CALENDAR

OF

THE UNIVERSITY OF ADELAIDE

FOR THE YEAR

1971

VOLUME II: DETAILS OF COURSES

The University's postal address is
Box 498D, G.P.O., Adelaide, South Australia, 5001;
and its telephone number is 23 4333.

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FOREWORD

The Calendar of the University is published annually in three Volumes, as follows:

VOLUME I

General information, including–

- The University Act
- Staff
- Statutes
- Standing Orders of the Senate
- The Elder Conservatorium of Music
- Institutions, Foundations and Colleges of the University
- Public Lectures and Courses
- Scholarships and Prizes
- Societies Associated with the University

VOLUME II

"Details of Courses", being–

- Regulations and Schedules of degree and diploma courses
- Rules
- Syllabuses and Timetables

VOLUME III

- Annual Report for 1970
- Commemoration Addresses, 1971
- Bibliography for 1970
- Financial Statements for 1970
- List of Graduates, Associates and Diploma holders of the University

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These Volumes are normally published as follows:

VOLUME I: In May: price 75c.
VOLUME II: In December of previous year: price 25c.
VOLUME III: In August: price 25c.
Postage extra.

THE ARMS OF THE UNIVERSITY

The heraldic description of the Coat of Arms is as follows:

> Per pale Or and Argent an Open Book proper edged Gold on a Chief Azure five Mullets, one of eight, two of seven, one of six and one of five points of the second, representing the Constellation of the Southern Cross;

and the Motto associated with the Arms is—

Sub cruce lumen

"The light (of learning) under the (Southern) Cross"

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VOLUME II

[The information in this volume is correct as at November 25, 1970.]

REGULATIONS, SCHEDULES AND RULES.

SYLLABUSES AND TIMETABLES

(*See* Page 651.)

1. REGULATIONS AND SCHEDULES FOR BACHELOR DEGREES

OF THE DEGREE OF BACHELOR OF AGRICULTURAL SCIENCE

REGULATIONS

1. There shall be an Ordinary and an Honours degree of Bachelor of Agricultural Science. A candidate may obtain either degree or both.

2. Except in special cases allowed by the Council, every candidate for the degree of Bachelor of Agricultural Science shall after matriculation spend at least four academic years in courses of study for the degree.

*3. To qualify for the degree, whether the Ordinary or the Honours degree, every candidate must do such written, laboratory and other practical work as is required and pass examinations in the subjects prescribed. He must also present evidence to the satisfaction of the Council that he has had the practical experience prescribed.

4. *(a) Schedules defining the course of study, including laboratory and other practical work to be undertaken, the examinations to be passed and the fees to be paid by candidates, shall be drawn up by the Faculty of Agricultural Science and submitted to the Council for approval.

(b) Such schedules shall become effective from the date of approval by the Council or from such other date as the Council may determine, and shall be published in the next edition of the University Calendar.

5. Except by permission of the Faculty of Agricultural Science, a candidate shall not be admitted to the class in any subject for which he has not satisfactorily completed the pre-requisite studies as prescribed in the syllabus for that subject: Provided that the Faculty may grant a candidate who holds an Honours diploma of Roseworthy Agricultural College such exemption from the requirements of this regulation, and on such conditions, as it may determine.

*6. A candidate may be exempted from attendance at practical work in a subject in which he desires to be examined, but only upon grounds approved by the Council.

7. (a) Except in cases approved by the Council, the annual examination in a subject shall be held soon after the completion of the course of instruction in it. Supplementary examinations, when granted, shall be held at such time as may be fixed whether in term or in vacation.

*(b) A candidate shall enter for examination on a form and by a date prescribed by the Council, but shall not be eligible to present himself for examination unless he has done written and laboratory or other practical work, where required, to the satisfaction of the professors and lecturers concerned.

* Amended 24th December, 1969.

(c) At the annual examination in a subject, the examiners may take into account the candidate's written or practical work in the subject and his results at terminal or other examinations in it.

†8. (a) A candidate who fails to pass in any subject shall, before presenting himself again for examination, again do practical work in that subject to the satisfaction of the professor and lecturers concerned unless exempted from doing so by the Faculty of Agricultural Science.

(b) A candidate who has twice failed to pass the examination in any subject may not enrol for the subject again except by permission of the Faculty and under such conditions as the Faculty may prescribe. For the purpose of this clause, a candidate who fails to receive permission to sit for or absents himself from the examination in any subject after having attended substantially the full course of instruction in it shall be deemed to have failed to pass the examination.

9. There shall be three classifications of pass at an annual examination in any subject for the Ordinary degree, as follows: Pass with Distinction, Pass with Credit, Pass. The names of the candidates who pass with Distinction or with Credit shall be arranged in order of merit within the classification; the names of other candidates who pass shall be arranged in alphabetical order either in one list or in two divisions as the Council may, on the recommendation of the Faculty, determine. If the list of candidates who pass be published in two divisions, a pass in the higher division may be prescribed in the appropriate syllabus as pre-requisite for admission to another subject. A candidate with a lower division pass who wishes to gain a higher division pass will be allowed to repeat the subject once only.

*10. (a) A candidate for the Honours degree shall spend an additional year in advanced study in one of the subjects listed in the schedule relating to the Honours degree.

(b) The names of candidates who qualify for the Honours degree shall be published in alphabetical order within the following classes and divisions:

First Class
Second Class
  Division A
  Division B
Third Class.

11. A candidate who has passed equivalent examinations in the University or elsewhere and desires that such examinations be counted *pro tanto* for the degree of Bachelor of Agricultural Science, may on written application be granted such exemption from the requirements of these regulations as the Council may determine.

Allowed 28th January, 1965.
* Amended 21st December, 1967.
† Amended 24th December, 1969.

SCHEDULES MADE BY THE COUNCIL UNDER REGULATION 4.

NOTE: To find the syllabuses of the subjects in these Schedules, see Table of Subjects on page 992.

I. The Ordinary Degree

1. The subjects of study for the Ordinary degree shall be as follows:

Group A Subjects: Agriculture IA, Biology I, Chemistry I, Mathematics I, Mathematics IM, Physics I, Zoology I.

Group A Half-Subjects: General Biology IH, Computing IH, General Geology IH, Genetics and Human Variation IH, Mathematics IH, Physical Geology IH, Plant Biology IH, Statistics IH.

Group B Subjects: Agriculture IB, Applied Mathematics II, Botany II, Chemistry II, Genetics II, Geology II, Pure Mathematics II, Zoology II.

Group C Subjects: Agricultural Biochemistry I, Agricultural Economics I, Agricultural Microbiology, Agriculture II, Animal Physiology and Production I, Biometry I, Crop Physiology, Entomology and Plant Pathology, Mathematical Statistics II, Soil Science I.

Group D Subjects: Agricultural Biochemistry II, Agricultural Economics II, Agriculture III, Agronomy, Animal Physiology and Production II, Entomology II, Genetics III, Horticultural Science, Mathematical Statistics III, Plant Breeding, Plant Pathology II, Soil Science II.

2. To qualify for the Ordinary degree a candidate shall, subject to the conditions and modifications specified in clause 4, satisfactorily complete the following courses:

(a) Agriculture IA, Chemistry I and three Group A subjects or their equivalents. These three subjects must include *either* (i) General Biology IH, Plant Biology IH and Zoology I, *or* (ii) Biology I.

(b) Agriculture IB and *either* three other subjects from Group B *or* two other subjects from Group B and a Group A subject not previously taken or its equivalent.

(c) Agriculture II, Agricultural Microbiology and *either* Biometry I and three other subjects from Group C *or* Mathematical Statistics II and two other subjects from Group C.

(d) Agriculture III and *either* two other subjects from Group D *or* one other subject from Group D and two subjects from Group C not previously taken.

3. A candidate may present Engineering I or a first-year subject available in the Faculty of Arts in lieu of not more than one Group A subject, or its equivalent, required under section (a) *or* (b) of clause 2 above.

4. The list of subjects to be presented for the degree must comply with the following conditions:

The following combinations of subjects shall not be presented:

Biology I and any *one* of General Biology IH, Plant Biology IH, Zoology;

Any *two* of Mathematics I, Mathematics IS, Mathematics IH, Mathematics IM;

Pure Mathematics II and Applied Mathematics II;

Agricultural Economics I and Economics I.

5. *The Flinders University of South Australia*

(a) A candidate who has completed the first two years in the School of Biological Sciences may apply for status in the Faculty of Agricultural Science and may be admitted to subjects in Group C.

(b) Extra study, as prescribed by the Head of the Department concerned, may be required in nominated subjects before the candidate enters the course.

6. *Roseworthy Agricultural College*

A candidate who holds an Honours diploma of Roseworthy Agricultural College may be exempted from taking the subjects in Group C and may be admitted tc the subjects in Group D, at the discretion of the Head of the Department concerned and with permission of the Dean of the Faculty.

7. *Practical Experience*

A candidate will be required to obtain thirty-six weeks' practical agricultural experience approved by the Faculty of Agricultural Science before he will be admitted to the degree. Of this period:

(a) Time spent on compulsory tours and camps may be allowed to count for not more than four weeks.

(b) Except with the special permission of the Dean or his representative, not more than fifteen weeks may be spent on farm experience at research and educational centres or on work in the field or in a laboratory directly related to the course of study taken by the candidate in his fourth year; any non-farm work must be approved in advance by the Dean or his representative.

(c) The balance must be spent in practical experience on private farms. A candidate will be expected to gain experience in a diversity of agricultural environment and he should discuss his plans for practical experience with the Dean of the Faculty.

(d) A candidate who holds the diploma of Roseworthy Agricultural College will be exempted from the requirements of practical experience.

II. The Honours Degree

1. A candidate may, subject to approval by the Head of the Department concerned, proceed to the Honours degree in one of the following disciplines:

Agricultural Biochemistry
Agronomy
Animal Physiology and Production
Animal Husbandry and Nutrition
Biometry
Entomology
Genetics
Horticulture
Plant Breeding
Plant Pathology
Plant Physiology
Soil Science

2. A candidate for the Honours degree in any subject shall not begin Honours work in that subject until he has completed the course of study for the Ordinary degree, all the courses in that subject available for the Ordinary degree, and such other pre-requisite subjects (if any) as may be prescribed in the syllabus.

III. Fees

A. Ordinary degree of B.Ag.Sc.:

(a) For attendance (or re-attendance) at lectures, tutorial and practical work and the annual examination in a subject taken separately:	
For a subject in Group A, except Agriculture IA -	$105
For a half-subject in Group A - - - - - -	$52.50
For a subject in Group B, Group C, or Group D except Agriculture IB, Biometry I, Agricultural Microbiology and Genetics III - - - - - - - - -	$144
For Agriculture IA, Agriculture IB, Biometry I (each)	$57
For Agricultural Microbiology - - - - -	$72
For Genetics III - - - - - - - - -	$210
(b) The fees prescribed in Section (a) of this Clause are subject to the proviso that the total fee for a standard academic year's work in any one year shall not exceed	$411
(c) For a special examination in any subject - - -	$24

Note: The fee for compulsory tours ($100) in Agriculture III is additional to the fees above.

B. Honours degree of B.Ag.Sc.: For the final-year Honours work in any subject -	$366
C. For admission to the degree - - - - - -	$24

OF THE DEGREE OF BACHELOR OF APPLIED SCIENCE

REGULATIONS

§†*1. There shall be an Ordinary and an Honours degree of Bachelor of Applied Science. A candidate may obtain either degree or both provided that until the Council decides otherwise a candidate for the degree in Mineral Engineering or in Data Processing or in Applied Physics may proceed to the Ordinary degree only.

*2. (a) For the Ordinary degree schedules defining the courses of study, including lectures, laboratory and other practical work to be undertaken, the examinations to be passed and the fees to be paid by candidates, shall be drawn up by the Faculty of Technology and Applied Science and submitted to the Councils of the University and the South Australian Institute of Technology.

Such schedules shall become effective as from the date of approval by both Councils or such other date as the Councils may determine, and shall be published in the next University Calendar which is issued after that approval has been given.

(b) For the Honours degree schedules defining the courses of study, including lectures, laboratory and other practical work to be undertaken, the examinations to be passed and the fees to be paid by candidates, shall be drawn up by the Faculty of Engineering and submitted to the Council of the University.

Such schedules shall become effective as from the date of approval by the Council or such other date as the Council may determine, and shall be published in the next University Calendar which is issued after that approval has been given.

3. ††(a) To qualify for the degree of Bachelor of Applied Science, a candidate must regularly attend such tutorials as may be prescribed and do written, laboratory and other practical work, where such is required, and pass examinations in the subjects prescribed for one of the following courses:

Applied Chemistry.
Primary Metallurgy.
Secondary Metallurgy.
Mineral Engineering.
Data Processing.
Applied Physics.

†(b) Before being admitted to the degree a candidate shall also satisfy the Faculty of Technology and Applied Science (in respect of the ordinary degree) or the Faculty of Engineering (in respect of the honours degree) that he has fulfilled the requirements in practical experience that are prescribed in the schedule relating thereto.

4. (a) All annual examinations, other than supplementary, shall take place towards the end of the academic year, except that practical examinations and examinations in a subject in which the course of instruction has been completed by the end of the second term, may be held at any convenient time fixed by the Faculty.

* Amended 12th December, 1963.
† Amended 28th January, 1965.
§ Amended 22nd December, 1966.
†† Amended 24th December, 1969.

††(b) A candidate shall enter for examination on the form and by the date prescribed by the Council, but shall not be eligible to present himself for examination unless he has regularly attended the prescribed tutorials and has done written and laboratory or other practical work where required to the satisfaction of the professors and lecturers concerned.

(e) Written and practical work done by candidates at the direction of the professors or lecturers and the results of terminal or other examinations in any subject may be taken into consideration at the final examination in that subject.

*(d) There shall be three classifications of pass at the annual examination in any subject or division of a subject for the degree, as follows: Pass with Distinction, Pass with Credit, Pass. The names of candidates who pass with Distinction or with Credit shall be arranged in order of merit within the classification; the names of other candidates who pass shall be arranged in alphabetical order.

††(e) A candidate who fails to pass in any subject shall again attend tutorials and do practical work in that subject to the satisfaction of the professors and lecturers unless exempted by the Faculty. Any such exemptions will hold for one academic year only.

(f) Supplementary examinations will be held only in special circumstances approved by the Faculty after consideration of individual cases.

(g) Except by permission of the Faculty a candidate shall not be admitted to the class in any subject for which he has not completed the pre-requisite work prescribed in the syllabus for that subject.

††5. Except in case of illness or other sufficient cause allowed by the Faculty, no candidate shall be credited in any year with attendance at tutorials or laboratory work in a subject unless he has attended at least three-fourths of the tutorials and laboratory work respectively in that subject.

††6. No candidate shall be granted exemption from attendance at tutorials or practical work except upon grounds approved by the Faculty.

*7. A candidate who has passed examinations *in pari materia* in another Faculty or otherwise, or who desires that his work at other Universities or Technical Schools should be counted *pro tanto* for the degree of Bachelor of Applied Science may on application be granted such exemption from the requirements of these regulations as the Council shall determine.

††‡8. Only those candidates who had entered upon the course for the degree in or before the academic year 1969 will be permitted to enrol in the course for the degree after December 31, 1969, provided that candidates who had entered upon the courses for an Associateship Diploma of the South Australian Institute of Technology at Whyalla or Port Pirie in or before the academic year 1966 will be permitted to enrol for the degree on such conditions as the Council may approve.

Allowed 16th March, 1961.
* Amended 22nd December, 1966.
†† Amended 24th December, 1969.
† Amended 21st December, 1967.
‡ Amendment awaiting allowance at time of printing.

Such students will be eligible to proceed to the degree under these Regulations provided that they qualify for the degree not later than March 31, 1976, unless the Council approve an extension of time in a particular case under Clause 5 of Chapter XXV of the Statutes.

Schedules made by the Council under Regulation 2 of the Degree of Bachelor of Applied Science.

1. Approval of Courses

Each candidate must obtain the approval of the Director of Studies of the Faculty for each year of his proposed course of study.

2. Arrangement of Courses

The courses shall occupy three years of full-time study. Details of these courses are set out in Clauses 5 to 10.

The first year of each of the courses set out in Clauses 5 to 10 will be offered for the first time in 1967, the second year in 1968 and the third year in 1969.

To find the syllabuses of the subjects in Clauses 5 to 10 below, see Table of Subjects on page 992.

3. Completion of Subjects

Except by permission of the Faculty, a candidate may not enrol for subjects in the second or third year of the course before he has passed the examinations in all of the subjects prescribed in the Schedules for the previous year of the course.

4. Continuation of Courses Offered Prior to 1967

Beginning on January 1, 1967, new courses for the degree of Bachelor of Applied Science have been established. All students enrolling in the Bachelor of Applied Science course for the first time in 1967 or later must enrol in the new courses unless the permission of the Faculty of Technology and Applied Science has previously been given.

Students who before the beginning of the academic year 1967 were enrolled in the Bachelor of Applied Science course will continue in the old courses except that—

(a) any student who wishes to transfer to the new courses may apply to the Faculty of Technology and Applied Science for permission to do so and will be granted such status in the course as the Faculty may determine; and

(b) students enrolled in the old courses who have not passed in the first-year subjects by February 28, 1968, the second-year subjects by February 28, 1969, the third-year subjects by February 28, 1971, and the fourth-year subjects by February 28, 1973, will be required to transfer to the new course.

Part-time students who may be unable to complete the old courses by February 28, 1973, are advised to transfer to the new courses as early as possible.

5. Applied Chemistry

(a) *Old Course (Course A)*

FOURTH YEAR

(To be offered for the last time in 1972)

TE83	Electrical Engineering IIA(T)	Lectures Practical	2 2		54
TJ12	Engineering Drawing and Design II	Lectures Practical	1 3		54
	either				
TI74	Analytical Chemistry	Lectures Tutorial Practical	1 1 3		57
	or				
TI84	Process Control (T)	Lectures Practical	1 3		54
TI04	Process Technology II	Lectures Practical	2 6		72
TI94	Unit Operations	Lectures Tutorials Practical	1 3 3		54
TA94	Industrial Economics	Lectures	1[2]		22
	Vacational Report (Second)				

(b) *Old Course (Course B)*

FOURTH YEAR

(To be offered for the last time in 1972)

Subject No. in Syllabus	Subject		Hours a week		Fee $
	either				
TJ21	Refrigeration Engineering I	Lectures	2		42
	or				
TJ73	Materials and Structures	Lectures Practical	2 2		54
	or				
TI84	Process Control (T)	Lectures Practical	1 3		54
TI04	Process Technology II	Lectures Practical	2 6		72
TI94	Unit Operations	Lectures Tutorials Practical	1 3 3		54
TA94	Industrial Economics	Lectures	1[2]		22
TI14	Industrial Microbiology II	Lectures Practical	2 6		108
	Vacational Report (Second)				

(c) *New Course*

FIRST YEAR

TM01	Mathematics IA	Lectures Tutorials	3 2		57
TP01	Applied Physics I	Lectures Tutorial Practical	3 1 2		60
TH01	Chemistry I(T)	Lectures Tutorial Practical	3 1 3		69
TH91	Basic Science Techniques	Lectures Tutorials Practical	1[1] 3[1] 3[2]		54
TT81	Engineering Materials A	Lectures Practical	1 3[1 1/2]		54
	A General Studies Elective (see Schedule 13)	Tutorials	2		42

SECOND YEAR

TH02	Chemistry II(T), Physical	Lectures	2		
		Tutorial	1		60
		Practical	3		
TH12	Chemistry II(T), Organic	Lectures	2		
		Practical	3		57
TH22	Applied Chemistry I	Lectures	2		
		Tutorials	2		54
TM12	Mathematics IIB	Lectures	2		
		Tutorials	2[2]		54
TH92	Engineering Service	Lectures	1		
		Practical	2		54
TT52	Fluid and Particle Dynamics	Lectures	1		
		Practical	3[1]		42
	A General Studies Elective (see Schedule 13)	Tutorials	2		42
	Vacational Report (First)				

THIRD YEAR

TH23	Applied Chemistry II	Lectures	2		
		Tutorial	1		69
		Practical	4		
TH53	Chemical Process Kinetics	Lectures	1		
		Tutorials	2		54
TH73	Transfer Operations	Lectures	2		
		Tutorial	1		60
		Practical	3		
TH63	Chemical Instrumentation	Lectures	2		
		Practical	3[2]		54
TH83	Process Dynamics and Control	Lectures	1		
		Tutorial	1		57
		Practical	3		
	A General Studies Elective (see Schedule 13)	Tutorials	2		42
	Vacational Report (Second)				

6. Applied Physics — New Course

FIRST YEAR

Subject No. in Syllabus	Subject		Hours a week		Fee $
TM01	Mathematics IA	Lectures	3		
		Tutorials	2		57
TP01	Applied Physics I	Lectures	3		
		Tutorial	1		60
		Practical	2		
TH01	Chemistry I(T)	Lectures	3		
		Tutorial	1		69
		Practical	3		
TK81	Basic Engineering Techniques	Lectures	1		
		Practical	3		54
	A General Studies Elective (see Schedule 13)	Tutorials	2		42
	Vacational Report (First)				

SECOND YEAR

TM02	Mathematics IIA	Lectures ... 3 Tutorials ... 2		57
TP02	Applied Physics II	Lectures ... 4 Tutorial ... 1 Practical ... 5		72
TM82	Mechanics I(T)	Lectures ... 1[1] Tutorial ... 1[1]		14
TE92	Electrical Engineering SP(T)	Lectures ... 1 Practical ... 2		54
TL92	Electronics (T)	Lectures ... 2 Practical ... 2		54
	A General Studies Elective (see Schedule 13)	Tutorials ... 2		42

THIRD YEAR

TM03	Mathematics IIIA	Lectures ... 1 Tutorial ... 1		42
TP03	Applied Physics III	Lectures ... 5 Tutorial ... 1 Practical ... 10		72
	either			
TT93	Metallurgy for Physicists	Lectures ... 2[2] Practical ... 3[2]		38
TM93	Programming Project	Tutorial ... 1[1] Practical ... 3[1]		18
TP93	Control Studies	Lectures ... 1[2] Practical ... 2[2]		36
	or			
TZ71	Biology (T)	Lectures ... 2 Tutorial ... 1 Practical ... 3		60
	A General Studies Elective (see Schedule 13)	Tutorials ... 2		42
	Vacational Report (Second)			

7. Primary Metallurgy Course

(a) *Old Course*

FOURTH YEAR

(To be offered for the last time in 1972)

TT64	Mineral Processing	Lectures ... 2 Seminars ... 1 Practical ... 3		60
TT44	Extractive Metallurgy I	Lectures ... 2 Seminar ... 1 Practical ... 3		60
TI84	Process Control (T)	Lectures ... 1 Practical ... 3		54
TA94	Industrial Economics	Lectures ... 1[2]		22
	either			
TI94	Unit Operations	Lectures ... 1 Practical ... 3		54
	or			
TN02	Mineral Engineering I	Lectures ... 2 Practical ... 1		54
	and			
TC73	Hydraulics (T)	Lectures ... 1[1] Practical ... 3		42
TT84	Primary Metallurgy Projects	... ... **7**		69
	Vacational Report (Second)			

(b) *New Course*

FIRST YEAR

TM01	Mathematics IA	Lectures Tutorials	3 2	57
TP01	Applied Physics I	Lectures Tutorial Practical	3 1 2	60
TH01	Chemistry I(T)	Lectures Tutorial Practical	3 1 3	69
TT71	Basic Science Techniques (M)	Lectures Tutorials Practical	1[2] 2[2] 3	57
TT91	Materials Science (T)	Lectures Tutorials	2 1	54
	A General Studies Elective (see Schedule 13)	Tutorials	2	42

SECOND YEAR

Subject No. in Syllabus	Subject		Hours a week	Fee $
TM12	Mathematics IIB	Lectures Tutorials	2 2[2]	54
TH02	Chemistry II(T), Physical	Lectures Tutorial Practical	2 1 3	60
TT52	Fluid and Particle Dynamics	Lectures Practical	1 3[1]	42
TT62	Applied Mineralogy	Lectures Practical	1 3[2]	54
TT72	Extractive Metallurgy IB	Lectures Practical	1 3[1]	42
TT92	Industrial Metallurgy IA	Lectures Practical	1[3] 3[1]	42
TH92	Engineering Service	Lectures Practical	1 2	54
	A General Studies Elective (see Schedule 13)	Tutorials	2	42
	Vacational Report (First)			

THIRD YEAR

TT63	Mineral Processing A	Lectures Tutorial Practical	2 1 3	60
TT73	Extractive Metallurgy II	Lectures Tutorial Practical	2 1 3	60
TH73	Transfer Operations	Lectures Tutorial Practical	2 1 3	60
TH83	Process Dynamics and Control	Lectures Tutorial Practical	1 1 3	57
TT83	Metallography IA	Tutorials Practical	2[1] 3[1]	19
	A General Studies Elective (see Schedule 13)	Tutorials	2	42
	Vacational Report (Second)			

8. Secondary Metallurgy Course

(a) *Old Course*

FOURTH YEAR

(To be offered for the last time in 1972)

Subject No. in Syllabus	Subject		Hours a week	Fee $
TT34	Physical Metallurgy II	Lectures Tutorial	2 1	54
TT74	Metal Fabrication	Lectures Practical	1 3[1]	42
TT94	Foundry Practice	Lectures Practical	1 3[2]	54
TA94	Industrial Economics	Lectures	1[2]	22
TT54	Metallurgical Thermodynamics and Kinetics	Lectures Tutorial	2 1	54
TT24	Physical Metallurgy Projects		[7]	72
	Vacational Report (Second)			

(b) *New Course*

FIRST YEAR

TM01	Mathematics IA	Lectures Tutorials	3 2	57
TP01	Applied Physics I	Lectures Tutorial Practical	3 1 2	60
TH01	Chemistry I(T)	Lectures Tutorial Practical	3 1 3	69
TT71	Basic Science Techniques (M)	Lectures Tutorials Practical	1[2] 2[2] 3	57
TT91	Materials Science (T)	Lectures	2	42
	A General Studies Elective (see Schedule 13)	Tutorials	2	42

SECOND YEAR

TM12	Mathematics IIB	Lectures Tutorials	2 2[2]	54
TH82	Chemistry II(T), Physical (part course)	Lectures Tutorials Practical	2[2] 1[2] 6[1]	40
TT02	Physical Metallurgy IA	Lectures Tutorial Practical	2 1 3	60
TT22	Industrial Metallurgy I	Lectures Practical	2 3[2]	54
TT12	Metallography I	Lectures Tutorials Practical	1[2] 1[2] 3[2]	38
TK92	Mechanical Design S	Lectures Tutorial Practical	1 1 3	57
	A General Studies Elective (see Schedule 13)	Tutorials	2	42
	Vacational Report (First)			

THIRD YEAR

Subject No. in Syllabus	Subject		Hours a week	Fee $
TT03	Physical Metallurgy IIA	Lectures 4 Tutorials 2 Practical 3		72
TT23	Industrial Metallurgy II	Lectures 4 Tutorial 1 Practical 5		72
TT72	Extractive Metallurgy IB	Lectures 1 Practical 3[1]		42
TT13	Metallography II	Tutorials 2[1] Practical 3[2]		36
TE63	Electrical Engineering SK(T)	Lectures 1[2] Practical 2[2]		36
	A General Studies Elective (see Schedule 13)	Tutorials 2		42
	Vacational Report (Second)			

9. Mineral Engineering Course

(a) *Old Course*

FOURTH YEAR

(To be offered for the last time in 1972)

TV94	Civil Engineering B (Min.)	Lectures 3 Practical 3		60
TD83	Methods of Construction and Management	Lectures 1		33
TE83	Electrical Engineering IIA(T)	Lectures 2 Practical 2		54
TN04	Mineral Engineering II	Lectures 3 Practical 3		60
TV14	Structures IIA(T)	Lectures 1 Practical 2		54
TN94	Mineral Exploration	Lectures 2 Practical 3		57
	Drilling Camp			
	Visit to Oil Rig			
	Vacational Report (Second)			

(b) *New Course*

FIRST YEAR

Subject No. in Syllabus	Subject		Hours a week	Fee $
TM01	Mathematics IA	Lectures 3 Tutorials 2		57
TP01	Applied Physics I	Lectures 3 Tutorial 1 Practical 2		60
TH81	Engineering Chemistry and Materials	Lectures 2 Practical 3		57
TK01	Engineering Mechanics I	Lectures 2^2, 1^1 Tutorial 1 Practical 1^1		54
TK91	Engineering Drawing	Practical 3		54
TK71	Basic Engineering Techniques (Part Course)	Lectures 1 Practical 3[1]		42
	A General Studies Elective (see Schedule 13)	Tutorials 2		42

SECOND YEAR

TM12	Mathematics IIB	Lectures Tutorials	2 2[2]	54
TK02	Engineering Mechanics II	Lectures Practical	4 3	69
TK82	Thermo-Fluid Dynamics I	Lectures Tutorial Practical	2 1 2[2]	57
TN12	Applied Geology I	Lectures Tutorial Practical	2 1 3	60
TC52	Civil Engineering S (T)	Lectures Tutorials Practical	2[2], 1[1] 1[1] 3[1], 2[1]	54
	A General Studies Elective (see Schedule 13)	Tutorials	2	42
	Vacational Report (First)			

THIRD YEAR

TM13	Mathematics IIC	Lectures Tutorials	1 1[2]	42
TK22	Mechanical Design I	Lectures Tutorials	1 3	54
TE72	Electrical Engineering SC(T)	Lectures Practical	1 2[2]	54
TN13	Applied Geology II	Lectures Practical	3 4	69
TN83	Mineral Engineering A	Lectures Practical	3 4	69
TN73	Mineral Engineering B	Lectures Tutorial Practical	2[2], 1[1] 1 3[1]	54
	A General Studies Elective (see Schedule 13)	Tutorials	2	42
TC82	Survey Camp			24
	Vacational Report (Second)			

10. Data Processing Course

(a) *Old Course*

Subject No. in Syllabus	Subject	Hours a week	Fee $

FOURTH YEAR

(To be offered for the last time in 1972)

TM84	Numerical Mathematics II	Lectures Tutorial	3 1	108
TM64	Theory of Systems (T)	Lectures Tutorials	2 2	54
TM74	Operations Research	Lectures Tutorial	3 1	54
TU94	Supervision—Human Relations	Lectures	1½	42
TM94	Second Project	Tutorials	7	108
	Vacational Report (Second)			

(b) *New Course*

FIRST YEAR

TM01	Mathematics IA	Lectures 3 Tutorial 2		57
TP01	Applied Physics I	Lectures 3 Tutorial 1 Practical 2		60
TM21	Programming I	Lectures 2 Practical 1		54
TA81	Accounting I	Lectures 2 Tutorial 1 Practical 1		54
	A General Studies Elective (see Schedule 13)	Tutorials 2		42

SECOND YEAR

TM02	Mathematics IIA	Lectures 3 Tutorials 2		57
TM22	Programming II	Lectures 2 Tutorial 1 Practical 3		60
TM92	Statistics	Lectures 3 Tutorial 1		54
TA92	Economics (T)	Lectures 2 Tutorial 1		54
TU92	Administration	Lectures 2 Tutorial 1		54
	A General Studies Elective (see Schedule 13)	Tutorials 2		42
	Vacational Report (First)			

THIRD YEAR

TM73	Systems Analysis	Lectures 2 Tutorial 1		54
TM23	Programming III	Lectures 2 Tutorial 1 Practical 3		60
TM33	Numerical Mathematics	Lectures 3 Tutorial 1 Practical 2		60
TM63	Operations Research I	Lectures 3 Tutorial 1		54
	A General Studies Elective (see Schedule 13)	Tutorials 2		42
	Vacational Report (Second)			

11. Practical Experience

To fulfil the requirements in respect of practical experience required under Regulation 3(b) a candidate shall:

(a) Submit two reports satisfactory to the Faculty on work that he has undertaken during vacations, each report covering a period of not less than two months and at least one period being spent in work related to the student's professional interests; *or*

(b) submit a report satisfactory to the Faculty on work relevant to his professional interests that he has undertaken for at least six months in full-time employment.

The service of the student must be certified by the student's employer during the period concerned.

A student who had entered upon the course for the degree in or before 1964 may fulfil the requirements relating to practical experience by submitting evidence satisfactory to the Faculty of his having had six months' practical experience in work relevant to his professional interests.

12. Honours Degree

(a) The Honours degree shall be available in each of the following courses:

Applied Chemistry;
Primary Metallurgy;
Secondary Metallurgy.

(b) No candidate shall proceed to the Honours degree except with the approval of the Faculty of Engineering. Before granting such permission, the Faculty will take into consideration the candidate's work up to the time of his application.

(c) A candidate for the Honours degree shall regularly attend lectures and practical work for one year and shall pass examinations in one of the subjects scheduled in Syllabus Nos. NH69, NH79 and NH89.

(d) A candidate for the Honours degree in any subject shall not begin the final-year Honours work in that subject until he has qualified for the Ordinary degree of Bachelor of Applied Science and has included in his qualifications all the courses in that subject prescribed for the Ordinary degree.

(e) The names of candidates who qualify for the Honours degree shall be published in alphabetical order within the following classes and divisions:

First Class

Second Class
Division A
Division B.

(f) The fee payable by candidates for the final year's work for the Honours degree shall be $366.

13. General Studies Elective

In addition to passing in all of the subjects prescribed for each year of the course, each student must complete three of the following General Studies courses:

Subject No. in Syllabus	Subject
TG91	Social and Technological History
TG81	Literature and Society
TG71	Social and Technological History (C.E.)
TG61	Social and Technological History (S.)
TG51	Science and Modern Society
TG41	German Life and Literature
TG31	Political Science
TG21	International Affairs—Asia
TG92	Music
TG82	Philosophy
TG72	The Development of Economic Society
TG62	Psychology and Human Organization

14. Schedule of Fees

A. Ordinary degree of B.App.Sc.:

(a) For attendance at lectures, practical work, thesis or other work and annual examination in a subject taken separately: the fee prescribed in the Schedules of subjects for the degree (see Clauses 5 to 10); provided that the total fee for a standard academic year's work in any one year shall not exceed $411.

(b) For a special or supplementary examination (theoretical or practical, or both) in any subject - - - - $24

B. Honours degree of B.App.Sc.:
For the additional Honours work and examination (see Clause 12) - - - - - - - - - - $366

C. For admission to the degree - - - - - - $24

OF THE DEGREE OF BACHELOR OF ARCHITECTURE

REGULATIONS

1. There shall be an Ordinary and an Honours degree of Bachelor of Architecture.

2. Schedules defining the courses of study, including lectures and the practical work to be undertaken, the examinations to be passed and the fees to be paid by candidates, shall be drawn up by the Faculty and submitted to the Council.

Such schedules shall become effective as from the date of approval by the Council or such other date as the Council may determine, and shall be published in the next University Calendar which is issued after that approval has been given.

3. (a) To qualify for the Ordinary degree of Bachelor of Architecture a candidate shall regularly attend lectures and do written and practical work (where such is required) and pass examinations in the subjects prescribed.

(b) Before being admitted to the degree a candidate shall also submit satisfactory evidence that he has had not less than twelve months' practical experience, not necessarily consecutive, in work approved by the Faculty as appropriate to his course.

4. (a) A candidate who has completed the work of the third year and who wishes to proceed to the Honours degree must apply to the Faculty, on or before March 1 of the year in which he intends to take the Honours course, for permission to do so.

(b) Before granting such permission the Faculty will take into consideration the candidate's work up to the time of his application.

(c) To qualify for the Honours degree a candidate shall complete the full course prescribed for the Ordinary degree and shall in addition undertake further work of an advanced nature and pass examinations in such work. Further, he must pass in the subjects which he takes after his acceptance as an Honours student at a higher standard than is required from candidates for the Ordinary degree.

*(d) The names of candidates who pass with Honours shall be arranged alphabetically in the following classes: First Class, Second Class Division A, Second Class Division B. A candidate who fails to obtain first or second class Honours may be awarded the Ordinary degree provided he has in all other respects completed the work for that degree.

(e) Before being admitted to the degree a candidate shall also submit satisfactory evidence that he has had not less than twelve months' practical experience, not necessarily consecutive, in work approved by the Faculty as appropriate to his course.

5. Except by permission of the Faculty a candidate shall not be admitted by the class in any subject for which he has not completed the pre-requisite work as prescribed in the syllabus for that subject.

6. (a) All annual examinations, other than supplementary, shall take place towards the end of the academic year, except that practical examinations and examinations in a subject in which the course of

* Amended 21st December, 1967.

instruction has been completed by the end of the second term, may be held at any convenient time fixed by the Faculty.

(b) A candidate shall enter for examination on the form and by the date prescribed by the Council, but shall not be eligible to present himself for examination unless he has regularly attended the prescribed lectures and has done written and practical work where required to the satisfaction of the professors and lecturers concerned.

(c) Written and practical work done by candidates at the direction of the professors or lecturers and the results of terminal or other examinations in any subject may be taken into consideration at the final examination in that subject.

(d) There shall be three classifications of pass at the annual examination in any subject or division of a subject for the degree as follows: Pass with Distinction, Pass with Credit, Pass. The names of candidates who pass with Distinction or with Credit shall be arranged in order of merit within the classification; the names of other candidates who pass shall be arranged in alphabetical order either in one list or in two divisions as the Faculty may determine. If the pass list be published in two divisions, a pass in the higher division may be prescribed in the syllabuses as pre-requisite for admission either to further courses in that subject or to other subjects.

(e) A candidate who fails to pass in any subject shall again attend lectures and do practical work in that subject to the satisfaction of the professors and lecturers unless exempted by the Faculty. Any such exemptions granted will hold for one academic year only.

(f) Supplementary examinations will be held only in special circumstances approved by the Faculty after consideration of individual cases.

7. Except in case of illness or other sufficient cause allowed by the Faculty, no candidate shall be credited in any year with attendance at lectures or practical work in a subject unless he has attended the lectures and practical work respectively in that subject to the satisfaction of the lecturer concerned.

8. No candidate shall be granted exemption from attendance at lectures or practical work except upon grounds approved by the Faculty.

9. A candidate who has twice failed to pass the examination in any subject or division of a subject may not present himself again for instruction or examination therein unless his plan of study is approved by the Dean. If he fails a third time he may not proceed with the subject again except by special permission of the Faculty, and under such conditions as the Faculty may prescribe.

For the purpose of this regulation a candidate who is refused permission to sit for examination in any subject or division of a subject shall be deemed to have failed to pass the examination.

10. A student who has passed examinations *in pari materia* in another Faculty or otherwise, or who desires that his work at other Universities or Technical Schools should be counted *pro tanto* for the degree of Bachelor of Architecture may on application be granted such

exemption from the requirements of these regulations as the Council shall determine.

*11. Repealed.

Allowed 9th January, 1958.

* Repealed 21st December, 1967.

Schedules made by the Council under Regulation 2.

NOTE: To find the syllabuses of the subjects in these Schedules, see Table of Subjects on page 992.

1. During the first, second, third, fourth and fifth years every candidate shall, unless exempted therefrom, attend courses of instruction and at the annual examination for the appropriate year shall satisfy the examiners in each of the following subjects:

(a) First Year:

Building Construction I;
Structural Mechanics;
Building Science I;
History of Architecture I;
Architectural Design and Planning I;
Architectural and Free Drawing;
Elective;
Studio Work I.

(b) Second Year:

Building Construction II;
Structures I;
Building Science II;
History of Architecture II;
Architectural Design and Planning II;
Architectural Surveying;
Studio Work II.

(c) Third Year:

Building Construction III;
Structures II;
Building Science III;
Architectural Design and Planning III;
Professional Practice I;
Studio Work III.

(d) Fourth Year:

Building Construction IV;
Structures III;
Building Science IV;
Architectural Design and Planning IV;
Urban and Regional Planning and Urban Design I;
Professional Practice II;
Studio Work IV.

Preliminary Honours Architecture: for Honours students additional seminar courses will be provided in a selection of the following topics:

(i) Advanced Architectural Design and Planning
(ii) Architecture and Environment
(iii) Development of Contemporary Architecture
(iv) Industrialised Building
(v) Architectural Structure
(vi) Urban Design and Planning
(vii) Landscape Design
(viii) Professional Management and Administration
(ix) Interior and Furniture Design
(x) Building Services
(xi) Architectural Acoustics
(xii) The Philosophy of Architecture

(e) Fifth Year:

Building Construction V;
Structures IV;
Building Science V;
Urban and Regional Planning and Urban Design II;
Architectural Thesis;
Professional Practice III;
Studio Work V.

Final Honours Architecture: for Final Honours students additional seminar courses will be provided in a selection of the topics set out under Preliminary Honours Architecture.

2. Except by permission of the Faculty, a candidate shall not proceed to any part of the work of the second or a subsequent year unless he has completed the whole of the work of, and passed the examination proper to, the preceding year or years. At the discretion of the Board of Examiners a candidate who fails to satisfy the examiners in not more than two subjects at an annual examination may be permitted to present himself for a supplementary examination in the subject or subjects concerned; and if he satisfies the examiners in the supplementary examination he shall then be deemed to have passed the whole examination.

3. (a) During the fourth year every candidate will normally be required to obtain at least six months' practical experience satisfactory to the Faculty.

(b) Such practical experience may form part of the twelve months' practical experience required under Regulation 3(b) or 4(e).

(c) Students attending National Service or Commonwealth Military Force training may be permitted to count such training, up to a maximum period of three months, as part of their required practical experience.

4. Matriculated students in the course for the degree of Bachelor of Engineering who completed subjects for that degree prior to 1958, may transfer to the course for the degree of Bachelor of Architecture, and shall be granted such status as may in each case be determined.

5. Courses of study must be approved by the Dean of the Faculty (or his nominee) at enrolment each year.

6. Fees:

A. Ordinary degree of B.Arch.:

(a) For each year's work, including one annual examination $411

(b) For a supplementary or special examination (theoretical or practical, or both) in any subject - - - - $24

(c) For subjects taken separately: $105 each up to a maximum of the annual fee of $411 for the full year's course.

B. Honours degree of B.Arch.:
For the additional Honours work and examination - $126

C. For admission to the degree - - - - - - $24

OF THE DEGREE OF BACHELOR OF ARTS

REGULATIONS

1. There shall be an Honours degree and an Ordinary degree of Bachelor of Arts. A candidate may obtain either degree or both.

†2. The course of study for the Ordinary degree shall extend over three academic years and that for the Honours degree over four academic years.

†3. (a) In these regulations and in schedules made under them by the Council the word "subject" means a course of study at the University normally completed in one academic year. In syllabuses, if the context so requires, it may mean alternatively a subject at one of the public examinations conducted by the University.

(b) The Council, after receipt of advice from the Faculty of Arts, shall from time to time prescribe schedules defining (i) the subjects of study for the degree to be provided by the University, (ii) the range of subjects (including lecture courses, laboratory courses and other practical work) to be satisfactorily completed and the examinations to be passed by candidates, and (iii) the fees to be paid by candidates.

(c) Such schedules shall become effective from the date of prescription by the Council or such other date as the Council may fix.

(d) The syllabuses of subjects shall be specified by the Head of the Department concerned and submitted to the Faculty and the Council for approval.

(e) Schedules made and syllabuses approved by the Council shall be published in the next edition of the University Calendar.

§4. A candidate for the degree shall attend lectures and other classes as required by the Head of the Department concerned and pass examinations in accordance with the provisions of Schedule II (Ordinary degree) or Schedule III (Honours degree).

††5. (a) A candidate desiring to enter for an honours school must obtain the approval of the head of the school concerned. The final examination may not, except by special permission of the Faculty, be taken until four years of study have been completed after matriculation.

(b) The work of the Final Honours year must be completed in one year of full-time study, save that on the recommendation of the Head of the Department concerned, the Faculty may permit a candidate to spread the work over two years, but not more, under such conditions as it may determine.

(c) The names of the candidates who qualify for the Honours degree shall be published in alphabetical order within the following classes and divisions in each school:

First Class
Second Class
  Division A
  Division B
Third Class.

† Allowed 28th January, 1965. †† Allowed 16th December, 1965.
§ Amended 24th December, 1969.

(d) A candidate who is unable to complete the course for the Honours degree within the time allowed, or whose work is unsatisfactory at any stage of the course, or who withdraws from the course shall be reported to the Faculty, which may either (i) permit him to re-enrol for the Honours degree under such conditions (if any) as it may determine; or (ii) require or allow him to take the course for the Ordinary degree. In that event he may be permitted to count towards that degree any subjects which he has completed and which are not ordinarily common to both degrees, provided that he complies in all other respects with the requirements for the Ordinary degree.

(e) A candidate who after examination has failed to obtain Honours shall be reported to the Faculty, which may recommend that he be awarded the Ordinary degree, provided that he has in all other respects completed the work for the Honours degree.

(f) A candidate may not enrol a second time for the Final Honours course in the same school if he (i) has already qualified for Honours in that school; or (ii) has presented himself for examination in that school but has failed to obtain Honours; or (iii) withdraws from his course, unless the Faculty under paragraph (d) hereof permits him to re-enrol.

‡6. Except by permission of the Faculty a candidate shall not proceed to a subject for which he has not completed the pre-requisite subjects prescribed in the syllabuses.

7. A candidate shall do such written or practical work as may be prescribed by the Professor or Lecturer.

8. Except in special cases approved by the Council the annual examinations shall take place towards the end of the academic year. A candidate shall enter for examination on the form and by the date prescribed by the Council, but shall not be eligible to present himself for examination unless he has regularly attended the prescribed lectures and has done written and laboratory or other practical work, where required, to the satisfaction of the professors and lecturers concerned. Written or practical work done by candidates by direction of the Professors or Lectures and the results of terminal or other examinations in a subject may be taken into consideration at the final examination that subject.

†**9. There shall be three classifications of pass at an annual examination in any subject in the schedules for the degree, as follows: Pass with Distinction, Pass with Credit, Pass. The names of the candidates who pass with Distinction or with Credit shall be arranged in order of merit within the classification; the names of other candidates who pass shall be arranged in alphabetical order either in one list or in two divisions as the Council may, on the recommendation of the Faculty, determine. If the list of candidates who pass be published in two divisions, a pass in the higher division may be prescribed in the appropriate syllabuses as pre-requisite for admission to another subject. A candidate with a lower division pass who wishes to gain a higher division pass shall be allowed to repeat the subject once only.

* Allowed 20th December, 1956; amended 15th January, 1959.
‡ Allowed 16th December, 1965. † Allowed 28th January, 1965.
** Awaiting allowance at time of printing.

10. A candidate who fails to pass in a subject and who desires to take the subject again shall again attend lectures and do practical work in the subject to the satisfaction of the Professors and Lecturers, unless exempted therefrom by the Faculty of Arts.

†11. A candidate who has twice failed to pass the examination in any subject or division of a subject may not enrol for that subject again except by special permission of the Faculty and then only under such conditions as the Faculty may prescribe.

For the purpose of this regulation a candidate who is refused permission to sit for examination, or who fails, without a reason accepted by the Dean as adequate, to attend all or part of an annual examination (or a supplementary examination if granted) after having enrolled for at least two terms in that year, shall be deemed to have failed to pass the examination.

12. A candidate who has passed equivalent examinations in the University or otherwise and who desires that the examinations which he has passed should be counted *pro tanto* for the degree of Bachelor of Arts, may on written application be granted such exemption from the requirements of these regulations as the Council shall determine.

‡*13. (a) A graduate in another Faculty who wishes to proceed to the degree of Bachelor of Arts and to count towards that degree subjects which he has already presented for another degree may do so subject to the following conditions:—(i) he may present not more than three such subjects, save that a graduate in Law may present five such subjects; (ii) he shall present a range of subjects which fulfils the requirements of the relevant Schedule made under Regulation 4; and (iii) he shall present two third-year subjects not presented for another degree.

(b) A candidate who holds a diploma may be granted such status in the course for the degree of Bachelor of Arts as the Faculty shall in each case determine; provided that if status be granted for more than three subjects the candidate shall, except as provided for in section (c) of this Regulation, surrender his diploma before being admitted to the degree.

(c) A matriculated student who was enrolled for the Diploma in Social Studies before June 30, 1962, may until June 30, 1967, present for the degree of Bachelor of Arts more than three subjects which he has presented for the diploma without surrendering his diploma before being admitted to the degree.

§14. No graduate who has obtained an Honours degree in a subject or field of study in another Faculty may obtain the Honours degree of Bachelor of Arts in a corresponding subject, field of study, or school of the Faculty of Arts.

† Allowed 16th March, 1961. ‡ Allowed 16th December, 1965.
§ Amended 24th December, 1969.
* Awaiting allowance at time of printing.

*15. The fees to be paid by candidates shall be prescribed from time to time by the Council. The schedule of fees so prescribed shall be published in the University Calendar.

° Allowed 18th October, 1956. Allowed 17th January, 1952.

Schedules made by the Council under Regulations 3 and 15

NOTE: To find the syllabuses of the subjects in these Schedules, see Table of Subjects on page 992.

SCHEDULE I: COURSES OF STUDY

1. The following shall be the subjects of lectures and examinations for the Ordinary degree:

Ancient History;
Applied Mathematics II, and III;
Australian History [only available in 1971 in special circumstances];
Australian Literature;
Classical Studies, I, II, and III;
Comparative Philology;
Economics I, II, and III;
Economic Development I;
Economic Geography;
English I, II, and III;
French I, II, and III;
German I, IA, II, IIA, and III;
Geography I, II, and III;
Greek I, II, and III;
History IA, IB, II, IIIA, IIIB, and IIIC;
Latin I, II, and III;
Mathematical Statistics II, and III;
Mathematics I, and IM;
Music I, II, and III;
Philosophy I, II, IIIA, and IIIB;
Politics I, IIA, IIB, IIIA, and IIIB;
Psychology I, II, and III;
Pure Mathematics II, and III;
Social Economics.

Law Subjects:

Constitutional Law II;
Jurisprudence;
The Law of Property.

Science Subjects:

Biology I;
Botany II;
Chemistry I, and II;
Computing Science IIIA and IIIM;
Genetics II;
Geology II;
Organic Chemistry II;
Physical and Inorganic Chemistry II;
Physics I, and II;
Zoology I, and II;
Such other Science subjects as may be approved under Section (c) of Clause 2 of Schedule II.

Half-subjects—any two of the following will count as one subject:

Computing IH;
Mathematics IH;
Statistics IH.

Science half-subjects:

General Biology IH;
Plant Biology IH;
General Geology IH;
Physical Geology IH;
Genetics and Human Variation IH.

Subject which may be counted for the degree only by candidates who have qualified for the Diploma in Social Science or the Diploma in Social Studies:

Sociology.

2. The following shall be the subjects of lectures and examinations for the Honours degree:

All the subjects listed in clause 1 of this schedule and in addition:

Economic Theory
Elementary Greek
German IIB, and IIIB
Honours English Language and Literature, Part I
Old and Middle English I, and II
Old and Middle French I, and II.

3. Except for Mathematics I no subject shall be counted as part of more than one sequence.

4. No subject shall be counted twice, and a candidate shall not present both subjects of any of the following pairs:

Ancient History and Greek II;
Ancient History and *either* Latin II *or* Latin III;
Biology I and *either* Botany I *or* Zoology I *or* General Biology IH *or* Plant Biology IH.

Classical Studies I and *either* Greek II *or* Greek III;
Economics I and Social Economics;
Geography I and Economic Geography;
German I and German IA;
German II and German IIA;
History IIB and Economic Development I;
Psychology I and Psychology IA;

5. A candidate shall not present any two of Mathematics IS, Mathematics IM, Mathematics I, Mathematics IH.

6. A candidate who has passed with distinction or credit in Economic Geography may be permitted, with the approval of the Head of the Department of Geography, to substitute Economic Geography for Geography I in sequence 4 of Schedule II 1(e) or in Schedule III (f).

7. A candidate may present only one of Chemistry II, Physical and Inorganic Chemistry II, and Organic Chemistry II.

8. A candidate who enrolled as a matriculated student before March 31, 1964, and passed in Education before March 31, 1966, may present that subject for either the Ordinary or the Honours degree.

9. These Schedules come into force on January 1, 1966.

A candidate who enrolled as a matriculated student prior to January 1, 1966, may continue under the Regulations and Schedules in force in 1965. Alternatively, he may complete his degree under the present Regulations and Schedules with such modifications as may be necessary to ensure that subjects validly passed under the 1965 or earlier Schedules be counted *pro tanto* under the present Schedules.

SCHEDULE II: THE ORDINARY DEGREE

1. To qualify for the Ordinary degree a candidate shall present nine subjects, which shall include:

(a) at least one of the following subjects: French I, German I, German IA, Greek I, Jurisprudence, Latin I, Mathematics I, Mathematics IM, Philosophy I;

(b) not more than three Science subjects;

(c) not more than three subjects which have been presented for any other degree or diploma;

(d) not more than four of the following subjects: Biology I, Chemistry I, Classical Studies I, Economics I, Economic Geography, English I, French I, Geography I, German I, German IA, Greek I, History IA, History IB, Latin I, Mathematics I, Mathematics IM, Music I, Philosophy I, Physics I, Politics I, Psychology I, Social Economics, Zoology I; any subject formed by counting two of the following half-subjects as one subject: Computing IH, General Biology IH, General Geology IH, Genetics and Human Variation IH, Mathematics IH, Physical Geology IH, Plant Biology IH, Statistics IH.

(e) two of the following sequences:

	First Year	*Second Year*	*Third Year*
1.	Classical Studies I	Classical Studies II	Classical Studies III
2.	Economics I	Economics II	Economics III
3.	English I	English II	English III
4.	French I	French II	French III *or* Comparative Philology
5.	Geography I	Geography II	Geography III
6.	(a) German I	German II	German III *or* Comparative Philology
	(b) German IA	German IIA	German III *or* Comparative Philology
7.	History IA *or* IB	History II	History IIIA *or* IIIB *or* IIIC *or* Politics IIIB
8.	Greek I	Greek II	Greek III *or* Comparative Philology
9.	Latin I	Latin II	Latin III *or* Comparative Philology
10.	Mathematics I	Pure Mathematics II	Pure Mathematics III
11.	Mathematics I	Applied Mathematics II	Applied Mathematics III
12.	Mathematics I	Mathematical Statistics II	Mathematical Statistics III
13.	Music I	Music II	Music III
14.	Philosophy I	Philosophy II	Philosophy IIIA *or* IIIB
15.	Politics I	Politics IIA	Politics IIIA *or* IIIB
16.	Psychology I	Psychology II	Psychology III

For candidates who have qualified for the Diploma in Social Science or the Diploma in Social Studies, the following are permissible alternatives to sequences 7 and 16.

	First Year	*Second Year*	*Third Year*
7.	Social Economics *or* Economics I	History IIB	History IIIA *or* IIIB *or* IIIC
16.	Psychology I	Psychology II	Sociology

2. (a) A candidate whose mother tongue is not English and who has passed an examination in his mother tongue approved by the Faculty, may satisfy the requirements of Clause 1 (a) above by passing in English I.

(b) A candidate whose third-year subjects are, or include two of, Pure Mathematics III, Applied Mathematics III, and Mathematical Statistics III, may not include more than one Science subject nor more than five of the subjects included in sequences 10, 11 and 12.

(c) With the permission of the Faculty of Arts in each case, a candidate may present a sequence of three Science subjects; *provided* that such sequence

i. may not include a third-year subject already presented for another degree;

ii. must be accompanied by a sequence chosen from numbers 2-9 or 13-16 above, provided that a Science sequence in Psychology may not be presented with Sequence 16.

Notwithstanding sub-paragraph (b) of Clause I of this Schedule, a candidate permitted to present a sequence of three Science subjects

may include four Science subjects among the subjects which he presents for his degree.

(d) Notwithstanding sub-paragraph (c) of Clause 1 of this Schedule, a candidate may present for the degree of Bachelor of Arts not more than five subjects presented for the degree of Bachelor of Laws.

NOTE: (not forming part of the Regulations or Schedules):

The Faculty of Arts recommends that the normal pattern of study for the Ordinary degree of Bachelor of Arts be four subjects in the first year, three in the second and two in the third.

SCHEDULE III: THE HONOURS DEGREE

1. A candidate for the Honours degree shall attend lectures regularly and pass examinations in one of the following schools:

(a) Applied Mathematics,
(b) Classics,
(c) Computing Science,
(d) Economics,
(e) English Language and Literature,
(f) French Language and Literature,
(g) Geography,
(h) German Language and Literature,
(i) History,
(j) Latin,
(k) Music,
(l) Philosophy,
(m) Politics,
(n) Psychology,
(o) Pure Mathematics,
(p) Statistics.

or in a combined school approved by the Faculty and including such subjects of two schools as shall be deemed equivalent to those of a single school.

A candidate desiring to enter for an Honours school must obtain the approval of the head of the school concerned.

2. Except in special circumstances approved by the Council, a candidate must, before the year in which he enrols for the work for the Final Honours Year, complete the following subjects:

(a) For the Honours degree in Applied Mathematics:

Mathematics I, Applied Mathematics II, Applied Mathematics III;

Six other subjects approved by the Head of the Department, including:

(i) either Pure Mathematics II *or* Mathematical Statistics II,
(ii) a third-year subject other than Applied Mathematics III.

(b) For the Honours degree in Classics:

Latin I, II and III;
Greek I, II and III;
Comparative Philology;
One other subject.

(c) For the Honours degree in Computing Science:

Mathematics I, Pure Mathematics II, Applied Mathematics II, Computing Science IIIA or IIIM.
Either Applied Mathematics III *or* Mathematical Statistics III, *or* Pure Mathematics III.
Four other subjects approved by the Head of the Department.

(d) For the Honours degree in Economics:

Economics I, II and III;
Economic Theory;
Five other subjects approved by the Head of the Department, including a third-year subject other than Economics.

(e) For the Honours degree in English Language and Literature:

English I, II and III;
Honours English Language and Literature, Part I.
Five other subjects approved by the Head of the Department, including one in a language other than English and *either* Old and Middle English I and II *or* a sequence of three subjects;
Exemption from the language other than English may be granted in exceptional circumstances.

(f) For the Honours degree in French Language and Literature:

French I, II and III;
Old and Middle French I and II;
Three other subjects, which must include Latin I unless Latin has been passed at the Matriculation Examination or an examination of equivalent standard.

(g) For the Honours degree in Geography:

Geography I, II and III;
Five other subjects approved by the Head of the Department including a third-year subject other than Geography.

(h) For the Honours degree in German Language and Literature:

German I, II and III; *or*
German IA, IIA and III;
German IIB and IIIB;
Three other subjects.

(i) For the Honours degree in History:

History I (A *or* B), II, III (A *or* B *or* C);

Five other subjects approved by the Head of the Department, which must ordinarily include a second third-year subject.

(j) For the Honours degree in Latin:

Scheme A:

Latin I, II and III;

Elementary Greek;

Greek I;

Three other subjects.

Scheme B:

Latin I, II and III;

A sequence of three other subjects;

Two other subjects;

Greek I must be included as one of the five elective subjects.

(k) For the Honours degree in Music:

Music I, II and III;

Five other subjects approved by the Professor of Music, including a second third-year subject.

If French I or German I or German IA or, in approved cases Latin I, is not included as one of the five elective subjects, a special language examination must be passed in addition.

(l) For the Honours degree in Philosophy:

Philosophy I, II and IIIA;

Five other subjects including one second-year subject and one third-year subject.

(m) For the Honours degree in Politics:

Politics I, IIA, IIIA and IIIB;

Four other subjects approved by the Head of the Department, including a second-year subject other than Politics.

In special cases, with the permission of the Head of the Department, students may proceed to the Honours year with only one of Politics IIIA and Politics IIIB, provided they have passed in an additional third-year subject.

(n) For the Honours degree in Psychology:

Psychology I, II and III;

Five other subjects including a third-year subject other than Psychology.

(o) For the Honours degree in Pure Mathematics:
Mathematics I, Pure Mathematics II, Pure Mathematics III;
Six other subjects approved by the Head of the Department, including:
(i) either Applied Mathematics II *or* Mathematical Statistics II,
(ii) a third-year subject other than Pure Mathematics III.

(p) For the Honours degree in Statistics:
Mathematics I, Pure Mathematics II and Mathematical Statistics II;
Mathematical Statistics III and Pure Mathematics III;
Four other subjects approved by the Head of the Department.

3. In addition to the subjects specified in clause 2 of this schedule every candidate shall undertake during the second and later years of his course such Honours or other work as the Head of his Department shall require.

4. Except by permission of the Faculty a candidate shall take the whole of the final examination for the Honours degree at the one annual examination.

5. A candidate shall not present for the Honours degree of Bachelor of Arts a third-year subject which he has presented for another degree.

NOTE: (not forming part of the Regulations or Schedules):

The Faculty recommends that the normal pattern of study for the Honours degree of Bachelor of Arts should include four subjects in the first year. For many Honours students the subjects of the first year should include a language other than English.

SCHEDULE IV: FEES

A. Ordinary degree of B.A.:

(a) For attendance (or re-attendance) at lectures, tutorial and practical work, and the annual examination:	
(i) a first-year subject (excluding Science subjects) -	$96
(ii) a first-year half-subject - - - - -	$52.50
(iii) a second-year subject (excluding Law and Science subjects) - - - - - - - - -	$126
(iv) a third-year subject (excluding Science subjects)	$183
(b) A Law or Science subject: the fee prescribed in the Schedule of Fees for the degrees of Bachelor of Laws Bachelor of Science, as the case may be.	

NOTES:

(i) For the purpose of this Schedule, Elementary Greek is classified as a first-year subject.

(ii) The following subjects are classified as second-year: Ancient History, Australian History, Australian Literature, Old and Middle English I, Old and Middle French I.

(iii) The following subjects are classified as third-year: Comparative Philology, Honours English Language and Literature Part I, Old and Middle English II, Old and Middle French II.

(c) The fees prescribed in Section (a) of this Clause are subject to the proviso that the total fee for a standard academic year's work in any one year shall not exceed $366

(d) For a special examination in any subject - - - $24

(e) For an annual examination in a subject with exemption from attendance or re-attendance at classes: half the fee prescribed in Section (a) of this Schedule.

B. Honours degree of B.A.:

(a) For the interim Honours work in the second and third years - - - - - - - - - - - $114

(b) For the final-year Honours work and examination - - $366

NOTES:

(i) The total fee for the four-year course for the Honours degree is the aggregate of the maximum fee for each year at the time when the student undertook that year's work. Thus, for a student beginning the four-year course in the year indicated below, the total fee will be:

1968	300 + 300 + 366 + 366 = 1332
1969	300 + 366 + 366 + 366 = 1398
1970	366 + 366 + 366 + 366 = 1464
1971	366 + 366 + 366 + 366 = 1464

A candidate who when enrolling for the fourth year work has not paid the total fee for the preceding three years as indicated above will be required to pay the outstanding balance of that total fee, together with the fee of $366 for the fourth-year work.

(ii) A candidate whose position is not clearly defined by note (i) above should apply in writing to the Academic Registrar to have his position determined.

(iii) The cost of attendance at excursions and/or camps is not included in the fees listed above. See separate statement on page 594.

C. For admission to the degree - - - - - - $24

OF THE DEGREE OF BACHELOR OF DENTAL SURGERY

REGULATIONS

1. There shall be an Ordinary and an Honours degree of Bachelor of Dental Surgery.

2. Schedules defining the courses of study, including lectures, clinical practice, laboratory and other practical work to be undertaken, the examinations to be passed, and the fees to be paid, shall be drawn up by the Faculty of Dentistry and submitted to the Council. Such schedules shall become effective from the date of approval by the Council or from such other date as the Council may determine, and shall be published in the University Calendar.

3. A candidate shall enter for each annual examination on the form and by the date prescribed by the Council, but shall not be eligible to present himself for examination unless he has completed to the satisfaction of the professors and lecturers concerned the course of study and practice prescribed for that examination.

4. Written or practical work done by candidates by direction of the professors and lecturers and the results of terminal or other examinations in any subject may be taken into consideration at the final examination in that subject.

5. All regulations hitherto in force concerning the degree of Bachelor of Dental Surgery are hereby repealed: provided that this repeal shall not affect

(a) anything done or suffered under any regulation hereby repealed; or

(b) any right or status acquired, duty imposed, or liability incurred by or under any regulation hereby repealed.

The Ordinary Degree.

6. The course of study for the Ordinary degree of Bachelor of Dental Surgery shall extend over five years after matriculation. To qualify for the degree a candidate shall:

(a) regularly attend lectures and clinical practice and do written and laboratory or other practical work to the satisfaction of the professors and lecturers concerned;

(b) satisfactorily complete each annual examination before entering upon the work of the following year's course of study: provided that a candidate may begin the first term's work in the following year's course of study pending the result of a supplementary examination for which he has been permitted to present himself.

7. The annual examination shall be held in or about August or November, as the Council shall in each case determine from time to time. The supplementary examinations of the first four years shall be held about three months after the annual examinations.

*8. The Board of Examiners may grant a supplementary examination to a candidate who has been prevented by illness or other sufficient cause from attendance at the whole or part of the annual examination

* Amendment awaiting allowance at time of printing.

at the end of the first, second, third or fourth year or who has failed a part of such examination.

†9. A candidate shall not be re-examined at a supplementary examination in any subject or group of subjects in which he had passed at the annual examination.

†10. The annual examination at the end of the Fifth Year shall be known as the Final Examination. A Final Examination may also be held in May or June. On the recommendation of the Board of Examiners the Faculty may debar any candidate who has failed in the Final Examination from presenting himself at a subsequent Final Examination until a period of twelve months has elapsed since that failure.

†11. (a) There shall be three classifications of pass in each component subject of the annual examinations for the Ordinary degree, as follows: Pass with Distinction, Pass with Credit, Pass. The names of candidates who pass with Distinction or with Credit shall be arranged in order of merit within the relevant classification; the names of candidates who pass shall be arranged in alphabetical order.

(b) A candidate who fails to pass in any subject of an annual examination shall, unless exempted wholly or partially therefrom by the Faculty, again attend lectures, clinical practice, laboratory and other practical work in that subject before presenting himself again for examination. In the case of the Third, Fourth and Fifth Years, such a candidate may also be required to attend, concurrently, such lectures, clinical practice, laboratory and other practical work as the Faculty may prescribe, in other subjects of that annual examination.

(c) Except in the case of the First Annual Examination, a candidate who is exempted from part of any subject shall not be granted a classified pass in that subject.

†12. A candidate who has passed examinations *in pari materia* in other Faculties or at other approved Universities or Institutions and desires that such examinations shall be counted *pro tanto* for the degree of Bachelor of Dental Surgery, shall on written application to the Academic Registrar be granted such exemption from the requirements of these regulations as the Council shall determine.

The Honours Degree.

°13. A candidate wishing to proceed to the Honours degree shall, after discussing his proposed course of study with the Head of the Department of Dental Science and the Head of any other Department concerned, apply in writing to the Academic Registrar for permission to do so on or before the first day of February of the year in which he intends to take the course. No candidate shall proceed to the Honours degree except with the approval of the Faculty of Dentistry.

° Amended 28th January, 1965.
† Amendment awaiting allowance at time of printing.

*14. To qualify for the Honours degree a candidate shall, in addition to satisfactorily completing the course of study for the Ordinary degree:

(a) undertake a course of study extending over one year;

(b) pass at the first attempt an examination at the end of the year of study.

15. A candidate for the Honours degree may undertake the prescribed course of study either:

(a) after passing the third annual examination or the fourth annual examination by interrupting his course for the Ordinary degree; or

(b) after passing the Final Examination for the Ordinary degree.

†16. The names of the candidates who qualify for the degree shall be published in alphabetical order within the following classes and divisions:

First Class
Second Class—Division A.
Division B.
Third Class

Allowed 16th March, 1961.
* Amended 28th January, 1965.
† Amended 21st December, 1967.

Schedules made by the Council under Regulation 2

Notes: 1. The dental clinical year begins on February 3. 2. Students should obtain from the Dental School Office the lists of instruments and equipment required by each student before commencing each year's course. 3. To find the syllabuses of the subjects in these Schedules, see Table of Subjects on page 992.

SCHEDULE I—COURSES OF STUDY

A. Approval of Enrolment.

Students enrolling in the first year of the dental course, and all other students enrolling in the dental course for the first time, must have their course of study approved by the Dean (or his nominee) at the time of enrolment.

B. Lectures, Practical Work, Clinical Instruction.

During the first year every student shall attend a course of instruction in each of the following subjects:—(a) Biology, (b) Chemistry, (c) Physics, (d) an approved fourth first-year subject selected from those which may be presented for the Ordinary degrees of Bachelor of Arts or Bachelor of Science.

During the second year every student shall attend a course of instruction in each of the following subjects:—(a) General Anatomy, (b) General and Dental Histology, (c) Biochemistry, (d) Human Physiology, (e) Oral Anatomy, (f) Dental Materials and Technics.

During the third year every student shall attend a course of instruction in each of the following subjects: (a) Human Physiology, (b) General Pathology, (c) Microbiology, (d) Oral Pathology, (e) Conservative Dentistry, (f) Prosthetic Dentistry, (g) Pharmacology and Therapeutics; and shall attend at the Dental Department of the Royal Adelaide Hospital for clinical instruction.

During the fourth and fifth years every student shall attend a course of instruction in each of the following subjects:—(a) General Medicine, (b) General Surgery, (c) Preventive Dentistry, (d) Children's Dentistry, (e) Orthodontia, (f) Periodontia, (g) Microbiology, (h) Oral Pathology, (i) Oral Surgery and Anaesthesia, (j) Pharmacology, (k) Conservative Dentistry, (l) Crown and Bridge Prosthesis, (m) Partial Denture Prosthesis, (n) Immediate Replacement Denture Prosthesis, (o) Complete Denture Prosthesis, (p) Principles of Dental Practice, (q) Applied Physiology; and shall attend at the Royal Adelaide Hospital courses of clinical instruction in medical and surgical practice; and at the Dental Department of the Royal Adelaide Hospital for clinical instruction.

SCHEDULE II—EXAMINATIONS

1. At the First Annual Examination the candidate shall satisfy the examiners in each of the following subjects:

(i) Biology
(ii) Chemistry I at Division I standard or better.
(iii) Physics I
(iv) An approved fourth subject selected from those which may be presented for the Ordinary degree of Bachelor of Arts or Bachelor of Science.

Candidates taking the work of the first-year at The Flinders University of South Australia will be granted status for the First Year Examination on their passing in Part I of the course of study for the Ordinary Degree of Bachelor of Science in that University provided that the Part I course so passed is acceptable to the University of Adelaide.*

Candidates are required to have completed the work of the First Annual Examination in full before they may proceed to the work of the second year.

2. At the Second Annual Examination the candidate shall satisfy the examiners in each of the following subjects:

(i) General Anatomy
(ii) General and Dental Histology
(iii) Biochemistry
(iv) Oral Anatomy
(v) Dental Materials and Technics.

3. At the Third Annual Examination the candidate shall satisfy the examiners in each of the following subjects:

(i) Human Physiology
(ii) General Pathology
(iii) Oral Pathology I
(iv) Microbiology
(v) Restorative Dentistry I

* For 1971, the following Part I course will be acceptable:

Chemistry I Physics I Biology
and Mathematics I *or* IB
or Earth Sciences I
or Any Part I course in the School of Humanities or the School of Social Sciences.

4. At the Fourth Annual Examination the candidate shall satisfy the examiners in each of the following subjects:

(i) General Medicine
(ii) General Surgery
(iii) Children's Dentistry
(iv) Periodontology
(v) Oral Pathology II
(vi) Pharmacology and Therapeutics
(vii) Restorative Dentistry II

5. At the Final Examination the candidate shall satisfy the examiners in each of the following subjects:

(i) Preventive Dentistry
(ii) Orthodontia
(iii) Oral Surgery and Anaesthesia
(iv) Oral Medicine
(v) Restorative Dentistry III.

SCHEDULE III—FEES

A. Ordinary degree of B.D.S.:

(a) For attendance (or re-attendance) at lectures, practical work and annual examination:
First year (for less than four subjects, the fee for each subject will be as prescribed for such subjects in the Schedules of the degree of Bachelor of Arts or Bachelor of Science as appropriate) - - - - - - - - - $411
Each subsequent year (for less than the full number of subjects, the fee for each subject shall be: Second Year $78, Third Year $90, Fourth Year $66, Fifth Year $90) - - $441

(b) For attendance at lectures, practical work and a Final Examination, held in May or June under Regulation 10—each subject - $45

(c) For a supplementary examination - - - - - - $24

B. Honours degree of B.D.S.:
For the year's Honours work and examination - - - - $366

C. For admission to the degree - - - - - - - - $24

NOTE: The following additional fees are payable by dental students:

(i) For the hire of microscopes, in each of the second, third, fourth and fifth years - - - - - - - - - $12

(ii) For the hire of dental instruments, in each of the third, fourth and fifth years (in addition to a deposit, payable at the beginning of the third year, of $20) - - - - - $40

Students admitted under Regulation 10 to a Final Examination held in May or June and who pass in that Examination, will pay half the prescribed fee for the use of microscopes and dental instruments.

RULES FOR THE ADMISSION OF DENTAL STUDENTS TO THE PRACTICE OF THE ROYAL ADELAIDE HOSPITAL

1. Each dental student of the University of Adelaide shall attend at the Dental Department and at other Departments of the Royal Adelaide Hospital as directed by the Dean of the Faculty of Dentistry; and each student shall be admitted to the practice of the Hospital under the disciplinary control of the Medical Superintendent or Dental Superintendent whilst attending a Department of the Hospital.

2. No student may introduce visitors into any department of the Hospital without permission from the Administrator.

3. Every student shall conduct himself with propriety and discharge the duties assigned to him, and pay for or replace any article damaged or lost, or destroyed by him, and make good any loss sustained by his negligence.

4. Each student shall at all times be under the direction and supervision of a duly appointed member of the teaching staff of the University of Adelaide, and shall carry out such work as shall be allotted to him.

5. No student shall administer treatment to any patient without the approval of an appointed teacher.

6. No student shall publish a report on any case without the written permission of the Honorary Medical Officer or Honorary Dental Officer under whose care the patient is or has been.

7. Any student infringing any of these rules, or otherwise misconducting himself, may be temporarily suspended by the Medical Superintendent or the Dental Superintendent. In the case of such temporary suspension, written notice shall immediately be given to the Dean of the Faculty of Dentistry and the Administrator of the Hospital.

Approved by Council, 1961.

OF THE DEGREE OF BACHELOR OF ECONOMICS

REGULATIONS

1. There shall be an Ordinary and an Honours degree of Bachelor of Economics. A candidate may obtain either degree or both.

*2. The course of study for the Ordinary degree shall extend over three years and that for the Honours degree over four years. A candidate for the Ordinary degree shall attend lectures and pass examinations in accordance with the provisions of Schedule II; a candidate for the Honours degree shall attend lectures and pass examinations in accordance with the provisions of Schedule III.

†3. There shall be three classifications of pass at an annual examination in any subject or division of a subject for the Ordinary degree, as follows: Pass with Distinction, Pass with Credit, Pass. The names of the candidates who pass with Distinction or with Credit shall be arranged in order of merit within the classification; the names of other candidates who pass shall be arranged in alphabetical order either in one list or in two divisions as the Council may, on the recommendation of the Faculty, determine. If the Pass list be published in two divisions, a pass in the higher division may be prescribed in the syllabuses as pre-requisite for admission either to further courses in that subject or to other subjects.

4. The names of candidates who qualify for the Honours degree shall be published in alphabetical order within the following classes and divisions:

First Class

Second Class
- Division A
- Division B

Third Class

A candidate who fails to obtain Honours may be awarded the Ordinary degree provided that he has in all other respects completed the work for the Honours degree.

5. No graduate who has obtained the Honours degree of Bachelor of Arts in the school of Economics may obtain the Honours degree of Bachelor of Economics.

6. Except by permission of the Faculty a candidate shall not proceed to a subject for which he has not completed the pre-requisite subjects or preparatory work as prescribed in the syllabuses.

7. A candidate shall do such written or practical work in any subject as may be prescribed by the professor or lecturer concerned.

† Allowed 22nd December, 1955.
* Amended 4th November, 1965.

*8. The annual examinations shall be held towards the end of each academic year. A candidate shall enter for examination on the form and by the date prescribed by the Council, but shall not be eligible to present himself for examination unless he has attended such tutorials and seminars, and has done such written or other work as may be required, to the satisfaction of the professors and lecturers concerned.

9. Written or practical work done by candidates by direction of the professor or lecturer concerned and the results of terminal or other examinations held during the year may be taken into consideration at the final examination in any subject.

*10. A candidate who fails to pass in any subject shall again attend tutorials and seminars and do written or practical work in that subject to the satisfaction of the professor or lecturer concerned, unless granted exemption from doing so by the Faculty.

11. A candidate who has twice failed to pass the annual examination in any subject or division of a subject may not present himself again for instruction or examination therein unless his plan of study is approved by the Dean. If he fails a third time he may not proceed with the subject again except by special permission of the Faculty and under such conditions as the Faculty may prescribe.

For the purpose of this regulation a candidate who has failed to comply with the provisions of Regulation 8 shall be deemed to have failed to pass the examination.

12. A candidate who has passed equivalent examinations in the University or otherwise and who desires that the examinations which he has passed should be counted *pro tanto* for the degree of Bachelor of Economics, may, on written application, be granted such exemption from the requirements of these regulations as the Council may determine.

†13. A graduate in another Faculty who wishes to proceed to the degree of Bachelor of Economics:

(i) may present for the degree not more than four subjects which he has already presented for another degree or in which he has been granted status or exemption on account of work done for another degree;

(ii) shall present a range of subjects which fulfils in all respects the requirements of the Schedules made under Regulation 15 below;

(iii) shall present two third-year subjects not presented for another degree.

A candidate who holds a Diploma may be granted such status in the course for the degree of Bachelor of Economics as the Faculty shall in each case determine; provided that if status be granted for more than four subjects the candidate shall surrender his Diploma before being admitted to the degree.

14. If in any year the number of students desiring to attend lectures in any subject be fewer than a minimum fixed by the Council, the course of lectures in that subject may be suspended for that year.

* Allowed 20th December, 1956: amended 24th December, 1969.
† Amended 4th October, 1962, 4th April, 1963, and 4th November, 1965.

15. Schedules defining the course of study, including lectures and practical work to be undertaken, the examinations to be passed and the fees to be paid by candidates shall be drawn up by the Faculty of Economics and be submitted to and approved by the Council.

Such schedules shall become effective as from the date of approval by the Council or such other date as the Council may determine and shall be published in the next University calendar which is issued after that approval has been given.

Allowed 17th January, 1952.

SCHEDULES MADE BY THE COUNCIL UNDER REGULATIONS 2 AND 15

NOTE: To find the syllabuses of the subjects in these Schedules, see Table of Subjects on page 992.

SCHEDULE I — GENERAL.

1. The subjects for the Ordinary degree shall be:

Subjects as listed for the Ordinary degree of Bachelor of Arts except those including the half-subjects Statistics IH and Computing IH.
Commercial Law;
Economic Development I, II;
Economic Geography;
Economic Theory;
Economics I, II, III;
Economic Statistics I, IA, II;
Elements of Accounting, Management Accounting, Financial Accounting;
Industrial Sociology;
Mathematics (Economics);

Provided that:

(i) no candidate may present Economic Geography and Geography I *or* more than one of Mathematics (Economics), Mathematics I, Mathematics IH and Mathematics IM, *or* more than one of Economic Statistics I or Economic Statistics IA or Mathematical Statistics II *or* Politics IIA and Politics IIB (unless both subjects have been passed before March 31, 1966);

(ii) a candidate who wishes to present Economic Development I and History II, must obtain special approval from the Head of the Department of Economics before enrolling for History II;

(iii) a student may present Geography I in place of Economic Geography if he is also presenting Geography II; he may present Mathematics I in place of Mathematics (Economics) if he is also presenting Pure Mathematics II, or if he passed Mathematics I in 1968 or later; and he may present Mathematical Statistics II in place of Economic Statistics IA.

2. A graduate in another Faculty may be granted status in not more than four subjects on account of work done for another degree.

A graduate may also be exempted by the Dean from Economic Geography and the "two subjects" referred to in Schedule II, provided that the total of the number of subjects from which exemption is granted together with the number of subjects in which status is granted shall not exceed four.

3. Courses of study must be approved by the Dean (or his nominee) at enrolment each year.

4. Candidates who have completed subjects for the degree prior to 1970 may continue under the Schedules then in force, with such modifications (if any) as shall be prescribed by the Dean, provided that for the purpose of completing the requirements of the degree a candidate shall not, except with permission of the Faculty, retain credit for any subject for more than ten years.

5. A candidate who has presented himself for the annual examinations in any subject may, at the discretion of the examiners, be required subsequently to present himself for an additional examination, which may be either oral or written; and his results at such an additional examination shall be taken into account in determining his results at the annual examination.

SCHEDULE II — THE ORDINARY DEGREE

Except as provided for in Clause 2 of Schedule I a candidate for the Ordinary degree shall pass in ten subjects. There shall be alternative schemes of study as follows:

Scheme A (Commerce)

Economic Geography *or* Mathematics (Economics) (*or* in special cases, by approval of the Dean, another subject);
Economics I, II, III;
Economic Statistics I *or* IA;
Elements of Accounting, Management Accounting, Financial Accounting (*or* in special cases, by approval of the Dean, another subject);
Two subjects approved by the Dean, provided that not more than one shall be a first-year subject.

Scheme B (General Economics)

Economic Development I (*or* in special cases, by approval of the Dean, another subject);

Economic Development II *or* Economic Statistics II (*or* in special cases, by approval of the Dean, another subject);

Economic Geography *or* Mathematics (Economics) (*or* in special cases, by approval of the Dean, another subject);

Economics I, II, III;

Economic Statistics I *or* IA;

Elements of Accounting;

Two subjects approved by the Dean, provided that not more than one shall be a first-year subject.

SCHEDULE III — THE HONOURS DEGREE

A candidate for the Honours degree shall:

(a) except as provided for in Clause 2 of Schedule I, pass in ten subjects as prescribed for the Ordinary degree in Schedule II, provided that one of the "two subjects approved by the Dean" shall be Economic Theory.

(b) The work of the Final Honours year must be completed in one year of full-time study, save that on the recommendation of the Dean, the Faculty may permit a candidate to spread the work over two years, but not more, under such conditions as it may determine.

SCHEDULE IV — FEES

A. Ordinary degree of B.Ec.:	
(a) For attendance (or re-attendance) at lectures, tutorial and practical work and the annual examination:	
(i) For subjects which are included in the Schedule for the degree of Bachelor of Arts: the fees prescribed in that Schedule.	
(ii) For Economics I, Economic Geography, Elements of Accounting and Mathematics (Economics) (each) - - - - - - - - -	$96
(iii) For each other subject - - - - - - -	$126
(b) The fees prescribed in Section (a) of this Clause are subject to the proviso that the total fee for a standard academic year's work in any one year shall not exceed	$366
(c) For a special examination in any subject - - - -	$24
(d) For an annual examination in a subject with exemption from attendance (or re-attendance) at classes: half the full fee for that subject.	
B. Honours degree of B.Ec.: For the final-year Honours work and examination - -	$366
C. For admission to the degree - - - - - -	$24

OF THE DEGREE OF BACHELOR OF ENGINEERING

REGULATIONS

1. There shall be an Ordinary and an Honours degree of Bachelor of Engineering.

2. Schedules defining the courses of study, including lectures, laboratory and other practical work to be undertaken, the examinations to be passed and the fees to be paid by candidates, shall be drawn up by the Faculty of Engineering and be submitted to the Council.

Such schedules shall become effective as from the date of approval by the Council or such other date as the Council may determine, and shall be published in the next University Calendar which is issued after that approval has been given.

†3. Except by permission of the Faculty a candidate shall not be admitted to the class in any subject for which he has not completed the pre-requisite work prescribed in the syllabus for that subject.

The Ordinary Degree.

‡4. (a) To qualify for the Ordinary degree a candidate shall regularly attend lectures and do written, laboratory, and other practical work (where such is required), and pass examinations in the subjects prescribed for one of the following Engineering courses:

(a) Chemical Engineering;
(b) Electrical Engineering;
(c) Mechanical Engineering;
(d) Civil Engineering.

††(b) Before being admitted to the degree a candidate shall also submit satisfactory evidence that he has completed a period of practical experience in work approved by the Faculty of Engineering as appropriate to the course which he has followed.

*5. (a) All annual examinations, other than supplementary, shall take place towards the end of the academic year, except that practical examinations, and examinations in a subject in which the course of instruction has been completed by the end of the second term may be held at any convenient time fixed by the Council.

**(b) A candidate shall enter for examination on the form and by the date prescribed by the Council, but shall not be eligible to present himself for examination unless he has regularly attended the prescribed lectures and has done written and laboratory or other practical work, where required, to the satisfaction of the professors and lecturers concerned.

(c) Written and practical work done by candidates by direction of the professors or lecturers, and the results of terminal or other examinations in any subject, may be taken into consideration at the final examination in that subject.

† Allowed 9th January, 1958.
‡ Amended 8th December, 1949, 15th January, 1959, 4th April, 1963, and 28th January, 1965.
* Amended 8th December, 1949. ** Allowed 20th December, 1956.
†† Allowed 21st December, 1967.

‡(d) There shall be three classifications of pass at an annual examination in any subject or division of a subject for the Ordinary degree, as follows: Pass with Distinction, Pass with Credit, Pass. The names of candidates who pass with Distinction or with Credit shall be arranged in order of merit within the classification; the names of other candidates who pass shall be arranged in alphabetical order either in one list or in two divisions as the Council may, on the recommendation of the Faculty, determine. If the Pass list be published in two divisions, a pass in the higher division may be prescribed in the syllabuses as pre-requisite for admission either to further courses in that subject or to other subjects.

(e) A candidate who fails to pass in any subject shall again attend lectures and do practical work in that subject, to the satisfaction of the professors and lecturers, unless exempted by the Faculty of Engineering. Any such exemption shall hold for one academic year only.

(f) Supplementary examinations will be held only in special circumstances approved by the Faculty after consideration of individual cases.

6. Except in case of illness or other sufficient cause allowed by the Council, no candidate shall be credited in any year with attendance at lectures or laboratory work in a subject unless he has attended at least three-fourths of the lectures and laboratory work respectively in that subject.

7. No candidate shall be granted exemption from attendance at lectures or practical work in any subject, except upon grounds approved by the Council.

8. A candidate who has twice failed to pass the examination in any subject or division of a subject may not present himself again for instruction or examination therein unless his plan of study is approved by the Dean. If he fails a third time he may not proceed with the subject again except by special permission of the Faculty, and under such conditions as the Faculty may prescribe.

For the purpose of this regulation a candidate who is refused permission to sit for examination in any subject or division of a subject shall be deemed to have failed to pass the examination.

9. A student who has passed examinations *in pari materia* in another Faculty or otherwise, or who desires that his work at other Universities or Technical Schools should be counted *pro tanto* for the degree of Bachelor of Engineering, may on application be granted such exemption from the requirements of these regulations as the Council shall determine.

The Honours Degree.

†10. The Honours degree shall be available in each of the following courses:

(i) Chemical Engineering;
(ii) Electrical Engineering;
(iii) Mechanical Engineering;
(iv) Civil Engineering.

‡ Allowed 22nd December, 1955.

† Allowed 11th November, 1954; amended 4th April, 1963, and 28th January, 1965.

*11. (a) The work for the Honours degree shall be taken concurrently with the professional engineering subjects of the final year of the course for the Ordinary degree as set out in the schedules for that degree.

§(b) No candidate shall proceed to the Honours degree except with the approval of the Head of his Department.

(c) In order to qualify for the Honours degree a candidate must (i) pass in the professional engineering subjects prescribed for the final year of the course for the Ordinary degree at a standard generally higher than that required for the Ordinary degree; (ii) concurrently with the final-year work for the Ordinary degree attend further lectures and pass examinations on work at an advanced level.

‡ (d) The names of candidates who pass with Honours shall be arranged alphabetically in the following classes under each Department: First Class, Second Class Division A, Second Class Division B. A candidate who fails to obtain first or second class Honours may be awarded the Ordinary degree provided he has in all other respects completed the work for that degree.

††(e) Before being admitted to the degree a candidate shall also submit satisfactory evidence that he has completed a period of practical experience in work approved by the Faculty of Engineering as appropriate to the course which he has followed.

Allowed 11th December, 1947.

* Allowed 11th November, 1954; amended 28th January, 1965; and 4th November, 1965.

‡ Amended 4th October, 1962. †† Allowed 9th January, 1958, amended 21st December, 1967.

§ Amended 24th December, 1969.

DETAILS OF COURSES AND SCHEDULES PRESCRIBED UNDER REGULATION 2 OF THE DEGREE OF BACHELOR OF ENGINEERING

AERONAUTICAL ENGINEERING

The University of Sydney has established a special four-year course in Aeronautical Engineering. Adelaide students who have successfully completed the first two years of the course in any branch of Engineering, may apply for admission to the third year of the course in Aeronautical Engineering in the University of Sydney. Those who have completed only the first year may apply for admission to the second year.

Applications, together with documentary evidence of academic standing in the University of Adelaide, should be sent to the Registrar of the University of Sydney.

AGRICULTURAL ENGINEERING

The University of Melbourne has established a four-year degree course in Agricultural Engineering. Adelaide students who have successfully completed the first two years of the course in Chemical, Electrical or Mechanical Engineering, provided they have taken Chemistry I, may apply for admission to the third year of the course in Agricultural Engineering in the University of Melbourne. Those who have completed only the first year of the course in Chemical, Electrical or Mechanical Engineering may apply for admission to the second year.

Applications, together with documentary evidence of academic standing in the University of Adelaide, should be sent to the Registrar of the University of Melbourne.

1. ARRANGEMENT OF COURSES.

The courses shall occupy four years of full-time study. Details of these courses are set out in Clauses 4, 5, 6 and 7.

To find the syllabuses of the subjects in Clauses 4 to 7 see Table of Subjects on page 992.

2. COMPLETION OF SUBJECTS.

It is not necessary for a candidate to take all the subjects of any one year simultaneously or to complete all the subjects set out for one year before enrolling for any subject of the following year provided that the pre-requisite subjects have been passed. But a candidate who desires to take a third-year subject before completing the first year, or a fourth-year subject before completing the second year, must obtain the permission of the Faculty.

3. APPROVAL OF SUBJECTS.

During the enrolment period before the beginning of each academic year each candidate must obtain the approval of the Assistant to the Dean of the Faculty of Engineering to enrol for the subjects he wishes to study.

NOTE: In the following schedules of courses, in the column headed "Hours a Week", a single figure, such as 2, means 2 hours a week throughout the year. A figure with a superscript, such as 2^2, means 2 hours a week for two terms.

4. CIVIL ENGINEERING COURSE

Details of the subjects Engineering I, Engineering II and Engineering III are given in Clause 9.

FIRST YEAR

Subject No. in Syllabus	Subject		Hours a week	Fee $
SM01	Mathematics I	Lectures Tutorials	4 2	105
SP01	Physics I	Lectures Tutorial Practical	3 1 3	105
NX01	Engineering I	Lectures Tutorial Practical	3 1 3	105
SG01	Geology I	Lectures Practical	3 3	105

SECOND YEAR

SM12	Applied Mathematics II	Lectures Tutorial	4 1	144
NC02	Civil Engineering I	Lectures Practical Field Work	4 9^1, 6^2	210
NX12	Engineering IIC	Lectures Practical	3 3	117

THIRD YEAR

NC03	Civil Engineering IIA	Lectures Tutorial Practical	3 1 5	138
NC13	Civil Engineering IIB	Lectures Tutorial Practical	3 1 5	138
NX53 NX63	Engineering IIIC A or Engineering IIIC B	Lectures Tutorial Practical	4 1 4	144

FOURTH YEAR

NC14	Civil Engineering IIIA	Lectures Practical	3, 1^2 3	141
NC44	Civil Engineering IIIB	Lectures Practical	3 8	156
NC34	Civil Engineering IIIC Project and Report Survey Camp	Seminars Total 150 hours	3	165

5. ELECTRICAL ENGINEERING COURSE.

FIRST YEAR

Subject No. in Syllabus	Subject		Hours a week	Fee $
SM01	Mathematics I	Lectures Tutorials	4 2	105
SP01	Physics I	Lectures Tutorial Practical	3 1 3	105
SC01	Chemistry I	Lectures Tutorial Practical	3 1 3	105
NX01	Engineering I	Lectures Tutorial Practical	3 1 3	105

SECOND YEAR

SM12	Applied Mathematics II	Lectures Tutorial	4 1	144
SP02	Physics II	Lectures Tutorial Practical	3 1 6	144
NE03	Electrical Engineering I	Lectures Tutorials Practical	3 2 3	117
NE83	Vacation Course in Workshop Practice (two weeks' duration)			36

THIRD YEAR

NE13	Electrical Engineering II	Lectures Tutorials Practical	4 2 6	168
NX23	Engineering IIE	Lectures Practical	2 4	96
	or			
ST02	Mathematical Statistics II*	Lectures Tutorials	4 2	144
SM02	Pure Mathematics II	Lectures Tutorial	4 1	144

Note: A candidate of high academic ability who has completed the Third Year is recommended to spend an additional year at this stage to qualify for the degree of Bachelor of Science, in order to improve his qualifications to undertake research in engineering science.

* Or such other subject offered by the Faculty of Science as may be approved in individual cases by the Faculty of Engineering.

FOURTH YEAR

NE14	Electrical Engineering IIIA	Lectures	5	174
NE24	Electrical Engineering IIIB	Lectures	4	144
NE34	Electrical Engineering IIIC	Lectures Practical	1 12	117

6. MECHANICAL ENGINEERING COURSE.

FIRST YEAR

Subject No. in Syllabus	Subject		Hours a Week	Fee $
SM01	Mathematics I	Lectures Tutorials	4 2	105
SP01	Physics I	Lectures Tutorial Practical	3 1 3	105
NX01	Engineering I	Lectures Tutorial Practical	3 1 3	105
SC01	Chemistry I	Lectures Tutorial Practical	3 1 3	105
	or			
AY01	Psychology I	Lectures Practical	3 2	105

SECOND YEAR

SM12	Applied Mathematics II	Lectures Tutorial	4 1	144
NM02	Mechanical Engineering I	Lectures Tutorials Practical	3 3 3	144
NX42	Engineering IIM	Lectures Practical	3 5	135

THIRD YEAR

NM03	Mechanical Engineering IIA	Lectures Tutorial Practical	3 1 3	117
NM13	Mechanical Engineering IIB	Lectures Tutorials Practical	3 4 3	141
NX73 NX83	Engineering IIIM A or Engineering IIIM B	Lectures Tutorial Practical	5 1 3	180

FOURTH YEAR

NM24	Mechanical Engineering IIIA	Lectures Tutorial Practical	5^2 1^2 3^2	138
NM34	Mechanical Engineering IIIB	Lectures Tutorials Practical	5^2 3^1, 6^1 3^1	138
NM44	Mechanical Engineering IIIC	Lectures Tutorials Practical	2^3, 4^1 6^1 3^1, 6^1	105
NM85	Engineering Management	Lectures	1, 1^1	54

7. CHEMICAL ENGINEERING COURSE.

FIRST YEAR

The same subjects as are taken in First Year by an Electrical Engineering candidate. The details of these subjects are shown in Clause 5.

A candidate who has completed the First Year and who wishes to qualify for the B.Sc. and B.E. degrees concurrently (see Clause 8 of the Schedules for the Ordinary B.Sc. degree) is recommended to undertake two years of full-time study within the Faculty of Science before proceeding to further studies within the Faculty of Engineering.

SECOND YEAR

Subject No. in Syllabus	Subject		Hours a Week	Fee $
SM12	Applied Mathematics II	Lectures Tutorial	4 1	144
SC02	Physical and Inorganic Chemistry II	Lectures Tutorial Practical	3 1 6	144
NH12	Chemical Engineering I	Lectures Tutorials Practical	3 3 2	141

THIRD YEAR

NH13	Chemical Engineering IIA	Lectures Tutorials Practical	3 4 3	141
NH23	Chemical Engineering IIB	Lectures Tutorials Practical	3 5 3	150
NX93	Engineering IIIH	Lectures Practical	4 6	144

FOURTH YEAR

NH14	Chemical Engineering IIIA*	Lectures Tutorials Practical	4^1, 3^1 4^2 8^2	144
NH24	Chemical Engineering IIIB*			
	(a) Reactor Design	Lectures Tutorials	2^1, 1^1 3^2	
	(b) Process Control	Lectures Tutorials Practical	2^2 1^1 4^2	213
	(c) Seminar	Tutorials	3^2	
	(d) Materials Engineering	Lectures Practical	2^2 3^2	

Any one student must pass in *either* parts (a), (b) and (c) *or* in parts (b) and (d).

NH34	Chemical Engineering IIIC*	Lectures Tutorials Design Project	2^1, 1^1 1^2 40^1	120

* Examinations in Chemical Engineering IIIA, IIIB and part of IIIC will be held in the second and third weeks of third term.

8.

(a). A candidate who has not passed in Engineering I but who has passed in Mathematics I, Physics I, and Chemistry I, and one other first year subject acceptable to the Faculty of Engineering may complete the academic requirements for the degree of Bachelor of Engineering in Chemical Engineering by passing in the following subjects.

SECOND YEAR

Normal 2nd year of the Chemical Engineering Course.

THIRD YEAR

NX01	Engineering I	Lectures Tutorials Practical	3 1 3	105
NX52	Engineering IIH	Lectures Practical	2 3^2	78
NH13	Chemical Engineering IIA	Lectures Tutorials Practical	3 4 3	150
NH23	Chemical Engineering IIB*	Lectures Tutorials Practical	3 3 3	150

* A written report on vacation experience will be required *in lieu* of part (c) of Chemical Engineering IIB.

FOURTH YEAR

Normal Chemical Engineering 4th year.

(b) A candidate who has passed in Mathematics I, Physics I, Chemistry I, Applied Mathematics II, and Physical and Inorganic Chemistry II, plus one other First Year subject and one other Second Year subject acceptable to the Faculty of Engineering may complete the academic requirements for the degree of Bachelor of Engineering in Chemical Engineering by passing in the following subjects.

Before embarking on the work of the Third Year of the Chemical Engineering course:

NH62	Chemical Engineering IS	Lectures	1	
		Tutorials	3	

This subject is available throughout the year as part of Chemical Engineering I and will also be offered as a special short course of about four weeks' duration towards the end of each long vacation.

THIRD YEAR

Subject No. in Syllabus	Subject		Hours a Week	Fee $
NX01	Engineering I	Lectures	3	105
		Tutorials	1	
		Practical	3	
NX52	Engineering IIH	Lectures	2	78
		Practical	3[2]	
NH13	Chemical Engineering IIA	Lectures	3	141
		Tutorials	4	
		Practical	3	
NH23	Chemical Engineering IIB*	Lectures	3	150
		Tutorials	5	
		Practical	3	

* A written report on vacation experience will be required in lieu of part (c) of Chemical Engineering IIB.

FOURTH YEAR

NH14	Chemical Engineering IIIA	Lectures	4[1], 3[1]	144
		Tutorials	4[2]	
		Practical	8[2]	
NH64	Chemical Engineering IIIBS—			
	(a) Reactor Design	Lectures	2[1], 1[1]	213
		Tutorials	3[2]	
	(b) Process Control	Lectures	2[2]	
		Tutorials	1[1]	
		Practical	4[2]	
	(c) Seminar	Tutorials	3[2]	
	(d) Materials Science	Lectures	2	
		Practical	3[2]	

Any one student must pass either parts (a), (b) and (c) or parts (b) and (d). No candidate who has previously passed in NH12 Chemical Engineering I may take the latter option.

NH34	Chemical Engineering IIIC	Lectures	2[1], 1[1]	120
		Tutorials	1[2]	
		Design Project	40[1]	

(c) A candidate who has completed the academic requirements for the degree of B.Sc. including the subjects listed above plus Reaction Kinetics as part of a Third Year subject in Physical and Inorganic Chemistry may proceed to the degree of B.E. in Chemical Engineering by passing in the subjects listed in Schedule 8(b) or by passing in the following subjects.

NH62	Chemical Engineering IS	See Schedule 8(b).

THIRD YEAR

NX01	Engineering I	Lectures ... 3 Tutorial ... 1 Practical ... 3	}	105
NX52	Engineering IIH	Lectures ... 2 Practical ... 3[2]	}	78
NH13	Chemical Engineering IIA	Lectures ... 3 Tutorials ... 4 Practical ... 3	}	150
NH63	Chemical Engineering IIBS	Lectures ... 3 Tutorials ... 3 Practical ... 3	}	141

FOURTH YEAR

Normal 4th year of the Chemical Engineering Course.

9. ENGINEERING I, ENGINEERING II AND ENGINEERING III

(a) *Engineering I*

Subject No. in Syllabus	Subject		Hours a week
NX01	Engineering I	Lectures ... 3 Tutorial ... 1 Practical ... 3	

This subject must be taken in First Year by all Engineering candidates. It consists of five parts:

Part 1. Statics
Part 2. Dynamics
Part 3. Graphics
Part 4. Engineering Drawing
Part 5. General Engineering

(b) *Engineering II and Engineering III*

These shall be made up of selected parts from the following list:

Part	Subject		Hours a week
1	Stress Analysis	Lectures ... 1 Practical ... 3[1]	
2	Structural Engineering	Lectures ... 1 Practical ... 3	
3	Theory of Machines	Lectures ... 1 Practical ... 3[1]	
4	Machine Design	Lectures ... 1 Practical ... 3	
5	Electrical Circuits and Machines	Lectures ... 1 Practical ... 3[1]	
6	Electronics	Lectures ... 1 Practical ... 3[1]	
7	Electrical Instrumentation	Lectures ... 1 Practical ... 3[1]	
8	Engineering Materials	Lectures ... 1 Practical ... 3[1]	
9	Materials Science	Lectures ... 2 Practical ... 2	
10	Stoichiometry	Lectures ... 1 Tutorial ... 3	
11	Mathematics III (Engineering)	Lectures ... 2 Tutorial ... 1	
12	Economics (Engineering)	Lectures ... 2 Tutorial ... 1	

A candidate from the Civil Engineering Department will do Engineering IIC and IIIC; from Electrical Engineering, IIE and IIIE; from Mechanical Engineering, IIM and IIIM; and from Chemical Engineering, IIIH. The parts making up each of these subjects are listed below.

Syllabus No.	Subject	Parts	Hours a week
NX12	Engineering IIC	5, 6, 8	Lectures ... 3 Practical .. 3
NX53	Engineering IIIC A	3, 4, 11	Lectures ... 4 Tutorial ... 1 Practical ... 3, 3[1]

NX63	Engineering IIIC B	3, 4, 12	Lectures ...	4
			Tutorial ...	1
			Practical ...	3, 3[1]
NX23	Engineering IIE	1, 4	Lectures ...	2
			Practical ...	4
NX42	Engineering IIM	1, 2, 8	Lectures ...	3
			Practical ...	5
NX73	Engineering IIIM A	5, 6, 7, 11	Lectures ...	5
			Tutorial ...	1
			Practical ...	3
NX83	Engineering IIIM B	5, 6, 7, 12	Lectures ...	5
			Tutorial ...	1
			Practical ...	3
NX52	Engineering IIH	5, 6	Lectures ...	2
			Practical ..	3[2]
NX93	Engineering IIIH	1, 4, 9	Lectures ...	4
			Practical ...	6
			Lectures ...	3

A pass in Engineering I, II or III will be granted on the subject as a whole and not in individual parts.

10. PRACTICAL EXPERIENCE

(a) *General*:

A total of sixteen weeks' practical experience is required under Regulations 4(b) and 11(e), and this should be completed during the University vacations before beginning the work of the fourth year of the course. A candidate will not normally be permitted to enrol in the fourth year of the course unless he has completed the requirements of this schedule.

The Faculty may grant either partial or total exemption from the requirements of this schedule to a candidate who produces satisfactory evidence of practical experience obtained before he first enrolled in the Faculty; and in special cases, the Faculty may grant dispensation from the requirements.

Credit will not normally be given for periods of less than three consecutive weeks.

A candidate should seek a variety of practical experience appropriate to his academic level.

Before beginning a period of practical experience, a candidate may ensure that it will be satisfactory to the Faculty by consulting the Head of the Department concerned. In doubtful cases an inquiry should be addressed to the Dean through the Academic Registrar.

Before the end of the first term in each year of his course, a candidate must submit to the Academic Registrar, on the prescribed form, a certificate from his employer of the practical experience gained during the preceding year.

(b) *Chemical Engineering*:

At least eight weeks of the required sixteen weeks must be spent in an approved Chemical Factory or Research Establishment on plant operation or industrial research or development. In addition, during the May vacation in the fourth year, each student must visit at least eight Chemical Plants.

11. HONOURS DEGREE IN ENGINEERING

A candidate for the Honours degree in Chemical, Civil, Electrical or Mechanical Engineering under Regulation 11 and Syllabus Nos. NH99, NC99, NE99, and NM99 shall complete the full course for the final year of his respective course, and in addition, special Honours work comprising two hours of Honours lectures a week with, in Civil and Mechanical Engineering, an associated laboratory project. The fee for the special Honours course is an additional $72.

12. TRANSFERS BETWEEN COURSES

In special circumstances, and by decision of the Faculty of Engineering in each case, a student who wishes to transfer from one Engineering course, or from any other course in the University or elsewhere, to either the Civil or Electrical or Mechanical Engineering course may present a first-year subject already passed instead of one of the first-year subjects (other than SM01. Mathematics I, SP01. Physics I or NX01. Engineering I) shown in Schedules 4, 5 and 6.

Any student contemplating such transfer should consult the Assistant to the Dean of the Faculty of Engineering.

13. FEES

(a) For attendance at lectures, practical work and annual examination the fees shall be those prescribed in the Schedule of subjects for the degree (see Clauses 4 to 7 above for the Ordinary degree and Clause 11 above for the Honours degree). Provided that the total tuition fee for a standard academic year's work shall not exceed $411.

(b) For a special examination (theoretical or practical or both) in any University subject the fee shall be $24.

(c) The fees for subjects and examinations of the South Australian Institute of Technology shall be as prescribed by that institution.

(d) Travel and living costs involved in excursions and camps are not included in the fees listed above. See separate statement on page 594.

OF THE DEGREE OF BACHELOR OF LAWS

REGULATIONS

1. There shall be an Ordinary and an Honours degree of Bachelor of Laws.

2. (a) The Council after receipt of advice from the Faculty shall from time to time prescribe schedules (i) defining the subjects of study for the degree to be provided by the University, and the post-graduate subjects to be offered; (ii) defining the range of subjects satisfactorily to be completed, and the examinations to be passed by candidates; (iii) providing for, or empowering the Faculty to provide for, the subject or subjects to be pre-requisite for, or concurrent with, any subject, and the lectures, seminars, tutorials, moot court work, and written and other work to be undertaken by candidates; and (iv) fixing the fees to be paid by candidates. Provided that the following subjects of study shall always be offered: Elements of Law, Constitutional Law I, Criminal Law, The Law of Contract, The Law of Torts, The Law of Property, Equity, Mercantile Law I, Family Law and The Law of Evidence and Procedure.

(b) The syllabuses of subjects shall be specified by the Head of the Department and submitted to the Faculty and the Council for approval.

(c) Schedules made and syllabuses approved by the Council shall become effective from the date of prescription by the Council or such other date as the Council may fix, and shall be published in the next edition of the University Calendar.

3. To qualify for the Ordinary degree a candidate shall comply with the provisions of schedules made under regulation 2 hereof.

4. (a) To qualify for the Honours degree a candidate shall comply with the provisions of schedules made under regulation 2 hereof.

(b) A candidate who satisfies the requirements of sub-regulation (a) of this regulation shall be awarded the Honours degree of Bachelor of Laws, but the Faculty shall decide within which of the following classes and divisions the degree shall be awarded:

First Class
Second Class
  Division A
  Division B
Third Class.

(c) A candidate who has been granted status by virtue of clause 7 of Chapter XXV of the University Statutes, or by virtue of regulation 11 of these regulations, may be awarded the Honours degree of Bachelor of Laws if the Council so decides, notwithstanding that he has not completely satisfied the requirements of sub-regulation (a) of this regulation.

5. (a) Except in cases approved by the Council annual examinations shall be held in November and supplementary examinations, where granted, shall be held in January, February or March in each year.

(b) A candidate may sit for a supplementary examination in any subject or subjects, if he is granted permission by the Faculty to do so on academic, medical or other special grounds.

6. Students shall enter for examination on the form and by the date prescribed by the Council. No student shall present himself for examination in any subject unless he shall have gained credit for attendance at not less than two-thirds of the seminars and tutorials held in that subject in that year, and shall have submitted such essays or other written work as may be prescribed for him.

7. If in any subject a candidate does not pass either at the annual or at the supplementary examination he shall again comply with the requirements of regulation 6 in respect of such subject before again presenting himself for examination in that subject.

8. If the lecturer and examiners deem it appropriate, any essays or other written work submitted by a student in accordance with regulation 6 may form part of the annual or supplementary examination in that subject and may be taken into account for the purposes of determining and classifying the results in that subject.

In addition, the examiners in any subject may require a candidate to submit himself for a *viva voce* examination in that subject, such *viva voce* examination to be taken into account in determining and classifying the candidate's results.

9. There shall be three classifications of pass at an annual or supplementary examination in any subject or division of a subject for the Ordinary degree, as follows: Pass with Distinction, Pass with Credit, Pass. The names of candidates who Pass with Distinction or with Credit shall be arranged in order of merit within the classification; the names of other candidates who pass shall be arranged in alphabetical order. The results of all annual and supplementary examinations shall be transmitted by the Academic Registrar to the Chief Justice of the Supreme Court of South Australia.

10. The Faculty may grant to any student such exemption from the requirements of regulations 6 and 7, and upon such conditions, as it shall decide.

11. A candidate may, at any time, apply to the Faculty for status under these regulations or under schedules made in accordance with regulation 2 and may be granted such status, and upon such conditions, as the Council on the recommendation of the Faculty, determines.

12. All previous regulations concerning the degree of Bachelor of Laws and the Final Certificate in Law are hereby repealed, provided that:

(a) a candidate who has completed subjects under the repealed regulations shall have status in the equivalent subjects under schedules made under these regulations; and

(b) a candidate who first enrolled in the Faculty of Law before 1967, shall, in order to qualify for the degree, in addition to complying with the requirements of regulation 3 or 4, pass in two subjects, other than Science subjects, available for the degree of Bachelor of Arts and approved by the Faculty of Law.

Awaiting allowance at time of printing.

SCHEDULES MADE BY THE COUNCIL UNDER REGULATION 2

SCHEDULE I: THE ORDINARY DEGREE

1. A candidate for the Ordinary degree shall—
   (a) pass in the following subjects:
      (i) Elements of Law;
      (ii) Constitutional Law I;
      (iii) Criminal Law;
      (iv) The Law of Contract;
      (v) The Law of Torts;
      (vi) The Law of Property;
      (vii) Constitutional Law II;
      (viii) Jurisprudence;
      (ix) Roman Law *or* International Law;
      (x) Equity;
      (xi) Mercantile Law I;
      (xii) Private International Law *or* Family Law;
      (xiii) Mercantile Law II *or* Local Government and Industrial Law;
      (xiv) The Law of Evidence and Procedure.

   (b) satisfy the Board of Examiners, normally by production of certificates from the lecturer in charge or from the Dean of the Faculty, that he has satisfactorily participated in two seminar courses to be arranged by the Faculty, or pass in the subject of Legal History, if offered by the Faculty, and satisfy the Board of Examiners in respect of one such seminar course. Provided that the Faculty may grant status to a candidate in respect of one seminar course where that candidate has presented a sufficient honours dissertation but has not qualified for the honours degree.

   (c) produce a certificate from the lecturer in charge or from the Dean of the Faculty that he has attended and shown a satisfactory interest in a course of lectures on the subject of Legal Ethics and Accounts.

2. Except with the permission of the Dean of the Faculty a candidate shall not be enrolled in any subject if he has not completed the subject or subjects prescribed as pre-requisite, or is not enrolled in the subject or subjects prescribed as concurrent and set out in the syllabus for the subject concerned.

SCHEDULE II: THE HONOURS DEGREE

1. A candidate for the Honours degree of Bachelor of Laws shall—
   (a) pass in all subjects required for the Ordinary degree of Bachelor of Laws;

(b) obtain eight or more honours points in the subjects or divisions of subjects set out in Schedule I, section 1, sub-section (a). Honours points shall be calculated on the basis that a distinction equals one and a half honours points and a credit equals one honours point;

(c) pass in the subject of Legal History, if offered, or satisfy the Board of Examiners in respect of one seminar course pursuant to Schedule I, section 1, sub-section (b);

(d) produce a certificate in accordance with Schedule I, section 1, sub-section (c); and

(e) produce a certificate from two joint supervisors appointed by the Faculty that he has successfully completed an honours dissertation on a subject approved by the Dean of the Faculty.

SCHEDULE III: TAXATION LAW

A course in Taxation Law may be offered as a post-graduate subject. In special circumstances students for the degree of Bachelor of Laws may, with the approval of the Faculty, attend this course in their final year.

SCHEDULE IV: FEES

A. Ordinary degree of LL.B.:

(a) For attendance (or re-attendance) at lectures and examinations in each of Elements of Law, Constitutional Law I and Criminal Law - - - - - $135

(b) For attendance (or re-attendance) at lectures and examinations in each other subject of the course except Legal History and Legal Ethics and Accounts $99

(c) For attendance (or re-attendance) at lectures and examination in Legal History - - - - - - $51

(d) For attendance at the course of lectures in Legal Ethics and Accounts - - - - - - - - $45

(e) For participation in a seminar course - - - $51

Provided that the total tuition fee for a standard academic year's work in any one year shall not exceed $390. (A standard academic year's work consists of the courses recommended by the Faculty for a given year in the notes attached to the regulations and schedules, or such a combination of courses as may reasonably be held to be the equivalent thereof.)

B. Honours degree of LL.B.:
For the supervision and marking of an Honours dissertation - - - - - - - - - - - - $72

C. For admission to the degree - - - - - - - $24

D. For attendance at the course of lectures in Taxation Law $60

Notes [which do not form part of the Regulations or Schedules]

1. To find the syllabuses of the subjects in the Law course, see Table of Subjects on page 992.

2. The Faculty of Law recommends that candidates for the LL.B. degree take their subjects according to the following scheme:

First Year: Elements of Law; Constitutional Law I; Criminal Law.

Second Year: The Law of Contract; The Law of Torts; The Law of Property; Constitutional Law II.

Third Year: Jurisprudence; Roman Law *or* International Law; Equity; Mercantile Law I; a seminar course or Legal History.

Fourth Year: Private International Law *or* Family Law; Mercantile Law II *or* Local Government and Industrial Law; The Law of Evidence and Procedure; a seminar course or honours dissertation.

RULES OF THE SUPREME COURT

The Rules of the Supreme Court respecting the admission of legal practitioners which concern students of Law in the University are here printed for convenience of reference, but students are advised to consult the Rules in full:

PRELIMINARY.

2. (1) The rules regulating the admission of Barristers, Attorneys, Solicitors, and Proctors made on the 17th day of August, 1936, are hereby annulled.

(2) The annulment shall not affect the previous operation of any rule so annulled, or anything duly done thereunder.

(3) Any person who, before the 31st day of December, 1952, had entered upon the course of study prescribed for the degree of Bachelor of Laws, or the Final Certificate in Law at the University of Adelaide by the regulations of the University then in force, and who shall be allowed by the Council of the University to complete the course for the degree or the Final Certificate under such regulations, shall be entitled to apply for admission as a practitioner, if he has qualified for admission under the annulled Rules, but Rules 8 to 10, 16 to 25, and 30 to 46 (all inclusive) of these rules shall apply to every such person.

3. In these Rules, unless the contrary intention appears—

"Board" or "Board of Examiners" means the Board of Examiners of the Supreme Court of South Australia:

"Court" means the Full Court:

"Degree of Bachelor of Laws" means the degree of Bachelor of Laws in the University of Adelaide:

"Law Society" means the Law Society of South Australia Incorporated:

"Master" means the Master of the Supreme Court of South Australia, and includes the Deputy Master:

"Practitioner" means a Barrister, Attorney, Solicitor, and Proctor of the Supreme Court of South Australia:

"Reciprocating part of the British Commonwealth" means any part of the British Commonwealth, in regard to which the Court is satisfied that the standard of qualification for admission is at least equal to the standard in this State, and that corresponding eligibility for admission of Practitioners of the Supreme Court of this State exists:

"Supreme Court" means the Supreme Court of South Australia:

"The State" or "this State" means the State of South Australia:

"University" means the University of Adelaide:

Words importing the masculine gender shall be deemed and taken to include the feminine gender, and the singular to include the plural and the plural the singular.

4. The business of the Court is to be conducted as heretofore by admitted practitioners.

PERSONS ELIGIBLE FOR ADMISSION.

5. (1) A person who is of good fame and character, and who has attained the age of twenty-one years, and is a British subject may apply to be admitted as a practitioner if such person is:—

(*a*) A clerk who has served the prescribed period of articles of clerkship, and has passed or been credited with the examinations prescribed by these Rules.

(*b*) A member of the bar in England, or of Northern Ireland.

(*c*) A Scottish Advocate.

(*d*) A Solicitor of the Supreme Court of Judicature in England, or of the Supreme Court of Northern Ireland, or a person admitted or deemed to be admitted as a solicitor in Scotland.

(*e*) A Barrister or Solicitor of the Supreme, or Superior Court of a reciprocating part of the British Commonwealth.

(2) An applicant mentioned in sub-paragraphs (*b*), (*c*), (*d*) and (*e*) of the preceding sub-rule is in these Rules referred to as "an applicant previously admitted elsewhere."

LAW EXAMINATIONS.

[1]6. No person (other than a person previously admitted elsewhere) shall be admitted until he has satisfied the [2]Board of Examiners that:—

(*a*) he has taken, or has passed or been credited with the examinations entitling him to take, the degree of Bachelor of Laws of the University of Adelaide; or

(*b*) he has obtained a certificate from the University of Adelaide certifying that he has passed or been credited with the examinations in the following subjects namely:—

[1] This rule is awaiting approval at the time of printing.

[2] The Board of Examiners of the Supreme Court of South Australia.

(i) Elements of Law,
(ii) Constitutional Law I,
(iii) Criminal Law,
(iv) The Law of Contract,
(v) The Law of Torts,
(vi) The Law of Property,
(vii) Equity,
(viii) Mercantile Law I,
(ix) Family Law,
(x) The Law of Evidence and Procedure; and

that he has produced to the Faculty of Law of the University of Adelaide a certificate from the Lecturer that he has attended and shown a satisfactory interest in a course of lectures on the subject of Legal Ethics and Accounts; or

(*c*) he has passed or been credited with the examinations entitling him to take the degree of Bachelor of Laws or some equivalent degree of a University in the Commonwealth of Australia or its Territories provided that the Board of Examiners after considering a report from the Faculty of Law of the University of Adelaide certifies that the degree course of such University is of sufficient academic merit.

PERIOD OF ARTICLES

[1]7. The period for which an applicant (not previously admitted elsewhere) is required to serve under articles is four years

Provided—

(1) that any applicant who has obtained, or become qualified to receive the degree of Bachelor of Laws of the University shall be eligible for admission after serving under articles for not less than three years, and

(2) that any applicant who has—
(*a*) obtained the said degree, and
(*b*) served under articles for at least one year after obtaining, or becoming qualified to receive, the same

shall be eligible for admission after serving under articles for not less than two years.

(3) that any applicant who has—
(*a*) obtained the said degree and
(*b*) served in articles for at least one year after obtaining or becoming qualified to receive the same and
(*c*) has attended and shown a satisfactory interest in a course of practical instruction approved by the Board of Examiners

shall be eligible for admission after serving under articles for not less than one year.

8. In the case of a person articled to a practitioner practising in the country one year of the period of articles prescribed by the preceding Rule may be served with the Adelaide agent of such practitioner, and

[1] This rule is awaiting approval at the time of printing.

the employment of the clerk as a *bona fide* pupil of the Adelaide agent, or his partner (if any) for such period of one year shall be deemed to be service under his articles of clerkship.

9. Any period during which a clerk has been or has acted as associate to a Judge of the Supreme Court of the State may be deemed by the Board to be a period served as an articled clerk to a practitioner.

10. No articles of clerkship shall bind a clerk to service after he has been admitted as a practitioner.

ENTRY INTO ARTICLES OF CLERKSHIP

11. No person may enter into articles of clerkship unless

(*a*) he has been matriculated, and has passed the Intermediate Examination in Law at the University;

(*b*) he has given to the [1]Master, and to the [2]Law Society at least twenty-one clear days notice of his intention to enter into articles. Such notice shall be in Form A in the schedule hereto, and shall contain the particulars therein prescribed.

Provided that, where any person has been required by notice (Form B) to attend personally before the Board and to satisfy it of his good character and fitness to enter into articles, such person shall not enter into articles until the Board has given its consent in writing thereto.

14. Within one month after the execution of his articles the articled clerk shall—

(*a*) file the articles in the office of the [1]Master together with an affidavit verifying the due execution thereof;

(*b*) produce to the Master a certificate, or certificates, by the University showing that the clerk has the qualifications required by Rule 11;

(*c*) file in the office of the Master a copy of every such certificate; and

(*d*) serve on the [2]Law Society copies of the said affidavit and of every such certificate, and of any consent, decision or determination given or made by the Board pursuant to the proviso to Rule 11, or to Rule 7, as the case may require.

15. Within one month after the execution of any supplementary articles, or of any assignment of any articles, the clerk shall—

(*a*) file in the office of the [1]Master the supplementary articles, or the assignment together with an affidavit verifying the due execution; and

(*b*) serve on the [2]Law Society a copy of the said affidavit and of any decision or determination of the Board given or made pursuant to Rule 22 (2), or to the proviso to Rule 7.

[1]The Master of the Supreme Court of South Australia.
[2]The Law Society of South Australia Incorporated.

SERVICE UNDER ARTICLES.

16. No clerk shall be articled to a practitioner who has not been in practice in this State as a principal for a continuous period of five years, unless the practitioner is the Crown Solicitor of this State or the Deputy Crown Solicitor for the Commonwealth in this State.

17. No practitioner shall have more than two articled clerks serving under articles at the same time.

18. No practitioner shall take, or retain, any articled clerk after he has ceased to practise as a practitioner, or whilst he is employed as a clerk by another practitioner.

19. (1) Subject to these Rules, every articled clerk shall during the whole term of his articles be actually employed in this State in the proper business, practice and employment of a practitioner under the personal supervision of—

(*a*) the practitioner practising in this State to whom he is articled; or

(*b*) a partner of the practioner; or

(*c*) a practitioner who for the time being is carrying on the business of the practitioner to whom the clerk is articled.

Provided that (for the purposes of clause (*b*) or (*c*) as the case may be) the partner or practitioner shall have been in practice in this State as a principal for a continuous period of five years.

(2) The Assistant Crown Solicitor shall for the purpose of this Rule be deemed to be a partner of the Crown Solicitor for the State.

20. (1) No articled clerk shall during the period of his articles pursue any occupation or business other than the proper business of the practitioner to whom he is articled or his partner (if any).

(2) A clerk articled to the Crown Solicitor of the State, or the Deputy Crown Solicitor for the Commonwealth in this State, shall not be deemed to pursue any such occupation or business by reason merely of the fact that he is a public servant.

21. Absence on duty as a member of the naval, military, or air forces of the Commonwealth of Australia under the National Service Act 1951-1953 or otherwise shall not terminate a clerk's articles, but any period of such service which exceeds sixteen days in any one year shall not be deemed service under articles unless the Court otherwise determines.

APPLICATIONS AND APPEALS

41. Applications for admission shall be made only on the first Tuesday in the month of March, and on the first Monday in the months of June and October in each year, and on such other days as the Court may specially appoint.

EXEMPTIONS

[1]46. The Court, if under special circumstances it thinks fit so to do, may exempt any person from compliance, or further compliance with

[1] This rule is awaiting approval at the time of printing.

any of these Rules either entirely, or partially, or subject to conditions. Without prejudice to the generality of the provisions of this Rule the Court may grant an exemption from compliance or further compliance with any of these Rules in a case where it is satisfied that by reason of any amendment to the Rules and a consequent transition period any person has been prejudiced.

OF THE HONOURS DEGREE OF BACHELOR OF MEDICAL SCIENCE

REGULATIONS

*1. There shall be an Honours degree of Bachelor of Medical Science. Subject to these Regulations a candidate may proceed to the degree in one of the following subjects:

(a) Anatomy, (b) Biochemistry, (c) Physiology, (d) Pathology, (e) Microbiology, (f) Pharmacology, (g) Genetics, (h) Psychology, (i) Clinical Science (within one of the Departments of Medicine, Surgery, Obstetrics and Gynaecology, Child Health, and Mental Health).

2. Before entering upon the course of study in one of the subjects for the degree a candidate must (i) have completed the pre-requisite work for that subject, and (ii) be deemed by the Head of the Department concerned to be a suitable candidate for advanced work.

3. To qualify for the degree a candidate shall interrupt his medical course, undertake a course of advanced study extending over at least one year in one of the subjects listed in Regulation 1, and satisfy the examiners therein.

4. The names of the candidates who qualify for the degree shall be published in alphabetical order within the following classes and divisions in each subject:

First Class
Second Class
Division A
Division B

5. A candidate shall enter for examination on the form and by the date prescribed by the Council, but shall not be eligible to present himself for examination unless he has regularly attended the prescribed lectures and has done written and laboratory or other practical work, where required, to the satisfaction of the professors and lecturers concerned.

6. Schedules defining the pre-requisite work, the course of study, including lectures, laboratory and other practical work to be undertaken, the examinations to be passed and the fees to be paid by candidates shall be drawn up by the Faculty of Medicine, and submitted to the Council. Such schedules shall become effective from the date of approval by the Council or such other date as the Council may determine, and shall be published as soon as practicable after that approval has been given.

7. A student who has passed examinations *in pari materia* and at equivalent standard in another Faculty or otherwise, and desires that such examinations shall be counted *pro tanto* for the Honours degree

Allowed 12th December, 1963.
* Amended 22nd December, 1966.

of Bachelor of Medical Science, may on written application be granted such exemption from the requirements of these regulations as the Council shall determine; but no exemption shall be granted from the year's course of advanced study for the degree.

SCHEDULES MADE BY THE COUNCIL UNDER REGULATION 6

Schedule I: Pre-requisite work

The pre-requisite work for the various subjects is:

Anatomy, Biochemistry, Physiology: a pass in the First Professional Examination in the course for the degrees of Bachelor of Medicine and Bachelor of Surgery.

Pathology, Microbiology, Pharmacology: a pass in the Second Professional Examination in the course for the degrees of Bachelor of Medicine and Bachelor of Surgery.

Genetics: a pass in the First Professional Examination in the course for the degrees of Bachelor of Medicine and Bachelor of Surgery, and in the annual examination in Genetics I as prescribed for the degree of Bachelor of Science.

Psychology: a pass in the First Professional Examination in the course for degrees of Bachelor of Medicine and Bachelor of Surgery, and in the annual examination of Psychology I (S) as prescribed for the degree of Bachelor of Science.

Clinical Science: a pass in the Final Professional Examination, Part I, in the course for the degrees of Bachelor of Medicine and Bachelor of Surgery.

Schedule II: Course of Study

The course comprises three equally important aspects undertaken concurrently:

1. *Course of Reading* in selected fields, and the submission of a series of essays associated therewith.
2. *Experimental work,* covering a wide range of techniques.
3. *The undertaking of a research project* which will be assigned early in the course and on which a thesis must be submitted.

Schedule III: Examination

The examination for the degree will consist of a written paper or papers, the essays submitted during the year, the thesis on the research project, an oral examination, and a practical examination if required by the examiners.

Schedule IV: Fees

A. For the special year's work and examination in any subject for the Honours degree - - - - - - - $366

B. For admission to the degree - - - - - - $24

OF THE DEGREES OF BACHELOR OF MEDICINE AND BACHELOR OF SURGERY

REGULATIONS

I. Length of Course

1. The course of study for the degrees of Bachelor of Medicine and Bachelor of Surgery shall extend over six years.

II. Curriculum

†2. To qualify for the degrees a candidate must attend regularly such tutorials and seminar work, satisfactorily perform such laboratory, practical, clinical and written work, and pass such examinations as the Council may from time to time prescribe.*

3. Schedules defining the courses of study and practice to be undertaken, the examinations to be passed and the fees to be paid by candidates, shall be submitted by the Faculty of Medicine to the Council and on approval by the Council shall be effective from the date of such approval or from such other date as the Council shall determine; and they shall be published in the next edition of the University Calendar issued after the Council has approved them.

III. Examinations

4. Unless the Council for reasons that it deems adequate directs otherwise, examinations during the six-year course shall be held as follows:

Preliminary Examination: in or about November of the first year.

First Professional Examination: in or about August of the third year.

Second Professional Examination: in or about November of the fourth year.

Final Professional Examination: Part I in or about November of the fifth year; Part II in or about November of the sixth year.

5. Subject to the provisions of Regulation 10 (d) hereof, a candidate shall pass in the whole of one examination before entering upon the courses of study and practice leading to the next examination.

6. A candidate shall enter for each examination on the form and by the date prescribed by the Council, but shall not present himself for the examinations unless he has completed to the satisfaction of the professors and lecturers concerned, prior to the beginning of the examination, the courses of study and practice prescribed for it.

7. The examiners in any subject may take into consideration written or practical work required of candidates during the course of study and practice and the results of terminal or other examinations in the subject.

**Note*: The Faculty of Medicine regards lectures as a valuable teaching method. Consequently candidates are advised to attend regularly such courses of lectures as may be provided.

† Amendment allowed 24th December, 1969.

8. A candidate who fails to pass in an examination shall, before presenting himself for the examination again, attend again such part or parts of the course of study and practice leading to that examination as the Faculty may direct.

*9. (a) Except in the case of the Second Professional Examination, the names of candidates who pass in the whole of an examination prescribed under regulation 4 hereof shall be arranged in alphabetical order.

(b) The names of candidates who, having passed the whole of a Professional Examination, other than the Second Professional Examination, or the whole or part of the Preliminary Examination, are adjudged by the Board of Examiners as having reached the standard of Distinction or Credit in any of the component subjects for that examination shall in each of these subjects be arranged in order of merit within the relative classification; provided that a candidate who passes in a supplementary or special examination in any subject or subjects shall not be classified at that examination.

(c) Except in the case of the Preliminary Examination, a candidate who passes in an examination in any subject from part of which he has been granted exemption shall not be classified at that examination.

(d) At the Second Professional Examination there shall be three classifications of pass as follows: Pass with Distinction, Pass with Credit, Pass. The names of candidates who pass with Distinction or Credit shall be arranged in order of merit within the classification and the names of other candidates shall be arranged in alphabetical order: provided that a candidate who passes in a supplementary or special examination, which in the case of the Second Professional Examination may be granted only under Regulation 10(a), shall not be classified at that examination.

(e) A candidate whose results in all the Professional Examinations in the medical course have been adjudged by the Faculty of Medicine to have been of distinguished merit may, by the decision of the Faculty, on the recommendation of the Board of Examiners in the final year of the course, be awarded the degrees of Bachelor of Medicine and Bachelor of Surgery (with Honours).

IV. Supplementary Examinations

10. (a) The Board of Examiners may grant a candidate who has been prevented by illness or other sufficient cause from sitting for the whole or part of an examination permission to sit for a special or supplementary examination; the extent of such special or supplementary examination to be determined by the Board in each case.

(b) The Board of Examiners may grant a candidate who has failed in part only of an examination permission to sit for a supplementary examination in the subject or subjects in which he has failed.

*(c) On passing in a special or supplementary examination granted under this Regulation a candidate shall be deemed to have completed the whole of the examination; but if he fails in such special or supplementary examination he shall take again, and pass in, the whole of the examination prescribed under regulation 4 hereof before pro-

* Amendment awaiting allowance at time of printing.

ceeding with the courses of study and practice leading to the next examination; provided that for the Preliminary Examination the Board of Examiners may require a candidate to repeat only those subjects in which he has failed.

(d) A candidate granted permission to sit for a supplementary or special examination may enter provisionally upon the courses of study and practice leading to the next examination pending publication of the result of his supplementary examination.

V. Status for Work Done Elsewhere

*11. A candidate who has passed examinations *in pari materia* in the University or in another University or institution and desires that such examinations shall be counted *pro tanto* for the degrees of Bachelor of Medicine and Bachelor of Surgery, may apply to the Academic Registrar for such exemption from the requirements of these Regulations as the Council may determine.

VI. Status under Earlier Regulations

12. All regulations hitherto in force concerning the degrees of Bachelor of Medicine and Bachelor of Surgery are hereby repealed: provided that this repeal shall not affect

(a) anything done or suffered under any regulation hereby repealed; or

(b) any right or status acquired, duty imposed, or liability incurred by or under any regulation hereby repealed.

Note: Before being admitted to the course of study a candidate shall have matriculated in the University and have been accepted by the Council as a student to be so admitted.

Allowed 28th January, 1965.
* Amendment awaiting allowance at time of printing.

SCHEDULES.

[Notes:—1. The Hospital Clinical Year begins on the fifth Monday in the year. 2. Candidates should obtain the descriptive leaflet on the Medical Course, which gives details of the scientific equipment required by each student before commencement of the various years of the course. 3. To find the syllabuses of the subjects in these Schedules, see Table of Subjects on page 992.

I. SCHEDULE OF COURSES OF STUDY.

A. Lectures, Practical Work, etc.

During the first year the student shall attend courses of lectures and practical work in (a) Biology, (b) Chemistry, (c) Physics, (d) an approved fourth first-year subject selected from those which may be presented for the Ordinary degrees of Bachelor of Arts or Bachelor of Science.

During the second year the student shall

(a) attend a course of instruction in Anatomy (including Gross Anatomy, Histology and Embryology), and dissect during the whole academic year;

(b) attend a course of instruction in Biochemistry;

(c) attend a course of instruction in Physiology.

During the third year the student shall

(a) attend a course of instruction in Anatomy, including surface, surgical and radiological anatomy;
(b) attend a course of instruction in Neurology.
(c) attend a course of instruction in Physiology, Applied Physiology and Pharmacology;
(d) attend a course of instruction in Biochemistry;
(e) attend a course of instruction in Microbiology;
(f) attend a course of instruction in Pathology, including a course of demonstrations in Clinical Pathology;
(g) attend a course of instruction, including clinical demonstrations, in Psychological Medicine.

During the fourth year the student shall attend courses of topic instruction in Medicine, Surgery, Mental Health, Microbiology, Pathology, Human Physiology, Pharmacology, Clinical Biochemistry, Applied Anatomy, Community Medicine and Public Health, as directed.

During the fifth year the student shall

(a) attend a course of instruction in Obstetrics and Gynaecology;
(b) attend a course of instruction in Ophthalmology;
(c) attend a course of instruction in Otorhinolaryngology;
(d) attend a course of instruction in Medical Pediatrics;
(e) attend a course of instruction in Surgical Pediatrics;
(f) attend a course of instruction in Dermatology;
(g) continue to attend demonstrations in Clinical Pathology;
(h) attend on three occasions the Outpatients' Department and for three clinical sessions at the Pulmonary Tuberculosis Department;
(i) attend, as directed, the Venereal Clinic at the Royal Adelaide Hospital;
(j) attend and assist at not less than one *post mortem* examination;
(k) attend Class Examinations as directed by the Faculty of Medicine.

During the sixth year the student shall

(a) attend a course of instruction in Medicine;
(b) attend a course of instruction in Surgery;
(c) attend clinical meetings as directed by the Faculty of Medicine;
(d) attend a course of instruction and demonstrations in Public Health and Preventive Medicine;
(e) attend a course of instruction in Forensic Medicine;
(f) complete a course of instruction in Infectious Diseases;
(g) complete a course of instruction in Dentistry;
(h) attend a course of instruction in the Principles of Medical Practice, including Medical Ethics, Life Assurance and General Practitioner Documentation;
(i) attend a course of instruction in Venereology;
(j) attend a course of instruction in Psychiatry;
(k) continue to attend demonstrations in Clinical Pathology;
(l) attend the Interim Examination in Surgery;
(m) attend the Class Examination in Forensic Medicine;
(n) attend the Interim Examination in Medicine.

B. Clinical Instruction.

Clinical Instruction will begin in the third term of third year.

During the period of clinical instruction the student shall

(a) attend the medical and surgical practice of the Royal Adelaide Hospital and/or the Queen Elizabeth Hospital in the wards and in the Outpatients' Department; and receive tutorial instruction in Medicine and Surgery as directed;

(b) be attached to the Outpatients' Department of the Royal Adelaide Hospital or the Queen Elizabeth Hospital for 11 weeks and perform such duties and attend such clinics as may be directed;

(c) attend for 11 weeks, or such lesser period as may be directed, the gynaecological practice of the Royal Adelaide Hospital or the Queen Elizabeth Hospital in the wards and in the Outpatients' Department;

(d) reside for 11 weeks, or such lesser period as may be directed, in the Queen Victoria Maternity Hospital or the Queen Elizabeth Hospital (Maternity Section) for clinical work in Obstetrics;

(e) hold for a total of at least 10 weeks, the offices of medical clerk or surgical dresser at the Adelaide Children's Hospital; and reside for at least one week in that hospital;

(f) attend for two sessions a week during not less than 5 weeks the practice of the Ophthalmological Department of the Royal Adelaide Hospital or the Queen Elizabeth Hospital;

(g) attend for one session a week during not less than 10 weeks the practice of the Ear, Nose and Throat, Department of the Royal Adelaide Hospital or the Queen Elizabeth Hospital;

(h) attend for one session a week during not less than 10 weeks the practice of the Dermatological Department of the Royal Adelaide Hospital or the Queen Elizabeth Hospital;

(i) attend as directed during a period of 11 weeks the practice of the Orthopaedic Department of the Royal Adelaide Hospital or the Queen Elizabeth Hospital;

(j) attend a course of clinical instruction in Psychiatry.

C. Approval of Enrolment.

Students enrolling in the first year of the medical course, and all other students enrolling in the medical course for the first time, must have their course of study approved by the Dean (or his nominee) at the time of enrolment.

II. SCHEDULE OF EXAMINATIONS MADE BY THE COUNCIL UNDER REGULATIONS 3 AND 10.

The subjects of the examinations prescribed in Regulation 3 shall be as follows, and a candidate shall satisfy the examiners in each subject:

(a) *The Preliminary Examination* (to be held in or about November of the first year)

1. Biology *or*, in special circumstances, an alternative subject approved in advance by the Faculty of Medicine.
2. Chemistry I.
3. Physics I.
4. An approved fourth subject selected from those which may be presented for the Ordinary degrees of Bachelor of Arts or Bachelor of Science.

Candidates taking the work of the first-year at The Flinders University of South Australia will be granted status for the Preliminary Examination on their passing in Part I of the course of study for the Ordinary Degree of Bachelor of Science in that University provided that the Part I course so passed is acceptable to the University of Adelaide.*

* For 1971, the following Part I course will be acceptable:

Chemistry I, Physics I, Biology I
and Mathematics I or IB
or Earth Sciences I
or Any Part I course in the School of Humanities or the School of Social Sciences.

Before being permitted to proceed to the second year of the course, candidates will be required to have completed the work of the Preliminary Examination including a pass, at Division I standard or better, in Chemistry I.

A candidate who fails to reach the pass standard in one, two or three subjects will be permitted to complete the outstanding subject or subjects at a subsequent examination.

The supplementary examinations (for candidates permitted under Regulation 10 to present themselves therefor) will be held in or about the following February.

(b) *The First Professional Examination* (to be held in four parts of equal weight; one near the end of each of the first, second and third academic terms of the second year, and one near the end of the second academic term of the third year)

1. Anatomy
2. Biochemistry
3. Human Physiology

The supplementary examinations (for candidates permitted under Regulation 10 to present themselves therefor) will be held in or about the following November.

(c) *The Second Professional Examination* (to be held in or about November of the fourth year)

1. A multi-disciplinary examination on the courses of topic instruction.
2. An examination of clinical ability. (The standard of clinical ability sought will be appropriate to the stage of teaching.)
3. A practical examination in Special Pathology.

As the work for the Second Professional Examination does not provide for the division into specified subjects, supplementary or special examinations may be granted only under Regulation 10(a).

(d) *The Final Professional Examination*

Part I (to be held in or about November of the fifth year):

1. Obstetrics and Gynaecology
2. Pediatrics

Part II (to be held in or about November of the sixth year):

1. Medicine
2. Surgery

A candidate who is granted on medical grounds a supplementary examination in part or the whole of Part I will be allowed to present himself for such supplementary examination in or about the following May. In the meantime he may proceed with the work of the sixth year.

A candidate granted on grounds other than medical a supplementary examination in one subject of Part I will be required to undertake a course in that subject under the direction of the Head of the Department in the summer vacation immediately following the examination in which he has failed. He may then proceed with the work of the sixth year but he will also be required further to study the subject in which he has been granted a supplementary examination during the third term of that year and to present himself for such supplementary examination in November of that year concurrently with the Final Professional Examination (Part II).

A candidate granted a supplementary examination in one subject of Part II or on medical grounds in the whole or part of Part II may present himself for such supplementary examination in or about the following May.

Candidates granted supplementary examinations in any part of the Final Professional Examination will carry out such additional work as the Head of the Department may require.

III. SCHEDULES OF FEES PRESCRIBED BY THE COUNCIL UNDER REGULATION 3.

A. For attendance (or re-attendance) at lectures, practical work and annual examination:

(a) In the first year - - - - - - - - - - - $411

For less than four subjects, the fees for each subject will be as are prescribed for such subject in the Schedules of the degree of Bachelor of Arts or Bachelor of Science as appropriate.

(b) In each of the second, third, fourth, fifth and sixth years - $441

B. For a supplementary examination:

(a) In any subject of the Preliminary, First Professional and Second Professional Examination - - - - - - - - - - $24

(b) In any subject of the Final Professional Examination, Parts I and II - - - - - - - - - - - - - - $48

C. For admission to the degrees of Bachelor of Medicine and Bachelor of Surgery - - - - - - - - - - - - $24

NOTE: Students who are required to take a supplementary examination in more than one subject of the Final Professional Examination will be required to pay a full year's tuition fee.

All medical students in the fourth, fifth and sixth years shall also pay the following annual fees for distribution to the various teaching hospitals and honorary staffs:

Teaching Hospitals Fees - - - - - - - -	$20.50
Clinical Instruction Fee - - - - - - - -	$48.00
Obstetrics Residence Fee - - - - - - - -	$36.67
Adelaide Children's Hospital Residence Fee (fifth year) -	$12.30

NOTE (not forming part of the schedule): The following provisions, operative in 1970, are at the time of printing under review for 1971.

RULES FOR THE ADMISSION OF MEDICAL STUDENTS TO THE PRACTICE OF THE TEACHING HOSPITALS AND THE INSTITUTE OF MEDICAL AND VETERINARY SCIENCE†

1. Medical students admitted to the practice of a Teaching Hospital shall be under the control of the Medical Superintendent° in relation to matters of common discipline; the University will otherwise be responsible for matters related to education.

2. No student shall publish the report of any case without the permission of the Hospital Board and the Senior Medical Officer under whose care the patient is or has been.

3. Except in the performance of his clinical duties, no student may disclose any information whatsoever concerning a patient without the permission of both the patient and the Senior Medical Officer in charge.

4. No student may communicate directly or indirectly to the Press, radio or television any matter concerning the clinical practice of the Institution to which he is attached.

5. No student may introduce visitors into any hospital to the practice of which he has been admitted, without the permission of the Medical Superintendent° or his deputy.

6. Students shall pay such fees as are laid down from time to time by the University in conjunction with the Teaching Hospitals. Fees are payable directly to the University: no student will be admitted to a Teaching Hospital until such fees are paid.

7. Students shall discharge the duties assigned to them, and pay for or replace any article damaged or lost or destroyed by them through negligence or misconduct.

8. During any period of residence the student will be responsible to the Medical Superintendent° of the hospital for discipline and general conduct.

9. Any student infringing any of these rules or the rules of the hospital, or otherwise misconducting himself may be suspended or dismissed by the Board of the hospital and shall on dismissal forfeit all payments which may have been made and all rights accruing therefrom.

10. In all instances where a student is under threat of suspension or dismissal his case shall be investigated by an Investigation Committee on which there shall be a representative appointed by the Hospital Board, a Senior Consultant Clinical Teacher nominated by the Chairman (or his deputy) of the appropriate Staff Committee of the hospital concerned, a representative appointed by the University, and the Dean of the Faculty of Medicine (or his deputy). The Committee should also normally include a representative of the Adelaide Medical Students' Society (e.g. a student member of the Faculty of Medicine). The Investigating Committee shall make its recommendations to the Board of the Hospital concerned and to the Council of the University for confirmation or otherwise.

11. These rules apply equally to medical students who use the facilities of the I.M.V.S. where the Director of the Institute has the authority given in these Rules to the Medical Superintendent of a Teaching Hospital, and where the Council of the Instiitute replaces the Board of the hospital.

° The Medical Director of the Queen Victoria Hospital.

‡ These rules are awaiting approval at the time of printing.

OF THE DEGREE OF BACHELOR OF MUSIC

REGULATIONS

1. There shall be an Ordinary degree and an Honours degree of Bachelor of Music. A candidate may obtain either degree or both.

2. The course of study for the Ordinary degree shall extend over three academic years and that for the Honours degree over four academic years.

3. To qualify for the Ordinary degree a candidate shall complete three years of academic study and pass the examination proper to each year.

*4. To qualify for the Honours degree a candidate shall:—

(a) pass at the first attempt and overall at distinction or credit standard the examinations prescribed for the Ordinary degree: provided that in exceptional cases the Faculty of Music may waive this requirement;

(b) in the fourth year satisfactorily complete a course of advanced study as provided under Schedule II.

5. Schedules defining the courses of study (including lectures, practical work, and examinations) to be undertaken and the fees to be paid by candidates, shall be drawn up by the Faculty of Music and submitted to the Council for approval. Such schedules shall become effective from the date of approval by the Council or such other date as the Council may determine, and shall be published as soon as practicable after that approval has been given.

6. Except by permission of the Faculty of Music, a candidate shall not be admitted to the class in any subject for which he has not completed the pre-requisite work prescribed in the syllabus for that subject.

7. The separate subjects which together comprise an academic year of study need not all be taken in one and the same year, nor need the examination in all the subjects of the academic year of study be passed at the same time; but except by special permission of the Faculty of Music a candidate shall not proceed to any part of the work of the second or a subsequent year unless he has completed the whole of the work of, and passed the examination proper to, the preceding year.

8. A candidate may be exempted by the Faculty of Music from attendance at lectures in any subject, but only upon grounds approved by the Council. Exemption from attendance at lectures in more than two subjects in any one year will be allowed only in very exceptional circumstances.

(9) (a) The annual examinations shall be held towards the end of each academic year. A candidate shall enter for examination on the form and by the date prescribed by the Council, but shall not be eligible to present himself for examination unless he has regularly

* Amendment allowed 24th December, 1969.

attended the prescribed lectures and has done the written and practical work required to the satisfaction of the professors and lecturers concerned.

(b) The examination in a subject shall take the form prescribed in the syllabus. Written or practical work done by the candidates by direction of the professor or lecturer concerned, and the results of terminal or other examinations held during the year, may be taken into consideration at the final examination in any subject.

(c) There shall be three classifications of pass at each annual examination for the Ordinary degree as follows: Pass with Distinction, Pass with Credit, Pass. The names of candidates who pass with Distinction or with Credit shall be arranged in order of merit within the classification; and the names of other candidates who pass shall be arranged in alphabetical order.

(d) The names of candidates who qualify for the Honours degree shall be published in alphabetical order within the following classes:

First Class
Second Class
Division A
Division B.

10. (a) Only one attempt at the examination for the Honours degree will be allowed.

(b) A candidate who fails to pass in any subject for the Ordinary degree shall, before presenting himself again for examination, again attend lectures and do written or practical work in that subject to the satisfaction of the professor or lecturer concerned unless granted exemption from doing so by the Faculty of Music.

(c) A candidate who has twice failed to pass the annual examination in any subject or division of a subject for the Ordinary degree may not present himself again for instruction or examination therein unless his plan of study is approved by the Dean. If he fails a third time he may not proceed with the subject again except by special permission of the Faculty of Music and under such conditions as the Faculty may prescribe.

(d) For the purpose of sections (b) and (c) of this regulation a candidate who is refused permission to sit for examination, or who fails either to enter for or to attend an annual examination after having enrolled for at least two terms in that year, shall be deemed to have failed to pass the examination.

11. (a) A candidate who, on account of illness or other sufficient cause allowed by the Faculty, is prevented from attending the whole or part of any annual examination may be permitted by the Faculty of Music to present himself for a supplementary examination.

(b) A candidate who presents himself at an annual examination for the Ordinary degree but fails to pass, may, on the recommendation of the Board of Examiners, be permitted by the Faculty of Music to present himself for a supplementary examination.

(c) A candidate shall not be re-examined at a supplementary examination in any subject in which he passed at the preceding annual examination.

12. A candidate who has passed equivalent examinations in the University or elsewhere and desires that such examinations be counted *pro tanto* for the degree of Bachelor of Music may, on written application, be granted such exemption from the requirements of these Regulations as the Council may determine.

13°. (a) A candidate who by March 31, 1970, had matriculated and completed at least one academic year of study for the degree of Bachelor of Music under the regulations in force in 1969 may complete his course under those regulations provided that he does so by December 31, 1974.

(b) A candidate may at any time apply for status under these regulations and shall be granted such status thereunder as the Faculty of Music may in each case determine.

* Allowed 24th December, 1969. Allowed 28th January, 1965.

Schedules made by the Council under Regulation 5

NOTE: To find the syllabuses of the subjects in these Schedules, see Table of Subjects on page 992.

SCHEDULE I—The Ordinary Degree

1. Before admission to the course of study for the degree of Bachelor of Music, a candidate shall pass a special entrance examination appropriate to the course of study he wishes to pursue.

2. Courses of study must be approved by the Dean (or his nominee) at enrolment each year.

3. A candidate shall satisfy the examiners in each of the following subjects:

(a) Theoretical Studies I, II and III;

(b) Historical and Social Studies I, II and III;

(c) Practical Studies I, II and III.

SCHEDULE II—The Honours Degree

1. (a) No candidate shall proceed to the Honours degree except with the approval of the Faculty of Music; normally such approval should be sought at the end of the second year of the course of the Ordinary degree. Before granting such permission the Faculty will take into consideration the candidate's academic record up to the time of his application.

(b) A candidate shall undertake the final year's study for the degree on a full-time basis and shall not undertake any other study or work except with the permission of the Faculty of Music.

2. A candidate for the Honours degree (i) shall complete the full course of study prescribed for the Ordinary degree; (ii) shall undertake further studies at advanced level extending over one academic year and shall pass the examination in one of the following—Composition or Musicology or Performance.

SCHEDULE III—FEES

A.	Ordinary degree of B.Mus.:	
(a)	For each year's work and examination - - - -	$366
(b)	For a supplementary examination in any subject - -	$24
(c)	For Chief Practical Study or Practical Studies I, II or III taken separately - - - - - - - - -	$180
(d)	For each other subject taken separately (up to a maximum of the annual fee of $366 for the full year's course) -	$99
(e)	For a subject taken separately which is included in the Schedules for the degree of Bachelor of Arts or for the degree of Bachelor of Science: the fee prescribed in the relevant Schedule.	
B.	Honours degree of B.Mus.: For the Honours work and final Honours examination -	$366
C.	For admission to the degree - - - - - -	$24

OF THE DEGREE OF BACHELOR OF PHARMACY.

REGULATIONS.

1. There shall be an Ordinary degree of Bachelor of Pharmacy.

2. Schedules defining the courses of study including lectures, laboratory and other practical work to be undertaken, the examinations to be passed, and the fees to be paid by candidates, shall be drawn up by the Faculty of Technology and Applied Science and submitted to the Councils of the University and the South Australian Institute of Technology. Such Schedules shall become effective from the date of approval by both Councils or from such other date as the Councils may determine, and shall be published as soon as practicable after that approval has been given.

*3. To qualify for the degree a candidate must regularly attend such tutorials as may be prescribed and do written, laboratory and other practical work, where such is required, and pass examinations in the subjects prescribed in the Schedules.

4. Except by permission of the Faculty a candidate shall not be admitted to the class in any subject for which he has not already completed the pre-requisite work as prescribed in the syllabus for that subject.

5. (a) Annual examinations shall be held towards the end of the academic year, except that practical examinations and the annual examination in a subject in which the course of instruction has been completed by the end of second term may be held at any convenient time fixed by the Faculty.

*(b) A candidate shall enter for examination on the form and by the date prescribed by the Council but shall not be eligible to present himself for examination unless he has regularly attended the prescribed tutorials and done the written laboratory and other practical work, where required, to the satisfaction of the professors and lecturers concerned.

(c) The examiners may take into consideration, at the final examination in any subject, a candidate's written and practical work in that subject during the year and his results at terminal or other examinations in the subject.

(d) There shall be three classifications of pass at the annual examinations as follows: Pass with Distinction, Pass with Credit, Pass. The names of candidates who pass with distinction or with credit shall be arranged in order of merit within the classification and the names of other candidates who pass shall be arranged in alphabetical order; provided that a candidate who sits for a supplementary or special examination in any subject or group of subjects of any annual examination shall be not classified at that annual examination.

(e) A candidate will be permitted to take a supplementary examination only in special circumstances approved by the Faculty and then only if in the opinion of the examiner the candidate's previous work in the subject has been such as to indicate that he has a reasonable chance of passing the supplementary examination.

* Amended 24th December, 1969.

*(f) A candidate who fails to pass at an annual examination shall, unless exempted wholly or partially therefrom by the Faculty, again attend tutorials and laboratory and other practical work in the subjects of the examination before presenting himself again for the annual examination.

*6. Except in case of illness or other sufficient cause allowed by the Faculty, no candidate shall be credited in any year with attendance at tutorials or laboratory work in a subject unless he has attended at least three-fourths of the tutorials and laboratory work respectively in that subject.

7. A candidate who has twice failed to pass an examination in any subject may not present himself again for instruction or examination therein except with the approval of the Faculty.

For the purpose of this regulation a candidate who is refused permission to sit for examination in any subject or division of a subject shall be deemed to have failed to pass the examination, and the annual examination and the supplementary examination shall be deemed to be one examination.

8. A candidate who has passed examinations *in pari materia* within the University or at other approved universities or institutions and who desires that such examinations shall be counted *pro tanto* for the degree of Bachelor of Pharmacy shall, on written application to the Registrar, be granted such exemption from the requirements of these regulations as the Council shall determine.

9. These Regulations shall come into force at a date to be determined by the Council.‡

†10. Only those candidates who had entered upon the course for the degree in or before the academic year 1969 will be permitted to enrol in the course for the degree after December 31, 1969. Such students will be eligible to proceed to the degree under these Regulations provided that they qualify for the degree not later than March 31, 1976, unless the Council approve an extension of time in a particular case under Clause 5 of Chapter XXV of the Statutes.

† Amended 21st December, 1967. * Allowed 24th December, 1969. Allowed 12th December, 1963.

‡NOTE: These Regulations came into force on January 1, 1965. The work for the first year of the course for the degree was available to candidates in the academic year 1965; the work for the second year of the course was available for the first time in 1966; and the work for the third year of the course was available for the first time in 1967.

Schedules made by the Council under Regulation 2 of the Degree of Bachelor of Pharmacy

1. COMPLETION OF SUBJECTS.

Except by permission of the Faculty, a candidate may not enrol for subjects in the second or third year of the course before he has passed the examinations in all the subjects prescribed in the Schedules for the previous year of the course.

2. APPROVAL OF SUBJECTS.

During the enrolment period, before the beginning of each academic year, each candidate must obtain the approval of the Director of Studies to enrol for the subjects he wishes to study.

3. SCHEDULE OF SUBJECTS.

To find the syllabuses of the subjects in these Schedules see Table of Subjects on page 992.

FIRST YEAR

Subject No. in Syllabus	Subject		Hours a week	Fee $
TP01	Applied Physics I	Lectures	3	60
		Tutorial	1	
		Practical	2	
TZ71	Biology (T)	Lectures	2	60
		Tutorial	1	
		Practical	3	
TH01	Chemistry I(T)	Lectures	3	69
		Tutorial	1	
		Practical	3	
TM91	Mathematics IB	Lectures	3	57
		Tutorials	2	
	A General Studies Elective (see Schedule 4)	Tutorials	2	42

SECOND YEAR

TH72	Chemistry IIA(T), Organic	Lectures	$2\frac{1}{2}$	69
		Practical	$4\frac{1}{2}$	
TF02	Pharmaceutical Chemistry I	Lectures	3^2, 4^1	72
		Practical	6^2, 5^1	
TF12	Pharmaceutics I	Lectures	4^2, 3^1	72
		Practical	6	
	A General Studies Elective (see Schedule 4)	Tutorials	2	42

THIRD YEAR

TF03	Pharmaceutical Chemistry II	Lectures	3^2, 2^1	72
		Practical	6	
TF13	Pharmaceutics II	Lectures	3	72
		Practical	7	
TF73	Physiology and Pharmacology	Lectures	2	54
		Practical	3^2	
TF83	Forensic Pharmacy and Pharmaceutical Practice	Lectures	2	42
	A General Studies Elective (see Schedule 4)	Tutorials	2	42

4. GENERAL STUDIES ELECTIVE

In addition to passing in all of the subjects prescribed for each year of the course, each student must complete three of the following General Studies courses:

Subject No. in Syllabus	Subject
TG91	Social and Technological History
TG81	Literature and Society
TG71	Social and Technological History (C.E.)
TG61	Social and Technological History (S)
TG51	Science and Modern Society
TG41	German Life and Literature
TG31	Political Science
TG21	International Affairs — Asia
TG92	Music
TG82	Philosophy
TG72	The Development of Economic Society.
TG62	Psychology and Human Organization

5. FEES

(a) For attendance at lectures, practical work and annual examinations: the fee prescribed in the schedule of subjects; provided that the total fee for a standard academic year's work in any one year shall not exceed $411.

(b) For a special examination (theoretical or practical or both) in any subject - - - - - - - $24

(c) For admission to the degree - - - - - $24

OF THE DEGREE OF BACHELOR OF SCIENCE

REGULATIONS

1. There shall be an Ordinary and an Honours degree of Bachelor of Science. A candidate may obtain either degree or both.

2. The course of study for the Ordinary degree shall extend over three academic years and that for the Honours degree over four academic years.

3. (a) In these regulations and in schedules made under them by the Council the following definitions shall apply:

"Subject" means a course of study at the University normally completed in one academic year.

"Unit" means a course of study at the University on a prescribed topic normally completed in one academic term.

(b) The Council, after receipt of advice from the Faculty of Science, shall from time to time prescribe schedules defining (i) the subjects and units of study for the degree (ii) the range of subjects and units (including lecture courses, laboratory courses and other practical work) to be satisfactorily completed and the examinations to be passed by candidates, and (iii) the fees to be paid by candidates.

(c) Such schedules shall become effective from the date of prescription by the Council or such other date as the Council may fix.

(d) The syllabuses of subjects and units shall be specified by the Head of the Department concerned and submitted to the Faculty and Council for approval.

(e) Schedules made and syllabuses approved by the Council shall be published in the next edition of the University Calendar.

4. (a) Except by permission of the Faculty, a candidate shall not be admitted to the class in any subject or unit, for which he has not satisfactorily completed the pre-requisite studies as prescribed in the syllabus for that subject or unit.

(b) Exemption from any part of the course on the first occasion on which a candidate takes a subject or unit will be granted only in special cases and on grounds approved by the Faculty.

5. (a) Examinations in any subject or unit shall be held in accordance with the provision of the relevant schedule made under these regulations.

(b) A candidate shall enter for examination in a subject on a form and by a date prescribed by the Council, but shall not be eligible to present himself for examination unless he has done written and laboratory or other practical work, where required, to the satisfaction of the teaching staff concerned.

(c) In determining a candidate's final results in a subject (or unit) the examiners may take into account the candidate's written or practical work and his results at any examinations in it.

(d) A candidate will be permitted to take a supplementary examination only in circumstances approved by the Faculty, and then only if the candidate's previous work in the subject or unit has been such as to indicate that he has a reasonable chance of passing the supplementary examination.

6. There shall be three classifications of pass in any subject for the Ordinary degree, as follows: Pass with Distinction, Pass with Credit, Pass. The names of the candidates who pass with Distinction or with Credit shall be arranged in order of merit within the classification; the names of other candidates who pass shall be arranged in alphabetical order either in one list or in two divisions, as the Council may on the recommendation of the Faculty, determine. If the list of candidates who pass be published in two divisions, a pass in the higher division may be prescribed in the appropriate syllabuses as pre-requisite for admission to another subject. A candidate with a lower division pass who wishes to gain a higher division pass shall be allowed to repeat the course, subject to the provisions of regulation 7.

7. (a) A candidate who fails to pass in a subject (or unit) or who obtains a lower division pass and who desires to take the subject or unit again shall, unless exempted wholly or partially therefrom by the Head of Department concerned, do written and laboratory or other work in that subject or unit to the satisfaction of the teaching staff concerned.

(b) A candidate who has twice failed to obtain a Division I pass or higher in the examination in any subject shall not enrol for the subject again except by permission of the Faculty and under such conditions as the Faculty may prescribe. For the purpose of this clause a candidate who fails to receive permission to sit for or absents himself from the examination in any subject after having attended substantially the full course of instruction in it, shall be deemed to have failed to pass the examination. A candidate who obtains a higher division pass only after being granted permission to enrol for the third time shall not take a subject for which that higher division pass is a pre-requisite, save in exceptional circumstances and with the permission of the Faculty.

8. (a) A candidate who has passed subjects in other Faculties or Universities or elsewhere, may on written application to the Academic Registrar be granted such exemption from these regulations and from schedules made under them as the Council on the recommendation of the Faculty may determine.

(b) A graduate in another Faculty, who wishes to proceed to the degree of Bachelor of Science and to count towards that degree subjects which he has already presented for another degree may do so, subject to the following conditions:

(i) he shall present a range of subjects which fulfils the requirements of the relevant schedule made under regulation 3, and

(ii) he shall present two third-year subjects not presented for any other degree.

9. (a) There shall be the following classifications for the Honours degree and the names of successful candidates in each subject shall be published in alphabetical order within each classification:

First Class
Second Class
  Division A
  Division B
Third Class.

(b) A candidate who fails to obtain one of the foregoing classifications at his first attempt shall not be permitted to present himself again for the examination.

10. A graduate who has obtained the Honours degree of Bachelor of Arts may not proceed to the Honours degree of Bachelor of Science in the same subject.

11. Applications for approval under clauses 4(a), 4(b), 7(a), 7(b), or 8 shall be submitted in writing to the Academic Registrar.

Awaiting allowance at time of printing.

NOTE: To find the syllabuses of the subjects in these Schedules, see Table of Subjects on page 992.

SCHEDULES

I. The Ordinary Degree

Definitions for the purposes of these Schedules

A Group A subject: A subject in first year, equivalent to one-quarter of a year's work.

A Group A half-subject: A half-subject in first year, equivalent to one-eighth of a year's work.

A Group B subject: A subject in second year, equivalent to one-third of a year's work.

A Group C subject: A subject in third year, equivalent to one-half of a year's work, basically consisting of six units or three double units.

A Group D subject: A double subject in third year, equivalent to two Group C subjects.

A Group E subject: A subject which forms part of a combination approved in lieu of a Group C subject under Clause 5 of these schedules.

1. The subjects of study for the Ordinary degree shall be as follows:

Group A subjects: Biology I, Chemistry I, Mathematics I, Mathematics IM, Physics I, Psychology I, Zoology I.

Group A half-subjects: Computing IH, General Biology IH, Plant Biology IH, General Geology IH, Physical Geology IH, Genetics and Human Variation IH, Mathematics IH, Statistics IH.

Group B subjects: Applied Mathematics II, Biochemistry II, Botany II, Chemistry II, Genetics II, Geology II, Mathematical Statistics II, Mathematics IIM (for 1972), Organic Chemistry II, Physical and Inorganic Chemistry II, Physics II, Physiology II, Psychology II, Pure Mathematics II, Zoology II.

Group C subjects: Applied Mathematics III, Applied Mathematics IIIM, Biochemistry III, Biochemistry IIIM, Botany III, Botany IIIA, Botany IIIM, Computing Science IIIA, Computing Science IIIM, Genetics III, Geochemistry III, Geology III, Geology IIIM, Geophysics III, Histology III, Mathematical Physics IIIA, Mathematical Physics IIIB, Mathematical Statistics III, Microbiology III, Microbiology IIIA, Microbiology

IIIB, Organic Chemistry III, Organic Chemistry IIIM, Physical and Inorganic Chemistry IIIB, Physical and Inorganic Chemistry IIIM, Physics III, Physics IIIM, Physiology III, Physiology IIIA, Physiology IIIB, Physiology IIIM, Psychology III, Pure Mathematics III, Pure Mathematics IIIM, Zoology III, Zoology IIIA, Zoology IIIB, Zoology IIIC, Zoology IIID, Zoology IIIE, Zoology IIIF, Zoology IIIM.

Group D subjects: Physical and Inorganic Chemistry IIIA.

Group E subjects: Botany IIP, Palaeontology III.

2. To qualify for the Ordinary degree a candidate shall, subject to the conditions and modifications specified in clauses 3, 4, 5 and 6 below, satisfactorily complete the following range of subjects:

(a) Four Group A subjects or their equivalent.

(b) *Either* three subjects from Group B *or* two subjects from Group B and a fifth Group A subject or its equivalent.

(c) *Either* two subjects from Group C or their equivalent, provided that no part of the work is common to both subjects, *or* one subject from Group D.

3. A candidate may present Engineering I or a first-year subject available in the Faculty of Arts, *in lieu* of not more than one Group A subject or its equivalent required under paragraphs 2(a) and 2(b).

4. The following combinations of subjects shall not be presented:

Biology I and any one of Botany I, Zoology I, General Biology IH, or Plant Biology IH;
Botany II and Botany IIP;
Any two of Mathematics IS, Mathematics IM, Mathematics I, Mathematics IH;
Mathematics IIM and *either* Applied Mathematics II *or* Pure Mathematics II;
Chemistry II and *either* Physical and Inorganic Chemistry II *or* Organic Chemistry II.

5. A candidate who presents Geology III may present one of the following combinations of subjects, in lieu of a subject from Group C:

Palaeontology III and Genetics II;
Palaeontology III and Botany IIP;
Palaeontology III and Zoology II.

6. Only those candidates who had entered the course for the Ordinary degree of Bachelor of Science in Forestry before July, 1967, will be permitted to enrol for that degree after December, 1967. Unless the Council approves an extension of time in particular cases under Clause 5 of Chapter XXV of the Statutes, such candidates shall, before March, 1971:

(a) Subject to the provisions of Clause 5 fulfil the requirements of sections (a) and (b) of Clause 2, including within those requirements the subjects Botany I and Botany II;

(b) During the long vacation at the end of the first and second years, satisfactorily complete a total of not less than twelve weeks work in the field under a forest authority approved by the Faculty;

(c) Subsequently complete a two years' course in the Department of Forestry at the Australian National University, in accordance with a syllabus approved by the Council;

(d) Present evidence satisfactory to the Council (i) of having satisfactorily completed the work at the Australian National University and (ii) of having subsequently had twelve months' experience, not necessarily consecutive, in work appropriate to his course in Forestry: provided that any forestry experience gained in the vacations during his course of studies at the University of Adelaide or at the Australian National University may be counted as part of the twelve months.

7. (a) Final examinations in any subject or unit shall be held soon after the completion of the course of instruction in that subject or unit.

(b) An examination counting as part of a final examination may be held in a part only subject, if the Faculty so approve. Such examination may be held at any time fixed by the Faculty.

Class and terminal examinations in a subject or unit may be held at any time fixed by the examiners concerned.

8. When, in the opinion of the Faculty of Science, special circumstances exist, the Council, on the recommendation of the Faculty in each case, may vary any of the provisions of Clauses 1-7 above.

II. The Honours Degree

1. A candidate may, subject to approval by the Head of the Department concerned, proceed to the Honours degree in one of the following subjects:

Biochemistry
Botany
Computing Science
Genetics
Geology
Mathematical Physics
Pure Mathematics
Applied Mathematics
Microbiology
Organic Chemistry
Pharmacology
Physical and Inorganic Chemistry
Physics
Physiology
Psychology
Statistics
Zoology

2. A candidate for the Honours degree in any subject shall not begin final-year Honours work in that subject until he has qualified for the Ordinary degree of Bachelor of Science and has completed all the courses in that subject prescribed for the Ordinary degree and such other pre-requisite subjects (if any) as may be prescribed in the syllabus.

3. When, in the opinion of the Faculty of Science, special circumstances exist, the Council, on the recommendation of the Faculty in each case, may vary the provisions of Clauses 1 and 2 above.

III. Fees

A. *Ordinary degree of B.Sc.*:

(a) For attendance (or re-attendance) at tutorial and practical work and the annual examination in a subject taken separately:

For a half-subject in Group A	$52.50
For a subject in Group A	$105
For a subject in Group B	$144
For a subject in Group C	$210
For a subject in Group D	$411
For a composite subject *in lieu* of a subject from Group C	$210

(b) The fees prescribed in Section (a) of this Clause are subject to the proviso that the total fee for a standard academic year's work in any one year shall not exceed $411

(c) For a special examination in any subject $24

B. *Honours degree of B.Sc.*:

For the final-year Honours work in any subject $366

Note: The foregoing amount, which does not include the fees for pass work is inclusive of all fees payable for courses taken at the University, which the Faculty deems necessary for the Honours course in the School selected.

C. For Science German $18

D. For admission to the degree $24

Notes: 1. The cost of attendance on excursions and/or at camps is not included in the fees listed above. See separate statement on page 594.

2. The Fees for the course in Forestry at the Australian National University are not included in this Schedule.

OF THE DEGREE OF BACHELOR OF TECHNOLOGY

REGULATIONS

1. There shall be an Ordinary degree of Bachelor of Technology.

*2. Schedules defining the courses of study, including lectures, laboratory and other practical work to be undertaken, the examinations to be passed and the fees to be paid by candidates, shall be drawn up by the Faculty of Technology and Applied Science and submitted to the Councils of the University and the South Australian Institute of Technology.

Such schedules shall become effective as from the date of approval by both Councils or such other date as the Councils may determine, and shall be published in the next University Calendar which is issued after that approval has been given.

†3. §(a) To qualify for the degree of Bachelor of Technology a candidate must regularly attend such tutorials as may be prescribed and do written, laboratory and other practical work, where such is required, and pass examinations in the subjects prescribed for one of the following courses:

Building Technology,
Civil Engineering,
Electrical Engineering,
Electronic Engineering,
Mechanical Engineering,
Surveying,

*(b) Before being admitted to the degree a candidate shall also satisfy the Faculty of Technology and Applied Science that he has fulfilled the requirements in practical experience that are prescribed in the schedule relating thereto.

4. (a) All annual examinations, other than supplementary, shall take place towards the end of the academic year, except that practical examinations and examinations in a subject in which the course of instruction has been completed by the end of the second term, may be held at any convenient time fixed by the Faculty.

§(b) A candidate shall enter for examination on the form and by the date prescribed by the Council, but shall not be eligible to present himself for examination unless he has regularly attended the prescribed tutorials and has done written and laboratory or other practical work where required to the satisfaction of the professors and lecturers concerned.

(c) Written and practical work done by candidates at the direction of the professors or lecturers and the results of terminal or other examinations in any subject may be taken into consideration at the final examination in that subject.

† Amended 15th January, 1959, 17th December, 1959, 16th March, 1961, 4th October, 1962, 4th April, 1963, 22nd December, 1966.
* Amended 12th December, 1963, and 28th January, 1965.
§ Amended 24th December, 1969.

**(d) There shall be three classifications of pass at the annual examination in any subject or division of a subject for the degree, as follows: Pass with Distinction, Pass with Credit, Pass. The names of candidates who pass with Distinction or with Credit shall be arranged in order of merit within the classification; the names of other candidates who pass shall be arranged in alphabetical order.

††‡(e) A candidate who fails to pass in any subject shall again attend tutorials and do practical work in that subject to the satisfaction of the professors and lecturers unless exempted by the Faculty of Technology and Applied Science. Any such exemptions will hold for one academic year only.

(f) Supplementary examinations will be held only in special circumstances approved by the Faculty after consideration of individual cases.

*(g) Except by permission of the Faculty a candidate shall not be admitted to the class in any subject for which he has not completed the pre-requisite work prescribed in the syllabus for that subject.

‡5. Except in case of illness or other sufficient cause allowed by the Faculty, no candidate shall be credited in any year with attendance at tutorials or laboratory work in a subject unless he has attended at least three-fourths of the tutorials and laboratory work respectively in that subject.

‡6. No candidate shall be granted exemption from attendance at tutorials or practical work except upon grounds approved by the Faculty.

7. A candidate who has twice failed to pass the examination in any subject or division of a subject may not present himself again for instruction or examination therein unless his plan of study is approved by the Dean. If he fails a third time he may not proceed with the subject again except by special permission of the Faculty, and under such conditions as the Faculty may prescribe.

For the purpose of this regulation a candidate who is refused permission to sit for examination in any subject or division of a subject shall be deemed to have failed to pass the examination.

**8. A student who has passed examinations *in pari materia* in another Faculty or otherwise, or who desires that his work at other Universities or Technical Schools should be counted *pro tanto* for the degree of Bachelor of Technology may on application be granted such exemption from the requirements of the regulations as the Councils shall determine.

§††9. Only those candidates who had entered upon the course for the degree in or before the academic year 1969 will be permitted to enrol in the course for the degree after December 31, 1969, provided that candidates who had entered upon the courses for an Associateship Diploma of the South Australian Institute of Technology at Whyalla or Port Pirie in or before the academic year 1966 will be

Allowed 20th December, 1956.
* Allowed 9th January, 1958.
** Amended 22nd December, 1966.
† Amended 12th December, 1963.
§ Amended 21st December, 1967.
‡ Amended 24th December, 1969.
†† Amendment awaiting allowance at time of printing.

permitted to enrol for the degree on such conditions as the Council may approve. Such students will be eligible to proceed to the degree under these Regulations provided that they qualify for the degree not later than March 31, 1976, unless the Council approve an extension of time in a particular case under Clause 5 of Chapter XXV of the Statutes.

Schedules made by the Council under Regulation 2 of the Degree of Bachelor of Technology.

1. Approval of Courses

Each candidate must obtain the approval of the Director of Studies of the Faculty for his proposed course of study.

2. Arrangement of Courses

The course shall occupy three years of full-time study. Details of these courses are set out in Clauses 5 to 10.

The first year of each of the courses set out in Clauses 5 to 10 will be offered for the first time in 1967, the second year in 1968 and the third year in 1969.

To find the syllabuses of the subjects in Clauses 5 to 10 see Table of Subjects on page 992.

3. Completion of Subjects

Except by permission of the Faculty, a candidate may not enrol for subjects in the second or third year of the course before he has passed the examinations in all of the subjects prescribed in the Schedules for the previous year of the course.

4. Continuation of Courses Offered Prior to 1967

Beginning on January 1, 1967, new courses for the degree of Bachelor of Technology have been established. All students enrolling in the Bachelor of Technology courses for the first time in 1967 or later must enrol in the new courses unless permission of the Faculty of Technology and Applied Science has previously been given.

Students who before the beginning of the academic year 1967 were enrolled in the Bachelor of Technology course will continue in the old courses except that:—

(a) any student who wishes to transfer to the new courses may apply to the Faculty of Technology and Applied Science for permission to do so and will be granted such status in the course as the Faculty may determine; and

(b) students enrolled in the old courses who have not passed in the first-year subjects by February 28, 1969, the second-year subjects by February 28, 1971, and the third-year subjects by February 28, 1973, will be required to transfer to the new courses.

Part-time students who may be unable to complete the old courses by February 28, 1973, are advised to transfer to the new courses as early as possible.

5. BUILDING TECHNOLOGY

(a) *Old Course*

THIRD YEAR

(To be offered for the last time in 1972)

TD03	Building Science III(T)	Lectures Practical	2 3[1]		54
TD13	Building Construction and Drawing III	Lectures Practical	1 5		60
TD33	Building Administration II	Lectures Practical	2 3		57
	either				
TD23	Quantity Surveying III	Lectures	3		54
	or				
TU94	Supervision—Human Relations	Lectures	1½		42
	and				
TD43	Building Administration III	Lectures	1½		42
TD93	Design of Structures	Lectures Practical	1 3		54
TD73	Estimating and Costing	Lectures	2		42
TA83	Bookkeeping and Accounts	Lectures	2		42
	Vacational Report (Second)				

(b) *New Course*

FIRST YEAR

TM91	Mathematics IB	Lectures Tutorial	3 2		57
TP91	Applied Physics IR	Lectures Tutorial Practical	2 1 2		57
TH81	Engineering Chemistry and Materials	Lectures Practical	2 3		57
TB21	Tectonics I	Lectures Tutorial Practical	3 1 6		72
	A General Studies Elective (see Schedule 13)	Tutorials	2		42

SECOND YEAR

Subject No. in Syllabus	Subject		Hours a week	Fee $
TB02	Building Science IR	Lectures Practical	2 3	57
TB12	Design of Structures IR	Lectures Tutorial Practical	1 1 2	54
TB22	Tectonics IIB	Lectures Practical	2 7	72
TC62	Surveying IB	Lectures Practical	1 3	54
TB92	Building Law	Lectures Tutorial	2 1	54
	A General Studies Elective (see Schedule 13)	Tutorials	2	42
	Vacational Report (First)			

THIRD YEAR

Subject No. in Syllabus	Subject		Hours a week	Fee $
TB03	Building Science IIR	Lectures Practical	2 3	57
TB13	Design of Structures IIR	Lectures Tutorial Practical	1 1 2	54
TB23	Tectonics IIIB	Lectures Practical	2 5	69
TA93	Building Accountancy	Lectures Tutorials	2 2	54
TM83	Contract Programming	Lectures Tutorial Practical	2 1 2	57
	A General Studies Elective (see Schedule 13)	Tutorials	2	42
	Vacational Report (Second)			

6. CIVIL ENGINEERING

(a) *Old Course*

THIRD YEAR

(To be offered for the last time in 1972)

Subject No. in Syllabus	Subject		Hours a week	Fee $
TV03	Structures II(T)	Lectures Practical	1 7	72
TV33	Civil Engineering A	Lectures Seminar Practical	3 1 4	72
TV43	Civil Engineering B	Lectures Practical	4 3	69
TD83	Methods of Construction and Management	Lectures	1	33
TE83	Electrical Engineering IIA(T)	Lectures Practical	2 2	54
TC82	Survey Camp			24
	Vacational Report (Second)			

(b) *New Course*

FIRST YEAR

TM01	Mathematics IA	Lectures .. 3 Tutorials .. 2		57
TP01	Applied Physics I	Lectures .. 3 Tutorial .. 1 Practical .. 2		60
TH81	Engineering Chemistry and Materials	Lectures .. 2 Practical .. 3		57
TK61	Engineering Mechanics IA	Lectures .. 2 Tutorial .. 1 Practical .. 1[1]		54
TC61	Civil Drawing	Practical .. 3		54
TK71	Basic Engineering Techniques (Part Course)	Lectures .. 1 Practical .. 3[1]		42
	A General Studies Elective (see Schedule 13)	Tutorials .. 2		42

SECOND YEAR

TM02	Mathematics IIA	Lectures .. 3 Tutorials .. 2		57
TC12	Civil Engineering IIA(T)	Lectures .. 2 Tutorials .. 2 Practical .. 3		69
TC22	Civil Engineering IIB(T)	Lectures .. 3 Tutorial .. 1 Practical .. 3[2]		60
TC01	Surveying I	Lectures .. 2 Tutorial .. 1 Practical .. 3[2]		60
TE72	Electrical Engineering SC(T)	Lectures .. 1 Practical .. 2[2]		54
	A General Studies Elective (see Schedule 13)	Tutorials .. 2		42
	Vacational Report (First)			

THIRD YEAR

TC13	Civil Engineering IIIA(T)	Lectures .. 3 Tutorials .. 3[1] Practical .. 2		60
TC23	Civil Engineering IIIB(T)	Lectures .. 4 Tutorials .. 3		69
TC33	Civil Engineering IIIC(T)	Lectures .. 3 Practical .. 3[2]		57
TC93	Structural Design	Practical .. 4		54
TC53	Engineering Computations	Lectures .. 1 Practical .. 2		54
	A General Studies Elective (see Schedule 13)	Tutorials .. 2		42
TC82	Survey Camp			24
	Vacational Report (Second)			

7. SURVEYING

(a) *Old Course*

THIRD YEAR

(To be offered for the last time in 1972)

TV83	Soils Investigations	Lectures Practical	1[2], 2[1] 3		57
TV53	Land Surveying Design and Drafting	Practical	3		54
TC83	Photogrammetry	Lectures Practical	3 6		72
TC63	Geodesy	Lectures Practical	3 3		60
TV93	Surveying Law	Lectures	2		42
TV73	Planning Law	Lectures	1		33
TV63	Land Valuation—Principles and Practice	Lectures	1		42
TC73	Hydraulics (T)	Lectures Practical	1 3[1]		42
	Vacational Report (Second)				

(b) *New Course*

FIRST YEAR

TM01	Mathematics IA	Lectures Tutorials	3 2		57
TP01	Applied Physics I	Lectures Tutorial Practical	3 1 2		60
TC01	Surveying I	Lectures Tutorial Practical	2 1 3		60
TN12	Applied Geology I	Lectures Tutorial Practical	2 1 3		60
	A General Studies Elective (see Schedule 13)	Tutorials	2		42

SECOND YEAR

Subject No. in Syllabus	Subject		Hours a week		Fee $
TM02	Mathematics IIA	Lectures Tutorials	3 2		57
TC02	Surveying IIA	Lectures Tutorials Practical	2 3 3		72
TC72	Surveying IIB	Lectures Tutorials Practical	4 3 3		72
TB82	Land Use	Lectures	1		33
TC92	Cartography	Practical	4		54
	A General Studies Elective (see Schedule 13)	Tutorials	2		42
TC82	Survey Camp	----			24
	Vacational Report (First)				

THIRD YEAR

TC03	Surveying III	Lectures Practical	$4\frac{1}{2}$[2] $2\frac{1}{2}$[1]	54
TC63	Geodesy	Lectures Tutorials	3 3	60
TC83	Photogrammetry	Lectures Practical	3 6	72
TC43	Engineering (T)	Lectures Tutorial Practical	2 1 3	60
	A General Studies Elective (see Schedule 13)	Tutorials	2	42
	Vacational Report (Second)			

8. ELECTRICAL ENGINEERING

(a) *Old Course*

THIRD YEAR
(To be offered for the last time in 1972)

Subject No. in Syllabus	Subject		Hours a week	Fee $
TE23	Electrical Engineering III(T)	Lectures Practical	2 2	54
TE73	Automatic Control	Lectures Practical	1 3	54
TL53	Applied Electronics	Lectures Practical	1 2	54
TJ83	Machine Design	Lectures Practical	2 3[2]	54
TJ33	Workshop Practice II	Lectures Practical	1 3	54
TT82	Engineering Materials	Lectures Practical	2 2	54
	Vacational Report (Second)			

(b) *New Course*

FIRST YEAR

TM01	Mathematics IA	Lectures Tutorials	3 2	57
TP01	Applied Physics I	Lectures Tutorial Practical	3 1 2	54
TH81	Engineering Chemistry and Materials	Lectures Practical	2 3	57
TE91	General Electrical Engineering A	Lectures Tutorial	1 1	42
TK81	Basic Engineering Techniques	Lectures Practical	1 3	54
	A General Studies Elective (see Schedule 13)	Tutorials	2	42

SECOND YEAR

TM12	Mathematics IIB	Lectures ... 2 Tutorials ... 2[2]		54
TE02	Electrical Engineering IA	Lectures ... 2 Tutorial ... 1 Practical ... 2		57
TE12	Electrical Engineering IB	Lectures ... 2 Practical ... 2		54
TK92	Mechanical Design S	Lectures ... 1 Tutorial ... 1 Practical ... 3		57
TK82	Thermo-Fluid Dynamics I	Lectures ... 2 Tutorial ... 1 Practical ... 2[2]		57
	A General Studies Elective (see Schedule 13)	Tutorials ... 2		42
	Vacational Report (First)			

THIRD YEAR

TE03	Electrical Engineering IIA	Lectures ... 3 Practical ... 2		57
TE13	Electrical Engineering IIB	Lectures ... 2 Tutorial ... 1 Practical ... 4		69
TE93	Automatic Control I	Lectures ... 1 Tutorial ... 1 Practical ... 2		54
TM13	Mathematics IIC	Lectures ... 1 Tutorial ... 1[2]		42
TL53	Applied Electronics	Lectures ... 1 Practical ... 2		54
	A General Studies Elective (see Schedule 13)	Tutorials ... 2		42
	Vacational Report (Second)			

9. ELECTRONIC ENGINEERING

(a) *Old Course*

THIRD YEAR

(To be offered for the last time in 1972)

TE23	Electrical Engineering III(T)	Lectures ... 2 Practical ... 2		54
TL33	Communication Engineering II	Lectures ... 2 Tutorial ... 1 Practical ... 3		60
TE73	Automatic Control	Lectures ... 1 Practical ... 3		54
TL63	Electronic Engineering Design	Lectures ... 1 Practical ... 2		54
TL73	Electronic Measurements	Lectures ... 1 Practical ... 2		54
TL93	Pulse Techniques	Lectures ... 2 Tutorial ... 1 Practical ... 2		57
	Vacational Report (Second)			

(b) *New Course*

FIRST YEAR

TM01	Mathematics IA	Lectures Tutorials	3 2	57
TP01	Applied Physics I	Lectures Tutorial Practical	3 1 2	60
TH81	Engineering Chemistry and Materials	Lectures Practical	2 3	57
TE91	General Electrical Engineering A	Lectures Tutorial	1 1	42
TK81	Basic Engineering Techniques	Lectures Practical	1 3	54
	A General Studies Elective (see Schedule 13)	Tutorials	2	42

SECOND YEAR

Subject No. in Syllabus	Subject		Hours a week	Fee $
TM2	Mathematics IIB	Lectures Tutorials	2 2[2]	54
TP92	Physics IIE	Lectures Tutorial Practical	2[1], 1[2] 1 3	60
TE82	Electrical Engineering SE(T)	Lectures Practical	2 2	54
TL02	Electronic Engineering IA	Lectures Tutorial Practical	2 1 2	57
TL12	Electronic Engineering IB	Lectures Tutorial Practical	2 1 2	57
	A General Studies Elective (see Schedule 13)	Tutorials	2	42
	Vacational Report (First)			

THIRD YEAR

TM13	Mathematics IIC	Lectures Tutorials	1 1[2]	42
TL03	Electronic Engineering IIA	Lectures Tutorial Practical	2 1 3	60
TL13	Electronic Engineering IIB	Lectures Tutorial Practical	2 1 3	60
TL23	Electronic Engineering IIC	Lectures Tutorial Practical	1 1 4	60
TE93	Automatic Control I	Lectures Tutorial Practical	1 1 2	54
	A General Studies Elective (see Schedule 13)	Tutorials	2	42
	Vacational Report (Second)			

10. MECHANICAL ENGINEERING

(a) *Old Course (Course A)*

THIRD YEAR

(To be offered for the last time in 1972)

Subject No. in Syllabus	Subject		Hours a week	Fee $
TE83	Electrical Engineering IIA(T)	Lectures ... 2 Practical ... 2		54
	either			
TL53	Applied Electronics	Lectures ... 1 Practical ... 2		54
	or			
TI84	Process Control (T)	Lectures ... 1 Practical ... 3		54
TJ03	Mechanical Engineering III(T)	Lectures ... 2 Practical ... 3		57
TJ93	Machine Design Project	Lectures ... 2 Practical ... 3		57
TJ33	Workshop Practice II	Lectures ... 1 Practical ... 3		54
TT74	Metal Fabrication	Lectures ... 1		42
TT94	Foundry Practice	Lectures ... 1 Practical ... 3		54
	Vacational Report (Second)			

(b) *New Course*

FIRST YEAR

TM01	Mathematics IA	Lectures ... 3 Tutorials ... 2		57
TP01	Applied Physics I	Lectures ... 3 Tutorial ... 1 Practical ... 2		60
TH81	Engineering Chemistry and Materials	Lectures ... 2 Practical ... 3		57
TK01	Engineering Mechanics I	Lectures ... 2^2, 1^1 Tutorial ... 1 Practical ... 1^1		54
TK91	Engineering Drawing	Practical ... 3		54
TK11	Engineering Manufacturing Practice I	Lectures ... 1 Practical ... 3		54
	A General Studies Elective (see Schedule 13)	Tutorials ... 2		42

SECOND YEAR

TM12	Mathematics IIB	Lectures ... 2 Tutorials ... 1^2		54
TK82	Thermo-Fluid Dynamics I	Lectures ... 2 Tutorial ... 1 Practical ... 3^2		54
TK02	Engineering Mechanics II	Lectures ... 4 Practical ... 3		69
TK22	Mechanical Design I	Lectures ... 1 Tutorial ... 3		54
TK12	Production Technology I(T)	Lectures ... 2 Practical ... 3		57
	A General Studies Elective (see Schedule 13)	Tutorials ... 2		42
	Vacational Report (First)			

THIRD YEAR

Subject No. in Syllabus	Subject		Hours a Week	Fee $
TM13	Mathematics IIC	Lectures Tutorials	1 1[2]	42
TK33	Thermo-Fluid Dynamics II	Lectures Tutorials Practical	2 1[2] 3[2]	57
TK03	Engineering Mechanics III	Lectures Tutorial	1 1	42
TK23	Mechanical Design II	Lectures Tutorial	1 1	42
TK13	Production Technology II(T)	Lectures Tutorials Practical	2 1[1] 3[3]	57
TK93	Mechanical Engineering Projects	Practical	6	60
TK83	Electrical and Civil Engineering (S)	Lectures Practical	3 2	57
	A General Studies Elective (see Schedule 13)	Tutorials	2	42
	Vacational Report (Second)			

(c) *Old Course (Course B)*

THIRD YEAR

(To be offered for the last time in 1972)

TJ23	Refrigeration Engineering III	Lectures Practical	2 3[2]	54
TE83	Electrical Engineering IIA(T)	Lectures Practical	2 2	54
	either			
TL53	Applied Electronics	Lectures Practical	1 2	54
	or			
TA73	Principles of Business and Industry A	Lectures	2	42
	or			
TI84	Process Control (T)	Lectures Practical	1 3	54
TJ03	Mechanical Engineering III(T)	Lectures Practical	2 3	57
TT82	Engineering Materials	Lectures Practical	2 2	54
TJ33	Workshop Practice II	Lectures Practical	1 3	54
	Vacational Report (Second)			

11. APPLIED PHYSICS

Old Course

THIRD YEAR

(To be offered for the last time in 1972)

TP13	Applied Physics IIA	Lectures ...	3	}	72
		Practical ...	5	}	
TP23	Applied Physics IIB	Lectures ...	3	}	72
		Practical ...	5	}	
TI93	Industrial Instrumentation A	Lectures ...	2	}	60
		Practical ...	4	}	
TT82	Engineering Materials	Lectures ...	2	}	54
		Practical ...	2	}	
	Vacational Report (Second)				

12. Practical Experience

To fulfil the requirements in respect of practical experience required under Regulation 3(b) a candidate shall:

(a) submit two reports satisfactory to the Faculty on work that he has undertaken during vacations, each report covering a period of not less than two months and at least one period being spent in work related to the student's professional interests; *or*

(b) submit a report satisfactory to the Faculty on work relevant to his professional interests that he has undertaken for at least six months in full-time employment.

The service of the student must be certified by the student's employer during the period concerned.

A student who had entered upon the course for the degree in or before 1964 may fulfil the requirements relating to practical experience by submitting evidence satisfactory to the Faculty of his having had six months' practical experience in work relevant to his professional interests.

13. General Studies Elective

In addition to passing in all of the subjects prescribed for each year of the course, each student must complete three of the following General Studies courses:

Subject No. in Syllabus	Subject
TG91	Social and Technological History
TG81	Literature and Society
TG71	Social and Technological History (C.E.)
TG61	Social and Technological History (S)
TG51	Science and Modern Society
TG41	German Life and Literature
TG31	Political Science
TG21	International Affairs—Asia
TG92	Music
TG82	Philosophy
TG72	The Development of Economic Society
TG62	Psychology and Human Organization

14. Schedule of Fees

A.	For attendance at lectures, practical work and annual examination in any subject: the fee prescribed in the schedule of subjects for the degree; provided that the total fee for a standard academic year's work in any one year shall not exceed $411.	
B.	For a special or supplementary examination (theoretical or practical, or both) in any subject - - - - -	$24
C.	For admission to the degree - - - - - -	$24

2. REGULATIONS AND SCHEDULES FOR MASTER DEGREES

NOTES AND INSTRUCTIONS TO CANDIDATES FOR THE DEGREE OF MASTER

I. General

(Applicable to candidates in the Faculties of Agricultural Science, Architecture, Arts, Dentistry, Economics, Engineering, Medicine, Music and Science.)

1. The attention of candidates is drawn to Clause 2B of Chapter XXV of the Statutes and to the Regulations and Schedules of the degrees to which they are proceeding.

2. The subject of the thesis must be approved by the appropriate Faculty and may not be altered without the permission of the Faculty.

3. A candidate for the degree of Master in the Faculties of Agricultural Science, Architecture, Arts, Economics, Engineering (under Regulation 3 of the degree of M.E.), Medicine and Science pursues a course of research under the direction of a supervisor who will report to the appropriate Faculty annually or whenever the supervisor considers that the candidate is not making satisfactory progress in his work.

4. It is the duty of the candidate to keep his supervisor fully informed of the progress of his research and to consult him about future work and about the general planning of his thesis.

5. The function of the supervisor is not to plan at all directly the work that the research student should do, but rather to provide a trained mind upon which the student may test his ideas and so be led to develop his own critical faculties. The thesis itself should represent the student's own work, assisted only by the general aid obtained by discussion with his supervisor as to the most satisfactory methods of developing and presenting his material. For a candidate whose mother tongue is not English, some help with the syntax may be given with the approval of the supervisor.

6. If more than one supervisor is appointed by the Faculty, the candidate shall consult all such supervisors on all matters of general concern to his work and thesis.

7. The responsibility for the layout of the thesis rests with the candidate after discussion with his supervisor. Before commencing to write his thesis a candidate should discuss its appropriate length with his supervisor; and the completed thesis should be shown to the supervisor before presentation for examination.

II. Specifications for Theses

(Applicable to candidates in all Faculties.)

1. *Preparation.*

Candidates may find the following publications useful for consultation before writing theses:

Scientific Theses

Australia, C.S.I.R.O., *Guide to authors* (C.S.I.R.O., 1953).

Barned, J. R., and Petrie, C. M., *Guide to report writing*, revised edition (C.S.I.R.O., Division of Building Research, 1955).

Conference of Biological Editors, Committee on Form and Style, *Style manual for biological journals* (American Institute of Biological Sciences, 1960).

Emberger, M. R., and Hall, M. R., *Scientific writing* (Harcourt, Brace, 1955).

Royal Society of London, *General notes on the preparation of scientific papers,* 2nd edition (The Society, 1965).

"Suggestions to authors", *Journal of Physiology,* v. 182, 1966: 1-33.

Trelease, S. F., *How to write scientific and technical papers* (Williams and Wilkins, 1958).

Other Theses

Clark, G. K., *Guide for research students working on historical subjects* (Cambridge University Press, 1959).

Crutchley, B., *Preparation of manuscripts and correction of proofs,* 3rd edition (Cambridge University Press, 1965).

Hook, L., and Gaver, M. V., *The research paper,* 3rd edition (Prentice-Hall, 1962).

La Nauze, J. A., *Presentation of historical theses* (Melbourne University Press, 1966).

Parker, W. R., *The MLA style sheet,* revised edition (Modern Language Association of America, 1964).

Seeber, E. D., *A style manual for students, based on the MLA style sheet* (Indiana University Press, 1964).

Turabian, K. L., *A manual for writers of term papers, theses and dissertations,* 3rd edition (University of Chicago Press, 1967).

Wiles, R. M., *Scholarly reporting in the humanities,* 3rd edition (University of Toronto Press, 1961).

2. *Typing.*

(a) A thesis should be typed on quarto paper on one side of the paper only with double spacing, but in exceptional circumstances and with the approval of the Librarian other forms of presentation may be permitted.

(b) Margins should be not less than 1½ inches on the left-hand side and ½ inch on the right-hand side to allow for binding and trimming.

(c) The thesis should incorporate in the following order (i) a title page giving the title of the thesis in full, the names and degrees of the candidate, the name of the organization, institute or laboratory in which the research was carried out, the name of the Department of the University associated with the work and the date when submitted for the degree; (ii) a table of contents; (iii) a summary in not more than 500 words; (iv) a signed statement to the effect that the thesis contains no material which has been accepted for the award of any other degree or diploma in any university and that, to the best of the candidate's knowledge and belief, the thesis contains no material previously published or written by another person, except when due reference is made in the text of the thesis;* (v) the main text; (vi) appendices, if any; (vii) bibliography.

3. *Diagrams and Figures.*

The following are general suggestions for normal practice, but they may be varied in special cases with the approval of the Librarian:

(a) Diagrams and figures, etc., should preferably be drawn or photographed on quarto paper (photographs should not be affixed to quarto paper) and bound in the appropriate place in the text.

(b) All figures should form a right-hand page with the legend either at the bottom or, if necessary, on the page facing the figures.

(c) Tables should be inserted in the appropriate place in the text, except that lengthy or bulky tables should appear as an appendix.

(d) Diagrams, maps, tables, etc., exceeding quarto size, should be folded so as to read as a right-hand page when open.

4. *Binding.*

(a) The thesis must be sewn and bound with stiff covers covered with dark cloth. (A loose-leaf binder of the spring-type or screw-type is not acceptable.)

(b) During binding the edges should be trimmed.

(c) On the spine of the thesis should be given, in gold lettering of suitable size, reading from the bottom to the top, the surname of the candidate and the title of the thesis, abbreviated if necessary.

(d) When published papers are submitted as additional evidence they should be bound in the back of the thesis as an appendix.

5. *Availability.*

(a) Three bound copies of the thesis, including the top typewritten copy (or approved alternative), and two additional loose copies of the summary should be lodged with the Registrar. If the thesis is accepted for the award of the degree the Registrar will distribute two copies, including the top copy, to the University Library, and one copy to the Head of the appropriate University Department.

(b) Subject to the author's consent, one copy of the thesis deposited in the Library will be available for loan.

(c) Subject to the author's consent, the thesis will be available for photo-copying.

(d) The author will be asked after the award of the degree to give his consent to (b) and (c) in writing. Such notice of consent will be inserted by the Registrar in the copies deposited in the Library.

(e)If the author's consent is not given to section (b) the thesis will in any case become available for loan two years after the award of the degree.

* The attention of candidates for the degree of Master of Surgery is drawn to Regulation 5 of that degree.

OF THE DEGREE OF MASTER OF AGRICULTURAL SCIENCE

REGULATIONS

*1. (a) Subject in each case to the applicant's academic qualifications being accepted by the Faculty of Agricultural Science as sufficient, the following persons may become candidates for the degree of Master of Agricultural Science: (i) Bachelors of Agricultural Science; (ii) other graduates.

(b) Subject to the approval of the Council, the Faculty may, in special cases and subject to such conditions (if any) as it may see fit to impose in each case, accept as a candidate for the degree a person who does not hold a degree of a University but has given evidence satisfactory to the Faculty of his fitness to undertake work for the degree.

2. A candidate who holds the Honours degree of Bachelor of Agricultural Science or its equivalent in a University recognised by the University of Adelaide may proceed to the degree of Master of Agricultural Science at the expiration of one year from the date of his admission to the Honours degree of Bachelor: no other candidate shall proceed to the degree before the expiration of two years from the date of his graduation.

3. Subject to conditions to be determined in each case, a graduate of a University recognised by the University of Adelaide may be allowed by the Council to proceed to the degree in compliance with these regulations. Every such candidate must spend at least three consecutive academic terms or twelve calendar months at the University of Adelaide or at an institution approved for the purpose by the University of Adelaide.

4. To qualify for the degree a candidate shall submit a thesis upon an approved subject and shall adduce sufficient evidence that the thesis is his own work. The thesis shall give the results of original research or of an investigation on which the candidate has been engaged. A candidate may also submit other contributions in Agricultural Science in support of his candidature.

5. Unless the candidate has obtained the Honours Degree of Bachelor of Agricultural Science, he shall, before submitting his thesis as provided for in Regulation 4, pass such qualifying examination as the Faculty may in the circumstances deem proper.

§6. Every candidate shall give at least three terms' notice of his intended candidature, and shall indicate therewith in general terms the subject of the research work or investigation on which he proposes to submit a thesis. The Faculty of Agricultural Science, if it approve the subject of his research, may appoint a supervisor to guide the candidate in his work. The candidate shall submit his thesis not earlier than *three* terms and, except by special permission of the Faculty, not later than *nine* terms after approval by the Faculty of the subject of his research.

* Amended 16th March, 1961, and 4th October, 1962.
§ Amended 4th October, 1962.

7. The Faculty shall appoint a Board of Examiners to report upon the thesis and any supporting papers that the candidate may submit. The Board of Examiners may require any candidate to pass an examination in the branch of science to which his original research or investigation is cognate.

†8. On completion of his work the candidate shall lodge with the Registrar three copies of his thesis prepared in accordance with directions given to candidates from time to time.*

9. A candidate who complies with the foregoing conditions and satisfies the Board of Examiners shall, on the recommendation of the Faculty of Agricultural Science, be admitted to the degree of Master of Agricultural Science.

‡10. The fees to be paid by candidates shall be prescribed from time to time by the Council. The schedule of fees so prescribed shall be published in the University Calendar.

‡ Allowed 18th October, 1956. † Allowed 16th March, 1961.
Allowed 14th December, 1960.
* These directions are published on page 513.

Schedule of Fees prescribed by the Council under Regulation 10

A. On approval of the subject of the thesis - - -	$12
For full-time work in the University - - -	$180
For part-time work in the University - - -	$60
B. Annual Registration Fee:	
For external work. - - - - - -	$36
C. On submission of the thesis for examination or re-examination, or on entry for any examination required	$36
D. On admission to the degree - - - - -	$36

OF THE DEGREE OF MASTER OF APPLIED SCIENCE

REGULATIONS

1. The following persons may become candidates for the degree of Master of Applied Science: (a) Bachelors of Applied Science, (b) Bachelors of Engineering, (c) Bachelors of Science, and (d) other graduates whose academic qualifications are accepted by the Faculty of Engineering as sufficient:

Provided that, subject to the approval of the Council, the Faculty of Engineering may, in special cases and subject to such conditions (if any) as it may see fit to impose in each case, accept as a candidate for the degree a person who does not hold a degree of a University, but has given evidence satisfactory to the Faculty of his fitness to undertake work for the degree.

2. Unless the candidate has obtained the Honours degree of Bachelor of Applied Science or of Engineering or of Science, he shall, before submitting his thesis as provided for in Regulation 5, pass such qualifying examination as the Faculty of Engineering may in the circumstances deem proper.

3. Subject to conditions to be determined in each case a graduate of a university recognised by the University of Adelaide, whose degree is accepted by the Faculty of Engineering as equivalent to one of the qualifications required in Regulation 1, may be allowed by the Council to proceed to the degree in compliance with these Regulations. Every such candidate must spend at least three consecutive academic terms or twelve calendar months at the University of Adelaide, or at an institution approved for the purpose by the University of Adelaide.

4. A candidate who holds the Honours degree of Bachelor of Applied Science or Bachelor of Engineering or its equivalent in a University recognised by the University of Adelaide may proceed to the degree of Master of Applied Science at the expiration of one year from the date of his admission to the Honours degree of Bachelor; no other candidate shall proceed to the degree before the expiration of two years from the date of his graduation.

5. To qualify for the degree a candidate shall submit a thesis upon an approved subject and shall adduce sufficient evidence that the thesis is his own work. The thesis shall give the results of original research or of an investigation on which the candidate has been engaged. A candidate may also submit other contributions to science in support of his candidature.

6. Every candidate shall give at least three terms' notice of his intended candidature, and shall indicate therewith in general terms the subject of the research work or investigation on which he proposes to submit a thesis. The Faculty of Engineering, if it approve the subject of his research, may appoint a supervisor to guide the candidate in his work. The candidate shall submit his thesis not earlier than three terms and, except by special permission of the Faculty, not later than nine terms after approval by the Faculty of the subject of his research.

7. The Faculty shall appoint a Board of Examiners to report upon the thesis and any supporting papers that the candidate may submit. The Board of Examiners may require any candidate to pass an examination in the branch of science to which his original research or investigation is cognate.

8. A candidate for the degree of Doctor of Philosophy or Doctor of Science whose work is considered by the Faculty, after report by the examiners appointed to adjudicate upon it, not to be of sufficient merit to qualify for the degree of Doctor but of sufficient merit for the degree of Master may be admitted to the degree of Master provided that he is qualified to become a candidate for the degree.

9. A candidate shall lodge with the Registrar three copies of his thesis prepared in accordance with directions given to candidates from time to time.*

10. A candidate who complies with the foregoing conditions and satisfies the Board of Examiners shall on the recommendation of the Faculty of Engineering be admitted to the degree of Master of Applied Science.

11. The fees to be paid by candidates shall be prescribed from time to time by the Council. The schedule of fees so prescribed shall be published in the University Calendar.

Allowed 4th October, 1962.

* These directions are published on page 513.

Schedule of Fees prescribed by the Council under Regulation 11

A. On approval of the subject of the thesis - - -	$12
B. Annual Registration Fee:	
For full-time work in the University - - -	$180
For part-time work in the University - - -	$60
For external work - - - - - -	$36
C. On submission of the thesis for examination or re-examination, or on entry for any examination required	$36
D. On admission to the degree - - - - -	$36

OF THE DEGREE OF MASTER OF ARCHITECTURE

REGULATIONS

1. There shall be a degree of Master of Architecture.

2. A candidate for the degree shall either:
   (a) have been admitted to the degree of Bachelor of Architecture in the University of Adelaide; or
   (b) have been admitted to another degree in the University of Adelaide or to a degree in another university recognised by the University of Adelaide, the qualifications of which degree are considered by the Faculty of Architecture and Town Planning to be equivalent for the purpose to those of the degree of Bachelor of Architecture.

3. To qualify for the degree a candidate shall prepare a thesis, embodying the results of original research or investigation made by him into an architectural topic which has been approved in advance by the Faculty, which he has prepared under the guidance of and in regular consultation with a supervisor or supervisors appointed by the Faculty.

4. Before approving the topic of his proposed research or investigation, the Faculty may require a candidate to pursue for not more than one calendar year under the supervision of a supervisor or supervisors appointed by the Faculty, and pass examinations in, advanced courses related to his field of study.

5. Unless the Faculty approve an extension of time in a particular case, a candidate shall submit the thesis not earlier than one calendar year and not later than three calendar years from the date of approval of the topic.

6. If in the opinion of the Faculty a candidate for the degree is not making satisfactory progress, the Faculty may, with the consent of the Council, withdraw its approval of his candidature, and the candidate shall cease to be enrolled for the degree.

*7. A candidate shall lodge with the Registrar three copies of his thesis, prepared in accordance with directions given to candidates from time to time.

8. The Faculty shall nominate examiners of the thesis, of whom at least one shall be external. The examiners may recommend that the thesis:
   (a) be accepted; or
   (b) be accepted subject to the candidate passing an examination in the field of study immediately relevant to the subject of his thesis; or
   (c) be returned to the candidate for revision and re-submission (within such period of time as the Faculty may allow); or
   (d) be rejected.

* These directions are published on page 513.

9. A candidate for the degree of Doctor of Philosophy whose work is considered by the Faculty, after report by the examiners appointed to adjudicate on it, not to be of sufficient merit to qualify him for that degree, but of sufficient merit to qualify him for the degree of Master of Architecture, may be admitted to the degree of Master provided that he is otherwise qualified to become a candidate for the degree.

10. A candidate who complies with the foregoing conditions and satisfies the examiners may be admitted to the degree of Master of Architecture.

11. The fees to be paid by candidates shall be prescribed from time to time by the Council. The schedule of fees so prescribed shall be published in the University Calendar.

Allowed 21st December, 1967.

Schedule of Fees Prescribed by the Council under Regulation 11.

A. On approval of the subject of the thesis - - -	$12
B. Annual Registration Fee:	
For full-time work in the University - - -	$180
For part-time work in the University - - -	$60
For external work - - - - - -	$36
C. On submission of the thesis for examination or re-examination, or on entry for any examination required	$36
D. On admission to the degree - - - - -	$36

OF THE DEGREE OF MASTER OF ARTS

REGULATIONS

1. (a) A Bachelor of Arts may proceed to the degree of Master of Arts by complying with these regulations, but may not be admitted to the degree until the expiration of two academic years from the date of his admission to the Ordinary degree or one year from the date of his admission to the Honours degree of Bachelor of Arts.

(b) Subject to the approval of the Council, the Faculty may accept as a candidate for the degree, on such conditions (if any) as it may impose in each case, a person who (i) holds the degree of Bachelor of Arts or its equivalent in a university recognised for the purpose by the University of Adelaide, and (ii) satisfies the requirements of Regulation 2.

(c) Subject to the approval of the Council, the Faculty may, in special cases and subject to such canditions (if any) as it may impose in each case, accept as a candidate for the degree a person who does not hold a degree of a University, but has given evidence satisfactory to the Faculty for his fitness to undertake work for the degree.

2. A candidate for the degree shall first satisfy the Faculty of his ability to proceed to the degree in the subject of study he selects. To do so he must:

(a) have obtained the Honours degree of Bachelor of Arts in a school to which his subject of study relates; or

(b) have passed in all the courses for the Ordinary degree that are compulsory for the Honours degree of Bachelor of Arts, and in addition an examination of Honours standard, in a school or schools to which his subject of study relates; or

(c) submit other evidence that satisfies the Faculty that his case deserves special approval.

3. Every candidate shall either:

(a) present a satisfactory thesis on a subject approved by the Faculty of Arts and (if required) adduce sufficient evidence that the thesis is his own work; provided that in Classics a candidate shall present himself for an examination in addition to presenting a thesis; or

(b) satisfy examiners, by means approved by the Faculty in each case, that he has completed a course of advanced study in work selected from two departments within the Faculty and approved by the Faculty.

A candidate who wishes to proceed to the degree in a course of study selected from two departments shall, after consultation with the Heads of the Departments concerned, apply in writing to the Academic Registrar for permission so to proceed and shall state in his application the course which he wishes to undertake.

4. (a) On completion of his work the candidate shall lodge with the Registrar three copies of his thesis prepared in accordance with directions given to candidates from time to time.*

* These directions are published on page 514.

(b) Unless the Faculty expressly approve an extension of time in a particular case the thesis shall be submitted within nine terms, but not earlier than three terms, from the date of approval of the candidate's subject by the Faculty.

(c) On submission of the thesis, the Faculty shall nominate examiners.

(d) The examiners may require a candidate to take an examination, written or oral or both, in the field of study immediately relevant to the subject of his thesis.

5. The fees to be paid by candidates shall be prescribed from time to time by the Council, and the schedule of fees so prescribed shall be published in the University Calendar.

6. A candidate who fulfils the requirements of these regulations and satisfies the examiners under Regulation 4 shall on the recommendation of the Faculty be admitted to the degree of Master of Arts.

Allowed 12th December, 1963.

Notes (not forming part of the Regulations):

1. The attention of a candidate for the degree under the regulations superseded by these regulations is drawn to Clause 11 of Chapter XXV of the Statutes, under which he must complete his qualifications for the degree under the superseded regulations within three years of the repeal of those regulations.
2. For the purpose of section (b) of Regulation 3 the Faculty is willing to consider applications for permission to take combined courses; such applications shall be made in the first instance to the Heads of the Departments concerned.

Schedule of Fees prescribed by the Council under Regulation 5

A. Under Regulation 2(b) and (c):
   (i) For internal study for all work required:
      By full-time study for one year - - - $216
      By part-time study extending over at least two years, annually - - - - - - $108
   (ii) For external study of all work required - - - $108

B. Under Regulation 3:
   On approval of the subject of the thesis or of the course of study - - - - - - - - - - $12

C. Under Regulation 3:
   Annual Registration Fee:
      For full-time work in the University - - - - $180
      For part-time work in the University - - - - $60
      For external work - - - - - - - - $36

D. Under Regulation 3:
   On submission of the thesis for examination or re-examination - - - - - - - - - - $36
   Provided that for a candidate in Classics the fee of $36 shall include also the fee for the examination required.

E. For admission to the degree - - - - - - $36

OF THE DEGREE OF MASTER OF BUSINESS MANAGEMENT

REGULATIONS

1. There shall be a degree of Master of Business Management.

†2. A candidate for admission to the course of study for the degree shall:

(a) be a graduate of the University of Adelaide (or of another university recognised for the purpose by the University of Adelaide);

(b) have had at least two years' experience in business, public service or other field of employment approved by the Faculty of Economics before commencing Part II of the course;

(c) obtain the approval of the Faculty of Economics for his candidature.

3. The maximum number of candidates which may be enrolled in any course for the degree shall be determined from time to time by the Council on the recommendation of the Faculty of Economics; and courses will not be provided unless a sufficient number of students has enrolled.

‡4. To qualify for the degree a candidate shall:

(a) attend classes and pass at the first attempt examinations in courses as prescribed in the schedules; and

**(b) subsequently, as prescribed in the schedules, present a satisfactory dissertation of masterate standard on a subject approved by the Faculty of Economics.

5. If in the opinion of the Faculty of Economics a candidate for the degree is not making satisfactory progress the Faculty may with the consent of the Council withdraw its approval of his candidature and the candidate shall cease to be enrolled for the degree.

6. A candidate shall not be permitted to present himself for examination, unless he has regularly attended the prescribed classes and has completed satisfactorily such written and practical work as may be required.

7. The Faculty of Economics shall appoint a Board of Examiners to conduct the examinations required under Regulation 4.

**8. On completion of his work the candidate shall lodge with the Registrar three copies of his dissertation prepared in accordance with directions given to candidates from time to time.*

‡9. Schedules defining the courses of study for the degree, the examinations to be passed and the fees to be paid by candidates shall be drawn up from time to time by the Faculty of Economics and approved by the Council.

† Allowed 12th December, 1963; amended 9th January, 1969.

‡ Amended 12th December, 1963. ** Amended 22nd December, 1966.

* These directions are published on page 513.

10. A candidate who complies with the foregoing conditions and satisfies the examiners shall, on the recommendation of the Faculty of Economics, be admitted to the degree.

11. These regulations shall come into force at a date to be determined by the Council.††

†† The Council authorised the Regulations to come into force on January 1, 1962.
Allowed 16th March, 1961.

Schedules made by the Council under Regulations 4 and 9

NOTE: To find the syllabuses of the subjects in these Schedules, see Table of Subjects on page 992.

SCHEDULE I: COURSES OF STUDY

1. The courses of study for the degree of M.B.M. shall comprise:

(a) Course-work subjects as follows:

Part I:
Economic I *or* Economics (Engineering);
Mathematics (Economics) *or* Mathematics I;
Economic Statistics IA *or* Mathematical Statistics II;
Accounting (Business Management);
Industrial Sociology.

Part II:
Economic Institutions and Policy;*
Organisation Theory and Behaviour;
Economic and Accounting Analysis;
Business Statistics;
Decision Making.

(b) A dissertation, satisfactory to the examiners, on a subject approved by the Faculty of Economics.

2. A candidate shall complete the prescribed course-work subjects and pass examinations in them, as follows:

Part I: At such standard as the Faculty may prescribe;

Part II: At a standard, over the whole of Part II, at least equivalent to that required for Second Class Honours:

Provided that the Faculty may grant any candidate such status in any subject as it may determine.

3. Subject to the following exceptions a candidate shall complete the subjects in Part I before proceeding with any of the subjects in Part II:

(a) The Head of the Department of Commerce may permit a candidate to proceed with a Part II subject before he has completed all the subjects of Part I;

* It is the intention of the Faculty that a graduate who holds the Honours degree of Bachelor of Economics shall be given status in this subject.

(b) the Faculty of Economics may allow a candidate who has completed all but one of the subjects in Part I to proceed to Part II and to take the Part I subject concurrently with his Part II studies.

4. The Faculty of Economics may review the academic performance of any candidate on his completion of Part I, and a candidate whose performance in Part I is deemed by the Faculty to be unsatisfactory shall not be permitted to proceed to Part II.

5. Except with the specific advance approval of the Faculty in each case, a candidate for the degree by part-time study shall complete the subjects of Part II in two years; provided that in the case of a candidate proceeding under one of the provisos in Clause 3 the year in which he is completing Part I shall not be counted. If the Faculty permit a longer time it may impose such conditions as it sees fit.

6. A candidate's programme of study must be approved by the Head of the Department of Commerce (or his nominee) at enrolment each year.

7. Each candidate will be required to undertake during University vacations such studies as may be prescribed.

8. A candidate shall submit for approval by the Faculty the subject on which he proposes to write his dissertation; and he shall submit the dissertation within two calendar years, but not earlier than six months, from the date of approval of the subject by the Faculty or from the date of passing the examinations in the course-work subjects, whichever is the later.

SCHEDULE II: FEES

A. Part I:	
(a) For Accounting (Business Management), Mathematical Statistics II (each)	$126
(b) For subjects included in the Schedules for the degree of Bachelor of Economics: the fees prescribed in that Schedule.	
(c) For Economics (Engineering), Mathematics I (each)	$96
(d) For Investment Planning and Business Finance	$54
B. Part II: For each Seminar course	$72

The fees under Clauses A and B are subject to the proviso that the total fee for a standard academic year's work in any one year shall not exceed $366.

C. On approval of the subject of the dissertation	$12
D. Annual Registration Fee for dissertation work:	
For full-time work in the University	$180
For part-time work in the University	$60
For external work	$36
E. On submission of the dissertation for examination or re-examination	$36
F. For admission to the degree	$36

OF THE DEGREE OF MASTER OF DENTAL SURGERY

REGULATIONS

1. (a) The following persons may apply to be accepted as candidates for the degree of Master of Dental Surgery under these Regulations:

i. A person who has qualified for the degree of Bachelor of Dental Surgery in the University of Adelaide; or

ii. A graduate in Dentistry of another University, whose degree has a course-content accepted by the Faculty as equivalent to that of the degree of Bachelor of Dental Surgery in the University of Adelaide.

(b) Subject to the approval of the Council the Faculty may in special cases and subject to such conditions (if any) as it may see fit to impose in each case, accept as a candidate for the degree a person who does not hold a degree of a University, provided that he holds a dental qualification for which he has followed a course of study acceptable to the Faculty and has given evidence of his fitness to undertake work for the degree.

2. (a) A candidate shall not be admitted to the degree before the expiration of nine academic terms from the date of his qualifying for the Ordinary degree of Bachelor of Dental Surgery, or six academic terms from the date of his qualifying for the Honours degree.

(b) In the case of a graduate in Dentistry of another University, or of a person accepted under Regulation 1(b), the appropriate number of terms shall be calculated from the date of his admission to the qualification accepted by the Faculty.

3. Unless an applicant has obtained the Honours degree of Bachelor of Dental Surgery or has a degree accepted by the Faculty of Dentistry as equivalent to the Honours degree he shall, before being permitted to proceed to the degree under Regulation 6 or Regulation 7, pass a qualifying examination of a standard equivalent to the Honours degree.

4. A candidate may qualify for the degree either (a) by examination, under Regulation 6; or (b) by thesis, or by thesis and examination, under Regulation 7.

5. (a) Every applicant who wishes to be accepted as a candidate for the degree shall apply to the Registrar in such form, and by such date, if any, as the Faculty shall prescribe. He shall submit with his application

i. details of his qualifications to be a candidate;

ii. a statement indicating whether he proposes to proceed by examination under Regulation 6 or by thesis under Regulation 7;

iii. *either*: if he proposes to proceed under Regulation 6, the section of dentistry selected by him;
or: if under Regulation 7, the subject of his proposed research or investigation and, if applicable, the section of dentistry selected by him.

(b) If the applicant is required, under Regulation 3, to pass a qualifying examination the Faculty shall approve the scope of that examination, and the means by which it shall be conducted; and the applicant shall be informed accordingly.

(c) If the Faculty of Dentistry is satisfied that the applicant

i. is eligible, under Regulations 1 and 3, to be a candidate; and

ii. is well equipped to proceed to the degree in the manner which he proposes,

it may accept him as a candidate. It may also approve the section of dentistry in which he elects to be examined under Regulation 6 or his subject under Regulation 7 as the case may be.

6. (a) To qualify for the degree under this Regulation a candidate shall pass at one examination, not earlier than three terms and, except by special permission of the Faculty, not later than nine terms after approval by the Faculty of the section of dentistry in which he is to be examined, in

i. the section of dentistry selected by him and approved by the Faculty; and

ii. such aspects of related subjects as the Faculty shall approve.

(b) The scope of the course of study in preparation for the examination shall be determined by the Head of the Department of Dental Science.

(c) The examination shall be held, if required, in November of each year. It shall be conducted by means of written papers, *viva voce* examinations, and practical and clinical examinations, or by any one or more of these methods as the Faculty may approve.

(d) A candidate shall enter for the examination in the manner, and by the date, prescribed by the Council.

(e) As part of the examination in the approved section of dentistry a candidate shall submit three typed copies of a report on any practical work carried out by him. These copies shall be submitted before the candidate is admitted to the remaining sections of the examination.

7. (a) To qualify for the degree under this Regulation a candidate shall submit a thesis on an approved subject and shall produce sufficient evidence that the thesis is his own work. The thesis shall give the results of original research or of an investigation on which the candidate has been engaged.

(b) Every candidate or intending candidate shall give to the Faculty, in writing, at least three terms' notice of his intention to submit a thesis, and shall indicate therein in general terms the subject of his research or investigation.

(c) The Faculty, if it approve the subject, shall appoint a supervisor to guide the candidate in his work.

(d) A candidate shall submit his thesis not earlier than three terms and, except by special permission of the Faculty, not later than nine terms after approval by the Faculty, of the subject of his research or investigation.

(e) On completion of his research or investigation the candidate shall lodge with the Registrar three copies of his thesis prepared in

accordance with the directions given to candidates from time to time.* The Faculty of Dentistry shall nominate examiners of the thesis, of whom at least one shall be an external examiner.

(f) A candidate proceeding to the degree by thesis may apply for permission to submit the thesis in partial fulfilment of the requirements of the degree and in addition to undergo an examination in the subject of or in subjects cognate to his thesis, or an examination in a section of dentistry selected by him and approved by the Faculty. Such examination shall be conducted, by examiners appointed by the Faculty, by such means as the Faculty may approve.

8. For each candidate the Faculty shall appoint an Examining Committee which shall

(a) if the candidate is proceeding under Regulation 6: conduct the examinations prescribed in that Regulation;

(b) if the candidate is proceeding under Regulation 7: consider the reports of the examiners of the thesis, and the results of the examination, if any;

(c) submit to the Faculty a report with recommendations.

9. After considerating the report and recommendations of the Examining Committee, the Faculty may recommend that the candidate

(a) be awarded the degree; or

(b) be not awarded the degree, but be allowed to re-submit his thesis (within such period as the Faculty may allow); or

(c) be not awarded the degree.

10. The fees to be paid by candidates shall be prescribed from time to time by the Council; and a schedule of fees so prescribed shall be published in the University Calendar.

11. All Regulations hitherto in force concerning the degree of Master of Dental Surgery are hereby repealed. A candidate enrolled for the degree under the Regulations hereby repealed may *either*

(a) complete the requirements of the degree under those Regulations, provided that he do so by December, 31, 1969; *or*

(b) be granted such status under these Regulations as the Council on the recommendation of the Faculty of Dentistry shall decide.

Allowed 22nd December, 1966.

* These directions are published on page 513.

Footnote to Regulation 3 (not forming part of the Regulation):

It is the intention of the Faculty of Dentistry that the Honours degree of Bachelor of Dental Surgery should be the normal avenue of entry to candidature for the degree of Master of Dental Surgery.

It should be noted that the scope and standard of the qualifying examination will be equivalent to that for the Honours degree of Bachelor of Dental Surgery, which requires one year of full-time work.

Footnote to Regulation 6 (not forming part of the Regulation):

Candidates are strongly advised to seek employment under conditions approved by the Faculty.

Schedule of Fees prescribed by the Council under Regulation 11

A. On approval of the subject of the thesis - - -	$12
B. Annual Registration Fee:	
For full-time work in the University - - -	$180
For part-time work in the University - - -	$60
For external work - - - - - - - -	$36
C. On submission of the thesis for examination or re-examination, or on entry for any examination required - - - - - - - - - -	$36
D. On admission to the degree - - - - -	$36

OF THE DEGREE OF MASTER OF ECONOMICS

REGULATIONS

1. (a) The Faculty of Economics may accept as a candidate for the degree any graduate who:

(i) has obtained the Honours degree of Bachelor of Economics of the University of Adelaide with First or Second-Class Honours; or

(ii) has obtained an Honours degree of another University, which degree the Faculty regards as being equivalent to a First or Second-Class Honours degree in Economics of the University of Adelaide.

(b) The Faculty of Economics may accept provisionally as candidates for the degree other graduates of the University of Adelaide or of other Universities whose qualifications satisfy the Faculty that they are likely to be able satisfactorily to undertake the work for the degree.

(c) A provisionally-accepted candidate shall, within such time as the Faculty shall in each case prescribe or allow, undertake an approved course of advanced study and pass an examination at First or Second-Class Honours standard before his acceptance as a candidate will be confirmed. Failure to pass the qualifying examination at the required standard at the first attempt shall, unless the Faculty decides otherwise, cancel the provisional acceptance.

(d) A candidate shall not be admitted to the degree before the expiration of one year from his admission to the Honours degree specified in section (a) (i) above, or to the degree which the Faculty accepts as equivalent thereto under section (a) (ii) above, or before the expiration of two academic years from his admission to the degree accepted by the Faculty under section (b) above.

2. A candidate may qualify for the degree by *either*:

(a) satisfactorily completing an approved programme of research work on an approved topic and submitting a satisfactory thesis thereon; *or*

(b) (i) passing an examination set after completion of an approved course of postgraduate study; and

(ii) satisfactorily completing an approved programme of research work on an approved topic and submitting a satisfactory dissertation thereon.

3. (a) A graduate who wishes to become a candidate for the degree shall apply to the Registrar indicating in general terms the subject of any research work to be undertaken, and where applicable, his proposed course of study for examination.

(b) If it accepts him, provisionally or otherwise, as a candidate for the degree, the Faculty may appoint a supervisor to guide him in his work.

4. A candidate's progress shall be reviewed by the Faculty at the end of each academic year. If, in the opinion of the Faculty of Economics, a candidate is not making satisfactory progress the Faculty may, with the consent of the Council, withdraw its approval of his candidature and the candidate shall cease to be enrolled for the degree.

5. On completion of his work, the candidate shall lodge with the Registrar three copies of his thesis or dissertation prepared in accordance with directions given to candidates from time to time.*

6. The Faculty shall appoint examiners to report upon the thesis or dissertation. The examiners shall report to the Faculty and may recommend (i) that the degree be awarded; or (ii) that the thesis or dissertation be returned to the candidate for revision and resubmission; or (iii) that the degree be not awarded.

7. A candidate who complies with all the foregoing conditions and satisfies the examiners of his thesis or dissertation may, on the recommendation of the Faculty of Economics, be admitted to the degree.

8. The fees to be paid by candidates shall be prescribed from time to time by the Council. The schedule of fees so prescribed shall be published in the University Calendar.

* These directions are published on page 513.
Allowed 22nd December, 1966.

Schedule of Fees prescribed by the Council under Regulation 8

A. Under Regulations I(c) and 2(b)(i):

(i) For internal study for all work required:	
By full-time study for one year	$216
By part-time study extending over at least two years, annually	$108
(ii) For external study of all work required	$108
B. On approval of the subject of the thesis or dissertation	$12
C. Annual Registration Fee for thesis or dissertation work:	
For full-time work in the University	$180
For part-time work in the University	$60
For external work	$36
D. On submission of the thesis or dissertation for examination or re-examination	$36
E. For admission to the degree	$36

OF THE DEGREE OF MASTER OF EDUCATION

REGULATIONS

1. There shall be a degree of Master of Education.

§2. A candidate for admission to the course for the degree shall:

(a) have been admitted to a degree of the University or to a degree of another University accepted for the purpose by the University; and

(b) hold the Diploma in Education of the University or a qualification accepted by the University as equivalent; and

(c) have had at least three years' experience in teaching or in some other educational work approved by the University, unless the Faculty of Arts, on the recommendation of the Department of Education, allows a curtailment of one or two years for a candidate who has shown exceptional promise in his course for the Diploma in Education.

†3. To qualify for the degree a candidate shall:

(a) satisfactorily complete a course of study extending over at least one year of full-time study or at least two years of part-time study; and

(b) subsequently either present a satisfactory thesis on a subject approved by the Faculty of Arts, or present a satisfactory dissertation on a subject approved by the Faculty of Arts and also be examined on a second subject approved by the Faculty of Arts.

4. Schedules defining the course of study and prescribing the fees to be paid by candidates shall be drawn up from time to time by the Faculty of Arts and shall be approved by the Council. Such schedules shall take effect as from the date of approval by the Council or such other date as the Council shall determine and shall be published in the next University Calendar which is issued after that approval has been given.

5. A candidate for the degree by part-time study shall be examined in any year in not more than half the subjects of the course of study.

†6. A candidate shall, within six months from the date of satisfactorily completing the course of study, submit for approval by the Faculty of Arts the subject of his thesis or the subject of his dissertation and the subject on which he desires to be examined. The Faculty shall appoint a supervisor to guide the candidate in his work.

†7. A candidate shall present his thesis, or submit his dissertation and take the examination on his approved subject, within four calendar years, but not earlier than one calendar year, from the date of the approval of his subject or subjects by the Faculty.

8. On completion of his work the candidate shall lodge with the Registrar three copies of the thesis or of the dissertation prepared in accordance with directions given to candidates from time to time.*

†9. (a) The Faculty of Arts shall appoint examiners of the thesis or of the dissertation and the approved subject, of whom at least one shall be an external examiner.

Allowed 16th March, 1961. † Amended 22nd December, 1966.
§ Amended 9th January, 1969.

* These directions are published on page 513.

(b) At the discretion of the examiners a candidate may be examined orally on his thesis or on his dissertation and may also be required to pass a written examination connected with the subject of his thesis or of his dissertation.

10. A candidate who desires that examinations which he has passed in the University or in another University should be counted *pro tanto* for the degree of Master of Education, may on written application be granted such exemption from the requirements of these regulations as the Council shall determine.

11. A candidate who complies with the foregoing conditions and satisfies the examiners shall, on the recommendation of the Faculty of Arts, be admitted to the degree of Master of Education.

Schedules made by the Council under Regulation 4

NOTE: To find the syllabuses of the subjects in these Schedules, see Table of Subjects on page 992.

Schedule I: Courses of Study

A candidate shall, unless exempted therefrom by the Faculty, regularly attend lectures, do such written and tutorial work as may be prescribed, and pass examinations in the following subjects:

Theory of Education II;
Sociology of Education II;
Educational Psychology II;
History of Education II; *or* Comparative Education; *or* History and Sociology of Science.

Schedule II: Fees

A. For attendance (or re-attendance) at lectures and annual examination in each subject prescribed in Schedule I	$51
B. For an annual examination in a subject prescribed in Schedule I with exemption from attendance or re-attendance at lectures	$27
C. For a special examination in a subject prescribed in Schedule I	$18
D. On approval of the subject of the thesis, or the subjects of the dissertation and examination	$12
E. Annual Registration Fee for work on the thesis or for work for the dissertation and examination:	
For full-time work in the University	$180
For part-time work in the University	$60
For external work	$36
F. On submission of the thesis or the dissertation, including entry for the associated examination	$36
G. On submission of the thesis or dissertation for re-examination, or on entry for any further examination required	$36
H. For admission to the degree	$36

OF THE DEGREE OF MASTER OF ENGINEERING

REGULATIONS

1. The following persons may be candidates for the degree of Master of Engineering—

(a) *To proceed under Regulation* 3:

(i) a candidate who has qualified in the University of Adelaide for the Honours degree of Bachelor of Engineering or for the Ordinary degree of Bachelor of Engineering at a standard which the Faculty deems sufficiently high; or

(ii) a candidate who holds in another University a qualification accepted by the Faculty of Engineering as equivalent to the Honours degree of Bachelor of Engineering in the University of Adelaide; or

(iii) a candidate who has qualified for the degree of Bachelor of Engineering in the University of Adelaide and has had at least three years of appropriate practical engineering experience approved by the Faculty.

(b) *To proceed under Regulation* 4:

a candidate who has qualified for the degree of Bachelor of Engineering in the University of Adelaide: provided that a candidate who has qualified for only the Ordinary Degree in the University of Adelaide may not present a thesis relating to research work carried out by him in a department of the University of Adelaide unless he had had three years' post-graduate professional experience before commencing his research in the Department.

2. Subject to the approval of the Council, the Faculty may, in special cases, and subject to such conditions (if any) as it may see fit to impose in each case, accept as a candidate for the degree under Regulation 3 a person who does not hold a degree of a University, but has given evidence satisfactory to the Faculty of his fitness to undertake work for the degree.

3. To qualify for the degree under this Regulation a candidate shall—

(a) after consultation with the Head of the Department in which the work falls, submit in writing for approval by the Faculty a subject of advanced full-time study and research designed to extend over at least one calendar year;

(b) after approval of the subject by the Faculty undertake, within the University of Adelaide and under the direction of a supervisor or supervisors appointed by the Faculty, the course of advanced study and research;

(c) if so required by the Faculty pass an examination on his course of advanced study;

(d) present a thesis embodying the results of his research; and

(e) submit evidence satisfactory to the Faculty that he has had at least two years' appropriate practical engineering experience.

4. To qualify for the degree under this Regulation a candidate shall—

(a) submit in writing for approval by the Faculty of Engineering the subject on which he proposes to present a thesis;

(b) not earlier than three academic terms after approval of the subject by the Faculty present a thesis which may be (i) an original design for some engineering work, or (ii) an account, giving evidence of ability on the part of the candidate to cope successfully with engineering difficulties, of some engineering work for the design or construction of which the candidate has been largely responsible, or (iii) an account of some original enquiry or investigation made by him into some matter connected with engineering;

(c) if so required by the Faculty, adduce evidence to its satisfaction of the originality of, and the degree of his responsibility for, his design or thesis;

(d) if so required by the Faculty pass an examination, written or oral or both, in the field of study immediately relevant to his thesis; and

(e) submit evidence satisfactory to the Faculty that he has had at least three years' practical experience in appropriate engineering work.

5. (a) On completion of his work the candidate shall lodge with the Registrar three copies of his thesis prepared in accordance with directions given to candidates from time to time.†

(b) Unless the Faculty expressly approve an extension of time in a particular case the thesis shall be submitted within twelve academic terms from the date of approval of the candidate's subject by the Faculty.

(c) On submission of the thesis the Faculty shall nominate examiners, who may recommend that the thesis—

(i) be accepted; or

(ii) be sent back to the candidate for revision; or

(iii) be rejected.

6. The fees to be paid by candidates shall be prescribed from time to time by the Council, and the schedule of fees so prescribed shall be published in the University Calendar.

7. A candidate who fulfils the requirements of these regulations and satisfies the examiners under Regulation 5 may on the recommendation of the Faculty be admitted to the degree of Master of Engineering.

Allowed 12th December, 1963

NOTE: A candidate who had been accepted as a candidate for the degree under the Regulations operative prior to the allowance of these Regulations may under Clause 11 of Chapter XXV of the Statutes seek permission, by application in writing to the Academic Registrar, to proceed to the degree under those Regulations. The time limit for such extension is three years from the date of repeal of those Regulations.

† These directions are published on page 513.

Schedule of Fees prescribed by the Council under Regulation 6

A. On approval of the subject of the thesis - - - -	$12
B. Annual Registration Fee:	
For full-time work in the University - - - -	$180
For part-time work in the University - - - - -	$60
For external work - - - - - - - -	$36
C. On submission of the thesis for examination or re-examination, or on entry for any examination required - - -	$36
D. On admission to the degree - - - - - -	$36

OF THE DEGREE OF MASTER OF LAWS

REGULATIONS

1. The Faculty of Law may accept as a candidate for the degree of Master of Laws any person who:

(a) has become entitled to receive the Honours degree of Bachelor of Laws of the University of Adelaide;

(b) has obtained in another University qualifications which in the opinion of the Faculty of Laws are at least equivalent to those of the Honours degree of Bachelor of Laws at the University of Adelaide.

2. (a) The Faculty may accept as a probationary candidate for the degree any other graduate of the University of Adelaide or of another University if his qualifications are such as to satisfy the Faculty that he is likely to be able satisfactorily to undertake work for the degree.

(b) Every person who is accepted as a probationary candidate for the degree shall within such time as the Faculty shall in his case prescribe or allow pass at Honours standard and at the first attempt such examinations formal or informal or both as the Faculty may prescribe: should he fail so to pass such examinations his probationary candidature shall lapse, unless the Faculty under such conditions as it thinks fit determines that it be allowed to continue.

3. To obtain the degree a candidate shall demonstrate in a thesis on a subject approved by the Faculty his ability to carry out independent research, to marshal logically and appropriately, and to analyse and assess, the material produced by that research, and to express clearly and effectively the conclusions to be drawn from that analysis and assessment. He shall on submission of the thesis adduce sufficient evidence that the thesis, which shall be prepared under the guidance of a supervisor or supervisors appointed by the Faculty, is his own work.

4. Unless the faculty in any particular case expressly approve an extension of time the thesis of a full-time candidate for the degree shall be submitted within two calendar years, and the thesis of a part-time or external candidate shall be submitted within four calendar years, from the date of the commencement of his candidature or probationary candidature. No thesis may be submitted earlier than one calendar year from the date of the commencement of candidature.

5. The candidature of every candidate shall commence on the approval by the Faculty of the subject of his research, unless the Faculty in special circumstances determines that it shall commence on some other specified date.

6. On the completion of this work the candidate shall lodge with the Registrar three copies of his thesis prepared in accordance with directions given to candidates from time to time.*

* These directions are published on page 513.

7. The Faculty shall appoint examiners to report on the thesis. The examiners shall report to the Faculty and may recommend (i) that the degree be awarded; or (ii) that the thesis be returned to the candidate for revision and resubmission; or (iii) that the degree be not awarded.

8. If a thesis submitted for the degree of Doctor of Laws or Doctor of Philosophy be considered by the Faculty, after a final report by the examiners appointed to adjudicate upon it, not sufficiently meritorious to qualify the candidate submitting that thesis for the award of the degree the Faculty may if in its opinion the thesis submitted is of a standard sufficient to comply with the relevant requirements for the award of the degree of Master of Laws recommend that the latter degree be awarded.

9. The fees to be paid by candidates shall be prescribed from time to time by the Council. The schedule of fees so prescribed shall be published in the University Calendar.

Allowed 9th January, 1969.

Schedule of Fees prescribed by the Council under Regulation 7

A. On approval of the subject of the thesis - - - -	$12
B. Annual Registration Fee:	
For full-time work in the University - - - -	$180
For part-time work in the University - - - - -	$60
For external work - - - - - - - - -	$36
C. On submission of the thesis for examination or re-examination, or on entry for any examination required - - -	$36
D. On admission to the degree - - - - - -	$36

OF THE DEGREE OF MASTER OF MUSIC

REGULATIONS

1. The Faculty of Music may accept as a candidate for the degree of Master of Music a person who: (i) has qualified in the University of Adelaide for the degree of Bachelor of Music; or (ii) has obtained, in another University or Institution recognised for the purpose, a qualification which is accepted by the Faculty of Music as equivalent to the degree of Bachelor of Music in the University of Adelaide.

2. In special cases the Council, on the recommendation of the Faculty and subject to such conditions (if any) as it may impose in each case, may accept as a candidate for the degree a person who does not hold a degree of any University but has given evidence satisfactory to the Faculty of his fitness to undertake studies for the degree of Master of Music.

3. The course of study for the degree shall comprise two parts as follows:

Part A: Such preliminary study and examinations as may be prescribed in the Schedules of the degree;

Part B: A course of advanced study and/or research extending over not less than one calendar year nor more than two calendar years of full-time study together with such examinations as may be prescribed in the Schedules of the degree. The Faculty may, in special cases, permit a candidate to complete Part B over not less than two calendar years nor more than four calendar years of part-time study. A candidate shall not be permitted to proceed to Part B until he has fulfilled the requirements of Part A.

4. A candidate may be exempted from the whole or such part of Part A as the Faculty may decide if he has:

(a) qualified for the Honours degree of Bachelor of Music; or

(b) qualified for the Ordinary degree of Bachelor of Music and has passed in (i) all the Ordinary degree subjects that are compulsory for the Honours degree in the field to which his subject of study relates; and (ii) an examination of Honours standard approved by the Faculty; or

(c) obtained a qualification which is accepted by the Faculty as equivalent to the Honours degree of Bachelor of Music in the University of Adelaide.

A candidate who has obtained qualifications which fully or partly satisfy the requirements specified in (a), (b) or (c) above may be exempted from the whole or such part of Part A as the Faculty may decide, and shall thereafter fulfil the requirements of Part B, as prescribed in the Schedules.

5. A candidate who is required to undertake any work in Part A shall be registered as a candidate in that Part for at least three terms before presenting himself for the examination prescribed in that Part.

6. A candidate in Part B shall satisfy the examiners in Composition, or in Musicology, or in Performance, as prescribed in the Schedules and shall not present himself for examination until the expiry of three terms from his acceptance as a candidate in that Part.

7. If in the opinion of the Faculty of Music a candidate is not making satisfactory progress the Faculty may, with the consent of the Council, withdraw its approval of his candidature and the candidate shall cease to be enrolled for the degree.

8. A candidate shall as early as possible and in any event not later than the last day of the first term in his final year, submit for approval by the Faculty:

(i) an adequate statement of the nature of the composition or compositions; or

(ii) the subject of a thesis; or

(iii) two recital programmes and the subject of a dissertation which he proposes to submit for examination.

9. A candidate shall, not later than the end of his final term, lodge with the Registrar three copies of his composition or compositions, or dissertation, or thesis, as the case may be, prepared in accordance with directions given to candidates from time to time.*

10. (a) Not less than two examiners, at least one of whom shall be an external examiner, shall be appointed by, and shall report to, the Faculty of Music.

(b) The examiners may require a candidate to undergo further examination in the field of study immediately relevant to his subject.

(c) The examiners of a thesis or of a dissertation or of a composition or compositions may recommend that the work under examination:

(i) be accepted (subject, if they so recommend, to minor amendments being made); or

(ii) be not accepted but returned to the candidate for revision and re-submission; or

(iii) be rejected.

11. The fees to be paid by candidates shall be prescribed from time to time by the Council and the Schedule of Fees so prescribed shall be published in the University Calendar.

12. A candidate who fulfils the requirements of these regulations and satisfies the examiners in the field to which his subject relates shall on the recommendation of the Faculty of Music be admitted to the degree.

Allowed 21st December, 1967.

* These directions are published on page 513.

SCHEDULES

SCHEDULE I

Part A: Preliminary study and examinations: as prescribed in the Schedules for the Honours degree of Bachelor of Music.

SCHEDULE II

Part B: Final Examination

(a) *Composition*

(i) A composition or compositions, the nature of which has been approved by the Faculty under Regulation 8.

(ii) Structural and harmonic analysis of an approved work.

(iii) Special papers: History of Music Theory (two three-hour papers).

(iv) *Viva voce* examination.

(b) *Musicology*

(i) A thesis on a subject approved by the Faculty under Regulation 8.

(ii) Editing or transcription of a work or works, published or unpublished.

(iii) Special papers relating to the candidate's field of study prescribed by the Faculty of Music (two three-hour papers).

(iv) *Viva voce* examination.

(c) *Performance*

(i) A dissertation on a subject approved by the Faculty under Regulation 8.

(ii) Special papers: History either of vocal or of instrumental music relating to the candidate's field of study (two three-hour papers).

(iii) Two public recitals to be given at an interval of not more than one week, the programmes approved by the Faculty under Regulation 8.

(iv) *Viva voce* examination.

SCHEDULE III

Schedule of fees prescribed by the Council under Regulation 11.

A. *For work in Part A.*

1. For the Honours work and examinations as prescribed in the Schedules for the Honours degree of Bachelor of Music.
2. For work prescribed under Regulation 4(b):
   - By full-time study for one year - - - - - $216
   - By part-time study extending over at least two years, annually - - - - - - - - - $108
   - By external study of all work required - - - $108

B. *For work in Part B.*

1. On acceptance as a candidate in Part B - - - $12
2. Annual Registration Fee:
   - For full-time work in the University - - - - $180
   - For part-time work in the University - - - - $108
3. On entry for examination in Part B - - - - $36

C. *On admission to the degree* - - - - - - $36

OF THE DEGREE OF MASTER OF SCIENCE

REGULATIONS

†1. The following persons may become candidates for the degree of Master of Science: (a) Bachelors of Science, (b) Bachelors of Agricultural Science, and (c) other graduates whose academic qualifications are accepted by the Faculty of Science as sufficient:

Provided that, subject to the approval of the Council, the Faculty may, in special cases and subject to such conditions (if any) as it may see fit to impose in each case, accept as a candidate for the degree a person who does not hold a degree of a University, but has given evidence satisfactory to the Faculty of his fitness to undertake work for the degree.

*1A. Unless the candidate has obtained the Honours Degree of Bachelor of Science or of Agricultural Science he shall, before submitting his thesis as provided for in Regulation 4, pass such qualifying examination as the Faculty may in the circumstances deem proper.

2. Subject to conditions to be determined in each case a graduate of a university recognised by the University of Adelaide, whose degree is accepted by the Faculty of Science as equivalent to one of the qualifications required in regulation 1, may be allowed by the Council to proceed to the degree in compliance with these regulations. Every such candidate must spend at least three consecutive academic terms or twelve calendar months at the University of Adelaide or at an institution approved for the purpose by the University of Adelaide.

3. A candidate who holds the Honours degree of Bachelor of Science or Bachelor of Agricultural Science or its equivalent in a University recognised by the University of Adelaide may proceed to the degree of Master of Science at the expiration of one year from the date of his admission to the Honours degree of Bachelor; no other candidate shall proceed to the degree before the expiration of two years from the date of his graduation.

††4. To qualify for the degree a candidate shall submit a thesis upon an approved subject and shall adduce sufficient evidence that the thesis is his own work. The thesis shall give the results of original research or of an investigation on which the candidate has been engaged. A candidate may also submit other contributions to science in support of his candidature.

*5. Every candidate shall give at least three terms' notice of his intended candidature, and shall indicate therewith in general terms the subject of the research work or investigation on which he proposes to submit a thesis. The Faculty of Science, if it approve the subject of his research, may appoint a supervisor to guide the candidate in his work. The candidate shall submit his thesis not earlier than three terms and, except by special permission of the Faculty, not later than nine terms after approval by the Faculty of the subject of his research.

* Allowed 14th December, 1944; amended 15th January, 1959 and 12th December, 1963.

† Amended 4th April, 1963. †† Amended 12th December, 1963.

‡6. The Faculty shall appoint a Board of Examiners to report upon the thesis and any supporting papers that the candidate may submit. The Board of Examiners may require any candidate to pass an examination in the branch of science to which his original research or investigation is cognate.

†7. A candidate for the degree of Doctor of Philosophy or Doctor of Science whose work is considered by the Faculty, after report by the examiners appointed to adjudicate upon it, not to be of sufficient merit to qualify for the degree of Doctor but of sufficient merit for the degree of Master may be admitted to the degree of Master provided that he is qualified to become a candidate for the degree.

††8. On completion of his work a candidate shall lodge with the Registrar three copies of his thesis prepared in accordance with directions given to candidates from time to time.**

9. A candidate who complies with the foregoing conditions and satisfies the Board of Examiners shall on the recommendation of the Faculty of Science be admitted to the degree of Master of Science.

§10. The fees to be paid by candidates shall be prescribed from time to time by the Council. The schedule of fees so prescribed shall be published in the University Calendar.

§ Allowed 18th October, 1956.
†† Allowed 16th March, 1961.
‡ Allowed 14th December, 1944.
† Amended 8th December, 1949.
Allowed 7th December, 1939.

** These directions are published on page 513.

Schedule of Fees prescribed by the Council under Regulation 10

A. On approval of the subject of the thesis - - - -	$12
B. Annual Registration Fee:	
For full-time work in the University - - - - -	$180
For part-time work in the University - - - - -	$60
For external work - - - - - - - -	$36
C. On submission of the thesis for examination or re-examination, or on entry for any examination required - - -	$36
D. On admission to the degree - - - - - -	$36

OF THE DEGREE OF MASTER OF SURGERY

REGULATIONS

§1. The following persons may be accepted as candidates for the degree of Master of Surgery:

(a) Bachelors of Surgery of the University of Adelaide;

(b) Graduates in Surgery of another University who hold a degree which is accepted by the Council on the recommendation of the Faculty of Medicine as equivalent to the degree of Bachelor of Surgery of the University of Adelaide.

No person may be awarded the degree of Master of Surgery until three years have elapsed since he became qualified to receive the degree by virtue of which he qualified for acceptance as a candidate for the degree of Master of Surgery.

†2. Except by special permission of the Faculty of Medicine, every candidate shall give at least three terms' notice of his intended candidature, and shall indicate in general terms the subject of the research work or investigation on which he proposes to submit his thesis. The Faculty of Medicine may, if it considers it desirable, nominate a department under whose aegis the candidate will be required to undertake his work and appoint a supervisor or supervisors to whom the candidate will be responsible for the preparation and presentation of his thesis.

†3. A candidate for the degree shall submit: (a) evidence satisfactory to the Faculty of Medicine of his having had special training in Surgery including at least two years' such training in a teaching hospital recognised by the Faculty for the purpose; (b) a thesis embodying the results of original work relevant to the science or art of Surgery or both; and (c) such other published papers in support of his candidature as he may wish.

†4. To qualify for award of the degree the thesis must make a contribution to surgical knowledge.

°5. A candidate's thesis must include: (a) a declaration by the candidate indicating clearly the extent (if any) to which the candidate is indebted for any portion of the work to any other person, and stating that the thesis does not contain any material which has been accepted for the award of any other degree in any University; (b) a statement of the nature of the problem investigated; (c) a review of the relevant scientific and historical background; (d) a detailed account of the methods of investigation employed, the results obtained, and their interpretation.

‡6. On completion of his work the candidate shall lodge with the Registrar three copies of his thesis prepared in accordance with directions given to candidates from time to time.††

The Faculty of Medicine, if it approve the subject of the work submitted, shall nominate examiners, of whom at least one shall be an external examiner.

† Allowed 4th November, 1965. ‡ Allowed 16th March, 1961.
° Amended 16th March, 1961. § Allowed 21st December, 1967.
†† These directions are published on page 513.

A candidate may be required to undergo an oral examination in the subject-matter of the thesis and in any other subject-matter cognate thereto.

7. After hearing the reports of the examiners the Faculty shall determine whether or not an oral examination is necessary, and may then recommend (a) that the degree be awarded, or (b) that the degree be awarded on satisfactory completion of an oral examination, or (c) that the thesis be returned to the candidate for revision, or (d) that the degree be not awarded.

**8. Repealed.

9. The fees to be paid by the candidates shall be prescribed from time to time by the Council; and a Schedule of fees so prescribed shall be published in the University Calendar.

Allowed 17th December, 1959. ** Repealed 16th March, 1961.

Schedule of Fees Prescribed by the Council under Regulation 9.

A. On approval of the subject of the thesis	$12
B. Annual Registration Fee:	
For full-time work in the University	$180
For part-time work in the University	$60
For external work	$36
C. On submission of the thesis	$60
D. On entry for the oral examination (if required)	$36
E. For admission to the degree	$36

OF THE DEGREE OF MASTER OF TOWN PLANNING

REGULATIONS

1. There shall be a degree of Master of Town Planning.

2. A candidate for admission to the course of study for the degree shall:

(a) be a graduate of the University of Adelaide or of another university recognised for the purpose by the University of Adelaide; provided that subject to the approval of the Council the Faculty of Architecture and Town Planning may, in special cases and subject to such conditions (if any) as it may prescribe, accept as a candidate for the degree a person who does not hold a degree of a University, but has given evidence satisfactory to the Faculty of his fitness to undertake work for the degree;

(b) have completed any preliminary work prescribed in accordance with the Schedules;

(c) have obtained the approval of the Faculty of Architecture and Town Planning for his candidature.

3. To qualify for the degree a candidate shall:

(a) attend courses of study extending over a period of not less than one academic year of full-time work or three academic years of part-time work, and pass the examinations prescribed in the Schedules;

(b) satisfactorily complete the practical work prescribed in the Schedules;

(c) subsequently present a thesis on a topic approved by the Faculty, prepared under the guidance of, and in regular consultation with, a supervisor or supervisors appointed by the Faculty.

No candidate may present himself for examination or submit his thesis unless he has regularly attended classes and has satisfactorily completed such written and practical work as may have been required of him.

4. Schedules defining the preliminary work, the courses of study for the degree, the practical work required and the examinations to be passed by candidates shall be drawn up from time to time by the Faculty and approved by the Council. The Schedules so prescribed shall be published in the Calendar.

5. Unless the Faculty approve an extension of time in a particular case, a candidate shall:

(a) within six months from the date of completing the courses of study and practical work prescribed in Regulation 3 submit in writing to the Academic Registrar the topic of the original research or investigation on which he proposes to submit the thesis prescribed in Regulation 3;

(b) not earlier than one calendar year and not later than three calendar years from the date of approval by the Faculty of the topic, submit the thesis prescribed in Regulation 3.

6. If in the opinion of the Faculty a candidate for the degree is not making satisfactory progress the Faculty may, with the consent of the Council, withdraw its approval of his candidature and the candidate shall cease to be enrolled for the degree.

7. The Faculty shall appoint examiners to conduct the examinations prescribed in Regulation 3.

8. Except in special circumstances approved by the Faculty, a candidate who has failed the examinations in any of the courses of study may not present himself for re-examination in those courses of study.

9. A candidate shall lodge with the Registrar three copies of his thesis prepared in accordance with directions given to candidates from time to time.*

10. The Faculty shall nominate examiners of the thesis, of whom at least one shall be external. The examiners may recommend that the thesis:

(a) be accepted; or

(b) be accepted subject to the candidate passing a special examination in the field of study directly related to the subject of his thesis; or

(c) be returned to the candidate for revision and re-submission (within such period as the Faculty may allow); or

(d) be rejected.

11. A candidate for the degree of Doctor of Philosophy whose work is considered by the Faculty, after report by the examiners appointed to adjudicate upon it, not to be of sufficient merit to qualify him for that degree, but of sufficient merit to qualify him for the degree of Master of Town Planning, may be admitted to the degree of Master provided that he is otherwise qualified to become a candidate for the degree.

12. A candidate who, before December 31, 1967, has passed the examinations prescribed in the Schedules may complete the requirements for the degree in accordance with the Regulations and Schedules then in force, with such modifications as the Council may from time to time approve, provided that the candidate:

(a) submits in writing the topic of his proposed thesis to the Registrar by July 1, 1968; and

(b) prepares and submits the thesis within three calendar years of the date of approval of the topic of the thesis.

13. A candidate who complies with the foregoing conditions and satisfies the examiners may be admitted to the degree of Master of Town Planning.

14. The fees to be paid by the candidates shall be prescribed from time to time by the Council. The Schedules of fees so prescribed shall be published in the University Calendar.

Allowed 21st December, 1967.

* These directions are published on page 513.

Schedules made by the Council under Regulations 2, 3 and 14.

SCHEDULE I: PRELIMINARY WORK

1. A person who holds one of the following qualifications, or a qualification deemed to be equivalent, will have satisfied the requirements of this Schedule:

Bachelor of Architecture

Bachelor of Arts (with Economics or Geography as a three-course subject for the degree)

Bachelor of Economics

Bachelor of Engineering (in Civil or Electrical Engineering)

Bachelor of Laws

Bachelor of Technology (in either Building Technology, Civil Engineering or Surveying).

2. Any other graduate may satisfy the requirements of this Schedule by passing in such subjects and/or carrying out such further work as may in his case be prescribed by the Faculty of Architecture and Town Planning.

SCHEDULE II: COURSES OF STUDY

NOTE: To find the syllabuses of the subjects in these Schedules, see Table of Subjects on page 992.

1. A candidate for the degree of Master of Town Planning shall satisfactorily complete the following courses of study and practical work, and pass such examinations therein as may be prescribed by the Faculty of Architecture and Town Planning:

(a) Theory and practice of town planning.
(b) History of town planning.
(c) Environmental design.
(d) Elements of statistics.
(e) Social and economic aspects of planning.
(f) The law in relation to planning.
(g) Physical basis of planning.
(h) Engineering aspects of planning.

Courses of study must be approved by the Dean (or his nominee) at enrolment each year.

2. Candidates undertaking the full-time course shall, after completion of the courses prescribed in Clause 1 of this Schedule, undertake for at least six months such part-time practical work (in the form of projects dealing with the problems of survey, plan and physical development) as may be prescribed by the Faculty of Architecture and Town Planning.

3. A candidate who desires that work which he has completed in the University or in another institution approved by the University for the purpose should be counted *pro tanto* for the degree of Master of Town Planning may, on written application, be granted such exemption from the requirements of this Schedule as the Council, on the advice of the Faculty of Architecture and Town Planning, shall determine.

SCHEDULE III: FEES

A. Annual fee for courses of study:
   For candidates by full-time study - - - - - $411
   For candidates by part-time study - - - - - $144

B. For re-examination in a course of study - - - - $36

C. On approval of the subject of the thesis - - - - $12

D. Annual Registration Fee for work on theses:
   For full-time work in the University - - - - - $180
   For part-time work in the University - - - - $60
   For external work - - - - - - - - - $36

E. On submission of thesis for examination or re-examination, or on entry for any examination required - - - $36

F. For admission to the degree - - - - - - $36

3. REGULATIONS AND SCHEDULES FOR DOCTORATES

NOTES AND INSTRUCTIONS TO CANDIDATES FOR THE DEGREE OF DOCTOR OF PHILOSOPHY

I. General

1. The degree of Doctor of Philosophy is common to the Faculties of Agricultural Science, Architecture, Arts, Dentistry, Economics, Engineering, Law, Medicine, Music, and Science, and is therefore administered by a Board of Research Studies. The attention of candidates is drawn to the regulations and schedules of the degree published after these notes.

2. A candidate for the degree of Doctor of Philosophy pursues a course of research under the direction of a supervisor, who reports formally to the Board of Research Studies each year on the candidate's work and progress. The supervisor will also report whenever in his opinion the student is not making satisfactory progress in his work, is otherwise not fulfilling the conditions laid down for him, or appears unlikely to reach the standard of the degree at which he aims.

3. The supervisor will maintain fairly close contact with the student, who should regard it as his duty to keep his supervisor fully informed of the progress of his research, and to consult him about proposed future work and about the general planning of his thesis. If not consulted fairly frequently, the supervisor will satisfy himself that the research student is working satisfactorily.

4. The function of the supervisor is not to plan at all directly the work that the research student should do, rather to provide a trained mind upon which the student may test his ideas and so be led to develop his own critical faculties. The thesis itself should represent largely the student's unaided work, assisted only by the general aid obtained by discussion with the supervisor as to the most satisfactory method of developing and presenting his material. For a candidate whose mother tongue is not English some help with the syntax may be given with the approval of the supervisor.

5. If more than one supervisor is appointed, the candidate shall consult all such supervisors on all matters of general concern to his work and thesis.

II. Specifications for Theses

1. *Preparation.*

(a) The responsibility for the layout of the thesis and selection of the title rests with the candidate after discussion with his supervisor, and the completed thesis should be shown to the supervisor before submission. In order to save delay in the appointment of examiners a candidate is advised to give three months notice in writing to the Registrar of intention to submit a thesis, and to give its proposed title.

(b) The thesis should be written and submitted before the candidate leaves the University. In exceptional circumstances the Chairman of the Board of Research Studies may give permission for the thesis to be completed elsewhere.

(c) Candidates may find the following publications useful for consultation before writing theses:

SCIENTIFIC THESES

Australia, C.S.I.R.O., *Guide to authors* (C.S.I.R.O., 1953).

Barned, J. R., and Petrie, C. M., *Guide to report writing,* revised edition (C.S.I.R.O. Division of Building Research, 1955).

Conference of Biological Editors, Committee on Form and Style, *Style manual for biological journals* (American Institute of Biological Sciences, 1960).

Emberger, M. R., and Hall, M. R., *Scientific writing* (Harcourt, Brace, 1955).

Royal Society of London, *General notes on the preparation of scientific papers,* 2nd edition (The Society, 1965).

"Suggestions to authors", *Journal of Physiology,* v. 182, 1966: 1-33.

Trelease, S. F., *How to write scientific and technical papers* (Williams and Wilkins, 1958).

OTHER THESES

Clark, G. K., *Guide for research students working on historical subjects* (Cambridge University Press, 1959).

Crutchley, B., *Preparation of manuscripts and correction of proofs,* 3rd edition (Cambridge University Press, 1965).

Hook, L., and Gaver, M. V., *The research paper,* 3rd edition (Prentice-Hall, 1962).

La Nauze, J. A., *Presentation of historical theses* (Melbourne University Press, 1966).

Parker, W. R., *The MLA style sheet,* revised edition (Modern Language Association of America, 1964).

Seeber, E. D., *A style manual for students, based on the MLA style sheet* (Indiana University Press, 1964).

Turabian, K. L., *A manual for writers of term papers, theses and dissertations,* 3rd edition (University of Chicago Press, 1967).

Wiles, R. M., *Scholarly reporting in the humanities,* 3rd edition (University of Toronto Press, 1961).

2. *Typing.*

(a) A thesis should normally be typed on quarto paper on one side of the paper only with double spacing. The top typewritten copy should be prepared on bond paper using a good black inked ribbon. Quotations and footnotes may be typed in single spacing. Footnotes should be clearly separated from the text by a black line.

Work previously published, if submitted, may be in printed form.

Other forms of presentation may be allowed, if the Librarian approves. In such cases bond paper should be used. If copies are produced by xerography the original typewritten copy should still be one of the copies submitted. If copies are produced from wax stencils or litho-offset plates great care should be taken to ensure a clear black image with no smudging. Those copying processes which use chemically coated paper are unsuitable for the reproduction of theses.

(b) Margins should not be less than 1½″ on the left-hand side and ½″ on the other three sides to allow for binding and trimming of an acceptable standard.

(c) The thesis should incorporate in the following order (i) a title page giving the title of the thesis in full, the names and degrees of the candidate, the name of the Department of the University associated with the work and the date when submitted for the degree; (ii) a table of contents; (iii) a summary in not more than 500 words; (iv) a signed statement to the effect that the thesis contains no material which has been accepted for the award of any other degree or diploma in any university and that, to the best of the candidate's knowledge and belief, the thesis contains no material previously published or written by another person, except when due reference is made in the text of the thesis; (v) An acknowledgment of any help given or work carried out by another person or organisation; (vi) the main text; (vii) appendices, if any; (vii) bibliography.

Additional pages or other material not suitable for binding should be placed last and treated as indicated below.

3. *Diagrams and Figures.*

The following are general suggestions for normal practice, but they may be varied in special cases with the approval of the Librarian:

(a) Diagrams and figures, etc., should preferably be drawn or photographed on quarto paper and bound in the appropriate place in the text. If, in exceptional circumstances, with the approval of the Librarian on the recommendation of the Board of Research Studies, it is necessary to mount photographs the mounting should be on paper somewhat heavier than that of the other pages, and great care should be taken to avoid wrinkling the paper or distorting the shape of the volume.

(b) Figures should form a right-hand page, with the top of the figure at the top or the inside edge of the page. The legend should be placed at the bottom or the right-hand edge of the page or, if necessary, on the page facing the figure.

(c) Tables should be inserted in the appropriate place in the text, except that lengthy or bulky tables should appear as an appendix.

(d) Diagrams, maps, tables, etc., exceeding quarto size, should be folded so as to read as a right-hand page when open.

4. *Binding.*

(a) The thesis must be sewn and bound with dark cloth on stiff covers. (A spring-type or screw-type binder is unacceptable. Stapling and plastic or "perfect" binding without sewing are also unacceptable.)

(b) During binding the edges should be trimmed.

(c) On the spine of the thesis should be given, in gold lettering of suitable size, normally reading from the bottom to the top, the candidate's surname and the title of the thesis, abbreviated if necessary. Where the width of the spine allows, the lettering may be placed horizontally, with the title of the thesis near the top of the spine and the candidate's surname near the middle.

(d) When published papers are submitted as evidence they should normally be bound near the back of the thesis as an appendix. In the case of published papers of unusual size it may be desirable to bind them in a separate volume. If they have been bound by the publisher it is desirable to keep them in a special case made and lettered to simulate a bound volume of a thesis.

Supplementary material such as folded maps and other large folded sheets may be placed in a pocket inside the back cover of the bound thesis.

Supplementary material such as reels of magnetic tape or microfilm which cannot readily be kept in a pocket should be placed in a special case made and lettered to simulate a bound volume of the thesis.

A supplementary case or additional volume of a thesis should be distinguished by a volume number but should otherwise be uniform with the first part of the thesis in respect to colour, lettering and, as far as possible, size.

5. *Availability.*

(a) Three bound copies of the thesis, including the top typewritten copy (or approved alternative), and two additional loose copies of the summary should be lodged with the Registrar. If the thesis is accepted for the award of the degree the Registrar will distribute two copies, including the top copy, to the University Library, and one copy to the Head of the appropriate University Department.

(b) Subject to the author's consent, one copy of the thesis deposited in the Library will be available for loan.

(c) Subject to the author's consent, the thesis will be available for photo-copying.

(d) The author will be asked after the award of the degree to give his consent to (b) and (c) in writing. Such notice of consent will be inserted by the Registrar in the copies deposited in the Library.

(e) If the author's consent is not given to section (b) the thesis will in any case become available for loan two years after the award of the degree.

OF THE DEGREE OF DOCTOR OF PHILOSOPHY

REGULATIONS

I. General

1. There shall be a degree of Doctor of Philosophy and a Board of Research Studies.

2. (a) (i) The Board shall comprise three members of the Faculty of Science, two members of the Faculty of Agricultural Science, two members of the Faculty of Engineering, two members of the Faculty of Arts, two members of the Faculty of Medicine, one member of the Faculty of Architecture and Town Planning, one member of the Faculty of Dentistry, one member of the Faculty of Economics, one member of the Faculty of Law and one member of the Faculty of Music.

(ii) The members of the Board shall be elected by the appropriate Faculties for a term of three years.

(iii) The Board shall annually elect one of its members as Chairman.

(b) The Board shall carry out those functions laid upon it by these regulations.

3. Schedules specifying the academic standing required for candidature, the nature and extent of the work to be completed and the fees to be paid by candidates shall be drawn up from time to time by the Board and submitted to the Council. Such schedules shall become effective from the first day of January following their approval by the Council or from such other date as the Council may determine and shall be published in the University Calendar.

II. Enrolments

4. A person seeking enrolment as a candidate for the degree shall apply to the Registrar in such form as the Board shall prescribe and shall submit as part of his application a statement of his academic standing, accompanied in the case of a person who is a graduate of a University or Institution other than the University of Adelaide by proof thereof acceptable to the Board, and an outline of the course of study and research which he proposes to pursue.

5. (a) A person shall not be enrolled as a candidate for the degree unless the Board is satisfied:

(i) that his proposed course of study and research can be adequately supervised; and

(ii) that he is personally qualified to undertake the particular course of study and research which he proposes.

(b) The Head of the appropriate Department and the appropriate Faculty shall have the power to make recommendations to the Board on the matters set out in sub-clause (a) of this clause.

(c) The appropriate Faculty or the Board may require a candidate who is not a graduate of the University to pass at a time which

it specifies such examination of Honours standard, whether special or annual, as it may deem necessary or desirable. The candidate must be notified of this requirement not later than six months after his acceptance.

6. (a) When it approves an enrolment the Board shall specify the month from which the candidature shall date, which shall normally be the one in which the candidate begins his course of study and research for the degree.

(b) When a candidate is required under Regulation 5(c) to undergo an examination the Board shall determine, after he has passed the examination, the month from which his candidature will date.

III. Work for the Degree

7. (a) A candidate shall pursue, to the satisfaction of the Board, and in accordance with any special conditions that may be specified in his case, an approved course of study and research in the University under a supervisor or supervisors appointed by the appropriate Faculty and approved by the Board. At least one supervisor shall be internal to the University.

(b) At the end of each year of candidature a supervisor shall submit to the Board a written report on the work of each candidate in his charge. He shall report to the Board at any time if in his opinion a candidate is not making satisfactory progress in his work or is otherwise not fulfilling the conditions laid down for him, or appears unlikely to reach the standard of the degree.

8. A candidate for the degree shall devote his whole time to the pursuit of his approved course of study and research; provided that full-time members of the academic staff of the University and full-time members of the academic staff of the South Australian Institute of Technology who are engaged in teaching courses prescribed for a degree of the University may be permitted to proceed to the degree on such conditions as the Board may prescribe.

9. (a) Subject to the provisions of this Regulation, a candidate for the degree shall pursue his approved course of study and research within the University for a period of not less than two years and not more than four years from the date of his enrolment.

(b) The Board may permit a candidate to pursue at another University or Institution part of his approved course under such conditions as it thinks fit. Normally, candidates will be required to work for at least two years within the University, but in exceptional circumstances the Board may approve a reduced period on such conditions as it may determine in each case.

(c) A candidate's supervisor, who shall report to the Board, may permit a candidate to spend three months in any one year of his candidature away from the University on work connected with his research. A period of such absence in excess of three months must be approved in advance by the Board.

(d) Because of the specific responsibility of the South Australian Institute of Technology in the conduct of certain University courses, notwithstanding the provisions of Regulations 5(a) and 7(a) and sub-clause (a) of this Regulation, the Board may, on the recommendation of the Faculty of Engineering or the Faculty of Science, permit a candidate to carry out his work in a department of the South Australian Institute of Technology; provided that:

(i) the candidate is a full-time member of the academic staff of the Institute;

(ii) the candidate is able to devote at least half of his time to his research; and

(iii) the Board is satisfied that facilities for the proposed course of study are available only in the Institute.

10. (a) A candidate shall submit for approval by the appropriate Faculty the proposed title of the thesis required under sub-clause (b) of this Regulation approximately three months before he expects to submit the thesis. On submission of the proposed title the appropriate Faculty may also require a candidate to submit a summary of the thesis.

(b) At the end of his approved course of study and research, or by the end of the fourth year from his enrolment, a candidate shall present to the Registrar, in such form as the Board prescribes, not fewer than three copies of a thesis embodying the results of his study and research. He may submit also, in support of the thesis, other relevant material provided that no material presented for any other degree within this or any other University shall be so submitted.

(c) Only in exceptional circumstances and by special permission of the Board on the recommendation of the relevant Faculty may an extension of time after the fourth year be allowed for submission of the thesis.

(d) On submission of the thesis or an acceptable summary thereof the appropriate Faculty shall nominate two external examiners and may nominate one or more internal examiners. The examiners may recommend that the candidate be examined orally or otherwise on the subject of his thesis and the general field of knowledge within which it falls. Such an examination will be conducted by examiners nominated by the appropriate Faculty.

11. To qualify for the degree the thesis shall contain a significant contribution to knowledge within the scope of its subject.

12. The Faculty shall consider the reports of the examiners and report, with recommendations, to the Board. The Board, after considering these reports, may recommend that the candidate:

(i) be awarded the degree subject to such minor amendments of the thesis as the examiners may have suggested;

(ii) be not awarded the degree, but be allowed to revise and resubmit his thesis within such period as the Board may allow;

(iii) be not awarded the degree and be not allowed to resubmit his thesis; or

(iv) be awarded an appropriate degree of Master subject to the concurrence of the appropriate Faculty.

13. Two copies of a thesis and other material on which the degree is awarded shall be deposited in the Library.

Allowed 21st December, 1967.

SCHEDULES

I. Academic Standing

1. The academic standing required for acceptance (subject to section (a) of Regulation 5) as a candidate for the degree is normally an Honours degree of Bachelor (with first or second class Honours) or a degree of Master of the University of Adelaide.

2. The Board may accept as a candidate for the degree a graduate who does not qualify under Clause I but (a) has completed to the satisfaction of the Board at least one year of full-time postgraduate study and research and (b) passes a qualifying examination prescribed by the appropriate Faculty and approved by the Board.

3. Provided that it is satisfied in each case, on the recommendation of the Head of the Department and the Faculty concerned, that the course of study undertaken and the academic standard reached are equivalent to those required of a candidate who is a graduate of the University of Adelaide, the Board may accept as a candidate for the degree a person who holds a degree of another University or a qualification acceptable to the University from an institution of tertiary education recognised for the purpose by the University.

4. A person who proposes to proceed to the degree by undertaking a course of study and research in education shall also hold the Diploma in Education of the University or a qualification accepted by the University as equivalent, and shall have at least three years' experience in teaching or in some other educational work approved by the University before enrolling for the degree.

The attention of intending candidates is specially drawn to Regulation 5.

II. Fees

Candidates shall pay the following fees, those prescribed in B being payable *in advance in such instalments as the Council may determine from time to time.*

A. On acceptance as a candidate - - - - - - - $12

B. For each *year's* work from enrolment until submission of the thesis - - - - - - - - - - - - $180

Incomplete years will be charged at the rate of $15 for each month or part thereof.

C. On submission of the thesis for examination or for re-examination - - - - - - - - - - - $60

D. On admission to the degree - - - - - - - - $36

OF THE DEGREE OF DOCTOR OF DENTAL SCIENCE

REGULATIONS

1. A candidate for the degree of Doctor of Dental Science shall not be admitted to the degree until the expiration of at least four years from his admission to the degree of Bachelor of Dental Surgery in the University of Adelaide: Provided that, in the case of a graduate in Dentistry of another University who has been admitted *ad eundem gradum* in the University of Adelaide, the period of four years shall be reckoned from the date of his first graduation in Dentistry.

2. Except in special cases approved by the Council only persons who have been admitted to the degree of Master of Dental Surgery may become candidates for the degree of Doctor of Dental Science.

3. To qualify for the degree a candidate shall submit a satisfactory thesis embodying the results of original research or investigation by the candidate on a subject approved by the Faculty of Dentistry. The thesis may be written specially for the degree, or may be an already published work, or may be a series of papers. It shall not be a compilation from books, nor a mere compendium of cases, nor merely observational. The candidate shall indicate in a preface or in a separate statement wherein he considers that it advances dental knowledge or practice, and shall furnish a history of the progress of dental knowledge in the subject of the thesis. A candidate may be required to undergo examination in the subject matter of, or in subjects cognate to, his thesis.

4. The degree shall not be awarded unless in the opinion of the examiners the thesis makes an original and substantial contribution to knowledge in some branch of Dental Science.

†5. The candidate shall lodge with the Registrar three copies of the work prepared in accordance with the directions given in subparagraph (b) of clause 2B of Chapter XXV of the Statutes. If the work is accepted for the degree the Registrar will transmit two of the copies to the University Library.

6. On receipt of the reports of the examiners appointed to adjudicate upon the thesis the Faculty of Dentistry will recommend whether the degree be granted or withheld or delayed.

‡7. Repealed.

°8. The fees to be paid by candidates shall be prescribed from time to time by the Council. The schedule of fees so prescribed shall be published in the University Calendar.

† Allowed 16th March, 1961. ‡ Repealed 16th March, 1961.
° Allowed 18th October, 1956. Allowed 10th December, 1942.

Schedule of Fees prescribed by the Council under Regulation 8

On presentation of the thesis - - - - - - - -	$90
On admission to the degree - - - - - - - -	$36

OF THE DEGREE OF DOCTOR OF LAWS

REGULATIONS

1. A Bachelor or Master of Laws may proceed to the degree of Doctor of Laws by complying with the following regulations, but shall not be admitted to the degree until the expiration of the fourth academic year from his admission to the degree of Bachelor of Laws or to a degree considered by the Council as equivalent thereto.

2. A candidate for the degree shall: (a) hold or have qualified for the honours degree of Bachelor of Laws; or (b) hold or have qualified for the degree of Master of Laws; or (c) have passed an examination approved by the Faculty of Law: provided that the Faculty of Law may accept in lieu of the foregoing an equivalent qualification obtained in any other University recognised by the University of Adelaide.

3. To qualify for the degree a candidate shall present a thesis on a subject of law proposed by him and approved by the Faculty of Law which (a) contains a substantial contribution to some branch of legal knowledge; (b) exhibits powers of original research and scholarship; and (c) whether or not previously published in full or in part shall in the opinion of the examiners merit publication as a book or monograph (other than as a collection of separate articles). Conjoint work, or a thesis previously accepted for a degree in this or in any other University, will not be accepted alone for the degree.

4. Every candidate may also present in support of his candidature other published books, monographs, or articles. If any of these publications record work carried out conjointly, the candidate shall state the extent to which he was responsible for the initiation and preparation of such publications.

5. The candidate shall lodge with the Registrar three copies of the work prepared in accordance with the directions given in subparagraph (b) of Clause 2 B of Chapter XXV of the Statutes. If the work is accepted for the degree the Registrar will transmit two of the copies to the University Library.

6. The Faculty of Law shall nominate examiners. Normally there will be three examiners, two of them external to the University; but exceptions may be made in special cases recommended by the Faculty and approved by the Council.

7. The examiners may, if they think fit, examine the candidate either orally or by written questions on the subject matter of his thesis.

8. A candidate who complies with the foregoing conditions and satisfies the examiners may, on the recommendation of the Faculty of Law, be admitted to the degree of Doctor of Laws.

9. The fees to be paid by candidates shall be prescribed from time to time by the Council. The schedule of fees so prescribed shall be published in the University Calendar.

Allowed 4th October, 1962.

Schedule of Fees prescribed by the Council under Regulation 9

On presentation of the thesis - - - - - - - -	$90
On admission to the degree - - - - - - - -	$36

OF THE DEGREE OF DOCTOR OF LETTERS

REGULATIONS

1. A person who is

(a) a Bachelor of Arts, with Honours, of four years' standing, or
(b) the holder of any Master's degree of three years' standing, or
(c) the holder of any Doctor's degree

in the University of Adelaide, may proceed to the degree of Doctor of Letters by complying with the following regulations.

2. To qualify for the degree a candidate shall furnish satisfactory evidence that he has made an original, substantial and scholarly contribution to some branch of letters.

The degree shall be awarded primarily on a consideration of such of his published works as a candidate may submit for examination, but the examiners may take into account any unpublished original work that he may submit in support of his candidature.

The Faculty of Arts, if it approve of the subject or subjects of the work submitted, shall nominate examiners, of whom one at least shall be an external examiner.

Every candidate in submitting his published and unpublished work shall acknowledge the main sources from which his information is derived and the extent to which he has availed himself of the work of others. He shall also state in general terms the grounds of his claims to have made an original contribution.

†3. The candidate shall lodge with the Registrar three copies of the work prepared in accordance with the directions given in subparagraph (b) of clause 2B of Chapter XXV of the Statutes. If the work is accepted for the degree the Registrar will transmit two of the copies to the University Library.

4. A candidate who complies with the foregoing conditions and satisfies the examiners may, on the recommendation of the Faculty of Arts, be admitted to the degree of Doctor of Letters.

*5. The fees to be paid by candidates shall be prescribed from time to time by the Council. The schedule of fees so prescribed shall be published in the University Calendar.

† Allowed 16th March, 1961. * Allowed 18th October, 1956.
Allowed 11th November, 1954.

Schedule of Fees prescribed by the Council under Regulation 5

On presentation of the thesis - - - - - - - -	$90
On admission to the degree - - - - - - - -	$36

OF THE DEGREE OF DOCTOR OF MEDICINE

REGULATIONS

1. The following persons may be accepted as candidates for the degree of Doctor of Medicine:

(a) Bachelors of Medicine of the University of Adelaide;

(b) Graduates in Medicine of another University who hold a degree which is accepted by the Council on the recommendation of the Faculty of Medicine as equivalent to the degree of Bachelor of Medicine of the University of Adelaide.

2. No person may be awarded the degree of Doctor of Medicine until three years have elapsed since he became qualified to receive the degree specified in Regulation 1 of these Regulations. He may proceed to the degree either by completing a period of research and presenting a satisfactory thesis thereon, or by the submission of previously published work.

3. No thesis or other work presented for the degree may include material which has been accepted for any other degree or qualification of any University or Institution. The degree shall not be awarded unless the thesis or work submitted contain an account of original work by the candidate for the degree amounting to a substantial contribution to knowledge.

4. When he submits his thesis or other work, a candidate shall:

(a) submit therewith a declaration that the thesis or work is his own composition;

(b) indicate wherein he considers the thesis or work to advance medical knowledge or practice;

(c) furnish a history of the progress of medical knowledge in the subjects of the thesis or work;

(d) indicate clearly and fully, by appropriate references, the extent to which he is indebted for any portion of his work to any other person.

5. The fees to be paid by candidates shall be prescribed from time to time by the Council. The schedule of fees so prescribed shall be published in the University Calendar.

Regulations Governing Admission to the Degree by Thesis

6. A person who wishes to proceed to the degree of Doctor of Medicine by thesis shall make written application to the Academic Registrar for enrolment as a candidate. The applicant shall include a brief statement of the topic upon which he proposes, upon the completion of a period of research, to submit a thesis.

7. A person accepted as a candidate shall conduct or continue research in the field of study approved by the Faculty. The Faculty may, if it thinks it desirable, appoint a supervisor or supervisors of his research and may nominate a department or departments under whose aegis the candidate may be required to pursue his research. Unless the Faculty shall otherwise determine, a candidate shall not present

his thesis for examination until after the expiry of six terms from the approval of his candidature.

8. The Faculty may permit a candidate to pursue his research at such place or places outside the University as it thinks fit.

9. A candidate shall give the Academic Registrar one month's notice in writing of his intention to submit his thesis and shall give particulars of any other work which he desires to submit in support of his thesis. The Faculty may permit the submission of such work if in its opinion it may conveniently be examined along with the thesis.

10. The candidate shall lodge with the Registrar three copies of the work prepared in accordance with the directions given in subparagraph (b) of Clause 2B of Chapter XXV of the Statutes. If the work is accepted for the degree the Registrar shall transmit two of the copies to the University Library.

11. The Faculty shall nominate examiners of the thesis of whom at least one shall be an external examiner. The Faculty may require the candidate to submit himself for examination upon the subject of his thesis and matters related thereto.

12. After the examiners' reports have been considered the Faculty may recommend that the candidate:

(a) be awarded the degree; or

(b) be awarded the degree on the satisfactory completion of an examination on the subject of his thesis and matters related thereto; or

(c) be not awarded the degree, but be allowed to revise and re-submit his thesis (within such period as the Faculty may allow); or

(d) be not awarded the degree and be not allowed to re-submit his thesis.

Regulations Concerning Admission to the Degree by Previously Published Work

13. Any person who satisfies the requirements of Regulation I hereof may seek the permission of the Faculty to submit, as evidence that he is a fit and proper person to receive the degree, work or papers previously published by him.

14. Any person who seeks the permission of the Faculty under Regulation 13 hereof shall apply in writing to the Academic Registrar giving particulars of the work which he proposes to submit together with a *curriculum vitae*. The Faculty shall refer the matter to a committee which shall enquire into it and make recommendations to the Faculty. The Faculty may refuse to grant the permission sought or it may, if it entertains serious doubts about the suitability of the work which the applicant proposes to submit, advise him of its doubts and request him to reconsider his application.

15. The candidate shall lodge with the Registrar three copies of the work prepared in accordance with the directions given in Clause 2B of Chapter XXV of the Statutes. If the work is accepted for the degree the Registrar shall transmit two of the copies to the University Library.

16. The Faculty shall nominate examiners of the work of whom at least one shall be an external examiner. The Faculty may require the candidate to submit himself for examination upon the subject of his work and matters related thereto.

17. After the examiners' reports have been considered the Faculty may recommend that the candidate:

(a) be awarded the degree; or

(b) be awarded the degree on the satisfactory completion of an examination on the subject of his work and matters related thereto; or

(c) be not awarded the degree.

Allowed 21st December, 1967.

Schedule of Fees prescribed by the Council under Regulation 5

A. On approval of the subject of the thesis	$12
B. Annual Registration Fee:	
For full-time work in the University	$180
For part-time work in the University	$60
For external work	$36
C. On submission of the thesis	$60
D. On entry for the oral examination (if required)	$36
E. On admission to the degree	$36

OF THE DEGREE OF DOCTOR OF MUSIC

REGULATIONS

1. (a) The Faculty of Music may accept as a candidate for the degree of Doctor of Music a person who:

(i) has qualified in the University of Adelaide for the degree of Bachelor of Music or the degree of Master of Music; or

(ii) has obtained another degree in the University of Adelaide and has satisfied the Faculty of his fitness to undertake studies for the degree of Doctor of Music.

(b) On the recommendation of the Faculty of Music, the Council may accept as a candidate for the degree a person who (i) has obtained in another university or institution of higher education recognised by the University of Adelaide a qualification accepted by the Faculty as equivalent to one of the qualifications specified in (a) above and (ii) has, or has had, a substantial association with the University.

(c) No person may be admitted to the degree of Doctor of Music before the expiration of five years from the date on which he obtained the qualification prescribed in (a) or (b)(i) above.

2. (a) A person who desires to become a candidate for the degree shall give notice of his intended candidature in writing to the Academic Registrar and with such notice shall furnish particulars of his musical achievements and of the work which he proposes to submit for the degree.

(b) The Faculty of Music shall appoint a committee to examine the information submitted and to advise the Faculty whether the Faculty should:

(i) allow the applicant to proceed, and approve the subject or subjects of the work to be submitted; or

(ii) advise the applicant not to submit his work; and the Faculty's decision shall be conveyed to the applicant.

(c) If it accept the candidature and approve the subject or subjects of the work to be submitted, the Faculty shall nominate examiners of whom two at least shall be external examiners.

3. (a) To qualify for the degree the candidate shall furnish satisfactory evidence that he has made an original and substantial contribution of distinguished merit to some branch of music.

(b) The degree shall be awarded primarily on a consideration of such of his published compositions or other scholarly works as a candidate may submit for examination, but the examiners may take into account any unpublished original composition or other work that he may submit in support of his candidature.

(c) The candidate in submitting his published works other than compositions shall, where applicable, state generally in a preface and specifically in notes the main sources from which his information is derived and the extent to which he has availed himself of the work

of others, especially where joint publications are concerned. He may also signify in general terms the portions of his work which he claims as original.

(d) The candidate shall indicate what part, if any, of the compositions or other work he has submitted for a degree in this or any other University.

4. The candidate shall lodge with the Academic Registrar three copies of the work prepared in accordance with the directions given in sub-paragraph (b) of Clause 2B of Chapter XXV of the Statutes. If the work is accepted for the degree the Academic Registrar will transmit two of the copies to the University Library.

5. A candidate who complies with the foregoing conditions and satisfies the examiners may, on the recommendation of the Faculty of Music, be admitted to the degree of Doctor of Music.

6. The fees to be paid by candidates shall be prescribed from time to time by the Council. The schedule of fees so prescribed shall be published in the University Calendar.

Awaiting allowance at time of printing.

Schedule of Fees prescribed by the Council under Regulation 7

A. On presentation of the exercise - - - - - -	$45
B. On entering for the Final Examination - - - -	$45
C. For admission to the degree - - - - - -	$36

OF THE DEGREE OF DOCTOR OF SCIENCE

REGULATIONS

1. (a) Subject to these regulations a person who has been admitted in the University of Adelaide to an Honours degree of Bachelor or a degree of Master in Science, Agricultural Science, Applied Science or Engineering, or to the degree of Doctor of Philosophy in a field of study approved by the Faculty of Science, may proceed to the degree of Doctor of Science.

(b) On the recommendation of the Faculty of Science the Council may accept as a candidate for the degree a person who has been admitted to a degree in the University of Adelaide other than one named in section (a) of this Regulation, or who is a graduate of another University or institution of higher education recognised by the University of Adelaide and has a substantial association with the University; provided that in each case the graduate concerned has, in the opinion of the Faculty of Science, had an adequate scientific training.

(c) No person shall be accepted as a candidate for the degree of Doctor of Science before the expiration of five years from the date of his original graduation.

2. (a) A person who desires to become a candidate for the degree shall give notice of his intended candidature in writing to the Registrar and with such notice shall furnish particulars of his scientific achievements and of the work which he proposes to submit for the degree.

(b) The Faculty of Science shall appoint a committee to examine the information submitted and to advise the Faculty on whether the Faculty should—(i) allow the applicant to proceed, and approve the subject or subjects of the work to be submitted; *or* (ii) advise the applicant not to submit his work: and the Faculty's decision shall be conveyed to the applicant.

(c) If it accept the candidature and approve the subject or subjects of the work to be submitted the Faculty shall nominate examiners of whom one at least shall be an external examiner.

3. (a) To qualify for the degree the candidate shall furnish satisfactory evidence that he has made an original contribution of distinguished merit adding to the knowledge or understanding of any subject with which the Faculty is directly concerned.

(b) The degree shall be awarded primarily on a consideration of such of his published works as the candidate may submit for examination.

(c) The candidate in submitting his published works shall state generally in a preface and specifically in notes the main sources from which his information is derived and the extent to which he has availed himself of the work of others, especially where joint publications are concerned. He may also signify in general terms the portions of his work which he claims as original.

(d) The candidate is required to indicate what part, if any, of the work he has submitted for a degree in this or any other University.

4. The candidate shall lodge with the Registrar three copies of the work prepared in accordance with the directions given in sub-paragraph (b) of Clause 2B of Chapter XXV of the Statutes. If the work is accepted for the degree the Registrar will transmit two of the copies to the University Library.

5. A candidate who complies with the foregoing conditions and satisfies the examiners may, on the recommendation of the Faculty of Science, be admitted to the degree of Doctor of Science.

6. The fees to be paid by candidates shall be prescribed from time to time by the Council. The schedule of fees so prescribed shall be published in the University Calendar.

Allowed 4th November, 1965.

Schedule of Fees prescribed by the Council under Regulation 6

On approval of the subject of the work - - - - - -	$90
On admission to the degree - - - - - - - -	$36

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4. REGULATIONS AND SCHEDULES OF DIPLOMAS

OF THE DIPLOMA IN APPLIED PSYCHOLOGY

REGULATIONS

1. There shall be a postgraduate Diploma in Applied Psychology.

2. A candidate for admission to the course for the diploma shall:
   (a) have been admitted to a degree of the University or to a degree of another University accepted for the purpose by the University, and
   (b) have obtained the approval of the Head of Department of Psychology.

3. To qualify for the diploma a candidate shall satisfactorily complete a course of full-time study extending over at least one year, or of part-time study extending over at least two years.

4. The preliminary work, the course of study to be undertaken, the examinations to be passed and the fees to be paid by candidates shall be prescribed in the schedules approved by the Council. Such schedules shall take effect as from the date of approval by the Council or such other date as the Council shall determine and shall be published in the next University Calendar which is issued after that approval has been given.

5. A candidate who desires that the examinations which he has passed in the University or elsewhere should be counted *pro tanto* for the Diploma in Applied Psychology, may on written application be granted such exemption from the requirements of these regulations as the Council shall determine.

6. There shall be three classifications of pass at an annual examination in any subject for the Diploma: Pass with Distinction, Pass with Credit, and Pass. The names of candidates within each classification shall be arranged in alphabetical order.

7. (a) A candidate who fails to pass the examination in any subject or who fails to complete satisfactorily the prescribed practical work, and who desires to take the subject or practical work again, shall again attend such lectures and satisfactorily do such written and practical work as the professor or lecturer concerned may prescribe, unless specifically exempted therefrom after written application to the Academic Registrar for such exemption.

(b) A candidate who has twice failed to pass the examination in any subject or who has twice failed to complete satisfactorily the prescribed practical work, may not enrol for that subject or practical work again except by special permission of the Faculty of Arts to be obtained in writing from the Academic Registrar and then only under such conditions as may be prescribed.

(c) For the purpose of this regulation, a candidate who has enrolled for at least two terms in an academic year and who is refused permission to sit for examination owing to unsatisfactory attendance or work, or who fails to attend all or part of an annual examination (or supplementary examination if granted) without a

reason accepted by the Head of the Department of Psychology as adequate, shall be deemed to have failed to pass the examination.

8. A candidate who complies with the foregoing conditions and satisfies the examiners shall be awarded the Diploma in Applied Psychology.

Awaiting allowance at time of printing.

SCHEDULE I: PRELIMINARY WORK

1. Preliminary work must be completed before commencement of the diploma course of study.

2. A candidate who holds an Honours degree of B.A. or B.Sc. in Psychology, or an Ordinary degree of B.A. or B.Sc. with Psychology as a third-year subject, will satisfy the requirements of this Schedule.

3. Any other graduate will satisfy the requirements of this Schedule if he satisfies the Head of the Department of Psychology that his experience in psychology is equivalent to a three-year university sequence in psychology, and is of a kind which will enable him to understand and profit from the course of study for the diploma. If a graduate does not so satisfy the Head of the Department, the preliminary work necessary to satisfy the requirements of this Schedule will be prescribed by the Head of the Department of Psychology.

SCHEDULE II: COURSE OF STUDY

1. A candidate for the Diploma in Applied Psychology shall regularly attend lectures and seminars, do such written work as may be prescribed, and pass examination in the following subjects (unless exempted under Regulations 5 or 7(a)).

(a) Developmental Psychology
(b) Human Skills
(c) Occupational Psychology
(d) Personality and Social Relations
(e) Psychopathology
(f) Statistics and Methodology

SCHEDULE III: PRACTICAL WORK

1. A candidate shall complete satisfactorily the prescribed practical work, which in the case of part-time students will be undertaken mainly during the second year of the course. The practical work will include:

(a) Practical work in applied psychology for a total of at least two hundred hours.
(b) A written report on either a research investigation or a critical survey on a topic within the field of applied psychology, chosen by himself and approved by the Head of the Department of Psychology.

Schedule IV: Fees

A. For each subject from Schedule I of the degree of Bachelor of Arts, taken as preliminary work for the diploma: the fee prescribed in Schedule IV of the degree.

B. For attendance (or re-attendance) at lectures, seminars and practical work, and for an annual examination in all components in the course for the Diploma in Applied Psychology - - - - - - - - - - - $366

Note: With candidates enrolled for the diploma over two years of part-time study, the fee for each year of part-time study will normally be $183.

C. For attendance (or re-attendance) at lectures and seminars, and for an annual examination in the following subjects taken separately:

Developmental Psychology, Human Skills, Occupational Psychology, Personality and Social Relations, Psychopathology: each - - - - - - - $39

Statistics and Methodology - - - - - - $63

D. For a supplementary or special examination, or for an annual examination with exemption from attendance or re-attendance at lectures, in any one of the subjects listed in Section C above - - - - - - - - - - $24

E. For (a) Practical work - - - - - - - - $63

(b) Research investigation or critical survey - - $63

F. For the diploma - - - - - - - - - - $24

ASSOCIATE IN ARTS AND EDUCATION

REGULATIONS

¶1. To qualify as an Associate in Arts and Education a candidate shall:

(a) have matriculated;

(b) attend lectures regularly and pass examinations in—

(i) four subjects from Schedule I of the degree of Bachelor of Arts, provided that not more than two are from the Law and Science subjects there listed,

(ii) professional courses as set out in Schedule I.

2. A candidate will not be admitted to a course in Mathematics or in a language other than English unless he has satisfied the requirements for admission to the course as prescribed from time to time.

3. A candidate who has fulfilled these conditions shall receive a diploma which will entitle him to be styled an Associate of the University, and to use the letters A.U.A.

4. A candidate may be granted exemption from attendance at lectures on any subject of examination, but only under the conditions prescribed in Regulation 7 of the Degree of Bachelor of Arts.

†5. (a) A graduate in Arts shall not be eligible to qualify also as an Associate in Arts and Education.

(b) Except as provided for in paragraph (c) of this regulation, not more than two subjects shall be presented both for the diploma in Arts and Education and for any other degree or diploma.

¶(c) Any holder of the diploma who subsequently proceeds to the degree of Bachelor of Arts may count towards that degree subjects which he has already presented for the diploma provided (i) that he fulfils the requirements for the degree in all respects, and (ii) that he surrenders his diploma before being admitted to the degree.

**6. (a) An unmatriculated student who enrolled before June 30, 1958, as a candidate for this diploma may qualify for the diploma under the Regulations previously in force if by the beginning of the academic year in 1960 he has passed in four of the subjects set out in Regulation 2 of the degree of Bachelor of Arts. Such a student may alternatively fulfil the requirements of Regulation 1 (b) above.

(b) Only in special circumstances may a student who has passed in less than four subjects at the beginning of the academic year in 1960 be permitted to qualify for the diploma without having fulfilled the requirements for matriculation.

‡(c) A student holding the Leaving Certificate, including a pass in English, or having passed in five subjects including English at the

¶ Allowed 15th January, 1959; and amended 16th December, 1965.
† Allowed 16th December, 1948. ‡ Allowed 28th July, 1959.
** Allowed 15th January, 1959.

Leaving Examination, or possessing an equivalent qualification approved by the Council, who enrols as a non-graduating student before June 30, 1960, may on completing the requirements for matriculation within two years of enrolment be permitted to count towards the Associateship in Arts and Education subjects passed prior to matriculation.

§7. Only those candidates who had entered upon the course for the Associateship before July 1, 1967, will be permitted to enrol in the course for the Associateship after December 31, 1967. Such students will be eligible to proceed to the Associateship under these Regulations provided that they qualify for the Associateship not later than March 31, 1971, unless the Council approves an extension of time in particular cases under Clause 5 of Chapter XXV of the Statutes.

§8. Nothing in these regulations shall be held to bind the Council to provide any or all of the courses in any year if for any reason the Council decides to suspend them.

Allowed 10th July, 1947.
§ Allowed 21st December, 1967.

Schedule I: Professional Subjects

NOTE: To find the syllabuses of the subjects in these Schedules, see Table of Subjects on page 992.

A candidate shall, unless exempted therefrom by the Faculty, regularly attend lectures, do such written and tutorial work as may be prescribed, and pass examinations in the following subjects:

Education;
Educational Psychology IA;
Practical Teaching and Methodology A.

Schedule II: Fees

A. For each subject from Schedule I of the degree of Bachelor of Arts: the fee prescribed in Schedule V of the degree of Bachelor of Arts.	
B. For attendance (or re-attendance) at lectures and annual examination in each professional subject set out in Schedule I above - - - - - - - -	$48
C. For an annual examination with exemption from attendance or re-attendance at lectures - - - -	$24
D. For a special examination in any subject - - -	$24
E. For the diploma - - - - - - - - -	$24

OF THE DIPLOMA IN COMPUTING SCIENCE

REGULATIONS

1. There shall be a postgraduate Diploma in Computing Science.

2. Except as provided for in Regulation 3 a candidate for admission to the course for the diploma shall have been admitted to a degree of the University or to a degree of another University accepted for the purpose by the University.

3. A candidate who in the year immediately preceding the year in which he wishes to be admitted to the course for the diploma failed in only one subject necessary for the completion of his course for an Ordinary degree of the University may, with permission of the Faculty of Science, be admitted to the course for the diploma if in the same year he enrols for a subject necessary to complete his qualifications for the degree. The diploma will not be granted until the candidate has qualified for the degree.

4. To qualify for the diploma a candidate shall satisfactorily complete a course of full-time study extending over at least one year or of part-time study extending over at least two years.

5. The course of study to be undertaken, the examinations to be passed and the fees to be paid by candidates shall be prescribed in schedules approved by the Council. Such schedules shall take effect as from the date of approval by the Council or such other date as the Council shall determine and shall be published in the next University Calendar which is issued after that approval has been given.

6. A candidate who desires that the examinations which he has passed in the University or elsewhere should be counted *pro tanto* for the Diploma in Computing Science, may on written application be granted such exemption from the requirements of these regulations as the Council shall determine.

7. There shall be three classifications of pass at an annual examination in any subject for the diploma: Pass with Distinction, Pass with Credit, and Pass. The names of candidates who pass with Distinction or with Credit shall be arranged in order of merit within the classification; the names of other candidates who pass shall be arranged in alphabetical order.

8. (a) A candidate who fails to pass in a subject and desires to take the subject again shall again attend lectures and satisfactorily do such written and practical work as the professor or lecturer concerned may prescribe, unless specifically exempted therefrom after written application to the Registrar for such exemption.

(b) A candidate who has twice failed to pass the examination in any subject or division of a subject may not enrol for that subject again except by special permission to be obtained in writing from the Registrar and then only under such conditions as may be prescribed.

(c) For the purpose of this regulation a candidate who is refused permission to sit for examination, or who fails, without a reason accepted by the Professor of Computing Science as adequate, to attend all or part of an annual examination (or supplementary examination if granted) after having enrolled for at least two terms in that year, shall be deemed to have failed to pass the examination.

9. A candidate who complies with the foregoing conditions and satisfies the examiners shall be awarded the Diploma in Computing Science.

Allowed 28th January, 1965.

Schedules made by the Council under Regulation 5.

SCHEDULE I: COURSES OF STUDY.

1. A candidate for the diploma shall regularly attend lectures and tutorials, do such written work as may be prescribed, and pass examinations in the subjects in the course of the Diploma in Computing Science.

2. A candidate shall also satisfactorily undertake and complete a course of practical work.

SCHEDULE II: FEES.

A. For attendance (or re-attendance) at lectures and practical work and an annual examination in the Course in Computing Science - - - - - - - - - - -	$366
B. For attendance (or re-attendance) at lectures and annual examination in the following subjects taken separately: Numerical Analysis, Programming Languages, Computer Mathematics, Theory of Systems and Data processing, each - - - - - - - - - - - -	$108
C. For an annual examination with exemption from attendance (or re-attendance) at lectures in any one of the subjects listed in Section B above - - - - - - - -	$54
D. For a supplementary or special examination in any one of the subjects listed in Section B above - - - - - -	$24
E. For the course of practical work - - - - - - -	$108
F. For the diploma - - - - - - - - - -	$24

OF THE DIPLOMA IN EDUCATION

REGULATIONS

[NOTE: These regulations came into force on January 1, 1962.]

1. There shall be a postgraduate Diploma in Education.

2. Except as provided for in Regulation 3 a candidate for admission to the course for the diploma shall have been admitted to a degree of the University or to a degree of another University accepted for the purpose by the University.

3. A candidate who in the year immediately preceding the year in which he wishes to be admitted to the course for the diploma failed in only one subject necessary for the completion of any Ordinary degree of the University may, with special permission of the Faculty, be admitted to the course for the diploma if in the same year he enrols for a subject necessary for the completion of his degree. The diploma will not be conferred upon the candidate until he has been admitted to the degree.

4. To qualify for the diploma a candidate shall:

(a) satisfactorily complete a course of full-time study extending over at least one year or of part-time study extending over at least two years; and

(b) satisfy the University in a course of practical teaching.

5. The course of study and the fees to be paid by the candidate shall be prescribed in schedules which shall be drawn up from time to time by the Faculty of Arts and approved by the Council. Such schedules shall take effect as from the date of approval by the Council or such other date as the Council shall determine and shall be published in the next University Calendar which is issued after that approval has been given.

6. A candidate who desires that the examinations which he has passed in the University or in another University should be counted *pro tanto* for the Diploma in Education, may on written application be granted such exemption from the requirements of these regulations as the Council shall determine.

7. A candidate for the diploma by part-time study who desires that his experience as a teacher should exempt him from a course of practical teaching may on written application be granted such exemption provided that he satisfies the University that he is a proficient teacher.

8. A candidate who has twice failed to pass the examination in any subject or division of a subject may not enrol for the subject again except by special permission of the Faculty and then only under such conditions as the Faculty may prescribe.

For the purpose of this regulation a candidate who is refused permission to sit for examination, or who fails, without a reason accepted by the Dean as adequate, to attend all or part of an annual

examination (or supplementary examination if granted) after having enrolled for at least two terms in that year, shall be deemed to have failed to pass the examination.

9. A candidate who complies with the foregoing conditions and satisfies the examiners shall be awarded the Diploma in Education.

10.* These regulations shall come into force, and all existing regulations shall be repealed, on January 1, 1962. However, a student who matriculated in the University on or before March 31, 1960, may at his option complete the course for the diploma under the regulations in force in 1960 provided that he satisfies the requirements of Regulation 3 of those regulations by February 28, 1966.

* Amended 4th April, 1963 Allowed 16th March, 1961.

Schedules made by the Council under Regulation 5

NOTE: To find the syllabuses of the subjects in these Schedules, see Table of Subjects on page 992.

SCHEDULE I: COURSES OF STUDY

A candidate shall, unless exempted therefrom by the Faculty, regularly attend lectures, do such written and tutorial work as may be prescribed, and pass examinations in the following subjects:

Theory of Education I;
History of Education I;
Sociology of Education I;
Educational Psychology I.

He shall also, unless exempted therefrom by the Faculty, regularly attend such courses of instruction and do such practical and written work as may be prescribed from time to time and satisfy the examiners in:

Practical Teaching and Methodology B.

SCHEDULE II: FEES

A. For attendance (or re-attendance) at lectures and annual examination in each subject - - - - - - -	$48
B. For an annual examination in a subject with exemption from attendance or re-attendance at lectures - - -	$24
C. For a special examination - - - - - - -	$18
D. For the course in Practical Teaching and Methodology B	$48
E. For examination of proficiency as a teacher when the candidate has been exempted by the Faculty from attendance at the course of instruction in Practical Teaching and Methodology B - - - - - - - - -	$16
F. For the diploma - - - - - - - - -	$24

DIPLOMA OF ASSOCIATE IN MUSIC

REGULATIONS

1. There shall be a diploma of Associate in Music, and examinations for the diploma shall be held during the month of November in each year.

2.*(a) A candidate for admission to the course for the diploma shall have passed in English and in one other subject exclusive of Music at the Matriculation Examination and either (i) have obtained an A or B grade pass in Practical at the Seventh Grade, Theory at the Fifth Grade, and Musical Perception at the Fifth Grade of the examinations conducted by the Australian Music Examinations Board; or (ii) pass in a special entrance examination in Music of standard equivalent to the Grade Examinations specified above.

(b) A candidate who produces evidence of having passed an equivalent examination in this or in any other University recognised by this University may be exempted by the Council from the requirements of this regulation.

3.‡(a) To qualify for the diploma a candidate shall complete three academic years of study, not necessarily consecutive, at the University in one of the under-mentioned principal subjects, together with such other subjects as are specified in the schedules, and shall pass the examination proper to each year:

(i) Pianoforte Playing; (ii) Singing; (iii) Violin Playing; (iv) Violoncello Playing; (v) Organ Playing; (vi) the playing of any other instrument approved by the Faculty of Music.

(b) A candidate who fails in one or two subjects only of an annual examination may at the discretion of the Faculty of Music be permitted to present himself for a supplementary examination in the subject or subjects concerned in March of the following year, and if he satisfies the Faculty of Music in such supplementary examination shall be deemed to have completed the whole annual examination.

(c) A candidate who passes in some portion only of an annual examination may be granted such credit as the Faculty of Music shall in each case determine.

(d) Except by permission of the Faculty of Music, a candidate shall not proceed to the second or third year's work, or to any part thereof, until he has completed the whole of the work of the preceding year.

†(e) A candidate who has completed equivalent work at the examinations conducted by the Australian Music Examinations Board or in some other school of music or at some other examination approved by the University of Adelaide may be granted such status in the course for the diploma as the Faculty of Music shall in each case determine; provided that every candidate for the diploma shall, before receiving the diploma, complete three years of study in an approved principal subject either wholly in the University or partly in the University and partly in some other University or school of music approved for

* Allowed 20th December, 1956; amended 16th March, 1961, and 4th October, 1962. ‡ Amended 9th January, 1958.

† Allowed 14th December, 1950; amended 16th March, 1961, and 4th October, 1962.

the purpose by the University and provided further that the final year shall in every case be spent in the University of Adelaide.

††4. Except as allowed by the Council, in case of illness or other sufficient cause, no student shall be permitted to present himself for any annual examination unless he has attended in each of the three Conservatorium terms up to the time of the annual examination not fewer than three-fourths of the lessons given in his principal subject and has attended classes regularly, and has performed any work prescribed to the satisfaction of the lecturers and teachers concerned in the other subjects of the year's work.

*5. (a) A candidate shall enter for examination on the form and by the date prescribed by the Council, but shall not be eligible to present himself for examination unless he has regularly attended the prescribed lectures and has done written and laboratory or other practical work, where required, to the satisfaction of the professors and lecturers concerned.

(b) A candidate who fails to pass in any annual examination shall again attend lectures and do practical work in the work of that year to the satisfaction of the professors and lecturers concerned unless exempted therefrom by the Faculty of Music.

*6. There shall be three classifications of pass at each annual examination as follows: Pass with Distinction, Pass with Credit, Pass. The names of candidates who pass with Distinction or with Credit shall be arranged in order of merit within the classification, and the names of other candidates who pass shall be arranged in alphabetical order: provided that a candidate who sits for a supplementary or special examination in any subject or group of subjects of any annual examination shall not be classified at that annual examination.

7. Schedules defining the course of study, including lectures, practical work, and examinations, and the fees to be paid by candidates, shall be drawn up by the Faculty of Music and be submitted to, and approved by, the Council.

Such schedules shall become effective as from the date of approval by the Council or such other date as the Council may determine. The schedules shall be published as soon as practicable after that approval has been given.

8. A candidate who has fulfilled the conditions prescribed for the diploma shall be awarded the diploma, shall be styled an Associate of the University of Adelaide, and shall be entitled to use the letters A.U.A.

**9. Only those candidates who had entered upon the course for the diploma before July 1, 1967, will be permitted to enrol in the course for the diploma after December 31, 1967. Such students will be eligible to proceed to the diploma under these Regulations provided that they qualify for the diploma not later than March 31, 1971, unless the Council approves an extension of time in particular cases under Clause 5 of Chapter XXV of the Statutes.

**10. Nothing in these regulations shall be held to bind the Council to provide any or all of the courses in any year if for any reason the Council decides to suspend them.

Allowed 16th December, 1948.

†† Amended 16th March, 1961. * Allowed 20th December, 1956.

** Allowed 21st December, 1967.

SCHEDULES

1. Schedule of Examinations made by the Council under Regulation 7.

1. At the First Examination a candidate shall satisfy the examiners in each subject of one of the following schools:

A. Instrumental School
1. Principal Study I
2. Second Study I
3. Historical Studies
4. Theory of Music I
5. Practical Tests I

B. Vocal School

(a) Concert Singing
1. Principal Study I
2. Second Study I
3. Historical Studies
4. Theory of Music I
5. Practical Tests I
6. Modern Languages I
7. Speech Training I

OR (b) Operatic Singing
1. Principal Study I
2. Drama I
3. Historical Studies
4. Theory of Music I
5. Practical Tests I
6. Modern Languages I
7. Speech Training I

C. School Music
1. Principal Study I
(This chief study should be Pianoforte, but in the event of another study, such as singing, or a stringed or wood-wind instrument being chosen, the student shall show that in each of the years a satisfactory standard of pianoforte playing has been reached.)
2. Scope of School Music I
3. Historical Studies
4. Theory of Music I
5. Practical Tests I
6. Principles of Class Music Teaching I

2. At the Second Examination a candidate shall satisfy the examiners in each subject of one of the following schools:

A. Instrumental School
1. Principal Study II
2. Second Study II
3. Theory of Music II
4. History of Music I
5. Practical Tests II
6. Ensemble Playing I
7. Accompanying (for students whose chief practical study is Pianoforte)

B. Vocal School

(a) Concert Singing
1. Principal Study II
2. Second Study II
3. Theory of Music
4. History of Music I
5. Practical Tests II
6. Modern Languages II
7. Speech Training II

OR (b) Operatic Singing
1. Principal Study II
2. Drama II
3. Theory of Music II
4. History of Music I
5. Practical Tests II
6. Modern Languages II
7. Speech Training II

C. School Music

1. Principal Study II
2. Scope of School Music II
3. Theory of Music II
4. History of Music I
5. Practical Tests II
6. Principles of Class Music Teaching II
7. Ensemble Playing I
8. Accompanying

3. After passing the Second Examination a candidate may, with the approval of the Faculty of Music, elect to proceed either as an executant or as a teacher of the principal subject of his course.

4. At the Third Examination a candidate shall satisfy the examiners in each subject of one of the following schools:

A. Instrumental School

1. Principal Study III
2. Second Study III
3. Ensemble Playing II
4. Practical Tests III
5. Musical Criticism and Aesthetics
6. Literature of Music
7. Concerto

and for candidates who elect to be examined as teachers:

8. Methods of Teaching

B. Vocal School

(a) Concert Singing

1. Principal Study III
2. Second Study III
3. Modern Languages III
4. Practical Tests III
5. Musical Criticism and Aesthetics
6. Literature of Music
7. Concerto

OR (b) Operatic Singing

1. Principal Study III
2. Drama III
3. Modern Languages III
4. Practical Tests III
5. Musical Criticism and Aesthetics
6. Literature of Music
7. Concerto

and for candidates who elect to be examined as teachers:

8. Methods of Teaching

C. School Music

1. Principal Study III
2. Scope of School Music III
3. Ensemble Playing II
4. Practical Tests III
5. Musical Criticism and Aesthetics
6. Literature of Music
7. Principles of Class Music Teaching III
8. Concerto.

Unless his Principal or Second Study be pianoforte playing a candidate shall also play on the pianoforte to the satisfaction of the examiners two pieces from a list published each year, and scales and arpeggios in forms defined by schedule.

5. Candidates who have completed subjects for the diploma prior to 1958 may continue under the Schedules for 1957, with such modifications (if any) as shall be prescribed by the Dean, provided that a candidate shall not lose credit for a subject already completed.

II. Schedule of Fees made by the Council under Regulation 7.

A. For each year's work and examination for the diploma, including the fee for a Principal Subject at the Elder Conservatorium - - - - - - - - - - $366

B. For a Principal Study taken separately - - - - $180

For a Second Study taken separately - - - - - $108

For each other subject taken separately: $72 up to a maximum of the annual fee for $366 for the full year's course.

C. For a supplementary examination in any subject of a year's work - - - - - - - - - - $24

D. For the diploma - - - - - - - - - $24

OF THE DIPLOMA AND CERTIFICATE IN PHYSICAL EDUCATION

REGULATIONS

1. There shall be a diploma in Physical Education.

*2. A candidate for admission to the course for the diploma shall:
(a) be matriculated; provided that until March 31, 1962, a candidate may, alternatively, fulfil the educational requirements for admission by complying with the requirements in force in 1960;
(b) have passed the medical and physical examinations prescribed by the Council.

†3. To qualify for the diploma a candidate shall:
(a) complete the equivalent of one year's work in one of the Faculties;
(b) attend classes regularly for a period of not less than two years and pass examinations as prescribed in the schedules;
(c) satisfactorily complete a course of practical teaching in such schools and under such supervision as may be approved by the Council.

Except by permission of the Board of Studies in Physical Education a candidate shall complete or substantially complete the work prescribed in paragraph (a) before entering upon the work of paragraph (b).

4. A candidate who has passed the medical and physical examinations prescribed, may at the discretion of the Council be granted a certificate upon his completing the courses of study and passing the examinations prescribed under Regulation 3 (b).

5. A candidate may be granted such exemption from attendance at lectures and from practical work as the Council may approve.

6. A candidate who desires that the examinations he has passed elsewhere, and the practical work he has done, should be counted *pro tanto* for the Diploma in Physical Education, may be granted such exemption from the requirements of these regulations as the Council shall determine.

7. Schedules defining the course of study, including lectures, practical work and examinations and the fees to be paid by candidates, shall be drawn up by the Board of Studies in Physical Education, and submitted to, and approved by, the Council.

Such schedules shall become effective as from the date of approval by the Council, or such other date as the Council may decide. The schedules shall be published as soon as practicable after that approval has been given.

8. A candidate who fulfils the conditions shall be awarded the diploma, shall be styled an Associate of the University, and shall be entitled to use the letters A.U.A.

* Allowed 11th November, 1954; amended 16th March, 1961.
† Allowed 16th March, 1961.

*9. Only those candidates who had entered upon the course for the diploma before July 1, 1968, will be permitted to enrol in the course for the diploma after December 31, 1968; provided that candidates who before March 31, 1969, have completed the work prescribed in paragraph (a) of Regulation 3 will be permitted to enrol in the course until July 1, 1969. All candidates enrolled in the course before July 1, 1969, will be eligible to proceed to the diploma under these Regulations provided that they qualify for the diploma not later than March 31, 1972, unless the Council approve an extension of time in particular cases under Clause 5 of Chapter XXV of the Statutes.

*10. Nothing in these regulations shall be held to bind the Council to provide any or all of the courses in any year if for any reason the Council decides to suspend them.

Allowed 16th December, 1948.
* Allowed 9th January, 1969.

Schedules made by the Council under Regulation 7.

NOTE: To find the syllabuses of the subjects in these Schedules, see Table of Subjects on page 992.

A. For subjects taken in the Faculties of Arts and Science: the fees prescribed in the Schedules for the degree of Bachelor of Arts and Bachelor of Science.

B. For the subjects included under Regulation 3(b): $720, payable in two annual instalments of $360 each.

C. For subjects taken separately:

Second-year Course:

Health Education	$54
Body Mechanics	$36
First Aid	$5
Practice of Physical Education	$72
Practical Work, Part I	$108
Education	$108
Human Biology	$108

Third-year Course:

Clinical Observation and Remedial Work	$54
Principles of Physical Education	$72
Practical Work, Part II	$108
Physiological Psychology	$54
Human Nutrition	$54
Human Physiology	$108

D. For each section of either part of the Practical Work - $30

E. For the course in Practical Teaching - $48

F. For a supplementary examination in any subject - $24

G. For the diploma - $24

OF THE DIPLOMA IN PHYSIOTHERAPY

REGULATIONS

1. There shall be a Diploma in Physiotherapy.

†2. A candidate for admission to the course for the diploma shall:
(a) be matriculated; and
(b) present a medical certificate approved by the Council.

†3. The course for the diploma shall extend over three years. Schedules prescribing the subjects of study, and the fees to be paid by candidates, shall be drawn up by the Board of Studies in Physiotherapy and approved by the Council.

Such schedules shall become effective as from the date of approval by the Council or such other date as the Council may determine, and shall be published in the next University Calendar which is issued after that approval has been given.

†4. To qualify for the diploma a candidate shall:
(a) regularly attend lectures and do such written, laboratory or other practical work as may be prescribed;
(b) at the end of each year pass an annual examination in the subjects prescribed for that year.

†5. A candidate shall not be eligible to present himself for examination at the end of a year unless he has completed the course of study and practice prescribed for that year to the satisfaction of the lecturers concerned.

*6. A candidate shall pass the annual examination proper to each year before beginning the course of study and practice for the following year.

7. A candidate who desires that examinations which he has passed *in pari materia* in any Faculty or otherwise, or that practical work which he had done elsewhere, be counted *pro tanto* for the Diploma in Physiotherapy may on application be granted such exemption from the requirements of these regulations as the Council shall determine.

8. A candidate who fails to present himself for examination or to pass the examination in any subject shall again attend the lectures and do the practical work in that subject unless exempted by the Council.

9. A candidate who fulfils the conditions shall be awarded the Diploma, shall be styled an Associate of the University, and shall be entitled to use the letters A.U.A.

§10. Only those candidates who had entered upon the course for the diploma before July 1, 1969, will be permitted to enrol in the course for the diploma after December 31, 1969. Such candidates will be eligible to proceed to the diploma under these Regulations provided that they qualify for the diploma not later than March 31, 1973, unless the Council approve an extension of time in particular cases under Clause 5 of Chapter XXV of the Statutes.

† Allowed 9th January, 1969. * Allowed 17th December, 1959.
§ Allowed 24th December, 1969.

11. Nothing in these Regulations shall be held to bind the Council to provide any or all the courses in any year if for any reason the Council decides to suspend them.

Note: A holder of the Diploma may wish to proceed to a degree and to count towards the degree appropriate subjects already presented for the Diploma. The attention of any such holder of the Diploma is drawn to the Regulations of the degree in question and to Clause 7 of Chapter XXIV of the Statutes.

Allowed 9th August, 1945.

Schedules made by the Council under Regulation 3.

NOTE: To find the syllabuses of the subjects in these Schedules, see Table of Subjects on page 992.

Schedule I: Subjects.

The subjects of study shall be:

First Year:

Anatomy I
Physiology
Physics
Treatment I
Movement I
Psychology IA

Second Year:

Anatomy II
Treatment II
Movement II
Pathology
Electrotherapy I
Practice of Hospital Work I

Third Year:

Treatment III
Movement III
Electrotherapy II
Practice of Hospital Work II
Physical Medicine

Schedule II: Fees.

A. For each year's work, including one annual examination	$366
B. For a supplementary examination in any subject - -	$24
C. For the diploma - - - - - - - -	$24

NOTE: The annual fee includes the fee of $2.50 payable to the Royal Adelaide Hospital, and the fee of $2.10 payable to the Adelaide Children's Hospital, for admission to Hospital practice.

OF THE DIPLOMA IN PUBLIC ADMINISTRATION

REGULATIONS

1. There shall be a diploma in Public Administration.

‡2. A candidate for admission to the course for the diploma shall be matriculated; provided that until March 31, 1967, a candidate who by March 31, 1963, had fulfilled the educational requirements in force in 1961 may be accepted as qualified for admission.

3. To qualify for the diploma a candidate shall (a) attend courses of lectures and pass examinations in the subjects set out in Schedule I made by the Council and (b) have performed at least three years' satisfactory service as an adult officer of a public service department in South Australia or in another public organization or enterprise approved by the Faculty; provided that for this purpose each completed two years' service as a junior officer shall be accepted as equivalent to one vear of adult service.

4. The regulations of the degree of Bachelor of Economics shall, *mutatis mutandis*, be applicable to studies for the diploma insofar as they are not repugnant to any condition or requirement specified in these regulations.

5. A candidate who has fulfilled the conditions of these regulations shall be entitled to receive the diploma, to style himself an Associate of the University, and to use the letters A.U.A.

6. A graduate in the Faculty of Economics shall not be eligible to qualify also for the diploma and not more than two subjects presented for any other degree or diploma may be presented for the Diploma also.

†7. Any holder of the diploma who subsequently proceeds to a degree may count towards the degree subjects which he has already presented for the diploma provided:

(a) that he matriculates before undertaking any further studies in the University;

(b) that he fulfils the requirements for the degree in all respects, and

(c) that if the number of subjects counted towards the degree exceeds four, he surrenders his diploma before being admitted to the degree.

*8. Only those candidates who had entered upon the course for the diploma before July 1, 1967, will be permitted to enrol in the course for the diploma after December 31, 1967. Such students will

† Amended 4th April, 1963. ‡ Allowed 16th December, 1965.
* Allowed 21st December, 1967.

be eligible to proceed to the diploma under these Regulations provided that they qualify for the diploma not later than March 31, 1971, unless the Council approves an extension of time in particular cases under Clause 5 of Chapter XXV of the Statutes.

*9. Nothing in these regulations shall be held to bind the Council to provide any or all of the courses in any year if for any reason the Council decides to suspend them.

Allowed 22nd January, 1953.

* Allowed 21st December, 1967.

Note (not forming part of the Regulations): the University will consider applications for modification of the admission requirements from candidates who have performed at least three years' satisfactory service as an adult officer of a public service department in South Australia or in another public organisation or enterprise approved by the Faculty.

Schedule I: Courses of Study

1. The subjects which a candidate for the Diploma shall complete are:

Politics I and Politics II;
Social Economics *or* Economics I with the approval of the Dean;
Public Finance;

and three of the following subjects, of which at least one shall be a third-year subject:

Economics II, III;
Economic Statistics I, II;
Economic Development I *or* History IIB;
Economic Development II;
Mathematics (Economics);
Economic Geography *or* Geography I;
Elements of Accounting, Management Accounting, Financial Accounting;
Commercial Law;
History IIA, IIIA, IIIB;
Politics IIIA, IIIB;
Geography II, III;
Psychology IIA, IIB, IIIA, IIIB;
Any other first-year Arts subjects listed for the Ordinary degree except for the Science subjects;

provided that a candidate presenting Economics III (including part B of the syllabus) shall not be required to present Public Finance.

2. Courses of study must be approved by the Dean of the Faculty of Economics (or his nominee) at enrolment each year.

3. Candidates who have completed subjects for the diploma prior to 1959 may continue under the Schedules then in force, with such modifications (if any) as shall be prescribed by the Dean of the Faculty of Economics, provided that a candidate shall not lose credit for a subject already completed.

Note: For the purpose of this Schedule a pass in the subject Political Science in or prior to 1954 will count as a pass in Politics II, and a pass in the subject Public Administration in or prior to 1954 will count as a pass in Politics IIIA.

Schedule II: Fees

A. For courses from the Faculty of Arts and the Faculty of Economics: the fees prescribed in the Schedules for the degrees of Bachelor of Arts and Bachelor of Economics.	
B. For attendance (or re-attendance) at lectures and examination in Public Finance - - - - - -	$54
C. For a supplementary examination in Public Finance -	$24
D. For the diploma - - - - - - - - - -	$24

OF THE DIPLOMA IN SOCIAL STUDIES

REGULATIONS

1. There shall be a Diploma in Social Studies.

2. A candidate for admission to the course of study for the diploma shall:

(a) be a graduate of the University or of another University accepted for the purpose by the University, and have completed to the satisfaction of the Council such preliminary courses of study as may be prescribed in the Schedule; or

(b) be qualified to matriculate.*

3. To qualify for the diploma:

(a) a candidate who has been admitted as a graduate shall satisfactorily complete a course of full-time study extending over at least one year or of part-time study extending over at least two years, and a course of practical instruction extending over at least six months;

(b) a candidate who has been admitted otherwise than as a graduate shall satisfactorily complete a course of full-time study extending over at least three years, or of part-time study extending over at least five years.

4. Schedules defining the course of study, including lectures and practical work, the examinations to be passed, and the fees to be paid by candidates, shall be drawn up by the Board of Studies in Social Studies and submitted to the Council. Such Schedules shall become effective from the date of approval by the Council or such other date as the Council may determine, and shall be published as soon as practicable after that approval has been given.

5. A candidate who has completed equivalent work elsewhere may on application be granted such exemption from the requirements of these Regulations as the Council shall determine.

6. A candidate who fulfils the conditions shall be awarded the diploma, shall be styled an Associate of the University, and shall be entitled to use the letters A.U.A.

Notes (not forming part of the Regulations):

*(a) The attention of prospective candidates is directed to Chapter IX of the Statutes: Of Matriculation.

(b) A holder of the Diploma may wish to proceed to a degree and to count towards the degree appropriate subjects (if any) already presented for the Diploma. The attention of any such Diploma holder is drawn to the Regulations and Schedules of the degree concerned, and to Clause 7 of Chapter XXIV of the Statutes.

†7. Candidates who have entered upon the course for the Diploma in Social Studies under Regulation 3 (b) in or before the academic year 1965 will be eligible to proceed to the Diploma under these regulations provided that they qualify for the Diploma no later than March 31, 1970, unless the Council approves an extension of time in particular cases under Clause 5 of Chapter XXV of the Statutes.

†8. Nothing in these regulations shall be held to bind the Council to provide any or all of the courses in any year if for any reason the Council decides to suspend them.

Allowed 12th December, 1963.

† Allowed 28th January, 1965.

NOTE: To find the syllabuses of the subjects in these Schedules, see Table of Subjects on page 992.

Schedule I: Preliminary Courses of Study for Graduates

A candidate shall not be admitted as a graduate to the course of study for the diploma unless

(a) he has satisfied the examiners in:

(i) three of the following subjects or their equivalents; *or*

(ii) two of these subjects and a second-year subject in sequence with one of them:

History IB or Politics I or Philosophy I;
Social Economics or Economics I;
Psychology I or Psychology IA;
Biology;

or (b) he has taken special courses of study, and has passed special examinations, in subjects prescribed by the Board of Studies. Such courses of study shall be determined by the Heads of the Departments concerned, who shall undertake the necessary examining, and will normally extend over not less than two months. The examinations will be held in or about March.

Schedule II: Courses of Study for Graduates

A candidate who has been admitted as a graduate shall, unless exempted by the Board, regularly attend lectures, do such written and practical work as may be prescribed, and pass examinations in the following subjects:

Sociology;
Social Organisation;
Social Work II.

He shall also, unless exempted by the Board, regularly attend such courses of instruction and satisfactorily complete such written and practical work as may be prescribed in:

Social Work I;
Field Work B.

Provided that graduates who by March 31, 1964, had passed in the subject Social Work I under the regulations and schedules in force in

1963 may complete their course for the Diploma in Social Studies under those regulations and schedules provided that they do so by March 31, 1967.

Courses of study must be approved by the Head of the Department of Social Studies at enrolment each year.

Schedule III: Courses of Study for Undergraduates

A candidate shall, unless exempted by the Board, regularly attend lectures, do such written and practical work as may be prescribed, and satisfy the examiners in the following subjects:

First Year:

History IB or Politics I or Philosophy I;
Psychology I or Psychology IA;
Social Economics or Economics I*;
Biology or Human Biology.

Second Year:

Sociology;
Social Work I;
Psychology IIB or another second-year subject.

Third Year:

Social Organisation;
Social Work II;
Field Work A.

Provided that candidates who by March 31, 1964, had passed in the subject Social Work I under the regulations and schedules in force in 1963 may complete their courses for the Diploma in Social Studies under those regulations and schedules provided that they do so by March 31, 1967.

Provided also that candidates, who have enrolled under the regulations and schedules in force in 1963, may complete their course for the diploma in Social Studies under this Schedule III.

Courses of study must be approved by the Head of the Department of Social Studies at enrolment each year.

* A candidate may with the special permission of the Board substitute Politics for a course in Economics.

Schedule IV: Fees

A. For subjects from the Faculties of Arts and Economics: the fees prescribed in the Schedules for the degrees of Bachelor of Arts and Bachelor of Economics.

B. For attendance (or re-attendance) at lectures and examination:

In Social Work II	$175
In Field Work	$54
In each other subject	$108

C. For attendance as a graduate without examination in Social Work I — $54

D. For the diploma — $24

5. TABLE OF FEES.

The fees payable by candidates for tuition and examination in the various undergraduate and diploma courses, for admission to degrees and the granting of diplomas, and on candidature for higher degrees, are prescribed in the appropriate regulations or schedules made by the Council. They are here assembled and published in one table for convenience of reference.

The table also includes the Statutory Annual Fee, which is payable by all undergraduates and all candidates for higher degrees or diplomas, and other incidental fees. It does not include hospital fees payable by medical students.

Compulsory Excursions and Camps.

The attention of students is drawn to the fact that attendance on excursions or at camps (usually during vacation) forms a compulsory part of the practical work associated with some subjects or courses. The students must meet the travel and living costs involved *in addition to* the specific fees for the subjects or courses prescribed by and payable to the University.

Over recent years the subjects, courses and costs involved have been approximately as follows:

Arts:	
Geography I	$6
Geography II	$14
Geography III	$25
Science:	
Geology II	$16
Geology III	$16
Honours Economic Geology	$56
Botany II	$32
Botany III	$28
Agricultural Science:	
Fourth-year Agricultural Science	$100
Engineering:	
Civil Engineering I, Field Work	$20
Civil Engineering, Second Survey Camp	$28
Chemical Engineering (Fifth Year)	$50
Mechanical Engineering (Final Year)	$24

This list is published only for the information and guidance of students and in no way restricts the University in determining each year the nature, duration and approximate cost of the excursions or camps associated with particular subjects or courses, or the list of subjects and courses in which such attendance may be required.

Fees

Statutory Annual Fee

Every student taking a course for a Bachelor's or higher degree or for a diploma must, unless exempted by the Council, pay a Statutory Annual Fee.

Payment of the Statutory Annual Fee entitles students to membership of the University Union (the Students' Club), with the use of such Union Buildings and facilities as the Refectory, the Union Hall, the Lady Symon Building for women and the George Murray Building for men; to take full part in the activities of the Students' Representative Council and of the University Sports Association; and to avail themselves of the University Health Service and the Counselling Service.

For full-time students enrolled prior to 1970, the Statutory Annual Fee is $48.

For full-time students who enrolled for the first time in 1970, the Statutory Annual Fee in 1971 is $58. At each subsequent enrolment, the fee will be $48.

For full-time students who enrol for the first time in 1971, the Statutory Annual Fee in 1971 and at the next subsequent enrolment is $58. Thereafter the fee will be $48.

For part-time, Teachers College, postgraduate and certain other students, the fee is reduced. The fee is not required from certain other students (e.g. external students).

Fee for Admission *ad eundem statum*.

Fee payable by every student from another educational institution who is admitted *ad eundem statum*: $10.

Late Fees

Late Fee payable on submission of late enrolment -	$15
Late Fee payable on late payment of tuition fees: for each week or part of a week beyond the end of the first fortnight of the respective term -	$2
Late Fee payable on submission of late entry for examination - - - - - - - -	$10

Graduation Fee.

The fee payable for admission to a degree or for the granting of a diploma is as follows:

For admission to any degree of Bachelor, whether Ordinary or Honours - - - - - - -	$24
For admission to any degree of Master or Doctor -	$36
For the granting of any diploma, except the Diploma in Pharmacy - - - - - - - -	$24

Note: The fee of $24 covers admission to both degrees of M.B., B.S.

Tuition Fees

The following fees are payable in advance in such instalments as the Council shall from time to time determine:

I. Degree of Bachelor of Agricultural Science

A. Ordinary degree of B.Ag.Sc.:

(a) For attendance (or re-attendance) at lectures, tutorial and practical work and the annual examination in a subject taken separately:

For a subject in Group A except Agriculture IA	$105
For a half-subject in Group A	$52.50
For a subject in Group B, Group C, or Group D except Agriculture IB, Biometry I, Agricultural Microbiology and Genetics III	$144
For Agriculture IA, Agriculture IB, Biometry I, each	$57
For Agricultural Microbiology	$72
For Genetics III	$210

(b) The fees prescribed in Section (a) of this Clause are subject to the proviso that the total fee for a standard academic year's work in any one year shall not exceed $411.

(c) For a special examination in any subject - $24

Note: The fee for compulsory tours ($100) in Agriculture III is additional to the fees above.

B. Honours degree of B.Ag.Sc.:
For the final-year Honours work in any subject - $366

II. Degree of Bachelor of Applied Science

A. Ordinary degree of B.App.Sc.:

(a) For attendance at lectures, practical work, thesis or other work and annual examination in a subject taken separately: the fee prescribed in the Schedules of subjects for the degree (see Clauses 5 to 10); provided that the total fee for a standard academic year's work in any one year shall not exceed $414.

(b) For a special or supplementary examination (theoretical or practical, or both) in any subject $24

B. Honours degree of B.App.Sc.:
For the additional Honours work and examination (see Clause 12) - $366

III. Degree of Bachelor of Architecture

A. Ordinary degree of B.Arch.:

(a) For each year's work, including one annual examination - - - - - - - - - - $411

(b) For a supplementary or special examination (theoretical or practical, or both) in any subject $24

(c) For subjects taken separately: $105 each up to a maximum of the annual fee of $411 for the full year's course.

B. Honours degree of B.Arch.:

For the additional Honours work and examination - $126

IV. Degree of Bachelor of Arts

A. Ordinary degree of B.A.:

(a) For attendance (or re-attendance) at lectures, tutorial and practical work, and the annual examination:

(i) a first-year subject (excluding Science subjects) - - - - - - - - - $96

(ii) a first-year half-subject - - - - $52.50

(iii) a second-year subject (excluding Law and Science subjects) - - - - - $126

(iv) a third-year subject (excluding Science subjects) - - - - - - - - $183

(b) A Law or Science subject: the fee prescribed in the Schedule of Fees for the degrees of Bachelor of Laws or Bachelor of Science, as the case may be.

Notes: (i) For the purpose of this Schedule, Elementary Greek is classified as a first-year subject.

(ii) The following subjects are classified as second-year: Ancient History, Australian History, Australian Literature, Old and Middle English I, Old and Middle French I.

(ii) The following subjects are classified as third-year: Comparative Philology, Honours English Language and Literature Part I, Old and Middle Euglish II, Old and Middle French II.

(c) The fees prescribed in Section (a) of this Clause are subject to the proviso that the total fee for a standard academic year's work in any one year shall not exceed $366.

(d) For a special examination in any subject - - $24

(e) For an annual examination in a subject with exemption from attendance or re-attendance at classes: half the fee prescribed in Section (a) of this Schedule.

B. Honours degree of B.A.:

(a) For the interim Honours work in the second and third years - - - - - - - - - $114

(b) For the final-year Honours work and examination $366

NOTES:

(i) The total fee for the four-year course for the Honours degree is the aggregate of the maximum fee for each year at the time when the student undertook that year's work. Thus, for a student beginning the four-year course in the year indicated below, the total fee will be:

1968	300 + 300 + 366 + 366 = 1332
1969	300 + 366 + 366 + 366 = 1398
1970	366 + 366 + 366 + 366 = 1464
1971	366 + 366 + 366 + 366 = 1464

A candidate who when enrolling for the fourth-year work has not paid the total fee for the preceding three years as indicated above will be required to pay the outstanding balance of that total fee, together with the fee of $366 for the fourth-year work.

(ii) A candidate whose position is not clearly defined by note (i) above should apply in writing to the Academic Registrar to have his position determined.

(iii) The cost of attendance at excursions and/or camps is not included in the fees listed above. See separate statement on page 594.

V. DEGREE OF BACHELOR OF DENTAL SURGERY

A. Ordinary degree of B.D.S.:

(a) For attendance (or re-attendance) at lectures, practical work and annual examination:

First year (for less than four subjects, the fee for each subject will be as prescribed for such subjects in the Schedules of the degree of Bachelor of Arts or Bachelor of Science, as appropriate) - - - - - - - - $411

Each subsequent year (for less than the full number of subjects, the fee for each subject shall be: Second Year $78, Third Year $90, Fourth Year $66, Fifth Year $90.) - - - $441

(b) For attendance at lectures, practical work and a Final Examination, not being an annual examination, under Regulation 10, each subject - - $45

(c) For a supplementary examination - - - $24

B. Honours degree of B.D.S.:

For the year's Honours work and examination - - $366

Note: The following additional fees are payable by dental students:

(i) For the hire of microscopes, in each of the second, third, fourth and fifth years - - - - - $12

(ii) For the hire of dental instruments, in each of the third, fourth and fifth years (in addition to a deposit, payable at the beginning of the third year, of $20) - - - - - - - - - $40

VI. Degree of Bachelor of Economics

A. Ordinary degree of B.Ec.:

(a) For attendance (or re-attendance) at lectures, tutorial and practical work and the annual examination:

(i) For subjects which are included in the Schedule for the degree of Bachelor of Arts: the fees prescribed in that Schedule.

(ii) For Economics I, Economic Geography, Elements of Accounting and Mathematics (Economics), each - - - - - - $96

(iii) For each other subject - - - - - $126

(b) The fees prescribed in Section (a) of this Clause are subject to the proviso that the total fee for a standard academic year's work in any one year shall not exceed $366.

(c) For a special examination in any subject - - $24

(d) For an annual examination in a subject with exemption from attendance (or re-attendance) at classes: half the full fee for that subject.

B. Honours degree of B.Ec.:

For the final-year Honours work and examination - $366

VII. Degree of Bachelor of Engineering

A. Ordinary degree of B.E.:

(a) For attendance at lectures, practical work and annual examination: those prescribed in the schedules of subjects for the degree (see Clauses 4-7); provided that the total fee for a standard academic year's work in any one year shall not exceed $411.

(b) For a special examination (theoretical or practical, or both) in any University subject - - $24

(c) For subjects and examinations of the South Australian Institute of Technology: as prescribed by that institution.

B. Honours degree of B.E.:

For the special Honours work, including examinations (see Clause 11) - - - - - - - - $72

C. For admission to the degree - - - - - - - $24

Note: The cost of attendance on excursions and/or at camps is not included in the fees listed above or in the annual fee. See separate statement on page 594.

VII. Degree of Bachelor of Laws

A. Ordinary degree of LL.B.:

(a) For attendance (or re-attendance) at lectures and examinations in each of Elements of Law, Constitutional Law I and Criminal Law - - - $135

(b) For attendance (or re-attendance) at lectures and examination in each other subject of the course except Legal History and Legal Ethics and Accounts - - - - - - - - - $99

(c) For attendance (or re-attendance) at lectures and examination in Legal History - - - - $51

(d) For attendance at the course of lectures in Legal Ethics and Accounts - - - - - - - $45

(e) For participation in a seminar course - - - $51

Provided that the total tuition fee for a standard academic year's work in any one year shall not exceed $390.

B. Honours degree of LL.B.:

For the supervision and marking of an Honours dissertation - - - - - - - - - - $72

C. For admission to the degree - - - - - - - $24

D. For attendance at the course of lectures in Taxation Law - - - - - - - - - - - $60

IX. Degree of Bachelor of Medical Science

For the special year's work and examination in any subject for the Honours degree - - - - - $366

X. Degrees of Bachelor of Medicine and Bachelor of Surgery

A. For attendance (or re-attendance) at lectures, practical work and annual examination:

(a) In the first year - - - - - - - - $411
For less than four subjects, the fee for each subject will be as prescribed for such subjects in the Schedules of the degree of Bachelor of Arts or Bachelor of Science, as appropriate.

(b) In each of the second, third, fourth, fifth and sixth years - - - - - - - - - $441

B. For a supplementary examination:

(a) In any subject of the Preliminary, First Professional and Second Professional Examination - $24

(b) In any subject of the Final Professional Examination, Parts I and II - - - - - - - $48

Note: Students who are required to take a supplementary examination in more than one subject of the Final Professional Examination will be required to pay a full year's tuition fee.

XI. Degree of Bachelor of Music

A. Ordinary degree of B.Mus.:

(a) For each year's work and examination	$366
(b) For a supplementary examination in any subject	$24
(c) For Chief Practical Study taken separately	$180
(d) For each other subject taken separately (up to a maximum of the annual fee of $366 for the full year's course)	$99
(e) For a subject taken separately which is included in the Schedules for the degree of Bachelor of Arts or for the degree of Bachelor of Science: the fee prescribed in the relevant Schedule.	

B. Honours degree of B.Mus.:

For the Honours work and final Honours examination	$366

XII. Degree of Bachelor of Pharmacy

A. For attendance at lectures, practical work, and annual examinations in any subject: the fee prescribed in the schedule of subjects.

B. For a special examination (theoretical or practical or both) in any subject $24

XIII. Degree of Bachelor of Science

A. Ordinary degree of B.Sc.:

(a) For attendance (or re-attendance) at tutorial and practical work and the annual examination in a subject taken separately:

For a half-subject in Group A	$52.50
For a subject in Group A	$105
For a subject in Group B	$144
For a subject in Group C	$210
For a subject in Group D	$411
For a composite subject in lieu of a subject from Group C	$210

(b) The fees prescribed in Section (a) of this Clause are subject to the proviso that the total fee for a standard academic year's work in any one year shall not exceed $411.

(c) For a special examination in any subject $24

B. Honours degree of B.Sc.:

For the final-year Honours work in any subject	$366

Note: The foregoing amount, which does not include the fees for pass work, is inclusive of all fees payable for courses taken at the University, which the Faculty deems necessary for the Honours course in the School selected.

Notes: The cost of attendance on excursions and/or at camps is not included in the fees listed above. See separate statement on page 594.

XIV. Degree of Bachelor of Technology

A. For attendance at lectures, practical work, and annual examination in any subject: the fee prescribed in the schedule of subjects for the degree.

B. For a special or supplementary examination (theoretical or practical or both) in any subject - - - $24

XV. Degree of Master of Agricultural Science

A. On approval of the subject of the thesis - - - $12

B. Annual Registration Fee:

For full-time work in the University - - - -	$180
For part-time work in the University - - -	$60
For external work - - - - - - - -	$36

C. On submission of the thesis for examination or re-examination or on entry for any examination required $36

XVI. Degree of Master of Applied Science

A. On approval of the subject of the thesis - - - $12

B. Annual Registration Fee:

For full-time work in the University - - - -	$180
For part-time work in the University - - -	$60
For external work - - - - - - - -	$36

C. On submission of the thesis for examination or re-examination or on entry for any examination required $36

XVII. Degree of Master of Architecture

A. On approval of the subject of the thesis - - - $12

B. Annual Registration Fee:

For full-time work in the University - - - -	$180
For part-time work in the University - - -	$60
For external work - - - - - - - -	$36

C. On submission of the thesis for examination or re-examination or on entry for any examination required $36

XVIII. Degree of Master of Arts

A. Under Regulation 2(b) and (c):

(i) For internal study for all work required:

By full-time study for one year - - - $216

By part-time study extending at least two years, annually - - - - - - - - $108

(ii) For external study of all work required - - $108

B. Under Regulation 3:

On approval of the subject of the thesis or of the course of study - - - - - - - - $12

C. Under Regulation 3:

Annual Registration Fee:

For full-time work in the University - - - $180

For part-time work in the University - - - $60

For external work - - - - - - - - $36

D. Under Regulation 3:

On submission of the thesis for examination or re-examination - - - - - - - - - $36

Provided that for a candidate in Classics the fee of $36 shall include also the fee for the examination required.

XIX. Degree of Master of Business Management

A. Part I:

(a) For Accounting (Business Management), Mathematical Statistics II (each) - - - - - $126

(b) For subjects included in the Schedule for the degree of Bachelor of Economics: the fees prescribed in that Schedule.

(c) For Economics (Engineering), Mathematics I (each) - - - - - - - - - $96

(d) For Investment Planning and Business Finance - $54

B. Part II: For each Seminar course - - - - - $72

The fees under Clauses A and B are subject to the proviso that the total fee for a standard academic year's work in any one year shall not exceed $366.

C. On approval of the subject of the dissertation - - $12

D. Annual Registration Fee for dissertation work:

For full-time work in the University - - - $180

For part-time work in the University - - - $60

For external work - - - - - - - - $36

E. On submission of the dissertation for examination or re-examination - - - - - - - - - $36

XX. Degree of Master of Dental Surgery

A. On approval of the subject of the thesis - - -	$12
B. Annual Registration Fee:	
For full-time work in the University - - -	$180
For part-time work in the University - - -	$60
For external work - - - - - - - -	$36
C. On submission of the thesis for examination or re-examination, or on entry for any examination required	$36

XXI. Degree of Master of Economics

A. Under Regulation I(c) and 2(b)(i):	
(i) For internal study for all work required:	
By full-time study for one year - - - -	$216
By part-time study extending over at least two years, annually - - - - - - -	$108
(ii) For external study of all work required - -	$108
B. On apporval of the subject of the thesis or dissertation	$12
C. Annual Registration Fee for thesis or dissertation work:	
For full-time work in the University - - -	$180
For part-time work in the University - - -	$60
For external work - - - - - - - -	$36
D. On submission of the thesis or dissertation for examination or re-examination - - - - - - - -	$36

XXII. Degree of Master of Education

A. For attendance (or re-attendance) at lectures and annual examination in each subject prescribed in Schedule I - - - - - - - - - -	$51
B. For an annual examination in a subject prescribed in Schedule I with exemption from attendance or re-attendance at lectures - - - - - - - -	$27
C. For a special examination in a subject prescribed in Schedule I - - - - - - - - - - -	$18
D. On approval of the subject of the thesis, or the subjects of the dissertation and examination - - -	$12
E. Annual Registration Fee for work on the thesis or for work for the dissertation and examination:	
For full-time work in the University - - -	$180
For part-time work in the University - - -	$60
For external work - - - - - - - -	$36
F. On submission of the thesis or the dissertation, including entry for the associated examination - - -	$36
G. On submission of the thesis or dissertation for re-examination, or on entry for any further examination required	$36

XXIII. Degree of Master of Engineering

A. On approval of the subject of the thesis	$12
B. Annual Registration Fee:	
For full-time work in the University	$180
For part-time work in the University	$60
For external work	$36
C. On submission of the thesis for examination or re-examination or on entry for any examination required	$36

XXIV. Degree of Master of Laws

A. On approval of the subject of the thesis	$12
B. Annual Registration Fee:	
For full-time work in the University	$180
For part-time work in the University	$60
For external work	$36
C. On submission of the thesis for examination or re-examination or on entry for any examination required	$36

XXV. Degree of Master of Music

A. For work in Part A.	
1. For the Honours work and examinations: as prescribed in the Schedules for the Honours degree of Bachelor of Music.	
2. For work prescribed under Regulation 4(b):	
By full-time study for one year	$216
By part-time study extending over at least two years, annually	$108
By external study of all work required	$108
B. For work in Part B:	
1. On acceptance as a candidate in Part B	$12
2. Annual Registration Fee:	
For full-time work in the University	$180
For part-time work in the University	$108
3. On entry for examinations in Part B	$36

XXVI. Degree of Master of Science

A. On approval of the subject of the thesis	$12
B. Annual Registration Fee:	
For full-time work in the University	$180
For part-time work in the University	$60
For external work	$36
C. On submission of the thesis for examination or re-examination or on entry for any examination required	$36

XXVII. Degree of Master of Surgery

A. On approval of the subject of the thesis	$12
B. Annual Registration Fee:	
For full-time work in the University	$180
For part-time work in the University	$60
For external work	$36
C. On submission of the thesis	$60
D. On entry for the oral examination (if required)	$36

XXVIII. Degree of Master of Town Planning

A. Annual fee for courses of study:	
For candidates by full-time study	$411
For candidates by part-time study	$144
B. For re-examination in a course of study	$36
C. On approval of the subject of the thesis	$12
D. Annual Registration Fee for work on theses:	
For full-time work in the University	$180
For part-time work in the University	$60
For external work	$36
E. On submission of thesis for examination or re-examination, or on entry for any examination required	$36

XXIX. Degree of Doctor of Dental Science

On presentation of the thesis	$90

XXX. Degree of Doctor of Laws

On presentation of the thesis	$90

XXXI. Degree of Doctor of Letters

On presentation of the thesis	$90

XXXII. Degree of Doctor of Medicine

A. On approval of the subject of the thesis	$12
B. Annual Registration Fee:	
For full-time work in the University	$180
For part-time work in the University	$60
For external work	$36
C. On submission of the thesis	$60
D. On entry for the oral examination (if required)	$36

XXXIII. Degree of Doctor of Music

On presentation of the exercise	$45
On entering for the Final Examination	$45

XXXIV. Degree of Doctor of Philosophy

A. On acceptance as a candidate - - - - - - $12

B. For each year's work from enrolment until submission of the thesis (incomplete years will be charged at the rate of $15 for each month or part thereof) - - $180

C. On submission of the thesis for examination or re-examination - - - - - - - - - $60

XXXV. Degree of Doctor of Science

On presentation of the thesis - - - - - - - $90

XXXVI. Diploma in Applied Psychology

A. For each subject from Schedule I of the degree of Bachelor of Arts, taken as preliminary work for the Diploma: the fee prescribed in Schedule IV of the degree.

B. For attendance (or re-attendance) at lectures, seminars and practical work, and for an annual examination in all components in the course for the Diploma in Applied Psychology - - - - - - - - - $366

Note: With candidates enrolled for the Diploma over two years of part-time study, the fee for each year of part-time study will normally be $183.

C. For attendance (or re-attendance) at lectures and seminars, and for an annual examination in the following subjects taken separately:

Developmental Psychology, Human Skills, Occupational Psychology, Personality and Social Relations, Psychopathology - - - - - - - - $39

Statistics and Methodology - - - - - - $63

D. For a supplementary or special examination, or for an annual examination with exemption from attendance or re-attendance at lectures, in any one of the subjects listed in Section C above - - - - - - - $24

E. For (a) Practical work - - - - - - - $63

(b) Research investigation or critical survey - $63

XXXVII. Diploma of Associate in Arts and Education

A. For each subject from Schedule I of the degree of Bachelor of Arts: the fee prescribed in Schedule V of the degree of Bachelor of Arts.

B. For attendance (or re-attendance) at lectures and annual examination in each professional subject set out in Schedule I above - - - - - - - - $48

C. For an annual examination with exemption from attendance or re-attendance at lectures - - - - - - $24

D. For a special examination in any subject - - - $24

XXXVIII. Diploma in Computing Science

A. For attendance (or re-attendance) at lectures and practical work and an annual examination in the course in Computing Science - - - - - - - - - $366

B. For attendance (or re-attendance) at lectures and annual examination in the following subjects taken separately:

Numerical Analysis, Programming Languages, Computer Mathematics, Theory of Systems and Data Processing, each - - - - - - - - - $108

C. For an annual examination with exemption from attendance (or re-attendance) at lectures in any one of the subjects listed in Section B above - - - - - - $54

D. For a supplementary or special examination in any one of the subjects listed in Section B above - - - $24

E. For the course of practical work - - - - - - $108

XXXIX. Diploma in Education

A. For attendance (or re-attendance) at lectures and annual examination in each subject - - - - - $48

B. For an annual examination in a subject with exemption from attendance or re-attendance at lectures - - $24

C. For a special examination - - - - - - - $18

D. For the course in Practical Teaching and Methodology B - - - - - - - - - - - $48

E. For examination of proficiency as a teacher when the candidate has been exempted by the Faculty from attendance at the course of instruction in Practical Teaching and Methodology B - - - - - - $16

XL. Diploma of Associate in Music

A. For each year's work and examination for the diploma, including the fee for a Principal Subject at the Elder Conservatorium - - - - - - - - - - $366

B. For a Principal Study taken separately - - - $180

For a Second Study taken separately - - - - $108

For each other subject taken separately: $72 up to a maximum of the annual fee of $366 for the full year's course.

C. For a supplementary examination in any subject of a year's work - - - - - - - - - - $24

XLI. Diploma and Certificate in Physical Education

A. For subjects taken in the Faculties of Arts and Science: the fees prescribed in the Schedules for the degree of Bachelor of Arts and Bachelor of Science.

B. For the subjects included under Regulation 3(b): $732, payable in two annual instalments of $366 each.

C. For subjects taken separately:

Second-year Course:	
Health Education	$54
Body Mechanics	$36
First Aid	$5
Practice of Physical Education	$72
Practical Work, Part I	$108
Education	$108
Human Biology	$108
Third-year Course:	
Clinical Observation and Remedial Work	$54
Principles of Physical Education	$72
Practical Work, Part II	$108
Physiological Psychology	$54
Human Nutrition	$54
Human Physiology	$108

D. For each section of either part of the Practical Work - $30

E. For the course in Practical Teaching - $48

F. For a supplementary examination in any subject - $24

XLII. Diploma in Physiotherapy

A. For each year's work, including one annual examination $366

B. For a supplementary examination in any subject - $24

Note: The annual fee includes the fee of $2.50 payable to the Royal Adelaide Hospital, and the fee of $2.10 payable to the Adelaide Children's Hospital, for admission to Hospital practice.

XLIII. Diploma in Public Administration

A. For courses from the Faculty of Arts and the Faculty of Economics: the fees prescribed in the Schedules for the degrees of Bachelor of Arts and Bachelor of Economics.

B. For attendance (or re-attendance) at lectures and examination in Public Finance $54

C. For a supplementary examination in Public Finance $24

XLIV. Diploma in Social Studies

A. For subjects from the Faculties of Arts and Economics: the fees prescribed in the Schedules for the degree of Bachelor of Arts and Bachelor of Economics.

B. For attendance (or re-attendance) at lectures and examination:

In Social Work II - - - - - - - -	$175
In Field Work - - - - - - - - -	$54
In each other subject - - - - - -	$108

C. For attendance as a graduate without examination in Social Work I - - - - - - - - - $54

6. RULES

RULES FOR THE UNIVERSITY LIBRARY

I. Opening and Closing of the Library

1. Except on Saturdays, Sundays, public holidays and such other occasions as the Council may direct that it be closed, the Library shall be open from 9 a.m. to 5 p.m. During the academic year it shall also be open from 9 a.m. to 12 noon on Saturdays, from 1.30 p.m. to 5.30 p.m. on Sundays, and to 10 p.m. on such days as the Library Committee may direct.

II. Persons Entitled to use the Library

2. The following persons are entitled to read in the Library:—

Members and past members of the Council.

Graduates of the University or of universities recognised by the University.

Members, full-time or part-time, of the academic staff of the University, and members of any Faculty or Board of Studies of the University.

Officers of the administrative staff.

Heads and Deputy Heads of affiliated colleges.

Professional officers, laboratory managers and senior laboratory technicians.

Students enrolled for courses of study in the University.

3. Other persons who wish to study in the Library may, after application to the Librarian, be permitted by the Library Committee to do so for specified periods.

III. Conduct of Readers

4. Books and periodicals are not to be removed from the Library, except in accordance with the provisions of Section IV.

5. (a) Readers who interfere with the comfort of other readers, or cause damage in the Library, or disfigure a book or periodical in any way, may be excluded by the Librarian or officer in charge, and shall make good any damage caused; they may also be deprived of the use of the Library for such time as the Council may determine. The Librarian may impose a fine not exceeding $10 for any misconduct or breach of the rules, or he may report any misconduct or offence to the Board of Discipline for such action as the Board may think fit. If he impose a fine he shall report in writing to the Registrar the amount of such fine, and the reason for it; and the fine shall be paid to the Registrar within seven days of its imposition.

(b) Bags or cases may not be taken into the Library.

(c) A person may not reserve a reading place during his absence from the Library.

(d) Smoking in the Library is not permitted, except in the rooms prescribed by the Committee.

IV. Borrowing of Books

6. The following persons are entitled to borrow books and periodicals:—

Members and past members of the Council.

Professors, readers, senior lecturers, lecturers, senior research fellows, research fellows, post-doctoral fellows, senior tutors, senior demonstrators, tutors, demonstrators, and other persons of equivalent status holding full-time or part-time teaching or research appointments in the University.

The Registrar, Academic Registrar and Bursar.

Heads and Deputy Heads of affiliated colleges.

Professional officers, laboratory managers and senior laboratory technicians.

Such other persons as the Chairman of the Library Committee and the Librarian may from time to time approve.

7. (a) Postgraduate students and research scholars enrolled as candidates for higher degrees may borrow books (and periodicals in accordance with Clause 16) on lodging with the Registrar's Department a deposit of $5 in security for the due return of books and periodicals and payment of any fines or penalties that may be incurred.

(b) Undergraduates and students proceeding to diplomas in the University who have paid the general service fee appropriate to their course may borrow books, but not periodicals, without lodging a deposit.

(c) Graduates of the University or of other universities approved by the University, and such other persons as the Chairman of the Library Committee and the Librarian may from time to time approve, may borrow books from the Barr Smith Library only, on lodging the deposit referred to in section (a) of this clause and on paying in addition an annual fee of $2.50. They may not borrow periodicals.

(d) The deposit required of borrowers named in section (a) or (c) of this clause will, subject to any deductions incurred in accordance with these Rules, be returned to the borrower after application in writing to the Librarian. The application shall include a statement that the borrower no longer wishes to borrow.

(e) Borrowing under this clause shall be subject to the following conditions except by special arrangement:

(i) No borrower shall be allowed to have in his possession more than six volumes belonging to the Library.

(ii) Every book borrowed from the Library must be returned within fourteen days. The loan may be renewed once only for a further period of fourteen days at the discretion of the Librarian if in the meantime there has been no other application for the book. The penalty for keeping any volume beyond the specified time is fifteen cents a day.

(iii) Any book may be marked temporarily for loan for a period of two to thirteen days. The penalty for keeping any such volume beyond the specified time is thirty cents a day.

(iv) Books placed on reserve and available for loan for a period of less than two days may be borrowed in the period beginning one hour before and ending fifteen minutes before the Library is closed, and must be returned to the Library no later than fifteen minutes after the Library is next opened. The penalty for keeping any such volume beyond the specified time is thirty cents an hour to a total of $3 in any day, and in addition sixty cents for any failure to return the volume by the time the Library closes on a day that return of the volume is overdue.

(v) Any book borrowed from the open shelves in the multiple-copy collection must be returned to the Library by the specified time. The penalty for keeping any such volume beyond the specified time is fifteen cents an hour to a total of $1.50 in any day, and in addition thirty cents for any failure to return the volume by the time the Library closes on a day that return of the volume is overdue.

(vi) Volumes borrowed personally from the Library must be returned to the Library by hand.

8. Only persons listed in clause 6 are entitled to borrow periodicals, bound or unbound. Other members of the teaching and research staff, and postgraduate students enrolled as candidates for higher degrees, may borrow bound and unbound periodicals on production of their borrower's cards suitably endorsed. Students who are enrolled in the fourth or a later year of a course for a degree may borrow from the Barr Smith Library bound volumes of periodicals related to their courses on production of their borrower's cards suitably endorsed. (This provision does not necessarily apply to the Medical Library and the libraries within the Faculties of Agricultural Science, Law and Music.)

9. No periodical shall be borrowed until it has been in the Library seven days. Every bound or unbound periodical then borrowed for departmental circulation or for personal use must be returned within seven days. The loan of a bound periodical may be renewed for a further period of seven days at the discretion of the Librarian if in the meantime there has been no other application for it.

10. For each book or periodical borrowed a voucher must be filled in and deposited with the Librarian. No book or periodical may, in any circumstances, be taken out of the Library until a borrowing voucher has been given for it. Any infringement of this rule renders the borrower liable to a fine not exceeding $10 a volume.

11. Notwithstanding clause 7(e)(ii) and (iii) above, the Librarian may recall a book or periodical at any time, and thereupon it must be returned within three days of the date of the notice. The penalty for keeping any such volume beyond the specified time is fifteen cents a day in the case of a periodical lent for seven days or a book lent for at least fourteen days, and thirty cents a day in the case of a book lent for a period of two to thirteen days.

12. A penalty for the late return of a book or periodical may be paid in the Library as the volume is returned and before an invoice

is issued. In this case the penalty mentioned in clause 7(e)(ii) and (iii) above for late return of a volume is reduced by five cents a day, and that mentioned in clause 7(e)(iv) and (v) above by five cents an hour, wtih a corresponding reduction in the other penalties mentioned.

13. All books and periodicals on loan from the Library shall be returned on a date to be fixed each year by the Chairman of the Library Committee and the Librarian for the annual check.

14. Borrowers of books and periodicals shall be held responsible for any loss, injury, mutilation, or disfigurement by writing or other marks, and shall be required to pay the full cost of replacing or repairing such volumes and may also, at the discretion of the Council, be fined or deprived of the use of the Library.

15. So long as any fine remains unpaid, or so long as any person keeps a book or periodical to which he is not entitled, the right of the defaulter to have access to the Library is suspended.

16. No book shall be borrowed until it has been in the Library seven days. Otherwise, any book except those specially reserved may be borrowed. Specially reserved books may be borrowed only by permission of the Library Committee.

17. Except as provided in clause 7(e) (iv) books and periodicals may be borrowed until thirty minutes before closing time on week-days and until fifteen minutes before closing time on Saturdays and Sundays.

18. No publications lodged in departments of the University by permission of the Library Committee may be borrowed for use outside the departments except through the Barr Smith Library.

19. The Council may vary any of the foregoing rules at any time either in specific cases or generally.

V. Rules for the Music Library

20. Teachers in the Elder Conservatorium are entitled to borrow books or music from the Library. Students may borrow music on the written recommendation of a teacher, but must not have in their possession more than two copies at the same time.

21. In all other respects the foregoing rules of the University Library shall apply to the Music Library.

VI. Rules for the Medical and Law Libraries

22. Medical graduates who are members of the Australian Medical Association (S.A. Branch), dental graduates who are members of the Australian Dental Association (S.A. Branch) and members of the Australian Physiotherapy Association (S.A. Branch) shall be entitled to use the Medical Library in accordance with the terms of the agreements between the Branches and the University. The agreements may be seen in the Medical Library.

23. In all other respects the foregoing rules of the University Library shall apply to the Medical and Law Libraries.

Approved by the Council, July, 1970.

LABORATORY RULES AND RULES APPLICABLE TO STUDENTS ON UNIVERSITY PREMISES

A. General

1. The attention of all students is drawn to the by-laws made under the University of Adelaide Act Amendment Act, which are published in the University Calendar and are exhibited on notice boards throughout the University.

2. The Head of a Department may exclude any student from any class in that Department for any cause he shall deem sufficient; and he shall report every such exclusion, and the grounds for it, to the Council through the Chairman of the Board of Discipline. The Council may reverse, vary or confirm the exclusion upon such terms as it shall think fit. The fees paid by any student so excluded shall not be refunded to him unless the Council shall otherwise determine.

3. The possession of fireworks, home-made explosives or explosive material of any kind on the University grounds or in any University building is forbidden.

B. Laboratories

1. For students taking regular courses involving laboratory work in the University an appropriate laboratory will be open daily during term time (Saturdays and holidays excepted) at such hours as shall be considered necessary by the Head of the Department concerned. Persons engaged in advanced work or original research may work at such additional times as the Head of the Department may arrange.

2. The facilities of a laboratory will also be made available for original research carried on by students or graduates not proceeding to a degree in the University at such times and under such conditions as the Head of the Department may determine; the fee for use of a laboratory and its facilities, and the charges for materials, to be determined in each case.

3. Whenever necessary and possible, each student will have a definite working place and locker or drawer assigned to him, which he may not change without permission. To avoid congestion, students should not move about the laboratories unnecessarily.

4. Paper and refuse of any kind must be placed in the receptacles provided for the purpose. No solid material of any kind shall be thrown into sinks.

5. Students are responsible for the cleanliness of their apparatus and work places or benches, which must be left clean and tidy after each practical session.

6. All preparations and equipment made from materials supplied by the University shall remain the property of the University.

7. Large or expensive pieces of apparatus will be supplied for use by students only on condition that any damage or breakage is to be made good by the student causing the damage or breakage, on such basis as the Head of the Department may determine.

8. No experiments of a dangerous nature may be performed without the express sanction of the Head of the Department concerned.

9. Any accident must be reported at once to the person currently in charge of the laboratory.

10. The Head of a Department may impose a fine not exceeding $10 for any breach of discipline, misconduct, misuse of apparatus or reagents, or waste of gas, water or electricity. He shall report in writing to the Registrar the amount of such fine, and the reason for it; and the fine shall be paid to the Registrar within seven days of the time of its imposition.

Approved by the Council, April, 1958.

RULES FOR STUDENTS USING THE NAPIER BIRKS ROOM

1. *Conduct of users*

The room is to be used for purposes of study only. Users must refrain from conduct which will interfere with the comfort of other users. Footwear which may damage the floor must not be worn.

2. *Persons entitled to use the room*

The room is available for use by students enrolled for second-year or subsequent subjects in the Departments of Economics and Commerce.

3. *Times of use*

During the academic year the room will be open between 9 a.m. and 10 p.m. on Mondays to Fridays, and from 9 a.m. to 12 noon on Saturdays. At all other times the room will be open during such hours as the Dean of the Faculty of Economics may determine.

4. *Use of books, periodicals, statistical material*

All such material must be returned to the desk of the Supervisor after use.

In no circumstances may such material be removed from the room.

5. *Use of calculating machines*

Calculating machines may be used by students only with the permission of a member of the lecturing staff; except that in the case of students presenting for Economic Statistics I, II or Final Honours, permission to use specific machines for the year will be given by the lecturer. After use, machines must be cleared, switched off and covered; and the plugs must be removed from the powerpoint.

6. *General*

Any student not observing the above rules shall be subject to disciplinary action.

Approved by the Council, April, 1961.

RULES OF THE COMPUTING ANNEXES

1. *Definitions*

These rules shall apply to such Computing Annexes as may be established by the University from time to time and to the input areas of the Computing Centre which for this purpose are defined as Computing Annexes; and the word "Director" refers to the Director of the Computing Centre.

2. *Persons entitled to use the computing annexes*

The Computing Annexes will be available for use by: (a) members of the University staff; (b) research students for projects which have been approved by the Head of the Department concerned; (c) undergraduate students for work approved by the Director and the Head of the Department concerned; and (d) such other persons engaged in business with the Computing Centre as the Director may approve.

3. *Opening and closing of computing annexes*

(a) The Computing Annexes will normally be open daily except on Saturdays, Sundays and Public Holidays; and during term they may be open on Saturday mornings also.

(b) The normal hours during which an Annex will be open are from 9 a.m. to 5 p.m., Mondays to Fridays throughout the year, and from 9 a.m. to 12 noon on Saturdays during term as the Director prescribes. Persons engaged on advanced work or original research may work in them at such additional times as the Director may approve.

(c) In case of emergency the Director may close an Annex at any time for such period as he deems necessary; and on special occasions he may open an Annex outside the normal hours in such circumstances and for such periods as he may approve and determine, but no change shall be made in the normal hours except with the approval of the Computing Centre Committee.

4. *Conduct of users*

i. Persons using the Computing Annexes shall not engage in conduct which may interfere with the performance of their work by other users;

ii. Paper and refuse of any kind must be placed in receptacles provided for the purpose;

iii. Users will be responsible for ensuring that equipment and work places are left clean and tidy after use;

iv. Any apparatus or equipment made from materials supplied by the University shall remain the property of the University.

v. Large or expensive pieces of equipment may be used only with the consent of the Director or an authorised officer of the Computing Centre and then only on condition that the user undertakes to make good, on such basis as the Director may determine, any damage to or breakage of the equipment;

vi. Any apparatus or machine failure must be reported immediately to the person currently in charge of the Annex;

vii. The Director may impose a fine not exceeding $10 for any breach of discipline, misconduct, misuse of equipment or for waste of paper, cards or electricity. He shall report, in writing to the Registrar, the amount of such fine and the reason for it. The fine shall be paid to the University within seven days of the time of its imposition;

viii. The person in charge of the Annex may exclude any person for any cause which he shall deem sufficient and he shall report every such exclusion, and the cause for it, to the Director. The Director may extend the exclusion beyond a particular day, but in such cases he shall notify the person concerned in writing and shall report the exclusion, and the cause for it, to the Council through the Chairman of the Board of Discipline. The Council may set aside, vary, or confirm the exclusion upon such terms as it shall think fit.

RULES FOR THE CONDUCT OF EXAMINATIONS

1. No candidate will be allowed to enter the examination room during any examination more than half-an-hour after the time fixed for the beginning of the written or practical work in that examination.

2. No candidate will be allowed to leave the examination room during any examination before half-an-hour has elapsed from the time fixed for the beginning of the written or practical work in that examination, nor during the last quarter of an hour.

3. Any candidate who shall leave the examination room shall be allowed to return to it during that examination only at the absolute discretion of the Officer-in-Charge. A candidate who wishes to leave the room temporarily *must therefore obtain the consent of a Supervisor before doing so.*

4. The attention of candidates is drawn to the following statute:

"A candidate must not during any examination whatever:

(a) have in his or her possession any book or notes or any other means whereby he or she may improperly obtain assistance in his or her work; or

(b) directly or indirectly give assistance to any other candidate; or

(c) permit any other candidate to copy from or otherwise use his or her papers; or

(d) directly or indirectly accept assistance from any other candidate; or

(e) use any papers of any other candidate; or

(f) by any other improper means whatever obtain or endeavour to obtain, directly or indirectly, assistance in his work, or give or endeavour to give, directly or indirectly, assistance to any other candidate; or

(g) be guilty of any breach of good order or propriety.

Any candidate who shall be guilty of a breach of any of the provisions of this regulation shall lose that examination; and, if detected at the time, shall be summarily dismissed from the examination room; and shall be liable to such further punishment, whether by exclusion from future examination or otherwise, as the Council may determine."

5. When the five-minute warning before the end is given, all *candidates must remain seated* until their books have been collected. No candidate may leave his or her seat until all answers have been collected and the announcement is made that candidates may leave the room.

Instructions to Candidates

1. Read carefully the directions printed on the front of the examination answer book and any directions that may be printed at the head of the examination paper.

2. Communicating with Examiners prior to the publication of the examination results is forbidden. Candidates who feel that they have a genuine claim for enquiry should state their cases in writing to the Academic Registrar.

CALENDAR OF

THE UNIVERSITY OF ADELAIDE

FOR THE YEAR 1971

SYLLABUSES AND TIME-TABLES

SYLLABUS NUMBERS—DESCRIPTION

SYSTEM

Each number comprises two letters followed by two digits, e.g. AE12 except in the case of first-year half-subjects where the letter H replaces the second digit, e.g. SB1H.

The first letter identifies the Faculty or Board of Studies controlling the subject.

The second letter (except in Engineering and Techology: q.v.) identifies the Department teaching the subject.

The two digits have meanings which vary according to the Faculty or Board of Studies concerned, and which are explained at the head of each Faculty or Board group of syllabuses.

CODE LETTERS

Faculty or Board of Studies	*Code Letter*	*Page*
Agricultural Science	W	653
Architecture and Town Planning	R	667
Arts	A	691
Dentistry	D	751
Economics	E	759
Engineering	N	778
Law	L	808
Medicine	M	820
Music	U	829
Physical Education*	Z	835
Physiotherapy*	P	841
Science	S	847
Technology and Applied Science	T	903

* Board of Studies.

For list of Departments within a Faculty or Board of Studies, with their departmental code letters, see list at head of each Faculty or Board group of syllabuses.

SYLLABUSES OF SUBJECTS FOR DEGREE AND DIPLOMA COURSES, 1971

Students are expected to procure the latest edition of all text-books prescribed.

FACULTY OF AGRICULTURAL SCIENCE

SYLLABUS NUMBERS

The first letter identifies the Faculty of Agricultural Science: **W**

The second letter identifies the Department or sub-department teaching the subject, as follows:

Agricultural Biochemistry and Soil Science	**B**	**Biometrics**	**Y**
Agronomy	**A**	**Entomology**	**E**
Animal Physiology	**N**	**Plant Pathology**	**P**
		Plant Physiology	**F**

The first digit

0-6: Indicates that the subject may form part of a sequence.

7-9: Indicates that the subject does not form part of a sequence.

The second digit

1, 2, 3 or 4: Indicates year of subject, e.g. first, second, third or fourth.

(5-8: Not used).

9: Indicates Final Honours.

H: Indicates a half-subject, two of which count towards the degree as a whole subject.

NOTE:

Some subjects for the degree of B.Ag.Sc. are taught by Departments of the Faculties of Economics and Science. In the syllabus numbers of those subjects the two digits do not necessarily have the significance shown above.

For syllabus of the following subject, see under Faculty of Economics:

EE01. Economics I.

For syllabus of the following subject, see under Faculty of Engineering.

NX01. Engineering I.

For syllabuses of the following subjects and half subjects, see under the relevant department of the Faculty of Science:

SZ71	**Biology.**	**SG02**	**Geology II.**
SB1H	**General Biology IH.**	**ST7H**	**Statistics IH.**
SB2H	**Plant Biology IH.**	**ST02**	**Mathematical Statistics II.**
SB02	**Botany II.**	**ST03**	**Mathematical Statistics III.**
SC01	**Chemistry I.**	**SM01**	**Mathematics I.**
SC12	**Chemistry II.**	**SM11**	**Mathematics IM.**
SA7H	**Computing IH.**	**SM7H**	**Mathematics IH.**
SJ7H	**Genetics and Human Variation IH.**	**SM02**	**Pure Mathematics II.**
		SN02	**Applied Mathematics II.**
SJ02	**Genetics II.**	**SP01**	**Physics I.**
SJ03	**Genetics III.**	**SZ01**	**Zoology I.**
SG1H	**General Geology IH.**	**SZ02**	**Zoology II.**
SG2H	**Physical Geology IH.**		

WB03. Agricultural Biochemistry I.

Students taking this course and proceeding to Agricultural Biochemistry II (WB04) are advised to have completed the course in Chemistry II (SC12).

A course of two hours lectures and five hours practical work a week for three terms dealing with chemistry and intermediary metabolism in micro-organisms, plants and animals. Topics include enzymology; metabolism of carbohydrates, lipids, protein and nucleic acids; biochemical control mechanisms; biochemistry of vitamins and coenzymes and biochemistry of nitrogen and sulphur cycles in nature. Practical work will consist of experiments related to the above topics.

Text-books:

White, A., and others, *Principles of biochemistry*, 4th edition (McGraw-Hill); *or*
Mahler, H. R., and Cordes, E. H., *Biological chemistry* (Harper).

WB04. Agricultural Biochemistry II.

Pre-requisite subject: A Division I pass or higher in Agricultural Biochemistry I (WB03).

A course of two hours lectures and ten hours practical work a week for three terms dealing with advanced aspects of the intermediary metabolism of micro-organisms, plants and animals. The topics include the sub-cellular distribution of enzymes in relation to their function; electron transfer and oxidative phosphorylation, metabolism of inorganic nitrogen and sulphur and their compounds; biochemistry of absorption and translocation of ions; function of metals in enzyme systems; chemical structure and biological activity; biosynthesis of nucleic acids, viruses and proteins; biochemical and genetical control mechanisms in cells, including hormones and their actions in plants and animals; biochemistry of muscle, vision, nerve action and digestion. The practical work will consist of experiments related to the above topics, training in the use of stable and radio-active isotopes and a short research project.

Text-books:

White, A., and others, *Principles of biochemistry*, 4th edition (McGraw-Hill).
Mahler, H. R., and Cordes, E. H., *Biological chemistry* (Harper).

A reading list will be given in the lectures.

WB13. Soil Science I.

Students taking this course and proceeding to Soil Science II (WB14) are advised to have completed also the course Chemistry II (SC12).

A course of two hours of lectures and three hours of practical work a week for three terms, dealing with soil formation and composition, and the chemistry and physics of soils in relation to soil fertility. Topics considered include: soil genesis, distribution of the major soil types of the world and Australia; composition of the inorganic and organic fractions of soils; clay mineralogy; chemistry of the plant nutrients in soils; the nitrogen cycle; air and water movements in soils; the physics of irrigation and drainage; soil erosion.

Practical work will consist of a number of field excursions, and laboratory work related to the above topics.

Text-books:

Russell, E. J., *Soil conditions and plant growth*, 9th edition (Longmans).
Leeper, G. W., *Introduction to soil science*, 3rd edition (M.U.P.).

Reference books:

Baver, L. D., *Soil physics*, 3rd edition (Wiley).
Bear, F. E., *Chemistry of the soil*, 2nd edition (Reinhold).
Clarke, G. R., *Study of the soil in the field*, 4th edition (O.U.P.).
Cooke, G. W., *The control of soil fertility* (Crosby Lockwood).
Jenny, H., *Factors of soil formation* (McGraw-Hill).
Stace, H. C. T., *et al.*, *Handbook of Australian soils* (Rellim)
Stephens, C. G., *A manual of Australian soils*, 3rd edition (C.S.I.R.O.).

WB14. Soil Science II.

Pre-requisite subjects: A Division I pass or higher in Soil Science I (WB13).

A course of two hours lectures and ten hours practical work a week for three terms devoted to fundamental studies of the chemistry and physics of the soil. The major topics considered are: the genesis and composition of clay minerals in different soil types; the reactions of ions and water at the surfaces of colloidal particles, and the influence of these reactions on the physical and chemical properties of soils, particularly the potential and capacity of the soil to provide the major plant nutrients and trace elements; the diffusion of ions in soils and the chemistry of nutrient uptake by plants; the composition of the organic colloids and the kinetics and biochemistry of organic matter transformations; soil organisms; theories of the flow and diffusion of air and water in porous materials, and their application to infiltration, permeability and other irrigation and drainage problems; mechanisms of aggregate formation and breakdown in soils in relation to soil fertility.

Practical work will be related to the above topics and will include a research project.

In addition to those books listed for Soil Science I the following are recommended:

Reference books:

Alexander, M., *Introduction to soil microbiology* (Wiley).
Bartholomew, W. V., and Clark, F. E., (eds.), *Soil nitrogen* (American Society of Agronomy).
Black, C. A., *Soil-plant relationships*, 2nd edition (Wiley).
Black, C. A., (ed.), *Methods of soil analysis* (American Society of Agronomy).
Brown, G., (ed.), *X-ray identification and crystal structures of clay minerals* (Mineralogical Society).
Grim, R. E., *Clay mineralogy* (McGraw-Hill).
Hagan, R. M., *et al., Irrigation of agricultural lands* (American Society of Agronomy).
Jackson, M. L., *Soil chemical analysis* (Constable).
Kononova, M., *Soil organic matter*, 2nd edition (Pergamon).
McLaren, A. D., and Peterson, S. H. (eds.), *Soil biochemistry* (Marcel Dekker).
Olphen, H. van, *Introduction to clay colloid chemistry* (Interscience).
Rose, C. W., *Agricultural physics* (Pergamon).
Shaw, B. T., *Soil physical conditions and plant growth* (Academic Press).

WA01. Agriculture IA.

A course of 20 lectures, one lecture a week.

This subject will be examined at the end of the second year, together with Agriculture IB.

WORLD AGRICULTURE:

World resources, population and food supply; factors influencing the distribution and productivity of crops and domestic animals; the plasticity of crop boundaries; the evolution of agriculture.

AUSTRALIAN AGRICULTURE:

Australian resources and their development; the history, structure and progress of Australian agriculture.

Text-books:

Andrews, J., *Australian resources and their utilisation* (Dept. of Adult Education, University of Sydney).
Australia. C.S.I.R.O., *The Australian environment*, 4th edition (M.U.P.).

Reference books:

Blake, C. D. (ed.), *Fundamentals of modern agriculture* (S.U.P.).
Trewartha, G. T., and others, *Elements of Geography,* 5th edition (McGraw-Hill).
Wadham, S. M., Wilson, R. K., and Wood, Joyce, *Land utilisation in Australia* (M.U.P.).
Williams, D. B. (ed.), *Agriculture in the Australian economy* (S.U.P.).

WA12. Agriculture IB.

A course of one lecture each week for three terms.

FACTORS IN AGRICULTURAL PRODUCTION:

Climate: World and Australian climates, length of growing season, soil/water balances; man's control of climatic factors: temperature, frost, rain, evaporation, wind. The microclimates of plants and animals.

Soils: Their origin and constitution; the Great Soil Groups of the world; Australian soils; introduction to the chemistry of plant nutrients in soils and the physics of soil water.

Animal Production: Introduction to the growth, nutrition, physiology and distribution of domestic livestock. Efficiency concepts in animal production.

Text-book:

Australia, C.S.I.R.O., *The Australian environment,* 4th edition (M.U.P.).

Reference books:

Barry, R. G., and Chorley, R. J., *Atmosphere, weather and climate* (Methuen).
Blake, C. D. (ed.), *Fundamentals of modern agriculture* (S.U.P.).
Cole, H. H. (ed.), *Introduction to livestock production* (Freeman).
Davis, A. J., *Chiefly fine* (Hall's Book Store, Melbourne).
Flohn, H., *Climate and weather* (World University Library).
Leeper, G. W., *Introduction to soil science* (M.U.P.).
Molnar, I. (ed.), *A manual of Australian agriculture,* 2nd edition (Heinemann).
Rice, V. A., and Andrews, F. N., *Breeding and improvement of farm animals* (McGraw-Hill).
Russell, E. J., *Soil conditions and plant growth,* 9th edition (Longmans).
Stace, H. C. T., and others, *A handbook of Australian soils* (Rellim).
Stephens, C. G., *A manual of Australian soils* (C.S.I.R.O.).
Wadham, S. M., and others, *Land utilization in Australia* (M.U.P.).

WA03. Agriculture II.

Pre-requisite subject: Agriculture IB (WA12).

A course of two lectures and three hours practical work a week for three terms.

Plants and animals: Variability, adaptation, breeding.

Soil and water management: Water resources, evaporation control, irrigation, drainage, water conservation. Elements of land surveying. Tillage, Fertilizers: fertilizer technology; incidence, diagnosis and correction of nutrient deficiencies.

Pasture production: Native and sown pastures, seeds mixtures, pasture establishment, ecology and management.

Field and horticultural crops: Principles and techniques of production in world and Australian crops.

Reference books:

Allard, R. W., *Principles of plant breeding* (Wiley).

Australia, C.S.I.R.O., *The Australian environment*, 4th edition (M.U.P.).

Australian Academy of Science, *Water resources, use and management* (M.U.P.).

Bannister, A. E., and Raymond, S., *Surveying*, 2nd edition (Pitman).

Cooke, G. W., *The control of soil fertility* (Crosby Lockwood).

Hutchinson, J., *Essays on crop plant evolution* (C.U.P.).

McVickar, M. H., and others, *Fertilizer technology and usage* (Soil Science Society of America).

Molnar, I., *A manual of Australian agriculture* (Heinemann).

Rice, V. A. and Andrews, F. N., *Breeding and improvement of farm animals* (McGraw-Hill).

Schwab, G. O., and others, *Soil and water conservation engineering*, 2nd edition (Wiley).

Wilsie, C. P., *Crop adaptation and distribution* (Freeman).

WA04. Agriculture III.

Pre-requisite subjects: Agriculture IB (WA12) and Agriculture II (WA03).

A course of two lectures and three hours practical work a week for three terms.

PRINCIPLES UNDERLYING AGRICULTURAL PRACTICE: Soil and water management; water resources, evaporation control, irrigation, drainage, water conservation. Elements of land surveying. Tillage. Fertilizers: fertilizer technology; incidence, diagnosis and correction of nutrient deficiencies. Seed production and certification. Weed control. Plant and animal protection.

THE ECONOMICS OF AUSTRALIAN AGRICULTURE: Agriculture in the Australian economy; farm production economics.

LAND USE AND FARM MANAGEMENT: Determination of land use by climatic, soil, economic and sociological factors. Land development; efficiency and allocation of resources. Representative agricultural development in Australia.

Students are required to participate in and report on tours of agricultural areas in South Australia.

Text-books:

Australia, C.S.I.R.O., *The Australian environment*, 4th edition (M.U.P.).

Wadham, S., and others, *Land utilization in Australia*, 4th edition (M.U.P.).

Reference books:

Barnard, A. (ed.), *The simple fleece* (M.U.P./A.N.U.).

Carson, Rachel, *Silent spring* (Hamilton).

Hardaker, J. B., and others, *Farm management and agricultural economics* (Angus and Robertson).

Klingman, G. L., *Weed control as a science* (Wiley).

Williams, D. B. (ed.), *Agriculture in the Australian economy* (S.U.P.).

See also list for Agriculture II.

WA74. Agronomy.

Pre-requisite subject: Crop Physiology (WF03) at Division I or higher.

A course of three lectures and seven hours practical work a week for three terms. The practical work includes an individual project.

PRINCIPLES OF AGRONOMIC EXPERIMENTATION: Formulation and testing of hypotheses. Errors and variation in agronomic studies. Collection of crop, pasture and animal data. Conduct of field and pot culture experiments.

THE BOTANY OF CROP AND PASTURE PLANTS: Origin, evolution and taxonomy; morphology and development of selected crop plants, pasture grasses and legumes.

THE GROWTH AND ECOLOGY OF FIELD CROPS AND PASTURES: Growth and growth analysis, growth curves, quantitative expression of growth, crop growth rates, photosynthesis, light interception and light energy conversion. Yield in relation to nutrient concentration, plant and soil analysis as basis for fertilizer recommendations, genotypic variation in nutrient requirements. Dynamics of water and nutrient supply. The crop environment. Energy balance and use of energy in micro-climatic processes. Transfer processes between the crop and the atmosphere. Water balance and factors affecting evaporation in crop systems. Density and plant competition. Pasture-animal interactions. Pasture ecology and utilization; pasture evaluation.

Text book:

Rose, C. W., *Agricultural physics* (Pergamon).

Reference books:

Barnard, C. (ed.), *Grasses and grasslands* (Macmillan).

Commonwealth Bureau of Pastures and Field Crops. Bulletin 42: *Methods of surveying and measuring vegetation,* by D. Brown (The Bureau).

Evans, L. T. (ed.), *Environmental control of plant growth* (Academic Press).

Hector, J. M., *Botany of field crops,* Vol. I and II (Johannesburg Central Newsagency).

Hutchinson, J. B. (ed.), *Essays on crop plant evolution* (Cambridge).

LeClerg, E. L., and others, *Field plot technique* (Burgess).

Leopold, A. C., *Plant growth and development* (McGraw-Hill).

Lynch, P. B., *Conduct of field experiments,* N.Z. Department of Agriculture Bulletin 399 (Government Printer, Wellington).

Milthorpe, F. L., and Ivins, J. D. (ed.), *Growth of cereals and grasses,* Proceedings 12th Easter School in Agricultural Science, University of Nottingham, 1965 (Butterworths).

Rorison, I. H. (ed.), *Ecological aspects of the mineral nutrition of plants* (Blackwell).

Commonwealth Bureau of Pastures and Field Crops. Bulletin 47: *Some concepts and methods in sub-tropical pasture research* by the Staff of the Cunningham Lab. C.S.I.R.O. Brisbane (The Bureau).

Commonwealth Bureau of Pastures and Field Crops. Bulletin 45: *Research techniques in use at the Research Institute, Hurley* (The Bureau).

WA84. Plant Breeding.

Pre-requisite subject: Genetics II (SJ02), at Division I or higher.

A course of three lectures and seven hours practical work a week for three terms. The practical work includes an individual project.

Objectives and bases of breeding programmes. Plant introduction, adaptation, effect of breeding history, breeding systems, variability, selection methods, in self and cross-pollinated plants. Crop plant evolution.

Polyploidy, incompatibility, mutation, male sterility, disease resistance, cytogenetics and inter-specific hybridization in relation to plant breeding.

Breeding for yield and quality. Biometrical, physiological and biochemical analysis. General philosophy of breeding, contributions of plant breeding to agriculture. Field plot, mechanization, computer techniques.

Reference books:

Allard, R., *Principles of plant breeding* (Wiley).

Burnham, C. R., *Discussions in cytogenetics* (Burgess).

Falconer, D. S., *Introduction to quantitative genetics* (Oliver and Boyd).

Hutchinson, J. B. (ed.), *Essays on crop plant evolution* (Cambridge U.P.).

Plant breeding symposium, Iowa State University, *Plant breeding*; ed. K. J. Frey (Iowa State U.P.).

WN03. Animal Physiology and Production I.

A three-term course of five hours weekly in three sections.

ANATOMY AND HISTOLOGY: Gross structure and histology with emphasis on the anatomical specialisation of ruminants.

PHYSIOLOGY AND BIOCHEMISTRY: Animal functions in relation to environment, nutrition and productive efficiency. Functions of skin, glands, hair and wool. Body composition, growth; metabolic turnover and conversion of water, electrolytes, proteins, carbohydrates and fats. Circulation and body fluids. Digestion, secretion absorption and transport of metabolites. Endocrine functions, reproductive physiology. Nervous and neuroendocrine control. Behaviour. Adaptive mechanisms. Principles of animal breeding.

NUTRITION AND PRODUCTION: Basic concepts of animal nutrition: balance of energy, carbon, nitrogen, electrolytes, and water. Energy, mineral and vitamin requirements and deficiencies in growth, production and reproduction. Ecology and nutrition of the grazing animal: seasonal limitations to production. The economic approach to supplementary feeding, drought feeding, lot feeding; the use and limitations of feeding standards. Nutrition of pigs and poultry. Nutrition as a factor modifying the form and composition of carcass animals.

Reference books:

May, N., *The anatomy of the sheep* (Q.U.P.).
Bell, G. H., and others, *Textbook of physiology and biochemistry* (Livingstone).
Wright, S., *Applied physiology* (O.U.P.).
Harper, H. A., *Review of physiological chemistry*, 12th edition (Lange).
Davson, H., and Eggleton, G., *Principles of human physiology* (Churchill).
Maynard, L. A. and Loosli, J. K., *Animal nutrition* (McGraw-Hill).
Clark, W. E. le Gros, *The tissues of the body* (O.U.P.).
Conn, E. E., and Stumpf, P. K., *Outlines of biochemistry* (Wiley).
Dougherty, R. W., *Physiology of digestion in the ruminant* (Butterworth).
Blaxter, K. L., *Energy metabolism of ruminants* (Hutchinson).
Brody, S., *Bioenergetics and growth* (Reinhold).
Hammond, J., *Progress in the physiology of farm animals* (Butterworth).
Wood, D. W., *Principles of animal physiology* (Arnold).
Mitchell, H. H., *Comparative nutrition of man and domestic animals* (Academic Press).
Nalbandov, A. V., *Reproductive physiology* (Freeman).
Rice, V. A., and others, *Breeding and improvement of farm animals*, 6th edition (McGraw-Hill).
Spedding, C. R. W., *Sheep production and grazing management* (Ballière).
Pike, R. L., and Brown, M., *Nutrition: an integrated approach* (Wiley).

WN04. Animal Physiology and Production II.

Pre-requisite subject: Animal Physiology and Production I (WN03).

A three term course of ten hours a week including a project.

ANATOMY AND HISTOLOGY: More detailed study of the structure of sheep and bird. Histology, and electron micrography of cells. Structure-function relations of muscle, storage organs, glands, egg formation and reproductive tract.

PHYSIOLOGY: Special topics, including rumen biochemistry and physiology, secretion, transport and absorption in kidney, glands and gut. Size, seasonal rhythms. Starvation and over-nutrition, metabolic dysfunction. Endocrinology, fertility, foetal physiology, lactation, and growth. Physiological ecology of animals. Nervous organisation. behaviour. Animal population, density, and social interactions.

ANIMAL PRODUCTION: Special aspects of ruminant metabolism and nutrition. Principles of experimentation with grazing animals, methods for studying production in the field: wool, growth, milk production, reproduction, body growth and its components; carcass evaluation. Seasonal productivity and nutritive value of pastures, nitrogen turnover of grazing animals. The assessment of herbage intake, grazing time and composition of the diet. Relative efficiencies of farm animals as converters of energy and protein.

PRINCIPLES OF DISEASE CONTROL: Developmental defects. Parasites, bacteria, viruses, fungi, worms, arachnids, insects. Degenerative and neoplastic disease. Biochemical lesions, poisons, and nutritional defects. Control by immunity, trace element replacements, antibiotics, management.

Reference books:

Assali, N. S., *Biology of gestation.*

Blaxter, K. L. (ed.), *Energy metabolism* (Hutchinson).

Annison, E. F., and Lewis, D., *Metabolism in the rumen* (Methuen).

Kleiber, M., *The fire of life* (Wiley).

Cantarow, A., and Schepartz, B., *Biochemistry* (Saunders).

Harper, H. A., *Review of physiological chemistry,* current edition (Lange).

Lerner, I. M., *Population genetics and animal improvement* (C.U.P.).

Hafez, E. S. E. (ed.), *Adaptation of domestic animals* (Lea and Febiger).

Dukes, H. H., *The physiology of domestic animals* (Comstock).

Yeates, N. T. M., *Modern aspects of animal production* (Butterworth).

Young, W. C., *Sex and internal secretions* (Williams and Wilkins).

Moule, G. R. (ed.), *Field investigations with sheep: a manual of techniques* (C.S.I.R.O., Melb.).

Reference lists of reviews and periodic publications will be provided.

WY73. Biometry I.

The course comprises 2 lectures and a 1-hour practical class each week. The syllabus comprises:

(a) (during the first and second terms); elementary statistical methods, including frequency distributions, expected values, standard significance tests, linear regression and analysis of variance for standard orthogonal designs.

(b) (during the third term); introduction to computer programming, and selected biomathematical topics.

Reference books:

Bailey, N. T. J., *Statistical methods in biology* (English University Press).

Clarke, G. M., *Statistics and experimental design* (Arnold).

Cochran, W. G., and Cox, G. M., *Experimental designs* (Wiley).

Cox, D. R., *Planning of experiments* (Wiley).

Li, Jerome, C. R., *Statistical inference,* Vol. 1 (Edwards Brothers, Inc.).

Snedecor, G. W., and Cochran, W. G., *Statistical methods,* 6th edition (The Iowa State University Press).

Steel, R. G. D., and Torrie, J. H., *Principles and procedures of statistics* (McGraw-Hill).

WE03. Entomology and Plant Pathology.

A course of two lectures and one practical class each week throughout the year. Half the year is spent on Entomology and half on Plant Pathology.

ENTOMOLOGY: The course provides an introduction to the morphology and taxonomy of insects, insect physiology and the principles of insect control.

Students will be required to make a collection of 50 species of insects which must be submitted during the last week of lectures in third term. Collection should begin in the long vacation preceding the course and equipment may be obtained by intending students from the Entomology Department before this vacation.

Text-books:

Imms, A. D., *Outlines of entomology, 5th edition* (Methuen).
Wigglesworth, V. B., *Insect physiology, 6th edition* (Methuen).

Reference books:

Borror, D. J., and De Long, D. M., *An introduction to the study of insects* (Holt).
Imms, A. D., *Insect natural history* (Collins).
Martin, H., *Scientific principles of crop protection* (Longmans).
Tillyard, R. J., *Insects of Australia and New Zealand* (Angus and Robertson).
Australia, C.S.I.R.O., *The insects of Australia* (M.U.P.).

PLANT PATHOLOGY: History; nature of plant disease; physiological disorders and diseases caused by bacteria, viruses, fungi, nematodes with examples of each class occurring in Australia; physiology of parasitism; principles of disease control, influence of environment, cultural practices, use of therapeutics, resistant varieties, legislation.

Students will be required to make a collection of 20 different plant diseases which must be submitted before the final examination.

Text-books:

Alexopoulos, C. J., *Introductory mycology* (Wiley).
Walker, J. C., *Plant pathology* (McGraw-Hill).

WE04. Entomology II.

Pre-requisite subject: Entomology and Plant Pathology (WE03).

A course of three lectures and six hours practical work a week on a more detailed study of:

(1) Insect morphology and taxonomy, with practice in the classification of insects to Families.

(2) Insect ecology.

(3) Embryology, post-embryonic development, insect physiology and biochemistry.

(4) Forest entomology, insect behaviour, social insects and apiculture.

Students will be required to make both a collection of insects, properly mounted and identified, and a slide collection illustrating the morphological and taxonomic features of insects. The collection may be commenced in the long vacation preceding the course. Equipment may be collected by intending students from the Entomology Department before the vacation. The collection must be submitted in the first week of the final term.

Text-book:

Australia, C.S.I.R.O., *The insects of Australia* (M.U.P.).

Reference books:

Anderson, R. F., *Forest and shade-tree entomology* (Wiley).
Andrewartha, H. G., *Introduction to the study of animal populations* (Methuen).
Bailey, N. T. J., *Statistical methods in biology* (English Universities Press).
Fraenkel, G., and Gunn, D. L., *The orientation of animals* (Dover).
Imms, A. D., *A general text-book of entomology*, 9th edition (Methuen).
Snodgrass, R. E., *Principles of insect morphology* (McGraw-Hill).
Tillyard, R. J., *Insects of Australia and New Zealand* (Angus and Robertson).
Wigglesworth, V. B., *Principles of insect physiology*, 5th edition (Methuen).

WP03. Agricultural Microbiology.

A course of one lecture and one practical a week throughout the year.

An introduction to micro-organisms; their morphology, physiology, ecology and general classification; the techniques used in the study of micro-organisms; the occurrence of micro-organisms in soil, air and water; their importance in agriculture and industry; the microbiology of foods.

WP04. Plant Pathology II.

Pre-requisite subjects: Entomology and Plant Pathology (WE03) and Agricultural Microbiology (WP03).

A course of nine hours a week for three terms covering:

(a) The classification and morphology of fungi; fungal physiology; the ecology of fungi and bacteria in relation to diseases they cause; the classification, ecology of and diseases caused by plant parasitic nematodes; the occurrence of plant viruses, their transmission, infection of plants and multiplication; physiology of parasitism; important diseases in Australia.

(b) A special project involving investigation of a disease of Australian importance, together with the study of relevant literature.

Text-books:

Alexopoulos, C. J., *Introductory mycology*, 2nd edition (Wiley).

Plant pathology: problems and progress 1908-1958 (University of Wisconsin Press).

Walker, J. C., *Plant pathology*, 2nd edition (McGraw-Hill).

WF03. Crop Physiology.

This course consists of two lectures and three hours practical work a week for three terms and covers:

Effects of external environment, including temperature, light, water and atmospheric conditions on the determination of plant size, form and development; the growth patterns of selected crop plants.

The interaction of internal and environmental factors in the physiological control of dormancy, germination, vegetative growth (roots, leaves, stem), accumulation of storage substances, and sexual reproduction (floral initiation, seed set, fruit growth).

The course will use crop species as examples where appropriate.

Attention will be given to critical assessment of published information, presentation of such assessments and the undertaking of a short experimental project.

Text-book:

Leopold, A. C., *Plant growth and development* (McGraw-Hill).

Reference books:

Such books and papers as are assigned during the course.

WF04. Horticultural Science.

Pre-requisite subject: Crop Physiology (WF03) at Division I or higher standard.

A course consisting of three lectures and seven hours of practical work a week for three terms. Lectures, practical work, demonstrations and field trips will cover:—

The growth of fruit trees, mechanisms controlling growth, the uses of growth regulators in horticulture.

The water requirements of crops, methods of irrigation and drainage.

Mineral nutrition, fertilizers and soil management.

Movement and accumulation of substances in plants, reserves.

Bud development and bearing habit, propagation principles and methods, root-stocks, pruning and training.

Flower and fruit morphogenesis, mechanisms of floral initiation, fruit setting and fruit growth, and practices involved.

Ripening of fruits, harvesting, post-harvest physiology, storage, marketing and processing of fruits.

Horticultural production and establishment, varieties, protection, frost.

The culture of important horticultural crops.

Attention will be given to training and experience in experimental method, reading, writing and speaking. Opportunity will be given for a project of individual study involving literature revision and limited original investigation. No text-books are required but selected reading will be assigned.

EE83. Agricultural Economics I.

This course is offered annually for students proceeding to the degree of Bachelor of Agricultural Science and is available to such students only. The course comprises two lectures and one tutorial a week throughout the year and provides an introduction to the general principles of economics, with special reference to Australian agriculture. A student who has passed the course with at least a credit may, subject to the approval of the Dean, enrol in Economics II.

The scope of the course is as follows:

1. Elementary theory of resource allocation; the characteristics of supply and demand in agriculture.
2. Production economics, and a brief introduction to farm management problems.
3. Elementary theory of the level of economic activity; the impact of agriculture on national income, balance of payments and economic development.
4. Agricultural policy in Australia and in some overseas countries.

Text-books:

Bishop, C. E., and Toussaint, W. D., *Agricultural economic analysis* (Wiley).

Doll, J. P., and others, *Economics of agricultural production, markets and policy* (Irwin).

Samuelson, P. A., and others, *Economics*, Australian edition (McGraw-Hill).

Williams, D. B. (ed.), *Agriculture in the Australian economy* (Sydney U.P.).

Reference books:

Harcourt, G. C., Karmel, P. H., and Wallace, R. H., *Economic activity* (C.U.P.).

Lipsey, R. G., *An introduction to positive economics*, 2nd edition (Weidenfeld and Nicolson).

Vincent, W. H. (ed.), *Economics and management in agriculture* (Prentice-Hall).

Downing, R. I., *National income and social accounts*, 9th edition, (M.U.P.).

Martin, Anne, *Economics and agriculture* (Routledge and Kegan Paul).

Halcrow, H. G., *Agricultural policy of the U.S.* (Prentice-Hall).

Schultz, T. W., *The economic organization of agriculture* (McGraw-Hill).

Johnson, D. G., *Forward prices for agriculture* (University of Chicago).

Crawford, J. G., *Australian agricultural policy* (University of Adelaide).

Drane, N. T., and Edwards, H. R., *The Australian dairy industry* (Cheshire).

Additional references will be prescribed by the lecturers.

EE84. Agricultural Economics II.

It is expected that this course will be offered in 1971. Emphasis will be on production economics particularly with respect to resource efficiency on the individual farm, between farms and between agriculture and other industries.

The newer and more advanced theoretical concepts in farm management will be compared from the standpoint of their usefulness in the analysis and planning of farm-household decisions under dynamic conditions. Applications of management concepts and procedures in farm management research will constitute a substantial part of the course.

Requirements for Practical Experience.

Candidates for the degree of Bachelor of Agricultural Science are required to obtain practical agricultural experience as laid down in the regulations.

In addition, students in Agricultural Science are required in the fourth year of the course to attend organised tours of various agricultural areas of South Australia.

THE HONOURS DEGREE OF B.AG.SC.

The Honours degree in Agricultural Science may be taken in Agricultural Biochemistry, Agronomy, Animal Husbandry and Nutrition, Animal Physiology and Production, Biometry, Entomology, Genetics, Horticulture, Plant Breeding, Plant Pathology, Plant Physiology, and Soil Science.

WB89. Agricultural Biochemistry for the Honours degree of B.Ag.Sc.

Pre-requisite subject: A credit or Distinction in Agricultural Biochemistry II (WB04).

WB99. Soil Science for the Honours degree of B.Ag.Sc.

Pre-requisite subject: WB89 *or* WB99. A Credit or Distinction in Soil Science II (WB14).

Students wishing to take the Honours degree in either Agricultural Biochemistry or Soil Science should consult the Head of the Department of Agricultural Biochemistry and Soil Science during the third term of their final year of the B.Ag.Sc. ordinary degree.

Candidates will be required to attend tutorials and to prepare seminars on selected topics. A research project will be assigned to each candidate, who will be required to present the results in a short thesis at the end of the course. Examination papers will also be set. Candidates should have a reading knowledge of French and German and may be required to attend courses in these subjects. Candidates are expected to begin studies on February 1.

WA89. Agronomy for the Honours degree of B.Ag.Sc.

WA79. Animal Husbandry and Nutrition for the Honours degree of B.Ag.Sc.

WA99. Plant Breeding for the Honours degree of B.Ag.Sc.

A candidate for the degree will be required to pass such examinations on the chosen subject of study as may be prescribed by the Head of the Department of Agronomy, and to submit a thesis reporting research work undertaken during the year.

A candidate may also be required to attend lectures and pass examinations in related subjects and to satisfy the Head of the Department that he has a reading knowledge of one or more modern languages other than English. University time not devoted to lectures must be spent in activities approved by the Head of the Department. Intending candidates should consult the Head of the Department and should be prepared to begin studies on or about February 1.

WN99. Animal Physiology and Production for the Honours degree of B.Ag.Sc.

A candidate for the degree will be required to pass such examination on the chosen subject of study as may be prescribed by the Head of the Department, and to submit a thesis reporting research work undertaken during the year.

A candidate may also be required to attend lectures and pass examinations in related subjects and to satisfy the Head of the Department that he has a reading knowledge of one or more languages other than English. University time not devoted to lectures must be spent in activities approved by the Head of the Department. Intending candidates should consult the Head of the Department concerned and should be prepared to begin studies on or about February 1.

WE99. Entomology for the Honours degree of B.Ag.Sc.

Students who wish to take the Honours Degree in Entomology should consult the Professor of Entomology some time during their final year.

Candidates are expected to attain a higher standard in general Entomology than that required for the Ordinary Degree. In addition, they are required to study more intensively some branch of Entomology and to carry out a research project in that field.

Candidates may be required to attend such lectures and to pass such examinations as the Professor may require. All time not necessarily devoted to lectures and set work must be spent in the laboratory.

A course of reading will be prescribed by the Professor and should be commenced in the long vacation prior to the Honours year.

Candidates must have some reading knowledge of French and German and may be required to attend courses and pass examinations in these subjects.

WP99. Plant Pathology for the Honours degree of B.Ag.Sc.

A candidate for the degree will be required to pass such examinations on the chosen subject of study as may be prescribed by the Head of the Department, and to submit a thesis reporting research work undertaken during the year.

A candidate may also be required to attend lectures and pass examinations in related subjects and to satisfy the Head of the Department that he has a reading knowledge of one or more modern languages other than English. University time not devoted to lectures must be spent in activities approved by the Head of the Department. Intending candidates should consult the Head of the Department and should be prepared to begin studies on or about February 1.

WF89. Plant Physiology for the Honours degree of B.Ag.Sc.

A candidate for the degree will be required to pass such examinations on the chosen subject of study as may be prescribed by the Head of the Department, and to submit a thesis reporting research work undertaken during the year.

A candidate may also be required to attend lectures and pass examinations in related subjects and to satisfy the Head of the Department that he has a reading knowledge of one or more modern languages other than English. University time not devoted to lectures must be spent in activities approved by the Head of the Department. Intending candidates should consult the Head of the Department concerned and should be prepared to begin studies on or about February 1.

WF99. Horticulture for the Honours degree of B.Ag.Sc.

A candidate for the degree will be required to pass such examinations on the chosen subject of study as may be prescribed by the Head of the Department, and to submit a thesis reporting research work undertaken during the year.

A candidate may also be required to attend lectures and pass examinations in related subjects and to satisfy the Head of the Department that he has a reading knowledge of one or more modern languages other than English. University time not devoted to lectures must be spent in activities approved by the Head of the Department. Intending candidates should consult the Head of the Department concerned and should be prepared to begin studies on or about February 1.

WY89. Biometry for the Honours degree of B.Ag.Sc.

Pre-requisite subject: Mathematical Statistics III.

A candidate for the degree will be required to pass such examinations on the chosen subject of study as may be prescribed by the Head of the Section, and to submit a thesis reporting research work undertaken during the year.

A candidate may also be required to attend lectures and pass examinations in related subjects and to satisfy the Head of the Section that he has a reading knowledge of one or more modern languages other than English. University time not devoted to lectures must be spent in activities approved by the Head of the Section. Intending candidates should consult the Head of the Section concerned and should be prepared to begin studies on or about February 1.

SJ79. Genetics for the Honours degree of B.Ag.Sc.

A candidate for the degree will be required to pass such examinations on the chosen subject of study as may be prescribed by the Head of the Department, and to submit a thesis reporting research work undertaken during the year.

A candidate may also be required to attend lectures and pass examinations in related subjects and to satisfy the Head of the Department that he has a reading knowledge of one or more modern languages other than English. University time not devoted to lectures must be spent in activities approved by the Head of the Department. Intending candidates should consult the Head of the Department concerned and should be prepared to begin studies on or about February 1.

FACULTY OF ARCHITECTURE AND TOWN PLANNING

SYLLABUS NUMBERS

The two letters identify the Faculties and Departments responsible for subjects as follows:

Faculty of Engineering, Department of Civil Engineering ... ... **NC**

Faculty of Architecture and Town Planning, Department of Architecture and Town Planning ... ... **RA**

The first digit

0-6: Indicates that the subject forms part of a sequence.

7-9: Indicates that the subject does not form part of a sequence.

The second digit

1-5: Indicates year of Ordinary degree subject, e.g. first, second, and so on.

(6-7: Not used).

8: Indicates Preliminary Honours (fourth year).

9: Indicates Final Honours (fifth year).

0: Indicates pre-thesis subject for the degree of Master of Town Planning.

SUBJECTS FOR THE DEGREE OF BACHELOR OF ARCHITECTURE

FIRST YEAR

RA01. Building Construction I.

General principles—functional requirements; the building team; the building contractor. Foundations. External and internal walls. Ground floor construction and fireplaces. Roofs. Joinery—doors and windows. Masonry.

Text-books:

McKay, W. B., *Building construction*, Vol. I (Longmans).

Sharp, W. W., *Australian methods of building construction* (Angus and Robertson).

Reference book:

Mitchell, G. A., and Mitchell, A. M., *Elementary building construction*, 23rd edition by R. Moxley (Batsford).

NC21. Structural Mechanics.

The course consists of a revision of the mathematics needed for an understanding of structural behaviour, together with lectures on statics and elementary structures.

Text-book:

Jensen, A., and Chenoweth, H. H., *Statics and strength of materials*, 2nd edition (McGraw-Hill).

Reference book:

Reynolds, T. J., and Kent, L. E., *Introduction to structural mechanics* (E.U.P.).

RA11. Building Science I.

Introduction; man, environment and shelter. The nature and properties of common building materials; occurrence and manufacturing problems; physical phenomena; moisture and porosity; moisture movement. Principles of control of natural environment; sun control; daylighting standards and assessment; natural ventilation.

Text-books:

Reid, D., *Building science,* Vols. 1 and 2 (Longmans).

Great Britain. Building Research Board, *Principles of modern building,* Vol 1 (H.M.S.O.).

Geeson, A. G., *Building science,* Vol. 2 (English Universities Press).

Australia. Commonwealth Experimental Building Station, Bulletin No. 8: *Sunshine and shade in Australasia,* by R. O. Phillips (C.E.B.S.).

Australia. Labour and National Service Department of, Industrial Welfare Division, *Data sheets on architectural control of sunlight penetration,* (The Department, Melbourne).

Australia. Commonwealth Experimental Building Station, Bulletin No. 7: *The design of buildings for daylighting,* by D. Paix (C.E.B.S.).

Great Britain. Building Research Station, *Architectural physics: lighting,* by Hopkinson, R. G. (H.M.S.O.).

Australia. Commonwealth Experimental Building Station, *Notes on the science of building* (C.E.B.S.) as prescribed by the lecturer.

Reference books:

Ragsdale, L. A., and Raynham, E. A., *Building materials practice,* (Arnold).

Butterworth, B., *Bricks and modern research* (Crosby Lockwood).

RA21. History of Architecture I.

The architecture of Egypt, Mesopotamia, the Aegean, Greece and Rome; and of the Early Christian, Byzantine, Romanesque, and Gothic periods.

Text-books:

Fletcher, B., *History of architecture* (Batsford).

Pevsner, N., *An outline of European architecture* (Penguin).

Reference books:

Allsopp, H. S., *The general history of architecture* (Pitman).

The Pelican *History of art* series.

Simpson, F. M., *History of architectural development,* Vols. I, II, III (Longmans).

Gardner, H., *Art through the ages* (Bell).

The great ages of world architecture series (Braziller).

Copplestone, T. (Ed.), *World architecture* (Paul Hamlyn).

Giedion, S., *The eternal present,* vol. 2: *The beginnings of architecture* (O.U.P.).

Quennell, M. and C. H. B., *Everyday things in ancient Greece* (Batsford).

Cowell, F. R., *Everyday life in ancient Rome* (Batsford).

Van Loon, H. W., *The arts of mankind* (Harrap).

White, J. M., *Everyday life in ancient Egypt* (Batsford/Putnam).

RA31. Architectural Design and Planning I.

The role and function of the architect in society historically and today; the elements of architectural design; perception; space sequence and circulation; structural types; fundamental qualities.

Reference books:

Ellis, C. W., *The pleasures of architecture* (Cape).

Gropius, W., *The scope of total architecture* (Allen and Unwin).

Leathart, J. R., *Style in architecture* (Nelson).

Rasmussen, S. E., *Experiencing architecture* (M.I.T., Chapman and Hall).

Hamlin, T., *Forms and functions of 20th century architecture,* 4 vols. (Columbia).

Graves, M. E., *Color fundamentals* (McGraw-Hill).

Jacobson, E., *Basic colour—an interpretation of the Ostwald system* (Theobald).

Gregory, R. L., *Eye and brain* (World University Library).

Vernon, M. D., *The psychology of perception* (Penguin).
Hall, E. T., *The hidden dimension* (Doubleday).
Graves, M., *Art and colour of design* (McGraw-Hill).
Damaz, P., *Art in European architecture* (Reinhold).
Time Saver Standards (Dodge).
Ramsey, C. G., and Sleeper, H. R., *Architectural graphic standards* (Wiley).
Danby, M., *Grammar of architectural design* (Oxford).
Senior, D., *Your architect* (Hodder).
Zevi, B., *Architecture as space* (Horizon).

RA71. Architectural and Free Drawing.

Standard drawing office practice. Orthographic projection; isometric and axonometric projection. The theory and practice of architectural perspective, division and measurement in perspective, angular and parallel perspective and interior perspective. Reflections in perspective. Sciagraphy. Systems of rendering in various media and drawing presentation; lettering and lay-out; creative design; colour. Free drawing.

Text-books:

Reekie, R. F., *Draughtsmanship* (Arnold).
Lee, L. A., and Reekie, R. F., *Descriptive geometry* (Arnold).
Sierp, A., *Applied perspective* (Angus and Robertson).

Reference books:

Schaarwächter, G., *Perspective for the architect* (Thames and Hudson).
Lockard, W. K., *Drawing as a means of architecture* (Reinhold).

RA81. Art History and Appreciation.

The evolution and development of art forms through history and appreciation of contemporary development in the arts.

RA41. Studio Work I.

The practical application of theoretical work in architectural and free drawing, architectural design, building construction and building science.

SECOND YEAR.

RA02. Building Construction II.

Paths and pavings. Upper floor construction and fireplaces. Timber frame construction. Framed timber roof construction. Roofing. Internal wall and ceiling finishes. Staircase construction. Gas and electricity services. Windows and doors. Joinery, cupboards, etc., and hardware. Screen walls and fences.

Text-books:

McKay, W. B., *Building construction*, Vol. 2 (Longmans).
Sharp, W. W., *Australian methods of building construction* (Angus and Robertson).
Mitchell, G. A., and Mitchell, A. M., *Elementary building construction*, 23rd edition, edited by R. Moxley (Batsford).

Reference book:

Australia. C.S.I.R.O., Division of Forest Products, *Timber engineering design handbook*, 2nd edition, by R. G. Pearson and others (Jacaranda Press).
Wallis, N. K., *Australian timber handbook*, 3rd edition (Angus and Robertson).
Boyne, D. A. C. A. (ed.), *Architects' working details* (Architectural Press).

NC22. Structures I.

Students will be expected to possess and be able to use a slide rule for this and subsequent courses in Structures.

Statically determinate plane frames. Elasticity, stress and strain. Shear force and bending moment diagrams. Theory of bending. Simple cases of beam deflection. The analysis of simple structures, including three-pin arch.

Text-book:

Jensen, A., and Chenoweth, H. H., *Statics and strength of materials*, 2nd edition (McGraw-Hill).

Reference book:

Reynolds, T. J., and Kent, L. E., *Introduction to structural mechanics* (E.U.P.).

RA12. Building Science II.

Provision of satisfactory environment; human physiology and comfort conditions relating to radiation, temperature, humidity, light, sound and ventilation. Climatology of Australia. Solar radiation and building shape. Thermal inertia of building materials; thermal effects of colour of materials; insulation; condensation and vapour barriers. Ventilation and air movement through buildings. Properties of sound; acoustical properties of materials; noise and the design of rooms. Light measurement. Electricity supply and wiring. Structural properties and applications of materials; adhesives and adhesion; sheet materials generally. Metals; corrosion; hardness of water and softening systems.

Sanitary science; hygiene. Water supply; hot and cold water services; plumbing. Central heating. Drainage; wastes; siphonage; sanitary fittings. Pumps. Sewerage; septic tanks; industrial effluents. Garbage disposal. Sanitary regulations.

Text-books:

Sheridan, N. R., and others, *Air conditioning* (University of Queensland Press).

Parkin, P. H., and Humphreys, H. R., *Acoustics, noise and buildings* (Faber Paperback).

Moore, J. E., *Design for good acoustics* (Architectural Press).

Moore, J. E., *Design for noise reduction* (Architectural Press).

Billington, N. S., *Thermal properties of buildings* (Cleaver Hume).

Bedford, T., *Basic principles of heating and ventilating* (2nd edition) (Lewis).

Australia. Commonwealth Experimental Building Station, Bulletin No. 6, *Designing houses for Australian climates* (C.E.B.S.).

Australia. Commonwealth Experimental Building Station, *Notes on the science of building* (C.E.B.S.), as prescribed by the lecturer.

S.A. Works, Ministry of, Regulations under the Sewerage Act 1929-1962, (S.A. Government Printer).

Reference books:

Faber, O., *Heating and ventilation* (Spon).

Knudsen, V. O., and Harris, C. M., *Acoustical designing in architecture* (Wiley).

Diamant, R. M. E., *Insulation of buildings* (Iliffe).

Blake, E. H., and Jenkins, W. R., *Drainage and sanitation* (Batsford).

Australia. Department of Labour and National Service, *Sanitary plumbing and water supply* (McCarron Bird).

RA22. History of Architecture II.

Renaissance architecture in Italy, France and England. Mannerism and Baroque. The Regency, 19th and 20th centuries architecture. The early architecture of Australia and its development to the present day.

Text-books:

Fletcher, B., *History of architecture* (Batsford).

Pevsner, N., *An outline of European architecture* (Penguin).

Wittkower, R., *Architectural principles in the age of humanism* (Tiranti).

Reference books:

Joedicke, J., *History of modern architecture* (Architectural Press).

Allsopp, H. S., *The general history of architecture* (Pitman).

Giedion, S., *Space, time and architecture* (Harvard University Press).

The Pelican *History of art* series

Simpson, F. M., *History of architectural development*, Vols. IV, V (Longmans).

Gardner, H., *Art through the ages* (Bell).

Pevsner, N., *Pioneers of modern design* (Pelican).

The great ages of architecture series (Braziller).

Copplestone, T., ed., *World architecture* (Paul Hamlyn).

Encyclopaedia of modern architecture, edited by G. Hatje (Thames and Hudson).

Bazin, G., *Baroque and rococo* (Thames and Hudson).

Burckhardt, J., *The civilisation of the renaissance in Italy* (Phaidon or Mentor).

Martindale, A., *Man and the renaissance* (Paul Hamlyn).

RA32. Architectural Design and Planning II.

The theory and application of design, methodologies and programme development; communities and groups of buildings; environment and architectural siting and density; landscape; visual elements of design and aesthetics.

Reference books:

Borissavlievitch, M., *The golden number* (Tiranti).

British Standards Institution, B.S. 1708: *Modular co-ordination.*

Le Corbusier, *Modular* 1 *and Modular* 2 (Faber).

Le Corbusier, *New world of space* (Reynal and Hitchcock).

Nelson, G., *Problems of design* (Whitney).

Scholfield, P. H., *Theory of proportion in architecture* (Cambridge).

Le Corbusier, *Towards a new architecture* (Architectural Press).

Zevi, B., *Architecture as space* (Horizon).

Viollet le Duc, E. E., *Discourses on architecture* (Tiranti).

Guadet, J., *Eléments et théorie de l'architecture* (Librairie de la Construction Moderne).

Le Corbusier, *Entretien avec les étudiants des écoles d'architecture* (Editions de Minuit).

Fry, E. M., *Fine building* (Faber).

Lurçat, A., *Formes—composition et lois d'harmonie* (Vincent, Fréal).

Greenough, H., *Form and function* (University of California Press).

Hamlin, T., *Forms and functions of 20th century architecture*, 4 vols. (Columbia).

Jellicoe, G. A., *Studies in landscape design* (O.U.P.).

Time Saver Standards (Dodge).

Ramsey, C. G., and Sleeper, H. R., *Architectural Graphic Standards* (Wiley).

Kepes, G., *The language of vision* (Theobald).

Raskin, E., *Architecturally speaking* (Reinhold; Chapman and Hall).

Lynch, K., *Site planning* (M.I.T.).

Norberg Schultz, C., *Intentions in architecture.*

RA82. Architectural Surveying.

The construction, use and adjustment of surveying equipment; optical square; staff; levels; theodolites and tellurometer. Chain surveys, levelling, traverses; measurement and setting out of building works; computation of traverses and levels, areas and volumes with straight and irregular boundaries; use of planimeter; plane table surveys. Survey and measurements of existing buildings relating to dilapidations and alterations, photogrammetry.

Text-books:

Curtin, W., and Lane, R. F., *Concise practical surveying* (E.U.P.).

Bannister, A., and Raymond S., *Surveying* (Pitman).

Reference book:

Huggins, F. R., *Building surveys* (Batsford).

RA42. Studio Work II.

The practical application of theoretical work in architectural design; building construction; building science; history of architecture.

THIRD YEAR.

RA03. Building Construction III.

Retaining walls. Steel and reinforced concrete frame construction. Concrete slab floors and roofs. Foundations. Joinery, fitments, etc. Special doors and windows. Brickwork and panel walling. Shoring: timbering to trenches. Designed foundations and damp proofing of basements. Ductwork. Fire services, requirements, etc. Staircases, fire-resisting and special.

Text-books:

McKay, W. B., *Building construction,* Vol. 3 (Longmans).

Sharp, W. W., *Australian methods of building construction* (Angus and Robertson).

Field, J. Eastwick, and Stillman, J., *The design and practice of joinery* (Architectural Press).

Great Britain: Building Research Board, *Principles of modern building,* Vol. 2 (H.M.S.O.).

Reference books:

Mitchell, G. A., and Mitchell, A. M., *Advanced building construction,* volume 1. *Components, services and finishes*; revised by D. Neild; volume 2. *The structure*; revised by J. S. Foster (Batsford).

Salvadori, M., *Structure in architecture* (Prentice-Hall).

NC23. Structures II.

Deflection of beams. Bending and shear stresses in beams. Principal stresses. Compound beams including reinforced concrete. Combined bending and axial stress. Compression of slender struts. Deflections of framed structures. Bolted, riveted and welded joints.

Text-book:

Jensen, A., and Chenoweth, H. H., *Statics and strength of materials,* 2nd edition (McGraw-Hill).

Reference book:

Norris, C. H., and Wilbur, J. B., *Elementary structural analysis* (McGraw-Hill).

RA13. Building Science III.

Internal environment; heating and air-conditioning (public and commercial buildings); artificial illumination; noise control. Acoustical design of auditoria and studios. Sun control problems associated with large buildings. Daylight control in group planning. Fire in buildings; fire resistance of materials. Functional analysis of architectural planning; ergonomics. Materials; concreting cements, special cements and additives; dense concrete surface finishes. Ceramics. Floor finishes. Biological attack on building materials; preventive methods.

Text-books:

Parkin, P. H., and Humphreys, H. R., *Acoustics, noise and buildings* (Faber Paperback).

Harris, N. C., *Modern air-conditioning practice* (McGraw-Hill).

Moore, J. E., *Design for good acoustics* (Architectural Press).

Moore, J. E., *Design for noise reduction* (Architectural Press).

Gay, C. M. (ed.), *Mechanical and electrical equipment for buildings*, 4th edition, by W. J. McGuinness, and others (Wiley).

Standards Assoc. of Aust., C.A.30—1965 *Artificial lighting of buildings.*

British lighting council, *Interior lighting design.*

Walsh, J. W. T., *Planned artificial lighting* (Odhams).

Great Britain. Ministry of Housing and Local Government. Planning bulletin 5: *Planning for daylight and sunlight* (H.M.S.O.).

Reference book:

Phillips, D., *Lighting in architectural design* (McGraw-Hill).

RA33. Architectural Design and Planning III.

Theories of architecture and planning principles, historical and modern; interior design; specialised building types; the allied arts.

Reference books:

Handbuch moderner architektur (Safari-Verlag).

Richards, J. M., *An introduction to modern architecture* (Pelican).

Neutra, R. J., *Life and human habitat* (Koch).

Blake, P., *The master builders* (Gollancz).

Giedion, S., *Mechanization takes command* (O.U.P.).

Pevsner, N., *Pioneers of modern design from William Morris to Walter Gropius* (Pelican).

Neutra, R., *Survival through design* (O.U.P.).

Scott, G., *Architecture of humanism* (Constable).

Giedion, S., *Architecture, you and me* (Harvard University Press).

Hamlin, T., *Forms and functions of 20th century architecture,* 4 vols (Columbia).

Richards, J. M., *The functional tradition in architecture* (Architectural Press).

Wright, F. L., *The future of architecture* (Architectural Press).

Joedicke, J., *History of modern architecture* (Architectural Press).

Time Saver Standards (Dodge).

Ramsey, C. G., and Sleeper, H. R., *Architectural Graphic Standards* (Wiley).

Jensen, R., *High density living* (Hill).

Gibberd, F., *Town design* (Architectural Press).

Simonds, J. O., *Landscape architecture* (Dodge).

Rasmussen, S. E., *Experiencing architecture* (Wiley).

Birren, F., *Color, forms and space* (Reinhold).

Kultermann, U., *Architecture of today* (Zwemmer).

Ponti, G., *In praise of architecture* (Dodge).

Grillo, P. J., *What is design* (Tiranti).

Chermayeff, S. I., and Alexander, C., *Community and privacy* (Pelican).

RA53. Professional Practice I.

Specification; structure and organisation of building industry; central and local government; general law of contract; pricing of tenders; preparation of quantities. Business management and administration; book-keeping and accountancy. Building Act and bye-laws, and other legislation.

Reference books:

Aqua Group, *Pre-contract practice* (Lockwood).

Institute of Quantity Surveyors (Aust.), *Australian standard method of measurement of building works* (The Institute).

Specification (Architectural Press).

Willis, A. J., *Specification writing for architects and surveyors* (Lockwood).

Willis, A. J., *The elements of quantity surveying* (Lockwood).

Royal Australian Institute of Architects, *Year book*, current edition.

Hudson, A. A., *Building and engineering contracts*, 9th edition, edited by E. J. Rimmer and I. N. D. Wallace (Sweet and Maxwell).

Smith, D. Walker-, and Close, H. A., *The standard form of building contract* (C. Knight).

Institute of Builders: Board of Building Education, *Management studies for the building industry* (The Institute).

Gabrielsen, E., *Arbeidsstudienes anvendelse i byggningsindustrien* (*Work studies in the building industry*).

Royal Institute of British Architects, *Handbook of architectural practice and management* (R.I.B.A.).

Royal Australian Institute of Architects, W.A. Practice Group, *Guide specification* (R.A.I.A.).

Green, R., *Architects guide to running a job* (Architectural Press).

Royal Institute of British Architects, *The architect and his office* (R.I.B.A.).

South Africa. National Building Research Institute, *Bulletin* 54.

Dobson, D. E., *Building regulations: a review of the position in some western countries.*

RA43. Studio Work III.

The practical application of theoretical work in architectural design, building construction, building science, and structures.

FOURTH YEAR.

RA04. Building Construction IV.

Load bearing walls, cross wall construction. Roofs and roof lights. Prestressed concrete. Special structures: factories, large span roofs, etc.

Text-book:

McKay, W. B., *Building construction*, Vol. 4 (Longmans).

Reference books:

Mitchell, G. A. and Mitchell, A. M., *Advanced building construction*, Vol. 1. *Components, services and finishes*, revised by D. Nield, Vol. 2. *The structure*, revised by J. S. Foster (Batsford).

Angerer, F., *Surface structures in building* (Tiranti).

Torroja, Miret E., *Philosophy of structures* (California U.P.).

Michaels, L., *Contemporary structure in architecture* (Reinhold).

Cassie, W. F., and Napper, J. H., *Structure in building* (Architectural Press).

Salvadori, M., *Structure in architecture* (Prentice-Hall).

Faber, C., *Candela the shell builder* (Architectural Press).

Huxtable, A. L., *Pier Luigi Nervi* (Braziller).

Siegel, C., *Structure and form in modern architecture* (Crosby Lockwood).

Joedicke, J., *Shell architecture* (Reinhold).

Engel, H., *Structure systems* (Iliffe).

NC24. Structures III.

Analysis of indeterminate framed structures. Multi-storey building frames. Moment distribution. Concrete mix design. Design of reinforced concrete members.

Text-books:

Standards Association of Australia, *Code No. CA.2-1963: Rules for the use of normal reinforced concrete in buildings.*

Norris, C. H., and Wilbur, J. B., *Elementary structural analysis* (McGraw-Hill).

RA14. Building Science IV.

Lightweight aggregates and concrete; pre-cast and pre-stressed concrete products. Behaviour of materials and structural elements in fires; protective measures. Plastics and building applications; structural sandwich panels. Protection and decoration of materials and surface finishes. Illumination; design of the visual field; glare; permanent supplementary artificial lighting of interiors. Acoustics; speech reinforcement and loud speaker installations. Mechanical engineering services in large buildings; air-conditioning, lifts and escalators. Introduction to climatic aspects of group planning; natural air flow patterns around buildings.

Text-books:

Phillips, D., *Lighting in architectural design* (McGraw-Hill).

Great Britain: Building Research Station, *Architectural physics: lighting*, by Hopkinson, R. G. (H.M.S.O.).

Kinzey, B. Y., and Sharp, H. M., *Environmental technologies in architecture* (Prentice-Hall).

Gay, C. M. (ed.), *Mechanical and electrical equipment for buildings*, 4th edition, by W. J. McGuiness, and others (Wiley).

Lushington, R., *Plastics and you* (Pan).

Illuminating Engineering soc. Technical report No. 4: *Lighting during daylight hours* (I.E.S.).

Reference books:

Olgyay, V., *Design with climate* (Princeton U.P.).

Strakosch, G. R., *Vertical transportation: elevators and escalators* (Wiley).

Bird, E. L., and Docking, S. J., *Fire in buildings* (Black).

RA34. Architectural Design and Planning IV.

Contemporary developments. The relationship of structure and design. Specialised design problems. The design team. Critical path analysis.

Reference books:

Sleeper, H., *Building, planning and design standards* (Wiley).

Hamlin, T., *Forms and functions of 20th century architecture*, 4 vols. (Columbia).

Time Saver Standards (Dodge).

Ramsey, C. G., and Sleeper, H. R., *Architectural graphic standards* (Wiley).

Michaels, L., *Contemporary structure in architecture* (Reinhold).

Torroja, Miret E., *Philosophy of structures* (University of California Press)

Cassie, W. F., and Napper, J. H., *Structure in building* (Architectural Press).

Siegel, C., *Structure and form in modern architecture* (Lockwood).

Angerer, F., *Surface structures in building* (Tiranti).

Wachsmann, K., *The turning point in building* (Reinhold).

Nervi, P. L., *Structures* (Dodge).

Lisborg, N., *Principles of structural design* (Batsford).

Salvadori, M., *Structure in architecture* (Prentice-Hall).

Rosenthal, H. W., *Structural decisions* (Chapman Hall).

RA64. Urban and Regional Planning and Urban Design I.

The architect and town planning; the history of town planning from ancient times; colonial town planning; problems in town planning deriving from the industrial revolution; the garden city movement; the Radburn principle; the neighbourhood unit; satellites and new towns; regionalism; the central core and urban renewal; town planning as an art form; civic art and urban design.

Text-books:

Mumford, L., *The city in history* (Pelican).
Hiorns, F., *Town building in history* (Harrap).

Reference books:

Giedion, S., *Space, time and architecture* (Harvard U.P.).
Gibberd, F., *Town design* (Architectural Press).
Zucker, P., *Town and square* (Columbia University Press).
Gallion, A. B., and Eisner, S., *The urban pattern* (Van Nostrand).
Collins, G. R., and Collins, C. C., *Camillo Sitte and the birth of modern city planning* (Columbia U.P.).
le Corbusier, *The radiant city* (Faber).
Mayhew, H., *Mayhew's London*, ed. P. Quennell (Spring Books).
Stamp, L. D., *The geography of life and death* (Collins).
Weber, M., *The city* (Macmillan).
Reps, J. W., *The making of urban America* (Princeton U.P.).
Sitte, C., *City planning according to artistic principles* (Phaidon).
Smailes, A. E., *The geography of towns* (Hutchinson).
Tetlow, J., and Goss, A., *Homes, towns and traffic* (Faber).
Abercrombie, L. P., *Town and country planning* (O.U.P.).
Rasmussen, S. E., *Towns and places* (Liverpool University Press).

RA54. Professional Practice II.

Building economics. Quantity surveying. Bills of quantities. Standard method of measuring. Law of building contracts. Standard form of contract.

Text-books:

Institute of Quantity Surveyors (Aust.), *Australian standard method of measurement of building works* (The Institute).
Eggleston, A. S., *The practising architect* (M.U.P.).
Nisbet, J., *Estimating and cost control* (Batsford).

Reference books:

Hudson, A. A., *Building and engineering contracts*, 9th edition edited by E. J. Rimmer and J. N. D. Walker (Sweet and Maxwell).
Royal Australian Institute of Architects, *Year book*, current edition.

RA44. Studio Work IV.

The practical application of theoretical work in architectural design, building construction and services, building science, and structures.

RA98. Preliminary Honours Architecture.

For Honours students additional Seminar courses will be provided in a selection of the following topics:

(a) Advanced Architectural Design and Planning.
(b) Architecture and Environment.
(c) Development of Contemporary Architecture.
(d) Industrialised Building.
(e) Architectural Structure.
(f) Urban Design and Planning.
(g) Landscape Design.
(h) Professional Management and Administration.
(i) Interior and Furniture Design.
(j) Building Services.
(k) Architectural Acoustics.
(l) The Philosophy of Architecture.

FIFTH YEAR.

RA05. Building Construction V.

Builders' plant. Road construction. Concrete work and finishes. Glass-concrete and patent glazing. Lifts and escalators. Curtain walling. Factory production and prefabrication.

Reference books:

Wilson, J. G., *Exposed concrete finishes,* 2 vols. (C. R. Books).

Morris, A. E. J., *Precast concrete cladding* (Fountain Press).

Schaal, R., *Curtain walls* (Reinhold).

Diamant, R. M. E., *Industrialised building,* vols. 1, 2 and 3 (Iliffe Books Ltd.).

See also titles under Final Honours Architecture (d).

NC25. Structures IV.

Soil mechanics. Arches. Plastic theory of design. Pre-stressed concrete. Experimental stress analysis. Three-dimensional framed structures.

RA15. Building Science V.

Quality control and materials. Sound measurements and acoustics tests on building elements and auditoria; noise surveys. Climatic aspects of group planning; solar radiation; sunlight and orientation; daylighting; air movement and atmospheric pollution. Illumination; luminance design; street lighting. Solar heating and cooling. Bearing properties and classification of soils. Soil stabilisation. Specialised problems and scientific research for architecture and town planning.

Reference book:

Hopkinson, R. G., and others, *Daylighting* (Heinemann).

RA65. Urban and Regional Planning and Urban Design II.

The practice of town and country planning. The principles of civic survey and the study of a modern town planning scheme. Outline of planning legislation. Town Planning Acts. Regional and national planning with reference to economics, sociology and demography.

Text-book:

Brown, A. J., and Sherrard, H. M., *Town and country planning* (Melbourne U.P.).

Reference books:

Keeble, L. B., *Principles and practice of town and country planning* (Estates Gazette, London).

Chapin, F. S., Jnr., *Urban land use planning,* 2nd edition (University of Illinois Press).

Winston, D., *Sydney's great experiment* (Angus and Robertson).

Gifford, K. H., *The Victorian town planning handbook* (Law Book Co. of Aust.).

Association for Planning and Regional Reconstruction, *The town and country planning text-book* (Architectural Press).

Gallion, A. B., and Eisner, S., *The urban pattern* (Van Nostrand).

Rasmussen, S. E., *Towns and buildings* (Liverpool University Press).

Unwin, R., *Town planning in practice* (Fisher Unwin).

Freeman, T. W., *The conurbations of Great Britain* (Manchester U.P.).

Mumford, L., *The culture of cities* (Secker and Warburg).

Rapkin, C., and Grigsby, W. G., *Residential renewal in the urban core* (University of Pennsylvania).

Jensen, R., *High density living* (Hill).

Sharp, T., *Town planning* (Pelican).

Sulman, J., *An introduction to the study of town planning in Australia* (Govt. Printer, N.S.W.).

South Australia: Town Planning Committee, *Report on the metropolitan area of Adelaide* (Govt. Printer, S.A.).

RA75. Architectural Thesis.

To be on a selected and approved subject involving architectural design and constructional problems and to be accompanied by a suitable report.

RA45. Studio Work V.

Advanced projects in architectural design and applications relating to building science, architectural construction, and structures.

RA55. Professional Practice III.

The code of professional conduct. Standard fee scales. Office organisation. Programming. Building investment and budgeting. Variations. Certificates and accounts. Law relating to the architect. Arbitration. Insurance. Bankruptcy and liquidated damages. Contract law.

Text-book:

Eggleston, A. S., *The practising architect* (M.U.P.).

Brunton, Baden Hellard and Boobyer, *Management applied to architectural practice* (The Builder).

Reference books:

Keating, D., *Law and practice of building contracts* (Sweet and Maxwell).

Hudson, A. A., *Building and engineering contracts* (Sweet and Maxwell).

Willis, A. J. and George, W. N. B., *The architect in practice* (Crosby Lockwood).

Turner, H. H., *Architectural practice and procedure* (Batsford).

Royal Australian Institute of Architects, *Year book*, current edition.

RA99. Final Honours Architecture.

For Final Honours students additional Seminar courses will be provided in a selection of the topics set out under RA98. Preliminary Honours.

(a) Reference books:

Yorke, F. R. S., *The modern house* (Architectural Press).

McGrath, R., *Twentieth century houses* (Faber).

Segal, W., *Home and environment* (Hill).

Yorke, F. R. S., and Gibberd, F., *The modern flat* (Architectural Press).

Abel, J. H., and Severund, F. N., *Apartment houses* (Reinhold).

Beiers, G., *Houses of Australia* (Ure Smith).

Koch, A., *Einfamilienhäuser* (Schwab).

Stratemann, S., *Das grosse Buch vom eigenen Haus* (Callwey).

London County Council, *Housing type plans.*

Great Britain. Ministry of Housing and Local Government, *Flats and houses*, 1958 (H.M.S.O.).

Boyd, R., *Australia's home* (Melbourne U.P.).

Paulhaus, P., *Wohnhochhäuser.*

Vines, H. W. C., *Background to hospital planning* (Faber).

Aldis, G., *Hospital planning requirements* (Pitman).

Rosenfield, I., *Hospitals—integrated design* (Reinhold).

Nuffield provincial hospital trust, *Studies in the function and design of hospitals* (Oxford).

Godfrey, J., and Cleary, C., *School design and construction* (Architectural Press).

Martin, B., *School buildings* (Lockwood).

Roth, A., *The new school* (Girsberger).
Bursch, C. W., and Reid, J. L., *High schools today and tomorrow* (Reinhold).
Perkins, L. B., and Cocking, W. D., *Schools* (Reinhold).
Morrell, D. H., and Pott, A. P., *Britain's new schools* (Longmans).
Architectural record (Periodical), *Buildings for industry* (Dodge).
Henn, W., *Bauten der industrie* (Callwey).
Mills, E., *The modern factory* (Architectural Press).
Rosenauer, M., *Modern office buildings* (Batsford).
Joedicke, J., *Burobaüten* (Hatje).
Koch, A., *Hotelbaüten* (Koch).
Gruen, V., and Smith, L., *Shopping centres, U.S.A.* (Reinhold).
Westwood, B., and Westwood, N., *The modern shop* (Architectural Press).
Somake, E. E., and Hellberg, R., *Shops and stores today* (Batsford).
Gutmann, R., and Koch, A., *Shop design* (Koch).
Gatz, K., and Hierl, F., *Neüe Läden* (Callwey).
Meyer, H. Burris-, and Cole, E. C., *Theatres and auditoria* (Reinhold).
Mills, E., *The modern church* (Architectural Press).

(b) Text-books:

Fry, E. Maxwell, and Drew, J., *Tropical architecture in the dry and humid zones* (Batsford).
Oakley, D., *Tropical houses* (Batsford).
Olgyay, V., *Design with climate* (Princeton U.P.).
Billington, N. S., *Thermal properties of buildings* (Cleaver Hume).
Drysdale, J. W., *Designing houses for Australian climates* (Australia: C.E.B.S., Bulletin No. 6).
Australia. Bureau of Meteorology, *Climate and meteorology of Australia* (Govt. Printer, Canberra).
Bedford, T., *Basic principles of ventilating and heating*, 2nd edition (Lewis).
Sheridan, N. R., and others, *Air conditioning* (University of Queensland Press).
Kinzey, B. Y., and Sharp, H. M., *Environmental technologies in architecture* (Prentice-Hall).
Manning, P., (ed.), *Office design: a study of environment* (Liverpool Univ., Building Science, Dept. of. Pilkington res. unit).
International Commission on Illumination, *Sunlight in buildings*, ed. R. G. Hopkinson (Boucentrum).
Carrel, A., *Man, the unknown* (Penguin).
Arvill, R., *Man and environment* (Penguin).
Straaten, J. F. Van, *Thermal performance of buildings* (Elsevier).

Reference books:

Conklin, E. G., *The weather conditioned house* (Reinhold).
Aronin, J. E., *Climate and architecture* (Reinhold).
Olgyay, A., and Olgyay, V., *Solar control and shading devices* (Princeton U.P.).
Groundwater, I., *Solar radiation and air conditioning* (Lockwood).
Holmes, B. M., *Weathering in the tropics* (Australia: C.S.I.R.O. Division of Building Research, Melbourne).
Keough, J. J., *Selected Australian climatic data* (Tech. Study 36, Australia: C.E.B.S., Sydney).
Geiger, R., *The climate near the ground* (Harvard U.P.).
Michigan. University, Ann Arbor. School Environments Research Project. SER: *School environments research*, Vols. 2-3 (University of Michigan).
U.S.A.: Housing and Home Finance Agency, *Application of climatic data to house design* (U.S. Govt. Printing Office).

Mills, C. A., *Climate makes a man* (Gollancz).
Brooks, C. E. P., *Climate in everyday life* (Benn).
Markham, S. H., *Climate and the energy of nations* (O.U.P.).
Architectural Forum, November, 1948: *Measure* OR
Fitch, J., *American building* (Houghton Mifflin).
Koeppe, C. E., and de Long, G. C., *Weather and climate* (McGraw-Hill).
Trewartha, G. T., and others, *Elements of geography, physical and cultural* (McGraw-Hill).
Bedford, T., *Environmental warmth and its measurement* (Medical Research Council, War Memo. No. 17, H.M.S.O.).
U.N.E.S.C.O., Arid Zone Research Series (U.N.E.S.C.O.).
Parts VII *Wind and solar energy symposium,*
X *Climatology,*
XI *Climatology and microclimatology.*
Lee, D. H. K., *Physiological objectives in hot weather housing* (Govt. Printing Office, Washington).
Macpherson, R. K., *Environmental problems in tropical Australia* (Govt. Printer, Canberra).
Building Research Institute, *Windows and glass* (Building Research Institute, Washington).
Bruce, W., *Man and his thermal environment* (National Research Council, Canada. Building Research, Div. of Technical, paper No. 84).
Chandler, T. J., *The climate of London* (Hutchinson).
Various other British and Australian Building Research Station publications as prescribed by the lecturer.

(c) Text-books:
Joedicke, J., *History of modern architecture* (Architectural Press).
Encyclopaedia of modern architecture, edited by G. Hatje (Thames and Hudson).
Pevsner, N., *Pioneers of modern design from William Morris to Walter Gropius* (Pelican).

Reference books:
Giedion, S., *Space, time and architecture* (Harvard U.P.).
Banham, R., *Theory and design in the first machine age* (Architectural Press).
Banham, R., *Guide to modern architecture* (Architectural Press).
Blake, P., *The master builders* (Gollancz).
Masters of world architecture series (Braziller).
Makers of contemporary architecture series (Braziller).
Hitchcock, H. R., *Architecture of the 19th and 20th centuries* (Pelican).

(d) Reference books:
British Standards Institution. B.S. 1708: *Modular co-ordination.*
British Standards Institution. B.S. 2900: *Modular co-ordination in building,* Part I, Glossary.
Standards Association of Aust. A148: *Recommendations for modular co-ordination in building* (S.A.A.).
Harrison, D. Dex, *An introduction to standards in building* (Spon).
Kent, S. R., *Modular drafting manual* (National Research Council of Canada, Div. of Building Research, Technical Paper 123).
Corker E., and Diprose, A., *Modular primer* (Modular Society Ltd., London).
Modular Building Standards Association, *Modular practice* (Wiley).
Ehrenkrantz, Ezra D., *The modular number pattern* (Tiranti).
O.E.E.C., European Productivity Agency, *Modular co-ordination in building,* first report of EPA project 174 (H.M.S.O., 1956).

O.E.E.C. European Productivity Agency, *Modular co-ordination,* second report of EPA project 174 (H.M.S.O., 1961).

Royal Institute of British Architects, *The co-ordination of dimensions for building* (R.I.B.A.).

Cement and Concrete Association, *Housing from the factory* (The Association).

O.E.E.C., European Productivity Agency, *Prefabricated building*—project 226 (from E.P.A.—O.E.E.C.).

Madge, J. H., *Tomorrow's houses* (Pilot Press).

Great Britain: Works, Ministry of, *Post-war building studies — House construction* No. 1, 23, 25 (H.M.S.O.).

Cherner, N., *Fabricating houses from component parts* (Reinhold).

Diamant, R. M. E., *Industrialised building,* 3 vols. (Iliffe).

Massachusetts Institute of Technology. Albert Farwell Bemis Foundation. *The prefabrication of houses* (M.I.T.).

Wachsmann, K., *The turning point of building* (Reinhold).

White, R. B., *Prefabrication: a history of its development in Great Britain,* National Building Studies Special Report No. 36 (H.M.S.O.).

(e) Reference books:

Cassirer, E., *An essay on man* (Yale U.P.).

Bergson, H., *The creative mind* (Phil Lib.).

Getzels, J. W., and Jackson, P. W., *Creativity and intelligence* (Wiley).

Kneller, G. F., *The art and science of creativity* (Holt).

Aldrich, V. C., *Philosophy of art* (Prentice-Hall).

Maritain, J., *Creative intuition in art and poetry* (Meridian).

Langer, S., *Reflections on art* (Oxford).

Philipson, M., *Aesthetics today* (Meridian).

Fry, R., *Vision and design* (Pelican).

Moholy-Nagy, L., *The new vision and abstract of an artist* (Wittenborn).

Norberg Schulz, C., *Intentions in architecture* (Allen and Unwin).

Cornell, E., *Humanistic inquiries into architecture* (Gunperts Forlag).

Koestler, A., *The act of creation* (Hutchinson).

Ghiselin, B., *The creative process* (Mentor Books).

Gotshalk, D. W., *Art and the social order* (Dover).

Conference on systematic and intuitive methods in engineering, industrial design, architecture and communications (Pergamon).

Alexander, C., *Notes on the synthesis of form* (Harvard).

Gilbert, K., and Kuhn, H., *A history of esthetics* (Thames and Hudson).

De Zurko, E. R., *Origins of functionalist theory* (Columbia U.P.).

Wittkower, R., *Architectural principles in the age of humanism* (Tiranti).

Panofsky, E., *Gothic architecture and scholasticism* (Meridian).

SUBJECTS FOR THE DEGREE OF MASTER OF TOWN PLANNING

RA00. Theory and Practice of Town Planning I.

Introduction.—Nature and purpose of planning, planning at various levels, structure of towns, town and country, principles underlying the preparation of town and regional plans.

Theory of land use, movement, and their relationship.

Basic planning surveys: Land use, land values, land suitability, condition of buildings and environment, visual features, transportation.

Growth factors: urban and regional economy, population.

Elements of town plans—residential areas, land subdivision and development, layout of detached and mixed housing areas, neighbourhoods and living areas, residential density, residential zoning, analysis of future housing requirements.

Text-books:

Brown, A. J., and Sherrard, H. M., *Town and country planning* (Melb. U.P.).

Gibberd, F., *Town design* (Architectural Press).

Chapin, F. S., *Urban land use planning* (University of Illinois Press).

Reference books:

Geddes, P., *Cities in evolution* (Williams and Norgate).

Mumford, L., *The culture of cities* (Secker and Warburg).

Mumford, L., *The city in history* (Harcourt Brace).

Keeble, L. B., *Principles and practice of town and country planning* (Estates Gazette).

Lynch, K., *Site planning* (Technology Press, Harvard Press).

Ritter, P., *Planning for man and motor* (Pergamon Press).

Urban Land Institute, community builders council, *Community Builders' handbook* (Urban Land Institute).

Lynch, K., *The image of the city* (Technology Press, Harvard Press).

Boyd, R. P., *The Australian ugliness* (Cheshire).

Tunnard, C., and Pushkarev, B., *Man-made America: chaos or control?* (Yale U.P.).

Robinson, E., and Keeble, L. B., *The development of building estates* (Estates Gazette).

Great Britain. Ministry of Housing and Local Government, *Design in town and village*, by T. Sharp, and others (H.M.S.O.).

Regional Plan Association, *The race for open spaces* (Regional Plan Association Inc., New York).

Gooch, R. B., *The selection and layout of land for playing fields and playgrounds*, Reports of the New Towns Committee (National Playing Field Assoc., London, H.M.S.O.).

Stein, C., *Towards new towns for America* (Reinhold).

Urban Land Institute, *New approaches to residential land development* (Urban Land Institute).

Simonds, J. O., *Landscape architecture* (Iliffe Books Ltd, London).

Gruen V. D., and Smith, L., *Shopping towns, U.S.A.* (Reinhold).

Logie, G., *Industry in towns* (London).

Forth, M. L. and McKeever, J. R., *Planned industrial districts* (Urban Land Institute).

Great Britain, Transport, Ministry of, *Traffic in Towns* (The Buchanan Report) (H.M.S.O.).

Baker, G., and Funaro, B., *Parking* (Reinhold).

National Committee on Urban Transportation, *Better transportation for your city* (Public Administration Service, U.S.A.).

Jones, J. H., *The geometric design of modern highways* (Spon).

Mayer, H. M., and Kohn, C. F., *Readings in urban geography* (Uni. of Chicago Press).

Gibbs, J. P., *Urban research methods* (Van Nostrand).

Isard, W., *Methods of regional analysis* (M.I.T. Press).

New York (City), City Planning Commission, *Rezoning New York city* (The Commission).

Winston, D., *Sydney's great experiment* (Angus and Robertson).

Melbourne, Melbourne and Metropolitan Board of Works, Melbourne Metropolitan Planning Scheme, 1954, *Survey and analysis—Report* (Melbourne and Metropolitan Board of Works).

Stephenson, G., and Hepburn, J. A., *Plan for the metropolitan region, Perth and Fremantle—Report* (Government Printing Office, Perth).

S.A. Town Planning Committee, *Report on the metropolitan area of Adelaide* (Government Printer, Adelaide).

Australia, National Capital Development Commission. Various reports (N.C.D.C., Canberra).

Note.—Students will be expected to keep abreast of current developments occurring during the course and the following periodicals are recommended for this purpose:

Australian Planning Institute Journal.

American Institute of Planners Journal.

Town Planning Institute Journal.

The Town Planning and Local Government Guide.

Town and Country Planning (U.K.).

RA10. Theory and Practice of Town Planning II.

Form and function: optimum size of cities, defence, dispersion, concentric, linear and radial growth, satellite towns, other forms of decentralisation.

Elements of town plans—industrial areas, planned industrial districts, industrial zoning, mineral workings and after use; wholesaling and storage areas; business centres, commercial zoning; public service facilities: transport terminals, utility undertakings; recreation: regional parks, foreshores, water sport facilities, sports grounds, parks and gardens, caravan parks, commercial recreation facilities; education, health and other institutions; transportation: future travel, traffic generation, parking, traffic distribution including home—work travel, travel assignment, freeways and other roads, interchanges and their effect on land use, public transport, systems of traffic and transport.

The town as a whole: design of new towns, planning of existing towns.

Text-books and Reference books as for RA00.

RA20. Theory and Practice of Town Planning III.

The central business area: studies of land use, movement and design.

Redevelopment, rehabilitation and conservation: economic, social and technical aspects, design.

Programming: objects, methods and implementation.

Statutory planning practice: principles and methods of development, control, zoning and reservations, by-laws and ordinances; regional, metropolitan and local planning schemes: preparation, role of the consultant, presentation, exhibitions, the public enquiry.

Planning as a profession: professional conduct, fees, public relations, the Planning Institutes.

Text-books and Reference books as for RA00.

RA30. History of Town Planning.

Origins. Ancient town planning. Mediaeval and early Renaissance. Baroque. Georgian and Regency. Industrial revolution. Garden city movement. The development of modern planning concepts, including the Radburn principle and the neighbourhood unit. Early planning in Australia.

Text-books:

Mumford, L., *The city in history* (Secker and Warburg).

Hiorns, F., *Town building in history* (Harrap).

Reference books:

Giedion, S., *Space, time and architecture* (Harvard U.P.).

Stewart, C., *Prospect of cities* (Longmans).

Rasmussen, S. E., *Towns and buildings* (Liverpool U.P.).

Hackett, B., *Man, society and environment* (Percival Marshall).

Gibberd, F., *Town design* (Architectural Press).

Sulman, J., *Town planning in Australia* (Government Printer, N.S.W.).

Zucker, P., *Town and square* (Columbia U.P.).

Rosenau, H., *The ideal city in its architectural evolution,* (Routledge and Kegan Paul).

Tout, T. F., *Mediaeval town planning* (Manchester U.P.).

Tunnard, C., *The city of man* (Scribners).

Collins, G. R., and Collins, C. C., *Camillo Sitte and the birth of modern city planning* (Phaidon).

RA40. Environmental Design.

(i) *Architecture in relation to planning*: Design in relation to use. Design as a means of environmental control. Structure and materials as part determinants of form. The art of architecture. Concepts of unity, harmony, contrast. Mass and volume. Formality and informality. Architecture as a social phenomenon: building in relation to the town.

(ii) *Civic design*: Introduction: the town as an art form. The relationship of buildings to each other, to groups, to streets, and to the town. Appropriateness and good relations between buildings: some methods of control. The design of urban open spaces. Street furnishings: the equipment of the city. The preservation of historic monuments as part of the living town: the concept of permanence and change. Advertising as part of the urban scene.

(iii) *Landscape design*: The relationship between landscape pattern and architecture. Landscape in the urban scene. Layout of open spaces, parks, recreational areas, camps, cemeteries, etc. Planting in relation to utility and aesthetics: the materials of landscape design. Public and private open space in the countryside. Preservation of rural amenity by landscaping.

RA50. Elements of Statistics.

Statistical measurements: classification and tabulation of data; limits of accuracy. Types of distribution: averages and measurements of dispersion. Graphical methods: index numbers; sampling and the calculation of standard errors; linear correlation; elementary curve fitting and interpolation; analysis of time-series. Computation and statistical method programming. Application to town planning in respect of population, industry, transport, utilities, etc.

RA60. Social and Economic Aspects of Planning.

(i) *Economics*: Scope, method and fundamental concepts of economics. Economic development in Australia, and potential development as it affects planning. The economics of land use on national, regional and local level. Land tenure and its effect on planning. Land values and rents. Financial aspects of private and public developments.

(ii) *Sociology*: Principles of sociology. Elements of demography. Elements of social economics. Measurement and interpretation of economic and social phenomena. The idea of social planning. The social structure of the city.

RA70. Law in Relation to Planning.

Forms and functions of central, state and local governments. History of planning legislation. Development of planning legislation in Australia. Current Planning Acts. Other legislation affecting planning. Statutory planning procedure. Planning inquiries, appeals.

RA80. Physical Basis of Planning.

(i) *Geology*: The geological formation of Australia. Solid rocks and surface deposits. Relation of geology to surface relief and scenery. Relation of geology to fertility and agriculture. Weathering and erosion. Water supply, with reference to protection from contamination. Mineral deposits and mining. Construction and interpretation of geological maps.

(ii) *Geography*: Land distribution. Distribution and potential density of population. Location of industry and commerce. Distribution of mineral and power resources. Communications. Pattern of agricultural resources. Analysis of climatic factors.

RA90. Engineering Aspects of Planning.

(i) *Engineering*: Provision for transport by road, rail, water, air. Planning, designing and construction of roads. Road junctions, bridges, subways, laybys, etc. Public services: water, gas, electrical supply and distribution systems. Sewer and storm water disposal. Traffic capacity and regulation. Traffic census. Parking sites and garages. Street lighting.

(ii) *Surveying*: The use of survey instruments. Types of surveys. Levelling and contouring. Computation of areas. Principles of aerial survey and photogrammetry. The use and compilation of maps. The compilation and interpretation of the topographic plan.

Practical Project Work.

To illustrate and elaborate problems of survey, plan and physical development.

Thesis.

On a subject to be approved by the Faculty.

Reference books for the course for the degree of **Master of Town Planning:**

Purdom, C. R., *The building of satellite towns* (Dent).

Weber, M., *The city* (Free Press).

Mumford, L., *City development* (Secker and Warburg).

Saarinen, E., *The city — its growth, decay and future* (Reinhold).

Tunnard, C., *The city of man* (Scribners).

Le Corbusier, *Concerning town planning* (Architectural Press).

Freeman, T. W., *The conurbations of Great Britain* (Manchester U.P.).

Lichfield, N., *The economics of planned development* (Estates Gazette).

"Fortune", *The exploding metropolis* (Doubleday).

Howard, E., *Garden cities of tomorrow* (Faber).

Housing, Building and Planning, No. 8, *Housing and town and country planning.*

Jensen, R., *High density living* (Hill).

Rosenau, H., *The ideal city in its architectural evolution* (Routledge and Kegan Paul).

Roberts, J. R. H., *The law of town and country planning* (Knight).

Hilberseimer, L., *The nature of cities* (Theobald).

Hilberseimer, L., *The new regional pattern* (Theobald).

Tout, T. F., *Mediaeval town planning* (Manchester U.P.).

Le Corbusier, *Les plans de Paris* (Les Editions de Minuit).

Rauda, W., *Raumprobleme im europaischen stadtebau* (Callwey).

Great Britain. Ministry of Housing and Local Government, *The review of development plans,* Circular No. 37/60 (H.M.S.O.).

Stein, C., *Toward new towns for America* (Reinhold).
Abercrombie, P., *Town and country planning* (Thornton Butterworth).
Great Britain, Laws, Statutes, etc., *Town and country planning act* 1947 (Spon).
Mekie, R. C. and Williams, H. B., *Town and country planning law* (Spon).
Association for Planning and Regional Reconstruction, *Town and country planning text-book* (Architectural Press).
Rivet, A. L. F., *Town and country in Roman Britain* (Hutchinson).
International seminar on urban renewal, 1st, The Hague, 1958. *Report; Proceedings,* edited by P. T. van der Hoff and G. S. Duggan.
Miller, J. M. (ed.), *New life for cities round the world* (Books International).
Rapkin, C., and Grigsby, W. G., *Residential renewal in the urban core* (Pennsylvania U.P.)
Sharp, T., *Town planning* (Pelican).
Sulman, J., *Introduction to the study of town planning in Australia* (Government Printer, N.S.W.).
Unwin, R., *Town planning in practice* (Fisher Unwin).
Rasmussen, S. E., *Towns and buildings* (Liverpool U.P.).
Hughes, T. H., and Lamborn, E. A. G., *Towns and town planning: ancient and modern* (Clarendon).
British Road Federation, *Urban motorways.*
Logie, G., *The urban scene* (Faber).
Gifford, K. H., *The Victorian town planning handbook* (Law Book Co.).
Jennings, I., *The Queen's government* (Pelican).
Cole, G. D. H., *Practical economics* (Pelican).
Stamp, L. D., *Applied geography* (Pelican).
Freeman, T. W., *Geography and planning* (Hutchinson).
Cole, G. D. H., *Britain's town and country pattern* (Faber).
Cadbury brothers, *Our Birmingham* (Cadbury).
Cadbury brothers, *Changing countryside* (Cadbury).
Tubbs, R., *Living in cities* (Penguin).
International Congresses for Modern Architecture, *The heart of the city,* ed. J. Tyrwhitt (Lund Humphries).
Fawcett, C. B., *A residential unit for town and country planning* (London U.P.).
Forshaw, J. H., and Abercrombie, L. P., *County of London plan* 1943 (Macmillan).
Abercrombie, L. P., *Greater London plan* 1944 (H.M.S.O.).
London County Council. *County of London development plan* 1951 — *statement and analysis* (L.C.C.).
Architectural Review, June 1955, *Outrage.*
Architectural Review, December 1956, *Counter attack* (Special Number).
S.A. Harbors Board. *The greater Port Adelaide plan.*
Great Britain. Fuel and Power, Ministry of, *Committee on national policy for the use of fuel and power resources* (see: Great Britain. Parliament. Parliamentary paper. 1951-2, No. 12).
National Building Studies Special Report No. 7, *District heating in American housing* (H.M.S.O.).
Huxley, Julian, *TVA-adventure in planning* (Architectural Press).
Bullock, E. H., *Planning tomorrow's Britain* (Muller).
Tyrwhitt, J., *Planning and the countryside* (Art and Education Publications).
Great Britain. Committee on land utilization in rural areas, *Report* (Scott Report) (H.M.S.O.).
Great Britain. Advisory council on scientific policy. Committee on scientific manpower, *Scientific manpower* (Barlow Report) (H.M.S.O.).

Great Britain. Ministry of works and planning. Expert committee on compensation and betterment, *Final report* (Uthwatt Report) (H.M.S.O.).

The approach to land use planning (Political and Economic Planning).

Watkins, E. S., *How will planning affect land ownership* (Architectural Press).

Bjorklund, E. M., *Focus on Adelaide* (Chicago U.P.).

Great Britain. Housing and Local Government, Ministry of, *Advisory handbook on the re-development of central areas* (H.M.S.O.).

Great Britain. Housing and Local Government, Ministry of, *Design in town and village; Part 2: The design of residential areas* (H.M.S.O.).

Planning reasearch — A register of research for all those concerned with town and country planning (Town Planning Institute).

Batson, R. G., *Roads, their alignment, layout and construction* (Longmans).

Goldsmith, H. E., *Practical road engineering* (Technical Press).

Collins, H. J., and Hart, C. A., *Principles of road engineering* (Arnold).

Institution of Structural Engineers. Conference, 50th, London, 1958. *Proceedings*, pp. 69-117 (five papers on bridges).

Parry, R., and Jenkins, W. R., *Elementary textbook on land surveying* (Estates Gazette).

Ormsby, M. T. M., *Elementary principles of surveying* (Benn).

Middleton, R. E., and Chadwick, O., *A treatise on surveying*, vol. II (Spon).

East, W. G., *The geography behind history* (Nelson).

Haverfield, F., *Ancient town planning* (Clarendon).

Wycherley, R. E., *How the Greeks built cities* (Macmillan).

Carcopino, J., *Daily life in ancient Rome* (Routledge).

Quennell, M., and C. H. B., *Everyday life in Roman Britain* (Batsford).

Orwin, C. S., and C. S., *Farms and fields* (O.U.P.).

Boumphrey, G., *British roads* (Nelson).

Sharp, T., *English panorama* (Architectural Press).

Smailes, A. E., *The geography of towns* (Hutchinson).

Summerson, J., *Georgian London* (Pleides Press).

Hackett, B., *Man, society and environment* (Marshall).

Trevelyan, G. M., *English social history* (Longmans).

Brogan, O., *Roman Gaul* (Bell).

Sharp, T., *The anatomy of the village* (Pelican).

Le Corbusier, *The city of tomorrow* (Architectural Press).

Gutkind, E. A., *Revolution of environment* (Routledge and Kegan Paul).

Gutkind, E. A., *Our world from the air* (Chatto and Windus).

Barratt, C., *Your local authority* (Pitman).

Hart, W. O., *Introduction to the law of local government and administration* (Butterworth).

Jackson, W. E., *Local government in England and Wales* (Penguin)

Maud, Sir J., *Local government in modern England* (O.U.P.).

Fearnsides, W. G., and Bulman, O. M. B., *Geology in the service of man* (Pelican).

Great Britain. Ministry of Housing and Local Government, *The control of mineral working* (H.M.S.O.).

Platt, J. I., and Challinor, J., *Simple geological structures* (Murby).

Stamp, L. D., and Beaver, S. H., *The British Isles: a geographic and economic survey* (Longmans Green).

Stamp, L. D., *The earth's crust* (Harrap).

Steers, J. A., *The sea coast* (Collins).

Stewart, C., *A prospect of cities* (Longmans).

Ginsberg, M., *Sociology* (Home University Library).

Sprott, W. H. J., *Sociology* (Hutchinson's University Library).
Mess, H. A., *Social groups in modern England* (Nelson).
Cairncross, A. K., *Introduction to economics* (Butterworth).
Hicks, J. R., *The social framework* (O.U.P.).
Allen, R. G. D., *Statistics for economists* (Hutchinson's University Library).
Connor, L. R., *Statistics in theory and practice* (Pitman).
Bowen, I., *Population* (C.U.P.).
Glass, R., *Social aspects of town planning* (Association for Planning and Regional Reconstruction).
Great Britain. Distribution of the Industrial Population, Royal Commission on the, *Report* (H.M.S.O.).
Great Britain. Distribution of the Industrial Population, Royal Commission on the, *Evidence* (H.M.S.O.).
Great Britain. Land Utilisation in Rural Areas, Committee on, *Report* (H.M.S.O.).
Gillie, F. B., and Hughes, P. L., *Some principles of land planning* (Liverpool U.P.).
Collins, B. J., *Development plans explained* (H.M.S.O.).
National Council of Social Service, *Size and social structure of a town* (Allen and Unwin).
Tippett, L. H. C., *Statistics* (O.U.P.).
Great Britain. New Towns Committee, *Reports* (interim, second interim and final), (H.M.S.O.).
Great Britain. Ministry of Transport, Memo No. 575 — *Layout and construction of roads; design and layout of roads in built-up areas* (H.M.S.O.).
Great Britain. Ministry of Education, *Community centres* (H.M.S.O.).
Current Town Planning Acts, *Orders and regulations for the United Kingdom and Australian states.*
Keeble, L., *Principles and practice of town and country planning,* 2nd edition (Estates Gazette, 1960).
Cullen, G., *Townscape* (Architectural Press).
Simonds, J. O., *Landscape architecture* (Dodge Corp.; Iliffe).
Zucker, P., *Town and square* (Columbia U.P.).
Richards, J., *Introduction to modern architecture* (Penguin).
Bailey, Sir E. B., *Geological survey of Great Britain* (Thomas Murby).
Hoskins, W. G., *The making of the English landscape* (Hodder and Stoughton).
Stamp, L. D., *The face of Britain* (Longmans). (See *British life and thought,* No. 5.)
Stamp, L. D., *The land of Britain: its use and misuse* (Longmans).
Stamp, L. D., *Man and the land* (Collins).
Cauter, T., and Downham, J. S., *The communication of ideas* (Chatto and Windus).
Planning, No. 409, *Britain and commonwealth migration* (P.E.P.).
Glass, D. V., *Social mobility in Britain* (Routledge)
Great Britain. General Register Office:
Census, 1951, *England and Wales. Report on usual residences and work-place* (H.M.S.O.).
Census, 1951, *England and Wales. Report on greater London and five other conurbations* (H.M.S.O.).
Studies on Medical and Population Subjects, No. 27, Newton, M. P., and Jeffrey, J. R., *Internal migration* (H.M.S.O.).
Great Britain. Royal Commission on Population: *Report,* Cmd 7695 (H.M.S.O.).
Morrison, H. S., *How London is governed* (James Barrie).
Hall, M. P., *The social services of modern England* (Routledge).

Great Britain. Home Office, Manuals of Civil Defence, Vol. I:
Pamphlet No. 1, *Nuclear weapons.*
Pamphlet No. 2, *Radioactive fall-out* (H.M.S.O.).
National Council of Social Service, *Voluntary social services: handbook of information and directory of organisations* (N.C.S.S.).
Alexander, W. P., *Education in England: the national system, how it works* (Newnes).
Cotgrove, S. F., *Technical education and social change* (Allen and Unwin).
Bracey, H. E., *English rural life* (Routledge).
Crossley, E. L., *The United Kingdom dairy industry* (U.K. Dairy Assoc.).
Planning, No. 407, *Agriculture and land use* (P.E.P.).
Great Britain. Agriculture, Fisheries and Food, Ministry of, *Agricultural statistics, United Kingdom Annual reports* (H.M.S.O.).
Great Britain. Information, Central Office of, *Farming Britain* (C.O.I.).
Great Britain. Information, Central Office of, Reference division. *Rural industries in Britain* (Reference Paper R. 3334, C.O.I.).
Edlin, H. L., *England's forests* (Faber).
British Industries: oil (Cassell).
British Petroleum Company, *The oilfields of Britain* (The British Petroleum Co.).
Sleeman, J. F., *British public utilities* (Pitman).
Great Britain. Power, Ministry of, *The nuclear power programme* Cmd 1083 (H.M.S.O.).
Great Britain. Information, Central Office of, Reference Division, *Nuclear energy in Britain,* C.O.I. Reference Pamphlet RF. P. 4192 (H.M.S.O.).
Great Britain. Water Pollution Research Board, *(Annual) reports: Water pollution research* (H.M.S.O.).
Great Britain. Central Advisory Water Committee. Sub-Committee on water resources, *Report* (H.M.S.O.).
Great Britain. Central Advisory Water Committee. Sub-Committee on growing demand for water, *1st, 2nd and final Reports* (H.M.S.O.).
Great Britain. Information, Central Office of, Reference Division, *Post-war industrial progress in the United Kingdom,* Reference Paper R. 3908 (C.O.I.).
Ports of the world, ed. D. Maxwell (Shipping World).
Planning No. 437, *The British shipping industry* (P.E.P.).
Port of London Authority, *Annual reports* (P.L.A.).
Great Britain. Information, Central Office of, Reference Division, *Commercial ports of the United Kingdom,* Reference Paper R. 4539 (C.O.I.).
Sargent, J. R., *British transport policy* (O.U.P.).
Great Britain. British Transport Commission, *Proposals for the railways,* (see Great Britain, Parliament. Command paper no. 9880).
Great Britain, Parliament. House of Commons, *Report from the select committee on nationalised industries: British railways* (H.M.S.O.).
Buchanan, C. D., *Mixed blessing: the motor in Britain* (Hill).
Great Britain. Ministry of Transport, *Roads in England and Wales,* (Annual Report) (H.M.S.O.).
Great Britain. Ministry of Transport, *Road research* 1958 (H.M.S.O.).
Great Britain. Transport, Ministry of, *Traffic in towns* (The Buchanan Report) (H.M.S.O.).
Great Britain. Transport, Ministry of, London and Home Counties Traffic Advisory Committee, *Annual report, London traffic* (H.M.S.O.).
Great Britain. Ministry of Transport. Committee of inquiry into London transport, *Report* (H.M.S.O.).
Great Britain. Ministry of Transport. *Government proposals following the report of the committee of inquiry into inland waterways* (H.M.S.O.).
Great Britain. Ministry of Transport. Committee of inquiry into inland waterways, *Report* (Bowes report) (H.M.S.O.)

Harvey, D. G. T., *British civil aviation* (Adlard Coles/Harrap).

Great Britain. Transport, Ministry of, London Airport Development Committee: *Report* (H.M.S.O.).

Hobson, Sir O., *How the city works* (News Chronicle).

Clarke, W. M., *The city's invisible earnings* (Institute of Economic Affairs).

British Broadcasting Corporation, *B.B.C. handbook,* (B.B.C.).

British Broadcasting Corporation, *The B.B.C. television service. A technical description* (B.B.C.).

Planning, No. 420, *Television in Britain* (P.E.P.).

Great Britain. Post Office, *Broadcasting; Memorandum on television policy,* Cmd 9005 (H.M.S.O.).

FACULTY OF ARTS

Students are reminded that in order to proceed to the second year in any subject in the Faculty of Arts they must pass in the first year of that subject, or in any pre-requisite subject, at Division I standard or higher, unless special permission is obtained in writing from the Academic Registrar.

SYLLABUS NUMBERS

The first letter identifies the Faculty of Arts: **A.**

The second letter identifies the Department teaching the subject, as follows:

Classics	**C**	**German**	**G**
Education	**D**	**History**	**H**
English	**E**	**Philosophy**	**L**
French	**F**	**Politics**	**P**
Geography	**J**	**Psychology**	**Y**

The first digit

0–6: If followed by 1, 2 or 3 indicates [except in the Departments of Education and Psychology] that the subject may form part of a sequence for the Ordinary degree of B.A. [as prescribed in Schedules II and III].

7–9: Indicates that the subject does not form part of a sequence for the ordinary degree.

The second digit

1, 2, 3: Indicates year of subject, e.g. first, second or third.

4: Indicates subject for the Diploma in Education or for the Diploma in Applied Psychology.

[5: Not used.]

6: Indicates service subject.

7: Indicates second-year subject taken only by Honours students.

8: Indicates third-year subject taken only by Honours students.

9: Final Honours.

0: Indicates pre-thesis subject for the degree of Master of Education.

CLASSICS

The editions of Greek and Latin texts mentioned below are not prescribed, but are recommended for the use of students.

LATIN

There are three subjects in Latin for the ordinary degree of Bachelor of Arts: Latin I, Latin II, and Latin III. Except with the permission of the Faculty of Arts, no student proceeding to a degree may take the subject Latin II until he has passed the final examination in Latin I, or the subject Latin III until he has passed the final examination in Latin II. No subject is pre-requisite to Latin I, but the standard of Latin at the Matriculation Examination is assumed, and, in general, students are not advised to attempt the subject unless they have reached Grade C or higher in that examination.

Every student taking a subject in Latin should have a Latin-English lexicon and a Latin grammar. Students who propose to take more than one subject in Latin should have Lewis and Short. *Latin Dictionary* (O.U.P.) and Gildersleeve and Lodge, *Latin Grammar* (Macmillan).

AC01. Latin I.

The subject is divided into two parts:

(a) the study of three works of Latin literature:
Sallust, *Rome and Jugurtha*, ed. Hawthorn (Macmillan).
Virgil, *Aeneid IV*, ed. Austin (O.U.P.).
Horace, *Odes 3*, ed. Williams (O.U.P.).

Each work is the subject of two weekly lectures in one term. The works may be examined separately during the year: passages from them are set for translation, short passages are set for comment, and questions, to be answered in essay form, are asked on their content and background.

(b) Latin unseen translation and, at the student's choice, *either* Latin prose composition *or* additional Latin reading chosen to illustrate a number of themes drawn from Roman literature, history, and society. The material that students will use for the options will be issued during the year. Both options involve weekly written work and a weekly tutorial.

AC02. Latin II.

The subject is divided into three parts:

(a) The study of three works of Latin literature:
Virgil, *Georgics IV*, in *Georgics I and IV*, ed. Huxley (Methuen).
Propertius, *Elegies Book I*, ed. Camps (C.U.P.).
Fifty letters of Pliny, ed. Sherwin White, 2nd edition (O.U.P.).

(b) Latin unseen translation and, at the student's choice, *either* Latin prose composition *or* practical criticism of passages from Latin literature. Those who opt for Latin prose composition should obtain Hardie, W. R., *Latin Prose Composition* (Arnold). The material that students will use for practical criticism will be issued during the year. Both options involve weekly written work and a weekly tutorial.

(c) The history of the later Roman Republic (133-27 B.C.). See the syllabus for Ancient History for the content of the lectures and the preliminary reading necessary. The lectures will be given, and an essay is to be written, in the first term. Students should obtain Cary, *History of Rome* (Macmillan) or Scullard, *From the Gracchi to Nero* (Methuen).

AC03. Latin III.

The subject is divided into four parts:

(a) The study of four works of Latin literature:
Tacitus, *Annals I*, ed. Miller (Methuen).

in addition to the works prescribed for Latin II.

(b) Latin unseen translation and, at the student's choice,
either Latin prose composition
or Latin satire and Latin epic.

Those who opt for prose composition should possess Hardie, *Latin prose composition* (Arnold). The material that students will use for the other option will be issued during the year. Both options involve weekly written work and a weekly tutorial.

(c) The history of the early Roman Empire (27 B.C.-180 A.D.). See the syllabus for Ancient History for the content of the lectures and the preliminary reading necessary. The lectures will be given, and an essay is to be written, in the second term. Students should obtain Cary, *History of Rome* (Macmillan) or Wells and Barrow, *Short history of the Roman Empire to the death of Marcus Aurelius* (Methuen).

(d) Roman society of the late Republic and early Empire. There will be weekly tutorials in the first term involving written work. For special reading the following books are recommended:

Cowell, F. R., *Cicero and the Roman Republic* (Pelican); *or*
Cowell, F. R., *Everyday life in ancient Rome* (Batsford).
Carcopino, J., *Daily life in ancient Rome at the height of the Empire* (Pelican).

AC89. Latin for the Honours Degree of B.A.

The formal work of the final Honours year consists mainly of weekly essays and tutorials. Essays in one term are devoted to literature, and in the other two to history and society. Unseen translation is also practised.

The examination consists of the following three-hour papers:

(a) Passages for translation into English from Latin prose authors.

(b) Passages for translation into English from Latin poets.

(c) Latin literature.
Twelve questions are set on the works of Latin authors, and candidates are required to attempt four.

(d) Roman history: the Age of Augustus.
Twelve questions are set on the period, and candidates are required to attempt four.

(e) Roman society: thought and religion.
Twelve questions are set, and candidates are required to attempt four.

GREEK

There are three subjects in Greek for the ordinary degree of Bachelor of Arts: Greek I, Greek II, and Greek III. Except with the permission of the Faculty of Arts, no student proceeding to a degree may take the subject Greek II until he has passed the final examination in Greek I, or the subject Greek III until he has passed the final examination in Greek II. No subject is pre-requisite to Greek I, but, in general, students are advised to have obtained the standard of Greek at the Matriculation Examination, or a pass in Elementary Greek.

Every student taking a subject in Greek should have a Greek-English lexicon and a Greek grammar. Students who propose to take more than one subject in Greek should have Liddell and Scott, *Greek-English Lexicon*, 9th edition, ed. Jones (O.U.P.), and Goodwin, *Greek Grammar* (Macmillan).

AC71. Elementary Greek (Preparatory Course).

This subject will not assume any previous knowledge of the language; and it will not normally be counted as one of the subjects required for the ordinary degree of B.A. It may not be taken except by beginners in Greek. It is primarily intended for potential Honours students in Latin or Classics, though it is available to others also.

Students who pass in the examination at the end of this subject will be expected to take Greek I in a subsequent year.

The fee for the subject is $96.

The following books will be used:

Nairn, J. A., and Nairn, G. A., *Greek through reading* (Ginn).
Selections from the Attic orators, ed. Jebb (Macmillan).
Euripides, *Medea*, ed. Bayfield (Macmillan), lines 1-356.

AC11. Greek I.

The subject is divided into two parts:

(a) The study of three works of Greek literature:
Homer, *Iliad* 18, in *Iliad* 13-24, ed. Leaf and Bayfield (Macmillan).
Herodotus, *Book* 9, ed. Shuckburgh (C.U.P.).
Euripides, *Iphigenia in Tauris*, ed. Platnauer (O.U.P.).

Each work is the subject of two weekly lectures in one term. The works may be examined separately during the year: passages from them are set for translation, short passages are set for comment, and questions, to be answered in essay form, are asked on their content and background.

(b) Additional Greek reading chosen to illustrate a number of themes drawn from Greek literature, history, and society. The material that students will use for additional reading will be issued during the year. It involves weekly written work and a weekly tutorial.

AC12. Greek II.

The subject is divided into three parts:

(a) The study of three works of Greek literature:
Aeschylus, *Agamemnon*, ed. Denniston and Page (O.U.P.).
Thucydides, *Book 6*, ed. Dover (O.U.P.).
Aristophanes, *Clouds*, ed. Dover, abridged ed. (O.U.P.).

(b) The history of Greece (600-404 B.C.). See the syllabus for Ancient History for the content of the lectures and the preliminary reading necessary. The lectures will be given, and an essay is to be written, in the third term. Students should obtain Ehrenberg, V., *From Solon to Socrates* (Methuen University Paperback).

(c) The study of a literary genre: epic. There will be weekly written work and a weekly tutorial in the first and second terms. The material to be used by students will be issued during those terms.

AC13. Greek III.

The subject is divided into three parts:

(a) The study of four works of Greek literature:
Menander, *Dyskolos*, ed. Handley (Methuen).
in addition to the works prescribed for Greek II.

(b) Greek society and thought down to the fourth century B.C. No special lectures will be given, but in the third term weekly written work and a weekly tutorial will be concerned with Greek thought: the period studied will be from the pre-Socratics to Aristotle. For preliminary reading Cornford, F. M., *Before and after Socrates* (C.U.P.) is recommended.

For Greek society the following books are recommended:
Zimmern, A. E., *The Greek Commonwealth* (O.U.P.).
Jones, A. H. M., *Athenian democracy* (Blackwell).

(c) Greek unseen translation, and the study of a literary genre: epic. There will be weekly written work and a weekly tutorial in the first and second terms. The material to be used by students will be issued during those terms.

CLASSICAL STUDIES

There are three subjects in Classical Studies for the ordinary degree of Bachelor of Arts: Classical Studies I, II and III. Except with the permission of the Faculty of Arts, no student proceeding to a degree may take the subject Classical Studies II until he has passed the final examination in Classical Studies I, or the subject Classical Studies III until he has passed the final examination in Classical Studies II. No subject is pre-requisite to Classical Studies I.

In these subjects classical literature is studied in translation, and no knowledge of Greek or Latin is required.

A student may not count as subjects towards the degree both Classical Studies I and either Greek II or Greek III.

AC31. Classical Studies I.

The subject forms an introduction to the classical world, and is concerned with the literature of classical Greece and its social and cultural background. Greek epic is studied in first term, Greek tragedy in second term, and Greek comedy and Greek philosophy in third term. As an example of the method that is followed, the treatment of epic is as follows: there is one lecture and one tutorial a week on epic literature, combining a broader survey with detailed study of the Iliad and the Odyssey. The tutorial, for which preparatory written work is set, is connected with the lecture. A second lecture a week is given on non-literary topics, and is intended to provide background for the literary studies. Topics include Mycenaean civilization, Homeric society, religion, archaeology etc.

General books for the whole subject, which students should obtain:

Finley, M. I., *The ancient Greeks* (Pelican).

Bowra, C. M., *Landmarks in Greek literature* (Weidenfeld Goldbacks *or* Pelican).

Books for the individual genres studied:

1. Epic.

Texts which students should obtain:

The Iliad of Homer, tr. Lattimore (Chicago U.P.).

Homer, *The Odyssey*, tr. Fitzgerald (Panther paperback).

Apollonius of Rhodes, *The voyage of Argo*, tr. Rieu (Penguin).

Recommended books:

Beye, C. R., *The Iliad, the Odyssey and the epic tradition* (Macmillan).

Finley, M. I., *World of Odysseus* (Pelican).

Kirk, G. S., *Homer and the epic* (C.U.P. paperback).

Knight, W. F. J., *Many-minded Homer* (Allen and Unwin).

Mireaux, E., *Daily life in the time of Homer* (Allen and Unwin).

Thomas, C. G. (ed.), *Homer's history* (Holt, Rinehart and Winston).

Reference book:

Wace, A. J. B., and Stubbings, F. H., *Companion to Homer* (Macmillan).

2. Drama.

Preliminary reading:

Kitto, H. D. F., *Greek Tragedy* (University paperback). *or*

Lesky, A., *History of Greek Literature* (Methuen). *or*

Lesky, A., *Greek Tragedy* (Benn paperback).

Prescribed texts:

Aeschylus: *Oresteia*

Sophocles: *Oedipus the King*
Philoctetes
Electra

Euripides: *Hippolytus*
Electra
Trojan Women

All in Grene and Lattimore, *Greek Tragedies*, 3 volumes (Univ. Chicago Phoenix paperbacks).

Aristophanes: *Clouds*, tr. Arrowsmith (Mentor paperback).
Frogs, tr. Lattimore (Mentor paperback).

Menander: *Dyskolos*, in Menander, *Plays and fragments* (Penguin).

Recommended reading:

Arnott, P., *The Attic Theatre and its Conventions* (O.U.P.).

Bowra, M., *Sophoclean Drama* (Oxford paperback).

Dodds, E. R., *The Greeks and the Irrational* (Beacon paperback).

Ehrenberg, V., *The People of Aristophanes* (Blackwell).

Grant, M., *The Myths of the Greeks and Romans* (Weidenfeld).
Grube, G. M. A., *The Drama of Euripides* (Methuen).
Jones, J., *On Aristotle and Greek Tragedy* (Chatto and Windus).
Kitto, H. D. F., *Form and Meaning in Drama* (Methuen paperback).
Lattimore, R. A., *The Poetry of Greek Tragedy* (Johns Hopkins).
Lever, K., *The Art of Greek Comedy* (Methuen).
Pickard-Cambridge, A. W., *Dithyramb, Tragedy and Comedy*, revised edition (O.U.P.).
Waldock, A. J., *Sophocles the Dramatist* (C.U.P.).
Webster, T. B. L., *Studies in Later Greek Comedy* (Manch. U.P.).
Webster, T. B. L., *Studies in Menander* (Manch. U.P.).
Webster, T. B. L., *The Tragedies of Euripides* (Manch. U.P.).
Whitman, C. H., *Aristophanes and the Comic Hero* (Harvard Univ. Press).
Whitman, C. H., *Sophocles; a study in Homeric humanism* (Harvard Univ. Press).

3. PHILOSOPHY.

Preliminary reading:

Cornford, F. M., *Before and after Socrates* (C.U.P. paperback).
Kitto, H. D. F., *The Greeks* (Pelican).

Texts which students should obtain:

Plato, *Last days of Socrates*, tr. Tredennick (Penguin).
Plato, *Republic*, tr. Lee (Penguin).

Recommended commentary on *Republic*:

Cross, R. C., and Woozley, A. D., *Plato's Republic: a philosophical commentary* (Macmillan).

Books for reference:

Aristophanes, *Clouds* (Mentor paperback).
Copleston, F., *History of philosophy*, vol. I (Image paperback).
Field, G. C., *Philosophy of Plato* (Home University Library).
Guthrie, W. K. C., *The Greek philosophers* (Methuen).
Stace, W. T., *Critical history of Greek philosophy* (Macmillan).

AC32. Classical Studies II.

The subject, which will be introduced in 1972, will be concerned with Roman literature and its background. Roman comedy and Lucretius will be studied in first term, Virgil's Aeneid and Latin personal poetry in second term, and Roman imperialism in third term.

AC33. Classical Studies III.

The subject, which will be introduced in 1973, will be concerned in the first two terms with comparative studies of some literary genres practised in Greece and Rome and of Greek and Roman philosophy. In first term Greek and Roman historiography or philosophy, at the student's choice, will be studied, and in second term Greek and Roman pastoral poetry and satire. The third term's study will be of the literature of the later Roman Empire and the society that produced it.

Classical Studies for the Honours Degree of B.A.

It is expected that, subject to the approval of the Council, an Honours degree in Classical Studies will be introduced, the final examination to be held for the first time in 1974.

AC72. Ancient History.

Second-year subject, not forming part of a sequence. Pre-requisite: Latin I or Greek I or Classical Studies I or History I or Politics I. Not available to exempted students. No knowledge of Latin or Greek is assumed.

A student cannot count as subjects towards his degree both Ancient History and any of the following: Latin II, Latin III, Greek II.

A course of lectures concerned with the political, social and cultural development of Greece (600-404 B.C.) and Rome (133 B.C.-A.D. 180). The lectures will assume that students are familiar with the outline of the periods being treated, and it is essential that, before the beginning of each term, students should have read at least once those parts of the recommended text-book which deals with the period to be studied. The lectures on Greek history will be given in the third term, those on Roman Republican history (133-27 B.C.) in the first, and those on Roman Imperial history in the second.

An essay is to be written each term.

Tutorials will be held on special topics throughout the year.

Text-books which students should obtain:

Ehrenberg, V., *From Solon to Socrates* (Methuen University Paperback).

Cary, M., *History of Rome* (Macmillan) *or*

Scullard, H. H., *From the Gracchi to Nero* (Methuen University Paperback).

Some useful books:

Greece:

Andrewes, A., *The Greeks* (Hutchinson).

Cambridge ancient history, vols. IV-V (C.U.P.).

Claster, J. N., *Athenian democracy* (Holt, Rinehart and Winston).

Forrest, W. G., *The emergence of Greek democracy* (World University Library).

Jones, A. H. M., *Athenian democracy* (Blackwell).

Kagan, D., *The outbreak of the Peloponnesian War* (Cornell U.P.).

Kagan, D., *Problems in ancient history*, vol. 1 (Macmillan).

Michell, H., *Sparta* (C.U.P. Paper-back).

Zimmern, A. E., *The Greek commonwealth* (O.U.P.).

Thucydides, trans. R. Warner (Penguin Classics).

Herodotus, trans. A. de Selincourt (Penguin Classics).

Roman Republic:

Heitland, W. E., *The Roman republic*, vols. II-III (C.U.P.).

Cambridge ancient history, vols. VIII-X (C.U.P.).

Smith, R. E., *The failure of the Roman republic* (C.U.P.).

Kagan, D., *Problems in ancient history*, vol. 2 (Macmillan).

Holmes, T. Rice, *The Roman republic and the founder of the empire* (O.U.P.).

Cowell, F. R., *Cicero and the Roman republic* (Pelican).

Abbott, F. F., *A history and description of Roman political institutions* (Biblo and Tannen).

Appian, *Roman history*, vols. III-IV (Loeb).

Plutarch, *Fall of the Roman republic* (Penguin).

Plutarch, *Makers of Rome* (Penguin).

Cicero, *Letters*, ed. Wilkinson (Arrow *or* Hutchinson Paper-back).

Badian, E., *Roman imperialism in the late republic* (Blackwell).

Dickinson, J., *Death of a republic* (Macmillan).

Lewis, N., and Reinhold, M., *Roman civilization*, vol. 1 (Columbia U.P.).

Roman Empire:

Augustus, *Res Gestae Divi Augusti* (*The achievements of the divine Augustus*), ed. P. A. Brunt and J. M. Moore (O.U.P.).

Tacitus, *Histories* and *Annals*, ed. C. H. Moore and J. Jackson, 4 vols. (Loeb).

Suetonius, *Lives of the Caesars*, ed. J. C. Rolfe, 2 vols. (Loeb).
Millar, F., *The Roman empire and its neighbours* (Weidenfeld and Nicholson).
Starr, C. G., *Civilization and the Caesars* (Norton).
Lewis, N., and Reinhold, M. (eds.), *Roman civilization*, vol. II (Columbia U.P.).
Cambridge ancient history, vols. X-XI (C.U.P.).
Syme, R., *The Roman revolution* (Oxford Paper-backs).
Yavetz, Z., *Plebs and Princeps* (O.U.P.).

AC23. Comparative Philology.

Pre-requisite subjects: Matriculation Latin (Grades A, B, C or D) *or* Leaving Latin (Grades 1, 2 or 3) and *either* Latin I *or* Greek I *or* French I *or* German I *or* IA. Special permission to enrol for the subject may be given to candidates who have linguistic qualifications other than these. Some competence in Latin, demonstrated in public examination, will always be required. Those who seek special permission should make enquiries of Mr. D. A. Hester in the Department of Classics.

The subject has three parts:

(a) A course of lectures concerned with general linguistics and with the comparative study of the Indo-European languages (especially English, Latin and Greek). Two lectures will be given each week and approximately half the course will be on each topic. Brief written exercises will be set.

(b) Special topics (such as semantics, prescriptive linguistics, history of linguistics, the comparative method) which will be studied independently by students from books to be prescribed and on which essays will be set (approximately two essays per term).

(c) For students with no previous knowledge of Greek or inadequate knowledge, tutorials will be provided during the first two terms.

Text-books:

Buck, C. D., *Comparative grammar of Greek and Latin* (Chicago U.P.).
Lockwood, W. B., *Indo-European philology* (Hutchinson Paperback).
Mitchell, A. G., *Spoken English* (Macmillan).

Students to whom (c) applies should enquire of Mr. Hester which text-book to obtain.

Recommended preliminary reading:

(Other reading matter will be recommended during the course.)
Potter, S., *Language in the modern world* (Pelican), *and either*
Barber, C. L., *The story of language* (Pan), *or*
Potter, S., *Our language* (Pelican).

AC99. Classics for the Honours Degree of B.A.

The formal work of the final Honours year consists mainly of weekly essays and tutorials. Essays in one term are devoted to literature, and in the other two to history and society. Unseen translation is also practised.

The examination consists of the following three-hour papers:

(a) Passages for translation into English from Greek prose authors and poets.

(b) Passages for translation into English from Latin prose authors and poets.

(c) Greek and Latin literature.
Twelve questions are set on the works of Greek and Latin authors, and candidates must attempt four, taking two questions from either section of the paper.

(d) Greek and Roman history: Imperial Athens, and the Age of Augustus.
Twelve questions are set on the periods, and candidates must attempt four, taking two questions from either section of the paper.

(e) Greek and Roman society, thought and religion.
Twelve questions are set, and candidates must attempt four, taking two questions from either section of the paper.

Classics for the Degree of M.A.

A candidate for the degree must:

(a) present a thesis of not more than 20,000 words on a subject approved by the Faculty of Arts;

(b) present himself for examination in a portion of work approved by the Faculty of Arts.

The qualifications required of applicants to be admitted as candidates for the degree are set out in the Regulations of the degree of Master of Arts. In general, a candidate should have obtained a good Honours degree in Latin or Classics.

The degree is intended to be obtained normally by one year of full-time or two years of part-time study. Work towards the degree is pursued under a supervisor or supervisors appointed by the Faculty, and consists largely of reading and essay work, until the candidate is ready to begin writing his thesis. The thesis itself, though of an advanced standard, is not intended necessarily to contain material that is a new contribution to knowledge.

General advice to candidates and specifications for theses are set out in the Notes and Instructions to Candidates for the degree of Master.

Potential candidates should consult the Head of the Department of Classics in the first instance.

ECONOMICS.

For syllabuses of Social Economics; Economics I, II and III; Economic Development I; Economics for the Honours degree of B.A.: see under Faculty of Economics.

EDUCATION.

DIPLOMA IN EDUCATION

The course for the diploma is a single, composite course of full-time study lasting for one year and requiring the whole of a candidate's time to be devoted to it. The work consists of reading, attendance at a number of tutorial and seminar classes each week, such practical and written exercises as may be prescribed, visits to schools and other institutions, periods of supervised teaching practice, and attendance at lecture courses.

Each of the lecture courses consists of one lecture a week.

AD04. Theory of Education I.

The following books, or chapters in books, should be read:

Plato, *The republic*, particularly sections 9 - 14 and 18 - 28 in F. M. Cornford's edition.

Rousseau, J. J., *Emile*.

Arnold, M., *Culture and anarchy*.

Mill, J. S., *On liberty*.

O'Connor, D. J., *An introduction to the philosophy of education* (Routledge).

Gribble, J., *Introduction to the philosophy of education* (Allyn and Bacon).

Peters, R. S., *Ethics and education* (Allen and Unwin).

Archambault, R. D. (ed.), *Philosophical analysis and education* (Routledge).

AD14. History of Education I.

The course comprises three topics: Education in Antiquity and in the Middle Ages; Secondary Education in England from the Renaissance to the present day; the Foundations of Public Education in Australia.

The following books should be read:

Clark, G., *World prehistory: an outline* (C.U.P.).

Marrou, H. I., *A history of education in antiquity* (Sheed and Ward).

Ruether, R. M., *Gregory of Nazianzus, rhetor and philosopher* (O.U.P.).

Lawson, J., *Medieval education and the Reformation* (Routledge and Kegan Paul).

Charlton, K., *Education in Renaissance England* (Routledge and Kegan Paul).

Mack, E. C., *The public schools and British opinion,* 1780-1860 (Methuen).

Banks, O., *Parity and prestige in English secondary education* (Routledge and Kegan Paul).

Austin, A. G., *Australian education,* 1788-1900 (Pitman).

Turney, C. (ed.), *Pioneers of Australian education* (Sydney U.P.).

Knight, R., *Illiberal liberal: Robert Lowe in New South Wales,* 1842-1850 (M.U.P.).

Tregenza, J., *Professor of democracy: the life of Charles Henry Pearson,* 1830-1894 (M.U.P.).

The following books may also be consulted with profit:

Dobzhansky, T., *The biological basis of human freedom* (Columbia U.P.).

Hawkes, J., and Woolley, L., *Prehistory and the beginnings of civilization* (George Allen and Unwin), Part II, Chapters VI and VII.

Alsop, J. W., *From the silent earth* (Secker and Warburg).

Ehrenberg, V., *Society and civilization in Greece and Rome* (Harvard U.P.).

Zimmern, A., *The Greek commonwealth* (O.U.P.).

Monroe, P., *Source book of the history of education for the Greek and Roman period* (Macmillan).

Jaeger, W., *Early Christianity and Greek Paideia* (Bellknap press).

Great Britain, Education, Board of, *Report of the Consultative Committee on Secondary Education* (The Spens Report), Chapts. I and II and Appendix II.

Waddell, H., *The wandering scholars* (Fontana).

Lewis, C. S., *The allegory of love,* Chapt. I only (O.U.P.).

Paetow, L. J., *The arts course at medieval universities* (The Iowa W. C. Brown Reprint Library).

Leff, G., *Paris and Oxford universities in the thirteenth and fourteenth centuries* (Wiley).

Prestage, E. (ed.), *Chivalry: its historical significance and civilizing influence* (Paul, Trench and Trubner), Chapters I, III and IX.

Kristeller, P. O., *Renaissance thought, the classic, scholastic and humanistic strains* (Harper).

Woodward, W. H., *Studies in education during the age of the Renaissance* (Russell and Russell).

Curtis, M. H., *Oxford and Cambridge in transition,* 1558-1642 (O.U.P.).

Ogilvie, R. M., *Latin and Greek: a history of the influence of the classics on English life from* 1600 *to* 1918 (Routledge and Kegan Paul).

Robson, D., *Some aspects of education in Cheshire in the eighteenth century* (The Chetham Society, Manchester).

Newsome, D., *Godliness and good learning* (John Murray).

Rothblatt, S., *The revolution of the dons* (Faber).

Austin, A. G., *Select documents in Australian education,* 1788-1900 (Pitman).

Melbourne studies in education, annually (M.U.P.).

AD24. Sociology of Education I.

This is an introductory course and, although its principal aim is to indicate the relationship between education and its social setting, a special emphasis is placed on theoretical sociology before discussing the educational implications of the subject. A large proportion of the time is devoted to the study of the concept of social class, the nature of social stratification in Australia and the relationship between social class and educational opportunity. The reading list is given below but a number of topics will be discussed for which there is no adequate reference in readily available texts (e.g. one of such topics is concerned with the influence of sociologist's own theoretical orientation on the way in which he applies the subject to the solution of educational problems). Students will also be referred to articles in sociological and educational journals.

Bottomore, T. B., *Sociology: a guide to problems and literature* (Unwin).
Berger, P. L., *Invitation to sociology: a humanistic perspective* (Penguin).
Elvin, H. L., *Education and contemporary society* (Watts).
Bantock, G. H., *Culture, industrialization and education* (Routledge).
Tumin, M. M., *Social stratification* (Prentice-Hall).
Davis, A., *Social class influences on learning* (Harvard).
Henderson, R. F., and others, *People in poverty: a Melbourne survey* (Cheshire).
Riessman, F., *The culturally deprived child* (Harper).
Hoggart, R., *The uses of literature* (Penguin).
Jackson, B., and Marsden, D., *Education and the working class* (Penguin).
Halsey, A. H., and others, *Education, economy and society* (Free Press).
Davies, A. F., and Encel, S., *Australian society: a sociological introduction* (Cheshire).
Stretton, H., *Ideas for Australian cities* (Stretton).
Daveis, A. F., *Images of class: an Australian study* (Sydney University Press).
Katz, F. M., and Brown, R. K., *Sociology of education* (Macmillan).
Partridge, P. H., *Society, schools and progress in Australia* (Pergamon).
McLean, D., *Its people that matter: education for social change* (Angus and Robertson).
Horne, D., *The education of young Donald* (Penguin).
Pedley, R., *The comprehensive school* (Penguin).
Ford, J., *Social class and the comprehensive school* (Routledge).
Rubinstein, D., and Stoneman, C., *Education for democracy* (Penguin).
Cox, C. B., and Dyson, A. E., *Fight for education* and *The crisis in education* (Black Paper I and II. The Critical Quarterly Society).
Jackson, B., *Streaming: an education system in miniature* (Routledge).
Zweig, F., *The student in the age of anxiety* (Heinemann).
Hodgkinson, H. L., *Education in special and cultural perspectives* (Prentice-Hall).
Hodgkinson, H. L., *Education, interaction, and social change* (Prentice-Hall).
Martin, J., *Refugee settlers* (A.N.U. Press).
Melbourne studies in education 1968-1969 (M.U.P.).

AD34. Educational Psychology I.

The following books should be read as early as possible in the course to provide useful background material:

Stones, E., *An introduction to educational psychology* (Methuen).
Bradley, J. I., and McClelland, J. N., *Basic statistical concepts: a self-instructional text* (Scott, Foresman and Co.).

During the course students will be required also to read the following books or selected portions of them:

Hudson, L., *Contrary imaginations* (Penguin).
Eysenck, H., *Fact and fiction in psychology* (Penguin).
Hill, W. F., *Learning* (Methuen).
Ausubel, D. P., *Educational psychology: a cognitive vew* (Holt, Rinehart, Winston).
De Cecco, J. P., *The psychology of learning and instruction* (Prentice-Hall).
Butcher, H. J., *Human intelligence, its nature and assessment* (Methuen).
Wiseman, S. (ed.), *Intelligence and ability* (Penguin).
Wasons, P. C., and Johnson-Laird, P. N. (eds.), *Thinking and reasoning* (Penguin).
Reichmann, W. J., *Use and abuse of statistics* (Penguin).
Kay, H., and others, *Teaching machines and programmed instruction* (Penguin).
Bloom, B. S. (ed.), *Taxonomy of educational objectives: Handbook I, cognitive domain* (Longmans).
Clarizio, H. F., and others (eds.), *Contemporary issues in educational psychology* (Allyn and Bacon).
Boyle, D. G., *A students' guide to Piaget* (Pergamon Press).
Stenhouse, L. (ed.), *Discipline in schools* (Pergamon Press).
Furth, H. G., *Piaget for teachers* (Prentice-Hall).

AD44. Practical Teaching and Methodology B.

The prescribed period of supervised teaching practice extends over an aggregate of at least ten weeks.

There will be classes and seminars on the methods of presenting the several school subjects.

THE DEGREE OF MASTER OF EDUCATION

Each of the four courses necessary for the degree consists of one seminar class a week lasting for an hour and a half and such written and practical work as may be prescribed.

AD00. Theory of Education II.

The following books should be read:

Montaigne, M. E. de, *Essais.*
Bruner, J. S., *The process of education* (Harvard U.P.).
Locke, J., *Some thoughts concerning education.*
Arnold, M., *Culture and anarchy.*
Dewey, J., *The school and society* (Chicago U.P.).
Rousseau, J. J., *Emile.*
McCallister, W. J., *The growth of freedom in education* (Constable).
Whitehead, A. N., *The aims of education* (Benn).
Judges, A. V. (ed.), *Education and the philosophic mind* (Harrap).

The following books should be consulted:

Plato, *Laws.*
Lodge, R. C., *Plato's theory of education* (Routledge)
Nettleship, R. L., *The theory of education in Plato's Republic* (O.U.P.).
Aristotle, *Ethics.*
Aristotle, *Politics.*

Quintilian, *Institutio oratoria.*
St. Augustine, *De magistro.*
Erasmus, D., *Declamatio de pueris statim ac liberaliter instituendis.*
Vives, J. L., *De trahendis disciplinis.*
Elyot, Sir Thomas, *The boke named the gouvernour.*
Ascham, Roger, *The scholemaster.*
Woodward, W. H., *Vittorino da Feltre and other humanist educators.*
Barnard, H. C., *The little schools of Port-Royal* (C.U.P.).
Hughes, T., *Loyola and the educational system of the Jesuits.*
Comenius, J. A., *The great didactic,* ed. M. W. Keatinge (Black).
Milton, J., *Tractate of education.*
Pestalozzi, J. H., *How Gertrude teaches her children* (Allen and Unwin).
Silber, Kate, *Pestalozzi: the man and his work* (Routledge).
Fichte, J. G., *Addresses to the German nation.*
Herbart, J. F., *The science of education.*
Froebel, F. W. A., *Education of man.*
Mill, J. and J. S., *On education,* ed. F. A. Cavenagh (C.U.P.).
Spencer, H., *Education, intellectual, moral and physical.*
Newman, J. H., *Idea of a university.*
Huxley, T. H., *A liberal education; and where to find it* in his *Lectures and lay sermons* (Dent).
Dewey, J., *My pedagogical creed.*
Montessori, M., *The Montessori method.*
Whitehead, A. N., *Adventures of ideas* (Penguin).
Wordsworth, W., *The prelude.*
Snyder, A. D. (ed.), *Coleridge on logic and learning* (Yale U.P.).
Coleridge, S. T., *Aids to reflection.*
Coleridge, S. T., *Biographia literaria.*
Leavis, F. R., *Education and the universities* (Chatto and Windus).
Leavis, F. R., *Revaluation* (Chatto and Windus).
Santayana, G., *The life of reason.*
Lawrence, D. H., *Letters.*
Lawrence, D. H., *Education of the people,* in his *Phoenix: posthumous papers* (Heinemann).
Collingwood, R. G., *Essay on philosophical method* (O.U.P.).
Coleridge, S. T., *Philosophical lectures,* edited by K. Coburn.
Suttie, I. D., *The origins of love and hate.*
Thring, E., *Theory and practice of teaching* (C.U.P.).
Stewart, W. A. C., *Quakers and education* (Epsworth).
Castle, E. B., *Moral education in Christian times* (Allen and Unwin).
Leavis, F. R., and Thompson, Denys, *Culture and environment* (Chatto and Windus).
Judges, A. V. (ed.), *Pioneers of English education* (Faber).

AD10. History of Education II.

The course comprises two topics: The History of Education in France (a reading knowedge of French is NOT required); The History of Secondary Education in Australia.

It is assumed that candidates enrolled for the course will have read the books prescribed or recommended for History of Education I.

The following books are also recommended:

Jackson, J. H., *A short history of France from early times to* 1958 (C.U.P.).
Koestler, A., *The sleepwalkers* (Penguin).
Aron, Robert, *Jesus of Nazareth* (Hamilton).
Jaeger, W., *Early Christianity and Greek Paideia* (Belknap).
Augustinus Aurelius, saint, bp. of Hippo, *Confessions.*

Rashdall, H., *The universities of Europe in the middle ages*, 2nd ed., ed. Powicke and Emden, 1936, 3 vols. (Clarendon Press), for reference.
Haskins, C. H., *The renaissance of the twelfth century* (Harvard).
Ariès, P., *Centuries of childhood* (Cape).
Barnard, H. C., *The French tradition in education: Ramus to Mme. Necker de Saussure* (C.U.P.).
Evennett, H. O., *The spirit of the counter-reformation* (C.U.P.).
Ganss, G. E., *St. Ignatius' idea of a Jesuit university* (Marquette U.P.).
Battersby, W. J., *De la Salle: a pioneer of modern education* (Longmans).
Battersby, W. J., *History of the Institute of the Brothers of the Christian Schools*, 3 vols. (Waldegrave).
Barnard, H. C., *Education and the French revolution* (C.U.P.).
Johnson, D., *Guizot: aspects of French history 1774-1874* (Routledge).
Arnold, M., *Democratic education* (Michigan U.P.).
Acomb, E. M., *The French Laic Laws (1879-1889)* (Octagon Books).
Debiesse, J., *Compulsory education in France* (UNESCO).
Toulmin, S. E., and Goodfield, J., *The discovery of time* (Hutchison).
Smeaton, W. A., *Fourcroy: chemist and revolutionary, 1755-1809* (Heffer).
Waddington, P., *The history, administration and function of the Baccalauréat as a secondary school examination in France* (Xerox copy available in the Barr Smith Library).
Arnold, M., *Schools and universities on the continent* (Michigan U.P.).
Graves, N. J., *Technical education in France in the nineteenth century* (*Vocational aspect of secondary and further education*, vol. 16, 1964, pp. 148-160 and pp. 163-175).
Graves, N. J., *The "grandes écoles" in France* (Vocational aspect of secondary and further education, vol. 17, pp. 40-49).
Zeldin, T., *Higher education in France, 1848-1940* (Journal of Contemporary History, vol. 2, 1967, pp. 53-80).
Hughes, H. S., *Consciousness and society* (Vintage Books, Random House).
Wykes, Olive, *Secondary education in France during the Fourth Republic* (Xerox copy available in the Barr Smith Library).
Fraser, W. R., *Education and society in modern France* (Routledge).
Cros, L., *The explosion in the schools* (S.E.V.P.E.N.).
Halls, W. D., *Society, schools and progress in France* (Pergamon).
Capelle, J., *Tomorrow's education: the French experience* (Pergamon).
Rideau, E., *Teilhard de Chardin: a guide to his thought* (Collins).
French, E. L., *Secondary education in the Australian social order*, 1788-1898 (Xerox copy available in the Barr Smith Library).
Goodman, R., *Secondary education in Queensland, 1860-1960* (A.N.U.).
Nadel, G., *Australia's colonial culture* (Cheshire).
Fogarty, R., *Catholic education in Australia* 1806-1950, 2 vols. (M.U.P.).
Crane, A. R., and Walker, W. G., *Peter Board. His contribution to the development of education in New South Wales* (A.C.E.R.).
Anchen, J. O., *Frank Tate and his work for education* (A.C.E.R.).
Beare, H., *The influence of Alfred Williams and the Price Ministry on public education in South Australia* (Xerox copy available in the Barr Smith Library).
New South Wales, Education, Dept. of, *Report of the committee appointed to survey secondary education in New South Wales* (N.S.W. Govt. printer).

AD20. Sociology of Education II.

Candidates are expected to be familiar with the books recommended for Sociology of Education I. They should read those parts of the following books which will be indicated:

Merton, R. K., *On theoretical sociology* (Free Press).
Melbourne studies in education 1968-1969 (Melbourne University Press).
Fallding, H., *The sociological task* (Prentice-Hall).
Cohen, P. S., *Modern social theory* (Heinemann).
Stretton, H., *The political sciences* (Routledge).
Aron, R., *Main currents in sociological thought* (Penguin).
Banks, O., *The sociology of education* (Batsford).
Swift, D. F., *The sociology of education* (Routledge).
Sexton, P. C., *Readings on the school in society* (Prentice-Hall).
Russel, B., *Education and the social order* (Allen and Unwin).
Jackson, J. A., *Social stratification* (Cambridge University Press).
Bottomore, T. B., *Classes in modern society* (Allen and Unwin).
Bottomore, T. B., *Elites and society* (Penguin).
Mabey, R., *Class* (Blond).
Lefebvre, H., *The Sociology of Marx* (Allen Lane).
Encel, S., *Equality and authority* (Cheshire).
Congalton, A. A., *Status and prestige in Australia* (Cheshire).
Ford, J., *Social class and the comprehensive school* (Routledge).
Stevens, F., *The new inheritors* (Hutchinson).
Koerner, J. D., *Reform in education* (Weidenfeld and Nicolson).
Douglas, J. W. B., *The home and the school* (Panther).
King, R., *Education* (Longmans).
Brown, Claude, *Man child in the Pormised Land* (Penguin).
Thelen, H. A., *Classroom grouping for teachability* (Wiley).
Yates, A., *Grouping in education* (Wiley).
Etzioni, A., *Modern organizations* (Prentice-Hall).
Etzioni, A., *Readings in modern organizations* (Prentice-Hall).
Hansen, D. A., and Gerstl, T. E., *On education: sociological perspectives* (Wiley).
Bell, G. D., *Organizations and human behaviour* (Prentice-Hall).
Musgrave, P. W., *The school as an organization* (Macmillan).
Merton, R. K., and others, *Reader in bureaucracy* (The Free Press).
Herriott, R. E., and St. John, N. H., *Social class and the urban school* (Wiley).
Hatt, P. K., and Reiss, A. J., *Cities and society: a reader in urban sociology* (The Free Press).
Fromm, E., *The sane society* (Routledge).
Merton, R. K., *Social theory and social structure* (The Free Press).
Cockburn, A., and Blackburn, R., *Student power* (Penguin).
Frankel, C., *Education and the barricades* (Norton).
Kerber, A., and Bommarito, B., *The school and the urban crisis* (Holt).
Columbia University, *Man in contemporary society* (Columbia).
Zubrzycki, J., *Settlers of the Latrobe Valley* (A.N.U. Press).
Price, C. A., *Southern Europeans in Australia* (Oxford).
Travers, R. M. W., *An introduction to educational research* (Macmillan).
Young, M., *Innovation and research in education* (Routledge).
Wakeford, J., *The Strategy of Social Enquiry* (Macmillan).
Stephan, F. F., and McCarthy, P. J., *Sampling opinions* (Wiley).
Garrett, A., *Interviewing* (Family Service Assoc. of America).
Foskett, D. J., *How to find out: educational research* (Pergamon).

Students will also be referred to monographs and articles in sociological and educational journals. They will also be expected to refer to government reports of educational and sociological importance.

AD30. Educational Psychology II.

This course of lectures, tutorials, written and practical exercises will have special reference to educational research and the application of it to teaching in schools.

Students must be familiar with the following publications devoted to educational research:

Journals:

Educational research.

Review of educational research.

Journal of educational psychology.

British journal of educational psychology.

Reference book:

Harris, C. W. (ed.), *Encyclopædia of educational research*, 4th edition (Macmillan).

For many pieces of research it is necessary also to consult several other journals of psychology and education.

The following list of recommended books is not intended to be prescriptive; nor can it be comprehensive in view of the flexibility of the course.

Ausubel, D. P., *Educational psychology: a cognitive view* (Holt, Rinehart and Winston).

De Cecco, J. P., *The psychology of learning and instruction* (Prentice-Hall).

Baldwin, A. L., *Theories of child development* (Wiley).

Flavell, J. H., *The developmental psychology of Jean Piaget* (Van Nostrand).

Sarason, I., *Personality: an objective approach* (Wiley).

Eysenck, H. J., and Eysenck, S. B., *Personality structure and measurement* (Routledge).

Butcher, H. J., *Human intelligence, its nature and assessment* (Methuen).

Brown, R., *Social psychology* (Collier-Macmillan).

Anderson, R. C., and Ausubel, D. P. (eds.), *Readings in the psychology of cognition* (Holt, Rinehart and Winston).

Bruner, J. S., and others, *A study of thinking* (Wiley).

Bruner, J. S., and others, *Studies in cognitive growth* (Wiley).

Shulman, L. S., and Keislar, E. R. (eds.), *Learning by discovery* (Rand McNally).

Gagne, R. M., *The conditions of learning* (Holt, Rinehart and Winston).

Maccoby, E. E. (ed.), *The development of sex differences* (Tavistock).

Rosenthal, R., *Experimenter effects in behavioural research* (Appleton-Century-Crofts).

Vygotsky, L. S., *Thought and language* (M.I.T. Press).

Dienes, Z., and Jeeves, M., *Thinking in structures* (Hutchinson Educational).

Hudson, L., *Contrary imaginations* (Penguin).

Hudson, L., *Frames of mind* (Methuen).

Wallach, M. A., and Kogan, N., *Modes of thinking in young children* (Holt, Rinehart and Winston).

Wiersma, W., *Research methods in education* (Lippincott).

Campbell, D. T., and Stanley, J. C., *Experimental and quasi experimental designs for research* (Rand, McNally and Co.).

Statistical Work.

All students must work through the following programme:

Elzey, F. F., *A programmed introduction to statistics* (Wadsworth).

Books which may be found helpful are:

Guilford, J. P., *Fundamental statistics in psychology and education* (McGraw-Hill).

McNemar, Q., *Psychological statistics* (Wiley).
Ferguson, G. A., *Statistical analysis in psychology and education* (McGraw-Hill).
Cattell, R. B., *Factor analysis* (Harper and Brothers).
Siegel, S., *Nonparametric statistics* (McGraw-Hill).

AD40. Comparative Education.

The following books should be read:

Hans, N. A., *Comparative education* (Routledge).
Kandel, I. L., *Comparative education* (Harrap).
Kandel, I. L., *The new era in education* (Houghton Mifflin).
The world year book of education, 1948 (Evans).
The world year book of education, 1952 (Evans).
Armfelt, R., *The structure of English education* (Cohen and West).
Johnson, W. H. E., *Russia's educational heritage* (Carnegie pr.).
Ulich, R., *The education of nations* (Harvard U.P.).
Benson, C. S., *The economics of public education* (Houghton).
Cruickshank, M., *Church and state in English education, 1870 to the present day* (Macmillan).
Dancy, J. C., *The public schools and the future* (Faber).
King, E. J., *Other schools and ours* (Holt).

The following books should also be consulted:

Hans, N. A., *History of Russian educational policy* (King).
Monroe, P., *The founding of the American public school system* (Macmillan).
Myrdal, G., *An American dilemma: the negro problem and modern democracy* (Harper).
U.N.E.S.C.O., *World survey of education, vol.* 1: *Handbook of educational organization and statistics.*
Durkheim, E., *L'évolution pédagogique en France* (Alcan).
Edwards, N., and Richey, H. G., *The school in the American social order* (Houghton).
The world year book of education, 1938. Hans, N. A., *Educational traditions in the English-speaking countries* (Evans).
Hans, N. A., and Hessen, S., *Educational policy in Soviet Russia* (King).
U.N.E.S.C.O., *Education in the modern world.*
Simon, B., *Studies in the history of education* (Lawrence and Wishart).
Peterson, A. D. C., *A hundred years of education* (Duckworth).
Rée, H., *The essential grammar school* (Harrap).
Dempster, J. J. B., *Purpose in the modern school* (Methuen).
Neal, L. F., *External examinations in secondary modern schools.* Leeds University. Institute of Education. Researches and Studies, 1956 (Leeds U.P.).
Wolfenden, J. F., *The public schools of today* (London U.P.).
Mallinson, V., *An introduction to the study of comparative education* (Heinemann).
Cramer, J. F., and Browne, G. S., *Contemporary education* (Harcourt).
Pedley, R., *Comprehensive schools today* (Councils and education pr.).
The world year book of education, 1959 (Evans).
Great Britain: Education, Ministry of Central Advisory Council on Education, 15 *to* 18 (Crowther Report) (H.M.S.O.).
Kandel, I. L., *Impressions of Australian education* (A.C.E.R.).
Medsker, L. L., *The junior college: progress and prospect* (McGraw-Hill).
Conant, J. B., *The American high school* (McGraw-Hill).
Conant, J. B., *The education of American teachers* (McGraw-Hill).

Barzun, J. M., *The house of intellect* (Harper).
Riesman, D., *Constraint and variety in American education* (Nebraska U.P.).
Lieberman, M., *The future of public education* (Chicago U.P.).
Butts, R. F., and Cremin, L. A., *A history of education in American culture* (Holt).
The world year book of education, 1960 (Evans).
Flexner, A., *Universities* (O.U.P.).
Barnard, H. C., *The French tradition in education* (C.U.P.).
Bereday, G. Z. F., and Pennar, J. (eds.), *Politics of Soviet education* (Srevens).
Bereday, G. Z. F., and others, *The changing Soviet school* (Houghton).
Robbins, L. C., *The university in the modern world* (St. Martin's Press).

AD50. History and Sociology of Science.

A study of the development of scientific thought from earliest times to the beginnings of modern science and of selected topics in the development of chemistry and the historical sciences from the seventeenth century to the present. The course will be concerned with the study of the structure of scientific change: the nature of scientific methods, explanation and proof; the cross-fertilization between sciences; the relation between pure science and technology; the influence of non-scientific factors upon the growth of science; and the social and moral responsibilities of scientists. Special emphasis will be placed on the study of the effects of scientific and technological change on man's natural environment and on the structure and function of social institutions. Attention will also be given to the place of the history and sociology of science in the education of scientists at both secondary and tertiary level and to the role of scientific education in helping to control the socially dysfunctional aspects of scientific and technological innovation. Interests of individual students will be taken into account whenever possible.

The course is intended primarily for graduates in science but, with the approval of the Head of the Department of Education, in special cases other qualified graduates may be permitted to take the course.

Recommended books:

Kuhn, T. S., *The structure of scientific revolutions* (Chicago U.P.).
Gillespie, C., *Edge of objectivity* (Oxford U.P.).
Hesse, M. B., *Models and analogies in science* (Sheed and Ward).
Beveridge, W. I. B., *The art of scientific investigation* (Heinemann).
Sambursky, S., *Physical world of the Greeks* (Routledge).
Clagett, M., *Greek science in antiquity* (Abelard-Schuman).
Crombie, A. C., *Augustine to Galileo* (Mercury books).
Hall, M. B., *The scientific renaissance* (Collins).
Kearney, H. F., *Origins of the scientific revolution* (Longmans).
Kuhn, T. S., *Copernican revolution* (Harvard).
Hall, A. R., *From Galileo to Newton* (Collins).
Santillana, G. de, *Crime of Galileo* (Heinemann).
Dijksterhuis, E. J., *The mechanization of the world picture* (Clarendon).
Cohen, I. B., *The birth of new physics* (Doubleday).
Hall, M. B., *Robert Boyle and seventeenth century chemistry* (C.U.P.).
Guerlac, H., *Lavoisier, the crucial year* (Cornell).
Lovejoy, A., *The great chain of being* (Harper).
Adams, F. D., *Birth and development of the geological sciences* (Dover).
Singer, C., *From magic to science* (Dover).
Price, D. J. de S., *Science since Babylon* (Yale).
Eiseley, L. C., *Darwin's century* (Doubleday).
Olson, E. C., *The evolution of life* (New American Library).
Leicester, H. M., *The historical background of chemistry* (Wiley).
Ihde, A. J., *The development of modern chemistry* (Harper).

Polanyj, M., *The study of man* (Routledge).
Polanyj, M., *Science, faith and society* (Oxford).
Oppenheimer, J. R., *The flying trapeze: three crises for physicists.*
Read, J., *Humour and humanism in chemistry* (Bell).
Klemm, F., *History of western technology* (Allen and Unwin).
White, L. T., *Medieval technology and social change* (Clarendon).
Derry, T. K., and Williams, T. I., *A short history of technology* (Clarendon).
Roubiczek, P., *Ethical Values in the age of science* (Cambridge U.P.).
Von Weizsäcker, C. F., *The relevance of science* (Collins).
Rose, H., and Rose S., *Science and society* (Allen Lane).
Vavoulis, A., and Colver, A. W., *Science and society* (Holden-Day).
Price, D. J. de S., *Little science, big science* (Columbia).
Marsak, L. M., *The rise of science in relation to society* (Macmillan).
Buchanan, R. A., *Technology and social progress* (Pergamon).
Spicer, E. H., *Human problems in technological change* (Wiley).
Tricker, R. A. R., *The contribution of science to education* (Mills and Bacon).
Yudkin, M., *General Education* (Allen Lane).
Jevons, F. R., *The teaching of science* (Allen and Unwin).
Ross, A. S. C., *Arts v. science* (Methuen).
Brierley, J., *Science in its context* (Heinemann).

Useful background reading will be found in the following paper-backed books:

Hurd, D. L., and Kipling, J. J. (eds.), *Origins and growth of physical science,* 2 vols. (Penguin).
Rook, A. (ed.), *Origin and growth of biology* (Penguin).
Toulmin, S., and Goodfield, J., *Fabric of heavens* (Penguin).
Toulmin, S., and Goodfield, J., *Architecture of matter* (Penguin).
Toulmin, S., and Goodfield, J., *Discovery of time* (Penguin).
Forbes, R. J., and Dijksterhuis, E. J., *A history of science and technology,* 2 vols. (Penguin).
Moonman, E., *Science and technology in Europe* (Penguin).

Reference books:

Taton, R., *A general history of the sciences,* 4 vols. (Thames and Hudson).
Sarton, G. A. L., *An introduction to the history of science* (Carnegie Inst.).
Partington, J. R., *A history of chemistry,* vols. 2, 3 and 4 (Macmillan).
Needham, J., *Science and civilization in China,* 4 vols. to date (C.U.P.).
Daumas, M., *Histoire générale des techniques* (P.U.F.).
Singer, C. J., Holmyard, E. J., Hall, A. R., and Williams, T. I., *A history of technology,* 5 vols. (Clarendon press).

Collections of source materials, journals and collected essays:

The source materials will be studied whenever practicable, including selected passages from the works of Copernicus, Galileo, Kepler, Newton, Bacon, Harvey, Boyle, Hales, Dalton, Darwin and Pasteur. Many important Greek and Latin works are available in translation in the 'Loeb Classics Library' and in *Source Book in Greek Science* (eds. Cohen, M. R., and Drabkin, I. E.). For modern science, apart from the collections of readings included in several of the recommended books, useful material will be found in the *Source Books* in *Astronomy* (eds. Shapley and Haworth), *Physics* (ed. Magie, W. F.), *Chemistry* (eds. Leicester, H. M., and Klickstein, H. S.), *Geology* (eds. Mather, K. F., and Mason, S. L.) and *Medical History* (ed. Clendening, L.).

Much of the important reading for the course is contained in the articles in journals such as *The British journal for the history of science, Isis, Osiris, Annals of science, History of science, Archives internationales d'histoire des sciences, British journal for the philosophy of science, Scientia, Journal of the history of ideas, Minerva* and *Technology and culture.*

A number of valuable articles and essays from these and other journals have been collected and reprinted. Books to which students will need to refer also include collections of important papers presented to the international conferences and symposia and of essays written in honour of eminent scientists and historians and philosophers of science. Valuable collections of this type are:

Clagett, M. (ed.), *Critical problem in the history of science* (Wisconsin U.P.).

Crombie, A. C. (ed.), *Scientific change* (Heinemann).

Singer, C. (ed.), *Studies in the history and method of science* (Clarendon).

Underwood, E. A. (ed.), *Science, medicine and history: essays in honour of Charles Singer* (O.U.P.).

Wiener, P. P., and Noland, A. (eds.), *Roots of scientific thought* (Basic books).

Goldsmith, M., and McKay, A. L. (eds.), *The science of science* (Souvenir pr.).

Glass, H. B., and others (eds.), *Forerunners of Darwin: 1745-1859* (John Hopkins pr.).

Bell, P. R. (ed.), *Darwin's biological work: some aspects reconsidered* (C.U.P.).

Barnett, S. A. (ed.), *A century of Darwin* (Heinemann).

Conant, J. B. (ed.), *Harvard case histories in experimental science*, 2 vols. (Harvard U.P.).

For more recent aspects of the development of science the appropriate scientific journals will be consulted.

Thesis.

A candidate is required to consult the Professor of Education about the subject and course of reading for his thesis.

ENGLISH LANGUAGE AND LITERATURE

English I, English II, English III, and Australian Literature are subjects for the Ordinary degree of Bachelor of Arts. No student proceeding to a degree may, without special permission, take English II until he has passed the final examination in English I, or take English III until he has passed the final examination in English II.

The subject Australian Literature forms no part of a sequence in English.

The subjects are made up of lectures and tutorials. Since the tutorial groups are small, and are arranged as far as possible at times to suit the best convenience of both students and tutors, *all students must attend the preliminary meeting held in the first week of the first term in each year,* at which the tutorial timetable is fixed.

In English I two lectures are given each week. Students attend tutorials once a week.

In English II two lectures are given each week. Students attend tutorials once a week.

In English III three lectures are given each week. Students attend tutorials once a week.

AE01. English I.

I. The history and structure of the English language.

Bolton, W. F., *A short history of literary English* (Arnold).

II. A critical study of some of the main types of English literature at various periods with a detailed knowledge of the following books:

A. Poetry:

Chaucer, *The wife of Bath's prologue and tale*, ed. James Winny (Cambridge University Press).
Gardner, H. (ed.), *The metaphysical poets* (Penguin).
Byron, *Selected verse*, etc., ed. Peter Quennell (Collins).
Mack, M. (ed.), *English masterpieces, Vol. 7 Modern poetry* (Prentice-Hall).
Penguin Modern Poets 5 (Corso, Ferlinghetti, Ginsberg).

B. Drama:

Shakespeare, *Measure for measure* (New Arden or Signet).
Jonson, *Volpone*, ed. Philip Brockbank (New Mermaid).
Goldsmith, *She stoops to conquer*, ed. Arthur Friedman (O.U.P.).
Shaw, *Heartbreak house* (Longmans).
Pinter, *The birthday party* (Methuen).

C. Novel:

Fielding, *Tom Jones* (Penguin).
Dickens, *David Copperfield* (Penguin).
James, *Washington Square* (Penguin).
Conrad, *Heart of darkness*.
Lawrence, *The rainbow* (Penguin).
White, P., *The aunt's story* (Penguin).
Heller, J., *Catch 22* (Corgi).

It is also intended that the department will publish an optional reading list of additional imaginative and critical texts. The books on the list will not formally be examined nor necessarily lectured on, but students will be given credit for referring to some of them in essays, in tutorial discussion and in the final examination.

AE02. English II.

Pre-requisite subject: English I.

The course is concerned with English literature from 1550-1780. There will be a special study of Shakespeare and the Elizabethan drama and in addition, one topic must be chosen for intensive study from among the options offered.

I. English Literature from 1550-1780.

Spenser, *Selected poetry*, ed. H. Maclean (Norton).
Dean, L. (ed.), *Renaissance poetry* (See *English masterpieces*, ed. M. Mack, Vol. 3) (Prentice-Hall).
Ashley, R., and Moseley, E. M. (eds.), *Elizabethan prose fiction* (Rinehart).
Milton, *Paradise lost and selected poetry and prose*, ed. N. Frye (Rinehart).
Dryden, *Selected works*, ed. W. Frost (Rinehart).
Congreve, *Love for love*, ed. E. I. Avery (Arnold).
Sutherland, J. (ed.), *Early eighteenth century poetry* (Arnold).
Defoe, *Moll Flanders* (Everyman or Penguin).
Swift, *Gulliver's travels*, ed. P. Dixon and J. Chalker (Penguin).
Richardson, *Pamela*, vol. 1 (Everyman).
Sterne, *Tristram Shandy* (Penguin or Everyman).
Johnson, *Rasselas, poems, and selected prose*, ed. B. Bronson (Rinehart).
Sheridan, *The school for scandal* (Everyman).

II. Shakespeare and the drama of his age.

Marlowe, *The Jew of Malta*, ed. R. W. Van Fossen (Arnold).
Jonson, *Epicoene*, ed. L. Beaurline (Arnold).

Middleton, *A chaste maid in Cheapside* (New Mermaid or Revels).
Shakespeare, *Richard II, Twelfth night, Troilus and Cressida, King Lear, A winter's tale* (The New Arden, New Cambridge or Kittredge editions are recommended).
Webster, *The Duchess of Malfi* (New Mermaid or Revels).

III. Special Studies.

One to be chosen from the following:

(1) Restoration and Early Augustan Literature 1660-1719.

Congreve, *The way of the world*, ed. K. Lynch (Arnold) or (Everyman, *Restoration plays*).
Otway, *Venice preserv'd*, ed. M. Kelsall (Arnold).
Vanbrugh, *The provok'd wife* (Everyman, *Restoration plays*).
Farquhar, *The beaux-stratagem* (Everyman, *Restoration plays*).
Steele, *The conscious lovers*, ed. S. Kenny (Arnold).
Dryden, *Selected works*, ed. W. Frost (Rinehart).
Love, H. (ed.), *The Penguin book of restoration verse* (Penguin).
Sutherland, J. (ed.), *Early eighteenth century poetry* (Arnold).
Addison and Steele, *Selections from The Tatler and The Spectator*, ed. R. J. Allen (Rinehart).
Defoe, *Robinson Crusoe* (Signet or Penguin).

(2) English Picaresque Fiction.

Nashe, *The unfortunate traveller* (in *Elizabethan fiction*, ed. Ashley and Moseley, Rinehart).
Smollett, *Roderick Random* (Everyman).
Fielding, *Joseph Andrews* (Everyman).
Goldsmith, *The vicar of Wakefield* (Everyman).
Thackeray, *Barry Lyndon* (First Novel Library, Cassell).
Twain, *Huckleberry Finn*.
Cary, *The horse's mouth* (Penguin).
Bellow, *Augie March* (Penguin).

(3) Chaucer.

Troilus and Criseyde, ed. D. Cook (Doubleday Anchor).
Chaucer, G., *Works*, ed. Skeat (O.S.A.) (or better still: *Works*, ed. F. N. Robinson, O.U.P.).

(4) Drama in English since 1945.

Albee, E., *Who's afraid of Virginia Woolf* (Penguin).
Arden, J., *Armstrong's last goodnight* (Methuen).
Beckett, S., *Waiting for Godot* (Faber).
Eliot, T. S., *The elder statesman* (Faber).
Miller, A., *The crucible* (Penguin).
O'Neill, E., *Long day's journey into night* (Cape).
Osborne, J., *Inadmissible evidence* (Faber).
Pinter, H., *The homecoming* (Methuen).
Seymour, A., *The one day of the year* (Penguin).
Wesker, A., *Golden city* (*New English dramatists*, vol. 10, Penguin).
Soyinka, Wole, *Kongi's harvest*, or another West African play (O.U.P.).

It is also intended that the Department will publish an optional reading list of additional imaginative and critical texts. The books on this list will not formally be examined or necessarily lectured on, but students will be given credit for referring to some of them in essays and in the final examination.

AE03. English III.

A study of English Literature and Drama with special but not exclusive reference to the works listed below. Students will be required to submit themselves for examination in Sections A and B and *either* Section C *or* Section D.

A. *Poetry since 1780.*

Frost, W., *Romantic and Victorian poetry,* (See *English masterpieces,* ed. M. Mack, vol. 6) (Prentice-Hall).
Carr, A. J. (ed.), *Victorian poetry: Clough to Kipling* (Rinehart).
Blake, *Poems* (Oxford Standard Authors).
Wordsworth, *Selected poetry* (Modern Library).
Coleridge, *Selected poems* (New Oxford English Series).
Shelley, *Selected poetry and prose* (Modern Library).
Browning, *Selected poetry* (Rinehart).
Yeats, *Selected poetry* (Papermac).
Eliot, *Collected poem,* 1900-1962.

B. *Prose Fiction since 1780.*

Austen, *Emma.*
Bronte, *Wuthering Heights* (Norton Critical Edition).
Dickens, *A tale of two cities, Great expectations.*
Thackeray, *Vanity fair.*
Eliot, *Middlemarch.*
James, *The Princess Casamassima.*
Hardy, *Jude the obscure.*
Joyce, *Portrait of the artist as a young man.*
Lawrence, *The rainbow.*
Woolf, *To the lighthouse.*
White, *The solid mandala.*

C. *Shakespeare; Modern Drama.*

Shakespeare, *As you like it, Hamlet, Antony and Cleopatra, Coriolanus.*
Ibsen, *Plays* (*The master builder, Little Eyolf, John Gabriel Borkman, Rosmersholm*) (Penguin).
Chekhov, *Three sisters.*
Strindberg, *Miss Julie.*
Pirandello, *Henry IV.*
O'Casey, *Three plays* (Papermac).
Brecht, *Mother Courage.*
Ionesco, *Rhinoceros,* etc. (Penguin).
Genet, *The balcony.*
Beckett, *Waiting for Godot.*
Pinter, *The birthday party.*

D. *American Literature.*

Melville, *Billy Budd,* etc. (Penguin).
Hawthorne, *Great Short works,* ed. F. C. Crews (Perennial Classic).
Twain, *Huckleberry Finn* (Norton Critical Edition).
Fitzgerald, *The Great Gatsby.*
Faulkner, *The sound and the fury.*
Bellow, *Herzog.*
Whitman, *Leaves of grass and selected prose* (Rinehart).
Dickinson, *A choice of Emily Dickinson's verse* (Faber).
Pound, *Selected poems* (Faber).
Stevens, *Selected poems* (Faber).
Crane, *Poems.*

Penguin modern poets 5 (Corso, Ferlinghetti and Ginsberg).
Penguin modern poets 9 (Levertov, Rexroth and Williams).
Miller, *Death of a salesman.*
Williams, *The glass menagerie.*

It is also intended that the Department will publish an optional reading list of additional texts. The books on this list will not formally be examined or necessarily lectured on; students will, however, be given credit for referring to some of them in essays and in the final examination.

AE72. Australian Literature.

Pre-requisite subject: English I.

Students should note that this subject does not form part of a sequence in English for the degree of Bachelor of Arts.

The course consists of two lectures a week and one tutorial fortnightly, the latter of two hours duration.

The course may not be attempted externally.

I. Authors and Works.

(a) Poetry:
Brennan, Dobson, Hope, McAuley, Neilson, Slessor, Webb.
Particular editions are not specified, but the *Australian poets* series (Angus and Robertson) will be found useful.
Elliott and Mitchell, *Bards in the wilderness.*

(b) Novel:
Boyd, M., *A difficult young man* or *The cardboard crown.*
Clarke, M., *His natural life.*
Furphy, J., *Such is life.*
Harris, A., *Settlers and convicts.*
Herbert, X., *Capricornia.*
Keneally, T., *Bring larks and heroes.*
Mathers, P., *Trap.*
Porter, H., *Watcher on the cast-iron balcony; The tilted cross.*
Prichard, K., *Coonardoo.*
Richardson, H. H., *The fortunes of Richard Mahony.*
Stead, C., *For love alone.*
Stow, R., *To the islands.*
White, P., *The tree of man.*

II. Special Studies.

(a) Drama:
Kippax, H. G. (ed.), *Three Australian plays* (Penguin).
Lawler, R., *Summer of the seventeenth doll.*
White, P., *Four plays.*

(b) Biography:
Boyd, M., *Day of my delight.*
Horne, D., *The education of young Donald.*
Johnston, G., *My brother Jack.*
McInnes, G., *The road to Gundagai.*

(c) Patrick White:
The burnt ones; Voss; The vivisector.

(d) Modern Poetry:
Shapcott, T. (ed.), *Australian poetry now.*

AE87. Old and Middle English I.

A. Anglo-Saxon culture and institutions.

B. The Old English language.
Prescribed book:
Mitchell, B., *A guide to Old English* (Blackwell).

C. Introduction to Old and Middle English literature.

D. Study of Old and Middle English texts.
Prescribed books:
Sweet, H., *Anglo-Saxon reader,* rev. D. Whitelock, 15th edition (O.U.P.).
Sisam, K. (ed.), *Fourteenth century verse and prose,* with glossary (O.U.P.).

AE88. Old and Middle English II.

A. Medieval English culture and institutions.

B. Old and Middle English language.
For reference:
Quirk and Wrenn, *An Old English grammar,* 2nd edition (Methuen).
Brunner, K., *An outline of Middle English grammar,* trans. G. K. W. Johnston (Blackwell).

C. Introduction to Middle English literature.

D. Study of Old and Middle English texts.
Prescribed books:
Sweet, H., *Anglo-Saxon reader,* rev. D. Whitelock, 15th edition (O.U.P.).
Sisam, K. (ed.), *Fourteenth century verse and prose,* with glossary (O.U.P.).
Skeat, W. W. (ed.), *The lay of Havelok the Dane,* 2nd edition, revised by K. Sisam (O.U.P.).
Thomas, R. G. (ed.), *Ten miracle plays* (Arnold).
Gibbs, A. C. (ed.), *Middle English romances* (Arnold).
Silverstein, T. (ed.), *The Medieval Lyric* (Arnold).

English Language and Literature for Part I of the Honours Work for the Honours Degree of Bachelor of Arts.

Students wishing to take Honours should consult the Head of the Department before the beginning of the second year's work. They will be required to satisfy the examiners in Part I, which will involve work in the second and third years and will normally be taken at the end of the third year, before proceeding to Part II, which will normally be taken at the end of the fourth year.

AE69. English Language and Literature, Honours, Second Year.

During the second year, in addition to English II and the other requisite second-year subjects, students accepted for Honours will attend special lectures, tutorials and seminars and will be required to reach a satisfactory standard before proceeding further.

AE79. Honours English Language and Literature, Part I.

The Honours work in the third year will be an extension of the Honours work of the second year, and will normally be taken concurrently with English III and another third-year subject, which for those taking papers (ii) or (iii) or (iv) in Part II will be Old and Middle English II. The examination in Part I,

covering the Honours work of the second and third years, will normally be taken at the end of the third year. It will consist of the following topics:

(i) English Language.
(ii) Shakespeare and Elizabethan Drama.
(iii) Special Period.
(iv) Special Topic.

AE99. English Language and Literature for Part II of the Honours Degree of B.A.

The examination for *Part II,* which will normally be taken at the end of the fourth year, will consist of the following papers:

(i) General Critical Paper, including passages for comment.
Any 5 papers from those listed below, subject to the approval of the Head of the Department:
(ii) Old Norse
(iii) Old English
(iv) Middle English Special
(v) Middle English General
(vi) Special Period of English Literature (taken from the period before 1780)
(vii) Special Period of English Literature (taken from the period after 1780)
(viii) (ix) Special Topics
(x) Special Author or Authors
(xi) The Novel
(xii) Drama
(xiii) American Literature
(xiv) Australian Literature
(xv) Commonwealth Literature

Before presenting themselves for examination in papers numbered (ii), (iii) and (iv), students will be required to attend classes and pass the examinations in Old English and Middle English I and II. In papers (vi), (vii), (viii) and (ix) they may not take the same periods or topics as in Part I [(iii) or (iv)]. Students may submit a long essay of not more than 12,000 words on a subject approved by the Head of the Department as an alternative to paper (viii) or (ix) or (x).

Information about special periods, topics, and authors is obtainable from the English Department.

The John Howard Clark Prize is awarded on the results of the Final Honours examination in English Language and Literature. For particulars of the Prize, see Statutes, Chapter XIV.

English Language and Literature for the Degree of M.A.

Candidates for the degree of M.A. in English Language and Literature are advised to take the earliest opportunity of consulting the Head of the Department about their courses.

Candidates who wish to qualify for the degree of M.A. under regulation 2(b) are required in their qualifying examination to follow either *Scheme I* or *Scheme II*: each course covers two years' part-time work or one year's full-time work, and must be completed within that period unless an extension is granted by the Academic Registrar.

In addition, candidates who have not already passed in a course for the Ordinary degree in a language other than English are normally required to do so.

Details of the Part II Honours papers are shown in syllabus No. AE99 above.

Scheme I: English Language and Literature.

1. Two papers, to be selected from Part II Honours papers (ii)-(xii). These two papers must be taken at the end of the first year's study by part-time students.
2. (a) Part II Honours paper (i).
   (b) Two papers not taken in the previous year, to be selected from Final Honours papers. These three papers must be taken at the end of the second year's study by part-time students.

Scheme II: American, Australian and Commonwealth Literature.

1. Two papers, to be selected, on advice from the Head of the Department, from the Part II Honours papers.
   These papers must be taken at the end of the first year's study by part-time students.
2. (a) Part II Honours paper (i).
   (b) A course of historical study appropriate to the candidate's area of interest.
   (c) Special subject in Australian, Commonwealth or American Literature.

Candidates who have a satisfactory Honours degree or who have qualified under *Scheme I* or *Scheme II* are required to write a thesis, for the subject of which they should consult the Head of the Department as early as possible,

FRENCH LANGUAGE AND LITERATURE

There are three courses in French for the ordinary degree of Bachelor of Arts: French I, French II and French III. No subject is pre-requisite to French I, but a knowledge of French at the standard of the Matriculation examination is assumed and students are advised to attempt the course only if they have reached Grade D or higher in that examination or possess some other equivalent qualification. Students enrolled in French I for the first time will not be exempted from attendance at lectures and tutorials.

In French II and French III the lectures on the literature may be given in French, and in the examinations candidates are required to answer in French all questions on literature.

All exercises set during the year form an integral part of the courses, and students may be refused permission to sit for the annual examination if their performance of the exercises has been unsatisfactory.

AF01. French I.

The course comprises:

1. Tuition in the speaking and writing of French by means of the Language Laboratory (1-2 hours a week), lectures on grammar and phonetics (1 hour a week) and tutorials (1 hour a week);
2. Translation of seen and unseen French texts: 1 hour in every three weeks;
3. Lectures on French literature and civilisation: 5 hours in every three weeks.

1. Language:

Prescribed book:

Politzer, R. L., and Hagiwara, M. P., *Active review of French* (Blaisdell).

The student should consult in the library:

Armstrong, L. E., *The phonetics of French* (Bell).

Harrap's standard French and English dictionary, 2 vols.

Petit, *Dictionnaire français-anglais* and *Dictionnaire anglais-français* (Hachette)

Le Petit Larousse or *Le Nouveau Larousse universel*, 2 vols.

Le Petit Robert.

2. Passages for translation will be distributed to students.

N.B. The translation of unseens will be tested at the end of each term in a one-hour paper, the marks for which will count at the end of the year in the total mark for the course.

3. (a) Literature—

At least three of the following four novels must be read:

Balzac, *Le Père Goriot* (Classiques Garnier).

Stendhal, *Le Rouge et le noir* (Classiques Garnier).

Flaubert, *Madame Bovary* (Classiques Garnier).

Zola, *La Fortune des Rougon* (Garnier-Flammarion).

A selection of poems from the following anthology will be studied:

Mansell-Jones, P., and Richardson, G., *A book of French verse* (O.U.P.).

(b) Civilisation—

Preliminary reading:

Robinson, J., and Martin, A., *France today* (Novak).

Prescribed book:

Parker, C. S., and Grigaut, P., *Initiation à la culture française*, 3rd edition (Harper and Row).

Reference book:

Michaud, G., *Guide France* (Hachette).

The Hope Crampton Prize, of the value of $10, is awarded to the matriculated student or graduate placed first in the list of candidates who have passed with distinction in the annual examination in French I.

The M. Rees George Prize, of the value of $12, is awarded to the matriculated or graduate woman student who wins the highest place in the annual examination in French I, provided that the candidate is of sufficient merit.

The rules governing these prizes are published in Volume I of the Calendar.

AF02. French II.

Pre-requisite subject: French I at Division I standard or higher.

(a) Translation from English into French.

Prescribed books:

Roe, F. C., and Lough, J., *French prose composition* (Longmans).

Mansion, J. E., *A grammar of present-day French, with exercises* (Harrap).

Reference books: As for French I, together with:

Robert, P., *Dictionnaire alphabétique et analogique de la langue française*, 7 vols.

Bailly, R., *Dictionnaire des synonymes* (Larousse): *or*

Bénac, H., *Dictionnaire des synonymes* (Hachette).

Maquet, C., *Dictionnaire analogique* (Larousse).

Lacroix, U., *Dictionnaire des mots et des idées* (Nathan).

Le Grand Larousse encyclopédique, 10 vols.

Grevisse, M., *Le Bon usage* (Geuthner).

Hanse, J., *Dictionnaire des difficultés grammaticales et lexicologiques* (Baude).

(b) Translation of unseen French texts into English. (This will be tested at the end of each term in a one-hour paper, the marks for which will count at the end of the year in the total mark for the course.)

(c) Literature: The seventeenth and eighteenth centuries.

Questions for special study:

Term I: *Le théâtre classique.*

Term II: *Le roman au XVIIe et au XVIIIe siècles.*

Term III: *La poésie au XVIIe siècle.*

Two essay subjects will be set each term on the question studied. The marks obtained by the student in the five best essays for the year will be incorporated with his total mark for the annual examination.

Prescribed books:

Lagarde, A., et Michard, L., *XVIIe Siècle* and *XVIIIe Siècle* (Harrap).

Works set for detailed study and *explication de textes*:

Term I:

Corneille, *Le Cid* and *Horace* (Bordas).
Racine, *Andromaque* and *Phèdre* (Bordas).
Molière, *L'Ecole des Femmes* and *Le Tartuffe* (Bordas).

Term II:

La Fayette, *La Princesse de Clèves* (Harrap).
Prévost, *Histoire du Chevalier des Grieux et de Manon Lescaut* (Garnier).
Voltaire, *Candide* (University of London Press).
Diderot, *Jacques le Fataliste et son maître* (Dell).
Laclos, *Les Liaisons dangereuses* (Garnier).

Term III:

La Fontaine, *Fables*, 2 vols. (Bordas).
Boileau, N., *L'Art poétique* (Bordas).

Reference books:

Adam, A., *Histoire de la littérature française au XVIIe siècle*, 5 vols. (Domat-Del Duca).
Bénichou, P., *Morales du grand siècle* (Gallimard).
Coulet, H., *Le roman jusqu' à la revolution*, 2 vols. (Colin).
Lough, J., *Introduction to seventeenth-century France* (Longmans).
Lough, J., *Introduction to eighteenth-century France* (Longmans).
Bénac, H., *Vocabulaire de la dissertation* (Hachette).
Cayrou, G., *Le Français classique* (Didier); *or*
Dubois, J., et Lagane, R., *Dictionnaire de la langue française classique* (Berlin).
Haase, A., *Syntaxe française du XVIIe siècle* (Delagrave).
Grente, G., *Dictionnaire des lettres françaises* (XVIIe et XVIIIe siècles) (Fayard).

The Edith A. Puddy Prize, of the value of $12, is awarded to the matriculated student or graduate placed first in the list of candidates who have passed with distinction in the annual examination in French II. The rules governing the prize are published in Volume I. of the Calendar.

AF03. French III.

Pre-requisite subject: French II.

(a) Translation from English into French.

Prescribed books:

Roe, F. C., and Lough, J., *French prose composition* (Longmans).
Mansion, J. E., *A grammar of present-day French, with exercises* (Harrap).

Reference books: As for French I and II.

(b) Translation of unseen French texts into English. (This will be tested at the end of each term in a one-hour paper, the marks for which will count at the end of the year in the total mark for the course.)

(c) Literature: The nineteenth and twentieth centuries.

Questions for special study:

Term I: *Le théâtre depuis la deuxième guerre mondiale.*
Term II: *Le roman au XXe siècle.*
Term III: *La poésie depuis Baudelaire.*

Two essay subjects will be set each term on the question studied. The marks obtained by the student in the five best essays for the year will be incorporated with his total mark for the annual examination.

Prescribed books:

Lagarde, A., et Michard, L., *XIXe Siècle* and *XXe Siècle* (Harrap).

Works for detailed study and *explication de textes*:

Term I:

Anouilh, *Antigone* (Harrap).
Montherlant, *La Reine morte* (Livre de poche Université).
Sartre, *Huis Clos et les Mouches* (Livre de poche).
Beckett, *En attendant Godot* (Harrap).
Ionesco, *Le roi se meurt* (Harrap).
Genet, *Le Balcon* (Appleton-Century-Crofts).

Term II:

Proust, *Combray* in *Du cote de chez Swann* (Livre de poche).
Gide, *L'Immoraliste* and *La Porte étroite* (Livre de poche).
Malraux, *La Condition humaine* (Livre de poche Université).
Sartre, *La Nausée* (Livre de poche Université)
Camus, *La Peste* (Livre de poche).

Term III:

Baudelaire, *Les Fleurs du Mal* (Garnier).
Rimbaud, *Pages choisies* (Classiques Larousse).
Nicolas, H., *Mallarmé et le symbolisme* (Classiques Larousse).
Apollinaire, *Alcools* (*choix de poèmes*) (Classiques Larousse).

The Violet de Mole Prize, of the value of $10.50, is awarded to the matriculated or graduate student who wins the highest place in the annual examination in French III, provided that the candidate is of sufficient merit.

The rules governing the prize are published in Volume I of the Calendar.

AF77. Old and Middle French I.

(a) Outline of the history of the French language from its origins to the present day; morphology and syntax of Old and Middle French.

Prescribed books:

Bruneau, C., *Petite histoire de la langue française*, 2 vols. (Colin).
Raynaud de Lage, G., *Introduction à l'ancien français* (S.E.D.E.S.).

(b) Outline of the history of French literature up to 1500.

Prescribed book:

Decahors, E., *Histoire de la littérature française; le Moyen Age* (Les Editions de l'Ecole).

(c) Translation of prescribed texts into English with simple linguistic commentary in English.

Prescribed book:

Ferran A., et Decahors, E., *Morceaux choisis de littérature française; le Moyen Age* (Les Editions de l'Ecole).

This course will be taken by the Honours student in his second year.

AF78. Old and Middle French II.

(a) Historical French grammar, i.e., phonetics, morphology, syntax.

Prescribed book:

Brunot, F., et Bruneau, C., *Précis de grammaire historique de la langue française* (Masson).

(b) Old and Middle French literature, with special reference to narrative verse and the theatre.

(c) Translation of prescribed texts, with advanced linguistic commentary in French.

Prescribed books:

La Chanson de Roland, ed. Whitehead (Blackwell).

Chretien de Troyes, *Erec et Enide,* ed. Roques (Champion).

Adam de la Halle, *Le Jeu de Robin et de Marion,* ed. Varty (Harrap).

Maistre Pierre Pathelin, ed. Holbrook (Champion).

La Taille, Jean de, *Saül le Furieux, La Famine ou les Gabeonites, tragédies,* ed. Forsyth (Didier).

For reference (as distinct from special bibliographies):

Greimas, A. J., *Dictionnaire de l'ancien français* (Larousse).

Gougenheim, G., *Grammaire de la langue française du seizième siècle* (Lyon, I.A.C.).

Rickard, P., *La Langue française au seizième siècle* (C.U.P.).

Le Gentil, P., *La Chanson de Roland* (Hatier).

Frappier, J., *Chrestien de Troyes* (Hatier).

Frank, G., *The medieval French drama* (Clarendon Press).

Lebègue, R., *La Tragédie française de la Renaissance* (S.E.D.E.S.).

This course will be taken by the Honours student in his third year. The lectures will be given in French.

AF99. French Language and Literature for the Honours Degree of B.A.

Students intending to take Honours, including those who have no knowledge of Latin, should consult the Professor before the beginning of their second year's work. They will be required (i) to attend special weekly tutorials in their second and third years and perform the exercises there prescribed; (ii) to take the courses in Old and Middle French I and II in their second and third years; (iii) to devote their fourth year entirely to advanced courses and exercises (including a 10,000 word thesis) in literature and philology. The marks obtained for the essays in both the third and the fourth years may be considered with the final examination results in determining the student's classification.

Under (ii), the following texts are prescribed:

Villon, *Œuvres,* ed. Longnon-Foulet (Champion).

Rabelais, *Œuvres complètes,* ed. P. Jourda, tome I (Garnier).

Montaigne, *Selected essays,* ed. Tilley-Boase (Manchester U.P.)

Honours students should make themselves familiar with the following works:

Langlois, P., and Mareuil, A., *Guide bibliographique des études littéraires* (Hachette).

Bouvier, E., and Jourda, P., *Guide de l'étudiant en littérature française* (Presses universitaires).

Dupouy, A., *Géographie des lettres françaises* (Colin).

Genest, E., *Dictionnaire des citations françaises* (Nathan); *or*

Guerlac, O., *Les Citations françaises* (Colin).

Marouzeau, J., *Lexique de la terminologie linguistique* (Geuthner).

Marouzeau, J., *Précis de stylistique française* (Masson).

Cressot, M., *Le Style et ses techniques* (Presses universitaires).

Mornet, D., *Histoire de la clarté française* (Payot).

Le Bidois, G., et Le Bidois, R., *Syntaxe du français moderne,* 2 vols. (Picard).

The final examination will comprise the following papers:

(a) Translation into French.

(b) Translation of seen and unseen passages from French into English.

(c) French philology.

(d) Translation of seen and unseen passages of Old and Middle French into English.

(e) Literature I.

(f) Literature II.

(g) Literature III.

Papers (c), (e), (f), (g) will be answered in French.

There will be an oral examination comprising tests in reading, conversation, dictation, phonetics and *explication de textes.*

Students who combine French with another subject for the Honours degree of B.A. will be required to pass in Old and Middle French I in their second year, but not to attend tutorials.

In their third year they will be required either to pass in Old and Middle French II or to attend tutorials on questions concerning French literature from 1550 to the present day and perform the exercises there prescribed.

In their final year they shall attend tutorials and write essays on the literature of the past four centuries; but those who have passed in Old and Middle French II may elect instead to do the fourth year course in Old and Middle French literature and French philology and write one essay in French on a question taken from French literature from its beginnings up to 1600.

Their final examination will comprise either papers (a), (b), (c), (d) and (e) or papers (a) and (b) and any two of papers (e), (f) and (g); and in either case an oral examination comprising tests in reading, conversation, dictation, phonetics and *explication de textes.*

The J. G. Cornell prize, of the value of $80, is awarded to the student who is placed first in the final Honours examination, provided the candidate is of sufficient merit.

The rules governing this prize are published in Volume I of the Calendar.

French Language and Literature for the Degree of M.A.

Candidates for the degree of M.A. in French Language and Literature are advised to consult the Professor at the earliest opportunity. Regular seminars are conducted throughout the academic year for post-graduate students.

Those who seek to qualify for candidature under regulation 2 (b) are required, at the outset of their preparatory course, to satisfy the examiner in a translation and oral test (excluding *explication de textes*), equivalent in standard to papers (a) and (b) and the oral test of the final examination for the Honours degree of B.A. On their completion of the preparatory course they shall take papers (c), (d), and any two of (e), (f), and (g) of the final examination for the Honours degree of B.A. and be tested for *explication de textes.*

GEOGRAPHY

There are four subjects in this school: Geography I, Geography II, Geography III and Economic Geography. Each subject is completed in one year and is given every year.

Economic Geography is designed for students who intend to take only a one-year course in Geography for the Ordinary degree of either Bachelor of Arts or Bachelor of Economics. Students who have passed with at least a credit in Economic Geography may with the approval of the Professor of Geography be permitted to proceed with Geography II.

AJ01. Geography I.

Introduction to climatology (energy balance, the air in motion and air mass theory) and biogeography (energy flow, nutrient cycling and structure of ecosystems, the emergence of man and his impact on the biosphere).

Principles of Human Geography (population geography, location of primary and secondary economic activities, the population/resource balance).

Australia. Relations between physical and human factors in shaping the geography of Australia at different stages of its development.

PRACTICAL WORK: Interpretation of topographic maps and aerial photographs; preparation of selected graphs and diagrams. A week-end field camp will be held April 16th-18th, 1971.

Preliminary reading:

Trewartha, G. T., and others, *Elements of geography, physical and cultural,* 5th edition (McGraw-Hill).

Fryer, D. W., *World economic development* (McGraw-Hill).

Reference books:

Bates, M., *Man in nature* (Prentice-Hall).

Beaujeu-Garnier, J., *Geography of population* (Longmans).

Billings, W. D., *Plants and the ecosystem* (Wadsworth).

Coggins, R. S., and Hefford, R. K., *The practical geographer,* 2nd edition (Longmans).

Ehrlich, P. R., and A. H., *Population, resources, environment* (Freeman).

Estall, R. C., and Buchanan, R. O., *Industrial activity and economic geography* (Hutchinson).

Eyre, S. R., *Vegetation and soils,* 2nd edition (Aldine).

Jones, E., *Human geography* (Chatto and Windus).

Kellogg, C. E., *The soils that support us* (Macmillan).

McCarty, H. H., and Lindberg, J. B., *A preface to economic geography* (Prentice-Hall).

Monkhouse, F. J., and Wilkinson, H. R., *Maps and diagrams* (Methuen).

National Research Council, *Committee on resources and man* (Freeman).

Newbigin, M., *Plant and animal geography* (Methuen).

Odum, E. P., *Ecology* (Saunders).

Ommanney, F. D., *The ocean* (Oxford).

Robinson, A. H., and Sale, R. D., *Elements of cartography,* 3rd edition (Wiley).

Roepke, H. G. (ed.), *Readings in economic geography* (Wiley).

Symons, L., *Agricultural geography* (Bell).

Wadham, S. M., and others, *Land utilization in Australia* (M.U.P.).

Wagner, P. L., and Mikesell, M. W., *Readings in cultural geography* (Univ. of Chicago Pr.).

Wilson, M. G. A., *Population geography* (Nelson).

Zelinsky, W., *A prologue to population geography* (Prentice-Hall).

AJ02. Geography II.

Pre-requisite subject: Geography I at Division I standard or higher.

A. PRINCIPLES OF PHYSICAL GEOGRAPHY: Further basic studies in physical geography, geomorphology, climatology and biogeography.

B. PRINCIPLES OF HUMAN GEOGRAPHY: Organizational elements of the landscape: rural and urban settlement. Introduction to basic theories and models in Human Geography.

C. PRACTICAL WORK: Tutorials and practical classes will be held during the year. Field camps will be held before the beginning of the first term. All students should contact the Department during the enrolment period and not later than 19th February, 1971.

Reference books:

A. Derruau, M., *Précis de géomorphologie* (Masson).

Dury, G. H., *The face of the earth* (Pelican).

Ehrlich, P. R., and A. H., *Population, resources, environment* (Freeman).

Hills, E. S. (ed.), *Arid lands* (Methuen).

Morisawa, M., *Streams: their dynamics and morphology* (McGraw-Hill).

Ollier, C. D., *Volcanoes* (A.N.U. Press).
Shelton, J. S., *Geology illustrated* (Freeman).
Sparks, B. W., *Geomorphology* (Longmans).
Thornbury, W. D., *Principles of geomorphology* (Wiley).
Twidale, C. R., *Geomorphology, with special reference to Australia* (Nelson).
Twidale, C. R., *Structural landforms* (A.N.U. Press).
Strahler, A. N., *Physical geography* (Wiley).
Trewartha, G., *The earth's problem climates* (Wisconsin U.P.).
Flohn, H., *Climate and weather* (World Univ. Lib.).
Petterssen, S., *Introduction to meteorology,* 3rd edition (McGraw-Hill).
Bunting, B. T., *The geography of soil* (Hutchinson).
Elton, C. S., *The ecology of invasions by animals and plants* (Methuen).
Hesse, R., and others, *Ecological animal geography* (Wiley).
Keast, A., *Biogeography and ecology in Australia* (Junk, The Hague).
Kellogg, C. E., *The soils that support us* (Macmillan).
Robinson, G. W., *Soils, their origin, constitution and classification,* 3rd edition (Murby, and Allen and Unwin).
Rolls, E. C., *They all ran wild* (Angus and Robertson).
Sauer, C. O., *Agricultural origins and dispersals* (American Geog. Soc.).

B. Chisholm, M., *Rural settlement and land use* (Hutchinson).
Chorley, R. J., and Haggett, H. P., *Socio-economic models in geography* (Methuen).
Chorley, R. J., and Haggett, H. P., *Frontiers in geographical teaching* (Methuen).
Christaller, W., *Central places in southern Germany,* Eng. transl. by C. W. Baskin (Prentice-Hall).
Dickinson, R. E., *City and region* (Routledge).
Houston, J. M., *A social geography of Europe* (Duckworth).
Jones, E., *Towns and cities* (Oxford).
Meinig, D. W., *On the margins of the good earth* (Rand McNally).
Rose, A. J., *Patterns of cities* (Nelson).
Smith, R. H. T., and others, *Readings in economic geography* (Rand McNally).

C. Coggins, R. S., and Hefford, R. K., *The practical geographer,* 2nd edition (Longmans).
Dury, G. H., *Map interpretation* (Pitman).
Gregory, S., *Statistical methods and the geographer* (Longmans).
Miller, A. A., *The skin of the earth* (Methuen).
Monkhouse, F. J., and Wilkinson, H. R., *Maps and diagrams* (Methuen).
Robinson, A. H., and Sale, R. D., *Elements of cartography,* 3rd edition (Wiley).

Other texts and current publications will be prescribed by the lecturers.

AJ03. Geography III.

Pre-requisite subject: Geography II.

In Geography III, there are three groups each comprising a number of electives. A candidate must take *two* electives drawn from different groups.

(a) Biogeography, Climatology, Geomorphology, Cartography;

(b) Agricultural Geography, Cultural Geography, Historical Geography, Urban Geography, Cartography;

(c) Australian Development, North-West Europe, South and South-East Asia.

Field camps will be held in the May and August vacations in 1971.

1. Biogeography.

The arrangement of the major components of the biosphere over the surface of the earth, and the various processes which have given rise to biotic distributions. About a third of the course is devoted to the impact of man upon the biosphere.

Anderson, E., *Plants, man and life* (Little, Brown & Co.).
Dansereua, P., *Biogeography—an ecological perspective* (Ronald).
Darlington, P. J., *Zoogeography* (Wiley).
Dobzhansky, T., *Evolution, genetics and man* (Allen and Unwin).
Ehrlich, P. R., and A. H., *Population, resources, environment* (Freeman).
Elton, C. S., *The ecology of invasions by animals and plants* (Methuen).
Good, R. D., *The geography of the flowering plants* (Longmans).
Hutchinson, J., *Essays in crop plant evolution* (C.U.P.).
Newbigin, M., *Plant and animal geography* (Methuen).
Odum, E. P., *Fundamentals of ecology*, 2nd edition (Saunders).
Simpson, G. C., *The geography of evolution* (Harcourt Brace).
Thomas, W. L. (ed.), *Man's role in changing the face of the earth* (Chicago U.P.).
Zeuner, F. E., *A history of domesticated animals* (Hutchinson).

2. Climatology.

Air Mass Climatology, climate and human comfort. The precipitation process and weather modification. Geographic factors affecting upper level air flow. The relation between upper level flow and surface development.

Flohn, H., *Climate and weather* (World Univ. Lib.).
Petterssen, S., *Introduction to meteorology* (McGraw-Hill).
Sellers, W. D., *Physical climatology* (Univ. of Chicago Press).
Trewartha, G., *The earth's problem climates* (Wis. Univ. Press).

3. Geomorphology.

The course continues on from that given in Geography II. The main topics covered are: the geomorphological effects of climatic change, coastal landforms, glaciers and their work, and further consideration of structural controls. Emphasis is placed on field observation, scientific method and critical analysis of hypotheses.

Bird, E. C. F., *Coasts* (A.N.U. Press).
Cotton, C. A., *Climatic accidents* (Whitcombe).
Derruau, M., *Precis de geomorphologie* (Masson).
Davies, J. L., *Landforms of cold climates* (A.N.U. Press).
Embleton, C., and King, C. A. M., *Glacial and periglacial geomorphology* (Arnold).
Guilcher, A., *Coastal and submarine morphology* (Methuen).
Jennings, J. N., and Mabbutt, J. A. (eds.), *Landform studies from Australia and New Guinea* (A.N.U. Press).
King, L. C., *Morphology of the earth* (Oliver and Boyd).
Leopold, L. B., and others, *Fluvial processes in geomorphology* (Freeman).
Morisawa, M., *Streams, their dynamics and morphology* (McGraw-Hill).
Thornbury, W. D., *Principles of geomorphology* (Wiley).
Twidale, C. R., *Geomorphology, with special reference to Australia* (Nelson).
Twidale, C. R., *Structural landforms* (A.N.U. Press).

4. Agricultural Geography.

A study of the roles of physical, economic, technological, and sociopolitical factors in causing areal variations in agriculture.

Barnard, A., *The simple fleece* (M.U.P.).
Chisholm, M., *Rural settlement and land use* (Hutchinson).
Courtenay, P. P., *Plantation agriculture* (Bell).

Davidson, B. R., *The northern myth*, 2nd edition (M.U.P.).
Gourou, B. R., *The tropical world*, 4th edition (Longmans).
Langford-Smith, T., and Rutherford, J., *Water and land* (A.N.U. Press).
Symons, L., *Agricultural geography* (Bell).
Williams, D. B., *Economic and technical problems of Australia's rural industries* (M.U.P.).

5. Cultural Geography.

The course studies the various ways in which culture influences how people see and use their environment and the interactions which occur when communities from different cultural backgrounds compete for the same land.

Berndt, R. M., and C. H., *The world of the first Australian* (Ure Smith).
Bordes, F., *The old stone age* (World University Library).
Brace, C. L., *The stages of human evolution* (Prentice-Hall).
Caldwell, J. R. (ed.), *New roads to yesterday* (Thames and Hudson).
Hunter, G. (ed.), *Industrialization and race relations* (O.U.P.).
Jennings, J. D., and Hoebel, E. A. (eds.), *Readings in anthropology* (McGraw-Hill).
Stoller, A. (ed.), *New faces: immigration and family life in Australia* (Cheshire).
Wagner, P. L., and Mikesell, M. W. (eds.), *Readings in cultural geography* (Univ. of Chicago Press).

6. Historical Geography.

The origin of and changes in the Australian human landscape through time, the sequence of settlement, the perception of the environment, models of change.

Meinig, D. W., *On the margins of the good earth* (Rand McNally).
Perry, T. M., *Australia's first frontier* (M.U.P.).
Roberts, S. H., *The history of Australian land settlement* (M.U.P.).

7. Urban Geography.

Social and settlement geography of rural areas on which urban systems are built; geography of urban systems; and internal geography of metropolitan cities.

Berry, B. J. L., *The geography of market centres and retail distribution* (Prentice-Hall).
Berry, B. J. L., and Horton, F. G., *Geographic perspectives in urban systems* (Prentice-Hall).

8. Australian Development.

A study of the physical and human factors influencing current development in selected regions of Australia, with some emphasis on underdeveloped areas.

Reference books:

Australia. C.S.I.R.O., *The Australian environment*, 3rd edition (1960).
Barnard, A. (ed.), *The simple fleece: studies in the Australian wool industry*. Especially nos. 7, 13, 20, 30, 36, 40.
Davidson, B. R., *The northern myth* (M.U.P.).
Dunsdorfs, E., *The Australian wheat growing industry, 1788-1948*.
Dury, G., and Logan, M., *Studies in Australian geography* (Heinemann).
White, D., *Under the iron rainbow* (Heinemann).
Meinig, D. W., *On the margins of the good earth* (Murray).

9. North-west Europe.

Reference books:

Childe, V. G., *Dawn of European civilisation* (Penguin).
Darling, F., *West highland survey* (O.U.P.).
Dury, G., *The British Isles* (Heinemann).
Elkins, T. H., *Germany* (Christophers).
Flint, R. F., *Glacial geology and the Pleistocene Period* (Wiley).

Gottman, J., *A geography of Europe*, 4th ed. (Holt).
Hoffman, G. W. (ed.), *A geography of Europe* (Methuen).
Monkhouse, F. J., *A regional geography of Western Europe* (Longmans).
Somme, A. (ed.), *The geography of Norden* (Heinemann).

10. South and South-east Asia.

A geographical study of India and Pakistan and the countries of S.E. Asia with particular reference to the economic and social development in recent years.

Reference books:

Dube, S. C., *India's changing villages* (Routledge, Cornell Univ. Press).
Fisher, C. A., *South-east Asia* (Methuen).
Fryer, D. W., *Emerging Southeast Asia* (Philip).
Ginsburg, N. S. (ed.), *The pattern of Asia* (Prentice-Hall).
Johnson, B. L. C., *South Asia* (Heinemann).
Lewis, J. P., *Quiet crisis in India* (Anchor).
Myrdal, G., *Asian drama* (Panther).
Ooi Jin-bee, *Land people and economy in Malaya* (Longmans).
Regional Conference of South-east Asian Geographers, *Studies in the geography of south-east Asia.*
Segal, R., *The crisis of India* (Penguin).
Spate, O. H. K., and Learmonth, A. M., *India and Pakistan* (Methuen).
Seminar on urbanization in India: India's urban future, ed. R. Turner (Calif. U.P.).
Wolpert, S., *India* (Spectrum).

AJ71. Economic Geography.

A course of two lectures and one tutorial a week throughout the academic year dealing with the field and function of Economic Geography. Students may be required to spend approximately one day during the second term or second vacation in practical field studies.

Physical Resources.

The concept of resources. The patterns of the world's physical resources, with special emphasis on the balance between man and these resources and on their conservation.

Human Resources.

The development of human resources (knowledge, techniques and cultural attributes) used by man in his economic activities, and the present distribution of these.

Economic Activities.

Selected examples of simple foraging economies, subsistence agriculture, tropical plantation agriculture, and commercial agriculture; extractive industries; general principles of the location of manufacturing industries; energy industries; transportation; examples of heavy and consumer-good industries; tertiary industry; the growing pressure of population on world resources.

Text-books:

Estall, R. C., and Buchanan, R. O., *Industrial activity and economic geography* (Hutchinson).
National Research Council, *Committee on resources and man* (Freeman).
Symons, L., *Agricultural geography* (Bell).
Zelinsky, W., *A prologue to population geography* (Prentice-Hall).

Reference books:

Ehrlich, P. R., and A. H., *Population, resources, environment* (Freeman).
Oxford atlas of the world (O.U.P.).
Trewartha, G. T., and others, *Elements of geography, physical and cultural*, 5th edition (McGraw-Hill, 1957).
Zimmermann, E. W., *An introduction to world resources*, ed. H. L. Hunker (Harper and Row).

Further selected references will be prescribed by the lecturer.

AJ99. Geography for the Honours Degree of B.A.

Students intending to take Honours should consult the Professor before the beginning of their second year's work. They will be required to undertake

(a) such Honours work as may be required in connection with the courses in Geography II and III;

(b) a fourth year of Honours work including tutorial discussions, written examinations and a field study on a selected geographical problem.

GERMAN LANGUAGE AND LITERATURE

German I, German IA, German II, German IIA and German III are subjects for the ordinary degree of Bachelor of Arts.

Except with special permission, to be obtained in writing from the Academic Registrar, no student proceeding to a degree may take the course in German I unless he has studied German to Matriculation level. Candidates are advised, moreover, that the recommended minimum standard is the "D" classification at the Matriculation Examination.

German IIB and German IIIB are for honours candidates only. See Syllabus AG99 German for the Honours Degree of B.A.

Students are required to attend tutorial classes.

AG01. German I.

(a) Translation, prose composition and essay writing.

Prescribed texts:

Dickins, E. P., *German for advanced students* (O.U.P.).

Langenscheidts Handwörterbuch, ed. H. Messinger, 2 vols. (Langenscheidt) or *Langenscheidt's concise German dictionary*, 2 vols. (Hodder and Stoughton).

Recommended texts:

Eggeling, H. F., *A dictionary of modern German prose usage* (O.U.P.).

Feix, I., and Schlant, E., *Gespräche, Diskussionen, Aufsätze* (Holt, Rinehart and Winston).

Russon, L. J., *Complete German course* (Longmans).

Stopp, F. J., *A manual of modern German* (University Tutorial Press).

(b) Introduction to German cultural history.

Prescribed texts:

'Panorama': Berichte, Analysen, Meinungen (rororotele 26).

Reinhardt, K. F., *Germany: 2000 years*, 2 vols. (Constable).

Recommended texts:

Anderson, W. E., *Das heutige Deutschland* (Harrap).

Blackall, E. A., *The emergence of German as a literary language, 1700-1755* (C.U.P.).

Chambers, W. W., and Wilkie, J. R., *A short history of the German language* (Methuen).

Elliott, B. J., *Hitler and Germany* (Modern times series) (Longmans).

Heer, F., *The medieval world* (Mentor).

McEvedy, C., *The Penguin atlas of medieval history* (Penguin).

Remak, J. (ed.), *The Nazi years* (Prentice-Hall).

Leonhardt, R. W., *This Germany* (Pelican).

(c) Introduction to modern German literature.

Prescribed texts:

Holz, A., and Schlaf, J., *Papa Hamlet* (Reclam).

Hofmannsthal, H. von, *Reitergeschichte; Das Erlebnis des Marschalls von Bassompierre.* In his *Four Stories* (O.U.P.).

Mann, T., *Tonio Kröger* (Blackwell).

Martini, F. (ed.), *Prosa des Expressionismus* (Reclam 8379-82).

Brecht, B., *Leben des Galilei* (Heinemann).

Weiss, P., *Marat* (Suhrkamp/Harcourt, Brace and World).

Ritchie, J. M. (ed.), *Periods in German literature* (Oswald Wolff).

Recommended texts:

Mann, T., *Mario und der Zauberer* (Fischer-Schulausgabe).

Frisch, M., *Biedermann und die Brandstifter* (Suhrkamp).

Dürrenmatt, F., *Der Besuch der alten Dame* (Methuen).

Dürrenmatt, F., *Die Panne* (O.U.P.).

(d) At the end of the year candidates must pass an oral test. This is an integral part of the annual examination in German I in which performance throughout the year will be taken into account. Practice in conversation, pronunciation, intonation, etc., is given in regular tutorial classes. *Candidates will also be required to work through a specified number of programmes in the language laboratory.* Attention is drawn to the German Club and the Goethe Society. Both bodies conduct their meetings in German. Details are posted in the Department.

The Weimar-Ohlstrom Prize is awarded annually to the matriculated student or graduate who gains the highest place at the examination in German I. Rules governing the prize are in the appropriate section of this calendar.

AG02. German II.

Pre-requisite subject: German I at Division I standard or higher.

(a) Translation, prose composition and essay writing.

Prescribed texts:

See German I, (a).

(b) Studies in German literature, 1796-1906.

Prescribed texts:

Kleist, H., *Erzählungen* (dtv).

Tieck, L., *Der blonde Eckbert* (Blackwell).

Hoffmann, E. T. A., *Der goldene Topf* (Blackwell).

Grillparzer, F., *König Ottokars Glück und Ende* (Blackwell).

Heine, H., *Atta Troll; Deutschland: Ein Wintermärchen* (O.U.P.).

Stifter, A., *Abdias* (Manchester University Press).

Büchner, G., *Dantons Tod* (Manchester University Press).

Wagner, R., *Die Meistersinger von Nürnberg* (Reclam 5639).

Storm, T., *Aquis submersus* (Reclam 6014).

Keller, G., *Kleider machen Leute* (Harrap).

Meyer, C. F., *Die Versuchung des Pescara* (Blackwell).

Hauptmann, G., *Vor Sonnenaufgang* (O.U.P.).

Musil, R., *Die Verwirrungen des Zöglings Törless* (rororo 300).

Hederer, E., (ed.), *Das deutsche Gedicht* (Fischer Bücherei 155).

Killy, W. (ed.), *Deutsches Lesebuch*, vols. 2 and 3: *Klassik und Romantik; Das* 19. *Jahrhundert* (Fischer Bücherei 992-93).

Recommended texts:

Gearey, J., and Schumann, W., (eds.), *Einführung in die deutsche Literatur* (Holt).

Ritchie, J. M. (ed.), *Periods in German literature* (Oswald Wolff).

(c) At the end of the year candidates must pass an oral test. This is an integral part of the annual examination in German II in which performance throughout the year will be taken into account. Practice in conversation, pronunciation, intonation, etc., is given in regular tutorial classes. *Candidates will also be required to work through a specified number of programmes in the language laboratory.* Attention is drawn to the German Club and the Goethe Society. Both bodies conduct their meetings in German. Details are posted in the Department.

The Weimar-Ohlstrom Prize is awarded annually to the matriculated student or graduate who gains the highest place in the examination in German II. Rules governing the prize are in the appropriate section of this calendar.

AG03. German III.

(a) Translation, prose composition and essay writing.

(b) Studies in German lyric poetry.

Prescribed text:

Forster, L. (ed.), *Penguin book of German verse* (Penguin).

Recommended texts:

Gray, R. D., *An introduction to German poetry* (C.U.P.).
Prawer, S. S., *German lyric poetry* (Routledge).
Pfeiffer, J., *Wege zur Dichtung* (Wittig).
Pfeiffer, J., *Umgang mit Dichtung* (Meiner).
Wiese, B. von, (ed.), *Die deutsche Lyrik,* 2 vols. (Bagel).

(c) Studies in twentieth century German prose.

Prescribed texts:

Wassermann, J., *Caspar Hauser* (Fischer Bücherei 867).
Hofmannsthal, H. von, *Andreas oder die Vereinigten.* In his *Four Stories* (O.U.P.).
Rilke, R. M., *Die Aufzeichnungen des Malte Laurids Brigge* (dtv 45).
Mann, T., *Der Zauberberg* (any edition).
Döblin, *Berlin Alexanderplatz* (dtv 295).
Broch, *Short stories* (O.U.P.).
Kafka, F., *Der Prozess* (any edition).
Grass, G., *Katz und Maus* (rororo 572).
Johnson, U., *Mutmassungen über Jakob* (Fischer Bücherei 452).
Killy, W. (ed.), *Deutsches Lesebuch,* vol. 4 (Fischer Bücherei 994).

(d) Studies in German literature, 1760-1805.

Prescribed texts:

Lessing, *Emilia Galotti* (Blackwell or Harrap).
Wieland, *Der Prozess um des Esels Schatten* (O.U.P.).
Goethe, *Die Leiden des jungen Werthers* (Blackwell).
Goethe, *Faust* (Wegner).
Schiller, *Maria Stuart* (Macmillan).
Richter, J. P. F., *Des Feldpredigers Schmelzle Reise nach Flätz* (O.U.P.).
Killy, W. (ed.), *Deutsches Lesebuch,* vols. 1-2 (Fischer Bücherei 991-92).

Recommended texts:

Von Hofe, H. H., *Faust: Leben, Legende und Literatur* (Holt, Rinehart and Winston).
Gray, R. D., *Goethe: a critical introduction* (C.U.P.).
Mason, G. R., *From Gottsched to Hebbel* (Harrap).

(e) At the end of the year candidates must pass an oral test. This is an integral part of the annual examination in German III in which performance throughout the year will be taken into account. Practice in conversation, pronunciation, intonation, etc., is given in regular tutorial classes. Attention is also drawn to the German Club and the Goethe Society. Both bodies conduct their meetings in German. Details are posted in the Department.

The A. J. Schulz Prize is awarded annually to the matriculated student or graduate who gains the highest place at the examination in German III. Rules governing the prize are in the appropriate section of this calendar.

AG11. German IA.

No previous knowledge of German is required.

(a) Language: grammar, general translation and composition.

Prescribed texts:

Langenscheidts Handwörterbuch, ed. H. Messinger, 2 vols. (Langenscheidt) or *Langenscheidt's concise German dictionary,* 2 vols. (Hodder and Stoughton).

Ellert, F. C., and Heller, P., *German One* (Heath).

Recommended texts:

Eggeling, H. F., *A dictionary of modern German prose usage* (O.U.P.).

Russon, L. J., *Complete German course* (Longmans).

Stopp, F. J., *A manual of modern German* (University Tutorial Press).

(b) Language: reading and special translation.

Prescribed texts:

Von Hofe, H. H., *Im Wandel der Jahre,* 4th edition (Holt, Rinehart and Winston).

Ryder, F., and McCormick, E., *Lebendige Literatur,* Pt. 1 (Houghton Mifflin).

(c) Introduction to modern German literature.

Prescribed texts:

Mann, T., *Tonio Kröger* (Blackwell).

Kafka, *Die Verwandlung* (Methuen).

Brecht, *Leben des Galilei* (Heinemann).

Dürrenmatt, *Der Besuch der alten Dame* (Methuen).

(d) At the end of the year candidates must pass an oral test. This is an integral part of the annual examination in German IA in which performance throughout the year will be taken into account. Practice in conversation, pronunciation, intonation, etc., is given in regular tutorial classes. *Candidates are advised that they must devote a total of at least two hours weekly to independent work in the language laboratory.* Attention is also drawn to the German Club and the Goethe Society. Both bodies conduct their meetings in German. Details are posted in the Department.

AG12. German IIA.

Pre-requisite subject: German IA at Division I standard or higher.

(a) Language.

Prescribed texts:

See German IA, (a) and German I, (a).

(b) Contemporary Germany.

Prescribed texts:

Neven-du Mont, J., *Liebe Deine Deutschen wie Dich selbst* (rororo 1297-98).

Wagenbach, K. (ed.), *Lesebuch: Deutsche Literatur der sechziger Jahre* (Wagenbach).

(c) German literature, 1796-1906.

Prescribed texts:

Tieck, L., *Der blonde Eckbert* (Blackwell).
Hoffmann, E. T. A., *Der goldene Topf* (Blackwell).
Grillparzer, F., *König Ottokars Glück und Ende* (Blackwell).
Heine, H., *Atta Troll; Deutschland: Ein Wintermärchen* (O.U.P.).
Stifter, A., *Abdias* (Manchester University Press).
Büchner, G., *Dantons Tod* (Manchester University Press).
Wagner, R., *Die Meistersinger von Nürnberg* (Reclam 5639).
Storm, T., *Aquis submersus* (Reclam 6014).
Keller, F., *Kleider machen Leute* (Harrap).
Meyer, *Die Versuchung des Pescara* (Blackwell).
Gearey, J., and Schumann, W., (eds.), *Einführung in die deutsche Literatur* (Holt, Rinehart and Winston).

Recommended text:

Ritchie, J. M. (ed.), *Periods in German literature* (Oswald Wolff).

(d) At the end of the year, candidates must pass an oral test. This is an integral part of the annual examination in German IIA in which performance throughout the year will be taken into account. Practice in conversation, pronunciation, intonation, etc., is given in regular tutorial classes. *Candidates will also be required to work through a specified number of programmes in the language laboratory.* Attention is also drawn to the German Club and the Goethe Society. Both bodies conduct their meetings in German. Details are posted in the Department.

AG87. German IIB.

Advanced German Language and Literature I.

(a) Modern and contemporary German poetry.

Prescribed text:

Bridgewater, P. (ed.), *Twentieth century German verse* (Penguin).

Recommended text:

Miesel, V. H. (ed.), *Voices of German expressionism* (Prentice-Hall).

(b) Introduction to Middle High German.

Prescribed texts:

Asher, J. A., *A short descriptive grammar of Middle High German* (O.U.P.).
Maurer, F. (ed.), *Frühester deutscher Minnesang* (Sammlung Göschen 1242).
Hartman von Aue, *Der arme Heinrich* (Blackwell).
Boor, H. de (ed.), *Das Nibelungenlied* (Brockhaus).

Recommended texts:

Boor, H. de, and Wisniewski, R., *Mittelhochdeutsche Grammatik* (Sammlung Göschen 1108).
Wright, J., *Middle High German primer* (Clarendon Press).
Heer, F., *The medieval world* (Mentor).
Reinhardt, K. F., *Germany: 2000 years,* vol. I (Constable).
Southern, R. W., *The making of the Middle Ages* (Yale U.P.).

AG88. German IIIB.

Advanced German Language and Literature II.

(a) Middle High German texts:

Prescribed texts:

Eschenbach, W. von, *Parzival,* ed. A. Leitzmann (Altdeutsch Textbibliothek 12-14, Niemeyer).

Strassburg, G. von, *Tristan und Isolt* (Blackwell).
Vogelweide, W. von der, *Gedichte* (Altdeutsche Textbibliothek I, Niemeyer).

(b) The poetry of the Baroque, Goethe and Hölderlin.
Prescribed texts:
Hederer, E. (ed.), *Deutsche Dichtung des Barock* (Hanser).
Goethe, J. W. von, *Poems*, ed. R. Gray (C.U.P.).
Chronik von Goethes Leben (dtv-Gesamtausgabe, vol. 45).
Hölderlin, *Gedichte, Hyperion* (Goldmann 429).
Recommended text:
Gray, R. D., *Goethe: a critical introduction* (C.U.P.).

(c) Studies in German prose since 1945.
Prescribed texts:
Frisch, *Mein Name sei Gantenbein* (Fischer Bücherei 1000).
Grass, *Die Blechtrommel* (Fischer Bücherei 47314).
Walser, M., *Das Einhorn* (Suhrkamp Sonderausgabe).
Weiss, *Der Schatten des Körpers des Kutschers* (ed. Suhrkamp 53).
Böll, *Ansichten eines Clowns* (dtv 400).
Hildesheimer, *Tynset* (Fischer Bücherei 844).
Handke, *Der Hausierer* (Suhrkamp).
Thomas, R. H. (ed.), *Seventeen modern German stories* (O.U.P.).

AG99. German for the Honours degree of B.A.

Before entering the final honours year candidates for the honours degree in German must (i) pass German I or IA, II or IIA, IIB, III, and IIIB at appropriately high standard; (ii) pass in three other subjects as indicated in Schedules—Degree of B.A., Schedule III: The Honours Degree.

During the Final year students will write a dissertation on some aspect of German literature or language. Choice of subject must be made not later than the beginning of the first term after consultation with the Professor of German. Students must also attend the following courses:

(a) Advanced translation, prose composition and essay writing.

(b) Studies in German prose since 1945.
See AG88 (c).

Students may obtain the permission of the Faculty of Arts to combine German with another subject for the Honours Degree. They should consult the Professor of German as soon as possible so that a suitably modified course can be arranged.

The A. J. Schulz Prize and the A. J. Schulz Award are awarded annually following the final examination for the Honours Degree of B.A. Rules governing these prizes are in the appropriate section of this calendar.

German Language and Literature for the degree of M.A.

Candidates for the degree of Master of Arts should consult the Professor of German.

AG74. Science German.

This subject is open to members of staff, research students and those honours students required by their Departments to take the course in Science German. It consists of two lectures weekly throughout the year. Its aim is to ensure fluency in reading German and in translation from German into English. *No previous knowledge of the language is required.*

Text-books:
Rosenberg-Rodgers, A., and Horwood, E. K., *German for science students*, 2nd edition (Cheshire).
de Vries, Louis, *German-English science dictionary* (McGraw-Hill).

HISTORY

There are six subjects.* A student proceeding to a degree must pass at Division I standard or higher in History I (A *or* B) or Politics I before he may take History II; and History II before he may take History III (A *or* B *or* C).

* Excluding Australian History AH72, which is only available in 1971 in special circumstances and by permission of the Head of the Department.

AH01. History IA.

EUROPE FROM THE SIXTEENTH TO THE EIGHTEENTH CENTURY.

No pre-requisite subject.

A first-year course: not available to exempted students.

A pass at Division I standard qualifies a student for History II.

Introductory Reading:

Bindoff, S. T., *Tudor England* (Pelican paperback).

Clark, G. N., *Early modern Europe* (O.U.P.).

Dickens, A. G., *Reformation and society in sixteenth-century Europe* (Thames and Hudson paperback).

Elliott, J. H., *Europe divided, 1559-1598* (Fontana paperback).

Elton, G. R., *Reformation Europe, 1517-1559* (Fontana paperback).

Hill, Christopher, *Reformation to industrial revolution* (Pelican paperback).

Laslett, Peter, *The world we have lost* (University paperback).

A fuller reading list will be available from the office of the Department of History in February.

AH11. History IB.

AUSTRALIAN HISTORY.

A general study of Australian society from the 18th century to the present day.

No pre-requisite subject.

Available to exempted students.

A pass at Division I standard qualifies a student for History II.

Introductory reading:

Blainey, G., *The tyranny of distance* (Macmillan).

Clark, C. M. H., *A short history of Australia* (Heinemann).

Glynn, S., *Urbanization in Australian history, 1788-1900* (Thomas Nelson Aust. Ltd.).

Meinig, D. W., *On the margins of the good earth* (Rigny).

Ward, R. B., *Australia* (Prentice-Hall).

A fuller reading list may be obtained from the office of the Department of History in February.

AH02. History II.

EUROPE IN THE NINETEENTH AND TWENTIETH CENTURIES.

Pre-requisite: Pass at Division I standard or higher in History I or Politics I; available to exempted students.

The subject has two parts: general history, and a special subject to be chosen from a selection of topics.

Introductory reading: General.

David Thomson, *Europe since Napoleon* (Pelican).

Franklin Ford, *Europe 1780-1830* (Longmans).

H. Hearder, *Europe in the nineteenth century 1830-1880* (Longmans).

John Roberts, *Europe 1880-1945* (Longmans).

A fuller reading list will be available from the office of the Department of History in February.

Reading lists for the special subjects will be issued at the beginning of first term.

AH03. History IIIA.

Pre-requisite: History II or Australian History AH72.

EITHER

EAST AND SOUTH EAST ASIAN HISTORY.

This comprises (a) lectures examining the main problems in modern East and South East Asian history; and (b) a special subject studying the modern history of one country in depth.

Before embarking on the course, students are strongly recommended to read the following brief, introductory works, all of which are available in paperback.

Bastin, J., and Benda, H., *A history of modern Southeast Asia* (Prentice-Hall).

Latourette, K. S., *China* (Prentice-Hall).

Storry, R., *A history of modern Japan* (Pelican).

A fuller reading list may be obtained from the office of the Department of History.

OR

SOUTH ASIAN HISTORY.

A study of the history of India and Pakistan, with an emphasis on social, economic and political change in the nineteenth and twentieth centuries.

Recommended reading:

Spear, T. G. P., *A history of India,* vol. 2 (Pelican).

Smith, V. A., *Oxford history of India,* 3rd edition (O.U.P.).

De Bary, W. T. (ed.), *Sources of Indian tradition* (Columbia U.P.).

Low, D. A. (ed.), *Soundings in modern south Asian history* (A.N.U. Press).

McLane, J. R. (ed.), *The political awakening in India* (Prentice-Hall).

Rudolph, L. I. and S. H., *The modernity of tradition* (Chicago U.P.).

Seal, A., *The emergence of Indian nationalism* (C.U.P.).

Srinivas, M. N., *Social change in modern India* (California U.P.).

A fuller reading list may be obtained from the office of the Department of History.

AH13. History IIIB.

Pre-requisite: Pass in History II or Australian History AH72.

EITHER

ECONOMIC HISTORY.

Not available in 1971.

OR

A HISTORY OF THE UNITED STATES OF AMERICA.

Available to exempted students.

Students are particularly recommended:

Documents and Sources, Readings:

Katz, S. N., and Kutler, S. I. (eds.), *New perspectives on the American past* (Little, Brown).

Glad, P., and others(eds.), *The process of American history* (Prentice-Hall).

Interpretations of American history, various titles and authors (Harper and Row).

Freidel, F. B., and Pollack, N. (eds.), *Builders of American institutions* (Rand McNally).

Degler, C. N. (ed.), *Pivotal interpretations of American history* (Harper).

Grob, G. N., and Billias, G. A. (eds.), *Interpretations of American history: patterns and perspectives* (Collier-Macmillan).

Commager, H. S. (ed.), *Documents of American history*, 1492-1949 (Appleton-Century-Crofts).

Problems in American history, various titles (Heath).

Surveys:

Smith, H. N., *Virgin land* (Vintage).

Miller, P., *Errand into the wilderness* (Harper).

Potter, D., *People of plenty* (Chicago).

Turner, F. J., *Frontier and section* (Spectrum Books).

McDonald, F., *The torch is passed: the U.S. in the 20th century* (Addison-Wesley).

Hofstadter, R., *The age of reform: from Bryan to F.D.R.* (Cape).

Woodward, C. V., *The burden of southern history* (Vintage).

A fuller reading list will be available from the office of the Department of History in February.

AH23. History IIIC.

Pre-requisite: Pass in History II or Australian History AH72.

Enrolment in this subject in 1971 is restricted. Candidates must apply to the Department of History.

PACIFIC HISTORY.

A study of social change in the Pacific islands, New Zealand and New Guinea from the 18th century to the present day.

Introductory reading:

Suggs, R. G., *The island civilisations of Polynesia* (New Amer. Lib.).

Maude, H. E., *Of islands and men* (O.U.P.).

Shineberg, D., *They came for sandalwood* (M.U.P.).

Gilson, R. P., *Samoa 1830-1900: the politics of a multi-cultural community* (O.U.P.).

Scarr, D., *Fragments of empire* (A.N.U. press).

Sinclair, K., *A history of New Zealand* (O.U.P.).

Hastings, P., *New Guinea: prospects and problems* (Cheshire).

Daws, G., *Shoal of time: a history of Hawaii* (Macmillan Co. of U.S.A.)

A fuller reading list will be available from the office of the Department of History in February.

AH72. Australian History.

A second-year subject.

A general study of Australian society from the 18th century to the present day.

NOTE: This subject may be taken in 1971, by permission of the Head of Department in each case, only by students who matriculated before June, 1968, and who, before June, 1969, were committed to a course of study for the degree of B.A. where completion depends on the inclusion of two second-year subjects in History.

Pre-requisite, at Division I standard or higher: History I (A or B) or Politics I or Australian Literature; not available except in special circumstances to exempted students.

A student may proceed from this subject to History III (A or B or C). But Australian History will not form part of an acceptable sequence for the degree of B.A.; i.e., it is intended to be taken as a second-year subject additional to the student's two major sequences.

Preliminary reading:

Blainey, G., *The tyranny of distance* (Macmillan).

Crawford, R. M., *An Australian perspective* (M.U.P.).

Clark, M., *A short history of Australia* (Heinemann).

Ward, R. B., *Australia* (Prentice-Hall).

The following books are essential for reference throughout the course:

Clark, C. M. H., *Sources of Australian history* (O.U.P.).

Clark, C. M. H., *Select documents in Australian history*, 2 vols. (Angus and Robertson).

Shaw, A. G. L., *The story of Australia* (Faber).

Other useful books:

Grattan, C. H., *The south west Pacific*, 2 vols. (Univ. of Michigan Pr.).

Greenwood, G. (ed.), *Australa: a social and political history* (Angus and Robertson).

Hancock, W. K., *Australia* (Jacaranda).

Ward, R. B., *The Australian legend* (O.U.P.).

Gollan, R., *Radical and working class politics* (M.U.P.).

Miller, J. D. B., *Australian government and politics* (Duckworth).

History—The Honours Degree of Bachelor of Arts.

Students wishing to take Honours should consult the Head of the Department before the beginning of the second year's work. They will be required to satisfy the examiners in the work of the second and third years before proceeding to the fourth year.

AH79. History Honours, Second Year.

During the second year, as well as History II and other requisite subjects, students accepted for Honours will attend special classes prescribed by the Department.

AH89. History Honours, Third Year.

During the third year, in addition to History III (A or B or C) and other subjects, students accepted for Honours will attend a course of tutorials in which they will be required to attain a satisfactory standard before proceeding to final Honours.

AH99. History Honours, Fourth Year.

The Honours work includes the writing of a thesis, two special subjects, a revision paper and a general essay paper.

History for the Degree of M.A.

Candidates for the degree of M.A. in History should consult the Head of the Department.

PHILOSOPHY

There are four courses in Philosophy for the ordinary degree of Bachelor of Arts.

AL01. Philosophy I.

The course of lectures is given every year and is completed in one year. It is a general introduction to logic, metaphysics and ethics. (Half the lectures will be on logic.)

Text-books:

Frankena, W., *Ethics* (Prentice-Hall).

Hospers, J., *Readings in introductory philosophical analysis* (Prentice-Hall).

Pike, N., *The problem of evil* (Prentice-Hall).

Black, M., *Critical thinking* (Prentice-Hall).

Matson, W. I., *The existence of God* (Cornell).

AL02. Philosophy II.

Pre-requisite subject: Philosophy I at Division I standard or higher.

This subject has three parts, General Philosophy A, General Philosophy B, and Logic. Any two of these three must be taken.

GENERAL PHILOSOPHY A.

The lectures in this part will deal mainly with Theory of Knowledge and Philosophy of Mind.

Text-book:

Aune, B., *Knowledge, mind and nature* (Random House).

GENERAL PHILOSOPHY B.

The lectures in this part will deal with some developments in Metaphysics, Ethics and Epistemology in the twentieth century.

Text-book:

White, M., *Toward reunion in philosophy* (Harvard).

LOGIC.

Text-book:

Massey, G. J., *Understanding symbolic logic* (Harper and Row).

AL03. Philosophy IIIA.

Pre-requisite subject: Philosophy II.

This subject has four parts, General Philosophy A, General Philosophy B, General Philosophy C, and Logic. Every student must take General Philosophy A and General Philosophy B, and *either* General Philosophy C *or* Logic, providing that any student who elects to take Logic must, in some previous year, have taken Logic at the second-year level, or passed an examination in Logic of equivalent standard. (Any student who has passed Philosophy II in 1970 or in any earlier year will be deemed to have taken Logic at the second-year level.)

GENERAL PHILOSOPHY A.

The lectures will deal with the Philosophy of Ludwig Wittgenstein.

Text-books:

Wittgenstein, L., *Tractatus logico-philosophicus* (Routledge and Kegan Paul).

Wittgenstein, L., *Philosophical investigations* (Blackwell).

GENERAL PHILOSOPHY B.

The lectures in this part will deal with questions in Epistemology, Philosophy of Logic and Philosophical Method.

Text-books:

Quine, W. V., *The philosophy of logic* (Prentice-Hall).

Aaron, R. I., *The problem of universals*, 2nd edition (Oxford).

Hamblin, C. L., *Fallacies* (Methuen).

GENERAL PHILOSOPHY C.

These lectures will consider the problem of knowledge, and in particular the role of sense-perception in acquiring it. Topics are: (A) Scepticism and certainty, (B) Philosophical theories of perception (Direct Realism, the Representative Theory, Phenomenalism).

Text-books:

Hirst, R. J., *Perception and the External World* (Macmillan).

Ayer, A. J., *The problem of knowledge* (Pelican).

Chisholm, R. M., *Theory of knowledge* (Prentice-Hall).

LOGIC.

Text book:

Mates, B., *Elementary logic* (Oxford).

AL13. Philosophy IIIB.

Pre-requisite subject: Philosophy II.

The course of lectures will be given every year and will be completed in one year. Subjects of examination will be the topics discussed in the following books:

Hare, R. M., *Language of morals* (O.U.P.).
Hare, R. M., *Freedom and reason* (O.U.P.).
Aristotle, *Nicomachean ethics*, trans. Sir David Ross (O.U.P.).
MacIntyre, A. C., *A short history of ethics* (Routledge).
Warnock, G. J., *Contemporary moral philosophy* (Macmillan).
Foot, P. (ed.), *Theories of ethics* (O.U.P.).

AL99. Philosophy for the Honours Degree of B.A.

In addition to study at a deeper level of the work required for the Ordinary Degree courses, namely, Philosophy I, II, IIIA and IIIB, candidates are expected to show knowledge of the following works:

Quine, W. V. O., *Word and object* (Technology Press, M.I.T., and Wiley).
Popper, K., *Conjectures and refutations* (Routledge and Kegan Paul).
Ryle, G., *The concept of mind* (Hutchinson).
Smart, J. J. C., *Between science and philosophy* (Random House).
Foot, P. (ed.), *Theories of ethics* (O.U.P.).
Dray, W. H. (ed.), *Philosophical analysis and history* (Harper and Row).
Gustafson, D. F. (ed.), *Essays in philosophical psychology* (Macmillan).
Quine, W. V. O., *The ways of paradox* (Random House).

Philosophy for the Degree of M.A.

Candidates for the degree of M.A. in Philosophy are required to consult the Professor of Philosophy within the first month of the academic year about the subject and the course of reading for their thesis.

POLITICS

Five courses are offered in this Department: Politics I, IIA, IIB, IIIA and IIIB.

The books recommended are not intended to be an exhaustive list; they are suggestions as to how the lectures should be supplemented.

Essays and written exercises are regarded as an integral part of the courses, and students will be allowed to sit for the annual examinations only if their written work has been satisfactory.

AP01. Politics I.

DEMOCRATIC POLITICS.

No pre-requisite.

A first-year subject—available to external students.

A study of the institutions, political processes, basic beliefs and assumptions characteristic of modern democracies. Attention is directed mainly to the principles and general features of the Australian political system, but reference is made to other countries. The political theory includes consideration of classical democratic theory, modern defences and radical criticism of democracy and human rights and liberties.

Introductory notes and a preliminary reading list will be available at the office of the Politics Department on 3 February, 1971, and should be collected by intending students as soon as possible thereafter.

Recommended books:

*Bachrach, P., *The theory of democratic elitism* (Little, Brown).
*Bottomore, T. B., *Elites and society* (Pelican).
*Cockburn, A., and Blackburn, R. (ed.), *Student power* (Penguin Special).

Davies, A. F., *Australian democracy* (Longmans).
*Encel, S., *Equality and authority* (Cheshire).
*Kariel, H., *Frontiers of democratic theory* (Random House).
or
*McCoy, C. A., and Playford, J., *Apolitical politics* (Crowell).
*Macpherson, C. B., *The real world of democracy* (Oxford).
Mill, J. S., *Utilitarianism, liberty and representative government* (Everyman).
*Miller, J. D. B., and Jinks, B., *Australian government and politics* (Duckworth, 1971 edition).
*Pranger, R. J., *The eclipse of citizenship* (Holt, Rinehart and Winston).
*Strachey, J., *The challenge of democracy* (Encounter).

Books marked * are available in paperback editions.

AP32. Politics IIA
and
AP42. Politics IIB.

Pre-requisite subjects for Politics IIA and Politics IIB: *Either* Politics I at Division I standard or higher, *or* History II.

In second-year Politics, there are five fields of study, namely:

1. Political Theory.
2. Political Sociology.
3. American Politics.
4. European Politics.
5. Asian Politics.

Politics IIA comprises two fields of study, one of which must be Political Theory or Political Sociology, though both may be taken.

Politics IIB comprises any two fields of study not forming part of Politics IIA.

Both subjects are available to external students.

Students should note that Politics IIB does not form part of a sequence in Politics for the degree of B.A.

(1) Social and Political Theory: a study of socialism, Marxism and anarchism, with particular emphasis on the writings of Marx.

Main references:

*Horowitz, I. L. (ed.), *Anarchism* (Dell).
*Joll, J., *The anarchists* (Methuen).
*Krimerman, L., and Perry, Lewis (eds.), *Patterns of anarchy* (Anchor).
*Mackenzie, N., *Socialism: a short history* (Hutchinson).
Marx and Engels, *Selected works* (one volume edition—Foreign Languages Publishing House, Moscow).
*Mills, C. W., *The Marxists* (Pelican).
*Woodcock, G., *Anarchism* (Pelican).

(2) Political Sociology: sociological analysis; socialisation; social stratification; electoral sociology; parties, pressure groups and social movements; political elites; power, influence, authority; authoritarianism; community; political culture; social conflict and change; modernising politics; revolution.

Some general texts:

Alford, R., *Party and society.*
Almond and Coleman, *Politics of the developing areas.*
*Almond and Verba, *Civic culture.*
*Bendix, R., and Lipset, S. M., *Class, status and power.*
Dahl, R., *Who governs?*
*Duverger, M., *Political parties.*
*Encel, S., *Equality and authority.*
Encel and Davies, *Australian society.*

Goldthorpe, *et al.*, *The affluent worker: political attitudes and behaviour.*
Hyman, H., *Political socialisation.*
Lane, R. E., *Political life.*
*Lipset, S. M., *Political man.*
Mackenzie and Silver, *Angels in marble.*
Wiseman, H. V., *Political systems.*

(3) American Politics: The emphasis will be on American political ideas, particularly those enshrined in the Declaration of Independence, the Constitution and the Federalist Papers. Democracy, the Constitution and the problems associated with majority and minority rights, particularly as expounded by de Tocqueville. The collapse of the US system in the mid-nineteenth century. Any parallels today? The American science of politics in the twentieth century.

The more general propositions of the lectures will be applied in tutorials to particular institutions and processes.

Suggested reading:

An American "college text", such as Ferguson and McHenry, Burns and Peltason, or Irish and Prothro.
De Tocqueville, *Democracy in America.*
McKenzie, W. J. M., *Politics and social science* (Pelican).
The Declaration of Independence and The Constitution, Amherst series.
The Federalist Papers (ed. and intro. by Beloff), Blackwell's Text edition.
The New York Times (Week in Review).

(4) European Politics: A comparative study of the political systems of Britain, France, West Germany and the Soviet Union. A preliminary reading list will be available at the Politics Department on 1 February, 1971.

Students should procure:

Macridis, R. C., and Ward, R. E. (eds.), *Modern political systems: Europe*, 2nd edition (Prentice-Hall).

Other useful books:

Rose, R., *Politics in England* (Faber).
*Blondel, J., *Voters, parties and leaders* (Penguin).
*Hanson, A. H., and Walles, M., *Governing Britain* (Fontana).
*Ehrmann, H. W., *Politics in France* (Little Brown).
*Blondel, J., and Godfrey, E. D., *The government of France* (Methuen).
*Schapiro, L., *The government and politics of the Soviet Union* (Hutchinson).
*Barghoorn, F. C., *Politics in the USSR* (Little Brown).
*Almond, G. A., and Powell, G. B., *Comparative politics* (Little Brown).
*Scarrow, H. A., *Comparative political analysis* (Harper and Row).

(5) Asian Politics: Political Change in South and Southeast Asia: This course will consider broad questions relating to political modernization within the specific context of South and Southeast Asia. Although the method will be comparative, primary emphasis will be given to the Indian political system. Among the comparative issues to be considered are: the impact of social mobilization; the role of strategic elites; the nature of micro-politics; the impact of religious, linguistic and social pluralism; the process of leadership circulation.

Recommended books:

*Bailey, F. G., *Politics and social change: Orissa in* 1959 (U. of California Press).
*Blondel, J., *Comparative government* (Doubleday).
Brass, P. R., *Factional politics in an Indian state* (U. of California Press).
Kahin, G. McT., *Governments and politics of Southeast Asia* (Cornell U. Press).
*McAlister, J. T., and Mus, P., *The Vietnamese and their revolution* (Harper and Row).
*Pye, L. W., *Southeast Asia's political system* (Prentice-Hall).
*Smith, D. E. (ed.), *South Asian politics and religion* (Princeton U. Press).

*Smith, W. C., *Islam in modern history* (Mentor Books).
*Tinker, H., *India and Pakistan: a political analysis* (Praeger).
Wriggins, W. H., *Ceylon: dilemmas of a new nation* (Princeton U. Press).

Books marked * are available in paperback editions.

AP03. Politics IIIA.

INDUSTRIAL SOCIETY AND THEORIES OF COMMUNITY.

Pre-requisite subject: Politics II (A or B).

A third-year course—not available to external students.

This course is primarily concerned with the reactions of social theorists to industrial society—and especially with the reactions of social theorists who developed communitarian critiques of industrialism. The thinkers considered include Burke, Rousseau, the Utopian Socialists, Marx, Durkheim, Tawney and the Guild Socialists, Marcuse and McLuhan. The focus of interest in each case will be the precise character of the critiques of industrial society and the images of community which are invoked against industrialism and/or seen as embedded or emerging within it. The realism of the search for community—which is not, of course, a common search for an agreed goal—and some of the practical efforts to establish genuine communities will be considered in tutorials.

A fuller reading list will be available at the office of the Politics Department in February.

Preliminary reading:

Bellow, S., *Dangling man* (Penguin).
Blumberg, Paul, *Industrial democracy: the sociology of participation* (Constable).
Coates, K., and Topham, T., *Workers' control* (Panther Modern Society).
Clegg, H., *A new approach to industrial democracy* (Blackwell).
Cole, G. D. H., *History of socialist thought*, vol. I (*The forerunners*) (Macmillan).
Goldthorpe, J. H., *et al.*, *The affluent worker: industrial attitudes and behaviour* (Cambridge U.P.).
Hobsbawm, E., *The age of revolution* (Weidenfeld and Nicolson).
Kolaja, J., *Workers' councils—the Yugoslav experience* (Tavistock).
Macpherson, C. B., *The political theory of possessive individualism* (O.U.P. paperback).
Moore, Barrington, *The social origins of dictatorship and democracy* (Allan Lane Penguin Press).
Morris, William, *News from nowhere* (Longmans).
Polanyi, K., *The great transformation* (Beacon paperback).
Tawney, R. H., *Religion and the rise of capitalism* (Penguin).
Thompson, E. P., *The making of the English working class* (Pelican).
Tönnies, F., *Community and society* (Harper Torchbooks).
Williams, R., *Culture and society* (Pelican).
Wolin, S., *Politics and vision* (Allen and Unwin).

AP13. Politics IIIB.

INTERNATIONAL POLITICS.

Pre-requisite subject: Politics II or History IIA or IIB or International Law. A third-year subject—not available to exempted students—which will be divided into three sections:

(i) The nature of international society: a theoretical inquiry into the development and structure of the modern multi-state system. It will include a study of power, the nation-state, sovereignty, national interest, diplomacy, imperialism and war.
(ii) The Cold War.
(iii) An analysis of contemporary international relations with particular reference to East and South-east Asia and Australia.

Reading guide: a more comprehensive guide, broken down by topics, will be made available during the course.

Albinski, H. S., *Australian policies and attitudes toward China* (Princeton University Press).
Aron, R., *On war* (Secker and Warburg).
Aron, R., *Peace and war* (Weidenfeld).
Baran, P. A., and Sweezy, P. M., *Monopoly capital* (Pelican).
Butterfield, H., and Wight, M. (eds.), *Diplomatic investigations* (Allen and Unwin).
Carr, E. H., *The twenty years crisis* (Macmillan).
Clark, G. J., *In fear of China* (Lansdowne).
Claude, I. L., *Power and international relations* (Random House).
Chomsky, N., *American power, the new mandarins* (Penguin).
Gerassi, J., *The great fear in Latin America* (Macmillan).
Gettleman, M. E., *Vietnam* (Penguin).
Horowitz, D., *From Yalta to Vietnam* (Penguin).
Horowitz, D. (ed.), *Containment and revolution* (Blond).
Horowitz, D., *Corporations and the Cold War* (Monthly Review Press).
Hinsley, F. H., *Power and the pursuit of peace* (Cambridge U.P.).
Johnson, C. A., *Peasant nationalism and communist power* (Stanford).
Kolko, G., *The politics of war* (Random House).
Lerche, C. O., and Said, A. A., *Concepts of international politics* (Prentice-Hall).
Magdoff, H., *The age of imperialism* (Monthly Review Press).
Miliband, R., *The state in capitalist society* (Weidenfeld and Nicolson).
Schram, S., *Mao Tse-tung* (Penguin).
Schram, S., *The political thought of Mao Tse-tung* (Penguin).
Waltz, K. N., *Man, the state and war* (Colombia).

AP99. Politics for the Honours Degree of B.A.

Students intending to take Honours should consult the Professor before the beginning of their second year's work. They will be required to undertake

(a) such Honours work as may be required in connection with Politics II and III.

(b) the fourth year of Honours work including tutorial discussions, the writing of a thesis and written examinations.

Politics for the Degree of M.A.

Candidates for the degree of M.A. in Politics are requested to consult the Professor at the earliest opportunity.

PSYCHOLOGY

In 1971 there will be three courses in Psychology for the ordinary degree of Bachelor of Arts: Psychology I, II and III.

AY01. Psychology I.

This course provides a survey of the main fields of modern experimental psychology, and qualifies the student to take further psychology subjects. The topics covered are learning, perception, physiological psychology, personality, social psychology, thinking and language, elementary, descriptive and inferential statistics.

The course is made up of three lectures each week and two hours of practical laboratory work. In addition students will be required to spend periods not exceeding a total of five hours in the year as participants in psychological experiments.

Background reading:

Carroll, J. B., *Language and thought* (Prentice-Hall).

Miller, G. A., *Psychology, the science of mental life* (Penguin Books).

Munn, N., *Psychology. The fundamentals of human adjustment*, 5th edition (Houghton Mifflin).

Text-books:

Deese, J. E., *Psycholinguistics* (Allyn and Bacon).

Hochberg, J. E., *Perception* (Prentice-Hall).

Millenson, J. R., *Principles of behavioral analysis* (Macmillan).

Runyon, R. P., and Haber, A., *Fundamentals of behavioral statistics* (Addison-Wesley).

Secord, P. F., and Backman, C. W., *Social psychology* (McGraw-Hill).

Tyler, L. E., *Tests and measurements* (Prentice-Hall).

For students intending to take further psychology subjects:

Thompson, R. F., *Foundations of physiological psychology* (Harper and Row).

For students not intending to take further psychology subjects:

Teitelbaum, P., *Physiological psychology* (Prentice-Hall).

Approximately 20 *Scientific American* off-prints will be recommended in lectures during the year.

NOTES:

1. The books listed above will be discussed at the preliminary meeting of the class.
2. Extensions for written work to be submitted in Psychology I will be given only in those cases where a request in writing is accompanied by a medical certificate.

AY02. Psychology II.

Pre-requisite subject: Psychology I at Division I standard or higher.

The course comprises: (i) Theory: three lectures and one tutorial a week; (ii) Laboratory and Statistics: an average of three hours a week in Terms I and II (including one hour a week of statistics), and one hour a week in Term III relating to statistics. The laboratory time will be devoted to experimental work and demonstrations in general and social psychology, and the statistics will deal with sampling and statistical inference from parametric and non-parametric data.

Approximately 20 percent of the lectures relate to physiological psychology and psychophysics, 46 percent to topics in the areas of perception, learning and motivation, and 34 percent to topics within social, personality and abnormal psychology.

This course is experimentally oriented with the main emphasis placed on contemporary behaviour theory. Extensions of experimental psychology are made to personality and social fields, and laboratory research is applied to problems of animal and human behaviour.

Reference books: (Students are expected to retain Psychology I text-books.)

Note: An indication of the varying emphases placed on these books will be given at the preliminary meeting of the class.

Day, R. H., *Perception* (Wiley).

Edwards, A. C., *The measurement of personality traits by scales and inventories* (Holt, Rinehart and Winston).

Garner, W. R., *Uncertainty and structure as psychological concepts* (Wiley).

Goldstein, H., and others (eds.), *Controversial issues in learning* (Appleton-Century-Crofts).

Haber, R. N., *Contemporary theory and research in visual perception* (Holt, Rinehart and Winston).

Hilgard, E. R., and Bower, G. H., *Theories of learning*, 3rd edition, (Appleton-Century-Crofts).

Honig, W. K., *Operant behaviour* (Appleton-Century-Crofts).

Miller, G. A., *Language and communication* (McGraw-Hill).

Runyon, R. P., and Haber, A., *Fundamentals of behavioral statistics* (Addison Wesley).

Secord, P. F., and Backman, C. W., *Social psychology* (McGraw-Hill).

Sidowski, J. B. (ed.), *Experimental methods and instrumentation in psychology* (McGraw-Hill).

Thompson, R. F., *Foundations of physiological psychology* (Harper and Row).

Vernon, P. E., *Personality assessment* (Methuen).

Welford, A. T., *Fundamentals of skill* (Methuen).

Young, P. T., *Motivation and emotion* (Wiley).

AY23. Psychology III.

Pre-requisite subject: Psychology II.

The course will consist of three lectures, one tutorial class and a practical work class each week throughout the year. The topics will include: Physiological Psychology; Psychological Statistics; Social Psychology; Personality; Cognition; Skills; Mathematical Models in Psychology; Theories of Perception; Motivation; and Comparative Psychology.

Sections of the course will include references to relevant research papers as well as to specialised texts. These will be noted during the course. The main general texts are listed below.

Text-books will be discussed at the preliminary meeting of the class.

Abrahamson, M., *Interpersonal accommodation* (Van Nostrand Insight Series. Paperback).

Coombs, C. H., and others, *Mathematical psychology: an elementary introduction* (Prentice-Hall).

Geiwitz, P. J., *Non-freudian personality theories* (Brooks/Cole. Basic Concepts Series).

Hays, W. L., *Statistics for psychologists* (Holt, Rinehart and Winston).

Hinde, R. A., *Animal behaviour: a synthesis of ethology and comparative psychology*, 2nd edition (McGraw-Hill).

Maier, N. R. F., *Frustration. The study of behaviour without a goal* (Ann Arbor Paperbacks. The University of Michigan Press).

McGill, T. E., *Readings in animal behaviour* (Holt, Rinehart and Winston).

McNemar, Q., *Psychological statistics*, 4th edition (Wiley).

Morris, D. (ed.), *Primate ethology* (Anchor Books)

Proshansky, H., and Seidenberg, B., *Basic studies in social psychology* (Holt, Rinehart and Winston).

Siegel, S., *Non-parametric statistics* (McGraw-Hill).

Steiner, I. D., and Fishbein, M. (eds.), *Current studies in social psychology* (Holt, Rinehart and Winston).

Thompson, R. F., *Foundation of physiological psychology* (Harper and Row).

Webb, E. J., and others, *Unobtrusive measures: nonreactive research in the social sciences* (Rand McNally).

Welford, A. T., *Fundamentals of skill* (Methuen).

Wheeler, L., *Interpersonal influence* (Allyn and Bacon Series in Social Psychology).

Yates, A. J., *Frustration and conflict* (Science Editions, Wiley).

Young, P. T., *Motivation and emotion* (Wiley).

AY99. Psychology for the Honours Degree of B.A.

Candidates are required to give their full attendance for an entire academic year to a special course of study in the psychological laboratory. The course will include lectures and discussions on advanced topics. It will also involve the writing of a substantial essay and the presentation of a dissertation embodying the results of, and a survey of the literature relevant to, a research investigation carried out under the supervision of a member of the staff of the Department.

DIPLOMA IN APPLIED PSYCHOLOGY

The course is intended primarily for graduates of the Faculty of Arts or the Faculty of Science who have either an Honours Degree in Psychology or an Ordinary Degree with Psychology as a major subject. Graduates who do not have either of these qualifications but who satisfy the Head of the Department of Psychology that they have an equivalent standard of attainment in Psychology may also be permitted to proceed to the course.

All students on the course are expected to develop research skills, and some students may be encouraged to pursue their research interests for a higher degree.

The course will normally be completed in two years of part-time study. It includes lectures, demonstrations, and discussions on the subjects of study listed below, together with one seminar per week throughout the course, and lectures on special topics.

The subjects of study 1-5 below are normally examined in the first year of the course, and subjects 6-8 below in the second year. Assessment of students will be made on the basis of attendance and work during the year, as well as by examination.

The subjects of study are:

1. Developmental Psychology.
2. Human Skills.
3. Occupational Psychology.
4. Personality and Social Relations.
5. Psychopathology.
6. Statistics and Methodology.
7. Practical work.
8. Research investigation or critical survey.

AY04. Developmental Psychology.

The course of lectures will consist of 8 two-hour sessions. Topics will include: Changes in individual capacity and personality through the life-span, from childhood to old age.

AY14. Human Skills.

The course of lectures will consist of 8 two-hour sessions. Topics will include: Basic principles of human performance. The nature of skill, and implications for the design of machines and of working environments. Methods of job-analysis. Fatigue and boredom.

AY24. Occupational Psychology.

The course of lectures will consist of 8 two-hour sessions. Topics will include: Factors affecting performance in occupational settings, including: motivation in work situations; vocational guidance, personnel selection and training; managerial organisation.

AY34. Personality and Social Relations.

The course of lectures will consist of 8 two-hour sessions. Topics will include: (a) The study of human adjustment and creative behaviour. (b) Interpersonal relationships; aspects of social behaviour which seem to be determined by impersonal, structural variables, such as proximity, propinquity, and roles.

AY44. Psychopathology.

The course of lectures will consist of 8 two-hour sessions. Topics will include: The nature of psychotic and neurotic states. Organic factors such as heredity and the effects of injury. Environmental and social factors. Various forms of therapy. Special problems in the psychopathology of children, and with geriatric and forensic cases.

AY54. Statistics and Methodology.

The course of lectures will consist of 24 two-hour sessions, normally during the second year of the part-time course. Topics will include: Basic statistical procedures; complex experimental designs; analysis of data from non-experimental intact groups; evaluating the effects of actions taken in the field; uses of regression and covariance; factor analysis. The study of individual cases, the construction of psychological tests, and the study of their reliability, validity, and utility. The design of questionnaires, and the design and conduct of social surveys.

AY64. Practical Work.

Practical work in applied psychology will be required for a total of not less than two hundred hours. This will normally be undertaken in conjunction with agencies co-operating with the Head of the Psychology Department. Assessment will be made on the basis of attendance and work during the course.

AY74. Research Investigation or Critical Survey.

A written report will be required of either a research investigation or a critical survey on a topic within the field of applied psychology, chosen by the student and approved by the Head of the Department of Psychology.

ADDITIONAL SUBJECT.

The Psychology Department also provides syllabus AY79 (see under Faculty of Medicine).

MUSIC FOR THE DEGREE OF BACHELOR OF ARTS

UA51. Music I.

No pre-requisites are necessary for admission to Music I, but a knowledge of the rudiments of music is assumed. An initial four-week course of intensive study will be prescribed for those who do not have such knowledge.

CLASSES: Three lectures or seminars a week.

SYLLABUS:

(i) Theory of music;

(ii) An introductory survey of European music from the Middle Ages to the present day;

(iii) Introduction to ethnomusicology, including preliminary studies of Asian cultures and minority groups.

Reference books:

(i) Harder, P., *Basic materials in music theory* (Allyn and Bacon).
Hindemith, P., *Elementary training* (Associated Music Publishers).
Hindemith, P., *Traditional harmony* (Schott).
Holst, I., *An A.B.C. of music* (O.U.P.).
Karolyi, O., *Introducing music* (Pelican).

(ii) Apel, W., *The Harvard dictionary of music* (Heinemann).
Crocker, R. L., *A history of musical styles* (McGraw-Hill).
Einstein, A., *Music in the romantic era* (Dent).
Grout, D. J., *A history of western music* (Dent).

Hitchcock, H. W., *Music in the United States: a historical introduction* (Prentice-Hall).
Newman, J., *Renaissance music* (Prentice-Hall).
Palisca, P. V., *Baroque music* (Prentice-Hall).
Pauly, R. G., *Music in the classical period* (Prentice-Hall).
Sachs, C., *The rise of music in the ancient world* (Norton).
Salzman, E., *Twentieth century music* (Prentice-Hall).
Seay, A., *Music in the mediaeval world* (Prentice-Hall).
Westrup, J. A., *An introduction to musical history* (Norton).

(iii) Harrison, F. L., and others, *Musicology* (Prentice-Hall).
Malm, W. P., *Music cultures of the Pacific, near East and Asia* (Prentice-Hall).
McCredie, A. D., *Musical composition in Australia, including catalogue of the works of forty-six Australian composers* (Prime Minister's Dept., Canberra).
Merriam, A. P., *The anthropology of music* (Northwestern University Press).
Nettl, B., *Theory and method in ethnomusicology* (Collier Macmillan).

Assignments completed during the year will be taken into account in determining a candidate's results at the annual examination.

UA52. Music II.

Pre-requisite subjects: Music I at Division I standard or higher.

CLASSES: Four lectures or seminars a week.

SYLLABUS:

(i) Analysis of music.

(ii) The history and development of music during the 16th, 17th and 18th centuries.

Prescribed works:

Palestrina, *Tu es Petrus* (Novello).
Byrd, *This day Christ was born* (Stainer and Bell).
Victoria, *O quam gloriosum* (Novello).
Gluck, *Orpheus* (Novello).
Mozart, *Symphony No. 41 in C "Jupiter" K551* (Eulenberg).

Students should provide themselves with scores of the prescribed works at the beginning of the year.

(iii) Music in western culture: selected aspects.

Reference books:

(i) Goldman, R. F., *Harmony in western music* (Norton).
Hardy, G., and Fish, A., *Music literature: a workbook for analysis*, vol. I (Dodd, Mead and Co.).
Hindemith, *Traditional harmony* (Schott).

(ii) Arnold, D., *Monteverdi* (Dent).
Bukofzer, H. F., *Music in the baroque era* (Dent).
Dart, T., *The interpretation of music* (Hutchinson).
Einstein, A., *Gluck* (Dent).
Einstein, A., *Mozart, his character, his work* (Cassell).
Fellowes, F. A., *William Byrd* (Oxford).
Morley, T., *A plain and easy introduction to practical music* (Dent).
Reese, G., *Music in the renaissance* (Dent).
Schweitzer, A., *J. S. Bach* (A. and C. Black).
Spitta, P., *Bach* (Dover).
Westrup, T. A., *Purcell* (Dent).

(iii) Allen, W. D., *Philosophies of music history* (Dover).

Assignments completed during the year will be taken into account in determining a candidate's result at the annual examination.

UA53. Music III.

Pre-requisite subject: Music II.

CLASSES: Four lectures or seminars a week.

SYLLABUS:

(i) Analysis of music.

(ii) History and development of music during the 19th and 20th centuries.

Prescribed works:

Beethoven, *Fidelio* (Boosey and Hawkes)

Strauss, *Also sprach Zarathustra* (Eulenberg).

Berg, *Violin concerto* (Universal).

Students should provide themselves with scores of the prescribed works at the beginning of the year.

(iii) History of musical notation.

(iv) (In 1970) Music in western culture: selected aspects.
(From 1971) Introduction to music aesthetics; elementary studies in the psychology and philosophy of music.

Reference books:

(i) Hardy, G., and Fish, A., *A workbook for analysis*, vol. II (Dodd).
La Rue, J., *Style analysis* (in "Notes", March, 1969).

(ii) Abraham, G. E. H., *A hundred years of music* (Duckworth).
Austin, W. W., *Music in the 20th century* (Norton).
Cooper, M., *French music from the death of Berlicz to the death of Fauré* (O.U.P.).
Dart, T., *The interpretation of music* (Hutchinson).
Einstein, A., *Music in the romantic era* (Dent).
Grout, D. J., *A short history of opera* (Columbia University Press).
Lang, P. H., and Broder, N. (eds.), *Contemporary music in Europe* (Nathan).
Reich, W., *Alban Berg* (N.Y. Harcourt).
Redlich, H., *Bruckner and Mahler* (Dent).
Rolland, R., *Beethoven the Creator* (Gollancz).
Vlad, K., *Stravinsky* (O.U.P.).

(iii) Apel, W., *The notation of polyphonic music* (The Medieval Academy of America).

(iv) Allen, W. D., *Philosophies of music history* (Dover).

Assignments completed during the year will be taken into account in determining a candidate's result at the annual examination.

MUSIC — FOR THE HONOURS DEGREE OF BACHELOR OF ARTS

Students wishing to take Honours should consult the Head of the Department before the beginning of the second year's work. They will be required to satisfy the examiners in the work in the second and third years before proceeding to the fourth year.

UA67. Music Honours, Second Year.

During the second year, as well as Music II and other requisite subjects, students accepted for Honours will attend lectures and be required to reach a satisfactory standard in the following:

(1) Aural awareness.

(2) Traditional harmony.

UA68. Music Honours, Third Year.

During the third year, in addition to Music III and other requisite subjects, students accepted for Honours will attend lectures and be required to reach a satisfactory standard in the following:

(1) Advanced harmony and counterpoint, including vocal and instrumental techniques.

(2) Score reading.

UA69. Music Honours, Fourth Year.

Candidates will complete research assignments as directed during the year.

SYLLABUS:

(1) *Ethnomusicology* (if available).

Syllabus: A course of seminars and individual tuition in the theoretical background to ethnomusicology, including field techniques, transcription, analytical procedures, performance techniques; *or*

(2) *Historical Musicology.*

Syllabus: A course of seminars and individual tuition in: paleography: selected theoretical writings; editorial practice; musicological method (analytical bibliography, source evaluation, periodisation of musical terminology); *or*

(3) *Systematic Musicology* (if available).

Syllabus: A course of seminars and individual tuition in: advanced acoustics; psycho-acoustics; music physiology; advanced music aesthetics; music philosophy; information theory.

FACULTY OF DENTISTRY

SYLLABUS NUMBERS.

The first letter identifies the Faculties responsible for the various subjects, as follows:

Faculty of Science	**S**
Faculty of Medicine	**M**
Faculty of Dentistry	**D**

The second letter: if it follows

S, is explained under Faculty of Science;
or M, is explained under Faculty of Medicine;
or D, indicates the Department of Dental Science.

The first digit

0–6: indicates that the subject forms part of a sequence.
7–9: indicates that the subject does not form part of a sequence.

The second digit

1–5: indicates year of subject, e.g. first, second, etc.
9: indicates subject available to Honours students only.

THE HONOURS DEGREE OF BACHELOR OF DENTAL SURGERY

DS99. Course for the Honours degree of Bachelor of Dental Surgery.

Candidates wishing to proceed to the Honours degree must consult the Head of the Department of Dental Science and should also consult the Head of the Department in which they wish to work. Application for admission to an Honours course must be made by February 1 of the year in which it is proposed to take the course.

THE ORDINARY DEGREE OF BACHELOR OF DENTAL SURGERY.

FIRST YEAR

The Schedules prescribe that students take—**SP01 Physics I; SC01 Chemistry I; SZ71 Biology**; and—

A fourth subject chosen from the first-year subjects available for the degree of Bachelor of Arts or Bachelor of Science. Two appropriate half-subjects may be taken.

For Syllabuses see under Arts and Science.

SECOND YEAR

MA72. General Anatomy.

The course consists of systematic lectures, demonstrations, and practical work and extends over three terms. It is arranged to cover the general anatomy of the body and the principles underlying its structure, the detailed topographical anatomy of the head and neck and the dissection of this region.

Text-books:

Cunningham, D. J., *Manual of practical anatomy*, Vol. 3 (O.U.P.).

Scott, J. H., and Dixon, A. D., *Anatomy for students of dentistry* (Livingstone).

Books for reference and further reading:

Abbie, A. A., *Principles of anatomy*, 3rd edition (Angus and Robertson).

Gray, H., *Anatomy, descriptive and applied* (Longmans).

Sicher, H., *Oral anatomy*, 5th edition (Mosby).

MA82. General and Dental Histology.

This course of study extends over three terms and consists of lectures, demonstrations and practical classes on general histology and histology and development of teeth and adjacent structures.

Text-books:

Maximow, A. A., and Bloom W., *A textbook of histology*, 9th edition, revised by W. Bloom and D. W. Fawcett (Saunders); *or*

Ham, A. W., *Histology* (Lippincott).

Orban, B. J., *Oral histology and embryology*, 6th edition (Mosby).

Reference books:

Mummery, J. H., *The microscopic anatomy of the teeth* (O.U.P.).

Noyes, F. B., *Oral histology and embryology*, edited and revised by I. Schour (Kimpton).

Widdowson, T. W., *Special or dental anatomy and dental histology* (Staples).

SY82. Biochemistry.

A course of lectures for three terms on general biochemistry.

Dental students attend the same basic lecture course as second-year medical students but at appropriate places separate lectures with emphasis on aspects relevant to dentistry are substituted.

Text-book:

White, A., and others, *Principles of biochemistry*, 4th edition (McGraw-Hill).

Reference books:

Lazzari, E. P., *Dental biochemistry* (Lea and Febiger).

Searcy, R. L., *Diagnostic biochemistry* (McGraw-Hill).

Stanbury, J. B., and others, *Metabolic basis of inherited diseases*, 2nd edition (McGraw-Hill).

Dickerson, R. E., and Geiss, I., *The structure and action of proteins* (Harper and Row).

SS22. Human Physiology.

The course in Human Physiology extends over the three terms of the Second year and is continued in the Third year. (See Syllabus SS23.)

Text-book:

Guyton, A. C., *Textbook of medical physiology*, current edition (Saunders).

DS02. Oral Anatomy.

A course of lectures and demonstrations will be given on the morphology of human teeth, deciduous and permanent; the functional anatomy of the human jaws and associated structures.

The teeth and associated structures will be studied in a series of laboratory exercises which include tooth drawing and carving.

Text-books:

Kraus, B. S. and others, *Dental anatomy and occlusion* (Williams and Wilkins).

Posselt, U., *The physiology of occlusion and rehabilitation*, 2nd edition (Blackwell).

Wheeler, R. C., *An atlas of tooth form*, 4th edition (Saunders).

Reference books:

Wheeler, R. C., *Text-book of dental anatomy and physiology*, 4th edition (Saunders).

Scott, J. H., and Symons, N. B., *Introduction to dental anatomy*, 5th edition (Livingstone).

DS12. Dental Materials and Technics.

A course of lectures, tutorials and practical work is given during second year and is continued in the third year.

Physical, chemical and mechanical properties of materials used in dentistry are studied in a series of experiments and laboratory exercises. The application of this knowledge to dentistry is gained by exercises in dental technics.

Text-books:

American Dental Association, *Guide to dental materials*, 4th edition, 1968-9.

Skinner, E. W., and Phillips, R. W., *The science of dental materials* (Saunders).

Reference books:

Anderson, J. N., *Applied dental materials* (Blackwell).

Peyton, F. A., and others, *Restorative dental materials* (Mosby).

Roydhouse, R. H., *Materials in dentistry* (Year Book Publications).

Standards Association of Australia, *Australian standard specifications for dental materials.*

THIRD YEAR

MP73. General Pathology.

A course of instruction on the general principles of pathology, consisting of: the genetic background of disease; the causation, character and sequelae of inflammation, degeneration, regeneration, repair, hypertrophy, atrophy and hyperplasia; blood coagulation and its disorders, thrombosis, embolism, infarction and ischaemia; the biologic effects of radiant energy and of viruses; the fundamentals of neoplasia. The pathology of systemic disease of importance in dental practice is also briefly studied.

Text-book:

Walter, J. B., *et al.*, *Principles of pathology for dental students*, latest edition (Churchill).

SS23. Human Physiology.

This course extends over the first and second terms and is a continuation of studies in Physiology from the Second year (see Syllabus SS22).

Text-books:

As for Syllabus SS22.

DS23. Oral Pathology I.

This course of instruction is based on the principles of general pathology and microbiology. Oral manifestations of disease processes and special reactions of oral tissues are studied. Clinical instruction is given in history taking, examination procedure and the use of special investigations in diagnosis. Practical instruction is given in clinical aspects and microscopic anatomy of diseased oral tissues.

An introductory course at the beginning of the year precedes the formal course which commences in the second term.

Text-books:

U.S.A. National Naval Medical Center, *Color atlas of oral pathology* (Lippincott).

Shafer, W. G., *et al., A textbook of oral pathology,* 2nd edition (Saunders).

Lucas, R. B., *Pathology of tumours of the oral tissues* (Churchill).

Reference books:

Kronfeld, R., *Histopathology of the teeth and their surrounding structures* (Lea and Febiger).

Thoma, K. H., and Goldman, H. M., *Oral pathology,* 6th edition (Kimpton).

DS33. Microbiology

A course of lectures and practical sessions extending over two terms.

The course emphasises basic principles of microbiology and immunology covering the general areas of: morphology, cytology, metabolism, physiology, isolation, cultivation and classification of bacteria and viruses. Principles of disinfection, sterilization and chemotherapy. Microbial genetics. Host-parasite relationships, mechanisms of microbial pathogenicity and principles of immunology and resistance to infective agents. Characteristics of selected groups of micro-organisms and viruses important in medical microbiology. Consideration of the oral microbiota and its relation to dental disease.

Text-books:

Burnett, G. W., and Scherp, H. W., *Oral microbiology and infectious disease,* 3rd edition (Williams and Wilkins).

Jawetz, E., and others, *Review of medical microbiology,* 8th edition (Lange Medical Publications).

Reference books:

Dubos, R. J., and Hirsch, J. G., *Bacterial and mycotic infections of man,* 4th edition (Lippincott).

Rubbo, S. D., and Gardner, J. F., *A review of sterilization and disinfection* (Lloyd Luke).

Gray, D. F., *Immunology* (Cheshire).

Humphrey, J. H., and White, R. G., *Immunology for students of medicine,* 3rd edition (Blackwell).

Davis, B. D., and others, *Microbiology* (Hoeber).

DS13. Restorative Dentistry I.

The courses in conservative dentistry and prosthetic dentistry are introduced by a series of lectures on the general principles of restorative dentistry. Studies in oral anatomy and physiology, oral pathology and microbiology, and dental materials and technics, are related to the problems involved in treating diseased oral tissues by restorative procedures.

CONSERVATIVE DENTISTRY: The scope of the course concerns the restoration of teeth by the procedures of operative dentistry. The course consists of lectures, demonstrations, and pre-clinical practical exercises. Students achieving a satisfactory standard are permitted to proceed to the clinical section of the course where experience is gained in treatment of patients.

Text-book:

Sturdevant, C. M., and others, *The art and science of operative dentistry* (McGraw-Hill).

Reference books:

In addition to those listed under Dental materials and technics (DS12):

Black, G. V., *Operative dentistry*—Vol. II (Kimpton).

Blackman, S., and Poyton, H. G., *A manual of dental and oral radiography* (John Wright and Sons, Bristol).

Black, G. V., *Operative dentistry*; revised by R. E. Blackwell, 9th edition (Kimpton).

Davis, W. C., *Operative dentistry* (Mosby).

Gilmore, H. W., *Textbook of operative dentistry* (Mosby).

Hampson, E. L., *Text-book of operative dentistry* (Heinemann).

Hollenback, G. M., *Science and technique of the cast restoration* (Mosby).

McCall, J. O., and Wald, S. S. *Clinical dental roentgenology* (Saunders).

McGehee, W. H. O., and others, *A text-book of operative dentistry* (McGraw-Hill).

Tocchini, J. J., *Restorative dentistry* (McGraw-Hill).

PROSTHETIC DENTISTRY: A course of lectures, demonstrations, practical exercises and clinical tutorials related to occlusion and the replacement of missing teeth and associated structures.

Text-book:

Posselt, U., *The physiology of occlusion and rehabilitation* (Blackwell).

U.S.A. National Naval Medical Centre, U.S.A. Naval Dental School, *Dental technician, prosthetic* (U.S. Government Printer).

Reference books:

Kraus, B. S., and others, *Dental anatomy and occlusion* (Williams and Wilkins).

McCracken, W. L., *Partial denture construction: principles and techniques* (Mosby).

Ramfjord, S. P., and Ash, M. M., *Occlusion* (Saunders).

FOURTH YEAR

DS34. General Medicine.

A special course of lectures and clinical instructions in the principles of medicine and on the diseases of different organs and systems of the body, with particular reference to the relationship between medical disorders and the oral manifestations of disease.

Text-book:

Kennedy, A. C., *Essentials of medicine for dental students* (Livingstone).

Reference books:

Davidson, L. S. P., and others, *Principles and practice of medicine* (Livingstone).

Collins, L. H., and Crane, M. P., *Internal medicine in dental practice* (Kimpton).

Houston, J. C., and others, *A short text-book of medicine*, 2nd edition (English University Press).

DS44. General Surgery.

A course of lectures and clinical demonstrations to illustrate the patterns of behaviour of surgical conditions, and the principles of their treatment.

Text-books:

Woodruff, Michael F. A., *Surgery for dental students* (Blackwell); *or*

Elsmlie, R. G., and Ludbrook, J., *Introduction to surgery* (Heinemann).

DS04. Children's Dentistry.

A course of instruction on child management and the materials and methods used in the treatment of injuries and diseases of children's teeth.

Text-book:

Finn, S. B., *Clinical pedodontics* (Saunders).

Reference books:

Brauer, J., and others, *Dentistry for children* (McGraw-Hill).

Davies, G. N., and King, R. M., *Dentistry for the pre-school child* (Livingstone).

McDonald, R. E., *Pedodontics* (Mosby).

McDonald, R. E., *Dentistry for the child and adolescent* (Mosby).

DS84. Periodontology.

Lectures and clinical practice in the recognition and treatment of pathology related to the periodontum and oral mucous membrane.

Text-books:

Goldman, H. M., and others, *An introduction to periodontia*, 4th edition (Mosby).

Manson, J. D., *Periodontics for the dental practitioner*, 2nd edition (Kimpton).

Reference books:

Glickman, I., *Clinical periodontology* (Saunders).

Goldman, H. M., and others, *Periodontal therapy*, 4th edition (Mosby).

Ramfjord, S. P., and Ash, M., *Occlusion* (Saunders).

DS24. Oral Pathology II.

This is an extension of Oral Pathology I (DS23).

By means of a course of lectures, clinical tutorials and practical classes, further instruction is given in oral pathology and microbiology and their relation to clinical dentistry.

Text-books:

Shafer, W. G., and others, *A textbook of oral pathology* (Saunders).

Lucas, R. B., *Pathology of tumours of the oral tissues* (Churchill).

U.S.A. National Naval Medical Center, *Color atlas of oral pathology* (Lippincott).

Reference books:

Stones, H. H., *Oral and dental diseases*, 5th edition (Livingstone).

Fish, E. W., *Surgical pathology of the mouth* (Pitman).

Burnett, G. W., and Scherp, H. W., *Oral microbiology and infectious diseases*, 3rd edition (Williams and Wilkins).

McCarthy, P. L., and Shklar, G., *Diseases of the oral mucosa* (McGraw-Hill).

Thoma, K. H., and Goldman, H. M., *Oral pathology*, 6th edition (Kimpton).

DS94. Pharmacology and Therapeutics.

Introductory lectures are given in the commencement term in third year; and the course proper extends over three terms in fourth year. It deals with drugs, their psysiological action and their application to clinical dentistry.

Text-books:

Francis, L. E., and Wood, D. R., *Dental pharmacology and therapeutics* (Saunders).

American Dental Association, Council on dental therapeutics, *Accepted dental therapeutics,* latest edition.

Reference books:

Beckman, H., *Pharmacology* (Saunders).

Laurence, D. R., *Clinical pharmacology* (Churchill).

DS14. Restorative Dentistry II.

The separate courses of instruction in operative dentistry, endodontics, crown and bridge prosthesis, ceramics, removable partial denture prosthesis, immediate replacement denture prosthesis and complete denture prosthesis are applied to the clinical treatment of patients.

Text-books:

Heartwell, C. M., *Syllabus of complete dentures* (Lea and Febiger).

Ingle, J. I., *Endodontics* (Lea and Febiger).

Johnston, J. F., and others, *Modern practice in crown and bridge prosthodontics* (Saunders).

McCall, J. O., and Wald, S. S., *Clinical dental roentgenology* (Saunders).

McCracken, W. L., *Partial denture construction: principles and techniques* (Mosby).

Reference books:

In addition to those listed under DS12 and DS13:

Applegate, O. C., *Essentials of removable partial denture prosthesis* (Saunders).

Bates, J. F., *Partial denture construction* (Wright).

Swenson, M. G., *Complete dentures,* 6th edition, by C. O. Boucher (Mosby).

Coolidge, E. D., and Kesel, R. G., *A text-book of endodontology* (Lea and Febiger).

Schlosser, R., and Gehl, D. H., *Complete denture prosthesis,* by D. H. Gehl and O. M. Drezen (Saunders).

Johnston, J. F., and others, *Modern practice in dental ceramics* (Saunders).

Osborne, J., and Lammie, G. A., *Partial dentures* (Blackwell).

Sharry, J. J., *Complete denture prosthodontics* (McGraw-Hill).

Tylman, S. D., *Theory and practice of crown and bridge prosthodontics* (Mosby).

FIFTH YEAR

DS05. Preventive Dentistry.

Epidemiology of dental disease; methods of control and treatment; relation of dental disease to systematic disease; the place of dentistry in public health programmes.

Text-books:

Muhler, J. C., and Wisan, J. M., *Preventive dentistry* (Kimpton).

Pelton, W. J., and Wisan, J. M., *Dentistry in public health* (Saunders).

Reference books:

O'Rourke, J. T., and Miner, L. M. S., *Oral physiology* (Mosby).

Clements, F. W., *et al., Diet and nutrition for the Australian people* (Angus and Robertson).

Sognnaes, R. F., *Chemistry and prevention of dental caries* (Thomas).

Goose, D. H., and Hartles, R. L., *Principles of preventive dentistry* (Pergamon Press).

Young, W. D., and Striffler, D. F., *The dentist, his practice and his community* (Saunders).

DS25. Orthodontics.

Lectures and clinical instruction in the growth and development of the craniofacial complex; the recognition, diagnosis and treatment of malocclusion and associated anomalies of the jaws by mechanical and surgical procedures.

Text-book:

Graber, T. M., *Orthodontics: principles and practice,* 2nd edition (Saunders).

Reference books:

Brash, J. C., *Four lectures on the aetiology of irregularity and malocclusion of the teeth* (Dental Board of the United Kingdom).

Horowitz, S. L., and Hixon, E. H., *The nature of orthodontic diagnosis* (Mosby).

Salzmann, J. A., *Practice of orthodontics,* Volumes I and II (Lippincott).

DS35. Oral Surgery and Anaesthesia.

A series of lectures and clinical tutorials is given on the principles and practice of oral surgery and the use of local anaesthesia and general anaesthesia.

Clinical practice includes routine minor oral surgery and elective oral surgery on out-patients, and major oral surgery on patients admitted as in-patients to the Royal Adelaide Hospital on a theatre list.

Text-books:

Jorgensen, N. B., and Hayden, J., *Premedication, local and general anaesthesia in dentistry* (Lea and Febiger).

Howe, G. L., *Minor oral surgery* (Wright).

Killey, H. C., and Kay, L. W., *The impacted wisdom tooth* (Livingstone).

Reference books:

Howe, G. L., *The extraction of teeth* (Wright).

Stacy, G. C., *Dental elevators* (Sydney U.P.).

Kruger, G. O., *Textbook of oral surgery,* 3rd edition (Mosby).

Nevin, M., and Puterbaugh, P. G., *Conduction, infiltration and general anaesthetics in dentistry* (Dental Items of Interest Publishing Co.).

Lee, J. A., *Synopsis of anaesthesia* (Wright).

Rowe, N. L., and Killey, H. C., *Fractures of the facial skeleton* (Livingstone).

DS45. Oral Medicine.

The course embraces all aspects of clinical oral pathology and its application to all branches of clinical dentistry.

The course includes examination and assessment of biopsy material and instruction in the use of special laboratory examination. During the year classes on histopathology, tutorials and seminars are given.

Books are as for Oral Pathology II.

DS15. Restorative Dentistry III.

This course is a continuation of studies and clinical practice in restorative dentistry.

Text-books and reference books:

Those listed under Dental Materials and Technics, and Restorative Dentistry I and II.

Principles of Dental Practice.

A short course of lectures on dental jurisprudence; forensic odontology; dental ethics; dental practice administration.

FACULTY OF ECONOMICS

SYLLABUS NUMBERS

The first letter identifies the Faculty of Economics: **E.**

The second letter identifies the Department teaching the subject:

Commerce ... ... **C** **Economics** ... ... **E**

Except in M.B.M. subjects, where it serves merely to differentiate the subjects.

The first digit

0–3: Indicates that the subject is in sequence with another subject.
4–6: Indicates that the subject is not in sequence with another subject.
7–9: Indicates service subject.

The second digit

1, 2, 3: Indicates year of subject, e.g. first, second or third.
[4–7: Not used.]
8: Indicates subject taken by Honours students before the Final Honours year.
9: Final Honours.
0: Indicates pre-dissertation subject for the degree of Master of Business Management.

ECONOMICS

The three main courses in Economics which constitute a sequence for the ordinary degrees of Bachelor of Arts and Bachelor of Economics are given annually, those in Economics II and Economics III being given alternately as day and evening lectures.

No student proceeding to a degree may take the course in Economics III until he has passed the final examination in Economics II, or the course in Economics II until he has passed the final examination in Economics I, or Economics (Engineering) at Division I standard or higher, provided that students who have passed with distinction or near distinction in Social Economics or Agricultural Economics may, with the approval of the Dean of the Faculty of Economics, enrol in Economics II.

It is proposed at present to give these courses in Economics as follows:

	1971	1972	1973
Economics I	Day and Evening	Day and Evening	Day and Evening
Economics II	Evening	Day	Evening
Economics III	Day	Evening	Day

This arrangement will permit a student to take the courses in Economics II and III in successive years as a sequence either of day lectures or of evening lectures, according to the year in which he takes Economics II.

EE01. Economics I.

The course will be given in 1971 as both day and evening lectures. It comprises two lectures and one tutorial a week. Its scope is as follows:

1. Introduction to the theory of value.
2. Introduction to the theory of outlay and employment.

Exemption from tutorials in Economics I is not usually granted.

Preliminary reading:

Drohan, N. T., and Day, J. H. (eds.), *Readings in Australian economics* (Cassell).

Australia. Economic Enquiry, Committee of. *Australian economic background,* from the *Report of the Committee* (Economic Standing Committee, Victorian Universities and Schools Examinations Board).

Galbraith, J. K., *The affluent society* (Penguin *or* Mentor).

Shackle, G. L. S., *Economics for pleasure* (C.U.P.) (paper-back).

Robinson, M. A., and others, *An introduction to economic reasoning* (Tudor) (Australian paper-back edition).

Robinson, Joan, *Economics: an awkward corner* (Allen and Unwin).

Text-books:

Leftwich, R. H., *The price system and resource allocation,* 3rd edition (Holt, Rinehart, Winston).

Brennan, M. J., *Theory of economic statics* (Prentice-Hall).

Lipsey, R. G., *An introduction to positive economics,* 2nd edition (Weidenfeld and Nicholson).

Harcourt, G. C., Karmel, P. H., and Wallace, R. H., *Economic activity* (C.U.P.).

Reference books:

Lancaster, K., *Introduction to modern microeconomics* (Rand McNally).

Samuelson, P. A., *Economics,* 4th, 5th, 6th or 7th edition (McGraw-Hill).

Samuelson, P. A., Hancock, K. J., and Wallace, R. H., *Economics,* Australian edition (McGraw-Hill).

Haig, B. D., and McBurney, S. S., *The interpretation of national income estimates* (A.N.U. Press).

Stonier, A. W., and Hague, D. A., *A text-book of economic theory* (Longmans).

Stigler, G. J., *The theory of price,* 3rd edition (Macmillan).

Schneider, E., *Pricing and equilibrium* (Allen and Unwin).

Schneider E., *Money, income and employment* (Allen and Unwin).

Bilas, R. A., *Micro-economic theory: a graphical analysis* (McGraw-Hill).

Gisser, M., *Introduction to price theory* (International Textbook Company).

Allen, C. L., *Elementary mathematics of price theory* (Wadsworth).

Watson, D. S., *Price theory in action: a book of readings* (Houghton Mifflin).

Breit, W., and Hochman, H. M. (eds.), *Readings in microeconomics* (Holt, Rinehart and Winston).

Braff, A. J., *Microeconomic analysis* (Wiley).

Additional references will be prescribed by the lecturers.

EE02. Economics II.

Students who passed Economics I prior to 1951 and who wish to take Economics II will be required to attend in addition to the full course in Economics II one lecture a week in Section 2 of Economics I and to pass in a special examination covering this work. This special examination may be taken prior to or at the same time as the examination in Economics II.

Exemption from tutorials in Economics II is not usually granted.

Economics II will be given in 1971 as evening lectures. It comprises two lectures and one tutorial a week. Its scope is as follows:

1. Money, banking and finance with special reference to the general level of economic activity.
2. Principles of industrial and agricultural organization in the Australian economy; pricing theory and policy; government policy in industry.

Preliminary reading:

Caves, R. E., *American industry: structure, conduct, performance,* 2nd edition (Prentice-Hall).

Morgan, E. V., *A history of money* (Pelican).

Goldsmith, R. W., *Financial institutions* (Random House).

Text-books:

Dernburg, T. F., and McDougall, D. M., *Macro-economics* (McGraw-Hill).

Hirst, R. R., and Wallace, R. H., *Studies in the Australian capital market* (Cheshire).

Arndt, H. W., and Harris, C., *The Australian trading banks,* 3rd edition (Cheshire).

Karmel, P. H., and Brunt, M., *The structure of the Australian economy* (Cheshire).

Due, J. F., and Clower, R. W., *Intermediate economic analysis* (Irwin).

Bain, J. S., *Price theory* (Holt).

Cohen, K. J., and Cyert, R. M., *Theory of the firm* (Prentice-Hall).

Bilas, R., *Microeconomic theory* (McGraw-Hill).

Text-books:

Reference books:

Harcourt, G. C., Karmel, P. H., and Wallace, R. H., *Economic activity* (C.U.P.).

Moore, B. J., *An introduction to the theory of finance* (Free Press).

Mayer, T., *Monetary policy in the United States* (Random House).

Rose, P. J., *Australian securities markets* (Cheshire).

Shapiro, E., and others, *Money and banking,* 5th edition (Holt, Rinehart and Winston).

Day, A. C. L., and Beza, S., *Money and income* (O.U.P.).

Sayers, R. S., *Modern banking,* 7th edition (O.U.P.).

Dean, E., *The controversy over the quantity theory of money* (Heath).

Shapiro, E., *Macroeconomic analysis* (Harcourt, Brace and World).

Giblin, L. F., *The growth of a central bank* (M.U.P.).

Great Britain. Treasury. Committee on the working of the monetary system. *Report.* (H.M.S.O.).

Reserve Bank of Australia, *Staff Paper, flow of funds, Australia* 1953-54 to 1961-62 (A. S. Holmes).

Robertson, D. H., *Lectures on economic principles* (Fontana).

Crick, W. (ed.), *Commonwealth banking systems* (O.U.P.).

Hart, A., and Kenen, P., *Money debt and economic activity* (Prentice-Hall).

Drake, P. J., *Money and finance in Malaya and Singapore* (A.N.U. Press).

Smith, W. L., and Teigen, R. (eds.), *Readings in money, national income and stabilization policy* (Irwin).

Mueller, M. G., *Readings in macro-economics* (Holt).

Thorn, R. S. (ed.), *Monetary theory and policy* (Random House).

Chamberlin, E. H., *The theory of monopolistic competition* (Harvard U.P.).

Richardson, J. E., *Introduction to the Trade Practices Act* (Hicks Smith).

Wheelwright, E. L., and Miskelly, J., *Anatomy of Australian manufacturing industry* (Law Book Co.).
American Economic Association, *Readings in price theory* (Irwin).
American Economic Association, *Readings in industrial organization and public policy* (Irwin).
Singer, E. M., *Antitrust economics* (Prentice-Hall).
Galbraith, J. K., *The new industrial state* (Hamish Hamilton).
Schumpeter, J. A., *Capitalism, socialism and democracy,* 2nd edition (Harper).
Galbraith, J. K., *American capitalism* (Houghton Mifflin; Hamish Hamilton).
Bain, J. S., *Barriers to new competition* (Harvard U.P.).
Hunter, A. (ed.), *The economics of Australian industry* (M.U.P.).
Penrose, E., *The theory of the growth of the firm* (Blackwell).
Williams, B. R., *Technology, investment and growth* (Chapman and Hall).
Stubbs, P., *Innovation and research* (Cheshire).
Brash, D. T., *American investment in Australian industry* (A.N.U.).
Needham, D., *Economic analysis and industrial structure* (Holt, Rinehart and Winston).

Additional references will be prescribed by the lecturers.

EE03. Economics III.

The course will be given in 1971 as day lectures. It comprises three lectures and one tutorial a week. The course consists of Part A and *either* Part B *or* Part C *or* Part D, *or* Part E.

Exemption from tutorials in Economics III is not usually granted.

Preliminary reading:
Robinson, J., *Economics: an awkward corner* (Allen and Unwin).
Pen, J., *Modern economics* (Pelican A710).
Harcourt, G. C., Karmel, P. H., and Wallace, R. H., *Economic activity* (C.U.P.).

PART A.

Theory of economic activity and the trade cycle; introduction to the theory of growth; wages; the general price level; international economics; the balance of payments; international money.

Text-books:
Keynes, J. M., *General theory of employment, interest and money* (Macmillan).
Day, A. C. L., *Outline of monetary economics* (O.U.P.).
Tew, B., *International monetary co-operation,* 9th edition (Hutchinson).
Matthews, R. C. O., *The trade cycle* (C.U.P.).
Mueller, M. G., *Readings in macro-economics* (Holt).
Ackley, G., *Macroeconomic theory* (Macmillan).
Australia; Census and Statistics, Bureau of,
Australian balance of payments (latest issue),
Australian economy (latest issue).

Reference books:
Allen, R. G. D., *Macro-economic theory* (Macmillan).
Duesenberry, J. S., *Business cycles and economic growth* (McGraw-Hill).
Evans, M. K., *Macroeconomic activity* (Harper and Row).
Hansen, A., *A guide to Keynes* (McGraw-Hill).
Lekachman, R., *Keynes' general theory: reports of three decades* (Macmillan).
Bober, S., *The economics of cycles and growth* (Wiley).

Rowan, D. C., *Output, inflation and growth* (Macmillan).
Meyer, J. R., and Glauber, R. R., *Investment decisions, economic forecasting and public policy* (Grad. school of business admin., Harvard Univ.).
Klein, L., *The Keynesian revolution* (Macmillan).
American Economic Association, *Surveys of economic theory,* vol. 1 (Macmillan).
Australia. Economic Enquiry, Committee of, *Report,* vols. 1 and 2.
Australia. Treasury. *Department of Treasury Information Bulletin,* Supplement, February, 1966: "The Australian balance of payments".
Australia. Treasury. *Department of Treasury Information Bulletin,* Supplement, May, 1965: "Private overseas investment in Australia".
Cohen, B. J., *Balance of payments policy* (Penguin modern economics).
Cooper, R. N., *International finance* (Penguin modern economics).
Kindleberger, C. P., *International economics,* latest edition (Irwin).
Meade, J. E., *Theory of international economic policy,* Vol. I. *The balance of payments* (O.U.P.).
Machlup, F., *International monetary economics* (Allen and Unwin).
Johnson, H. G., *Money, trade and economic growth* (Allen and Unwin).
Arndt, H. W., and Corden, W. M., *The Australian economy* (Cheshire).
Isaac, J. E., and Ford, G. W. (eds.), *Australian labour economics* (Sun Books).
Triffin, R., *Our international monetary system* (Random House).
Ball, R. J., and Doyle, P. (eds.), *Inflation* (Penguin).
McCormick, B. J., and Owen Smith, E. (eds.), *The labour market* (Penguin).
Isaac, J. E., *Wages and productivity* (Cheshire).

Additional references will be prescribed by the lecturers.

PART B (Public Finance).

The course is concerned with the theory and practice of public finance: the public sector; theory of public goods; cost-benefit analysis and public expenditures; theory of taxation; taxation in Australia; federal-state fiscal relations; fiscal policy.

Preliminary reading:

Eckstein, O., *Public finance,* 2nd edition (Prentice-Hall).
McKean, R., *Public spending* (McGraw-Hill).

Text-books:

Downing, R. I., and others, *Taxation in Australia — agenda for reform* (M.U.P.).
Due, J. F., *Government finance,* 4th edition (Irwin).

Reference books:

Musgrave, R. A., *The theory of public finance* (McGraw-Hill).
Johansen, L., *Public economics* (North-Holland).
Shoup, C., *Public finance* (Aldine).
Kaldor, N., *An expenditure tax* (Allen and Unwin).
Mathews, R. L., *Public investment in Australia* (Cheshire).
Simons, H., *Personal income taxation* (Chicago U.P.).
Turvey, R. (ed.), *Public enterprise* (Penguin).
Friedman, M., and Heller, W. W., *Monetary v. fiscal policy: a dialogue* (Norton).
American Economic Association, *Readings in fiscal policy* (Allen and Unwin).
American Economic Association, *Readings in the economics of taxation* (Allen and Unwin).
Australia; Commonwealth Grants Commission, *Reports.*

Additional references will be prescribed by the lecturers.

PART C (Economics of Labour).

This course is essentially a study of the interaction of economic and institutional factors in the labour market. The topics studied will include processes of wage determination; factors influencing the relative wage structure; industrial relations systems; unemployment and the labour force; basic theories of inflation; and wages and incomes policies. Emphasis will be given to the role of the Australian arbitration system in relation to general economic policy.

Text-books:

Isaac, J. E., and Ford, G. W., *Australian labor economics: readings* (Sun Books).

McCormick, B. J., and Smith, E. O., *The labour market* (Penguin).

Reference books:

Ball, R. J., and Doyle, P., *Inflation* (Penguin).

Cartter, A. M., *Theory of wages and employment* (Irwin).

Cartter, A. M., and Marshall, F. R., *Labor economics: wages, employment; and trade unionism* (Irwin).

Dunlop, J. T., *Wage determination under trade unions* (Kelley).

Flanders, A., and Clegg, H., *The system of industrial relations in Great Britain* (Blackwell).

Fleischer, B. M., *Labor economics: theory and evidence* (Prentice-Hall).

Hicks, J. R., *The theory of wages,* 2nd edition (Papermac).

International Labor Office, *Job evaluation* (I.L.O. Studies and Reports N.S. 56).

Isaac, J. E., and Ford, G. W., *Australian labor relations: readings* (Sun Books).

Isaac, J. E., *Wages and productivity* (Cheshire).

Jaques, E., *Equitable payment* (Pelican).

O'Dea, R., *Industrial relations in Australia* (West).

Perlman, R., *Labor theory* (Wiley).

Rees, A., *The economics of trade unions* (Chicago U.P.).

Roberts, B. C. (ed.), *Industrial relations,* revised edition (Methuen).

Wootton, B., *The social foundations of wage policy,* 2nd edition (Allen and Unwin).

PART D (Agricultural Economics).

The role of agriculture in the Australian economy; the characteristics of agriculture; the objectives of agricultural policy and supporting measures; capital formation; recent and current problems, such as the cost-price squeeze, protection of the dairy industry, quota restrictions on wheat production, and the reserve price plan for wool.

Reference books:

Crawford, J. G., *Australian agricultural policy* (Joseph Fisher Lecture, University of Adelaide).

Johnson, D. G., *Forward prices for agriculture* (University of Chicago).

Australia, Rural Reconstruction Commission, *First report: a general survey* (Government Printer).

Schultz, T. W., *Production and welfare of agriculture* (Macmillan).

Williams, D. B., *Agriculture in the Australian economy* (Sydney Univ. Press).

Additional references will be prescribed by the lecturers.

PART E (History of Economic Thought).

The course covers some of the main contributions to economic thought of the leading economists from Adam Smith up to recent times. The emphasis is on contributions to economic theory. Students are expected to work mainly from secondary sources.

Text-books:

Rima, I., *Development of economic analysis* (Irwin).

Blaug, M., *Economic theory in retrospect* (Heinemann).

Reference books:

Hutchison, T. W., *Review of economic doctrines* (Clarendon).

Stigler, G., *Production and distribution theories* (Macmillan).

Eshag, E., *From Marshall to Keynes* (Blackwell).

Seligman, B. B., *Main currents in modern economics: economic thought since* 1870 (Free Press of Glencoe).

Haberler, G., *Prosperity and depression* (League of Nations).

Additional references will be prescribed by the lecturers.

EE12. Economic Development I.

Pre-requisite subject: Social Economics *or* Economics I.

This course, comprising two lectures and one tutorial a week, will be given as day lectures in 1971.

The course is concerned with the economic development of Great Britain, the United States of America and Australia. It will attempt to show how economic change was related to the social and economic position of these countries and how simple economic models can be used to analyse their development.

Preliminary reading:

Rostow, W. W., *The stages of economic growth* (C.U.P.).

Text-books:

Griffin, J. (ed.), *Essays in economic history of Australia* (Jacaranda).

North, D. C., *The economic growth of the United States* 1790-1860 (Norton).

Forster, C. (ed.), *Australian economic development in the twentieth century* (Allen and Unwin).

Reference books:

Lewis, W. A., *The theory of economic growth* (Allen and Unwin).

Landes, D. S., *The unbound Prometheus* (C.U.P.).

Gerschenkron, A., *Economic backwardness in historical perspective* (Harvard U.P.).

Tawney, R. H., *Religion and the rise of capitalism* (Pelican).

Wilson, C., *England's apprenticeship* 1603-1763 (Longmans).

Chambers, J. D., and Mingay, G. E., *The agricultural revolution,* 1750-1880 (Batsford).

Jones, E. L., *Agriculture and economic growth in England,* 1650-1815 (Methuen).

Ashton, T. S., *An economic history of England,* Vol. 3: *The eighteenth century* (Methuen).

Deane, P., and Cole, W. A., *British economic growth* 1688-1959 (C.U.P.).

Ashton, T. S., *The industrial revolution* 1760-1830 (Home University Library).

Deane, P., *The first industrial revolution* (C.U.P.).

Chambers, J. D., *The workshop of the world* (O.U.P.).

Checkland, S. G., *The rise of industrial society in England* 1815-1885 (Longmans).

Matthews, R. C. O., *A study in trade-cycle history* (C.U.P.).

Imlah, A. H., *Economic elements in the Pax Britannica* (Harvard U.P.).

Ashworth, W., *An economic history of England* 1870-1939 (Methuen).

Cairncross, A. K., *Home and foreign investment* (C.U.P.).

Pollard, S., *The development of the British economy* 1914-1950 (Arnold).

Thistlethwaite, F., *The great experiment* (C.U.P.).

Harris, S. E., *American economic history* (McGraw Hill).

Williamson, H. F. (ed.), *Growth of the American economy* (Prentice-Hall).
Bruchey, S. W., *The roots of American economic growth* (Hutchinson).
Habakkuk, H. J., *American and British technology in the nineteenth century* (C.U.P.).
Dillard, D., *Economic development of the atlantic economy* (Prentice-Hall).
Hession, C. H., and Sardy, H., *Ascent to affluence* (Allyn and Bacon).
Temin, P., *The Jacksonian economy* (Norton).
Johnson, E. A. J., and Krooss, H. E., *The American economy* (Prentice-Hall).
Leuchtenburg, W. E., *The perils of prosperity* 1914-32 (Chicago U.P.).
Greenwood, G., *Australia: A social and political history* (Angus and Robertson).
Fitzpatrick, B., *The British Empire in Australia* (M.U.P.).
Shann, E. O. G., *An economic history of Australia* (Georgian House).
Butlin, S. J., *Australia and New Zealand Bank* (Longmans).
Butlin, N. G., *Investment in Australian economic development* 1861-1900 (C.U.P.).
Barnard, A., *The Australian wool market* 1840-1900 (M.U.P.).
Forster, C., *Industrial development in Australia* 1920-1930 (A.N.U.).
Blainey, G., *The tyranny of distance* (Sun).
Abbott, G. J., and Nairn, N. B., *Economic growth of Australia* 1788-1821 (M.U.P.).

Additional references will be prescribed by the lecturers.

EE13. Economic Development II.

Pre-requisite subjects: Economic Development I *or* History IIB; and Economics III, if not already completed, must be taken concurrently.

This course, comprising two seminars a week, will be given in 1971 as evening classes. It will be concerned with the secular development of economics and with a comparative study of economic systems. The programme will include a discussion of theories of growth with special emphasis given to the problems of developing countries. Students will be expected to produce case studies on selected countries.

Text-books:

Myrdal, G., *Asian drama* (Penguin *or* Random House).
Lewis, W. A., *Theory of economic growth* (Unwin).
Agarwala, A. N., and Singh, S. P., *The economics of underdevelopment* (O.U.P.).
Lewis, W. A., *Development planning* (Allen and Unwin).

Reference books (additional references will be supplied at the beginning of the course):

Domar, E., *Essays in the theory of economic growth* (O.U.P.).
Lekachman, R., *National policy for economic welfare* (Columbia U.P.).
Meier, G. M., *Leading issues in development economics* (O.U.P.)
Singer, H. W., *International development: growth and change* (McGraw-Hill).
Cairncross, A. K., *Factors in economic development* (Unwin).
Higgins, B. H., *Economic development* (Norton).
Okun, B., and Richardson, R. W., *Studies in economic development: a book of readings* (Holt).
Baumol, W. J., *Economic dynamics* (Macmillan).
Johnson, H. G., *Economic policies towards less developed countries* (Allen and Unwin).

Leibenstein, Harvey, *Economic backwardness and economic growth* (Wiley, Science Paper-back).

Zimmerman, L. J., *Poor lands, rich lands: the widening gap* (Random House, Paper-back).

Eicher, C. K., and Witt, L. W., *Agriculture in economic development* (McGraw-Hill).

Tinbergen, J., *Development planning* (Weidenfeld and Nicolson).

EE22. Economic Statistics I.

Pre-requisite subject: Economics I *or* Social Economics, unless the Head of the Department of Economics determines otherwise.

This course is given annually, alternately as day lectures and evening lectures. It will be given in 1971 as evening lectures. It comprises two lectures and one tutorial a week.

The course provides an introduction to statistical methods with special reference to applications in the field of economics. It includes discussion of the available Australian economic statistics and of the methods of compilation. The principal topics are: collection, presentation and description of data, with special reference to frequency distributions; sampling, significance and elementary decision theory, including the use of the normal, t and χ^2 distributions; linear regression and correlation; time series; sample surveys; quality control; elementary statistical computing; index numbers of prices and volume.

Students will be required to prepare class exercises. Permission to sit for the final examination will not be granted unless a satisfactory standard in them has been reached.

Text-books:

Karmel, P. H., and Polasek, M., *Applied statistics for economists* (Pitman); *or*

Neter, J., and Wasserman, W., *Fundamental statistics for business and economics*, 3rd edition (Allyn and Bacon) *or*

Yamane, Taro, *Statistics, an introductory analysis*, 2nd edition (Harper and Row).

Reference books:

Langley, R., *Practical statistics for non-mathematical people* (Pan).

Moroney, M. J., *Facts from figures* (Penguin).

Yates, F., *Sampling methods for censuses and surveys* (Charles Griffin).

Pearson, E., *The application of statistical methods in industrial standardization and quality control* (see British standards institution. Standard specifications, No. 600).

Spiegel, M. R., *Theory and problems of statistics* (Schaum).

Huff, D., *How to take a chance* (Gollancz, and Penguin).

Mudgett, B. D., *Index numbers* (Wiley).

Carter, C. F., and others, *The measurement of production movements* (C.U.P.).

Merrett, A. J., and Bannock, G., *Business economics and statistics* (Hutchinson).

Palmer G. R., *A guide to Australian Economic Statistics* (Macmillan).

Shao, S. P., *Statistics for business and economics* (C. E. Merrill Books, Inc.).

Simone, A. J., *Probability: an introduction with applications* (Allyn and Bacon).

Chou, Ya-lun, *Statistical analysis* (Holt, Rinehart and Winston).

Friday, F. A., *The elements of probability and sampling* (Blackwell).

Wetherill. G. B., *Elementary statistical methods* (Methuen).

Boot, J. C. G., and Cox, E. B., *Statistical analysis for managerial decisions* (McGraw-Hill).

Greenwald, W., *Statistics for economists* (Merrill).

Edwards, W., and Tversky, A. (eds.), *Decision making* (Penguin).

Kazmier, L. J., *Statistical analysis for business and economics* (McGraw-Hill).

Additional references will be prescribed by the lecturers.

Students will be expected to familiarize themselves with the publications of the Commonwealth Bureau of Census and Statistics, and they should procure a copy of the latest issue of the *Labour report* (Govt. Printer, Canberra).

EE32. Economic Statistics IA.

Pre-requisite subjects: Mathematics (Economics) and Economics I.

Students other than candidates for the degree of Master of Business Management may enrol for this subject only with the permission of the Head of the Department of Economics.

The course comprises two lectures and one tutorial a week. In 1971 the course will be given as evening lectures and thereafter will alternate between day and evening lectures. From 1971 Economic Statistics IA will be a pre-requisite for Economic Statistics II. From that time Economic Statistics I will not be acceptable as a pre-requisite for Economic Statistics II.

Students will be required to prepare class exercises. Permission to sit for the final examination will not be granted unless a satisfactory standard in them has been obtained.

The course will deal with an essentially mathematical approach to probability and statistical inference with economic applications. The topics covered will include: probability and probability distributions, expected values and moments, testing hypotheses, estimation—including multiple regressions, time series, index numbers, quality control, demography, introduction to electronic computing.

Text-books:

Larson, H. J., *Introduction to probability theory and statistical inference* (Wiley).

Additional references will be prescribed by the lecturers.

EE23. Economic Statistics II.

Pre-requisite subjects: Economic Statistics IA and Mathematics (Economics) or Mathematics I and a knowledge of elementary matrix algebra.

Students may enrol for this subject only with the permission of the Head of the Department of Economics.

This course comprises two lectures and one tutorial a week. Students will be required to prepare class exercises. Permission to sit for the final examination will not be granted unless a satisfactory standard in them has been obtained.

The course will deal with the estimation of economic relationships and with statistical applications to business problems and will include the following topics: single equation and multiple equation estimation in econometric models; elementary linear programming; inventory analysis; decision making under certainty and uncertainty, sample surveys.

Text-books:

Johnston, J., *Econometric methods* (McGraw-Hill, International Student Edition).

Llewellyn, R., *Linear programming* (Holt, Rinehart and Winston).

Schlaifer, R., *Probability and statistics for business decisions* (McGraw-Hill, International Student Edition).

Reference books:

Christ, C., *Econometric models and methods* (Wiley).

Kane, E. J., *Economic statistics and econometrics* (Harper and Row).

Leser, C. E. V., *Econometric techniques and problems* (Griffin).

Walters, A. A., *An introduction to econometrics* (Macmillan).

Cramer, J. S., *Empirical econometrics* (North-Holland).

EE41. Mathematics (Economics).

No pre-requisite subjects are formally required. However, a sound knowledge of Leaving Mathematics is assumed. Students are also advised (though not required) to have done Economics I, or to do Economics I concurrently.

The course is given, in alternate years, as day and evening lectures. It will be given as day lectures in 1971. It comprises three lectures and one tutorial a week. Of these, one lecture per week and some tutorial work is optional for students who have a knowledge of Matriculation Mathematics. Exercises will be set each week and permission to sit for the final examination will not be granted unless a satisfactory standard has been reached.

The main emphasis of the syllabus will be on:

(a) calculus—with applications to problems in economics and commerce.

(b) matrix algebra—with applications to economic models.

Preliminary reading:

Sawyer, W. W., *Prelude to mathematics* (Pelican).
Gray, J. F., *Sets, relations, and functions* (Holt).

Text-books:

Yamane, T., *Mathematics for economists*, 2nd edition (Prentice-Hall).

Chiang, A. C., *Fundamental methods of mathematical economics* (McGraw-Hill).

Peston, M. H., *Elementary matrices for economics* (Routledge and Kegan Paul).

Reference books:

Henry, S. G. B., *Elementary mathematical economics* (Routledge and Kegan Paul).

Kemeny, J. G., and others, *Introduction to finite mathematics*, 2nd edition (Prentice-Hall).

Kemeny, J. G., and others, *Finite mathematics with business applications* (Prentice-Hall).

Archibald, G. C., and Lipsey, R. G., *An introduction to a mathematical treatment of economics* (Weidenfeld and Nicholson).

Dean, B. V., and others, *Mathematics for modern management* (Wiley).

EE52. Public Finance.

Pre-requisite subject: Economics I *or* Social Economics.

This course is offered for students proceeding to the Diploma in Public Administration. It will be offered in 1971, and will be given if sufficient students enrol.

The course is concerned with the theory and practice of public finance: the public sector; theory of public goods; cost-benefit analysis and public expenditures; theory of taxation; taxation in Australia; federal-state fiscal relations; fiscal policy.

Reference books:

As for Economics III, Part B.

EE68. Economic Theory.

Students may enrol for this subject only with the permission of the Head of the Department of Economics.

The course comprises two lectures a week on advanced theory of value and advanced theory of outlay. Students should consult the lecturers for guidance in preliminary reading.

EE99. Economics for the Honours degrees of B.A. and B.Ec.

Detailed arrangements for classes will depend on enrolments, and students are advised to communicate with the Dean of the Faculty of Economics well before the beginning of the academic year. Students will be admitted to honours classes only with the approval of the Dean. The honours work falls into two divisions. Interim honours classes are conducted for students in the third year and final honours classes in the fourth year.

INTERIM HONOURS:

Interim honours students will take the course in Economic Theory.

FINAL HONOURS:

(i) Final honours students are required to undertake a research project and present a thesis on it of not more than 10,000 words. The thesis will form part of the final honours examination. Students must have the subject of their theses approved by the Dean of the Faculty and be allotted to supervisors before the end of the academic year preceding their final honours year. Students must commence work on their projects during the long vacation preceding their final honours year and must report to their supervisors not later than during the first week of February. They will be required to keep in touch with their supervisors, to present a progress report to them not later than during the first week of the first term, and to submit a final draft of their theses not later than during the seventh week of the first term. Four copies of the thesis typed double spaced on quarto paper must be presented not later than the first day of the second term. Students will be required to submit themselves to an oral examination on their theses during the second term.

(ii) Each student will select two options from the following list. Classes and tutorials in these subjects will be arranged to take place in second and third terms.

International Economics	Theory of Accounting
Monetary Theory and Policy	Managerial Economics
Econometrics	Development
Business Statistics	Capital and Growth

(iii) A weekly seminar in Applied Economics will be held throughout the year.

(iv) The examination will consist of:

(a) The thesis.

(b) Two papers in Applied Economics.

(c) One paper in each of the two optional subjects.

ADDITIONAL SUBJECTS

EE71. Social Economics.

This course is designed for students who intend to take only a one-year course in Economics, and all such students are recommended to take it instead of the course in Economics I. It will not be accepted as qualifying a student to proceed with the course in Economics II (for which Economics I is a pre-requisite), except that students who have passed with at least a credit in Social Economics may, with the approval of the Professor of Economics, be permitted to proceed with Economics II.

This course is given annually alternatively as day lectures and evening lectures. It will be given in 1971 as day lectures. It comprises two lectures and one tutorial a week. Its scope is as follows:

The economic basis of social welfare, with special reference to the following topics: demand and supply; competition and monopoly; distribution of income and wealth; international trade; national accounting; money and banking; theory of employment; government policy in depression and inflation; capital accumulation in underdeveloped areas.

Preliminary reading:

Heilbroner, R. L., *The making of economic society* (Prentice-Hall).

Text-books:

Gill, R. T., *Economic development past and present* (Prentice-Hall).

Karmel, P. H., and Brunt, M., *The structure of the Australian economy* (Cheshire).

Samuelson, P. A., Hancock, K. J., and Wallace, R. H., *Economics*, Australian ed. (McGraw-Hill).

Reference books will be prescribed in lectures.

EE83. Agricultural Economics I.

EE84. Agricultural Economics II.

For syllabuses see under Faculty of Agricultural Science.

COMMERCE

EC01. Elements of Accounting.

The course comprises two lectures (of one hour) and one tutorial class (of ninety minutes) each week throughout the academic year. Students are required to submit written assignments throughout the year, and permission to sit for the final examination will not be granted unless a satisfactory standard in them has been reached. No prior knowledge of the subject is required. Day lectures are given in even years, evening lectures in odd years.

The accounting process; introduction to the theory of valuation and income measurement; consolidations; sources and uses of funds; function of the auditor; analysis and interpretation of financial accounting reports.

Text-books:

Finney, H. A., and Miller, H. E., *The accounting process* (Prentice-Hall).

Gordon, M. J., and Shillinglaw, G., *Accounting, a management approach*, 4th edition (Irwin).

Sidebotham, R., *Introduction to the theory and context of accounting* (Pergamon).

Baxter, W. T., and Davidson, S. (eds.), *Studies in accounting theory* (Law Book Co.)

Reference book:

Mathews, R. L., *Accounting for economists* (Cheshire).

EC02. Management Accounting.

Pre-requisite subjects: Elements of Accounting, Economics I.

(Economic Statistics I or IA, if not previously passed, should be taken concurrently.)

A general course in management accounting and business finance, including an introduction to cost accounting and a study of the relationship between accounting and economic theory. The course consists of two lectures plus one tutorial each week. Day lectures are given in odd years, evening lectures in even years. Day tutorials are given every year, but evening tutorials in even years only.

Elements of organization theory, with emphasis on planning and control; budgets and performance reports and introduction to critical path analysis; standards and variances for materials and labour; methods of cost accumulation; accounting for overheads; cost-output relationships; flexible budgets and variable costing; overhead and joint costs; cost concepts in relation to price, production and inventory policy; financial mathematics; business finance—factors affecting the demand for capital, sources of finance, the Australian capital market, optimum financial structure, share valuation, cost of capital; investment planning.

Text-books:

Shillinglaw, G., *Cost accounting, analysis and control,* revised edition (Irwin).

Solomons, D. (ed.), *Studies in cost analysis,* 2nd edition (Sweet and Maxwell).

Makeham, J. P., and others, *Best-bet farm decisions* (Dept. of Farm Management, Univ. of New England, Armidale).

Reference books:

Argenti, J., *Corporate planning: a practical guide* (Allen and Unwin).

Battersby, A., *Network analysis for planning and scheduling* (Macmillan).

Bennett, J. W., and others, *Topics in business finance and accounting* (Cheshire).

Bierman, H., and Smidt, S., *The capital budgeting decision* (Macmillan).

Dopuch, N., and Birnberg, J. G., *Cost accounting: accounting data for management's decisions* (Harcourt, Brace and World).

Drucker, P. F., *The practice of management* (Mercury or Pan).

Hirst, R. R., and Wallace, R. H. (eds.), *Studies in the Australian capital market* (Cheshire).

Horngren, C. T., *Cost accounting: a managerial emphasis* (Prentice-Hall).

Hummel, P. M., and Seebeck, C. L., *Mathematics of finance* (McGraw-Hill) (or any standard financial mathematics text).

Mathews, R. L., *Accounting for economists* (Cheshire).

Rappaport, A. (ed.), *Information for decision making* (Prentice-Hall).

Richards, M. D., and Nielander, W. A. (ed.), *Readings in management* (South-Western).

Simon, H. A., *Administrative behaviour* (Free Press).

Weston, J. F., and Brigham, E. F., *Managerial finance,* 3rd edition (Holt, Rinehart and Winston).

EC03. Financial Accounting.

Pre-requisite subjects: Management Accounting, Economic Statistics I or IA. A knowledge of computer programming as taught in Economic Statistics I or IA during 1970 will be assumed.

The course comprises two lectures and one tutorial class a week. Day lectures are given in even years, evening lectures in odd years. Day tutorials are given every year, but evening tutorials in odd years only.

Income measurement and the effect of price changes; current problems in financial accounting; consolidations; verification; valuation of assets, shares and enterprises; introduction to electronic data processing information systems and systems analysis.

Text-books:

National Computing Centre, *Basic training in systems analysis,* ed. A. Daniels and D. Yeates (Pitman).

Hendriksen, E. S., *Accounting theory* (Irwin).

Reference books:

Davis, G. B., *An introduction to electronic computers* (McGraw-Hill).

Baxter, W. T., and Davidson, S., (eds.), *Studies in accounting theory* (Irwin).

Davidson, S., and others, (eds.), *An income approach to accounting theory* (Prentice-Hall).

Bennett, J. W., and others, *Topics in business finance and accounting* (Cheshire).

Edwards, E. O., and Bell, P. W., *The theory and measurement of business income* (University of California Press).

American Accounting Association, *A statement of basic accounting theory* (The Association).

American Institute of Certified Public Accountants, *Accounting research studies.*

Bierman, H., *Financial accounting theory* (Macmillan).

Parker, R. H., and Harcourt, G. C., *Readings in the concept and measurement of income* (C.U.P.).

Boutell, W. S., *Computer-oriented business systems* (Prentice-Hall).

Zeff, S. A., and Keller, T. F., *Financial accounting theory* (McGraw-Hill).

Chambers, R. J., *Accounting, evaluation and economic behaviour* (Prentice-Hall).

Bedford, N. M., *Income determination theory: an accounting framework* (Addison-Wesley).

Lee, L. N., and McPherson, L. A., *Consolidated statements and group accounts* (Law Book Co.).

Mautz, R. K., *Fundamentals of auditing*, 2nd edition (Wiley).

Cyert, R. M., and Davidson, H. J., *Statistical sampling for accounting information* (Prentice-Hall).

Clifton, H. D., *Systems analysis for business data processing* (Business Books).

Prince, T. R., *Information systems for management planning and control* (Irwin).

Appropriate programming manuals for computers available to the University.

EC13. Commercial Law.

Pre-requisite subject: Elements of Accounting.

The course comprises two evening lectures a week and tutorial classes as arranged throughout the academic year.

A general introduction to the legal system in Australia; general principles of the law of contract and of the law of agency; the law relating to companies and partnerships.

The following South Australian statutes, which may be taken into examinations, should be acquired:

Partnership Act, 1891-1935.

Companies Act, 1962-68.

Text-books:

Derham, D. P., Maher, F. K. H., and Waller, P. L., *Judicial precedent and statutory interpretation* (Law Book Co.).

Atiyah, P. S., *An introduction to the law of contract* (O.U.P.).

Underhill, A., *Principles of the law of partnership*, 8th ed. (Butterworth).

Gower, L. C. B., *Principles of modern company law*, 3rd ed. (Stevens).

Shtein, B. J. L., and Lindgren, K. E., *An introduction to business law* (Law Book Co., 1970).

Reference books:

Cheshire, G. C., and Fifoot, C. H. S., *The law of contract*, 2nd Australian ed. (Butterworth).

Bowstead, W., *A digest of the law of agency*, 13th ed. (Sweet and Maxwell).

Higgins, P. F. B., *Law of partnership in Australia and New Zealand* (Law Book Co.).

Yorston, R. K., and Brown, S. R., *Company Law*, 3rd ed. (Law Book Co.).

EC23. Industrial Sociology.

Pre-requisite subject: Economics II.

This subject is offered as a day-time course in even years, and as an evening course in odd years.

The course comprises two lectures (of one hour) and one tutorial class (of ninety minutes) each week throughout the academic year. Students are required to prepare exercises and essays and permission to sit for the final examination will not be granted unless a satisfactory standard in them has been reached.

The relationship between business organization and technological processes and the social environment; types of business organization; the relationship of formal to informal organization; the structure of authority and the exercise of power—management, unions, technical experts, personnel staff; the impact of the work environment, community pressures and personal situation on individual behaviour, illustrated from research on productivity, absenteeism, labour turnover, strikes, morale; planned change in industry, with special reference to experimental studies. During the course, students will be introduced to the basic concepts of sociology and will critically consider selected theories of behaviour.

Recommended for preliminary reading:

Olmsted, M. S., *The small group* (Random House).

Shepherd, C. R., *Small groups: some sociological perspectives* (Chandler Publishing Co., San Francisco).

Berger, P. L., *Invitation to sociology* (Pelican).

Text-books:

Brown, J. A. C., *The social psychology of industry* (Pelican).

Mead, M., (ed.), *Cultural patterns and technical change* (Mentor).

Whyte, W. F., *Organizational behaviour* (Irwin-Dorsey).

Reference books:

Etzioni, A., *Modern organizations* (Prentice-Hall).

Gouldner, A., *Wildcat strike* (Antioch College Press).

Homans, G. C., *The human group* (Routledge and Kegan Paul).

Jaques, E., *The changing culture of a factory* (Tavistock).

Katz, D., and Kahn, R. L., *The social psychology of organizations* (Wiley).

Landsberger, H. A., *Hawthorne revisited* (Cornell U.P.).

Malpass, L. F., *Social behaviour* (McGraw-Hill).

Mann, F. C., and Hoffman, L. R., *Automation and the worker* (Holt).

Miller, E. J., and Rice, A. K., *Systems of organization* (Tavistock).

Presthus, R., *The organizational society* (Knopf).

Roethlisberger, F. J., and Dickson, W. J., *Management and the worker* (Wiley).

Sayles, L., *Behaviour of industrial work groups* (Wiley).

Walker, C. R., and Guest, R. H., *The man on the assembly line* (Harvard U.P.).

Walker, C. R., and Turner, A. N., *The foreman on the assembly line* (Harvard U.P.).

Warner, W. L., and Low, J. C., *The social system of the modern factory* (Yale U.P.).

Whyte, W. F., *Pattern for industrial peace* (Harper).

Woodward, J., *Management and technology* (H.M.S.O.).

Woodward, J., *Industrial organization: theory and practice* (O.U.P.)

COURSES FOR THE DEGREE OF M.B.M.

EC00. Accounting (Business Management).

The course is offered annually for students proceeding to the degree of Master of Business Management and for such other students as the Professor of Commerce may approve. Economics I, if not already passed, must be taken concurrently.

Students take the full course Management Accounting (EC02), and in addition one lecture per week during first and second terms. Written assignments will be set throughout the course.

Syllabus: As for Management Accounting (EC02), and in addition: The double-entry framework and the recording of business transactions; preparation of accounting reports; analysis and interpretation of accounting reports.

Text-books:

As listed under Management Accounting (EC02) and in addition:

Anthony, R. N., *Essentials of accounting* (Addison Wesley).

Reference books:

As listed under Management Accounting (EC02), and, in addition:

Gordon, M. J., and Shillinglaw, G., *Accounting, a management approach*, 4th edition (Irwin).

EC30. Economic Institutions and Policy.

The structure of the Australian economy — the structure of agricultural, industrial, labour and capital markets. Economic policy objectives, and weapons of economic policy — monetary, fiscal, wages and trade.

Reference books:

Karmel, P. H., and Brunt, M., *The structure of the Australian economy* (Cheshire).

Australia. Economic Enquiry, Committee of, *Report of the Committee of Economic Enquiry* (Vernon Report) (Government Printer, Canberra).

Hunter, A. (ed.), *The economics of Australian industry* (M.U.P.).

Williams, D. B., *Economic and technical problems of Australia's rural industries* (M.U.P.).

Arndt, H. W., and Corden, M. (eds.), *The Australian economy* (Cheshire).

Downing R. I., and others, *Taxation in Australia: agenda for reform* (M.U.P.).

Isaac, J. E., *Wages and productivity* (Cheshire).

EC50. Economic and Accounting Analysis.

Business environment and its relation to internal policies of the firm, employing both traditional economic analysis and behavioural theory. Cost and demand analysis. Linear programming. Marketing. Pricing problems including transfer pricing, product line pricing and price discrimination. Growth of firms by diversification and merger.

Preliminary reading:

Hague, D. C., *Managerial economics* (Longmans), Chapters 1-5.

Levitt, T., *Innovation in marketing* (Pan).

Text-book:

Haynes, W. W., *Managerial economics* (Business Publications).

Reference books:

Llewellyn, R. W., *Linear programming* (Holt, Rinehart and Winston).

Bain, J. S., *Price theory* (Wiley).

Hunter, A. (ed.), *The economics of Australian industry* (M.U.P.).

Johnston, J., *Statistical cost analysis* (McGraw-Hill).

Kotler, P., *Marketing management* (Prentice-Hall).

Caves, R. E., *American industry: structure, conduct, performance* (Prentice-Hall).

Cohen, K. J., and Cyert, R. M., *Theory of the firm* (Prentice-Hall).

Kaplan, A. D. H., and others, *Pricing in big business* (Brookings Inst.).

EC60. Business Statistics.

A knowledge of Mathematics (Economics) and Economic Statistics IA is assumed in this course. During February-March, 1971, a special vacation course will be offered for students intending to take Business Statistics who have passed in Mathematics (Economics) and Economic Statistics I but not in Economic Statistics IA.

Analysis of probabilistic processes, decision-making under uncertainty, mathematical programming. Analysis of production and marketing situations.

Text-books:

Moore, P. G., and Hodges, S.D. (eds.), *Programming for optimal decisions* (Penguin).

Schlaifer, R. O., *Probability and statistics for business decisions* (McGraw-Hill).

White, D., and others, *Operational research techniques*, vol. I (Business Books).

Hadley, G., and Whitin, T. M., *Analysis of inventory systems* (Prentice-Hall).

Reference books:

Elmaghraby, S. E., *The design of production systems* (Reinhold).

Hadley, G., *Introduction to probability and statistical decision theory* (Holden-Day).

Kemeny, J. G. and others, *Finite mathematics with business applications* (Prentice-Hall).

Llewellyn, R., *Linear programming* (Holt).

Nemhauser, G. L., *Introduction to dynamic programming* (Wiley).

Starr, M. K., and Miller, D. W., *Inventory control; theory and practice* (Prentice-Hall).

Schlaifer, R., *Analysis of decisions under uncertainty*, 2nd ed. (McGraw-Hill).

Raiffa, H., *Decision analysis* (Addison Wesley).

EC70. Decision-Making.

Cases in business policy, pricing, investment planning, finance, production cost control, marketing, and labour relations.

Text-books:

Hunt, P., and others, *Basic business finance, text and cases*, 3rd edition (Irwin).

Craig, H. F., *Australian case studies in business administration* (Law Book Co.).

Learned, E. P., and others, *Business policy: text and cases*, revised edition (Irwin).

EC80. Organization Theory and Behaviour.

A knowledge of EC23 Industrial Sociology is assumed in this course.

Consumer behaviour. Theory of organizations. Design of organization structure. Some topics in industrial relations and personnel management: conflict, negotiation, productivity agreements, problems of automation; interviewing, testing, selection.

Text-books:

Lawrence, P. R., and others, *Organizational behavior and administration* (Irwin Dorsey).

Thompson, J. D., *Organizations in action* (McGraw-Hill).

Seiler, J. A., *Systems analysis and organizational behaviour* (Irwin Dorsey).

Reference books:

Crane, E., *Marketing communications—a behavioral approach to men, messages and media* (Wiley).
Douglas, J., and others, *Human behavior in marketing* (Merrill).
Markin, R. J., *The psychology of consumer behavior* (Prentice-Hall).
Child, J., *British management thought* (Allen and Unwin).
Miller, E. J., and Rice, A. K., *Systems of organization* (Tavistock).
McGregor, D., *The human side of enterprise* (McGraw-Hill).
Brown, W. D. B., *Exploration in management* (Pelican).
Dalton, M., *Men who manage* (Wiley).
Litterer, J. A., *The analysis of organizations* (Wiley).
Kornhauser, A., and others, *Industrial conflict* (McGraw-Hill).
Rubenstein, A. H., and Haberstroh, C. J., *Some theories of organization* (Irwin).

Additional references will be prescribed by the lecturers in all subjects throughout the year.

FACULTY OF ENGINEERING

SYLLABUS NUMBERS

The first letter identifies the Faculty of Engineering: **N.**

The second letter identifies the Department teaching the subject, as follows:

Chemical Engineering ...	**H**	**Electrical Engineering** ...	**E**
Civil Engineering	**C**	**Mechanical Engineering** ...	**M**

X indicates that two or more Departments are responsible for the subject.

The first digit

0–5: indicates that the subject forms part of a sequence.
6–9: indicates that the subject does not form part of a sequence.

The second digit

1–4: indicates year of subject,* e.g. first, second, etc.
[5–8: not used.]
9: indicates subject available to Honours students only.

* Except in the cases of NE03. Electrical Engineering I and NE83. Vacation Course in Workshop Practice, which are taken by Electrical Engineering students in the second year of the course and NM85. Engineering Management, which is taken in the fourth year by Mechanical Engineering students.

CHEMICAL ENGINEERING COURSE

FIRST YEAR

SM01. Mathematics I.

SP01. Physics I.

SC01. Chemistry I.

For syllabuses see under Faculty of Science.

NX01. Engineering I.

1. STATICS.

Resultant of coplanar forces and spatial force and couple systems. Conditions of equilibrium. Vectorial representation. Solution of pinjointed frames. Transverse and axial loadings. Bending moment and shear force diagram. Centroid, centre of pressure. Moments and products of inertia and related theorems. Elements of hydrostatics. Virtual work.

2. DYNAMICS.

Dynamics of particles. Rectilinear and angular motion—uniform and variable acceleration. Curvilinear motion—acceleration components. Work, power, energy, momentum. Motion relative to moving axes. Conservation of energy and momentum, action of steady and impulsive forces and couples. Extension to dynamics of rigid bodies. Power transmission. Vibration.

3. GRAPHICS.

Projections (first and third angle).

Pictorial representation of data. Graphical mathematics (addition, subtraction, multiplication, division).

Graphical integration, differentiation, applications, functional scales, slide rule, adjacent charts, network charts, nomography.

4. ENGINEERING DRAWING.

Pictorial representation (dimetric, trimetric, isometric and perspective). Sketching. Drawing means of communication. Geometry of manufacturing processes. Functional dimensioning. Limits and fits, interchangeable assemblies. Standards and standardisation. Introduction to mechanical design.

5. GENERAL ENGINEERING.

A series of lectures on the broad scope of Engineering including its historical background and sociological implications.

Students are given an opportunity during the course of inspecting the facilities and learning something of the research objectives of the Engineering Department of the University.

Text-books:

Hoelscher, R. P., and others, *Graphics for engineers* (John Wiley).

Standards Assoc. of Australia. S.A.A. CZ1, *Engineering drawing practice* (The Assoc.).

British Standards Institution:
B.S.S., 1916 Part 1, *Limits and fits for engineering.*
B.S.S., 1916 Part 2, *Guide to the selection of fits.*

Meriam, J. L., *Statics* (Wiley).

Meriam, J. L., *Dynamics* (Wiley).

Reference book:

Beer, F. B., and Johnston, E. R., *Vector mechanics for engineers* (McGraw-Hill, I.S.E.).

SECOND YEAR.

SM12. Applied Mathematics II.

SC02. Physical and Inorganic Chemistry II.

For syllabuses see under Faculty of Science.

NH12. Chemical Engineering I.

Pre-requisite subjects: Chemistry I, Mathematics I and Physics I.

Chemical Engineering I is made up of parts 9 and 10 of Engineering II and III. Refer Schedule 9(b).

9. MATERIALS SCIENCE.

The course consists of two lectures and three hours laboratory work a week throughout the year.

It covers the following topics: Mechanical and rheological properties of real and idealized materials, atomic arrangements in solids, crystallography, imperfections in crystals. Phase equilibria in metals and alloys, the structure and properties of ceramic phases, plastic deformation of crystalline materials. Phase hairs formations and heat treatment of steels. Polymer structure, composition and mechanical properties, methods of testing, methods of processing. Corrosion theory and application. Composite materials.

Recommended preliminary reading:

Gordon, J. E., *The new science of strong materials* (Pelican).

Text-book:

Moffatt, W. G. (ed.), *The structure and properties of materials*, vols. 1-III (Wiley).

Reference books:

Billmeyer, F. W., *Textbook of polymer science* (Wiley).

Guy, A. G., *Elements of physical metallurgy* (Addison-Wesley).

Kingery, W. D., *Introduction to ceramics* (Wiley).

Samans, C. H., *Metallic materials in engineering* (Macmillan).

Uhlig, H. H., *Corrosion and corrosion control* (Wiley).

Van Vlack, L. H., *Elements of materials science* (Addison-Wesley).

10. STOICHIOMETRY.

One lecture and one three-hour tutorial per week covering an introduction to Chemical Engineering apparatus, equilibrium stage operations, mass and energy balances, and general Chemical Engineering calculations.

Text-books:

Schmidt, A. X., and List, H. L., *Material and energy balances* (Prentice-Hall); *or*

Henley, E. J., and Rosen, E. M., *Material and energy balance computations* (Wiley); *or*

Williams, E. T., and Johnson, R. C., *Stoichiometry for chemical engineers*, International Student edition (McGraw-Hill).

or

Whitwell, J. C., and Toner, R. K., *Conservation of mass and energy* (Ginn-Blaisdell).

Reference books:

Foust, A. S., *Principles of unit operations* (Wiley).

Badger, W. L., and Banchero, J. T., *Introduction to chemical engineering* (McGraw-Hill).

McCabe, W. L., and Smith, J. C., *Unit operations of chemical engineering* (McGraw-Hill).

Coulson, J. M., and Richardson, J. F., *Chemical engineering*, 2nd edition (Pergamon Press).

Brown, G. C., *Unit operations* (Wiley).

Riegel, E. R., *Chemical machinery* (Reinhold).

Treybal, R. E., *Mass transfer operations* (McGraw-Hill).

Smith, B. D., *Design of equilibrium stage processes* (McGraw-Hill).

THIRD YEAR

NH13. Chemical Engineering IIA.

Pre-requisite subject: Chemical Engineering I or IS.

LECTURES: Three hours per week throughout the year dealing with the general theory of molecular and turbulent transport of properties, fluid mechanics, heat transfer processes and mechanical processes.

TUTORIALS: Three hours per week throughout the year devoted to problems designed to illustrate the practical applications of the theory covered in lectures.

LABORATORY WORK: Three hours per week throughout the year on quantitative laboratory work designed to illustrate the principles of transport theory and fluid mechanics as applied to unit operations.

Text-books:

Holman, J. P., *Heat transfer*, 2nd edition (McGraw-Hill); *or*

Simonson, J. R., *An introduction to engineering heat transfer* (McGraw-Hill).

Daily, J. W., and Harleman, D. R. F., *Fluid dynamics* (Addison-Wesley).

Foust, A. S., *Principles of unit operations* (Wiley).

Reference books:

Perry, J. H., *Chemical engineers' handbook*, 4th edition (McGraw-Hill).

Coulson, J. M., and Richardson, J. F., *Chemical engineering*, 2 vols., 2nd edition (Pergamon Press).

Bird, R. B., and others, *Transport phenomena* (Wiley).
(Wiley).

McCabe, W. L., and Smith, J. C., *Unit operations of chemical engineering*, 2nd edition (McGraw-Hill).

Welty, J. R., Wilson, R. E., and Wicks, C. E., *Fundamentals of momentum, heat and mass transfer* (Wiley International Edition).

Sparrow, E. M., and Cess, R. D., *Radiation heat transfer*, revised edition (Brooks-Cole).

NH23. Chemical Engineering IIB.

Pre-requisite subjects: Physical and Inorganic Chemistry II and Applied Mathematics II.

This subject is divided into three parts:

(a) Thermodynamics and Kinetics.

Lectures: Two lectures a week throughout the year devoted to chemical engineering, thermodynamics and chemical reaction analysis.

Tutorials: Three hours a week for two terms devoted to problems designed to illustrate the practical applications of the theory covered in lectures.

Text-books:

Smith, J. M., and Van Ness, H. C., *Introduction to chemical engineering thermodynamics*, 2nd edition (McGraw-Hill).

Levenspiel, O. L., *Chemical reaction engineering* (Wiley).

Aris, R., *Elementary chemical reactor analysis* (Prentice-Hall).

Reference books:

Denbigh, K., *Principles of chemical equilibrium*, 2nd edition (C.U.P.).

Denbigh, K., *Chemical reactor theory* (C.U.P.).

Reid, R. C., and Sherwood, T. K., *The properties of gases and liquids* 2nd edition (McGraw-Hill).

Walas, S. M., *Reaction kinetics for chemical engineers* (McGraw-Hill).

Hougen, O. A., and others, *Chemical process principles*, Part II, 2nd edition (Wiley).

(b) Instrumentation and Process Control.

Lectures: One lecture a week throughout the year devoted to the principles of industrial instrumentation and an introduction to the elements of process control and process dynamics.

Tutorials: One hour a week.

Laboratory Work: Three hours a week.

Text-book:

Harriott, P., *Process control* (McGraw-Hill).

Reference books:

Considine, D. M., *Process instruments and controls handbook* (McGraw-Hill).

O'Higgins, P. J., *Basic instrumentation—industrial measurement* (McGraw-Hill).

(c) Seminar.

Three hours a week in first and second terms. Each student is required to submit an essay at the end of first term and present it at a seminar in second term.

NX93. Engineering IIIH.

This course is made up of parts 1, 4, 5 and 6 of Engineering II and III. Refer Schedule 9(b).

1. Stress Analysis.

The course consists of one lecture a week throughout the year and the equivalent of three hours a week of laboratory work for one term.

The following topics will be covered:

Stresses and strains, normal and shearing. Equilibrium, compatibility. Stress-strain relationships; mechanical properties of materials. Thin-walled cylinders. Torsion of round shafts. Beams; stresses, deflections. Statically indeterminate beams. Columns-buckling. Combined stresses; failure theories. Stress concentrations. Thick-walled cylinders. Experimental stress analysis.

Text-books:

Timoshenko, S., and Young, D. H., *Elements of strength of materials* (Van Nostrand).

Seely, F. B., and Smith, J. O., *Resistance of materials* (Wiley).

4. Machine Design.

A short course of 27 lectures and of 81 hours' drawing-office work in the fundamentals of design of machine elements and power transmission systems.

Text-book:

Faires, V. M., *Design of machine elements* (Macmillan).

Maleev, V. L., and Hartmann, J. B., *Machine design* (International Textbook Company).

5. Electric Circuits and Machines.

The course consists of one lecture a week throughout the year and the equivalent of three hours a week of laboratory work for one term.

The lecture course comprises:

(a) One lecture a week for one term devoted to network theory, including transient and steady state analysis of simple networks, network theorems, and the solution of three-phase networks.

(b) One lecture a week for one term devoted to self and mutual inductance and coupled coils, magnetic circuits and the calculation of m.m.f., transformers, direct current motors and generators.

(c) One lecture a week for one term devoted to synchronous motors, and generators, single phase and three-phase induction motors, and machine characteristics.

Practical work in the laboratory is designed to illustrate the subject matter of the lectures.

Text-book:

Smith, R. J., *Circuits, devices and systems* (Wiley).

Reference books:

Hayt, W. H., and Kemmerley, J. E., *Engineering circuit analysis* (McGraw-Hill).

Hirst, A. W., *Applied electricity* (Blackie).

Fitzgerald, A. E., and Higginbotham, D. E., *Basic electrical engineering* 3rd edition (McGraw-Hill).

6. Electronics.

The course consists of one lecture a week throughout the year and the equivalent of three hours a week laboratory work for one term.

The lecture course comprises:

Vacuum and semi-conductor devices, their characteristics, and equivalent circuits. Rectifier circuits. Single stage amplifiers. RC-, transformer-, and LC-coupled amplifiers. Class A, AB and B push-pull amplifiers. Direct coupled and feedback amplifiers. Controlled rectifiers.

Practical work in the laboratory is designed to illustrate the subject matter of the lectures.

Text-book:

Smith, R. J., *Circuits, devices and systems* (Wiley).

Reference books:

Lowenberg, E. C., *Theory and problems of electronic circuits* (Schaum).

Fitzgerald, A. E., and Higginbotham, D. E., *Basic electrical engineering*, 3rd edition (McGraw-Hill).

Van der Ziel, A., *Introduction to electronic circuits* (Allyn and Bacon).

FOURTH YEAR

NH14. Chemical Engineering IIIA.

Pre-requisite subject: Chemical Engineering IIA.

LECTURES: Four hours a week for one term plus three hours a week for one term devoted to applications of transport theory and of fluid and particle mechanics in the unit operations of chemical engineering.

TUTORIALS: Three hours a week for two terms. Problems studied are of a practical nature, but involve the application of fundamental principles rather than the use of handbooks.

PRACTICAL WORK: Eight hours a week for two terms; a series of illustrative experiments based on the lecture course.

Text-book:

No text-book is prescribed, but students are expected to own a copy of Perry, J. H., Chemical Engineers' Handbook, 4th edition (McGraw-Hill).

NH24. Chemical Engineering IIIB.

This subject is divided into four parts from which the student must take *either* Parts (a), (b) and (c) *or* Parts (b) and (d).

Part (a): Reactor Design.

LECTURES: Two hours a week for one term dealing with advanced reactor design and one hour a week for one term dealing with fuels.

TUTORIAL: One hour a week for the first two terms.

Text-books:

To be advised.

Part (b): Process Dynamics and Control.

LECTURES: Two hours a week for the first two terms dealing with the principles of (a) process dynamics and simulation, and (b) process control. The theory is developed to a stage where it may be applied to a wide variety of practical problems in design and operation of chemical process plant.

TUTORIAL: Two hours a week for the first two terms.

PRACTICAL WORK: Four hours a week for two terms with experiments illustrating problems in simulation and control of simple process plant.

Text-book:

Harriott, P., *Process control* (McGraw-Hill).

Reference book:

Shinsky, F., *Process control systems* (McGraw-Hill).

Part (c): Seminar.

Three hours a week in first and second terms. Each student is required to submit an essay at the end of first term and present it at a seminar in second term.

Part (d): Materials Engineering.

LECTURES: Two lectures a week for two terms dealing with the following topics: The selection, properties and fabrication of materials for engineering applications involving corrosive and high temperature environments, structural and low alloy steels. The relation of structural variables in polymers to their engineering properties, engineering properties of specific polmers. Processing and selection of plastics.

PRACTICAL WORK: Six hours per week for two terms. The course will involve laboratory techniques and experiments related to the lecture course.

Text-books:

Candidates are advised to consult the lecturers about text and reference books in this subject before the beginning of first term.

NH34. Chemical Engineering IIIC.

Pre-requisite or concurrent subjects: Chemical Engineering IIIA and IIIB.

Part 1 (Industrial Economics and Operations Research).

LECTURES: Two lectures a week for two terms dealing with topics in Industrial Economics and Operations Research.

The lectures deal generally with:

(1) The allocation of scarce economic resources between a number of competing ends; more specifically these lectures deal with the effective allocation of land, labour, capital and enterprise during all phases of the development and operation of a chemical manufacturing enterprise. The treatment includes research and development, patents, market analysis, plant location, process development, pre-investment estimation, capital investment evaluation, selection and purchase of labour and equipment, construction planning and control, production planning and control, cost planning and control, basic management principles, industrial safety, company control, capital procurement, company finance, and a general treatment of the structure and environment of industry.

(2) A review of the potentialities of the methods of operations research, with special reference to problems arising in Chemical Engineering practice.

Reference books:

Ackoff, R. L., and Sasieni, M. W., *Fundamentals of operations research* (Wiley).

Buchanan, R. H., and Sinclair, C. G., *Costs and economics of the Australian process industries* (West, 1964, with 1966 supplement).

Grant, E. L., and Ireson, W. G., *Principles of engineering economy* (Ronald Press).

Hunter, A., *The economics of Australian industry* (Melbourne Univ. Press).

Kirkbride, C. G., *Chemical engineering fundamentals* (McGraw-Hill).

Peters, M. S., and Timmerhaus, K. D., *Plant design and economics for chemical engineers*, 2nd edition (McGraw-Hill).

Schweyer, H. E., *Process engineering economics* (McGraw-Hill).

Part 2 (Plant Design).

TUTORIAL: One tutorial a week for two terms dealing with sources and estimation of data, costing and economic analysis of alternative proposals, the application of Process Engineering and Operations Research techniques to the selection, sizing, design and optimization of equipment and processes, project scheduling and control, and plant operation and safety considerations.

PROJECT: The project occupies approximately 300 hours of full-time work during the months of September-November after the normal Departmental examinations. It involves the economic comparison of alternative processes for the manufacture of a nominated chemical product, the study of a selected process, calculation of material and energy balances, preparation of flow sheets, design of selected plant items, estimation of plant cost and process economics, preparation of a design report and drawing of plant lay-out.

Preliminary reading:

Jones, D. G., *Chemistry and industry* (O.U.P.).

Text-book:

Peters, M. S., and Timmerhaus, K. D., *Plant design and economics for chemical engineers*, 2nd edition (McGraw-Hill).

Reference books:

Rudd, D. F., and Watson, C. C., *Strategy of process engineering* (Wiley).

Bodman, S. W., *The industrial practice of chemical process engineering* (M.I.T.).

Buchanan, R. H., and Sinclair, C. G., *Costs and economics of the Australian process industries* (West, 1964, with 1966 supplement).

Cremer, H. W., *Chemical engineering practice,* vol. 1 (General), vol. 9 (Design and Construction), vol. 10 (Ancillary Services), vol. 11 (Works Design, etc.) (Butterworth).

Faith, W. L., and others, *Industrial chemicals,* 3rd edition (Wiley).

Hackney, J. W., *Control and management of capital projects* (Wiley).

Hougen, O. A., and others, *Chemical process principles,* vol. 1, 2nd edition (Wiley).

Jeffreys, G. V., *A problem in chemical engineering plant design—the manufacture of acetic anhydride* (Institutute of Chemical Engineers).

Kern, D. Q., *Process heat transfer* (McGraw-Hill).

Ludwig, E. E., *Applied process design for chemical and petrochemical plants,* vols. 1-3 (Gulf).

Lyle, O., *The efficient use of steam* (H.M.S.O.).

Perry, J. H., *Chemical engineers' handbook,* 4th edition (McGraw-Hill).

Rase, H. F., and Barrow, M. H., *Project engineering of process plants* (Wiley).

Sherwood, T. K., *A course in process design* (M.I.T.).

Shreve, R. N., *The chemical process industries,* 3rd edition (McGraw-Hill).

NOTE: Students who have completed one or more years' work in the Faculty of Science: refer Schedule 8.

Certain courses differing from those listed in the preceding pages are prescribed for students who, having completed one or more years' work in suitable subjects in the Faculty of Science, wish to qualify for the degree of Bachelor of Engineering in Chemical Engineering. These are as follows:

NH62. Chemical Engineering IS.

This course is part 10 of Engineering II and III (see Schedule 9 (b)), Stoichiometry.

The syllabus for Stoichiometry may be found on page 780.

NH63. Chemical Engineering IIBS.

This subject is divided into two parts.

(a) Materials Science. The syllabus for this part of the subject is as for Engineering II and III part (9) (see Schedule 9(b)).

(b) Instrumentation and Process Control. The syllabus for this part of the subject is as for Chemical Engineering IIB, part (b).

(c) Written report on vacation experience.

NH64. Chemical Engineering IIIBS.

This subject is divided into four parts of which the student must take either parts (a), (b) and (c), or parts (b) and (d).

(a) Reactor Design. See page 783.

(b) Process Control. See page 783.

(c) Seminar. See page 783.

(d) Materials Science. The syllabus for this part of the subject is as for Engineering II and III, part 9 (see Schedule 9(b)).

NX52. Engineering IIH.

This course is made up of parts 5 and 6 of Engineering II and III, Electrical Circuits and Machines, and Electronics (see Schedule 9(b)).

The syllabuses for these parts may be found on pages 786-7.

CIVIL ENGINEERING COURSE

FIRST YEAR

SM01. Mathematics I.

SP01. Physics I.

SG01. Geology I.

For syllabuses see under Faculty of Science.

NX01. Engineering I.

For syllabus see under CHEMICAL ENGINEERING COURSE, FIRST YEAR.

SECOND YEAR

SM12. Applied Mathematics II.

For syllabus see under Faculty of Science.

NC02. Civil Engineering I.

Pre-requisite subjects: Mathematics I, Engineering I.

The course consists of four lectures a week and is an introductory course in stress analysis, structural analysis, design of structural elements and in surveying. Six hours a week for two terms, nine hours a week for one term will be occupied by laboratory, drawing office and field exercises. In addition, a field camp extending over two weeks is held in the long vacation.

Text-books:

Clark, D., *Plane and geodetic surveying for engineers,* 6th edition (Constable).

Seely, F. B., and Smith, J. O., *Resistance of materials,* 4th edition (Wiley).

Bresler, B., and others, *Design of steel structures,* 2nd edition (Wiley).

Standards Association of Australia:

Interim 350-1952, *Minimum design loads on buildings.*

Code CA34, Pt. 1-1969, *S.A.A. loading code.*

Code CA1-1968, *S.A.A. steel structures code.*

Code CA8, Pt. 1-1965, *S.A.A. code for welding in buildings.*

Code CA45-1970, *S.A.A. high strength bolting code.*

Reference books:

Bannister, A., and Raymond, S., *Surveying,* 2nd edition (Pitman).

Drucker, D. C., *Introduction to mechanics of deformable bodies* (McGraw-Hill).

Shanley, F. R., *Strength of materials* (McGraw-Hill).

Students should provide themselves with six- or seven-figure logarithmic tables, such as *Chamber's Shorter six-figure mathematical tables,* or *Chamber's Seven-figure mathematical tables.*

NX12. Engineering IIC.

Pre-requisite subjects: Mathematics I, Physics I, a knowledge of matriculation Chemistry will be assumed.

Engineering IIC is made up of parts 5, 6 and 8 of Engineering II and III. Refer Schedule 9(b).

5. Electrical Circuits and Machines.

The course consists of one lecture a week throughout the year and the equivalent of three hours a week of laboratory work for one term.

The lecture course comprises:

(a) One lecture a week for one term devoted to network theory, including transient and steady state analysis of simple networks, network theorems, and the solution of three-phase networks.

(b) One lecture a week for one term devoted to self and mutual inductance and coupled coils, magnetic circuits and the calculation of m.m.f., transformers, direct current motors and generators.

(c) One lecture a week for one term devoted to synchronous motors and generators, single phase and three-phase induction motors, and machine characteristics.

Practical work in the laboratory is designed to illustrate the subject matter of the lectures.

Text-book:

Smith, R. J., *Circuits, devices and systems* (Wiley).

Reference books:

Hayt, W. H., and Kemmerley, J. E., *Engineering circuit analysis* (McGraw-Hill).

Hirst, A. W., *Applied electricity* (Blackie).

Fitzgerald, A. E., and Higginbotham, D. E., *Basic electrical engineering*, 3rd edition (McGraw-Hill).

6. Electronics.

The course consists of one lecture a week throughout the year and the equivalent of three hours a week laboratory work for one term.

The lecture course comprises:

Vacuum and semi-conductor devices, their characteristics, and equivalent circuits. Rectifier circuits. Single stage amplifiers. RC-, transformer-, and LC-coupled amplifiers. Class A, AB and B push-pull amplifiers. Direct coupled and feedback amplifiers. Controlled rectifiers.

Practical work in the laboratory is designed to illustrate the subject matter of the lectures.

Text-book:

Smith, R. J., *Circuits, devices and systems* (Wiley).

Reference books:

Lowenberg, E. C., *Theory and problems of electronic circuits* (Schaum).

Fitzgerald, A. E., and Higginbotham, D. E., *Basic electrical engineering*, 3rd edition (McGraw-Hill).

Van der Ziel, A., *Introduction to electronic circuits* (Allyn and Bacon).

8. Engineering Materials.

The course consists of one lecture a week throughout the year and the equivalent of three hours a week of laboratory work for one term.

The following topics will be covered:

Stress strain behaviour in the real and idealised state; atomic bonding and packing; crystal structure; X-rays; the formation of polycrystalline materials; structure and properties of ceramics; equilibrium and non-equilibrium phase reactions; heat treatment; metallography and selection of steels, cast irons, aluminium alloys and copper alloys; deformation and failure of crystalline materials; corrosion; the structure, properties and applications of polymeric materials.

Recommended preliminary reading:

Gordon, J. E., *The new science of strong materials* (Pelican).

Text-book:

Moffat, W. G. (ed.), *The structure and properties of materials*, vols. I-III (Wiley); *or*

Van Vlack, L. H., *Elements of materials science* (Addison-Wesley).

Reference books:

Cullity, B. D., *Elements of X-ray diffraction* (Addison-Wesley).

Guy, A. G., *Elements of physical metallurgy* (Addison-Wesley).

Polakowski, N. H., and Ripling, E. J., *Strength and structure of engineering materials* (Prentice-Hall).

Van Vlack, L. H., *Physical ceramics for engineers* (Addison-Wesley).

THIRD YEAR.

NC03. Civil Engineering IIA.

Pre-requisite subjects: Applied Mathematics II, Engineering I, Engineering IIC.

This course consists of three lectures and six hours' practical or tutorial work a week throughout the year, and is designed for students intending to complete a degree in Civil Engineering to cover the topics of Hydraulics and Instrumentation.

HYDRAULICS.

LECTURES: Fluid properties and the nature of fluid motion — steady, unsteady, uniform, non-uniform, rotational and irrotational. Fundamental laws of fluid motion, potential flow; stream line plotting; equation of motion for inviscid (Euler) and real fluids (Navier-Stokes), the equation of continuity in general form for compressible and incompressible flow; dimensional analysis and dimensionless groups; study of flow in closed conduits — pipelines, networks, steady and unsteady flow, water hammer and pendulation, surge-tank analysis; flow in open channels; flow through porous media, fluid forces on a body in a free stream; elements of boundary layer theory; theory of similitude applied to hydraulic and aerodynamic model studies of hydraulic structures, vortex behaviour; performance of pumps and turbines with their characteristics influencing their selection for particular applications; hydraulic measurements — pressure, velocity, discharge, depth, orifices, weirs, etc.; cavitation of hydraulic structures. Hydrology and water supply.

PRACTICAL: Experimental work in the laboratory and field occupies about two-thirds of the time and the balance is spent in the design office.

INSTRUMENTATION.

LECTURES. Elements of system engineering applied to instrumentation and data collection and recording; physical measurements, detailed examination of transducers for engineering measurements of strain, displacement, pressure, velocity, acceleration, flow discharge, time, temperature and radio activity; input circuits and signal processing facilities; elements of suitable electronic circuits (amplifiers, oscillators, counting and triggering circuits, filters, etc.); recording media chart, magnetic tape (F.M., digital), C.R.O.; analogue–digital conversion; digital transducers, digital data handling and recording techniques for computer entry; specialized measurement procedures, high speed photography (single shot and cine), radio isotope tagging procedures.

PRACTICAL. Laboratory experiments, demonstrations, design seminars and field exercises are intended to illustrate the application of the lecture subject matter.

Text-books:

Rouse, H. (ed.), *Engineering hydraulics* (Wiley); *or*
Vennard, J. K., *Elementary fluid mechanics*, 4th edition (Wiley); *or*
Streeter, V. L., *Fluid mechanics* (McGraw-Hill).

Reference books:

Rouse, H., and Ince, S., *History of hydraulics* (Iowa Institute of Hydraulics).
Jaeger, C., *Engineering fluid mechanics* (Blackie).
Prandtl, L., *Essentials of fluid dynamics* (Blackie).
Francis, J. R. D., *A text-book of fluid mechanics* (Arnold).
Vallentine, H. R., *Applied hydrodynamics* (Butterworth).
Chow, V. T., *Open channel hydraulics* (McGraw-Hill).
Norrie, D. H., *An introduction to incompressible flow machines* (Arnold).
Partridge, G. R., *Principles of electronic instruments and instrumentation* (Pitman).
Studer, J. J., *Electronic circuits and instrumentation systems* (Wiley).
Prensky, S. D., *Electronic instrumentation* (Prentice-Hall).
Susskind, A. K., *Notes on analogue-digital conversion techniques* (Wiley).

NC13. Civil Engineering IIB.

Pre-requisite subjects: Civil Engineering I, Applied Mathematics II.

This course consists of three lectures, one tutorial and five hours' practical work a week throughout the year and is designed for students intending to complete a degree in Civil Engineering.

LECTURES: The theory of statically determinate and indeterminate beams, triangulated frames and rigid frames, plastic design and cables; reinforced concrete and prestressed concrete; soil mechanics; the design of structures.

PRACTICAL: Design projects are carried out under supervision in the drawing office; laboratory work illustrates the subject matter of the lectures.

Text-books:

Rosenak, S., *Soil mechanics* (Batsford).
Ferguson, P. M., *Reinforced concrete fundamentals* (Wiley).
Pearson, R. G., *Timber engineering design handbook* (M.U.P.).
Wilbur, J. B., and Norris, C. H., *Elementary structural analysis* (McGraw-Hill).
Bresler, B., and others, *Design of steel structures,* 2nd edition (Wiley).
National Association of Australian State Road Authorities, *Highway bridge design specifications,* 3rd edition.
Standards Association of Australia:
Interim 350-1952, *Minimum design loads on buildings.*
Code CA34, Pt. 1-1969, *S.A.A. loading code.*
Code CA1-1968, *S.A.A. steel structures code.*
Code CA8, Pt. 1-1965, S.A.A. *code for welding in building.*
Code CA2-1963, S.A.A. *code for concrete in building.*
Code CA35-1963, *S.A.A. code for prestressed concrete.*

Reference books:

Lambe, T. W., and Whitman, R. W., *Soil mechanics* (Wiley).
Wu, T. H., *Soil mechanics* (Allyn and Bacon).
Lin, T. Y., *Design of prestressed concrete structures* (Wiley).

Engineering IIIC.

Pre-requisites: Applied Mathematics II, Civil Engineering I, Engineering IIC.

Civil Engineering students must take one of the following Engineering IIIC courses which are made up of parts of Engineering II and III (refer Schedule 9(b)):

EITHER

NX53. Engineering IIICA.

Parts 3, 4 and 11.

OR

NX63. Engineering IIICB.

Parts 3, 4 and 12.

The syllabuses for these parts are as follows:

3. THEORY OF MACHINES.

An introductory course of 27 lectures and 27 hours' of drawing-office exercises in kinematics and dynamics of machines.

Text-book:

Mabie, H. H., and Ocvirk, F. W., *Mechanisms and dynamics of machinery,* 2nd edition (Wiley).

4. MACHINE DESIGN.

A short course of 27 lectures and of 81 hours' drawing-office work in the fundamentals of design of machine elements and power transmission systems.

Text-book:

Faires, V. M., *Design of machine elements* (Macmillan).

Maleev, V. L., and Hartman, J. B., *Machine design* (International Textbook Company).

11. MATHEMATICS III (ENGINEERING).

Pre-requisite to this part: a pass in Applied Mathematics II (SM12) at Division I or higher standard.

Vectors and tensors; numerical analysis; operations research.

Text-books:

Spiegel, M. R., *Vector analysis* (Schaum).

Fröberg, C. E., *Introduction to numerical analysis* (Addison-Wesley).

Reference books:

Rutherford, D. E., *Vector methods* (Oliver and Boyd).

Spain, B., *Tensor calculus* (Oliver and Boyd).

Isaacson, E., and Keller, H. B., *Analysis of numerical methods* (Wiley).

National Physical Laboratory, Mathematics Division, *Modern computing methods* (H.M.S.O.).

Berge, C., and Ghouila-Houri, A., *Programming, games and transportation networks* (Wiley).

Kaplan, W., *Operational methods for linear systems* (Addison-Wesley).

Saaty, T. L., *Mathematical methods of operational research* (McGraw-Hill).

Spivey, W. A., *Linear programming: an introduction* (Macmillan).

Crandall, S. H., *Engineering analysis* (McGraw-Hill).

12. ECONOMICS (ENGINEERING).

Two lectures and one tutorial a week.

1. Introduction to the theory of value.
2. Introduction to the theory of outlay and employment.

Preliminary reading:

Drohan, N. T., and Day, J. H. (eds.), *Readings in Australian economics* (Cassell).

Australia, Economic Enquiry, Committee of. *Australian economic background*, from the *Report of the Committee* (Economic Standing Committee, Victorian Universities and Schools Examinations Board).

Galbraith, J. K.:, *The affluent society* (Penguin *or* Mentor).

Shackle, G. L. S., *Economics for pleasure* (C.U.P.) (paper-back).

Robinson, M. A., Morton, H. C., and Calderwood, J. C., *An introduction to economic reasoning* (Tudor) (Australian paper-back edition).

Robinson, J., *Economics: an awkward corner* (Allen and Unwin).

Text-books:

Leftwich, R. H., *The price system and resource allocation*, 3rd edition (Holt, Rinehart, Winston).

Brennan, M. J., *Theory of economic statics* (Prentice-Hall).

Downing, R. I., *National income and social accounts*, 9th (or later) edition (M.U.P.).

Haig, B. D., and McBurney, S. S., *The interpretation of national income estimates* (A.N.U. Press).

Harcourt, G. C., and others, *Economic activity* (C.U.P.).

Some students might find that one of the following provides useful supplementary reading for the initial stages of the course in the theory of value:

Fels, R., *The law of supply and demand: a programmed approach* (Allyn and Bacon); ***or***

Entelek Incorporated, *Supply and demand* (and worksheets) (Macmillan).
or
Lumsden, K., and others, *Micro-economics: a programmed book* (Prentice-Hall).

Reference books:

Lancaster, K., *Introduction to modern micro-economics* (Rand McNally).
Lipsey, R. G., *An introduction to positive economics*, 2nd edition (Weidenfeld and Nicholson).
Samuelson, P. A., *Economics*, 4th, 5th, 6th or 7th edition (McGraw-Hill).
Samuelson, P. A., and others, *Economics*, Australian edition (McGraw-Hill).
Stoneir, A., and Hague, D. A., *A text-book of economic theory* (Longmans).
Stigler, G. J., *The theory of price*, 3rd edition (Macmillan).
Schneider, E., *Pricing and equilibrium* (Allen and Unwin).
Robinson, J., *Economics: an awkward corner* (Allen and Unwin).
Bilas, R. A., *Micro-economic theory: a graphical analysis* (McGraw-Hill).
Gisser, M., *Introduction to price theory* (International Textbook Company).
Allen, C. L., *Elementary mathematics of price theory* (Wadsworth).
Watson, D. S., *Price theory in action: a book of readings* (Houghton Mifflin).
Breit, W., and Hochman, H. M. (eds.), *Readings in microeconomics* (Holt, Rinehart and Winston).
Braff, A. J., *Micro-economic analysis* (Wiley).

Additional references will be prescribed by the lecturers.

FOURTH YEAR

NC14. Civil Engineering IIIA.

Pre-requisite subjects: Civil Engineering IIA and IIB.

It is also necessary for the work associated with the practical field camp, normally held at the end of NC02 Civil Engineering I, to have been satisfactorily completed.

A course of about 80 lectures dealing with soil mechanics, surveying, and hydraulics.

One session of three hours a week is required for practical work.

Text-books:

Clark, D., *Plane and geodetic surveying for engineers*, Vols. I and II (Constable).
Lambe, T. W., and Whitman, R. V., *Soil mechanics* (Wiley).
The Star almanac for land surveyors for the current year (H.M.S.O.).

Reference books:

Rouse, H., *Engineering hydraulics* (Wiley).
Terzaghi, K., and Peck, R. B., *Soil mechanics in engineering practice*, 2nd edition. (Wiley).
Streeter, V. L., *Handbook of fluid dynamics* (McGraw-Hill).
Rouse, H., *Advanced mechanics of fluids* (Wiley).
Wu, T. H., *Soil mechanics* (Allyn and Bacon).
Reynolds, C. E., *Concrete construction* (Concrete Publications).
Clendinning, J., and Olliver, J. G., *The principles of surveying*, 3rd edition (Blackie).
Great Britain: War Office, *Text book of field astronomy*, revised by Biddle, C.A. (H.M.S.O., 1958).
Jenkins, R. B. M., *Curve surveying* (Cleaver-Hume).

NC44. Civil Engineering IIIB.

Pre-requisite subject: Civil Engineering IIB.

A course of about 80 lectures dealing with the theory and design of structures. Students must undertake the design of selected engineering projects.

Text-books:

Hoff, N. J., *The analysis of structures* (Wiley).
Hall, A. S., and Woodhead, R. W., *Frame analysis* (Wiley).
Neal, B. G., *The plastic methods of structural analysis*, 2nd edition (Wiley).
Livesley, R. K., *Matrix methods of structural analysis* (Pergamon).

Reference books:

Lin, T. V., *Design of prestressed concrete structures*, 2nd edition (Wiley).
McGuire, W., *Steel structures* (Prentice-Hall).

NC34. Civil Engineering IIIC.

Students will be required to submit a report on a project of an experimental nature conducted during the year and to give a seminar on a related subject. Students will also be required to attend a survey camp of 2½ weeks duration.

This subject must be taken concurrently with Civil Engineering IIIA.

ELECTRICAL ENGINEERING COURSE

FIRST YEAR

SM01. Mathematics I.

SP01. Physics I.

SC01. Chemistry I.

For syllabuses see under Faculty of Science.

NX01. Engineering I.

For syllabus see under CHEMICAL ENGINEERING COURSE, FIRST YEAR.

SECOND YEAR

SM12. Applied Mathematics II.

SP02. Physics II.

For syllabuses see under Faculty of Science.

NE03. Electrical Engineering I.

Pre-requisite subjects: Physics I, Mathematics I.

Pre-requisite or concurrent subject: Applied Mathematics II.

Lectures: Three lectures a week throughout the year.

Energy Storage and Conversion: Physical aspects, energy and mechanical forces, energy balance in electromechanical energy conversion. Use of energy conversion and dynamic circuit theory principles for the analysis of rotating machines. Transformers.

Electronics: Electronic circuit elements; semi-conductor diodes, transistors, thyristors, vacuum tubes; graphical and equivalent circuit analyses; rectifier and amplifier principles and performance.

Network Theory: Kirchoff's Laws; free and forced response of networks; steady-state a.c. methods, resonance and the complex-frequency plane; mesh and nodal analysis, network theorems; magnetic coupling; polyphase systems; transform methods; four-terminal network parameters; impedance matching.

Tutorial: Two hours a week throughout the year devoted to the working and discussion of problems, and the discussion of practical and theoretical topics.

Practical: Three hours practical a week throughout the year, comprising a series of experiments and exercises designed to support the subject matter of the lectures.

Text-books:

Angelo, E. J., *Electronic circuits* (McGraw-Hill).

Gourishankar, V., *Electromechanical energy conversion* (International Textbook Company).

Hayt, W. H., and Kemmerly, J. E., *Engineering circuit analysis* (McGraw-Hill).

Van Valkenburg, M. E., *Network analysis* (Prentice-Hall).

Reference books:

Seely, S., *Electronic circuits* (Holt, Rinehart and Winston).

Lowenberg, E. C., *Theory and problems of electronic circuits* (Schaum).

Fitzgerald, A. E., and Kingsley, C., *Electric machinery*, 2nd edition (McGraw-Hill).

Hammond, S. B., *Electrical engineering* (McGraw-Hill).

Ryder, J. D., *Electronic fundamentals and applications* (Pitman).

Gray, P. E., and Searle, C. L., *Electronic principles* (Wiley).

NE83. Vacation Course in Workshop Practice.

The course consists of two weeks full-time instruction in an approved engineering workshop during a vacation. The course deals with the basic machine-tools and processes with the aim of developing an understanding of fabrication techniques necessary to modern production processes.

Reference books:

Steeds, W., *Engineering materials, machine tools and processes* (Longmans).

Sachs, G., *Fundamentals of the working of metals* (Pergamon).

Degarmo, E. P., *Materials and processes in manufacturing* (Macmillan).

Bolz, R. W., *Production processes: their influence on design*, Volumes I and II (Penton).

THIRD YEAR.

NE13. Electrical Engineering II.

Pre-requisite subjects: Electrical Engineering I, Applied Mathematics II.

Pre-requisite or concurrent subject: Physics II.

LECTURES: Four lectures a week throughout the year.

(a) An elementary treatment of transmission lines, plane waves, guided waves and radiation using circuit and field concepts where appropriate. An introduction to waveguides and microwave components.

(b) Steady state and transient analysis of rotating machines. Symmetrical components.

(c) A further development of amplifier theory, modulation, detection and feedback. Waveform analysis, generation and shaping. Elementary filter networks.

(d) An introductory course on linear feedback control systems with special emphasis on frequency response and root locus techniques.

TUTORIAL: Two hours a week throughout the year devoted to the working and discussion of problems, and the discussion of practical and theoretical topics.

PRACTICAL: Practical work of six hours a week, comprising a series of experiments and exercises.

Text-books:

Adler, R. B., and others, *Electromagnetic energy transmission and radiation* (Wiley).

Fitzgerald, A. E., and Kingsley, C., *Electric machinery*, 2nd edition (McGraw-Hill).

D'Azzo, J. J., and Houpis, C. H., *Feedback control system analysis and synthesis* (McGraw-Hill).

Seely, S., *Electronic circuits* (Holt, Rinehart and Winston).

Reference books:

Dorf, R. C., *Modern control systems* (Addison Wesley).

International Telephone and Telegraph Corporation, *Reference data for radio engineers.*

Magnusson, P. C., *Transmission lines and wave propagation*, 2nd edition (Allyn and Bacon).

Majmudar, H., *Electromechanical energy converters* (Allyn and Bacon).

Plonsey, R., and Collin, R. E., *Principles and applications of electromagnetic fields* (McGraw-Hill).

Ginzton, E. L., *Microwave measurements* (McGraw-Hill).

Lindmayer, J., and Wrigley, C. Y., *Fundamentals of semi-conductors* (Van Nostrand).

Ryder, J. D., *Electronic fundamentals and applications* (Pitman).

Kuo, B. C., *Linear networks and systems* (McGraw-Hill).

Smith, S. P., *Problems in electrical engineering* (Constable).

Terman, F. E., *Radio engineers' handbook* (McGraw-Hill).

Thaler, G. J., and Wilcox, M. L., *Electric machines* (Wiley).

Van Valkenburg, M. E., *Network analysis* (Prentice-Hall).

Gray, P. E., and Searle, C. L., *Electronic principles* (Wiley).

Additional references may be given during the course.

NX23. Engineering IIE.

Pre-requisites: Physics I, Mathematics I, Engineering I.

Engineering IIE is made up of parts 1 and 4 of Engineering II and III. Refer Schedule 9(b).

1. STRESS ANALYSIS.

The course consists of one lecture a week throughout the year and the equivalent of three hours a week of laboratory work for one term.

The following topics will be covered:

Stresses and strains, normal and shearing. Equilibrium, compatibility. Stress-strain relationships; mechanical properties of materials. Thin-walled cylinders. Torsion of round shafts. Beams; stresses, deflections. Statically indeterminate beams. Columns-buckling. Combined stresses; failure theories. Stress concentrations. Thick-walled cylinders. Experimental stress analysis.

Text-books:

Timoshenko, S., and Young, D. H., *Elements of strength of materials* (Van Nostrand).

Seely, F. B., and Smith, J. O., *Resistance of materials* (Wiley).

4. MACHINE DESIGN.

A short course of 27 lectures and of 81 hours' drawing-office work in the fundamentals of design of machine elements and power transmission systems.

Text-book:

Faires, V. M., *Design of machine elements* (Macmillan).

Maleev, V. L., and Hartman, J. B., *Machine design* (International Textbook Company).

EITHER

SM02. Pure Mathematics II.

OR

ST02. Mathematical Statistics II.

For syllabuses see under Faculty of Science.

FOURTH YEAR

NE14. Electrical Engineering IIIA.

Pre-requisite subjects: Electrical Engineering II, Physics II.

Lectures: This course consists of five lectures a week throughout the year, covering the following topics:

Communication theory; switching theory; theory and design of digital systems, machine language programming of digital computers; engineering aspects of reliability; analogue and hybrid computers; advanced electronic devices and circuits; antennas and propagation; microwave engineering principles; design for integrated circuits.

Text-books:

Camenzind, H. R., *Circuit design for integrated electronics* (Addison-Wesley).

Carlson, A. B., *Communication systems* (McGraw-Hill).

Collin, R. E., *Foundations for microwave engineering* (McGraw-Hill).

Dummer, G. W. A., and Griffin, N. B., *Electronics reliability—calculation and design* (Pergamon).

Jordan, E. E., and Balmain, K. G., *Electromagnetic waves and radiating systems* (Prentice-Hall).

Nashelsky, L., *Digital computer theory* (Wiley).

Reference books:

Bazovsky, I., *Reliability theory and practice* (Prentice-Hall).

Bennett, W. R., *Electrical noise* (McGraw-Hill).

Caldwell, S., *Switching circuits and logical design* (Wiley).

Cluley, J. C., *Electronic computers* (Oliver and Boyd).

Ginzton, E. L., *Microwave measurements* (McGraw-Hill).

Doyle, J. M., *Thin film and semiconductor integrated circuitry* (McGraw-Hill).

Hancock, J. C., *An introduction to the principles of communication theory* (McGraw-Hill).

Hoernes, G. E., and Heilveil, M. F., *Introduction to Boolean algebra and logic design* (McGraw-Hill).

Hoeschele, D. F., *Analog-to-digital, digital-to-analog conversion techniques* (Wiley).

Huskey, H. D., and Korn, G. A. (eds.), *Computer handbook* (McGraw-Hill).

International Telephone and Telegraph Corporation, *Reference data for radio engineers.*

Josik, H., *Antenna engineering handbook* (McGraw-Hill).

Kraus, J. D., *Antennas* (McGraw-Hill).

Ledley, R. S., *Digital computer and control engineering* (McGraw-Hill).

Lynn, D. K., and others, *Analysis and design of integrated circuits* (McGraw-Hill).

Messiah, A., *Quantum mechanics,* 2 vols. (North Holland).

Mitra, S. K., *Analysis and synthesis of linear active networks* (Wiley).
Newcomb, R. W., *Active integrated circuit synthesis* (Prentice-Hall).
Schwartz, M., *Information transmission, modulation and noise* (McGraw-Hill).
Terman, F. E., *Radio engineers' handbook* (McGraw-Hill).
Terman, F. E., and Pettit, J. M., *Electronic measurements* (McGraw-Hill).
Richards, R. K., *Electronic digital systems* (Wiley).
Richards, R. K., *Electronic digital components and circuits* (Van Nostrand).
Rumpf, K. H., and Pulvers, M., *Transistor electronics* (Pergamon).
Schelkunoff, S. A., and Friis, H. T., *Antennas theory and practice* (Wiley).
Wickes, W. L., *Logic design with integrated circuits* (Wiley).

NE24. Electrical Engineering IIIB.

Pre-requisite subjects: Electrical Engineering II, Physics II.

Lectures: This course consists of four lectures a week throughout the year covering the following topics: network synthesis, machine dynamics; static conversion equipment; power transmission systems; advanced control systems; acoustics.

Specialist Lectures: During the year students are required to attend specialist lectures given by practising engineers from industry and Government establishments.

Text-books:

Fitzgerald, A. E., and Kingsley, C., *Electric machinery* (McGraw-Hill).
D'Azzo, J. J., and Houpis, C. H., *Feedback control system analysis and synthesis* (McGraw-Hill).

Reference books:

Crary, S. B., *Power system stability,* vols. I and II (Wiley).
Dorf, R. C., *Modern control systems* (Addison Wesley).
Elgerd, O. I., *Control systems theory* (McGraw-Hill).
Jevons, M., *Electrical machine theory* (Blackie).
Kimbark, E. W., *Power system stability,* vols. I, II and III (Wiley).
Kirchmayer, L. K., *Economic operations of power systems,* vol. I (Wiley).
Kuo, Fa-k'un, *Network analysis and synthesis* (Wiley).
Melsa, J. L., and Schultz, D. G., *Linear control systems* (McGraw-Hill).
O'Kelly, D., and Simmons, S., *Introduction to generalized electrical machine theory* (McGraw-Hill).
Truxal, J. G., *Automatic feedback control system synthesis* (McGraw-Hill).
Westinghouse Electric Manufacturing Corporation, *Electrical transmission and distribution reference book.*
Venikov, V. A., *Transient phenomena in electrical power systems* (Pergamon).
Hughes, W. L., *Nonlinear electrical networks* (Ronald Press).
Stagg, G. W., and Al-Abiad, Ahmed H., *Computer methods in power system analysis* (McGraw-Hill).

NE34. Electrical Engineering IIIC.

Pre-requisite subjects: Electrical Engineering II, Physics II.

(a) Management and Industrial Organization: One lecture a week throughout the year. The course introduces Industrial Organization, Industrial relations, Decision making and control, Marketing, Selection and training of labour, Safety, Human Relations and other relevant topics.

Text-book:

Bethel, L. L., and others, *Industrial Organisation and Management*, 4th edition (McGraw-Hill).

(b) Experimental Investigation and Seminar: Each candidate will be required to submit reports on one or more projects carried out during the year. This will involve theoretical surveys and the design, development and testing of equipment. The candidate will also be required to present the results of his investigation in the form of seminars.

Reference books:

Candidates should consult the books listed under Section II of the Notes and Instructions to Candidates for the Degree of Doctor of Philosophy (see earlier in this Volume).

MECHANICAL ENGINEERING COURSE

FIRST YEAR

SM01. Mathematics I.

SP01. Physics I.

Either SC01. Chemistry I.

or AY01. Psychology I.

For syllabuses see under Faculty of Science.

NX01. Engineering I.

For syllabus see under CHEMICAL ENGINEERING COURSE, FIRST YEAR.

SECOND YEAR

SM12. Applied Mathematics II.

For syllabus see under Faculty of Science.

NM02. Mechanical Engineering I.

Pre-requisite subject: Engineering I; pre-requisite or concurrent subject: Engineering IIM.

An introductory course in the analysis of fluid flow, thermodynamics, manufacturing processes and machine elements leading to a synthesis of systems utilizing such analyses.

Preliminary reading:

Street, A., and Alexander, W., *Metals in the service of man* (Penguin).

Edgar, C., *Fundamentals of manufacturing processes and materials* (Addison-Wesley).

Krick, E. V., *An introduction to engineering and engineering design* (Wiley).

Text-books:

As for Engineering I, plus

Faires, V. M., *Design of machine elements* (Macmillan).

Sabersky, R. H., and Acosta, A. J., *Fluid flow* (Collier-Macmillan).

Begeman, M. L., and Amstead, B. H., *Manufacturing processes,* 6th edition (Wiley).

Van Wylen, G. J., and Sonntag, R. E., *Fundamentals of classical thermodynamics* (Wiley).

Reference books:

Siegel, M. J., and others, *Mechanical design of machines* (International Text-book Co.).

British Standards Institution. Handbook No. 2 (1953: *Workshop practice. Standard Specifications* and *Codes of Practice* as required for project work.

Marks, L. S., *Mechanical engineers' handbook* (McGraw-Hill).

Machinery's Handbook (Industrial Press).

Kalpakjian, S., *Mechanical processing of materials* (Van Nostrand).

Moore, H. D., and Kibbey, D. R., *Manufacturing materials and processes* (Irwin).

Sachs, G., *Fundamentals of the working of metals* (Pergamon).

Ruddle, R. W., *The solidification of castings* (Institute of Metals).

Black, P. H., *Theory of metal cutting* (McGraw-Hill).

Bolz, R. W., *Production processes; the producibility handbook* (Penton).

Datsko, J., *Material properties and manufacturing processes* (Wiley).

Moore, H. D., and Kibbey, D. R., *Manufacturing materials and processes* (Irwin).

NX42. Engineering IIM.

Pre-requisite subjects: Engineering I, Mathematics I; a knowledge of matriculation Physics and Chemistry will be assumed.

Engineering IIM is made up of parts 1, 2 and 8 of Engineering II and III. Refer Schedule 9(b).

1. Stress Analysis.

The course consists of one lecture a week throughout the year and the equivalent of three hours a week of laboratory work for one term.

The following topics will be covered:

Stresses and strains, normal and shearing. Equilibrium, compatibility. Stress-strain relationships; mechanical properties of materials. Thin-walled cylinders. Torsion of round shafts. Beams; stress, deflections. Statically indeterminate beams. Columns-buckling. Combined stresses; failure theories. Stress concentrations. Thick-walled cylinders. Experimental stress analysis.

Text-books:

Timoshenko, S., and Young, D. H., *Elements of strength of materials* (Van Nostrand).

Seely, F. B., and Smith, J. O., *Resistance of materials* (Wiley).

2. Structural Engineering.

The course consists of one lecture and three hours' practical work a week throughout the year.

The following topics will be covered:

Design of tension and compression members. Statically indeterminate problems in tension and compression. R.C. columns. Riveted, bolted and welded joints. Beams; built-up beams, composite beams, R.C. and prestressed concrete beams. Statically indeterminate beams — moment distribution — slope deflection equations. Simple trusses and rigid jointed frames, simple foundations, slabs.

Text-books:

Standards Association of Australia:

Code CA2-1963, *Code of concrete in buildings.*

Code CA1-1968, *Steel structures code.*

Code CA34-1969, *Minimum design loads on buildings.*

Reference books:

Wilbur, J. B., and Norris, C. H., *Elementary structural analysis* (McGraw-Hill).

Cowan, H. J., and Smith, P. R., *Design of reinforced concrete* (Angus and Robertson).

8. ENGINEERING MATERIALS.

The course consists of one lecture a week throughout the year and the equivalent of three hours a week of laboratory work for one term.

The following topics will be covered:

Stress-strain behaviour in the real and idealised state; atomic bonding and packing; crystal structure; engineering applications of X-rays; the formation of single crystal and polycrystalline materials; equilibrium and non-equilibrium phase reactions; heat treatment; metallography and selection of steels; cast irons; deformation and failure of crystalline materials; corrosion; the structure, properties and applications of polymeric materials.

Recommended preliminary reading:

Gordon, J. E., *The new science of strong materials* (Pelican).

Text-books:

Moffatt, W. G. (ed.), *The structure and properties of materials,* vols. I-III (Wiley).

Van Vlack, L. H., *Elements of materials science* (Addison-Wesley).

Reference books:

Cullity, B. D., *Elements of X-ray diffraction* (Addison-Wesley).

Guy, A. G., *Elements of physical metallurgy* (Addison-Wesley).

Polakowski, N. H., and Ripling, E. J., *Strength and structure of engineering materials* (Prentice-Hall).

Van Vlack, L. H., *Physical ceramics for engineers* (Addison-Wiley).

THIRD YEAR.

NM03. Mechanical Engineering IIA.

Pre-requisite subjects: Engineering I, Physics I, Applied Mathematics II, Mechanical Engineering I.

An introductory course in applied thermodynamics, heat transfer, and fluid mechanics, including about 96 lectures and 132 hours' laboratory work.

APPLIED THERMODYNAMICS: Temperature and thermometry. Consequences of second law; properties of pure substances; thermodynamic relations; gas and vapour mixtures; psychrometry. Ideal air and vapour cycles. Introduction to combustion. Introduction to heat transfer.

Text-books:

Van Wylen, G. J., and Sonntag, R. E., *Fundamentals of classical thermodynamics* (Wiley).

Simonson, J. R., *An introduction to engineering heat transfer* (McGraw-Hill).

Reference books:

Rogers, G. F. C., and Mayhew, Y. R., *Engineering thermodynamics work and heat transfer* (Longmans).

Lee, J. F., and Sears, F. W., *Thermodynamics* (Addison-Wesley).

Eckert, E. R. G., and Drake, R. M., *Heat and mass transfer* (McGraw-Hill).

Faires, V. M., *Thermodynamics,* 4th edition (Macmillan).

Obert, E. F., and Young, R. L., *Elements of thermodynamics and heat transfer* (McGraw-Hill).

Reynolds, W. C., *Thermodynamics* (McGraw-Hill).

FLUID MECHANICS: A course of lectures and practical work introducing the fundamentals of fluid dynamics and including the following: Units, dimensions and equations, unit and dimension systems, standards, dimensional analysis, theory of models, properties of fluids; incompressible inviscid fluid motion, kinematics of a fluid field, dynamics of a fluid field, flow about a body, aerofoil theory; incompresesible viscous fluid motion. Navier-Stokes equations, boundary layer equations, laminar flow in tubes and boundary layers, turbulence, turbulent flow in tubes and boundary layers, transition and separation, flow in closed conduit systems, drag; measurements in incompressible flow, weirs, orifices, nozzles, venturis, pitot tubes, other instruments.

Text-books:

Langhaar, H. L., *Dimensional analysis and theory of models* (Wiley).

Whitaker, S., *Introduction to fluid mechanics* (Prentice-Hall).

Reference books:

Sabersky, R. H., and Acosta, A. J., *Fluid flow: a first course in fluid mechanics* (Macmillan).

Lamb, H., *Hydrodynamics* (Dover).

Prandtl, L., *The essentials of fluid dynamics* (Blackie).

Tietjens, O. G., and Prandtl, L., *Applied hydro- and aero-mechanics* (McGraw-Hill).

Rouse, H., *Advanced mechanics of fluids* (Wiley).

Schlichting, H., *Boundary layer theory,* 6th edition (McGraw-Hill).

Goldstein, S. ,*Modern developments in fluid dynamics* (O.U.P.).

Glauert, H., *The elements of aerofoil and airscrew theory* (C.U.P.).

Mises, R. von, *Theory of flight.*

Ower, E., and Pankhurst, R .C., *The measurement of air flow* (Pergamon).

Pankhurst, R. C., and Holder, D. W., *Wind-tunnel technique* (Pitman).

Robertson, J. M., *Hydrodynamics in theory and application* (Prentice-Hall).

NM13. Mechanical Engineering IIB.

Pre-requisite subjects: Engineering I, Engineering IIM, Mechanical Engineering I.

An introductory course in theory of machines and machine design, including about 96 lectures and 132 hours of drawing office, tutorial and laboratory work.

THEORY OF MACHINES: Lectures and graphical exercises in kinematics and dynamics of machinery, including kinematic chains and simple mechanisms; velocity and acceleration diagrams; spur gears; bevel; helical and worm gearing; gear trains; cams; computing mechanisms; synthesis; force analysis of plane mechanisms; balancing and vibrations. An introduction to feedback systems and automatic process control, including block diagrams and transfer functions; control actions and system types; stability; differential equations for physical systems; Laplace transformation; transient response.

Text-books:

Mabie, H. H., and Ocvirk, F. W., *Mechanisms and dynamics of machinery,* 2nd edition (Wiley).

Harrison, H. L., and Bollinger, J. G., *Introduction to automatic controls* (International Text-book Co.).

Reference books:

Hirschhorn, J., *Dynamics of machinery* (Nelson).

Chironis, N. P., *Mechanisms, linkages and mechanical controls* (McGraw-Hill).

Martin, G. H., *Kinematics and dynamics of machines* (McGraw-Hill).

Shigley, J. E., *Kinematic analysis of mechanisms* (McGraw-Hill).

Eckman, D. P., *Automatic process control* (Wiley).

MACHINE DESIGN: Lectures and drawing office tutorial work on the design of machine elements and power transmission systems. The course develops a logical discipline for handling the application of the more specific technical design factors when influenced by economic factors, current practice and manufacturing

methods. Materials and their use; fabrication processes; the use of stock components; the application of combined stresses and theories of failure; fatigue and creep; factors of safety and design stresses; applications of basic principles in the design of shafts subject to combined loading, bearings, couplings and clutches, belt drives, gearing, brakes and other machine components.

Text-books:

Faires, V. M., *Design of machine elements* (Macmillan).

British Standards Institution:

B.S. 436, *Machine cut gears. A. Helical and straight spur* (B.S.I.).

B.S. 436, Part 1, 1967, *Spur and helical machine cut gears* (B.S.I.).

B.S. 545, 1949, *Bevel gears (machine cut)* (B.S.I.).

B.S. 721, 1937, *Machine cut gears: worm gearing* (B.S.I.).

Reference books:

Siegel, M. J., and others, *Mechanical design of machines* (International Text Book Co.).

Black, P., *Machine design* (McGraw-Hill).

Barwell, F. T., *Lubrication of bearings* (Butterworth).

Marks, L. S., *Mechanical engineers' handbook* (McGraw-Hill).

Battelle Memorial Institute, *Prevention of failure of metals under repeated stress.*

Machinery's handbook (Industrial Press).

British Standards' Handbook No. 2 (1953), *Workshop practice.*

Merritt, H. E., *Gears* (Pitman).

Buckingham, E., *Spur gears* (McGraw-Hill).

Standard specifications and codes of practice as required for project work.

Engineering IIIM.

Mechanical Engineering students must take one of the following Engineering IIIM courses which are made up of parts of Engineering II and III (refer Schedule 9(b)):

EITHER

NX73. Engineering IIIMA.

Parts 5, 6, 7 and 11.

OR

NX83. Engineering IIIMB.

Parts 5, 6, 7, and 12.

The syllabuses for these parts are as follows:

5. Electrical Circuits and Machines.

The course consists of one lecture a week throughout the year and the equivalent of three hours a week of laboratory work for one term.

The lecture course comprises:

(a) One lecture a week for one term devoted to network theory, including transient and steady state analysis of simple networks, network theorems, and the solution of three-phase networks.

(b) One lecture a week for one term devoted to self and mutual inductance and coupled coils, magnetic circuits and the calculation of m.m.f., transformers, direct current motors and generators.

(c) One lecture a week for one term devoted to synchronous motors and generators, single phase and three-phase induction motors, and machine characteristics.

Practical work in the laboratory is designed to illustrate the subject matter of the lectures.

Text-book:

Smith, R. J., *Circuits, devices and systems* (Wiley).

Reference books:

Hayt, W. H., and Kemmerley, J. E., *Engineering circuit analysis* (McGraw-Hill).

Hirst, A. W., *Applied electricity* (Blackie).

Fitzgerald, A. E., and Higginbotham, D. E., *Basic electrical engineering*, 3rd edition (McGraw-Hill).

Van der Ziel, A., *Introduction to electronic circuits* (Allyn and Bacon).

6. ELECTRONICS.

The course consists of one lecture a week throughout the year and the equivalent of three hours a week laboratory work for one term.

The lecture course comprises:

Vacuum and semi-conductor devices, their characteristics, and equivalent circuits. Rectifier circuits. Single stage amplifiers. RC-, transformer-, and LC-coupled amplifiers. Class A, AB and B push-pull amplifiers. Direct coupled and feedback amplifiers. Controlled rectifiers.

Practical work in the laboratory is designed to illustrate the subject matter of the lectures.

Text-book:

Smith, R. J., *Circuits, devices and systems* (Wiley).

Reference books:

Lowenberg, E. C., *Theory and problems of electronic circuits* (Schaum).

Fitzgerald, A. E., and Higginbotham, D. E., *Basic electrical engineering*, 3rd edition (McGraw-Hill).

7. ELECTRICAL INSTRUMENTATION.

This course consists of one lecture a week throughout the year covering methods of electrical and electronic instrumentation and the equivalent of three hours a week of laboratory work for one term.

Topics covered include: Signal sources; steady state measurements; transient measurements; data acquisition; transducers and sensors.

Text-book:

Malvino, A. P., *Electronic intrumentation fundamentals* (McGraw-Hill).

Reference book:

Smith, R. J., *Circuits, devices and systems* (Wiley).

Cerni, R. H., and Foster, L. E., *Instrumentation for engineering measurement* (Wiley).

Brookes, A. M. P., *Basic instrumentation for engineers and physicists* (Pergamon).

11. MATHEMATICS III (ENGINEERING).

Pre-requisite to this part: a pass in Applied Mathematics II (SM12) at Division I or higher standard.

Vectors and tensors; numerical analysis; operations research.

Text-books:

Spiegel, M. R., *Vector analysis* (Schaum).

Fröberg, C. E., *Introduction to numerical analysis* (Addison-Wesley).

Reference books:

Rutherford, D. E., *Vector methods* (Oliver and Boyd).

Spain, B., *Tensor calculus* (Oliver and Boyd).

Isaacson, E., and Keller, H. B., *Analysis of numerical methods* (Wiley).

National Physical Laboratory, Mathematics Division, *Modern computing methods* (H.M.S.O.).

Berge, C., and Ghouila-Houri, A., *Programming, games and transportation networks* (Wiley).

Kaplan, W., *Operational methods for linear systems* (Addison-Wesley).

Saaty, T. L., *Mathematical models of operational research* (McGraw-Hill).

Spivey, W. A., *Linear programming: an introduction* (Macmillan).

Crandall, S. H., *Engineering analysis* (McGraw-Hill).

12. ECONOMICS (ENGINEERING).

Two lectures and one tutorial a week.

1. Introduction to the theory of value.
2. Introduction to the theory of outlay and employment.

Preliminary reading:

Drohan, N. T., and Day, J. H. (eds.), *Readings in Australian economics* (Cassell).

Australia, Economic Enquiry, Committee of. *Australian economic background*, from the *Report of the Committee* (Economic Standing Committee, Victorian Universities and Schools Examinations Board).

Galbraith, J. K., *The affluent society* (Penguin *or* Mentor).

Shackle, G. L. S., *Economics for pleasure* (C.U.P.) (paper-back).

Robinson, M. A., and others, *An introduction to economic reasoning* (Anchor).

Robinson, J., *Economics: an awkward corner* (Allen and Unwin).

Text-books:

Leftwich, R. H., *The price system and resource allocation*, 3rd edition (Holt, Rinehart, and Winston).

Brennan, M. J., *Theory of economic statics* (Prentice-Hall).

Lipsey, R. G., *An introduction to positive economics*, 2nd edition (Weidenfeld and Nicholson).

Harcourt, G. C., and others, *Economic activity* (C.U.P.).

Reference books:

Samuelson, P. A., *Economics*, 4th, 5th, 6th and 7th edition (McGraw-Hill).

Samuelson, P. A., and others, *Economics*, Australian edition (McGraw-Hill).

Haig, B. D., and McBurney, S. S., *The interpretation of national income estimates* (A.N.U. Press).

Stonier, A. W., and Hague, D. C., *A text-book of economic theory* (Longmans).

Stigler, G. J., *The theory of price*, 3rd edition (Macmillan).

Schneider, E., *Pricing and equilibrium* (Allen and Unwin).

Robinson, J., *Economics: an awkward corner* (Allen and Unwin).

Bilas, R. A., *Micro-economic theory: a graphical analysis* (McGraw-Hill).

Gisser, M., *Introduction to price theory* (International Textbook Company).

Allen, C. L., *Elementary mathematics of price theory* (Wadsworth).

Watson, D. S., *Price theory in action: a book of readings* (Houghton Mifflin).

Breit, W., and Hochman, H. M. (eds.), *Readings in micro-economics* (Holt, Rinehart and Winston).

Additional references will be prescribed by the lecturers.

FOURTH YEAR

NM24. Mechanical Engineering IIIA.

Pre-requisite subject: Mechanical Engineering IIA.

An advanced course in applied thermodynamics, heat transfer and fluid mechanics. The course is covered by about ninety lectures and one hundred and sixty hours of laboratory or project work.

APPLIED THERMODYNAMICS: A course of lectures and practical work in applied thermodynamics and heat transfer. Including advanced thermodynamics of fluids with application to internal combustion engines, gas turbines, steam turbines, refrigeration, psychrometry and air conditioning, compressed air; fuels and combustion; heat transmission with application to boilers, condensers, and other heat exchangers; nuclear power plant.

Text-books:

Van Wylen, G. J., and Sonntag, R. E., *Fundamentals of classical thermodynamics* (Wiley).

Cohen, B. H., and Rogers, G., *Gas turbine theory* (Longmans).

Obert, E. F., *Internal combustion engines* (International Text Book Co.).

Threlkeld, J. L., *Thermal environmental engineering* (Prentice-Hall).

Holman, J. P., *Heat transfer* (McGraw-Hill).

Reference books:

Schmidt, E., *Thermodynamics* (Oxford Clarendon Press).

Wrangham, D. A., *The theory and practice of heat engines* (C.U.P.).

Pye, D. R., *Internal combustion engine*, Vols. I and II (O.U.P.).

Taylor, C. F., *The internal combustion engine in theory and practice*, Vol. I (Wiley).

Jennings, B. H., and Rogers, W. L., *Gas turbine analysis and practice* (McGraw-Hill).

Stodola, A., *Steam turbines* (Van Nostrand).

Kearton, W. J., *Steam turbine theory and practice* (Pitman).

Simonson, J. R., *An introduction to engineering heat transfer* (McGraw-Hill).

Eckert, E. R. G., and Drake, R. M., *Heat and mass transfer* (McGraw-Hill).

Jordan, R. C., and Priester, G. B., *Refrigeration and air conditioning* (Constable).

Stoecker, W. F., *Refrigeration and air conditioning* (McGraw-Hill).

Jennings, B. H., and Lewis, S. R., *Air conditioning and refrigeration.*

Obert, E. F., *Elements of thermodynamics and heat transfer* (McGraw-Hill).

Faires, V. M., *Thermodynamics*, 4th edition (Macmillan).

American Society of Heating, Refrigerating and Air-conditioning Engineers, *Guide and data book—fundamentals and equipment, Guide and data book—applications.*

Fluid Mechanics: A course of lectures and laboratory work in fundamental and applied fluid dynamics including: incompressible flow machines (pumps, turbines, fans and propellers); the flow of compressible fluids, both inviscid and viscous; compressible flow machines.

Text-books:

Norrie, D. H., *An introduction to incompressible flow machines* (Arnold).

Ferguson, T. B., *The centrifugal compressor stage* (Butterworth).

Liepmann, H. W., and Roshko, A., *Elements of gas dynamics* (Wiley).

Reference books:

Goldstein, S., *Modern developments in fluid dynamics* (O.U.P.).

Prandtl, L., *The essentials of fluid dynamics* (Blackie).

Tietjens, O. G., and Prandtl, L., *Applied hydro and aero mechanics* (Dover).

Ower, E., and Pankhurst, R. C. ,*The measurement of air flow* (Pergamon).

Pankhurst, R. C., and Holder, D. W., *Wind-tunnel technique* (Pitman).

Glauert, H., *The elements of aerofoil and airscrew theory* (C.U.P.).

Howarth, L., *Modern developments in fluid dynamics—high speed flow* (O.U.P.).

Dixon, S. L., *Fluid mechanics, thermodynamics of turbomachinery* (Pergamon).

Cohen, B., and Rogers, G., *Gas turbine theory* (Longmans).

Courant, R., and Friedrichs, K. O., *Supersonic flow and shock waves* (Interscience).

Cox, R. N., and Crabtree, L. F., *Elements of hypersonic aerodynamics* (E.U.P.).

NM34. Mechanical Engineering IIIB.

Pre-requisite subjects: Mechanical Engineering IIB, Engineering IIM, Engineering IIIM.

An advanced course in theory of machines and machine design, involving about 90 lectures and 160 hours of laboratory and drawing office tutorial work.

THEORY OF MACHINES: A course in advanced dynamics including the dynamics of engine and shaft; balancing; mechanical vibrations including measurements, isolation, damping, dynamic absorbers, vehicle springing, critical speeds in torsion and whirling; continuous media; analogies; engineering acoustics and noise control.

Text-books:

As for Theory of Machines IIB, together with
Church, A. H., *Mechanical vibrations* (Wiley); *or*
Thomson, W. T., *Vibration theory and applications* (Prentice-Hall).

Reference books:

Wilcox, J. B., *Dynamic balancing of rotating machinery* (Pitman).
Holowenko, A. R., *Dynamics of machinery* (Wiley).
Hartman, J. B., *Dynamics of machinery* (McGraw-Hill).
Den Hartog, J. P., *Mechanical vibrations* (McGraw-Hill).
Macduff, J. N., and Curreri, J. R., *Vibration control* (McGraw-Hill).
Burton, R., *Vibration and impact* (Addison-Wesley).
Tuplin, W. A., *Vibration in machinery* (Pitman).
Raven, F. H., *Automatic control engineering* (McGraw-Hill).
Distefano, J. J., and others, *Feedback and control systems* (Schaum).
Dorf, R. C., *Modern control systems* (Addison-Wesley).
Harris, C. M., *Handbook of noise control* (McGraw-Hill).
Kinsler, L. E., and Frey, A. R., *Fundamentals of acoustics* (Wiley).
Beranek, L. L., *Noise reduction* (McGraw-Hill).
Robson, J. D., *Introduction to random vibration* (Edinburgh U.P.).

MACHINE DESIGN.—A course of lectures and drawing office tutorial work on advanced aspects of the design of machine members and mechanical assemblies including treatments of various types of gears, lubrication and bearing design; reciprocating engine components; mathematical and experimental stress analysis, fatigue, creep, design for high speed operation; curved beam theory; the economics of product design and design in relation to manufacturing method.

The work includes the design of a mechanism and of a small project involving thermodynamics or fluid mechanics.

Text-books:

As for Theory of Machines IIB and IIIB and Applied Thermodynamics IIA and IIIA, together with

Johnson, W., and Mellor, P. B., *Plasticity for mechanical engineers* (Van Nostrand).

Reference books:

As for Machine Design IIB, together with the following:
Dixon, J. R., *Design engineering* (McGraw-Hill).
Rogowski, A. R., *Elements of internal combustion engines* (McGraw-Hill).
Lichty, L. C., *Internal combustion engines* (McGraw-Hill).
Mackerle, J., *Air-cooled motor engines* (Cleaver Hume).
Howarth, M. H., *The design of high speed diesel engines* (Constable).
Chou, P. C., and Pagano, N. J., *Elasticity* (Van Nostrand).
Timoshenko, S., *Theory of elasticity* (McGraw-Hill).
Timoshenko, S., *Theory of elastic stability* (McGraw-Hill).
Timoshenko, S., *Theory of plates and shells* (McGraw-Hill).

Lubahn, J. D., and Felgar, *Plasticity and creep of metals* (Wiley).
Cazaud, R., *Fatigue of metals*, tr. by Fenner (Chapman and Hall).
Marin, J., *Mechanical properties of materials and design* (McGraw-Hill).
Finnie, I., and Heller, W. R., *Creep of engineering materials* (McGraw-Hill).
Durelli, A. J., and Riley, W. F., *Introduction to photomechanics* (Prentice-Hall).
Hendry, A. E., *Introduction to photoelasticity* (Blackie).
Merritt, H. E., *Gears* (Pitman).
Shaw, M. C., and Macks, E. F., *Analysis and lubrication of bearings* (McGraw-Hill).
Barwell, F. T., *Lubrication of bearings* (Butterworth).

NM44. Mechanical Engineering IIIC.

1. Seminars—two to be presented by each student on selected topics.

2. A limited research-type project involving a written thesis is to be undertaken by all students during the final year and submitted by the first week in December.

3. A major design project.

NM85. Engineering Management.

This course, covering certain of the more important managerial and non-technical factors which regulate the practice of Engineering, has been designed to meet the requirements of the engineering student about to enter professional practice.

The course is given in two parts which must be taken concurrently. Part A is concerned with the principles of organisation and management and Part B with accounting principles from an engineering viewpoint.

Part A.—Industrial Organisation and Management.

Part A comprises one lecture a week throughout the year. The course gives an introduction to economic development, forms of business ownership, business finance, organisation, industrial engineering, quality control, plant location and layout, industrial relations, and linear programming as an aid to business decision making.

Text-books:

Riggs, J. L., *Production systems planning analysis and control* (John Wiley).

Reference books:

Robertson, S. A., *Engineering management* (Blackie).
Buffa, E. S., *Modern production management* (John Wiley).
Lewis, W. A., *The theory of economic growth* (George Allen and Unwin).
S.A. Laws, Statutes, etc., *Companies Act*, 1962.
Paish, F. W., *Business finance* (Pitman).
Albers, H. H., *Organised executive action* (John Wiley).
Maynard, H. B., *Industrial engineering handbook* (McGraw-Hill).
Taylor, F. W., *Principles of scientific management* (Harpers).
Barnes, R. M., *Work sampling* (John Wiley).
Juran, J. M., *Quality control handbook* (McGraw-Hill).
Ferguson, R. O., and Sargent, L. F., *Linear programming* (McGraw-Hill).

Part B.—Essentials of Accounting.

Part B comprises one lecture a week for two terms and tutorial work as arranged. Written assignments will be set each fortnight. The scope of the course is as follows:

The double-entry framework and the recording of business transactions; preparation of accounting reports for different kinds of accounting entities; analysis and interpretation of accounting reports; introduction to financial mathematics.

Text-book:

Anthony, R. N., *Essentials of accounting* (Addison-Wesley).

Reference books:

Mathews, R. L., *Accounting for economists* (Cheshire).

Gordon, M. J., and Shillinglaw, G., *Accounting, a management approach*, 4th edition (Irwin).

THE HONOURS DEGREE OF BACHELOR OF ENGINEERING

Work for the Honours Degree of Bachelor of Engineering is taken concurrently with that of the final year of the Ordinary Degree course.

NH99. Chemical Engineering for the Honours Degree of B.E.

The work for the Honours Degree will consist of the work prescribed for the Ordinary Degree plus such other work as the Head of the Department may deem desirable. Honours candidates will be required to show a much greater depth of understanding than that required of Pass Degree candidates.

NC99. Civil Engineering—for the Honours Degree of B.E.

The work for the Honours Degree will consist of the full course of lectures prescribed for the final year of the Ordinary Degree and in addition candidates taking Honours will:

(a) take the subject NC89, Civil Engineering IIID, consisting of special lectures at an advanced level, and pass an examination in that subject; and

(b) undertake a laboratory project, which may be an extension of the project taken in the practical work of the Ordinary degree or may be a separate project.

NE99. Electrical Engineering for the Honours Degree of B.E.

The work for the Honours Degree will consist of the full course of lecture and laboratory project work prescribed for the final year of the Ordinary Degree and in addition candidates taking Honours will attend special lectures at an advanced level. Honours candidates will be required to reach a significantly higher standard in all sections of the work than that required of Pass Degree candidates.

NM99. Mechanical Engineering for the Honours Degree of B.E.

The work for the Honours Degree will include the full course of lectures prescribed for the final year of the Ordinary Degree and, in addition, will include special lectures at an advanced level. The laboratory project in the Honours course is more ambitious than that for the Ordinary Degree and is to be submitted as a thesis in the first week of December.

THE HONOURS DEGREE OF BACHELOR OF APPLIED SCIENCE

NH89. Applied Chemistry for the Honours Degree of B.App.Sc.

NH79. Primary Metallurgy for the Honours Degree of B.App.Sc.

NH69. Secondary Metallurgy for the Honours Degree of B.App.Sc.

Candidates may choose one of Applied Chemistry, Primary Metallurgy, and Secondary Metallurgy as a principal subject. The course will consist of lectures, seminars and courses of reading in advanced aspects of the principal subject and in such other subjects as the Head of the Department may deem necessary. Each candidate will be required to give all the time not required for lectures to research and design projects. Candidates may be required to satisfy the examiners that they have a reading knowledge of French and German.

FACULTY OF LAW

SYLLABUS NUMBERS

The first and second letters identify the Faculty of Law: **LL.**

The first digit differentiates subjects in the same year.

The second digit

1–4: indicates year of subject, e.g. first, second, etc.
5: indicates subject normally available only to graduates.
9: indicates subject available to Honours students only.

NOTE: Occasionally new editions of law books are published after the Calendar goes to press; as a general rule, lecturers will use these rather than the ones listed. However, there are important exceptions and students should make inquiries at the Law Library desk before buying such later editions.

LL01. Elements of Law.

The history and organization of the legal system of England and Australia; an introduction to the study of law and to legal reasoning; the system of precedent; the interpretation of statutes.

Text-books:

*Derham, D. P., Maher, F. K. H., and Waller, P. L., *An introduction to law* (Law Book Co., 1966).

Hanbury, H. G., *English courts of law,* 4th edition (O.U.P., 1967).

Levi, E. H., *An introduction to legal reasoning* (Chicago U.P., 1961).

Maher, F. K. H., Waller, P. L., and Derham, D. P., *Cases and materials on the legal process* (Law Book Co., 1966).

Reference books (available in the Library):

†Cross, R. N., *Precedent in English law,* 2nd edition (O.U.P., 1968).

†Archer, P., *The Queen's courts,* 2nd edition (Pelican, 1963).

†Allen, C. K., *Law in the making,* 7th edition (O.U.P., 1964).

Baalman, J., *Outline of law in Australia,* 3rd edition (Law Book Co., 1969).

Kiralfy, A. K. R., *The English legal system,* 4th edition (Sweet and Maxwell, 1967).

Plucknett, T. F. T., *Concise history of the common law,* 5th edition (Butterworth, 1956).

Potter, H., *Historical introduction to English law,* 4th edition (Sweet and Maxwell, 1958).

†Williams, G. L., *Learning the law,* 8th edition (with Australian supplement) (Stevens, 1969).

Holdsworth, W. S., *History of English law,* vol. 1, 7th edition (Methuen, 1956).

Allen, C. K., *The Queen's peace* (Stevens, 1953).

†Windeyer, W. J. V., *Lectures on legal history,* 2nd revised edition (Law Book Co., 1957).

Craies, W. F., *Treatise on statute law,* 6th edition (Sweet and Maxwell, 1963).

Melbourne, A. C. V., *Early constitutional development in Australia* (Qld. U.P., 1963).

Harding A., *A social history of English law* (Pelican, 1966).

†Lloyd, D., *The idea of law* (Pelican, 1964).

Reynold, F., *The judge as lawmaker* (Macgibbon and Kee, 1967).

* To be read before the commencement of lectures.

† Specially recommended reference material.

LL11. Constitutional Law I.

The constitutional history of the United Kingdom, South Australia and the Commonwealth of Australia; the main principles of British constitutional law, with special reference to the application of these principles in Australia; the Constitution of South Australia.

Text-books:

Bagley, J. J., and others, *A documentary history of England,* vols. 1 and 2 (Pelican, 1965-66).

Combe, G. D., *Responsible government in South Australia* (Government printer, Adelaide, 1957).

Mackenzie, K. R., *The English parliament* (Pelican, 1963).

Phillips, O. H., *Constitutional and administrative law,* 4th edition (Paperback) (Sweet and Maxwell, 1967).

Phillips, O. H., *Leading cases in constitutional and administrative law* 3rd edition, paperback (Sweet and Maxwell, 1967).

Sawer, G., *Australian federalism in the courts* (M.U.P., 1967).

Cases, materials and readings in constitutional law (Mimeographed casebook issued by the Law School).

Reference books:

Crisp, L. F., *Australian national government* (Longmans, 1965).

Deakin, A., *The federal story,* 2nd edition (M.U.P., 1963).

Dicey, A. V., *Introduction to the study of the law of the constitution,* 10th edition (Macmillan, 1959).

Evatt, H. V., *The King and his dominion governors,* 2nd edition (Cheshire, 1967).

Heuston, R. F. V., *Essays in constitutional law,* 2nd edition (Stevens, 1964).

Howard, C., *Australian federal constitutional law* (Law Book Co., 1968).

Jennings, W. I., *The law and the constitution,* 5th edition (U. London P., 1959).

Keir, D. L., and Lawson, F. H., *Cases in constitutional law,* 5th edition (O.U.P., 1967).

Langmead, T. P. Taswell-, *English constitutional history,* 11th edition (Sweet and Maxwell, 1960).

Lovell, C. R., *English constitutional and legal history* (O.U.P., 1962).

Stephenson, C., and Marcham, F. G., *Sources of English constitutional history* (Harper, 1937).

Tanner, J. R., *English constitutional conflicts of the seventeenth century,* 1603-1689, students' edition (C.U.P., 1961).

Wade, E. C. S., and Phillips, G. G., *Constitutional law,* 8th edition (Longmans, 1970).

NOTE: Students should purchase a copy of the South Australian *Constitution Act,* 1934-1969, *Criminal Law Consolidation Act,* 1935-66, and *Police Offences Act,* 1953-67 (Government Printer, Adelaide); and of the Commonwealth *Constitution, and the Statute of Westminster Adoption Act,* 1942 (with Index) (Government Printer, Canberra). These will be referred to in classes throughout the year and may be taken into the examination room.

LL21. Criminal Law.

A general introduction to the criminal law.

Text-books:

Brett, P., and Waller, P. L., *Cases and materials in criminal law,* latest edition (Butterworth).

Howard, C., *Australian criminal law,* 2nd edition (Law Book Co., 1970).

Reference books:

Williams, G. L., *Criminal law,* 2nd edition (Stevens, 1961).

Cross, R., and Jones, P. A., *An introduction to criminal law,* 6th edition, Parts I and II (Butterworth, 1968).

Russell, W. O., *On crime,* 12th edition, ed. J. W. C. Turner (Stevens, 1964)

Hall, J., *General principles of criminal law,* 2nd edition (Bobbs-Merrill, 1960).

Perkins, R. M., *Criminal law* (Foundation Press, 1957).

Smith, J. C., and Hogan, B., *Criminal law,* 1st edition (Butterworth, 1965).

Smith, J. C., and Hogan, B., *Criminal law,* 2nd edition (Butterworth, 1969).

Morris, N., and Howard C., *Studies in criminal law* (Oxford, 1964).

NOTE: Students should purchase a copy of *Criminal Law Consolidation Act,* 1935-69, and the *Police Offences Act,* 1953-67 (Government Printer, Adelaide). These will be referred to in classes throughout the year and may be taken into the examination room.

LL02. The Law of Contract.

General principles of the law of contract, including agency.

Text-books:

Cheshire, G. C., and Fifoot, C. H. S., *The law of contract,* 2nd Australian edition (Butterworth, 1969).

McGarvie, R. E., Pannam, C. L., and Hocker, P. J., *Cases and materials on contract* (Law Book Co., 1966).

Reference books:

Anson, W. R., *Principles of the English law of contract,* 22nd edition (O.U.P., 1964).

Chitty, J., *Treatise on the law of contracts,* 23rd edition (Sweet and Maxwell, 1968).

Treitel, G. H., *The law of contract,* 3rd edition (Stevens, 1970).

Atiyah, P. S., *Introduction to the law of contract* (O.U.P., 1961).

Wilson, J. F., *Principles of the law of contract* (Sweet and Maxwell, 1957).

Smith, J. C., and Thomas, J. A. C., *Casebook on contract,* 4th edition (Sweet and Maxwell, 1969).

Williston, S., *Treatise on the law of contracts,* 3rd edition (Baker, Voorhis and Co., 1957-).

Corbin, A. L., *On contracts* (West, 1950-).

Stoljar, S. J., *Law of agency* (Sweet and Maxwell, 1961).

Powell, R., *Law of agency,* 2nd edition (Pitman, 1961).

Fridman, G. H. L., *Law of agency,* 2nd edition (Butterworth, 1966).

NOTE: Students should purchase a copy of the *Sale of Goods Act,* 1895-1952 (Government Printer, Adelaide).

LL12. The Law of Torts.

General principles of the law of torts; specific torts.

Text-books:

Fleming, J. G., *The law of torts,* 3rd edition (Law Book Co., 1965), *or*

Winfield, P. H., *Text-book of the law of tort,* 8th edition (Sweet and Maxwell, 1967).

Reference books:

Morison, W. L., Sharwood, R. L., and Pannam, C. L., *Cases on torts,* paperback (Law Book Co., 1968).

Street, H., *The law of torts,* 4th edition (Butterworth, 1968).

Salmond, J. W., *Law of torts,* 15th edition (Sweet and Maxwell, 1969).

Clerk, J. F., and Lindsell, W. H. B., *Law of torts,* 13th edition (Sweet and Maxwell, 1969).

Weir, T., *A casebook on tort* (Sweet and Maxwell, 1967).

Williams, G. L., *Joint torts and contributory negligence* (Stevens, 1951).

Wright, C. A., *Cases on the law of torts,* 4th edition (Butterworth, 1967).

Prosser, W. L., *Handbook of the law of torts*, 3rd edition (West, 1964).
Fleming, J. G., *Introduction to the law of torts* (O.U.P., 1967).
Fridman, G. H. L., *Modern tort cases* (Butterworth, 1968).
Millner, M. A., *Negligence in modern law* (Butterworth, 1967).
Atiyah, P. S., *Vicarious liabilitiy in the law of torts* (Butterworth, 1967).

NOTE: Students should purchase a copy of the *Wrongs Act*, 1936-1959, and of the *Survival of Causes of Action Act*, 1940 (Government Printer, Adelaide). These will be referred to in classes and may be taken into the examination room.

LL22. The Law of Property.

Pre-requisite or concurrent subjects: The Law of Contract; the Law of Torts.

(a) Principles of the law of real and personal property, and particularly: estates in land (including leaseholds), equitable ownership, future estates, powers of appointment, the rule against perpetuities, servitudes, restrictive covenants, and the general principles of personal property (including general principles of bailment).

(b) Statutes: Law of Property Act, 1936-1966, Real Property Act, 1886-1967, Real Property (Registration of Titles) Act, 1945, Estates Tail Act, 1881, and other statutes as prescribed in lectures (Government Printer, Adelaide).

Text-books:

Megarry, R. E., *A manual of the law of real property*, any edition (Stevens); *or*
Hargreaves, A. D., and Helmore, B. A., *Introduction to the principles of land law, New South Wales* (Law Book Co., 1963).
Goodeve, L. A., *Modern law of personal property*, 9th edition (Sweet and Maxwell, 1949); *or*
Vaines, J. C., *Personal property*, 4th edition (Butterworth, 1967).
Sackville, R., and Neave, M., *Cases, materials and text on property law* (Butterworth, 1971).

Reference books:

Cheshire, G. C., *Modern law of real property*, any edition (Butterworth).
Megarry, R. E., and Wade, H. W. R., *The law of real property*, any edition (Stevens).
Jackson, D. C., *Principles of property law* (Law Book Co., 1967).
Simpson, A. W. B., *An introduction to the history of the land law* (O.U.P., 1964).
Kerr, D., *Principles of the Australian land titles (Torrens) system* (Law Book Co., 1927).
Jessup, G. A., *Forms and practice of Lands Titles Office of S.A.*, 4th edition (Law Book Co., 1963).
Morris, J. H. C., and Leach, W. B., *The rule against perpetuities*, 2nd edition (Stevens, 1962).
Harrison, W. N. L., *Cases on land law*, 2nd edition (Law Book Co., 1965).
Pollock, F., and Wright, R. S., *An essay on possession in the common law* (O.U.P., 1888).
Baalman, J., *Torrens system in New South Wales* (Law Book Co., 1951).
Lawson, F. H., *Introduction to the law of property* (O.U.P., 1958).
Preston, C. H., and Newsom, G. H., *Restrictive covenants affecting freehold land*, 4th edition (Sweet and Maxwell, 1967).
Simes, L. M., *Handbook on the law of future interests* (West, 1951).

LL32. Constitutional Law II.

Pre-requisite subject: Constitutional Law I.

The constitution of the Commonwealth of Australia; introduction to administrative law.

Text-books:

Cases, materials and readings in Australian constitutional law (Mimeographed casebooks issued by the Law School).
An introduction to Australian administrative law (Mimeographed case book issued by the Law School).
Sawer, G., *Cases on the constitution of the Commonwealth of Australia*, 3rd edition (Law Book Co., 1964).

Reference books:

Brennan, T. C., *Interpreting the constitution* (M.U.P., 1935).

Cowen, Z., *Federal jurisdiction in Australia* (O.U.P., 1959).

Else-Mitchell, R., *Essays on the Australian constitution,* 2nd edition (Law Book Co., 1961).

Howard, C., *Australian federal constitutional law* (Law Book Co., 1968).

Moore, W. Harrison, *The constitution of the Commonwealth of Australia,* 2nd edition, (Maxwell, 1910).

Quick, J., and Garran, R. R., *Annotated constitution of the Australian Commonwealth* (Angus and Robertson, 1901).

Wynes, W. A., *Legislative, executive and judicial powers in Australia,* 4th edition (Law Book Co., 1970).

Allen, C. K., *Law and orders,* 3rd edition (Stevens, 1965).

de Smith, S. A., *Judicial review of administrative action,* 2nd edition (Stevens, 1968).

Benjafield, D. G., and Whitmore, H., *Principles of Australian administrative law,* 3rd edition (Law Book Co., 1966).

Griffith, J. A. G., and Street, H., *Principles of administrative law,* 4th edition (Pitman, 1967).

Robson, W. A., *Justice and administrative law,* 2nd edition (Stevens, 1947).

Statutes:

The following should be acquired before lectures commence and may be taken into the examination room.

The Constitution, and the Statute of Westminster Adoption Act, 1942 (with Index) (Government Printer, Canberra).

The High Court Procedure Act, 1903-50 and *The Judiciary Act,* 1903-66 (Government Printer, Canberra).

LL03. Jurisprudence.

Pre-requisite subjects: Elements of Law; Constitutional Law I; Criminal Law and Procedure.

Pre-requisite or concurrent subjects: The Law of Contract; The Law of Torts; The Law of Property: Constitutional Law II.

The philosophy of law; historical and analytical jurisprudence.

Text-book:

Hart, H. L. A., *The concept of law* (O.U.P., 1961).

Reference books:

Aquinas, Thomas, *Selected political writings,* ed. by A. P. d'Entrèves (Blackwell, 1965).

Aquinas, Thomas, *Summa theologiae,* vol. 28 (Blackfriars, 1966).

Austin, J., *The province of jurisprudence determined,* ed. by H. L. A. Hart (Weidenfeld and Nicolson, 1954).

d'Entrèves, A. P., *Natural law* (Hutchinson, 1951).

Devlin, P. A., *The enforcement of morals* (O.U.P., 1965).

Frank, J. N., *Courts on trial* (Princeton U.P., 1950).

Frank, J. N., *Law and the modern mind* (Stevens, 1949).

Fuller, L. L., *The morality of law* (Yale U.P., 1964).

Guest, A. G. (ed.), *Oxford essays in jurisprudence* (O.U.P., 1961).

Hall, J. (ed.), *Readings in jurisprudence* (Bobbs-Merrill, 1938).

Hart, H. L. A., *Law, liberty and morality* (Stanford U.P., 1963).

Hart, H. L. A., *Punishment and responsibility* (O.U.P., 1968).

Hohfeld, W. N., *Fundamental legal conceptions* (Yale U.P., 1923).

Hospers, J., *An introduction to philosophical analysis,* 2nd revised edition (Routledge and Kegan Paul, 1967).

Jones, J. W., *Historical introduction to the theory of law* (O.U.P., 1940).
Kantorowicz, H., *The definition of law* (C.U.P., 1958).
Kelsen, H., *The general theory of law and state* (Harvard U.P., 1946).
Llewellyn, K. N., *Jurisprudence* (U. of Chicago P., 1962).
Lloyd, D., *Introduction to jurisprudence,* 2nd edition (Stevens, 1965).
Ross, A., *On law and justice* (Stevens, 1958).
Shuman, S. I., *Legal positivism* (Wayne State U.P., 1963).
Stone, J., *Human law and human justice* (Stanford U.P., 1965).
Stone, J., *Legal system and lawyers' reasonings* (Stanford U.P., 1964).
Stone, J., *Social dimensions of law and justice* (Stanford U.P., 1966).
Summers, R. S. (ed.), *Essays in legal philosophy* (Blackwell, 1968).
Wasserstrom, R. A., *The judicial decision* (Stanford U.P., 1961).

Students are expected before the beginning of the course to have read Sabine, G. H., *History of political theory,* 3rd edition (Harrap, 1952) (especially sections on Aristotle, Cicero, Aquinas, Machiavelli, Hobbes, Locke, Rousseau, Bentham, Austin, Kant, Hegel, Marx), and Hospers (supra), Chapter I.

LL13. Roman Law.

Pre-requisite subjects: Elements of Law. Two of:—The Law of Contract; The Law of Torts; The Law of Property – if any one of these subjects has not previously been passed it must be taken concurrently.

A course of lectures extending over two terms covering some aspects of Roman private law, particularly the laws of sale and of negligence.

Students will be expected to compare Roman law with South Australian law on relevant topics.

Text-book:

Lee, R. W., *The elements of Roman law,* 4th edition (Sweet and Maxwell, 1956), *or*
Nicholas, J. K. B., *Introduction to Roman law* (O.U.P., 1962).

Reference books:

de Zulueta, F. M. (ed.), *Gaius,* Vols. I and II (O.U.P., 1946-53).
Moyle, J. B. (ed.), *Justinian's Institutes,* 5th edition, 2 vols. (O.U.P., 1913).
Buckland, W. W., *A text-book of Roman law,* 3rd edition (C.U.P., 1963).
Jolowicz, H. F., *Historical introduction to the study of Roman law,* 2nd edition (C.U.P., 1952).
Buckland, W. W., and McNair, A. D., *Roman law and common law,* 2nd edition, reprinted with corrections (C.U.P., 1965).
Schulz, F., *Classical Roman law* (O.U.P., 1951).
de Zulueta, F. M., *The Roman law of sale* (O.U.P., 1945).
Kaser, M., *Roman private law,* 2nd edition; translated by R. Dannenbring (Butterworth, 1968).

LL23. International Law.

Pre-requisite subjects: Elements of Law; Criminal Law and Procedure.

Pre-requisite or concurrent subjects: The Law of Contract; The Law of Torts; The Law of Property; Constitutional Law II.

Text-books:

O'Connell, D. P., *International law,* 2nd edition (Stevens, 1970).
Green, L. C., *International law through the cases,* 3rd edition (Stevens, 1970).
Brierly, J. L., *The law of nations,* 6th edition (O.U.P., 1963).
Brownlie, I., *Principles of public international law* (O.U.P., 1966).

Reference books:

Lauterpacht, H., *Recognition in international law* (C.U.P., 1948).

O'Connell, D. P., *State succession in municipal law and international law* (C.U.P., 1967).

Colombos, C. J., *International law of the sea*, 6th edition (Longmans, 1967).

McNair, A. D., *The law of treaties* (O.U.P., 1961).

Lauterpacht, H., *The development of international law by the International Court* (Stevens, 1958).

Oppenheim, L. F. L., *International law*, Vol. I, 8th edition (Longmans, 1955).

Goodrich, L. M., Hambro, E., and Simons, A. P., *Charter of the United Nations*, 3rd edition (Columbia Univ. Press, 1969).

Bowett, D. W., *The law of international institutions* (Stevens, 1963).

De Visscher, C., *Theory and reality in public international law*, revised edition (Princeton U.P., 1968).

Briggs, H. W., *The law of nations: cases, documents and notes*, 2nd edition, (Stevens, 1953).

LL33. Legal History.

Students are advised to consult the departmental notice board for announcements about this subject which may not be offered in 1971.

Pre-requisite subjects: Elements of Law; Constitutional Law I; Criminal Law and Procedure.

Pre-requisite or concurrent subjects: The Law of Contract; The Law of Torts; The Law of Property; Constitutional Law II.

The course will deal with some aspects of the history of English law and with the evolution of Australian legal institutions.

Text-books:

Milsom, S. F. C., *Historical foundations of the common law* (Butterworth, 1969).

Castles, A. C., *An introduction to Australian legal history* (Law Book Co., expected to be available in early 1971).

Fifoot, C. H. S., *History and sources of the common law* (Stevens, 1949).

Maitland, F. W., *The forms of action at common law* (C.U.P., 1948).

Simpson, A. W. B., *An introduction to the history of the land law* (O.U.P., 1961).

Holdsworth, W. S., *A history of English law*, especially Vols. III, IV, VII and VIII (Methuen).

Radcliffe, G. R. Y., and Cross, C., *English legal system*, 4th edition (Butterworth, 1964).

Plucknett, T. F. T., *Concise history of the common law*. 5th edition (Butterworth, 1956).

Ames, J. B., *Lectures on legal history* (Harvard U.P., 1913).

Pollock, F., and Maitland, F. W., *History of English law*, Vols. I and II (C.U.P.).

Holmes, O. W., *The common law* (Macmillan, 1882).

Maitland, F. W., *Collected papers* (C.U.P., 1911).

Kiralfy, A. K. R., *The action on the case* (Sweet and Maxwell, 1951).

Potter, H., *Historical introduction to English law*, 4th edition (Sweet and Maxwell, 1958).

Association of American Law Schools, *Select essays in Anglo-American legal history*, Vols. I-III (Little, Brown, 1907-9).

Sutton, R., *Personal actions at common law* (Butterworth, 1929).

Dicey, A. V., *Law and public opinion in England*, 2nd edition (Macmillan, 1914).

Pound, R., *Interpretations of legal history* (C.U.P., 1923).

Stephen, J. F., *History of the criminal law of England* (Macmillan, 1883).

LL43. Equity.

Pre-requisite subjects: The Law of Contract; The Law of Property.

Such of the following special subjects as may be chosen by the lecturer: The principles of equity and equitable estates and interests; trusts; mortgages; wills and intestacy; administration of estates; the principles of conveyancing.

Text-books:

Snell, E. H. T., *Principles of equity*, 26th edition (Sweet and Maxwell, 1966).

Nathan, J. A., and Marshall, O. R., *A casebook on trusts*, 5th edition (Stevens, 1967).

Hanbury, H. G., *Modern equity*, 9th edition (Stevens, 1970).

Other books on particular subjects suggested in lectures.

Reference books:

Nathan, J. A., *Equity through the cases*, 4th edition (Stevens, 1961).

Ford, H. A. J., *Cases on trusts*, 2nd edition (Law Book Co., 1966).

McDougall, A., *Modern conveyancing* (Pitman, 1936).

Jacobs, K. S., *Law of trusts in N.S.W.*, 2nd edition (Butterworth, 1967).

Fricke, G., and Strauss, O. K., *Law of trusts in Victoria* (Butterworth, 1964).

Pettit, P. H., *Equity and the law of trusts* (Butterworth, 1966).

Scott, A. W., *Abridgment of the law of trusts* (Little, Brown, 1960).

Parker, D. B., and Mellows, A. R., *The modern law of trusts*, 2nd edition (Sweet and Maxwell, 1970).

NOTE: Students should purchase a copy of the *Trustee Act*, 1936-1968, and of the *Law of Property Act*, 1936-66. These will be referred to in classes.

LL53. Mercantile Law I.

Pre-requisite subjects: The Law of Contract; The Law of Property.

Pre-requisite or concurrent subject: Equity.

The sale of goods, hire purchase, bills of sale, and negotiable instruments with particular emphasis on cheques; an introduction to bankruptcy, partnership and company law.

Text-books:

Gower, L. C. B., *Principles of modern company law*, 3rd edition (Stevens, 1969).

Adelaide University Law School Committee on consumer credit and moneylending, *Report* (Government Printer, Adelaide, 1969).

Mimeographed materials will be issued by the Law School.

Statutes:

Sale of Goods Act, 1895-1952 (Government Printer, Adelaide).

Bills of Exchange Act, 1909-58 (Government Printer, Canberra).

Bills of Sale Act, 1886-1940 (Government Printer, Adelaide).

Hire Purchase Agreements Act, 1960-66 (Government Printer, Adelaide).

Mercantile Law Act, 1936 (Government Printer, Adelaide).

Bankruptcy Act, 1966 (Government Printer, Canberra).

Companies Act, 1962-68 (Government Printer, Adelaide).

Reference books:

Borrie, G., and Diamond, A. L., *The consumer, society and the law*, 2nd edition (Penguin, 1968) (*Recommended for preliminary reading*).

Atiyah, P. S., *The sale of goods*, 3rd edition (Pitman, 1966).

Chalmers, M. D. E., *Sale of goods act*, 1893, 15th edition (Butterworth, 1967).

Fridman, G. H. L., *Sale of goods* (Sweet and Maxwell, 1966).
Sutton, K. C. T., *The law of sale of goods in Australia and New Zealand* (Law Book Co., 1967).
Richardson, D., *A simple guide to negotiable instruments*, 3rd edition (Butterworth, 1963).
Riley, B. B., *The law relating to bills of exchange in Australia*, 2nd edition (Law Book Co., 1964).
Lewis, A. N., *A textbook of Australian bankruptcy law*, 5th edition (Law Book Co., 1967).
Dean, A., *Law relating to hire-purchase in Australia*, 2nd edition (Law Book Co., 1938).
Else-Mitchell, R., and Parsons, R. W., *Hire-purchase law*, 4th edition (Law Book Co., 1968).
Pannam, C. L., *The law of money lenders in Australia and New Zealand* (Law Book Co., 1965).
Sykes, E. I., *Law of securities* (Law Book Co., 1962).
Paton, G. W., *Bailment in the common law* (Stevens, 1952).
Higgins, P. F. P., *The law of partnership* (Law Book Co., 1963).
Pollock, F., *Law of partnership*, 15th edition (Stevens, 1952).
Wallace, G., and Young, J. McI., *Australian company law and practice* (Law Book Co., 1965).

LL63. Seminar Course.

Seminar courses on Administrative Law, Restrictive Trade Practices and on other subjects will be arranged by the Faculty of Law from time to time. For further details concerning seminar courses to be offered in 1971 and selection procedure students should consult the departmental notice board.

LL04. Private International Law.

Pre-requisite subjects: The Law of Contract; The Law of Torts; The Law of Property; Equity.

Pre-requisite or concurrent subjects: Mercantile Law I; The Law of Evidence and Procedure.

(1) General principles of private international law; jurisdiction and choice of law in the general fields of matrimonial causes, actions *in personam*, title to property (both movable and immovable), and the status of children; recognition of foreign divorces, nullity decrees, adoptions and legitimations; recognition and enforcement of foreign money judgments.

(2) Private international law in a federal system; diversity jurisdiction and choice of law; full faith and credit.

Text-books:

Cowen, Z., and Mendes da Costa, D., *Matrimonial causes jurisdiction* (Law Book Co., 1961).
Kelly, D. St. L., *Private international law casebook* (Mimeographed).
Nygh, P. E., *Conflict of laws in Australia* (Butterworth, 1968).

Reference books:

Cavers, D. F., *The choice of law process* (U. of Michigan P., 1965).
Cheshire, G. C., *Private international law*, 8th edition (Butterworth, 1970).
Cook, W. W., *The logical and legal bases of the conflict of laws* (Harvard U.P., 1949).
Cowen, Z., *American-Australian private international law* (Oceana, 1957).
Cowen, Z., *Federal jurisdiction in Australia* (O.U.P., 1959).
Currie, B., *Selected essays on the conflict of laws* (Duke U.P., 1963).
Dicey, A. V., and Morris, J. H. C., *Conflict of laws*, 8th edition (Stevens, 1967).

Falconbridge, J. D., *Essays on the conflict of laws,* 2nd edition (Canada Law Book Co., 1954).

Morris, J. H. C., *Cases on private international law,* 4th edition (O.U.P., 1968).

Robertson, A. H., *Characterization in the conflict of laws* (Harvard U.P., 1940).

Sykes, E. I., *Cases and materials on private international law,* 2nd edition (Law Book Co., 1969).

Von Mehren, A. T., and Trautman, D. T., *The law of multi-state problems* (Little, Brown, 1965).

Wolff, M., *Private international law,* 2nd edition (O.U.P., 1950).

LL14. Family Law.

Pre-requisite subjects: The Law of Contract; The Law of Torts; The Law of Property; Equity; Mercantile Law I.

The course consists of a detailed study of: the engagement to marry; the laws of marriage; matrimonial property; maintenance; matrimonial causes; legitimacy and legitimation; adoption; laws relating to testators' family maintenance; laws relating to custody and guardianship of infants; parental right and duties; certain selected topics of private international law including the law of domicil.

Text-book:

Hambly, A. D., and Turner, J. N., *Cases and materials on Australian family law* (mimeographed).

Reference books:

Bromley, P. M., *Family law,* 3rd edition (Butterworth, 1966).

Cowen, Z., and Mendes da Costa, D., *Matrimonial causes jurisdiction* (Law Book Co., 1961).

Finlay, H. (ed.), *Divorce, society and the law* (Butterworth, 1969).

Joske, P. E., *Matrimonial causes and marriage law and practice of Australia and New Zealand* (Butterworth, 1969).

Toose, P. B., Watson, R., and Benjafield, D., *Australian divorce law and practice* (Law Book Co., 1968).

LL24. Mercantile Law II.

Pre-requisite subject: Mercantile Law I.

Pre-requisite or concurrent subject: Equity.

The course consists of a detailed study of agency, bankruptcy and company law, and will also include an examination of other selected topics in mercantile law.

Text-book:

Gower, L. C. B., *Principles of modern company law,* 3rd edition (Stevens, 1969).

Reference books:

Palmer, F. B., *Company law,* 21st edition (Stevens, 1968).

University of Sydney, Law School, *The new companies law* (Young, 1962).

Northey, J. F., *Introduction to company law* (N.Z.), 6th edition (Butterworth, 1968).

Bowstead, W., *Digest of the law of agency,* 13th edition (Sweet and Maxwell, 1968).

Powell, R., *Law of agency,* 2nd edition (Pitman, 1961).

LL34. Local Government and Industrial Law.

Pre-requisite subjects: Criminal Law and Procedure; The Law of Contract, The Law of Torts; Constitutional Law II.

Pre-requisite or concurrent subjects: The Law of Property; Equity.

The course is divided into two sections:

(a) An examination of powers and functions of local government authorities.

(b) Industrial law, consisting of a study of contracts of employment, with particular reference to restrictive covenants, copyright and patent law, and to the termination of such contracts; Conciliation and Arbitration Act procedures; the making of awards, both State and Commonwealth; the law applicable to strikes and trade unions; workmen's compensation law.

The following statutes, which may be taken into the examination, should be acquired:

Conciliation and Arbitration Act, 1904-67 (Government Printer, Canberra).

Commonwealth Employees' Compensation Act, 1930-67 (Government Printer, Canberra).

Local Government Act, 1934-67 (Government Printer, Adelaide).

Workmen's Compensation Act, 1932-66 (Government Printer, Adelaide).

Industrial Code, 1967-68 (Government Printer, Adelaide).

Reference books:

Portus, J. H., *The development of Australian trade union law* (M.U.P., 1958).

Cooper, W. M., and Wood, J. C., *Outlines of industrial law*, 5th edition (Butterworth, 1966).

Nolan, J. R. W., and Cohen, K. A., *Federal industrial laws*, 4th edition (Butterworth, 1968).

Batt, F. R., *Law of master and servant*, 5th edition (Pitman, 1967).

Anderson, K. V., and Beach, B. W., *Workmens compensation acts*, 2nd edition (Butterworth, 1966).

LL44. The Law of Evidence and Procedure.

Pre-requisite subjects: Criminal Law; The Law of Contract; The Law of Torts.

Pre-requisite or concurrent subjects: The Law of Property; Equity.

The law of evidence generally; pleading and practice in the Supreme Court and Local Court; criminal procedure.

Text-books:

Cross, R. N., *Evidence*, Australian edition (Butterworth, 1970).

Wells, W. A. N., *An introduction to the law of evidence* (Government Printer, Adelaide).

Reference books:

Cross, R. N., and Wilkins, N., *Outline of the law of evidence*, 2nd edition, (Butterworth, 1968).

Cross, R. N., *Evidence*, 3rd edition (Butterworth, 1967).

Stephen, J. F., *A digest of the law of evidence*, 12th edition (Macmillan, 1948).

Phipson, S. L., *The law of evidence*, 11th edition (Sweet and Maxwell, 1970).

The Supreme Court practice (Sweet and Maxwell).

Hannan, A. J., *Practice of the Local Court in South Australia* (Law Book Co., 1934).

Hannan, A. J., *Summary procedure of justices in South Australia*, 3rd edition (Law Book Co., 1957).

Daniell, E. R., *Treatise on the practice of the High Court of Chancery*.

Chitty, T., *Queen's bench forms*, 18th edition (Sweet and Maxwell, 1956).

Matrimonial causes hand-book (Government Printer, Canberra, 1961).

Odgers, W. B., *Principles of pleading*, 18th edition (Stevens, 1963).

Cockle, E., *Cases and statutes on the law of evidence*, 11th edition (Sweet and Maxwell, 1970).

Edwards, E. J., *Cases on evidence in Australia* (Law Book Co., 1968).

NOTE: Students should purchase copies of the *Criminal Law Consolidation Act*, 1935-69, and the *Justices Act*, 1921-69 (Government Printer, Adelaide).

LL54. Legal Ethics and Accounts.

Pre-requisite or concurrent subjects: Equity, The Law of Evidence and Procedure.

A course of lectures on the rules and etiquette of professional practice, and on certain basic accounting procedures in the practitioner's office.

LL64. Seminar Course.

Seminar courses on Administrative Law, Restrictive Trade Practices and on other subjects will be arranged by the Faculty of Law from time to time. For further details concerning seminar courses to be offered in 1971 and selection procedure students should consult the departmental notice board.

LL05. Taxation Law.

This course of lectures is given only in alternate years, and will be offered in 1971. It is available to graduates in law and, with the Faculty's permission, to law students in their final year.

Details of the course and a reading list are available at the Law School.

LL99. The Honours Degree of Bachelor of Laws.

See Regulation 4 and Schedule II of the LL.B. Regulations and Schedules.

FACULTY OF MEDICINE

SYLLABUS NUMBERS

The first letter identifies the Faculties responsible for the various subjects, as follows:

Faculty of Arts	**A**	**Faculty of Medicine** ...	**M**
Faculty of Science ...	**S**		

The second letter: if it follows

A, is explained under Faculty of Arts;
or **S**, is explained under Faculty of Science;
or **M**, identifies the medical department teaching the subject as follows:

Anatomy and Histology ...	**A**	**Obstetrics and Gynaecology** ...	**O**
Child Health	**C**	**Pathology**	**P**
Medicine	**M**	**Surgery**	**S**
Mental Health	**H**		

The first digit

0–6: indicates that the subject forms part of a sequence.
7–9: indicates that the subject does not form part of a sequence.

The second digit

1–6: indicates year of subject, e.g. first, second, etc.
9: indicates subject available only to candidates for the Honours degree of B.Med.Sc.

DEGREES OF BACHELOR OF MEDICINE AND BACHELOR OF SURGERY

PRELIMINARY EXAMINATION.

FIRST YEAR

The schedules prescribe that students take—

SP01 Physics I; SC01 Chemistry I; SZ71 Biology I; and—

A fourth subject chosen from the first-year subjects available for the degree of Bachelor of Arts or Bachelor of Science.

(For Syllabuses see under Arts or Science).

FIRST PROFESSIONAL EXAMINATION

SECOND YEAR

MA02. Anatomy.

HISTOLOGY AND EMBRYOLOGY: Lectures and practical classes on the development and microscopic structure of the tissues, organs and systems of the body extend over the three terms of second year. Before the time of examination students are required to submit their notebooks as evidence of satisfactory performance at practical classes. Medical students are expected to provide their own microscopes and the following books (latest editions):

Ham, A. W., *Histology* (Lippincott), *or*
Maximow, A. A., and Bloom, W., *A text-book of histology*, revised by W. Bloom and D. W. Fawcett (Saunders); *together with*

Hamilton, W. J., and others, *Human embryology* (Heffer).
Ford, E. B., *Genetics for medical students* (Methuen).

The following books are recommended for further reading:
Arey, L. B., *Developmental anatomy* (Saunders).
Patten, B. M., *Human embryology* (Blakiston).
Clark, W. E. Le Gros, *The tissues of the body* (O.U.P.).
Langman, J., *Medical embryology: human development, normal and abnormal* (Williams and Wilkins).
Sinclair, C., *Human growth after birth* (Oxford Med. Pub.).
Smith, C. A., *The physiology of the newborn infant* (Thomas).
Toner, P. G., and Carr, K. E., *Cell structure. An introduction to biological electron microscopy* (Livingstone).
Harrison, R. J., *Man the peculiar animal* (Pelican).
Auerbach, C., *Genetics in the atomic age* (Oliver and Boyd).

GROSS AND NEURO-ANATOMY: The course extends over five terms, beginning in the first term of the second year of the medical course, and is so arranged that the dissection of the human body can be completed by the end of the course. The dissecting room is open from Monday to Friday from 9 a.m. to 5 p.m. and on Saturday from 9 a.m. to 11 a.m. during each week of term, under the supervision of the professor, the readers, lecturers and demonstrators.

The practical work includes a series of oral tests on parts of the body, as they are dissected.

The following lectures and practical classes are held:
During the whole period, tutorial classes on regional anatomy.
During the first term, a course of introductory lectures on anatomy.
During the third, fourth and fifth terms, a course of lectures and practical classes on the gross and microscopical anatomy of the nervous system.
During the fifth term, lectures and demonstrations on special topics.

Students must equip themselves with dissecting instruments, half a human skeleton, and the following books (*latest editions*):
Gray, H., *Anatomy, descriptive and applied* (Longmans); *or*
Cunningham, D. J., *Textbook of anatomy* (O.U.P.); *or*
Lockhart, R. D., and others, *Anatomy of the human body* (Faber).
Cunningham, D. J., *Manual of practical anatomy*, vols. 1-3 (O.U.P.).

The following books are recommended for further reading:
Abbie, A. A., *Principles of anatomy* (Angus and Robertson).
Appleton, A. B., and others, *Surface and radiological anatomy*, latest edition (Heffer).
Crosby, Elizabeth C., and others, *Correlative anatomy of the nervous system* (Macmillan).
Lockhart, R. D., *Living anatomy* (Faber).
Maguire, F. A., *Anatomy of the female pelvis* (Angus and Robertson).
Peele, T. L., *The neuroanatomic basis for clinical neurology* (McGraw-Hill).

Books for further reading and reference will be recommended from time to time and can be consulted in the medical library.

SY12. Biochemistry.

A course of four terms of lectures and laboratory work in biochemistry including both fundamental and applied aspects.

The course will include aspects of: protein structure and function; biochemistry of enzymes; nucleic acids and protein synthesis; biochemistry of gene action; molecular action of antibiotics; metabolism of carbohydrates, amino acids and lipids; molecular functions of vitamins; biochemical control mechanisms; nature of viral diseases, biochemistry of cancer, metabolic disorders; use of biochemistry in diagnosis; molecular approach to disease. The course will include lectures on the more clinical aspects of biochemical disorders.

Text-book:

White, A., and others, *Principles of biochemistry*, 4th edition (McGraw-Hill).

Reference books:

Harper, H. A., *Review of physiological chemistry*, 12th edition (Lange).

Bartley, W., and others, *Biochemistry of the tissues* (Wiley).

Searcy, R. L., *Diagnostic biochemistry* (McGraw-Hill).

Stanbury, J. B., and others, *Metabolic basis of inherited disease* (McGraw-Hill).

Dickerson, R. E., and Geis, I., *The structure and action of proteins* (Harper and Row).

SS12. Human Physiology.

The course of lectures and experimental work in Human Physiology extends over the three terms of the second year and the first and second terms of the third year of medical study.

Text-books:

Guyton, A. C., *Textbook of medical physiology* (Saunders).

Rand, M. J., and others, *An introduction to the physiology and pharmacology of the autonomic nervous system* (The Australasian Pharmaceutical Publishing Co., Melbourne).

Autonomic Pharmacology will be covered during the course in Human Physiology. Pharmacology continues in the third term of the third year and then may merge with the topic teaching programme in fourth year.

THIRD YEAR

MA03. Anatomy.

For Syllabus see **MA02 Anatomy**—under Second Year.

SY13. Biochemistry.

For Syllabus see **SY12 Biochemistry**—under Second Year.

Part of course **SY12** is given in Third Year.

SS13. Human Physiology.

For Syllabus see **SS12 Human Physiology**—under Second Year.

SECOND PROFESSIONAL EXAMINATION

FOURTH YEAR

MP74. Pathology.

The course in Pathology extends over four terms. In the third term of the third year of the medical course a self-contained introductory course in the general principles of the subject is given. The nature and causes of disease are first considered, and then follows a full consideration of the inflammatory reaction, including tissue regeneration and repair. Other topics are coagulation and its disorders, thrombosis, embolism and infarction, retrograde cellular changes and degenerations, the biological effects of radiant energy, the fundamentals of the neoplastic process, malformations, chromosomal abnormalities, haemorrhage, shock and oedema.

Commencing in the first term of the fourth year of the medical course applied (systematic) pathology is studied, as part of an integrated multi-disciplinary programme of instruction on selected topics: The naked-eye and microscopic changes in diseased organs and tissues are considered, and the morbid physiology of disease is also discussed. The course comprises lectures, weekly tutorials, mortuary demonstrations of selected material, clinico-pathological demonstrations, and attendance at necropsies in the mortuary of the Royal Adelaide Hospital.

Necropsies are held daily when material is available, and students are required to attend as many as possible.

Text-books:

For General Pathology:

Walter, J. B., and Israel, M. S., *General pathology*, latest edition (Churchill).

Reference book: Florey, *General pathology*, latest edition (Lloyd-Luke).

For Special Pathology:

Robbins, S. L., *Text book of pathology*, latest edition (Saunders).

For the integrated topical programme:

A companion to medical studies, (editors R. Passmore and J. S. Robson), Volume 2: Pharmacology, Microbiology, General Pathology, (Blackwell, Oxford, 1970).

SK74. Microbiology.

Bacteria of medical importance: their isolation, morphology, physiology and classification. The principles of sterilization and disinfection, the use of antibiotics and chemotherapeutic agents. The role of micro-organisms in human disease, considered as a study of host-parasite relationships; epidemiology and its relation to hospital cross-infections. An outline of human virus infections. The collection of specimens for bacteriological and viral diagnosis.

The principles of immunology as applied to the diagnosis, prophylaxis and therapy of bacterial and virus diseases, transplantation, diseases due to allergy or hypersensitivity and autoimmune disease.

The first term consists of introductory lectures and a practical course using basic laboratory techniques. In the following three terms there are seminars on selected clinical topics related to Topic Teaching concerning infectious diseases and immunological problems, including visits to the Children's Hospital and the Northfield Wards of the Royal Adelaide Hospital. Students are expected to take an active part in these clinical presentations.

At all stages the course is related, whenever possible, to clinical material.

Text-books:

Cruickshank, R. (ed.), *Medical microbiology* (Livingstone).

Humphrey, J. H., and White, R. G., *Immunology for students of medicine*, 3rd edition (Blackwell).

Barber, M., and Garrod, L. P., *Antibiotic and chemotherapy*, 3rd edition by L. P. Garrod and F. O'Grady (Livingstone).

SS74. Applied Physiology and Pharmacology.

The course extends through four consecutive terms beginning with the third term in the third year of medical studies. There will be two lectures and one practical class a week in the third term of the third year and one half-day a week throughout the fourth year or part of topic teaching. The subject-matter will be the application of the more important principles of physiology and pharmacology to medicine and surgery.

Text-books:

Meyers, F. H., and others, *Review of medical pharmacology* (Lange); *or*

Goth, A., *Medical pharmacology* (Mosby); *or*

Wilson, A., and Schild, H., *Applied pharmacology* (Churchill); *or*

Laurence, D. R., *Clinical pharmacology* (Churchill).

Campbell, E. J. M., and others, *Clinical physiology* (Blackwell).

Guyton, A. C., *Textbook of medical physiology* (Saunders).

Reference books:

Goodman, L. S., and Gilman, A., *The pharmacological basis of therapeutics*, current edition (Macmillan).

Welt, L. G., *Clinical disorders of hydration and acid-base equilibrium* (Little, Brown).

Harrison, T. R., *Principles of internal medicine* (McGraw-Hill).

Bland, J. H., *Clinical metabolism of body water and electrolytes* (Saunders).

Passmore, R., *A companion to medical studies*, vol. 2: *Pharmacology etc.* (Blackwell).

FINAL PROFESSIONAL EXAMINATION, PART I

FIFTH YEAR

MO75. Obstetrics and Gynaecology.

A course of lectures in obstetrics and gynaecology is given during the fifth year. Students reside in The Queen Elizabeth Hospital or Queen Victoria Hospital for one clinical term. During this time both obstetric and gynaecological clinical attachments are performed.

Tutorials in practical obstetrics, endocrinology and gynaecological pathology are given during residence.

Text-books:

Townsend, L., *Obstetrics for students* (Melbourne U.P.).

Llewellyn-Jones, D., *Fundamentals of obstetrics and gynaecology*, vol. I: *Obstetrics* (Faber and Faber).

Townsend, L., *Gynaecology for students*, 2nd edition (Melbourne U.P.).

Jeffcoate, T. N. A., *Principles of gynaecology*, 3rd edition (Butterworth).

Kerr, J. M. N., *Combined textbook of obstetrics and gynaecology*, 8th edition, ed. D. Baird (Livingstone).

Garry, M. M., and others, *Obstetrics illustrated* (Livingstone).

Peel, J., and Potts, M., *Textbook of contraceptive practice* (Cambridge U.P.).

Advanced reading:

Shaw, W., *Textbook of operative gynaecology*, rev. by J. Hawkins, 3rd edition (Livingstone).

Kerr, J. M. M., *Operative obstetrics*, 7th edition by J. C. Moir, (Ballière, Tindall and Cox).

Haines, R. M., and Taylor, C. W., *Gynaecological pathology* (Churchill).

Williams, J. W., *Obstetrics*, 13th edition, by N. J. Eastman and L. M. Hellman (Appleton-Century Crofts).

Hytten, F. E., and Leitch, I., *The physiology of human pregnancy* (Blackwell).

Kistner, R. W., *Gynaecology: principles and practice* (Year Book Medical Publishers).

De Lee, J. B., *Obstetrics*, 13th edition by J. P. Greenhill (Saunders).

MC75. Pediatrics.

MEDICAL DISEASES OF CHILDREN: Lectures, tutorials, and clinical instruction in the general problems of pediatrics, including the newborn.

Reference book:

Nelson, W. E., *Text-book of paediatrics*, latest edition (Saunders).

SURGICAL DISEASES OF CHILDREN: Lecture-demonstrations on surgical diseases of children given at the Adelaide Children's Hospital.

Reference books:

White, M., *Surgery in infancy and childhood*, 2nd edition ed. by W. M. Dennison (Livingstone).

Royal Children's Hospital Melb., *Clinical paediatric surgery*, ed. by P. G. Jones (Ure Smith).

FINAL PROFESSIONAL EXAMINATION, PART II

SIXTH YEAR

MM76. Medicine.

A. MEDICINE: A course of lectures in the fourth and sixth years in the principles and practice of medicine, including therapeutics, in general and special diseases.

Clinical instruction is given during both in- and out-patient appointments in general medicine during the third, fourth and sixth years.

1. *Medicine.*

Text-book (fourth year):

Davidson, L. S. P., and others, *Principles and practice of medicine* (Livingstone); *or*

Houston, J. C., and others, *A short text-book of medicine* (English Universities Press).

Text-book (sixth year):

Harrison, T. R., and others, *Principles of internal medicine* (McGraw-Hill); *or*

Price, F. W., *Text-book of the practice of medicine*, 10th edition by R. Bodley Scott (O.U.P.); *or*

Cecil, R. L. F., and Loeb, R. F., *Text-book of medicine* (Saunders).

Special reference books:

Hinshaw, H. C., and Garland, L. H., *Diseases of the chest* (Saunders).

Brain, R., *Clinical neurology* (O.U.P.).

Friedberg, C. K., *Diseases of the heart* (Saunders).

Sneddon, I. B., and Church, R. E., *Practical dermatology* (Arnold).

De Wardener, H. E., *Kidney* (Churchill).

Sherlock, S. P. V., *Liver disease* (Churchill).

Ramsay, A. M., and Edmond, R. T. D., *Infectious diseases* (Heinemann).

Gruchy, G. C. de, *Clinical haematology in medical practice* (Blackwell).

Truelove, S. C., and Reynell, P. C., *Diseases of the digestive system* (Blackwell).

Williams, R. H., (ed.), *Textbook of endocrinology* (Saunders).

2. *Physical Signs.*

Text-book:

Judge, R. D., and Zuidema, G. D., *Physical diagnosis, a physiologic approach* (Little, Brown).

3. *Clinical Chemistry.*

Text-book:

Gray, C. H., *Clinical chemical pathology* (Arnold).

4. *Therapeutics.*

Text-books:

Dunlop, D. M., McNee, J. W., and others, *Text-book of medical treatment* (Livingstone); *or*

Chatton, M. J., and others, *Handbook of medical treatment* (Lange).

B. Psychological Medicine: This course is designed to help the student to appreciate the relevance for all illness of psychological and sociological factors.

In addition, the main forms of mental disorder are studied.

The pre-clinical part of the course in Medical Psychology deals with the development of human personality and the main areas of psychological enquiry.

In the fifth year the major forms of mental illness including the affective disorders, schizophrenia, character disorders, including alcohol and drug addiction and the psychoneuroses are studied.

The complete course ends in sixth year with an intensive period of study in the general teaching hospitals when the student studies emotional problems of the patient and the family in depth.

Text-books:

Sim, M., *Guide to psychiatry*, 2nd edition (Livingstone).

Mowbray, R. M., and Rodger, T. F., *Psychology in relation to medicine*, 2nd edition (Livingstone).

Mussen, P. H., and others, *Child development and personality* (Harper and Row).

The following paperbacks are valuable:

Hays, P., *New horizons in psychiatry.*

Stafford-Clark, D., *Psychiatry for students.*

Stafford-Clark, D., *Psychiatry today.*

Oswald, I., *Sleep.*

Eysenck, H., *Fact and fiction in psychology.*

Hinton, J. M., *Dying.*

MS76. Surgery.

A. Surgery: A course of lectures and demonstrations extending over three years in the principles and practice of surgery. Clinical instruction is given during in- and out-patient appointments in both general surgery and special subjects during fourth, fifth and sixth years.

Text-books:

Systematic (*one* of the following):

Ellis, H., and Calne, R. Y., *Lecture notes on general surgery*, 2nd edition (Blackwell).

Illingworth, C., *A short textbook of surgery*, 8th edition (Churchill).

Macfarlane, D. A., and Thomas, L. P., *Textbook of surgery*, 2nd edition (Livingstone).

Bailey, A. J. H., and Love, R. J. M., *Short practice of surgery*, 14th edition rev. by A. J. H. Rains and W. M. Capper (Lewis).

Taylor, S., and Cotton, L., *A short textbook of surgery,* 2nd edition (English U.P.).

Elmslie, R. G., and Ludbrook, J., *Introduction to surgery,* 1st edition (Heinemann).

Physical Diagnosis (*one* of the following):

Bailey, H., *Demonstration of physical signs in clinical surgery,* 14th edition by A. Clain (Wright).

Dunphy, J. E., and Botsford, T. W., *Physical examination of the surgical patient,* 3rd edition (Saunders).

Judge, R. D., and Zuidema, G. D., *Physical diagnosis: a physiological approach to the clinical examination,* 2nd edition (Little Brown).

Reference books:

Davis, L., *Christopher's textbook of surgery,* 9th edition (Saunders).

Allen, J. G., and others, *Surgery, principles and practice,* 3rd edition by C. A. Moyer and others (Lippincott).

Schwartz, S. I., *Principles of surgery,* 1st edition (McGraw-Hill).

Adams, J. C., *Outline of orthopaedics,* 6th edition (Livingstone).

Adams, J. C., *Outline of fractures,* 5th edition (Livingstone).

N.B.: Detailed advice on selection and use of text-books and references is issued by the Head of the Department. Fourth year students in 1971 should note special recommendations which will be issued in relation to the new curriculum.

B. Diseases of the Eye: A course of eighteen tutorials and six lectures dealing with examination of the eyes, errors of refraction, diseases and injuries of the eyelids, conjunctive, lachrymal apparatus and eyeball, including ocular signs of systemic disease, affections of the ocular muscles and simple principles of ocular operations.

Text-book:

Vaughan, D., Cook, R., and Asbury, T., *General ophthalmology,* 5th edition (Lange Medical Publications).

Reference books:

Parsons, J. H., *Diseases of the eye,* 14th edition, edited by L. S. Duke-Elder(Churchill).

Elder, L. S. Duke-, *Textbook of ophthalmology,* 2nd edition (10 volumes) (Kimpton). This text-book of ophthalmology is now being replaced by the author's new *System of ophthalmology.*

Equipment:

Students are expected to equip themselves with an ophthalmoscope, an 8 x monocular loupe, a Bishop Harman or Mayou binocular loupe and a torch; details of approved types can be obtained from the Medical School Office.

C. Diseases of the Ear, Nose and Throat: A course of out-patient clinics and lectures dealing with: nasal obstruction due to disease and injury; acute and chronic sinusitis, symptoms, and treatment; nasal manifestations of allergy and treatment; epistaxis — causes and treatment; throat infections — types, causes and treatment; malignant disease of throat, its surgery and treatment by radiation; dysphagia — types, causes and treatment; cardiospasm; diseases of the larynx and their treatment, with special reference to tuberculosis and cancer; the nature of hearing and deafness; causes and types of deafness and their treatment; suppurative otitis and its complications; tinnitus; vertigo; injuries to ear; vestibular tests.

Text-books:

Hall, I. S., *Disease of the nose, throat and ear* (Livingstone); *or*

De Weese, D. D., and Saunders, W. H., *Textbook of otolaryngology* (Mosby).

Reference book:

Jackson, C., and others, *Nose, throat and ear, and their diseases* (Saunders).

D. DENTISTRY: Extraction of teeth under local and general anaesthetic on at least four patients; instruction on normal and abnormal arrangement of teeth, the importance of deciduous dentition and conservation of teeth, and recognition and treatment of certain teeth and gum conditions, e.g., temporary treatment of various teeth, abscess conditions, pyorrhoea, inflammatory and ulcerative conditions of gums, dental use of X-rays, regulation of children's teeth.

E. RADIOLOGY: A course of lecture-demonstrations in third year, dealing with: surgical and applied anatomy combined with the radiological investigation of bones and joints, of thorax, of alimentary tract, of liver and gall bladder, of urinary tract, of female pelvic organs and of soft tissues.

F. ANAESTHETICS: A course of lectures during the fourth year and demonstrations during the fifth year on the practical elements of resuscitation, and the applied physiology and pharmacology involved in resuscitation problems, and care of patients at the time of anaesthesia and surgery.

Medical Ethics.

A short course of lectures on the ethics of the profession.

The relationship of practitioners to one another, to patients, nurses, chemists, friendly societies, the public, advertising, hospitals, the law courts, and the State.

THE HONOURS DEGREE OF BACHELOR OF MEDICAL SCIENCE.

MA99. Anatomy for the Honours degree of B.Med.Sc.

SY89. Biochemistry for the Honours degree of B.Med.Sc.

SS69. Physiology for the Honours degree of B.Med.Sc.

MP99. Pathology for the Honours degree of B.Med.Sc.

SK89. Microbiology for the Honours degree of B.Med.Sc.

SS79. Pharmacology for the Honours degree of B.Med.Sc.

SJ89. Genetics for the Honours degree of B.Med.Sc.

AY79. Psychology for the Honours degree of B.Med.Sc.

CLINICAL SCIENCE FOR THE HONOURS DEGREE OF B.Med.Sc.

MO99. Clinical Science (Obstetrics and Gynaecology).

MC99. Clinical Science (Child Health).

MM99. Clinical Science (Medicine).

MS99. Clinical Science (Surgery).

FACULTY OF MUSIC

SYLLABUS NUMBERS.

The first letter identifies the Faculty of Music: **U.**

The second letter identifies the Department of Music: **M.**

The first digit differentiates subjects in the same year.

The second digit

1–3: indicates year of subject, e.g. first, second or third-year.
[4–8: not used.]
9: indicates Honours.

THE ORDINARY DEGREE OF BACHELOR OF MUSIC.

All students are required to take part satisfactorily in practical work in the Department of Music (e.g., choir, orchestra).

First Year.

UM01. Theoretical Studies I.

Classes: Three lectures or seminars a week.

Syllabus: (i) Aural training: intervals, rhythmic, melodic and harmonic dictation.

(ii) Creative writing: an introduction to basic principles of musical construction and expression.

(iii) Traditional harmony.

Reference books:

Hindemith, P., *Elementary training* (Associated Music Publishers).
Hindemith, P., *Traditional harmony* (Schott).

UM11. Historical and Social Studies I.

Classes: Three lectures or seminars a week.

Syllabus: (i) An historical survey of Western music from the Middle Ages to the present day with special reference to:

Machaut, *Messe de Nostre Dame* (available from Department).
Monteverdi, *Missa a quattri voci* (1651) (Eulenburg 982).
Bach, J. S., *Cantata* no. 56 (Kreuzstab) (Eulenburg).
Haydn, *Symphony,* no. 31 in D (Horn Signal) (Eulenburg).
Mozart, *Pianoforte concerto,* in F, K.459 (Eulenburg).
Beethoven, *Pianoforte sonata,* in E, Op. 109 (Associated Board).
Strauss, *Also sprach Zarathustra* (Eulenburg).
Stravinsky, *Les Noces* (Chester).
Webern, *Symphony* (Universal).

(ii) Introduction to ethnomusicology, including preliminary studies of music of Asian cultures and minority groups.

Reference books:

(i) Apel, W., *The Harvard dictionary of music* (Heinemann).
Crocker, R. L., *A history of musical styles* (McGraw-Hill).
Einstein, A., *Music in the romantic era* (Dent).
Grout, D. J., *A history of western music* (Dent).
Hitchcock, H. W., *Music in the United States: a historical introduction* (Prentice-Hall).
McCredie, A. D., *Musical composition in Australia, including catalogue of the works of forty-six Australian composers* (Commonwealth Government Publications, Canberra).
Newman, J., *Renaissance music* (Prentice-Hall).
Palisca, C. V., *Baroque music* (Prentice-Hall).
Pauly, R. G., *Music in the classical period* (Prentice-Hall).
Sachs, C., *The rise of music in the ancient world* (Norton).
Salzman, E., *Twentieth century music* (Prentice-Hall).
Seay, A., *Music in the medieval world* (Prentice-Hall).
Westrup, J. A., *An introduction to musical history* (Hutchinson).
(ii) Harrison, F. L., *Musicology* (Prentice-Hall).
Malm, W. P., *Music cultures of the Pacific, Near East and Asia* (Prentice-Hall).
Merriam, A. P., *The anthropology of music* (Northwestern U.P.).
Nettl, B., *Theory and method in ethnomusicology* (Collier-Macmillan).

UM21. Practical Studies I.

CLASSES: One lecture a week and individual tuition throughout the year.

SYLLABUS:

(i) An introduction to acoustics and instruments.
(ii) Studies in one of the following groups:
voice and one instrument,
two instruments,
(in approved cases only) composition and either voice or one instrument,
(in approved cases only) voice alone,
(in approved cases only) one instrument alone.

Each candidate will be required to perform all or part of a list of works to be submitted to the Head of the Department of Music for approval not later than the last day of the second term, and to show a thorough knowledge of matters connected with the tonality and form of the work presented, and a knowledge of standard works (for his instrument or voice) of representative composers of the main periods of composition.

Reference books:

(i) Baines, A., *Musical instruments through the ages* (Pelican).
Benade, A. H., *Horns, strings and harmony* (Anchor Books).
Briggs, G. A., *Musical instruments and audio* (Wharfdale Wireless Works).
Donington, R., *The instruments of music* (University Paperbacks).
Wood, A., *The physics of music* (University Paperbacks).

SECOND YEAR.

UM02. Theoretical Studies II.

CLASSES: Three lectures and seminars a week.

SYLLABUS: (i) Aural and written analysis.
(ii) Studies in Mediaeval, Renaissance and Viennese techniques of composition.
(iii) Score reading (associated with (ii) above).

Reference books:

(iii) Andrews, H. K., *Oxford harmony, book II* (O.U.P.).
Creuzburg, H., *Partiturspiel* (Schott).
Piston, W., *Harmony* (Gollancz).
Piston, W., *Counterpoint* (Gollancz).
Thomson, J. C., *Music through the Renaissance* (Brown).

UM12. Historical and Social Studies II.

CLASSES: Four lectures and seminars a week.

SYLLABUS: (i) Studies of the following topics:

(a) The dissolution of tonality in the 20th century;

(b) The relation of operatic and instrumental music in the 17th century;

(c) Gregorian chant as a basis of polyphony.

(ii) Music in Western culture: selected aspects.

(iii) Music in Society I: social and educational aspects of music, including music in non-Western high culture; music as a part of national life; community music.

Reference books:

(i) Bukofzer, M., *Studies in mediaeval and renaissance music* (Norton).
Bukofzer, M., *Music in the baroque era* (Dent).
Hindemith, P., *The craft of musical composition, Book I* (AMP).
Hutchings, A., *The baroque concerto* (Faber).
Mitchell, D., *The language of modern music* (Faber).
Moldenhauer, H., *Anton von Webern perspectives* (Washington U.P.).
Myers, R., *Twentieth century music—a symposium* (Calder).
Newman, W. S., *The sonata in the baroque era* (O.U.P.).
Reese, G., *Music in the Renaissance* (Dent).
Reese, G., *Music in the Middle Ages* (Dent).
Reti, R. R., *Tonality, atonality and pantonality* (Barrie and Rockliff).
Robinson, M., *Opera before Mozart* (Hutchinson).
Rufer, J., *Composition with twelve notes* (Rockliff).
Schoenberg, A., *Style and idea* (Williams and Norgate).
Strunk, W. O., *Source readings in music history* (Norton).
Valois, J. de, *Le chant grégorien* (Presses universitaires de France).
Webern, A. von, *The path to the new music* (Theodore Presser).
Wellesz, E., *A history of Byzantine music and Hymnography* (Oxf. Clarendon).
Worsthorne, S. T., *Venetian opera in the seventeenth century* (Oxf. Clarendon).

(ii) Allen, W. D., *Philosophies of music history* (Dover).

(iii) Engel, H., *Musik und Gesellschaft* (Max Hesse).
Mackerness, E. D., *A social history of English music* (Routledge).
Mellers, W., *Music in society* (Dobson).
Silbermann, A., *The sociology of music* (Routledge).
Lesure, F., *Music and art in society* (Pennsylvania State U.P.).

UM22. Practical Studies II.

CLASSES: Two lectures a week and seminars and individual tuition throughout the year.

SYLLABUS: (i) Style and Interpretation in Performance I: from Viennese classicism to neo-classicism.

(ii) Textures I: principles of orchestration.

(iii) (a) *Composition*: (Pre-requisite: credit in Theoretical Studies I, except with Faculty approval).

An individual course of study in Composition. The candidate must lodge with the Head of the Department of Music not more than four original compositions in an approved form.

OR

(b) *Performance*: (Pre-requisite: credit in Practical Studies I, except with Faculty approval).

Courses of study in two instruments, or voice and instrument, or (in approved cases) in either voice or instrument alone; ensemble playing; and (for pianists) a course in accompaniment.

Each candidate will be required to perform all or part of a list of works to be submitted to the Head of the Department of Music for approval not later than the last day of second term, and to show a thorough knowledge of matters connected with the tonality and form of the works presented, and a knowledge of standard works (for his instrument or voice) of representative composers of the main periods of composition.

OR

(c) Course of study in one instrument or voice; classes in composition and arranging, singing, conducting; ensemble playing, systems of education with special reference to music in education.

Reference books:

(ii) Dart, T., *The interpretation of music* (Hutchinson).
Donington, R., *The interpretation of early music* (Faber).
Dorian, F., *The history of music in performance* (Norton).
Piston, W., *Orchestration* (Gollancz).

(iii) (c) Bartle, G., *Music in Australian schools* (A.C.E.R.).
Gray, V., and Percival, R., *Music, movement and mime for children* (O.U.P.).
Mursell, J. L., and Glenn, M., *Psychology of school music teaching* (Silver Burdett).
Rainbow, B., *Music in the classroom* (Heinemann).
Shaw Watkins, H., *Music in the secondary school* (Dobson).
Swanson, B. R., *Music in the education of children* (Wadsworth).

THIRD YEAR.

UM03. Theoretical Studies III.

CLASSES: Four lectures and seminars a week.

SYLLABUS: (i) Aural and written analysis; music diagnostics.
(ii) Studies in baroque and twentieth century techniques of composition.
(iii) Continuo realisation: improvisation.

Reference book:

(iii) Simpson, K., *Keyboard harmony and improvisation* (Lengnick).

UM13. Historical and Social Studies III.

CLASSES: Four lectures and seminars a week.

SYLLABUS: (i) Studies of the following topics:
(a) 19th century 'Rescue' opera;
(b) History of notation: 1400 to the present day;
(c) Post-expressionism.

(ii) Introduction to music aesthetics: elementary studies in the psychology and philosophy of music.

(iii) Music in Society II: music in a non-literate tradition, music and the child.

Reference books:

(i) Apel, W., *The notation of polyphonic music* (Mediaeval Academy of America).
Collaer, P., *History of modern music* (Grosset and Dunlop).
Dadelsen, G. V., *Editions richtlinien (musikalischer) Denkmäler und Gesamtausgaben* (Bärenreiter).
Duckles, V. H., *Music reference and research materials* (Free Press).
Eggebrecht, H. H., *Studien zur musikalischen Terminologie* (Akad. der Musikwissenschaften).
Fellerer, K. G., *Einführung in die Musikwissenschaft* (Sikorski).
Grout, D. J., *A short history of opera* (Columbia U.P.).
Haydon, G., *Introduction to musicology* (Chapel Hill).
Lang, P. H., and Broder. N. (eds.), *Contemporary music in Europe* (Norton).
La Rue, J., *Style analysis* (Norton).
Rolland, R., *Beethoven the creator* (Gollancz).

UM23. Practical Studies III.

CLASSES: Two lectures a week and seminars and individual instruction throughout the year.

SYLLABUS: (i) Style and Interpretation in Performance II: (in 1970 only) from Viennese classicism to neo-classicism. (From 1971) Renaissance, Baroque, late twentieth century style.

(ii) Textures II twentieth century techniques.

(iii) (a) *Composition*: continuation of second-year work.

The candidate must lodge with the Head of the Department of Music not more than four original compositions in an approved form.

OR

(b) *Performance*: i. continuation of second-year work. ii. a study of history and repertoire of music relevant to candidate's instrument or voice.

Each candidate will be required to perform all or part of a list of works to be submitted to the Head of the Department of Music for approval not later than the last day of the second term. Students who are permitted to present themselves for examination as Solo Performers will be required to undertake the performance, if possible, with orchestra, of an approved work.

Executants not permitted to present themselves for examination as Solo Performers will be required to undertake such additional studies as may be directed.

OR

(c) Course of study in one instrument or voice; classes in composition and arranging; orchestral instruments (string, woodwind, brass); systems of education with special reference to music in education.

Reference books:

(iii) (b):
Boyden, D. D., *History of violin playing* (O.U.P.).
Carse, A., *Musical wind instruments* (Da Capo).
Friskin, J., *Music for the piano* (Rinehart).
Hutcheson, E., *The literature of the piano* (Hutchinson).
Letz, H., *Music for the violin and viola* (Rinehart).

(iii) (c):
Benson, W., *Creative projects in musicianship* (C.M.P.).
Hale, N. V., *Education for music* (O.U.P.).
Leonhard, C., and House, R. W., *Foundations and principles of music education* (McGraw-Hill).
Rainbow, B., *Handbook for music teachers* (Novello).
Révész, G., *Introduction to the psychology of music* (Longmans Green).
Self, G., *New sounds in class* (Universal).
UNESCO, Music in education; reports of 1959, 1961, 1963 and 1968 (ISME conferences).

THE HONOURS DEGREE OF BACHELOR OF MUSIC.

UM99. Composition.

A course of seminars and individual tuition in composition and analysis of music.

Candidates will be required to submit a major work, or group of works, the general nature of which has been approved in advance by the Faculty of Music, and which must be lodged with the Dean by September 30 of the year in which the candidate intends to take the examination. Assignments in advanced analysis must be completed during the year.

UM89. Musicology.

A reading knowledge of a language or languages necessary for the course of study will be assumed.

Candidates will be required to complete individual research assignments as directed.

(i) *Ethnomusicology* (if teaching facilities are available).

A course of seminars and individual tuition in the theoretical background to ethnomusicology, including field techniques, transcription, analytical procedures, performance techniques.

OR

(ii) *Historical Musicology.*

A course of seminars and individual tuition in: paleography; selected theoretical writings; editorial practice; musicological method (analytical bibliography), source evaluation, periodisation of musical terminology).

OR

(iii) *Music in Education.*

A course of seminars and individual tuition in: research techniques; music in education, including comparative studies.

OR

(iv) *Systematic Musicology* (if teaching facilities are available).

A course of seminars and individual tuition in: advanced acoustics; psychoacoustics; music physiology; advanced music aesthetics; music philosophy; information theory.

UM79. Performance.

A course of individual tuition in performance.

Candidates will be required to perform two recital programmes, approved in advance by the Faculty of Music, for public performance, and will be required to show a knowledge of history and repertoire of music relevant to their instrument or voice.

ADDITIONAL SUBJECTS.

The Department of Music also provides syllabuses UA51, UA52, UA53, UA67, UA68 and UA69 (see under Faculty of Arts).

BOARD OF STUDIES IN PHYSICAL EDUCATION

SYLLABUS NUMBERS.

The first two letters identify the Faculty and Department providing a subject, as follows:

AY Faculty of Arts, Department of Psychology.
MA Faculty of Medicine, Department of Anatomy and Histology.
SS Faculty of Science, Department of Physiology.
SY Faculty of Science, Department of Biochemistry.

The letters ZZ identify the Board of Studies in, and the Department of, Physical Education.

The first digit differentiates the subjects.

The second digit

2, 3: indicates year of subject, i.e. second or third.

DIPLOMA AND CERTIFICATE IN PHYSICAL EDUCATION.

NOTE: All candidates should consult the Senior Lecturer-in-Charge of Physical Education as soon as possible about course arrangements for 1971.

MEDICAL AND PHYSICAL EXAMINATIONS

Every student entering for the practical exercises and every student entering upon a course of lectures leading to the diploma or certificate in Physical Education for the purpose of taking the examination in that course, must be prepared to attend the various examinations which will be held as early as possible in March. Enrolments should be made early to facilitate the necessary arrangements.

Students will also be required to present themselves for such repeat examinations as may be prescribed for them during the progress of their course.

All students are advised to consult the Senior Lecturer-in-Charge of Physical Education as early as possible in the year and to acquaint themselves with the arrangements for their examinations.

SECOND YEAR

ZZ02. Health Education.

This course provides a foundation study for the subject of health education with particular reference during the first two terms to human and personality development. Third term is devoted to a study of the content and methods of health education.

The course consists of one lecture a week for three terms.

Reference books:

Bibby, H. C., *Health education.*

Gabriel, J., *Children growing up* (University of London Press).

Great Britain, Ministry of Education, *Health education* (H.M.S.O.).

Clements, F. W., and McCloskey, B. P., *Child health, its origins and promotion* (Arnold).

Murray, R. E., and Scott, G. C., *Personal and community health* (Angus and Robertson).

This course consists of lectures and practical work during two periods a week for three terms.

ZZ12. Body Mechanics.

A detailed study of the human skeletal and muscular systems, and their association with the nervous system, to assist in the understanding of bodily movement; posture in standing, sitting, and in movement; postural errors, their causes, effects, and preventive treatment; examination of patients for the recognition of postural defects.

Reference books:

Smout, C. F. V., and McDowall, R. J., *Anatomy and physiology for students of physiotherapy* (Arnold).

Great Britain, Air Ministry, *Principles of anatomy and physiology for physical training instructors* (H.M.S.O.).

Perrott, J. W., *Anatomy for students and teachers of physical education* (Arnold).

Gardiner, M. Dena, *The principles of exercise therapy,* revised edition (Bell).

Kendall, H. O., and Kendall, F. P., *Posture and pain* (Williams and Wilkins).

Rathbone, J. L., *Corrective physical education* (Saunders).

Anderson, T. McC., *Human kinetics and analysing body movements* (Heinemann).

Wells, K. F., *Kinesiology—the mechanical and anatomical fundamentals of human motion* (Saunders).

ZZ22. First Aid.

This course consists of lectures and practical work, having special reference to the needs of physical education students, but also providing some background for those who have not already qualified for their St. John Certificate.

ZZ32. Practice of Physical Education.

This course consists of lectures and discussions on the work of administering physical education in practice, and occupies two periods a week.

It covers the nature of physical education in schools and its place in the curriculum; the organisation of physical education with particular reference to equipment, staffing, and administration; the work of the teacher in preparing tables of exercises, adjusting practical work to suit ages, weather and other conditions; establishing standards and developing interest. Methods of organising classwork, problems connected with class management and discipline, and methods and procedures of value in work with clubs, welfare groups and recreation centres are also discussed.

Students are introduced to the study of kinesiology with particular reference to the structural bases of motion, the classification of motion and the factors influencing motion.

Credit is given for class exercises and essays.

Reference books:

Williams, J. F., and Brownell, C. L., *Administration of health and physical education* (Saunders).

Nixon, J. E., Flanagan, L., and Frederickson, F. S., *An introduction to physical education,* 6th edition (Saunders).

Great Britain, Board of Education, *Physical education in the primary school: Part I, Moving and growing. Part II, Planning the programme* (H.M.S.O., 1952-4).

Syllabuses of physical education prepared by the Australian Education Departments.

Morehouse, L. E., and Rasch, P. J., *Scientific basis of athletic training* (Saunders).

British Empire and Commonwealth Conference on Physical Education, Third, Perth, 1962.

McCloy, C. H., and Young, N. D., *Tests and measurements in health and physical education* (Appleton).

Wells, K. F., *Kinesiology,* 3rd edition (Saunders).
Kranz, L. G., *Manual of kinesiology,* ed. C. W. Thompson, 5th edition (Mosby).
Huizinga, J., *Homo ludens: a study of the play element in culture* (Routledge).
Tanner, J. M., *Growth at adolescence* (Blackwell).
Jones, H. E., *Motor performance and growth* (University of California Press).
UNESCO, *The place of sport in education.*
Central Council of Physical Recreation. Wolfenden Committee on Sport, *Sport and the community* (The Council).

ZZ62 and ZZ63. Practical Work.

Candidates are required to attend demonstrations and to take part in practical classes in various branches of physical activity for two years. Each year's work requires about 12 periods a week throughout the academic year. Attendance at practical classes is compulsory.

Students are required to achieve a reasonable standard of proficiency and teaching skill in the various branches. There is no formal examination, the student being assessed on his work throughout the year. The Lecturer-in-Charge has, notwithstanding, the right to prescribe a formal examination in any one or all branches of practical work.

Except in special cases approved by the Board of Studies in Physical Education a candidate who fails in more than one subject of either part will be required to repeat the whole of the practical work of that part. Part I must be completed before Part II is taken.

The course in swimming is spread over two years and a standard approximating that of the Royal Life Saving Society's Bronze Medallion is expected to be reached.

A prescribed gymnastic costume must be worn for all practical subjects.

ZZ62. Practical Work, Part I.

For men: Gymnastics and minor games; dancing; organised sports and physical recreational activities; swimming; hiking and camping; individual and team games.

For women: Gymnastics and minor games; organised sports and physical recreational activities; movement education; dancing; swimming; hiking; and camping; individual and team games.

AD01. Education.

For syllabus, see Calendar for 1970, Volume II, p. 847.

MA92. Human Biology.

The course consists of two lectures a week for three terms.

The first lectures deal with the characteristics of living matter in general, the living cell, and the basic anatomy of different animal groups, thus presenting man as a member of a species with an evolutionary history and with a definite relationship to other members of the animal kingdom. Next follows a description of the basic tissues of the body and then, at some length, the anatomy of the different systems of the body is discussed together with their microscopical structure and functions, an attempt always being made to relate structure and function to one another. Some aspects of pathology are also discussed in so far as these can be simply related to the normal. Following after the skin these lectures deal with the skeleton and joints, the muscular and nervous systems, the sense receptors, the circulatory and respiratory systems, the alimentary tract and associated organs, the excretory system and the ductless glands: the last system discussed is that concerned with reproduction and this leads to an account of the embryological development and growth of the body and the normal and abnormal growth of tissues. Then heredity and environment are considered as factors

concerned in normal development and in the production of disease. Lastly, bacteria, viruses and zoal parasites of man are briefly discussed and their effects on normal bodily function considered.

In general, the course is designed to serve as an introduction to biological science for students with little or no previous knowledge of the subject. The main emphasis is on the normal anatomy and physiology of man placed in his proper zoological perspective.

Text-books:

De Coursey, R. M., *The human organism* (McGraw-Hill); *or*
Gowland, W. P., and Cairney, J., *Anatomy and physiology for nurses* (Peryer).

Books for reference and further reading:

Abbie, A. A., *Principles of anatomy* (Angus and Robertson).
Best, C. H., and Taylor, N. B., *The human body: its anatomy and physiology* (Chapman and Hall).
Barnett, A., *The human species*, chapters 1-7 (Pelican).
Dale, A., *Introduction to social biology*, especially chapters 1-6 (Heinemann).
Easton, D. M., *Mechanisms of body functions* (Prentice-Hall).
Greisheimer, E. M., *Physiology and anatomy* (Pitman).
Harrison, R. J., *Man the peculiar animal* (Pelican).
Sinclair, D. C., *Introduction to functional anatomy*, Parts I and II (Blackwell).
Waddington, C. H., *Biology for the modern world* (Harrap).
Warwick, R., *Introduction to anatomy* (Newnes).

Further references to special subjects may be given during the course of lectures.

THIRD YEAR

ZZ13. Clinical Observation and Remedial Work.

Following the course in Body Mechanics, a series of hospital visits is arranged during the third year. Students are shown how to observe postural defects and deformities common among school children and young adults. X-rays of the bony changes occurring in deformities are explained, and corrective exercises demonstrated. The possibilities of preventive work in schools through early recognition of signs and symptoms, and through correct habitual postures, are demonstrated.

Students will be required to write several papers applying this clinical observation to their own practical work. There will be a practical examination at the end of the course.

Reference book:

Kendall, F. M., and Kendall, H. O., *Posture and pain* (Williams and Wilkins).
Powell, M., *Orthopaedic nursing*, 6th edition (Livingstone).
Morton D., *The human foot* (Columbia University Press).
Steindler, Arthur, *Kinesiology* (Thomas).
Duvall, E. N., *Kinesiology: the anatomy of motion* (Prentice-Hall).
Bowen Wilbur, P., *Applied anatomy and kinesiology* (Kimpton).
Ferguson, Albert B., *Orthopaedic surgery in infancy and childhood* (Williams and Wilkins).
Hauser, E. D. W., *Curvatures of the spine* (Thomas).
Tidy, N. M., *Massage & remedial exercises in medical and surgical conditions*, 10th edition (Williams and Wilkins).

ZZ43. Principles of Physical Education.

This course consists of a series of lectures on the history and principles of physical education together with seminar discussions on topics and problems arising from the lectures and directed reading, and will take two periods a week for three terms. The unity of body-mind and the scientific bases of physical education are stressed, and the aims and the place of physical education in the life of the individual, the school and the modern community are discussed.

The course in kinesiology is extended to include kinetics, the application of mechanical principles in the analysis of motion, and the methods of kinesiological investigation.

Credit is given for class exercises and essays.

Reference books:

Gardiner, E. N., *Athletics of the ancient world* (O.U.P.).
Rice, E. A., *Brief history of physical education* (Barnes).
Williams, J. F., *Principles of physical education* (Saunders).
Jacks, L. P., *Education of the whole man* (U.L.P.).
Jacks, L. P., *Education through recreation* (U.L.P.).
Jacks, M. L., *Physical education* (Nelson).
Smithells, Philip A., *Atlantic gap.*
British Medical Association, *Report of the Physical Education Committee.*
Randall, M. W., *Modern ideas on physical education* (Bell).
McIntosh, P. C., *Physical education in England since* 1800 (Bell).
Munrow, A. D., *Pure and applied gymnastics* (Arnold).
McIntosh, P. C., and others, *Landmarks in the history of physical education* (Routledge and Kegan Paul).
Randall, M. W., and Waine, W. K., *Objectives of the physical education lesson* (Bell).
Birmingham University, Physical education department, *Britain in the world of sport.*
Natan, A., *Sport and society* (Bowes).
Smithells, P. A., and Cameron, P. E., *Principles of evaluation in physical education* (Harper).
Karpovich, P. V., *Physiology of muscular activity,* 5th edition (Saunders).
Johnson, W. R., *Science and medicine of exercise and sports* (Harper).
Bunn, J. W., *Scientific principles of coaching* (Prentice-Hall).
Colloquium on exercise and fitness (Athletic Institute).
Health and fitness in the modern world (Athletic Institute, Chicago).
Rasch, P. J., and Burke, R. K., *Kinesiology and applied anatomy* (Lea and Febiger).
Jokl, E., and Simon, E., *International research in sport and physical education* (Thomas).
Henry, F. M., *Work physiology* (University of California Press).

Selected journals:

Research Quarterly (A.A.H.P.E.R., Washington, D.C.).
Australian Journal of Physical Education.
Physical Education (P.E. Association of Great Britain and Northern Ireland).
Journal of Sports Medicine and Physical Fitness.
New Zealand Journal of Physical Education.

ZZ63. Practical Work, Part II.

For men: Gymnastics and minor games; athletics and organised sports; swimming; combative exercises; hiking and camping; individual and team games.

For women: Gymnastics and minor games; athletics and organised sports; swimming; movement education; dancing; hiking and camping, individual and team games.

ZZ73. Practical Teaching.

The prescribed practical work consists of attendance at about thirty sessions (about 90 hours) for demonstration and discussion lessons, and approximately ten weeks (or its equivalent, not necessarily consecutive) of teaching practice in such schools and under such conditions of supervision and reports as may be approved.

In addition to this work in schools, teaching practice and leadership experience may be prescribed for students in clubs, camps, and playgrounds either during term or in vacation.

AY73. Physiological Psychology.

This course is intended to provide an appreciation of the fundamental processes involved in the learning and execution of sensory-motor skills. An attempt will be made to relate human performance to underlying anatomical and physiological characteristics wherever possible. Consideration will also be given to individual differences and changes in ability with age.

The course will extend over three terms and will consist of one lecture a week.

Reference books:

Gagné, R. M., and Fleishman, E. A., *Psychology and human performance* (Holt, 1959).

Welford, A. T., *Fundamentals of skill* (Methuen).

Attneave, F., *Applications of information theory to psychology* (Holt, New York, 1959).

Cratty, B. J., *Movement behaviour and motor learning,* 2nd edition (Lea and Febiger).

Thompson, R. F., *Foundations of physiological psychology* (Harper and Row).

Fitts, P. M., and Posner, M. I., *Human performance* (Brooks-Cole).

SS73. Human Physiology.

This course consists of two lectures or lecture-demonstrations a week for three terms, and is taken in the third year of the course.

In this course the principles of human physiology are dealt with, and special attention is given to those functions which, directly or indirectly, are connected with muscular exercise. An elementary knowledge of chemistry and physics is desirable.

Text-books:

Bainbridge, F. A., and Menzies, J. A., *Essentials of physiology,* 11th edition (Longmans); *or*

Bell, G. H., and others, *Textbook of physiology and biochemistry,* 6th edition (Livingstone).

Guyton, A. C., *Function of the human body,* 2nd edition (Saunders).

Morehouse, L. E., and Miller, A. T., *Physiology of exercise,* 4th edition (Mosby).

Reference book:

Johnson, W. R., *Science and medicine of exercise and sports* (Harper, 1960).

SY73. Human Nutrition.

This course consists of one lecture a week for three terms. After a general introduction, the course deals with the following main divisions of the subject: the elementary chemistry of energy-providing foodstuffs; energy and protein requirements of the body; the mineral constituents of the diet; accessory food factors; the processes of digestion absorption and excretion; food preservation and food poisoning; the relative value of common natural foods and the economic aspects of nutrition.

The course includes a special course in chemistry. Students are expected to have knowledge of physics to the intermediate stage.

Text-books:

Great Britain, Ministry of Agriculture, Fisheries and Food, *Manual of nutrition* (H.M.S.O.).

Clements, F. W., and Rogers, J. F., *You and your food* (Reed).

Fleek, H. C., and Munves, E., *Introduction to nutrition* (Macmillan).

BOARD OF STUDIES IN PHYSIOTHERAPY

SYLLABUS NUMBERS

The two letters identify the Faculties and/or Departments responsible for the various subjects, as follows:

Faculty of Arts, Department of Psychology ... ... **AY**

Faculty of Science, Department of Human Physiology and Pharmacology ... ... **SS**

Faculty of Medicine, Department of Anatomy and Histology .. **MA**

Department of Physiotherapy ... ... **PP**

The first digit

0–6: indicates that the subject forms part of a sequence.

7–9: indicates that the subject does not form part of a sequence.

The second digit

2–3: indicates year of subject, e.g. second or third.

FIRST YEAR

The work of the First Year was taught for the last time in 1970. Particulars of that work may be found in the Calendar for 1970, Vol. II, pp. 992-4.

SECOND YEAR

MA22. Anatomy II.

GROSS ANATOMY.—Lectures and demonstrations on the topographical anatomy of the head and neck and on special topics extend throughout the year.

NEUROLOGY.—Students attend the course of lectures on neurology given in the first two terms to medical students but complete different practical work.

PRACTICAL.—Students dissect the head and neck, including the brain, to make themselves familiar with its major macroscopic features.

Text-books:

No additional books are required, but the following are recommended for general reading:

Brain, R., *Clinical neurology*, 3rd edition revised by R. G. Bannister (O.U.P.).

Jones, F. Wood, *Principles of anatomy as seen in the hand* (Baillière, Tindall and Cox).

Jones, F. Wood, *Structure and function as seen in the foot* (Baillière, Tindall and Cox).

PP02. Treatment II.

A course of lectures throughout the year. Clinical tutorials, demonstrations and supervised practical work are conducted in clinical departments and wards (see Practice of Hospital Work I).

SECTION A. PAEDIATRICS.

The sensori-motor development of the infant from birth to 5 years. Introduction to the influence of abnormal postural reflex activity on development. Compensatory control mechanisms. Principles of treatment of deformities in children caused by disturbances of the musculo-skeletal system in the mentally normal and in the retarded child. Splinting and fixation.

SECTION B. MEDICAL AND SURGICAL CONDITIONS.

Causes, onset, signs and symptoms, complications, aims and methods of treatment of medical and surgical conditions. Emphasis is placed on examination, assessment, the use of physical modalities and management. Deformities of the extremities and spine, degenerative joint disease, synovitis, bursitis, capsulitis. The principles of reduction and splintage of fractures, dislocations and subluxations, sprains and strains, muscle trauma, burns, wounds, scars, pressure sores, lower motor neurone lesions, amputations.

Text-books:

Tidy, N. M., *Massage and remedial exercises in medical and surgical conditions* (Wright).

Heardman, H., *Physiotherapy in obstetrics,* 3rd edition, ed. M. Ebner (Livingstone).

Maternity Center Assoc., *A baby is born* (Allen and Unwin).

Reference books:

Adams, J. C., *Outline of fractures* (Livingstone).

Adams, J. C., *Outline of orthopaedics* (Livingstone).

Cash, J. E., *Physiotherapy in some surgical conditions* (Faber).

Read, G. D., *Childbirth without fear* (Heinemann).

Vellay, P., *Childbirth without pain* (Hutchinson).

Parry, C. B. Wynn, *Rehabilitation of the hand* (Butterworth).

Lowman, C. LeRoy, and Roen, S. G., *Underwater therapy* (Rubel Memorial Library).

Duffield (ed.), *Exercise in water* (Cassell).

Bolton, E., and Goodwin, D., *Introduction to pool exercises* (Livingstone).

Ferguson, A. B., *Orthopaedic surgery in infancy and childhood* (Williams and Wilkins).

Kite, J. H., *The club foot* (Grune and Stratton).

Lake, N. C., *The foot,* 4th edition (Ballière).

Aufranc, O. E., *Constructive surgery of the hip* (Mosby).

Strange, I. G., *The hip* (Heinemann).

Cyriax, J. H., *Text-book of orthopaedic medicine,* vol. 2 (Cassell).

PP12. Movement II.

The course consists of lectures and practical work throughout the year and concerns the study of normal and some sections of abnormal movement. The section on abnormal movement is conducted by demonstrations and supervised practical work in hospital departments (see Practice of Hospital Work I).

Emphasis is placed on disorders of joints arising from disease or damage of articular structures, bones, and muscles. Normal physical development in various age groups, introduction to modern movement and expression, contact and pivot points, bases, relaxation and control of joints in motion. Class taking—schematic exercises, commands, apparatus; analysis of muscle work, effects and uses of fundamental and derived positions.

Classification of movement—passive, active, resisted. Range and tension of spinal and peripheral joints. Restriction of joints in different planes of movement, accessory joint movements. Methods of applying resistance—gravity,

manual, auto-resisted, dead weight, springs, weight and pulley. Techniques of altering resistance. Suspension therapy. Study of abnormal posture and movement resulting from mechanical derangement of joints. Co-ordination training related to musculo-skeletal and labyrinthine disturbances. Introduction to muscle testing, grading and mass movement patterns.

Reference books:

Anderson, T. McC., *Human kinetics and analysing body movements* (Heinemann).

Steindler, A., *Kinesiology* (Thomas).

Huddleston, O. L., *Therapeutic exercises: kinesiotherapy* (Davis).

Brunnstrom, S., *Clinical kinesiology* (Blackwell).

Williams, M., and Lissner, H. R., *Biomechanics of human motion* (Saunders).

De Lorme, T. L., *Progressive resistance exercise* (Appleton-Century-Crofts).

Gardner, W. D., and Osburn, W. A., *Structure of the human body* (Saunders).

American Academy of Orthopaedic Surgeons, *Joint motion: method of measuring and recording* (Bishop).

Gardiner, M. D., *The principles of exercise therapy* (Bell).

Maitland, G. D., *Vertebral manipulation* (Butterworth).

Maitland, G. D., *Peripheral manipulation* (Butterworth).

PP82. Pathology.

The course consists of one lecture a week for three terms, and practical work in the laboratory of histopathology.

A. General Pathology.—Acute and chronic inflammation, immunity, atrophy and hypertrophy, thrombosis, embolism and infarction—benign and malignant tumours.

B. Special Pathology.—Diseases of the cardiovascular, respiratory, alimentary, genitourinary, central nervous systems, connective tissues, bones and joints.

Text-books.—Advice will be given at the outset of term.

PP22. Electrotherapy I.

The course consists of: (a) lectures and practical work throughout the year; (b) clinical tutorials, demonstrations and supervised practical work conducted in clinical departments and wards (see Practice of Hospital Work I).

The application of electro-medical currents and waves to the human body:—faradic, sinusoidal, interrupted direct, and direct currents, ionic transfer. Ultra sound, short wave, microwave, infra-red and ultra-violet, apparatus and accessories. Nature of wave forms and cautery properties—control of output—safety measures and precautions—physical and physiological effects, therapeutic uses—techniques of application—dosage—contra-indications—care of apparatus. Introduction to electrical testing. Principles of counter irritation.

Text-book:

Clayton, E. B., and Scott, P. M., *Electrotherapy and actinotherapy,* 5th edition (Baillière, Tindall and Cox).

Reference books:

Beckett, R. H., *Modern actinotherapy* (Heinemann, 1955).

Scott, B. O., *Principles and practice of diathermy* (Heinemann).

Scott, B. O., *The principles and practice of electrotherapy and actinotherapy.*

Licht, S. H., *Therapeutic heat and cold,* 2nd edition (Licht).

Summer, W., and Patrick, M. K., *Ultrasonic therapy* (Elsevier).

PP32. Practice of Hospital Work I.

The course deals with the basic clinical application of Movement II, Treatment II and Electrotherapy I integrating the clinical nature and the response of pathological conditions with methods of examination, treatment and general management.

Introductory lectures are given and tutorials, demonstrations and selected supervised practical work in clinical departments and wards are arranged by various clinical affiliations throughout the year.

Reference books:

Barnett, C. H., and others, *Synovial joints: their structure and mechanics* (Longmans).

Colson, J. H., *Rehabilitation of the injured* (Cassell).

Powell, M., *Orthopaedic nursing* (Livingstone).

Hollis, M., and Roper, M. H. S., *Suspension therapy in rehabilitation* (Baillière).

THIRD YEAR

PP03. Treatment III.

The course consists of: (a) lectures throughout the year; (b) clinical tutorials, demonstrations and supervised practical work conducted in the clinical aspects of the subject during clinical affiliations at various hospitals (see Practice of Hospital Work II).

Lectures cover clinical features, related pathology, medical, surgical and physiotherapeutic treatment and management of respiratory, cardio-vascular, rheumatic, collagen and nervous diseases. Diseases of bone and muscle. General medicine, psychiatric medicine, orthopaedics and reconstructive surgery, obstetrics, disorders of micturition.

Reference books:

Hobson, E. P. G., *Physiotherapy in paraplegia* (Churchill).

Brain, R., *Clinical neurology* (O.U.P.).

Fletcher, E., *Medical disorders of the locomotor system including rheumatic diseases* (Livingstone).

Cash, J. E., *Text-book of medical conditions for physiotherapists* (Faber).

Kendall, H. O. and F. M., *Posture and pain* (Williams and Wilkins).

Allen, E. van Nuys, and others, *Peripheral vascular diseases* (Saunders).

Rusk, H. A., *Living with a disability* (Blakiston).

Buchwald, E., *Physical rehabilitation for daily living* (McGraw-Hill).

Storey, G. N., *Thoracic surgery for physiotherapists* (Faber).

Thacker, E. W., *Postural drainage* (Lloyd-Luke).

Kersley, G. D., *The rheumatic diseases* (Heinemann).

Ebner, M., *Connective tissue massage* (Livingstone).

Licht, S. H., *Massage manipulation and traction* (Licht).

Spinal injuries symposium: 1963 (Morrison and Gibb).

Townsend, L., *Obstetrics for students* (Melbourne U.P.).

Nelson, W. E., *Text-book of paediatrics* (Saunders).

Hinshaw, H. C., and Garland, L. H., *Diseases of the chest* (Saunders).

Jones, R., Watson, *Fractures and other bone and joint injuries* (Livingstone).

PP13. Movement III.

The course consists of: (a) lectures throughout the year; (b) clinical tutorials, demonstrations and supervised practical work (see Practice of Hospital Work II).

Primitive and pathological reflexes and patterns of movement in diseases of the central nervous system. Abnormalities of tone and posture. Methods of examination and assessment of disorders of tone, posture, movement, gait and specific functions in relation to injuries and diseases of the nervous system. Inhibition—local and central physiological mechanisms and methods of activating these. Facilitation—the physiological basis and theoretical application of methods of proprioceptive and exteroceptive facilitation. Specific application to initiation of movement, strength and length of muscles and range of joints. Methods of assisting bradykinesia. Automatic reactions—the use of equilibrium reactions and righting reactions in the rehabilitation of movement. Re-education of co-ordination and skill. Methods of assisting dysphagia, dysarthria, apraxia, dysgraphia. Muscle testing and charting—trick movements. Isolated muscle re-education. Methods of compensating for irreversible loss of functional movement. Relevant hydro-dynamics and hydro-therapy.

Reference books:

Gesell, A., and others, *Developmental diagnosis* (Hoeber).

Gesell, A., and others, *The embryology of behaviour* (Harper).

Kendall, H. O. and F. P., *Muscles: testing and function* (Williams and Williams).

Ganong, W. F., *Review of medical physiology* (Lange).

Decker, R., *Motor integration* (Thomas).

Finnie, N., *Handling the young cerebral palsied child at home* (Heinemann).

PP23. Electrotherapy II.

The course consists of: (a) eight lecture-demonstrations and discussion on techniques of electrical testing; the treatment of local infections with physical agents; methods of stimulating healing; the use of electrotherapy in the treatment of certain conditions affecting the eyes and nose; evaluation of different forms of heat; (b) clinical teaching and practical work (see Practice of Hospital Work II).

Reference books:

Licht, S. H., *Electro-diagnosis and electromyography* (Licht).

Other reading will be suggested at lectures.

PP33. Practice of Hospital Work II.

The course deals with the clinical teaching of Treatment III, Movement III, Electrotherapy II and Physical Medicine.

It consists of clinical tutorials, demonstrations and supervised practical work throughout the year on different clinical affiliations at the Royal Adelaide Hospital, the Queen Elizabeth Hospital, the Adelaide Children's Hospital, and the Queen Victoria Hospital. Clinical affiliations include thoracic (medical and surgical), orthopaedics, neurology and neurosurgery, electrotherapy and testing, paediatrics, obstetrics, physical medicine clinics and electrodiagnosis, pulmonary function unit, spinal manipulation, cardio-vascular, rheumatic, general surgical.

Essays and case studies are written at each hospital and submitted for examination.

Visits to special centres are arranged in vacations.

Reference books:

Davidson, L. S. P., and others, *Principles and practice of medicine* (Livingstone).

Mowbray, R. M., and Rodger, J. F., *Psychology in relation to medicine* (Livingstone).

Bates, D. V., and Christie, R. V., *Respiratory function in disease* (Saunders).

Maitland, G. D., *Peripheral manipulation* (Butterworth).

Bobath, K., *The motor deficit in patients with cerebral palsy*, Clinics in Developmental Medicine No. 23 (Heinemann).

Bobath, K., *Abnormal postural reflex activity caused by brain damage* (Heinemann).

Maitland, G. D., *Vertebral manipulation* (Butterworth).

Cyriax, J. H., *Text-book of orthopaedic medicine*, vol. I (Cassell).

Mennell, J. B., *The science and art of joint manipulation*, vols. I and II (Churchill).

Stoddard, A., *Manual of osteopathic technique* (Hutchinson).

Bartholemew, A. E., *The treatment of gravitational ulcers by physiotherapy* (London Facsimile Letter Press).

Kiernander, B., *Physical medicine in paediatrics* (Butterworth).

Potter, J. M., *The practical management of head injuries* (Lloyd-Luke).

PP43. Physical Medicine.

A course of lectures to cover:

1. Clinical examination and interpretation of findings in relation to specific skeletal syndromes and their pathology including relevant radiology. Principles of treatment of the above syndromes.

2. Co-ordination of physiotherapy treatment with medical and other ancillary medical treatments in the rehabilitation programme of a patient.

3. Use of drugs in Physical Medicine.

4. Electro-diagnosis.

FACULTY OF SCIENCE

SYLLABUS NUMBERS

The first letter identifies the Faculty of Science: **S.**

The second letter identifies the Department teaching the subject, as follows:

Applied Mathematics (for subjects, see under Mathematics)	**N**	**Microbiology**	**K**
Biochemistry	**Y**	**Organic Chemistry** (for subjects, see under Chemistry)	**O**
Botany	**B**	**Physical and Inorganic Chemistry** (for subjects, see under Chemistry)	**C**
Chemistry: see Physical and Inorganic Chemistry; Organic Chemistry		**Physics**	**P**
Computing Science	**A**	**Physiology: see Human Physiology and Pharmacology.**	
Economic Geology	**E**	**Pure Mathematics** (for subjects, see under Mathematics)	**M**
Genetics	**J**	**Statistics** (for subjects, see after Mathematics)	**T**
Geology and Mineralogy	**G**	**Zoology**	**Z**
Human Physiology and Pharmacology (for subjects, see under Physiology)	**S**		
Mathematical Physics	**F**		

The first digit

0–6: Indicates that the subject is in sequence with another subject.

7 or 9: Indicates that the subject is not in sequence with another subject.

8: Indicates a group C(3) Third Year subject.

The second digit

1, 2, 3: Indicates year of subject, e.g. first, second or third.

4: Indicates subject of Course A or Course B for the Diploma in Computing Science.

[5–6: Not used.]

8: Indicates subject taken by intending Honours student before the Honours year.

The letter H used in place of the second digit indicates a half-subject two of which count towards the degree as a whole subject.

NOTE: Some subjects for the degree of B.Sc. are taught by Departments of other Faculties. In the syllabus numbers of those subjects the two digits do not necessarily have the significance shown in the Faculty of Science table above.

The subjects are:

WA12	Agriculture 1B	AY02	Psychology II
MA13	Histology	AY23	Psychology III
AY01	Psychology I	WB13	Soil Science I

The syllabuses of these subjects may be found, in alphabetical order, after the last Faculty of Science subject, Zoology.

BIOCHEMISTRY.

There are several combinations of subjects with Biochemistry II in second year which are appropriate for students intending to take Biochemistry III in third year. There is a place in the subject both for those strongly biassed towards the

biological or towards the physico-chemical subjects. However, as general guidance, students who wish to specialise in Biochemistry are advised to take at least one of the second-year chemistry subjects (Chemistry II, Organic Chemistry II or Physical and Inorganic Chemistry II). For appreciation of modern biochemistry probably the most suitable subjects to take along with Biochemistry II are two of the following: Chemistry II, Genetics II, Organic Chemistry II, Physical and Inorganic Chemistry II. Other subjects are, however, not excluded.

SY02. Biochemistry II.

Division I pass in Chemistry I. This requirement may be waived, in special circumstances, subject to the approval of the Head of Department or his nominee (only for students whose academic records are sufficiently good to give a reasonable prospect of acquiring an adequate chemical background).

A course of three hour lectures and six hours practical work a week and tutorials.

The course will include: protein structure and function; biochemistry of enzymes; nucleic acids and protein synthesis; biochemistry of gene action; molecular action of antibiotics; metabolism of carbohydrates, amino acids and lipids; molecular functions of vitamins; biochemical control mechanisms in the cell; molecular transport across cell membranes.

The practical work will be related to these topics.

Text-books:

White, A., and others, *Principles of biochemistry,* 4th edition (McGraw-Hill).

Horskowitz, I. H., *Basic principles of molecular genetics* (Nelson).

Reference books:

Dickerson, R. E., and Geis, I., *The structure and action of proteins* (Harper and Row).

Watson, J. D., *Molecular biology of the gene* (Benjamin).

Brock, T. D., *Biology of micro-organisms* (Prentice-Hall).

THIRD-YEAR SUBJECTS IN BIOCHEMISTRY

Pre-requisite subject for all third-year subjects in Biochemistry: Biochemistry II (SY02) at Division I pass, or higher, standard.

The Department offers the following double-units, each consisting of about 26 lectures and about 100 hours' practical work. Because of the rapid development of the subject, most of the reading matter in all units will be reviews or original articles. These will be made available by the Department:

1. Biochemistry of Gene Action (first term): Structure, function and replication of DNA and RNA and investigational procedures; antibiotic action; biochemistry of virus infection.

Text-book:

Hayes, W., *The genetics of bacteria and their viruses,* 2nd edition (Blackwell).

Reference books:

Swanson, C. P., *The cell,* 3rd edition (Prentice-Hall).
Harris, H., *Cell fusion* (Clarendon Press).
Harris, H., *Nucleus and cytoplasm* (Clarendon Press).

2. Protein Synthesis and Control (second term): Principles of biological control of sub-unit structure with reference to ribosomes; ribosome synthesis, mechanism of protein biosynthesis; control of enzyme synthesis; expression of the mammalian genome and action of hormones.

3. Protein Structure and Function (third term): Amino acid sequences in proteins and the relationship of these sequences to structure and function of proteins, active sites of enzymes and polypeptide hormones; correlation of chemical and physical studies on proteins; reaction pathways, reaction mechanisms and specificity of enzymes; regulatory enzymes and control of metabolic pathways.

In selecting desirable combinations with units from other Departments it should be noted that the Biochemistry Department *recommends* that the double-unit 2 should not be taken without having taken the double-unit 1. However, double-units 1 and 3 can be taken separately.

Students intending to take combinations of units from other Departments with Biochemistry in the third year *must* make an appointment with the Head of Department, or members of staff, as soon as possible after the results of the November examinations are known and before the enrolment period.

The subjects offered are:

SY03. Biochemistry III.

A group C(1) subject. Double Units 1, 2, 3.

SY83. Biochemistry IIIM.

A group C(3) subject. With approval of the Heads of Departments concerned, a combination of two double-units together with one double-unit or two single-units from other Departments.

SY99. Biochemistry for the Honours degree of B.Sc.

Pre-requisite subject: Biochemistry III (SY03) or Biochemistry IIIM (SY83). In exceptional cases students having passed another group C (2) subject, which includes as part of it one of the Biochemistry double-units, may be considered for entry into the Honours class.

Candidates are required to give their full time for an entire academic year to a special course of study and experimental work in the Department of Biochemistry. Candidates will normally be expected to start the course on the first Monday of February, but this can be altered in special circumstances by arrangement with the Professor of Biochemistry.

The work will include participation in a series of lecture-symposia on topics of modern biochemistry; participation in research seminars, and the performance of research work under the supervision of one or more members of the Biochemistry Department staff. At the end of the year candidates will be required to sit a written examination, and submit the results of their research work in the form of a thesis. Reading work necessary for the lecture-symposia will be prescribed during the course, and candidates will write a review of literature on their research topics early in the course.

ADDITIONAL SUBJECTS.

SY12. Biochemistry.

SY13. Biochemistry.

SY89. Biochemistry for the Honours degree of B.Med.Sc.

See Schedule II of the Honours degree of B.Med.Sc.

SY82. Biochemistry.

For syllabus see under Faculty of Dentistry.

SY73. Human Nutrition.

For syllabus see under Physical Education.

BOTANY.

Students are directed to refer to the Laboratory Rules, which appear immediately after the Regulations.

EXAMINATIONS.—All examinations in Botany cover *both* theoretical and practical aspects. These cannot be taken separately.

SB1H. General Biology IH.

A half-subject comprising one lecture and two hours' practical work per week and one tutorial per fortnight throughout the year.

The course is concerned with the principles of biology which are applicable to all living things, viz: cell structure and function, elementary biochemistry, genetics, the mechanism of evolution, the species concept, general ecological principles.

Text-books:

either:

Loewy, A. G., and Siekevitz, P., *Cell structure and function*, 2nd edition (Holt, Rinehart and Winston).

Wallace, C., *A study of evolution* (Blackie).

Kormondy, E. J., *Concepts of ecology* (Prentice-Hall).

or:

Raven, P., and Curtis, H., *Biology of plants* (Worth).

SB2H. Plant Biology IH.

A half-subject comprising one lecture and two hours' practical work per week and one tutorial per fortnight throughout the year.

The course is concerned with the principles of biology which relate to plants as organisms; evolutionary relationships of plants; ecology, structure, physiology and reproduction of plants. Field work is included.

Text-books:

Raven, P., and Curtis, H., *Biology of plants* (Worth).

Mellanby, K., *Pesticides and pollution* (Fontana paperback).

Botany I.

This subject is a combination of the two half-subjects General Biology (SB1H) and Plant Biology (SB2H).

SZ71. Biology I.

For Biology I (SZ71), a subject which is given jointly by the Departments of Botany and Zoology, see under Zoology.

SB02. Botany II.

Pre-requisite subjects: A pass at Division I or higher standard in *either* Botany I [i.e. General Biology (SB1H) plus Plant Biology (SB2H)] *or* Biology I (SZ71) *or* General Biology (SB1H) alone with the permission of the Head of Department (permission will normally be given if the student enrols for Plant Biology (SB2H) concurrently with Botany II). A pass in Chemistry I (SC01) is also required but a candidate may be permitted to proceed to Botany II without this pre-requisite subject on the approval of the Head of the Botany Department (obtained in writing through the Academic Registrar).

The course comprises two lectures and two practical periods per week throughout the year.

FIELD WORK: An ecology field camp of five days during the first week of the August vacation; several half-day excursions during second term.

A. *Evolution and Taxonomy of the Angiosperms*: Natural selection and speciation, chromosome botany, recombination systems; taxonomic concepts illustrated by selected families and genera; biogeography and origin of angiosperms.

A representative herbarium of between 50 and 80 species of South Australian plants is to be made during the year and submitted by the last day of lectures, and a taxonomic project is carried on throughout the year. Both herbarium and project count towards final marks.

Text-books:

Stebbins, G. L., *Processes of organic evolution* (Prentice-Hall).

Davis, P. H., and Cullen, J., *The identification of flowering plant families* (Oliver and Boyd).

Black, J. M., *Flora of South Australia*, vols. 1-4 (Government Printer, Adelaide).

Cotton, B. C. (ed.), *South Australian national parks and wildlife reserves* (Government Printer, Adelaide).

Reference books:

Darlington, C. D., *Chromosome botany and the origins of cultivated plants*, 2nd edition (Allen and Unwin).

Rendle, A. B., *Classification of flowering plants*, vol. 2 *Dicotyledons* (C.U.P.).

Eichler, Hj., *Supplement to J. M. Black's Flora of South Australia* (Government Printer, Adelaide).

Bailey, L. H., *Manual of cultivated plants* (Macmillan).

Hill, A. F., *Economic botany* (McGraw-Hill).

Willis, J. H., *Manual and dictionary of flowering plants and ferns* (C.U.P.).

B. *Plant Ecology*: Principles and practice of plant ecology; ecological anatomy; biostatistics.

Text-books.

Esau, K., *Anatomy of seed plants* (Wiley).

either:

Greig-Smith, P., *Quantitative plant ecology*, 2nd edition (Butterworth).

or:

Kershaw, K. A., *Quantitative and dynamic ecology* (Edward Arnold).

Reference books:

To be notified during the course.

C. *Plant Physiology*: The structure of plant cells and their permeability to water and solutes. Sources of metabolic energy. Movement of water, mineral ions and organic solutes within the plant. Plant growth.

Text-book:

Salisbury, F. B., and Ross, C., *Plant physiology* (Wadsworth).

SB72. Botany IIP.

Pre-requisite subjects: as for Botany II (SB02).

This subject is designed for (and only available to) students taking Palaeontology (SG13) with which it forms a group E subject.

The subject comprises the double unit Comparative Morphology and Palaeobotany from Botany III (SB03), part (A) of Botany II (SB02) although without the taxonomic project, and *either* the double unit Marine Plant Biology *or* the double unit Mycology from Botany III though without the project work involved.

Text-books are as set for these courses.

THIRD YEAR SUBJECTS IN BOTANY.

Pre-requisite subjects for all third-year subjects in Botany; Botany II (SB02) at Division I or higher standard; students who entered Botany II (SB02) having passed only General Biology IH (SB1H) are required to pass Plant Biology IH (SB2H); or special permission of the Head of the Department for particular units.

The Department offers the seven double-units listed below. Numbers 3-7 each comprise three lectures and the equivalent of one and a half days (11 hours) practical work per week, for one term. The other two are each equivalent in content to this but the work is done during intensive courses of 4 weeks duration, number 1 in January, 2 in February. Double-unit 3 is offered in first term, 4 and 5 in second term, 6 and 7 in third term. The two courses in a term are at different times so that both may be taken in appropriate combination with unit courses in another department.

1. Marine Plant Biology: An intensive course given during four weeks in January. Students wishing to enrol for this course must inform the Head of Department by December 24th of the preceding year. Field work is a normal part of the course and will be undertaken when weather and tides are convenient.

The main groups of marine plant organisms—marine algae, phytoplankton, marine angiosperms; comparative morphology, reproduction and relationships; marine ecology and biogeography; primary productivity; economic aspects.

Text-book:

Dawson, E. Y., *Marine botany* (Holt).

Reference books as set during the course.

2. Rangeland Ecology: An intensive course given during four weeks in February. Students wishing to enrol for this course must inform the Head of Department by December 24th of the preceding year. The course will include no more than two weeks continuous field work on an arid-zone station.

A course in ecology emphasizing the study of the interactions between grazing animals and vegetation in arid areas, the principles involved, and their application to management practices.

Reference book:

National Research Council: Committee on range and pasture problems, *Basic problems and techniques in range research*, Natl. Acad. Sci. (U.S.A.), (Nat. Res. Council Publ. 890).

3. Environmental Physiology and Ecology: Physiological aspects of the ecology of arid zone plants; micrometeorology, plant energy balances, water relations, transpiration, productivity, instrumentation, and arid zone physiology.

Reference books:

Geiger, R., *The climate near the ground* (Harvard Univ. Press).

Kozlowski, T. T. *Water deficits and plant growth*, vols. I and II (Academic Press).

Munn, R. E., *Descriptive micrometeorology* (Academic Press).

Rose, C. W., *Agricultural physics* (Pergamon Press).

Slatyer, R. O., *Plant-water relationships* (Academic Press).

Wijk, W. R. van, *Physics of the plant environment* (Amsterdam—North Holland Publishing Co.).

4. Plant Biochemistry: Enzymes, photosynthesis, respiration, metabolism of growth; cell physiology.

Reference books:

Davies, D. D., and others, *Plant biochemistry* (Blackwell).

Whittingham, C. P., *The chemistry of plant processes* (Methuen).

5. Mycology: Morphology and taxonomy of the fungi; industrial and applied mycology.

This course is given at the Waite Agricultural Research Institute.

Text-book:

Alexopolous, C. J., *Introductory mycology* (Wiley).

Reference book:

Ainsworth, G. C., and Bisley, G. R., *A dictionary of the fungi*, 5th edition (Imperial Mycological Inst.).

6. CELLS AND EMBRYOS (given jointly with Zoology): Fertilisation; normal and asymmetric division of cells; differentiation of cells and regulation of cellular activities; polarity in spores, eggs and embryos; induction; control of growth and form in animals and plants.

Reference books:

De Robertis, E. D. P., and others, *Cell biology* (5th edition of *General Cytology*) (Saunders).

Ebert, J. D., *Interacting systems in development* (Holt).

Barth, L. J., *Development—selected topics* (Addison-Wesley).

Sinnott, E. W., *Plant morphogenesis* (McGraw-Hill).

du Praw, E. J., *Cell and molecular biology* (Academic Press).

Torrey, J. G., *Development in flowering plants* (Macmillan).

7. COMPARATIVE MORPHOLOGY AND PALAEOBOTANY: This course involves comparative investigations of living and fossil representatives of the bryophytes and vascular plants. The course includes day field trips.

Text-books:

Sporne, K. R., *The morphology of pteridophytes* (Hutchinson).

Sporne, K. R., *The morphology of gymnosperms* (Hutchinson).

Watson, E. V., *The structure and life of bryophytes* (Hutchinson).

Reference books as set during the course.

The subjects offered are:

SB03. Botany III.

A group C(1) subject. Three double-units from the above list selected with the approval of the Head of Department.

SB83. Botany IIIM.

A group C(3) subject. With approval of the Heads of the Departments concerned, a combination of two double-units from the above list together with two units or one double-unit from another department.

SB99. Botany for the Honours degree of B.Sc.

Pre-requisite subjects: Botany III (SB03) or Botany IIIM (SB83) or special permission of the Head of the Department.

Candidates are expected to acquire a more detailed knowledge than is required for the Ordinary Degree. A course of reading is prescribed and students are required to lead seminars and write essays. In addition, candidates are expected to study more deeply one branch of botany, to carry out research in this field and to present results in a written report. A small proportion of the total course is flexible and candidates choose, with approval, between additional project work and courses such as third year science units, Science German (AG74), Fortran programming etc.

Candidates should consult the Head of the Department during the final year of their Ordinary degree course. The Honours course commences at the beginning of February.

CHEMISTRY.

Students who intend to take third-year subjects in the Departments of Physical and Inorganic Chemistry or Organic Chemistry are advised to take the following combinations of first- and second-year subjects: *First Year*: Chemistry I, Physics I,

Mathematics I *or* Mathematics IM *or* IS, and either Biology I *or* Geology I; *Second Year*: Physical and Inorganic Chemistry II, Organic Chemistry II, and Biochemistry I *or* Pure Mathematics II *or* Applied Mathematics II *or* Mathematics IIM *or* Physics II. Other combinations are acceptable but students are advised to consult Heads of Departments before enrolling.

Before enrolling for third year unit-courses all students *must* discuss their programmes with the Heads of the Departments.

A student who wishes, or who thinks he may wish, to proceed to Honours in either Department of Chemistry is advised to discuss his course programme with Heads of Departments concerned as early as possible.

PHYSICAL AND INORGANIC CHEMISTRY

SC01. Chemistry I.

A knowledge of Matriculation Chemistry will be assumed. In addition, students would be assisted greatly by a study of Physics and either Mathematics IS or both Mathematics I and II at Matriculation level.

The course consists of three lectures and three hours practical work and one tutorial each week throughout the three terms of the year.

Students will be required to complete regular work assignments based on the lecture course and prescribed text-books.

The course of lectures deals with an introduction to energetics, chemical structure and bonding theory, reaction mechanisms and the synthesis of compounds with reference to both organic and inorganic systems.

Text-books:

Campbell, J. A., *Chemical systems* (Freeman).

Tedder, J. M., and Nechvatal, A., *Basic organic chemistry* (Wiley).

Richards, J. H., Cram, D. J., and Hammond, G. S., *Elements of organic chemistry*, (International Student Edition) (McGraw-Hill).

SC02. Physical and Inorganic Chemistry II.

Pre-requisite subjects: A Division I pass, or higher, in Chemistry I. The course assumes a knowledge of some topics covered in first year Mathematics courses and students wishing to enrol for Physical and Inorganic Chemistry II without having passed Mathematics I, Mathematics IM or IS, or Mathematics IH in combination with either Computing Science IH or Statistics IH must obtain special permission from the Head of the Department of Physical and Inorganic Chemistry.

The course consists of three lectures, one tutorial and not less than six hours' practical work a week throughout the three terms of the year.

The lectures serve as an introduction to chemical thermostatics, electrochemistry, elementary molecular spectra, co-ordination chemistry, chemistry of the transition metals and non-metals. A more detailed syllabus for each of these topics will be available from the Department of Physical and Inorganic Chemistry during December and the enrolment period.

The practical courses deal with physical chemistry, preparative inorganic chemistry and modern instrumental analysis.

Text-books:

Cotton, F. A., and Wilkinson, G., *Advanced inorganic chemistry*, 2nd edition (Inter-science).

Denaro, A. R., *Elementary electrochemistry* (Butterworths).

Basolo, F., and Johnson, R. E., *Co-ordination chemistry: the chemistry of metal complexes* (Benjamin).

Hannay, N. B., *Solid state chemistry* (Prentice-Hall).

Denbigh, K. G., *The principles of chemical equilibrium* (C.U.P.) — for students likely to proceed to third year unit 2 Statistical Thermodynamics.

Reference books:

Azaroff, L. V., *Introduction to solids* (McGraw-Hill).

Vogel, A. I., *A text-book of quantitative inorganic analysis*, 3rd edition (Longmans).

Denbigh, K. G., *The principles of chemical equilibrium* (C.U.P.).

Banwell, C. N., *Fundamentals of molecular spectroscopy* (McGraw-Hill).

Sheehan, W. F., *Physical chemistry* (Allyn and Bacon).

Buckingham, A. D., *The laws and applications of thermodynamics* (Pergamon).

Dickerson, R. E., *Molecular thermodynamics* (Benjamin).

Dunford, H. B., *Elements of diatomic molecular spectra* (Addison-Wesley).

Wells, A. F., *Structural inorganic chemistry*, 3rd edition (O.U.P.).

SC12. Chemistry II.

Pre-requisite subjects: A Division I pass, or higher, in Chemistry I. A pass in a full or a half Mathematics subject in first year is desirable; a student without such qualification should consult the Head of the Department of Physical and Inorganic Chemistry for advice before enrolling.

The course consists of three lectures and six hours practical work a week throughout the three terms of the year.

The lectures in physical chemistry will serve as introductions to thermodynamics, electrochemistry, reaction kinetics, chemical spectroscopy, macromolecular chemistry; lecture topics in inorganic chemistry will be selected to illustrate the applications of physico-chemical principles and concepts; lectures in organic chemistry will deal with the chemistry of the heterocyclic compounds with special reference to nitrogenous and other compounds of significance to the biologist, the mechanisms of organic reactions, the chemistry of carbohydrates, the chemistry of amino acids and related compounds. The practical course will illustrate the principles of physical chemistry, preparative inorganic chemistry and modern instrumental analysis, and the main methods and techniques of organic chemistry.

Text-books:

Banwell, C. N., *Fundamentals of molecular spectroscopy* (McGraw-Hill).

Wyatt, P. A. H., *Energy and entropy in chemistry* (Macmillan).

Sykes, P., *A guidebook to mechanisms in organic chemistry* (Longmans); and

De Puy, J. H., and Rinehart, K. L., *Introduction to organic chemistry* (Wiley).

Richards, J. H., and others, *Elements of organic chemistry* (McGraw-Hill).

Reference books:

Cotton, F. A., and Wilkinson, G., *Advanced inorganic chemistry* (Inter-science).

Laidler, K. J., *Reaction kinetics*, vol. 1 (Pergamon).

THIRD-YEAR SUBJECTS IN PHYSICAL AND INORGANIC CHEMISTRY.

Pre-requisite subjects: A Division I pass, or higher, in Physical and Inorganic Chemistry II is the desirable pre-requisite for third year units. However, subject to the approval of the Head of the Department of Physical and Inorganic Chemistry in each case, students may be allowed to proceed to a limited programme of third year units in Physical and Inorganic Chemistry III on the basis of Division I passes or higher, in second year (Group B) subjects other than Physical and Inorganic Chemistry II.

The Department offers the following units, each of which consists of about 15 lectures and about 54 hours' practical work and tutorials.

A pamphlet giving further information on unit courses will be available from the Department of Physical and Inorganic Chemistry in December and during the enrolment period. Prior to enrolling all third-year students taking unit courses should discuss their course with members of staff of the Department and finally with the Head of Department.

1. Quantum Chemistry: First term. Wave mechanics, hydrogen, hydrogen-like atoms, more complex atoms, molecular orbitals, simple and complex molecules, π molecular orbitals, calculation of charge densities, bond orbitals and dipole moments; symmetry operations; group theory.

Text-books:

Hanna, M. W., *Quantum mechanics in chemistry* (Benjamin), *or*
Phillips, L. F., *Basic quantum chemistry* (Wiley Paperback).

2. Statistical Thermodynamics: Second term. Use of statistical methods to calculate thermodynamic properties and equilibrium constants; Maxwell-Boltzmann, Fermi-Dirac, and Bose-Einstein quantum statistics. Determination of intermolecular forces from equilibrium and transport properties.

Text-book:

Denbigh, K. G., *The principles of chemical equilibrium* (C.U.P.).

3. Crystallography: First term. Symmetry and structure determination; application of diffraction methods to structural and analytical problems.

Text-book:

Sands, D. E., *Introduction to crystallography* (Benjamin).

Reference book:

Stout, G. H., and Jensen, L. H., *X-ray structure and determination* (Macmillan).

4. Reaction Kinetics: Third term. Theories of gas and liquid phase reactions; unimolecular, bimolecular, termolecular, chain, and photochemical reactions; stationary state and non-stationary state systems. The practical work illustrates the use of kinetic measurements to deduce reaction mechanisms.

Text-book:

Laidler, K. J., *Reaction kinetics,* vols. 1 and 2 (Pergamon).

Reference books:

Laidler, K. J., *Chemical kinetics,* 2nd edition (McGraw-Hill).
Benson, S. W., *Foundations of chemical kinetics* (McGraw-Hill).
Frost, A. A., and Pearson, R. G., *Kinetics and mechanism,* 2nd edition (Wiley).

5. Molecular Spectra: Second term. Theory and applications of microwave, infra-red, Raman, ultraviolet-visible and spin resonance spectroscopy.

Text-book:

Banwell, C. N., *Fundamentals of molecular spectroscopy* (McGraw-Hill).

Reference books:

Walker, S., and Straw, H., *Spectroscopy,* vols. 1 and 2 (Chapman and Hall).
Dunford, H. B., *Elements of diatomic molecular spectra* (Addison-Wesley).

6. Organometallic Chemistry and Inorganic Structural Chemistry: Second term. The main classes of organometallic and inorganic compounds surveyed with reference to their reactions, structure and bonding.

Text-books,

Cotton, F. A., and Wilkinson, G., *Advanced inorganic chemistry*, 2nd edition (Interscience).

Wells, A. F., *Structural inorganic chemistry*, 3rd edition (O.U.P.).

7. Macromolecular Chemistry: Second term. The structure, solution properties and some solid state properties of natural and synthetic macromolecules.

Reference books:

Tanford, C., *Physical chemistry of macromolecules* (Wiley).

Billmeyer, F. W., *Textbook of polymer science* (Wiley-Toppan).

Mahler, H. R., and Cordes, E. H., *Biological chemistry* (Harper International).

8. Metal Complexes: Third term. Bonding in complexes, crystal field and charge transfer spectra. Formation of complexes in solution: species, equilibria, and energy changes.

Text-books:

Cotton, F. A., and Wilkinson, G., *Advanced inorganic chemistry*, 2nd edition (Interscience).

Sutton, D., *Electronic spectra of transition metals* (McGraw-Hill).

9. Inorganic Reaction Mechanisms: Third term. Characteristic reactions of compounds of both the metals and the non-metals: hydrolysis, solvolysis, substitution, exchange, isomerization and oxidation-reduction.

Text-book:

Edwards, J. O., *Inorganic reaction mechanisms* (Benjamin).

Reference book:

Basolo, F., and Pearson, R. S., *Mechanisms of inorganic reactions*, 2nd edition (Wiley).

10. Electrolyte Solutions: First term. Equilibrium and transport properties of electrolyte solutions. Interpretation in terms of simple models.

Reference books:

Robinson, R. A., and Stokes, R. H., *Electrolyte solutions*, 2nd edition (Butterworths).

Gurney, R. W., *Ionic processes in solutions* (Dover).

Three different subjects in third-year Physical and Inorganic Chemistry are offered depending on whether eight, six or four units from the above list are taken along with units from other Departments. All students intending to take courses in third-year Physical and Inorganic Chemistry *must* obtain notes issued by the Department on suggested combinations of units and *must* make an appointment to discuss their course with the Head of Department or members of Staff prior to enrolment during the enrolment period and/or immediately after the results of the November examinations are made known.

The subjects offered are:

SC03. Physical and Inorganic Chemistry IIIA.

A Group D subject. Eight units from the above list selected with the approval of the Head of Department together with four units or two double-units in either Organic Chemistry; or Biochemistry; or Pure and Applied Mathematics III; or other third-year subjects chosen after consultation with the Heads of the Departments concerned.

Note: The pre-requisites for the subjects in other Departments must be observed.

SC13. Physical and Inorganic Chemistry IIIB.

A Group C(1) subject. Six units from the above list selected with the approval of the Head of Department.

SC83. Physical and Inorganic Chemistry IIIM.

A Group C(3) subject. Four units from the above list with two units or one double-unit from one other Department selected with the approval of the Heads of the Departments concerned.

SC99. Physical and Inorganic Chemistry for the Honours degree of B.Sc.

Pre-requisite subjects: Any third-year subject in the Department of Physical and Inorganic Chemistry together with subjects in any of the Departments of Organic Chemistry, Biochemistry, Mathematics, Mathematical Physics, Geology or Physics, or such other third-year subjects as may be approved by the Head of the Department of Physical and Inorganic Chemistry. Subject to the approval of the Head of the Department of Physical and Inorganic Chemistry in each case, a student may proceed to Honours in Physical and Inorganic Chemistry if he has taken a first degree programme which has not included a Physical and Inorganic Chemistry III subject.

A series of unit courses in advanced Physical and Inorganic Chemistry will be provided for the Honours course. The list of Honours units will be issued by the Department in October. Students will select courses from Honours units and from third-year units in Physical and Inorganic Chemistry not taken in the course for the Ordinary Degree. Lectures or unit courses in other Departments may also be taken. The lecture programme of each student will be determined by consultation with his research supervisor and the Head of Department. Each student will be assigned a research problem which he will investigate under the personal guidance of a member of staff of the Department of Physical and Inorganic Chemistry. The performance of each student will be assessed on the basis of written and oral examinations and the student's written report of his research investigation.

Books: Those for the Ordinary degree, and in addition other reference books, a list of which will be published in the Department of Physical and Inorganic Chemistry.

ORGANIC CHEMISTRY.

SO02. Organic Chemistry II.

Pre-requisite subject: A Division I pass, or higher, in Chemistry I (SC01).

The course, which is given annually, consists of three lectures and at least six hours practical work a week throughout the three terms of the year.

The lectures will provide an introduction to the physical and theoretical aspects of organic chemistry, and a discussion of the reactions and properties, including those of biological significance, of compounds belonging to the major families of aliphatic, aromatic and heterocyclic compounds.

Text-books:

Cram, D. J., and Hammond, G. S., *Organic chemistry*, international student edition (McGraw-Hill).

Finar, I. L., *Organic chemistry*, 5th edition, vol. 1 (Longmans).

Hart, H., and Schuetz, R., *Laboratory manual for organic chemistry* (Houghton Mifflin).

Students intending to proceed to Organic Chemistry III could purchase also Roberts, J. D., and Caserio, M. C., *Modern principles of organic chemistry* (Benjamin) and Vogel, A. I., *Practical organic chemistry*, 3rd edition (Longmans).

THIRD-YEAR SUBJECTS IN ORGANIC CHEMISTRY.

Pre-requisite subjects for all third-year subjects in Organic Chemistry: Organic Chemistry II (SO02) at Division I pass, or higher, standard.

The Department offers the following units each of which consists of about 14 lectures and about 54 hours' practical work and tutorials.

1. SPECTROSCOPY: First term. Theory and applications in organic chemistry of infra-red, ultra-violet, nuclear magnetic resonance and mass spectrometry.

2. PHYSICAL-ORGANIC CHEMISTRY: First term. Thermodynamics and kinetics of organic systems; medium effects; linear free energy relationships; reaction mechanisms.

3. REACTIVE INTERMEDIATES, I: First term. Structure, stereochemistry and reactions of free radicals, carbenes and arynes; photochemistry.

4. REACTIVE INTERMEDIATES, II: Second term. Structure, stereochemistry and reactions of carbonium ions, carbanions and radical-ions.

5. HETEROCYCLIC COMPOUNDS: Second term. Structure and reactions of heterocyclic systems; alkaloids and other heterocyclic compounds of biological significance.

6. SYNTHETIC METHODS, I: Third term. General synthetic methods, selective reactions, protecting groups.

7. SYNTHETIC METHODS, II: Third term.

8. BIOSYNTHESIS AND BIO-ORGANIC MECHANISMS: Third term. Biosynthetic pathways; mechanisms of important biological processes.

The subjects offered are:

SO03. Organic Chemistry III.

A group C(1) subject. Six units from the above list selected with the approval of the Head of Department.

SO83. Organic Chemistry IIIM.

A group C(3) subject. Four units from the above list together with two units or one double-unit from one other Department selected with the approval of the Heads of the Departments concerned.

NOTE: All students intending to take courses in third-year organic chemistry *must* obtain notes issued by the Department concerning suggested combinations of units and *must* make an appointment prior to enrolment with the Head of Department or member of staff to discuss their course either during the enrolment period or immediately after the results of the November examinations are made known.

Text-books:

All Units

Roberts, J. D., and Caserio, M. C., *Modern principles of organic chemistry* (Benjamin).

Fleming, I., and Williams, D. H., *Spectroscopic methods in organic chemistry* (McGraw-Hill).

Unit 1

Dyer, J. R., *Applications of absorption spectroscopy of organic compounds* (Prentice-Hall).

Unit 3

Pryor, W. A., *Introduction to free-radical chemistry* (Prentice-Hall).

Units 4, 6 *and* 7

House, H. O., *Modern synthetic reactions* (Benjamin).

Reference books:

Norman, R. O. C., *Principles of organic synthesis* (Methuen).

Noller, C. R., *Chemistry of organic compounds*, 3rd edition (Saunders).

Banwell, C. N., *Fundamentals of molecular spectroscopy* (McGraw-Hill).

March, J., *Advanced organic chemistry; reactions, mechanisms, and structure* (McGraw-Hill).

Gould, E. S., *Mechanism and structure in organic chemistry* (Holt).

Liberles, A., *Introduction to theoretical organic chemistry* (Macmillan).

Kosower, E. M., *An introduction to physical organic chemistry* (Wiley).

Budzikiewicz, H., and others, *Interpretation of mass spectra of organic compounds* (Holden-Day).

Eliel, E. L., *Stereochemistry of carbon compounds,* International student edition (McGraw-Hill).

Kan, R. O., *Organic photochemistry* (McGraw-Hill).

Acheson, R. M., *An introduction to the chemistry of heterocyclic compounds,* 2nd edition (Wiley, International Edition).

Vogel, A. I., *Practical organic chemistry,* 3rd edition (Longmans).

Linstead, Sir P., *A course in modern techniques of organic chemistry,* 2nd edition, rev. and enl. by J. A. Elvidge and P. G. Sammes (Butterworths).

Gilchrist, T. L., and Rees, C. W., *Carbenes, nitrenes and arynes* (Nelson).

SO99. Organic Chemistry for the Honours degree of B.Sc.

Pre-requisite subjects: A third-year subject in the Department of Organic Chemistry [preferably Organic Chemistry III (SO03)] *and* a third-year subject in the Department of Physical and Inorganic Chemistry, *or* a third-year subject in the Department of Biochemistry, *or* such other third-year subject as may be approved by the Professor of Organic Chemistry.

The course, which is given annually, will consist of lectures and seminars in advanced Organic Chemistry and such lectures in Physical and Inorganic Chemistry, and Biochemistry as the Professor of Organic Chemistry may deem necessary. All time not devoted to lectures and seminars will be given to laboratory work. Each student will be expected to investigate a research problem under the guidance and supervision of one or more members of the staff of the Department of Organic Chemistry.

Students who wish to take the Honours degree should consult the Professor of Organic Chemistry during the preceding year in order that they can be advised on a suitable course of study.

Books: Those for the Ordinary degree and, in addition, other reference books, a list of which will be published in the Department of Organic Chemistry.

COMPUTING SCIENCE.

Programming.

These courses, which may not be counted towards any degree or diploma, are intended as elementary introductions to programming for students needing to use computers. No formal pre-requisite subjects are specified for the courses, but a thorough knowledge of matriculation mathematics is assumed.

Each course will comprise lectures and tutorials covering the use of a programming language and programme system applicable to the computers available to the University. Additional post-course tutorials are normally provided. Most courses (e.g., FORTRAN programming) are given during vacations, on a full-time basis.

Students wishing to take one of these courses should enrol with the Secretary of the Computing Centre.

Text-books: Appropriate programming manuals.

SA7H. Computing IH.

A first year half-subject, consisting of two lectures and one tutorial per week throughout the year. A background in algebra, such as may be obtained from the Matriculation Mathematics IS syllabus, or equivalent, will be assumed. (In 1971 only, this will entail *both* Matriculation Mathematics I and II.)

The subject is intended to provide an introduction to Computing Science. Some programming will be covered, but those desiring simply a working knowledge of (e.g.) FORTRAN programming are advised to attend short intensive classes conducted by Computing Centre staff. Enquiries should be addressed to the Secretary of the Computing Centre.

Syllabus: Algorithmic processes and algebraic languages. Computer organization and coding. Data structures and their manipulation.

Text-book:

Kemeny, J. G., and Kurtz, T. E., *Basic Programming* (Wiley).

Reference books: To be advised.

Students who expect to take Computing Science III in 1973 or later are encouraged, but not obliged, to take Computing IH.

THIRD YEAR SUBJECTS IN COMPUTING SCIENCE AND DIPLOMA IN COMPUTING SCIENCE.

Pre-requisite subjects: Intending students should have a working knowledge of programming in a procedure-oriented language, such as may be obtained from various short courses.

Some third-year units require considerable mathematical knowledge, and no student will be admitted without at least one Division I pass in a second-year Mathematics or Statistics subject. Students who wish to proceed with further studies in Computing should have taken at least two of Pure Mathematics II, Applied Mathematics II and Mathematical Statistics II, each at Division I or higher standard, and others are strongly advised to do so.*

Graduates with a similar mathematical background, but who have not taken Computing III, may take the Diploma in Computing Science. Graduates who have taken Computing III and who wish to take the Diploma should consult the Professor of Computing Science.

UNITS OFFERED.

The Department offers the following units, each of which consists of about 18 or 27 lectures, tutorials and written exercises.

First Term:
- A301 Assembly Languages
- A302 Numerical Analysis I
- A303 Operations Research I
- A304 Systems Analysis and Design

Second Term:
- A305 Operating Systems (pre-req. 301)
- A306 Data Structures
- A307 Numerical Analysis II (pre-req. 302)
- A308 Operations Research II (pre-req. 303)

Third Term:
- A309 Systems Investigations
- A310 Programming Languages
- A311 System Programming (pre-req. 305)
- A312 Numerical Analysis III

Selected students may also be allowed to take units offered mainly for Honours students.

SUBJECTS.

(a) *Third Year.*

The following subjects are offered:

* Students with a lesser mathematical background should consult the department; they may for example be able to take Computing Science IIIM.

SA13. Computing Science IIIA.

Units 301, 302, 305, 306, 309 and 310.

SA83. Computing Science IIIM.

Units 301 and 6, plus 4 others approved by the Departments concerned.

(b) *Third Year Honours.*

Students who wish to take Honours in Computing Science are encouraged to consult the department as soon as possible, desirably before enrolling for their third year.

(c) *For the Diploma.*

SA04. Numerical Analysis.

Units 312 and either 302 and 307 or 303 and 308.†

SA14. Programming Languages.

Units 301, 305 and either 310 or 311.

SA24. Theory of Systems.

Units 304, 306 and 309.

Diploma students are also required to take:

SA34. Project.

Students will be required to carry out extensive practical programming and system analysis, to participate in programme system development, and to undertake major projects in computing science occupying about 200 hours.

MINOR STUDIES IN COMPUTING SCIENCE.

Students wishing to take one or two Computing Science units are invited to consult the Department. However, units 301 and 305 are suitable for those heavily involved in practical computing on a large scale. Units 302, 307 and 312 are useful for those involved in complex mathematical calculations, 303, 308 and 309 for those involved in scientific management, and 310 for users seeking a broad perspective.

Reference books:

Units 301/305/311.

Wegner, P., *Programming languages, information structures and machine organization* (McGraw-Hill).

Barron, D. W., *Assemblers and loaders* (Macdonald).

Davis, G. B., *An introduction to electronic computers* (McGraw-Hill).

Knuth, D., *The art of computer programming*, vol. 1 (Addison-Wesley).

Current reference manuals, as advised.

Units 302/307/312.

Fröberg, C. E., *Introduction to numerical analysis* (Addison-Wesley).

Fox, L., and Mayers, D. F., *Computing methods for scientists and engineers* (O.U.P.).

Isaacson, E., and Keller, H. B., *Analysis of numerical methods* (Wiley).

Units 303/308.

Hillier, F. S., and Lieberman, G. J., *Introduction to O.R.* (Holden Day).

Ackoff, R. L., and Sasieni, M. W., *Fundamentals of operations research* (Wiley).

† Students wishing to take 303/308 must have taken 302, 305, 308 and 309 or equivalents.

Unit 304.

Gregory, R. H., and van Horn, R. L., *Automatic data processing systems* (Chatto and Windus).

National Computing Centre, *Basic training in systems analysis and design* (Pitman).

Unit 306.

Knuth, D., *The art of computer programming*, vol. 1 (Addison-Wesley).

Khinchin, A. I., *Mathematical foundations of information theory* (Dover).

Singh, Jagjit., *Great ideas in information theory, language and cybernetics* (Dover).

Unit 309.

Kaufmann, A., *Graphs, dynamic programming and finite games* (Academic Press).

Hadley, G., *Non-linear and dynamic programming* (Addison-Wesley).

Unit 310.

Sammet, J., *Programming languages: history and fundamentals* (Prentice-Hall).

Davis, G. B., *An introduction to electronic computers* (McGraw-Hill).

Wegner, P., *Programming languages, information structures and machine organization* (McGraw-Hill).

Forte, A., *SNOBOL3 primer* (M.I.T.).

FOR THE HONOURS DEGREE OF B.A. OR B.Sc.

SA99. Computing Science for the Honours degree of B.A. or B.Sc.

In general, only students who have reached a satisfactory standard in Computing Science IIIA or IIIM and one other third-year subject offered by the Departments of Pure Mathematics, Applied Mathematics or Statistics will be permitted to proceed to the Honours course.

The course will be determined from year to year and will consist partly of lectures given in the Department of Computing Science, and partly of lectures given in other departments. It will normally comprise topics selected from the following: logical design of automatic systems, advanced numerical analysis, information theory, operations research, theory of information systems, advanced computer programming and language systems, automatic analysis and design of systems, information retrieval, theory of adaptive systems. Students will be required to undertake major projects involving extensive practical work with computers and automatic systems.

Intending students should consult the Professor of Computing Science not later than the end of the preceding year, and be prepared to commence work on a suitable project in the first week of February.

GENETICS.

SJ7H. Genetics and Human Variation IH.

A Group A(3) subject, equivalent to one-eighth of a year's work.

This course is designed to introduce the principles of human genetics as a means of understanding some of the diversity and the underlying unity of mankind. The course will consist of one lecture each week and a three-hour practical class fortnightly throughout the year. In addition, students will be required to write several essays which will be discussed in separate tutorials.

The nature and causes of human variation. Genetic patterns in families. Human chromosomes. Gene action and inborn errors. Polygenic variation (body shape and size, fingerprints, intelligence, etc.). Twin comparisons. Mutation and radiation hazards. Human populations and their genetical structure. Selection in primitive and civilized communities. Effects of migration and racial mixture. Human evolution.

Text-book:

Lerner, I. M., *Heredity, evolution and society* (Freeman).

Reference books:

Carter, C. O., *Human heredity* (Pelican).

Harrison, G. A., and others, *Human biology* (Oxford).

McKusick, V. A., *Human genetics*, 2nd edition (Prentice-Hall).

Roslansky, J. D., *Genetics and the future of man* (North Holland).

SJ02. Genetics II.

The following subjects are recommended as most suitable for taking along with Genetics II in second-year: Biochemistry II, Botany II, Chemistry II, Mathematical Statistics II, Organic Chemistry II, Physical and Inorganic Chemistry II, Physiology II, Psychology II, Pure Mathematics II, Zoology II.

Pre-requisites: *either*

(A) Passes in one biological and one mathematical subject from Group A; *or*

(B) A knowledge of biology and mathematics deemed satisfactory by the Head of the Department of Genetics.

Three lectures, four hours' practical work and one tutorial a week for three terms.

Views on the origin of the universe and of life. Mendelian inheritance. Probability and inductive inference in genetics. Linkage. Mitosis and meiosis. The chromosome theory of heredity. Structural changes in chromosomes. Recombination systems in micro-organisms. The genetic material. Gene mutation. Gene structure and function. Protein synthesis. Gene regulation. The genetic code. Cytoplasmic inheritance. Differentiation. Sex determination and differentiation. Polyploidy. Breeding systems in plants. Population growth and the elements of demography. Population genetics and natural selection. Polygenic variation (e.g. height, yield, intelligence) and its particulate basis. Heritability and the response to selection. Inbreeding and outbreeding. Speciation. Genetics and Man—pedigree analysis, chromosomal variants, inborn errors of metabolism, twin comparisons, common genetical differences, genetic counselling.

Text-books:

McKusick, V. A., *Human genetics*, 2nd edition (Prentice-Hall).

Strickberger, M. W., *Genetics* (Macmillan).

Reference books:

Bailey, N. T. J., *Statistical methods in biology* (E.U.P.).

Carter, C. O., *Human heredity* (Penguin).

Falconer, D. S., *Introduction to quantitative genetics* (Oliver and Boyd).

Fincham, J. R. S., *Microbial and molecular genetics* (E.U.P.).

Fincham, J. R. S., and Day, P. R., *Fungal genetics*, 2nd edition (Blackwell).

Lerner, I. M., *Heredity, evolution and society* (Freeman).

Li, C. C., *Population genetics* (Chicago U.P.).

Mather, K., *Statistical analysis in biology* (Methuen).

Mather, K., *The measurement of linkage in heredity* (Methuen).

Mendel, G., *Experiments in plant hybridisation* (Oliver and Boyd).

Mettler, L. E., and Gregg, T. G., *Population genetics and evolution* (Prentice-Hall).

Penrose, L. S., *Outline of human genetics* (Heinemann).

Pirchner, F., *Population genetics in animal breeding* (Freeman).
Race, R. R., and Sanger, R., *Blood groups in man*, 5th edition (Blackwell).
Sager, R., and Ryan, F. J., *Cell heredity* (Wiley).
Sheppard, P. M., *Natural selection and heredity* (Hutchinson).
Srb, A. M., and others, *General genetics* (Freeman).
Stebbins, G. L., *Processes of organic evolution* (Prentice-Hall).
Stern, C., *Principles of human genetics*, 2nd edition (Freeman).
Wagner, R. P., and Mitchell, H. K., *Genetics and metabolism*, 2nd edition (Wiley).
Watson, J. D., *Molecular biology of the gene* (Benjamin).
Whitehouse, H. L. K., *Towards an understanding of the mechanism of heredity*, 2nd edition (Arnold).

SJ03. Genetics III.

Pre-requisite subject: Genetics II (SJ02).

Four courses, A, B, C and D, are offered as part of Genetics III. Each course extends over three terms and consists of one lecture and an average of 2-3 hours of practical or tutorial work per week. A student who enrols for Genetics III takes three of these courses.

A. *Gene and chromosome structure and function. Differentiation.*

Text-books:
Hartman, P. E., and Suskind, S. R., *Gene action*, 2nd edition (Prentice-Hall).
Swanson, C. P., and others, *Cytogenetics*, 2nd edition (Prentice-Hall).
Whitehouse, H. L. K., *Towards an understanding of the mechanism of heredity*, 2nd edition (Arnold).

Reference books:
Fincham, J. R. S., *Genetic complementation* (Benjamin).
Wilkie, D., *The cytoplasm in heredity* (Methuen).

B. *Recombination and genetic systems.*

Text-book:
Hayes, W., *The genetics of bacteria and their viruses*, 2nd edition (Blackwell).

Reference books:
Darlington, C. D., *Evolution of genetic systems*, 2nd edition (Oliver and Boyd).
Lewis, K. R., and Lewis, J. B., *Chromosome marker* (Churchill).

C. *Ecological Genetics. Human genetics.*

Text-books:
Ford, E. B., *Ecological genetics* (Methuen).
Giblett, E. R., *Genetic markers in human blood* (Blackwell).

Reference books:
Harris, H., *The principles of human biochemical genetics* (North Holland)
Race, R. R., and Sanger, R., *Blood groups in man*, 5th edition (Blackwell).

D. *Quantitative genetics.*

Text-books:
Crow, J. F., and Kimura, M., *An introduction to population genetics theory* (Harper and Row).
Falconer, D. S., *Introduction to quantitative genetics.* (Oliver and Boyd).

Reference books:

Allard, A. W., *Principles of plant breeding* (Wiley).

Newton Turner, H., and Young, S. S. Y., *Quantitative genetics in sheep breeding* (Macmillan).

Genetics in Zoology I.

About eight lectures and practical classes, as part of Zoology I (SZ01).

Human pedigrees. Hypothesis of gene determination of heritable characters. Mendel's work on the garden pea, his laws of purity of gamete and independent segregation. Linkage and genetical chromosome maps. Physical basis of Mendelian inheritance. Sex linked inheritance. Mutation and selection. Evolution. Relation of genetics to other sciences.

Text-books:

Carter, C. O., *Human heredity* (Pelican).
Mather, K., *Genetics for schools* (Murray).
McLeish, J., and Snoad, B., *Looking at chromosomes* (Macmillan).

Reference book:

Strickberger, M. W., *Genetics* (Macmillan).

SJ99. Genetics for the Honours degree of B.Sc.

Candidates are required to give their full attendance for one academic year to a special course of study in the Department of Genetics. Each candidate will have a prescribed reading list and a research investigation to be carried out under the supervision of a member of staff. The course will include participation in seminars and discussions on advanced topics and the writing of essays and literature reviews. Candidates will be required to take a written examination and to present a thesis embodying the results of their research work.

Intending Honours candidates should consult the Head of the Department during the previous year so that they can be advised on suitable reading for the Long Vacation.

ADDITIONAL SUBJECTS.

SJ89. Genetics for the Honours degree of B.Med.Sc.

The pre-requisites are passes in Genetics II (SJ02) and in the First Professional Examination in Medicine. Intending candidates should consult the Professor of Genetics as early as possible.

SJ79. Genetics for the Honours degree of B.Ag.Sc.

For syllabus see under Faculty of Agricultural Science.

GEOLOGICAL SCIENCES.

SG1H. General Geology IH.

There are no formal pre-requisites for General Geology IH but a knowledge of Matriculation Chemistry will be helpful. The course consists of two lectures and one tutorial per week for the first half of the year and one lecture and three hours practical work for the second half. There are occasional voluntary field excursions.

The lecture course deals with materials of the earth's crust; basis of the geological record; and earth resources with special reference to Australia.

The practical course will involve the study of crystals, minerals, rocks and fossils, thus illustrating aspects of the lecture course with reference to Australian materials.

Text-books:

Either Read, H. H., and Watson, J., *Introduction to geology*, 2nd edition, vol. 1 (Macmillan), *or*

Gilluly, J., and others, *Principles of geology*, 3rd edition (Freeman).

Atlas of Australian resources, second series: *vol. 4, geology*, 2nd edition (Department of National Development, Canberra).

Reference books:

*Dana, J. D., *Manual of mineralogy*, 17th edition, revised by C. S. Hurlbut (Wiley).

Dunbar, C. O., and Waage, K. M., *Historical geology* (Wiley).

Skinner, B. J., *Earth resources* (Prentice-Hall).

Turekian, K. K., *Oceans* (Prentice-Hall).

McAlester, A. L., *The history of life* (Prentice-Hall).

SG2H. Physical Geology IH.

There are no formal pre-requisites for Physical Geology IH but a knowledge of Matriculation Physics will be helpful. The course consists of one lecture and three hours practical work per week for the first half of the year and two lectures and one tutorial per week for the second half. There are occasional voluntary field excursions.

The lecture course deals with physical properties of minerals and rocks; structural geology and geomorphology; geophysical methods and global geophysics.

The practical course will involve the study of physical properties of rocks and minerals; interpretation of elementary geological maps; geophysical exercises.

Text-books:

Either Gilluly, J., and others, *Principles of geology*, 3rd edition (Freeman), *or*

Longwell, C. R., and others, *Physical geology* (Wiley).

Reference books:

Holmes, A., *Principles of physical geology*, 2nd edition (Nelson).

Shelton, J. S., *Geology illustrated* (Freeman).

Phillips, O. M., *The heart of the earth* (Freeman, Cooper).

SG02. Geology II.

Pre-requisite subjects: The first year half-subject General Geology IH at Division I pass or higher standard. The first year half-subject Physical Geology IH is also a pre-requisite for part of the Geology II course but students who have not taken Physical Geology IH or who have not passed at Division I or higher standard will be permitted to enrol in Physical Geology IH concurrently with Geology II. Chemistry I is not a formal pre-requisite but is strongly recommended.

LECTURES.—This course consists of three lectures a week throughout the year as follows:—

Crystallography: The symmetry of crystals and lattices.

Mineralogy: The theory of optical mineralogy.

Petrology: The characteristics and mode of occurrence of igneous, metamorphic and sedimentary rocks; a study of the accepted classifications of rocks.

Structural Geology: The geometry and interpretation of geological structures.

Geomorphology: The nature and development of land forms with emphasis on structural control.

* This is also a text for Geology II and III.

Stratigraphy and Sedimentation: Principles, with application to the study of Australian stratigraphy.

LABORATORY WORK.—Not less than six hours a week.

Crystallography: Symmetry of crystals.

Mineralogy: Optical mineralogy; study of minerals in the hand specimen.

Petrology: Identification and classification of rocks; study of typical rocks both in hand specimen and under the microscope.

Structural Geology: Interpretation of geological maps; solving of structural problems by graphical methods. Introduction to photogeological interpretation.

FIELD WORK.—A minimum of ten days will be spent in the field during the year. Excursions to localities of special interest may be arranged.

APPARATUS.—Students need to provide themselves with field equipment of approved pattern.

Text-books:

*Dana, J. D., *Manual of mineralogy*, 17th edition revised by C. S. Hurlbut (Wiley).

Bloss, F. D., *An introduction to the methods of optical crystallography* (Holt, Rinehart and Winston).

Williams, Howel, and others, *Petrography* (Freeman).

Hills, E. S., *Elements of structural geology* (Methuen).

Dunbar, C. O., and Rodgers, J., *Principles of stratigraphy* (Wiley).

*Heinrich, E. W., *Microscopic identification of minerals* (McGraw-Hill).

*Krauskopf, K., *Introduction to geochemistry* (McGraw-Hill).

Reference books:

Handbook of South Australian geology, ed. by L. W. Parkin (Geological Survey of South Australia).

Phillips, F. C., *Introduction to crystallography*, 3rd edition (Longmans).

Brown, D. A., *et al.*, *The geological evolution of Australia and New Zealand* (Pergamon).

Lahee, F. H., *Field geology*, 6th edition (McGraw-Hill).

Twidale, R., *Geomorphology* (Nelson).

Bayly, B., *Introduction to petrology* (Prentice-Hall).

*Pettijohn, F. J., *Sedimentary rocks* (Harper).

* These are also Geology III texts.

THIRD YEAR SUBJECTS IN GEOLOGICAL SCIENCES.

Pre-requisites vary according to the units or subjects taken and are given below. The Department of Geology and Mineralogy and the Department of Economic Geology offer the following units, each of which consists of about 16 lectures together with about 48 hours' practical work:

1. Tectonics: First term. An historical survey of the development of the structure of the Earth's crust on a global or regional scale. Emphasis is placed on the inter-relationship of tectonic, sedimentary, igneous and ore-forming processes.

   Reference books:

   Clark, S. P., *Structure of the earth* (Prentice-Hall).

   Sitter, L. U., de, *Structural geology*, 2nd edition (McGraw-Hill).

2. Stratigraphy: Third term. Principles of stratigraphy and historical Geology. Field studies will form a part of the course.

   Text-book:

   Donovan, D. T., *Stratigraphy* (Murby).

Reference books:

Pettijohn, F. J., *Sedimentary rocks*, 2nd edition (Harper).

Krumbein, W. C., and Sloss, L. L. *Stratigraphy and sedimentation*, 2nd edition (Freeman).

Rayner, D. H., *Stratigraphy of the British Isles* (C.U.P.).

3. Structural Geology and Field Geology: Third term. The characteristics and origin of geological structures on all scales. Field studies will form a part of the course.

Reference books:

Price, N. J., *Fault and joint development in brittle and semi-brittle rock* (Pergamon).

Jaeger, J. C., and Cook, W. G. W., *Fundamentals of rock mechanics* (Methuen).

Turner, F. J., and Weiss, L. E., *Structural analysis of metamorphic tectonites* (McGraw-Hill).

Ramsay, J. G., *Folding and fracturing of rocks* (McGraw-Hill).

Sitter, L. U., de, *Structural geology*, 2nd edition (McGraw-Hill).

4. Quantitative Mineralogy: Third term. The principles of determinative methods; their applications and results in mineralogy and crystallography.

Text-books:

Dana, J. D., *Manual of mineralogy*, 17th edition, revised by C. S. Hurlbut (Wiley).

Deer, W. A., and others, *An introduction to the rock-forming minerals* (Longmans).

Heinrich, W. M., *Microscopic identification of minerals* (McGraw-Hill).

5. Igneous and metamorphic petrology: Second term. The characteristics and origin of the principal associations of igneous and metamorphic rocks. Field studies will form a part of the course.

Text-book:

Barth, T. F. W., *Theoretical petrology*, 2nd edition (Wiley).

Reference books:

Hatch, F. H., and others, *Petrology of the igneous rocks*, 12th edition (Murby).

Winkler, H. F. G. *Petrogenesis of metamorphic rocks*, 2nd edition (Springer).

Turner, F. J., and Verhoogen, J., *Igneous and metamorphic petrology*, 2nd edition (McGraw-Hill).

Turner, F. J., *Metamorphic petrology* (McGraw-Hill).

6. Basin Analysis and sedimentary ore deposits: Second term. Application of sedimentary petrology, textures and structures to the reconstruction of palaeogeography, and the relation of this to the nature and distribution of sedimentary ore and fuel deposits. Low-temperature geochemistry.

Text-books:

Pettijohn, F. J., *Sedimentary rocks*, 2nd edition (Harper).

Krauskopf, K., *Introduction to geochemistry* (McGraw-Hill).

Reference books:

Potter, P. E., and Pettijohn, F. J., *Paleocurrents and basin analysis* (Springer-Verlag).

Folk, R. L., *Petrology of sedimentary rocks*, 1968 ed. (Hemphills, Texas).

Krumbein, W. C., and Sloss, L. L., *Stratigraphy and sedimentation*, 2nd edition (Freeman).

Garrels, R. M., and Christ, C. L., *Solutions, minerals and equilibria* (Harper and Row).

7. Magmatic and hydrothermal ore deposits: First term. The nature and origin of ore-bearing fluids. Principles controlling the concentration and localisation of magmatic and hydrothermal ore deposits.

Text-book:

Park, C. F., and MacDiarmid, R. A., *Ore deposits* (Freeman).

Reference books:

Krauskopf, K., *Introduction to geochemistry* (McGraw-Hill).
Barnes, H. L., *Geochemistry of hydrothermal ore deposits* (Holt).

8. Crystal chemistry of minerals: Second term.

Text-book:

Bragg, W. L., and Claringbull, G. F., *Crystal structures of minerals* (Bell).

Reference books:

Evans, R. C., *Introduction to crystal chemistry*, 2nd edition (C.U.P.).
Fyfe, W. S., *Geochemistry of solids* (McGraw-Hill).

9. Geochemistry: Third term. Study of geochemical differentiation processes. Isotope geology.

Text-book:

Krauskopf, K., *Introduction to geochemistry* (McGraw-Hill).

Reference book:

Mason, B. H., *Principles of geochemistry*, 3rd edition (Wiley).

10. General Palaeontology and Biostratigraphy: First term. General palaeontology and biostratigraphy.

Text-book:

Brouwer, A., *General palaeontology* (Oliver and Boyd).

Reference book:

Beerbower, J. R., *Search for the past*, 2nd edition (Prentice-Hall).

11. Invertebrate palaeontology: Second term. Invertebrate palaeontology: Morphology and evolution of the fossil invertebrates.

Text-book:

Beerbower, J. R., *Search for the past*, 2nd edition (Prentice-Hall).

12. Vertebrate palaeontology and palaeobotany: Third term. Vertebrate palaeontology and palaeaobotany.

Text-books:

Colbert, E. H., *Evolution of the vertebrates* (Wiley).
Delevoryas, T., *Plant diversification* (Holt).

Reference book:

Delevoryas, T., *Morphology and evolution of fossil plants* (Holt).

13. Exploration Geophysics: Second term. Application of geophysical methods to exploration for oil and minerals.

Text-book:

Parasnis, D. S., *Mining geophysics* (Elsevier).

Reference books:

Dobrin, M. B., *Introduction to geophysical prospecting* (McGraw-Hill).
Griffiths, D. H., and King, R. F., *Applied geophysics for engineers and geologists* (Pergamon).
Nettleton, L. L., *Geophysical prospecting for oil* (McGraw-Hill).

14. Interpretation of Geophysical data: Third term. Text-book and reference books as for Unit 13.

The units can be combined in the following subjects:

SG03. Geology III.

(A Group C subject.) A combination of 6 units approved by the Head of the Department of Geology from 1, 2, 3, 4, 5, 6, 7, 10 and 13. Normally units 10, 13 will be required.

SG23. Geochemistry III.

(A Group C subject.) Units 4, 7, 8, 9 together with two units from those offered by the Department of Physical and Inorganic Chemistry, including the unit in crystallography. Units 1, 2 *or* 3, 5, 6, 10 and 13 are recommended for Geology III in combination with Geochemistry.

SG73. Geophysics III.

(A Group C subject.) Units 13 and 14 together with 4 units from the Departments of Mathematics and Physics, including the unit on Elasticity. Units 1, 2 *or* 3 *or* 4, 5, 6, 7 and 10 are recommended for Geology III in combination with Geophysics.

SG13. Palaeontology III.

(A Group E subject.) Units 11 and 12. Palaeontology may be taken together with Genetics II *or* Botany IIP *or* Zoology II, in lieu of a Group C subject. Units 1, 2, 10 and 13 and two from 3, 4, 5 and 6 are recommended for Geology III in combination with Palaeontology.

SG83. Geology IIIM.

(A Group C subject.) With approval of the Heads of Departments concerned, a combination of four units from the above list (two terms' work) together with two units or one double unit (one term's work) in another department. Pre-requisites will depend on the units approved.

Students majoring in the Geological Sciences will normally take Geology III and *either* Geochemistry III *or* Geophyiscs III *or* Palaeontology III; but any one of the above subjects can be taken in combination with subjects offered by other departments providing the following pre-requisites are satisfied:

Pre-requisite subjects for Geology III: Geology II at Division I pass or higher standard. There are no other formal pre-requisites but Mathematics I, Physics I and Chemistry I are all highly desirable.

Pre-requisite subjects for Geochemistry III: Geology II and *either* Physical and Inorganic Chemistry II *or* Chemistry II at Division I or higher standard.

Pre-requisite subjects for Geophysics III: Geology I and Applied Mathematics II at Division I or higher standard; Physics II or a knowledge of Physics deemed satisfactory by the Professor of Geophysics.

Pre-requisite subjects for Palaeontology: Geology II and Zoology I at Division I or higher standard. In special circumstances Biology I may be accepted as a pre-requisite instead of Zoology I.

The pre-requisites for individual units will usually be the same as those for the subjects in which they occur but in special circumstances exemption from certain pre-requisites may be granted on application to the Head of the Department of Geology or his nominee.

SG99. Geology for the Honours degree of B.Sc.

Pre-requisite subjects: Passes satisfactory to the Professors concerned, in any third year subject offered by the Departments of Economic Geology and Geology and Mineralogy together with a second subject in Geological Sciences or a subject offered by the Departments of Mathematics, Statistics, Physics, Physical and Inorganic Chemistry or Organic Chemistry.

Candidates will be required to attend several courses from a number which will be given in specialised fields of geology and economic geology including geophysics, geochemistry and palaeontology. In addition, candidates will undertake supervised individual projects involving one or more of these fields. Special courses of reading and laboratory studies will be laid down and each candidate

will be required to give all the time not required for lectures or in the field to work in the laboratory. Candidates may be required to satisfy the examiners that they have a reading knowledge of French, German or Russian. They will also be required to contribute to a series of seminars.

Candidates must apply, before the end of the year preceding that in which they wish to enrol, to the Professor concerned for approval of their proposed courses of study.

MATHEMATICAL PHYSICS.

The pre-requisites for Mathematical Physics IIIA and IIIB are passes at Division I or higher standard in Physics II (SP02) and Pure Mathematics II (SM02) *or* Applied Mathematics II (SN02).

The Department offers the following units, most of which consist of two lectures a week, and a tutorial, for one term:

1. Quantum Mechanics I: Principles and elementary applications.
2. Quantum Mechanics II: More advanced applications, including scattering theory.
3. Mathematical Methods: Tensor analysis. Theory and applications of distributions.
4. Theory of Relativity.
5. Fluid Mechanics: Macroscopic conservation laws, thermodynamics and irreversible processes.
6. Elementary Plasma Dynamics: Fully ionized gases, charged particle motions, and magnetohydrodynamics.
7. Electricity and Magnetism.

The subjects offered are:

SF03. Mathematical Physics IIIA.

This is a group C subject and may be taken only with Physics III (SP03) or Physics IIIM (SP83) or Physical and Inorganic Chemistry IIIB (SC13) or Physical and Inorganic Chemistry IIIM (SC83). It consists of at least six units, which must include 1, 2, 3 and the unit Analysis II in Pure Mathematics III (SM03). (Units 4 and 7 form part of Physics III or IIIM.) The remaining units should be chosen, with the approval of the Head of the Department, from 5, 6 and units in Mathematics.

SF13. Mathematical Physics IIIB.

This is a group C subject, and may be taken only with Pure Mathematics III (SM03) or Applied Mathematics III (SM13). It consists of at least six units, which must include 1, 2, 3, 4 and 7. The unit Analysis II in Pure Mathematics must be included by students not taking Pure Mathematics III.

SF99. Mathematical Physics for the Honours degree of B.Sc.

Students who have reached a satisfactory standard in Mathematical Physics IIIA (SF03) or Mathematical Physics IIIB (SF13), and another Group C subject, may be permitted to proceed to the Honours course.

The course will contain lectures on most of the following subjects: general theory of relativity, relativistic quantum mechanics, elementary field theory, statistical mechanics, quantal many body theory, electricity and magnetism, advanced plasma dynamics, theoretical nuclear physics, particle physics, irreversible statistical mechanics, together with a selection of lectures drawn from the honours programmes of the Departments of Physics and Mathematics. In addition students will be required to submit a thesis containing a review of, or original contributions to, some advanced topic in mathematical physics, to be approved in advance by the Head of the Department. A reading knowledge will be required of at least one foreign language.

MATHEMATICS

INTRODUCTORY NOTES.

1. Attention is drawn to the pre-requisite subjects for admission to the various courses as prescribed in the syllabuses below.

2. The courses in Mathematics for the Ordinary degree of B.Sc. are as follows:

Group A(1): Mathematics I, Mathematics IM.

Group A(3): Mathematics III.

Group B: Pure Mathematics II, Applied Mathematics II, Mathematics IIM.

Group C: Pure Mathematics III, Pure Mathematics IIIM, Applied Mathematics III, Applied Mathematics IIIM.

3. For candidates proceeding to the Ordinary degree of B.A., possible three-year sequences are:

Mathematics I → Pure Mathematics II → Pure Mathematics III.

Mathematics I → Applied Mathematics II → Applied Mathematics III.

Note: A candidate for the Ordinary degree of B.A. whose third year subjects are, or include two of, Pure Mathematics III, Applied Mathematics III, and Mathematical Statistics III, may not include more than one science subject nor more than five of the subjects in the above sequences. (Hence such a candidate may not include more than two of Pure Mathematics II, Applied Mathematics II, Mathematical Statistics II.)

FIRST-YEAR SUBJECTS.

SM01. Mathematics I.

This course is intended for students whose main interests are in mathematics or its applications to physical science or engineering. A knowledge of Matriculation Mathematics I and II will be assumed.

The course comprises four lectures and one two-hour tutorial class a week.

A pass in it at Division I or higher standard is a pre-requisite for entrance to Pure Mathematics II (SM02), Applied Mathematics II (SN02).

The syllabus comprises sequences and series; functions of one and two real variables; elementary differential equations; vectors; matrices and determinants; sets and groups; probability.

Text-books:

Allendoerfer, C. B., and Oakley, C. O., *Principles of mathematics* (McGraw-Hill).

Barnes, E. S., and Robson, B. N., *Calculus—a first course,* (including the supplement) (Rigby).

Hilton, P. J., *Partial derivatives* (Routledge and Kegan Paul).

Reference books:

Green, J. A., *Sequences and series* (Routledge and Kegan Paul).

Green, J. A., *Sets and groups* (Routledge and Kegan Paul).

Ledermann, W., *Introduction to the theory of finite groups* (Oliver and Boyd).

Purcell, E. J., *Calculus with analytic geometry* (Appleton-Century-Crofts).

Thomas, G. B., *Calculus and analytic geometry,* 2nd or 3rd edition (Addison-Wesley).

SM11. Mathematics IM.

This course is intended for students who have studied only one mathematics subject at matriculation (Mathematics I or Mathematics IS), and a knowledge of Matriculation Mathematics IS will be assumed.

A pass in it, at Division I level or higher, suffices for entry to Mathematics IIM (to be offered in 1972); exceptionally a student obtaining a pass at Distinction level may, with the permission of the Head of the appropriate Department, proceed to Pure Mathematics II (SM02) or Applied Mathematics II (SN02).

The course comprises four lectures and one two-hour tutorial class a week.

The syllabus comprises differential and integral calculus of functions of one or two real variables; differential equations; vectors and 2 and 3 dimensional coordinate geometry; linear equations, matrices and determinants; group theory; fields and number systems.

Text-books:

Allendoerfer, C. B., and Oakley, C. O., *Principles of mathematics* (McGraw-Hill).

Barnes, E. S., and Robson, B. N., *Calculus—a first course*, (including the supplement) (Rigby).

Hilton, P. J., *Partial derivatives* (Routledge and Kegan Paul).

Reference books:

Green, J. A., *Sets and groups* (Routledge and Kegan Paul).

Ledermann, W., *Introduction to the theory of finite groups* (Oliver and Boyd).

Purcell, E. J., *Calculus wtih analytic geometry* (Appleton-Century-Crofts).

Thomas, G. B., *Calculus and analytic geometry*, 2nd or 3rd edition (Addison-Wesley).

SM7H. Mathematics IH.

This course is intended for students who do not wish to proceed to further courses in mathematics. It will assume a knowledge of Matriculation Mathematics IS, and comprises two lectures a week and one two-hour tutorial class a fortnight.

The syllabus comprises differential and integral calculus, differential equations, vectors and 2 and 3 dimensional coordinate geometry, linear equations, matrices and determinants.

Text-books:

Allendoerfer, C. B., and Oakley, C. O., *Principles of mathematics* (McGraw-Hill).

Barnes, E. S., and Robson, B. N., *Calculus—a first course*, (including the supplement) (Rigby).

Reference books:

Purcell, E. J., *Calculus with analytic geometry* (Appleton-Century-Crofts).

Thomas, G. B., *Calculus and analytic geometry*, 2nd or 3rd edition (Addison-Wesley).

SECOND-YEAR SUBJECTS.

SM02. Pure Mathematics II.

Pre-requisite subject: Mathematics I (SM01) at Division I or higher standard.

The course comprises four lectures and one tutorial class a week.

The syllabus comprises elementary theory of real and complex functions; convergence of real and complex sequences, power series; linear algebra, matrices, and determinants; calculus of functions of several variables.

Text-books:

Burkill, J. C., *A first course in mathematical analysis* (C.U.P.).
Curtis, C. W., *Linear algebra* (Allyn and Bacon).
Phillips, E. G., *Functions of a complex variable* (Oliver and Boyd).

Reference books:

Apostol, T. M., *Calculus,* vol. 1 (Blaisdell).
Courant, R., *Differential and integral calculus,* vol. I (Blackie).
Courant, R., and John, F., *Introduction to calculus and analysis,* vol. 1 (Interscience).
Hyslop, J. M., *Infinite series* (Oliver and Boyd).
Kahn, P. J., *Introduction to linear algebra* (Harper).
Lipschutz, S., *Linear algebra* (Schaum Outline).
Munkres, J. R., *Elementary linear algebra* (Addison Wesley).
Spivak, M., *Calculus* (Benjamin).

Recommended general reading:

Adler, I., *The new mathematics* (Mentor, New American Library; John Day).
Sawyer, W. W., *A concrete approach to abstract algebra* (Freeman).
Sawyer, W. W., *Prelude to mathematics* (Pelican).
Waismann, F., *Introduction to mathematical thinking* (Harper torchbook; Hafner).

SN02. Applied Mathematics II.

Pre-requisite subject: Mathematics I (SM01) at Division I or higher standard.

The course assumes an elementary knowledge of computer programming. (A short programming course is given by the Department of Computing Science about the end of February, and students should make every effort to attend this course.)

The course comprises four lectures and one tutorial class a week.

The syllabus comprises a selection of topics from: vector differential calculus, ordinary and partial differential equations, Laplace transforms, special functions, sequences, series and Fourier series, linear algebra, probability and statistics, computing, dynamics of a particle, of rigid bodies, and of fluids.

Text-books:

Glauert, M. B., *Principle of dynamics* (Routledge).
Kreyszig, E., *Advanced engineering mathematics* (Wiley).

Reference books:

Brand, L., *Advanced calculus* (Wiley).
Hildebrand, F. B., *Advanced calculus for applications* (Prentice-Hall).
Hoel, P. G., *Introduction to mathematical statistics* (Wiley).
Rabenstein, A. L., *Introduction to ordinary differential equations* (Academic Press).
Spiegel, M. R., *Vector analysis* (Schaum).

The reference books by Rabenstein and Spiegel will be particularly useful to students who intend to proceed to Applied Mathematics III.

SM22. Mathematics IIM.

This course will first be given in 1972.

Pre-requisite subject: Mathematics I (SM01) at Division I or higher standard *or* Mathematics IM (SM11) at Division I or higher standard.

The course comprises four lectures and one tutorial class a week.

THIRD-YEAR SUBJECTS.

PURE MATHEMATICS.

THIRD YEAR UNITS IN PURE MATHEMATICS.

The Department of Pure Mathematics offers the following units, each of which consists of 2 or 3 lectures a week for one term and one tutorial a fortnight. The pre-requisite for all units is a pass, at Division I level or higher, in Pure Mathematics II (SM02). In addition, as specified below, some units pre-suppose a knowledge of units offered in preceding terms.

M301. Sets and Numbers (First term).

Sets, relations and mappings; the axiom of choice and related topics; cardinal and ordinal numbers; the construction of the real number system.

Text-book:

Halmos, P. R., *Naive set theory* (Van Nostrand).

Reference books:

Abian, A., *The theory of sets and transfinite arithmetic* (Saunders).

Gleason, A. M., *Fundamentals of abstract analysis* (Addison-Wesley).

M302. Analysis I (First term).

An introduction to topology and analysis in n-dimensional Euclidean space.

Text-book:

Apostol, T., *Mathematical analysis* (Addison-Wesley).

Reference books:

Boas, R. P., *A primer of real functions* (Wiley).

Newman, M. H. A., *Elements of the topology of plane sets* (C.U.P.).

Rudin, W., *Principles of mathematical analysis*, 2nd edition (McGraw-Hill).

Fleming, W. H., *Functions of several variables* (Addison-Wesley).

M303. Analysis II (Second term).

Functions of a complex variable, including contour integration and conformal mapping. The course will pre-suppose a knowledge of some topics from Analysis I.

Preliminary reading:

Mitrinovic, D. S., *Functions of a complex variable* (Noordhoff).

Text-book:

Ahlfors, L. V., *Complex analysis* (McGraw-Hill).

Reference books:

Mackey, G. W., *Lectures on the theory of functions of a complex variable* (Van Nostrand).

Mitrinovic, D. S., *Calculus of residues* (Noordhoff).

M304. Analysis III (Third term).

Continuation of the topics of Analysis I (SM302), a knowledge of which will be assumed; the Lebesgue integral and its applications.

Text-books and reference books: As for Analysis I (SM302).

M305. Algebra I (Second term).

A basic course on groups, rings and ideals, integral domains, fields. A knowledge of Sets and Numbers (SM301) will be assumed.

Text-books:

Birkhoff, G., and MacLane, S., *A survey of modern algebra*, 3rd edition (Macmillan).

Reference books:

Herstein, I. N., *Topics in algebra* (Blaidsdell).

Dean, R. A., *Elements of abstract algebra* (Wiley).

M306. Algebra II (Third term).

A continuation of Algebra I (SM305), a knowledge of which will be assumed; further topics in algebra, including extensions of fields.

Text-books and reference books: As for SM305.

M307. Geometry (Third term).

Properties and interrelations of the various geometries; the axiomatic and transformation approaches; a brief survey of projective, affine, Euclidean and hyperbolic geometries.

Text-book:

Coxeter, H. S. M., *An introduction to geometry* (Wiley).

Reference books:

Tuller, A., *A modern introduction to geometries* (Van Nostrand).

Fishback, W. T., *Projective and Euclidean geometry* (Wiley).

M308. Elementary Number Theory (First term).

(This unit is recommended for students who are contemplating an honours course in Pure Mathematics, as a background to courses offered in Honours Pure Mathematics IV (SM99).)

Divisibility and prime numbers; congruences, residue class rings; number theoretical functions.

Reference books:

Hardy, G. H., and Wright, E. M., *Introduction to the theory of numbers* (C.U.P.).

Davenport, H., *The higher arithmetic* (Hutchinson).

LeVeque, W. J., *Topics in number theory*, vol. 1 (Addison-Wesley).

M309. Topology (Second term).

(Students intending to enrol in Honours Pure Mathematics IV (SM99) are strongly advised to attend this unit, a knowledge of which will be assumed in all Honours courses in Analysis.)

Topological spaces and metric spaces; continuous functions and mappings; function spaces. Applications of topological results.

Reference books:

Simmons, G. F., *Introduction to topology and modern analysis* (McGraw-Hill).

Hocking, J. G., and Young, G. S., *Topology* (Addison-Wesley).

Newman, M. H. A., *Elements of the topology of plane sets* (C.U.P.).

THIRD-YEAR SUBJECTS IN PURE MATHEMATICS.

SM03. Pure Mathematics III.

A Group C subject in the Faculty of Science and a third-year subject in the Faculty of Arts. It consists of Units SM301, 302, 303, 304, 305 and *either* 306 *or* 307. Intending Honours students should consult with the Head of Department on their choice of units; they are in any case required to offer SM306 for examination and advised to attend SM309.

Pre-requisite: a pass in Pure Mathematics II (SM02) at Division I or higher standard.

SM83. Pure Mathematics IIIM.

A Group C subject in the Faculty of Science, consisting of Units SM301, 302, 303 and 305, with two single-units or one double-unit offered by other Departments and selected with the approval of the Heads of all Departments concerned.

Pre-requisite: a pass in Pure Mathematics II (SM02) at Division I or higher standard.

APPLIED MATHEMATICS.

Third Year Units in Applied Mathematics.

The Department of Applied Mathematics offers the following units, each of which consists of 2 or 3 lectures a week for one term and one tutorial a fortnight. The pre-requisite for all units is a pass, at Division I level or higher, in Applied Mathematics II (SN02). In addition, as specified below, some units pre-suppose a knowledge of units offered in preceding terms.

N301. Elasticity (First term).

An introduction to the theory of elasticity. Cartesian tensor methods will be used; these will be taught as part of the unit as required.

Reference books:

Sokolnikoff, I. S., *Mathematical theory of elasticity* (McGraw-Hill).

Filonenko-Borodich, M., *Theory of elasticity* (Noordhoff).

N302. Applied Probability (First term).

Processes defined on a probability space; Markov Chains, classification, properties and examples of Markov Chains. Random walks on lattices. Branching processes. Appications of the laws of large numbers. Generating function methods.

Text-book:

Feller, W., *An introduction to probability theory and its applications*, vol. 1 (Wiley).

N303. Calculus of Variations (First term).

Euler equation. Constrained extrema. Isoperimetric problems. Movable boundaries. Rayleigh-Ritz and Galerkin methods. Applications to boundary value problems.

Reference book:

El'sgol'ts, L. E., *Calculus of variations* (Pergamon).

N304. Hydrodynamics (Second term).

Classical hydrodynamics of an inviscid fluid. Bernoulli theorem. Irrotational flows. Vector (but not tensor) methods will be used. Some use may be made of complex variable analysis, which will be taught as part of the unit as required.

Reference books:

Rutherford, D. E., *Fluid dynamics* (Oliver and Boyd).

Chorlton, F., *Textbook of fluid dynamics* (Van Nostrand).

N305. Mathematical Programming (Second term)

Algorithms for solution of systems of linear equations, linear programming, simplex algorithm, duality theority, integer programming, dynamic programming.

Reference books:

Spivey, W. A., *Linear programming: an introduction* (Macmillan).

Dantzig, G. B., *Linear programming and extensions* (Princeton).

Sasieni, M., Yuspan, A., and Friedman, L., *Operations research* (Wiley).

N306. Differential Equations (Second term).

A selection of topics from: Existence and uniqueness. Critical points and stability theory. Linear systems analysis. Sturm-Liouville theory. Eigenfunction expansions. Integral equations. Partial differential equations. Asymptotic expansions.

Reference books:

Rabenstein, A., *Introduction to ordinary differential equations* (Academic Press).

Burkill, J. C., *The theory of ordinary differential equations* (Oliver and Boyd).

Hildebrand, F. B., *Methods of applied mathematics* (Prentice-Hall).

Courant, R., and Hilbert, D., *Methods of mathematical physics*, vol. 1 (Interscience).

Sanchez, D. A., *Ordinary differential equations and stability theory* (Freeman).

N307. Continuum Mechanics (Third term).

A knowledge of elementary elasticity and hydrodynamics will be assumed, such as could be gained by attending units SN301, SN304.

General continuum mechanics, with applications to the elastic and plastic deformation of solids, and to the mechanics of viscous fluids.

Reference books:

Fung, Y. C., *A first course in continuum mechanics* (Prentice-Hall).

Scipio, L. A., *Principles of continua with applications* (Wiley).

Batchelor, G. K., *An introduction to fluid dynamics* (C.U.P.).

Hunt, J. N., *Incompressible fluid dynamics* (Longmans).

Frederick, D., and Chang, T. S., *Continuum mechanics* (Allyn and Bacon).

N308. Network Theory (Third term).

A knowledge of mathematical programming, such as given in unit SN305, will be assumed.

The course will cover the following topics: graph theory and its application to network flows; labelling and cheapest route algorithms; the transportation problem; trip distribution; traffic assignment.

Reference book:

Ford, L. R., and Fulkerson, D. R., *Flows in networks* (Princeton).

N309. Queues (Third term).

A knowledge of SN302 is assumed.

Definition and examples of queues. Techniques used in solving queueing problems, imbedded chains, Kolmogorov differential equations. Transient and ergodic behaviour of simple queues.

Text-book:

Feller, W., *An introduction to probability theory and its application* (Wiley).

Reference book:

Cox, D. R., and Smith, W. L., *Queues* (Methuen).

THIRD-YEAR SUBJECTS IN APPLIED MATHEMATICS.

SN03. Applied Mathematics III.

A Group C subject in the Faculty of Science and a third-year subject in the Faculty of Arts.

The course consists of:

two of the three units N301, N302, N303;

two of the three units N304, N305, N306; and

two of the three units N307, N308, N309.

Students who may wish to proceed to Honours Applied Mathematics IV (SN99) will be encouraged to take additional units and are advised to see the Head of the Department before enrolling.

Pre-requisite: Applied Mathematics II (SN02) at Division I or higher standard.

SN83. Applied Mathematics IIIM.

A Group C subject in the Faculty of Science, consisting of four of the units N301, N302, . . ., N309, together with two single-units or one double-unit offered by other Departments and selected with the approval of the Heads of all Departments concerned.

Pre-requisite: Applied Mathematics II (SN02) at Division I or higher standard.

FOURTH-YEAR COURSES .

N.B. Students who are considering taking course SM99 or SN99 are advised to consult with the Heads of the Departments as early as possible.

SM99. Pure Mathematics for the Honours Degree of B.A. or B.Sc. (Honours Pure Mathematics IV.)

Students are required to consult with the Head of the Department of Pure Mathematics, preferably no later than the end of the year preceding their enrolment, in order:

(i) to ensure that they have obtained the necessary pre-requisite knowledge at a satisfactory standard;

(ii) to plan their course of study and discuss their choice of project.

All students are required to obtain the approval of the Head of the Department of Pure Mathematics before enrolling for Honours Pure Mathematics IV.

The normal pre-requisite in 1971 is Honours Mathematics III (SM08) at a satisfactory standard. In 1972 the normal pre-requisites will be: (i) Pure Mathematics III (SM03) at a satisfactory standard, including Unit SM306 (Algebra II), and a knowledge of the material of Unit SM309 (Topology); and (ii) a third-year subject offered by the Departments of Applied Mathematics, Computing Science or Mathematical Statistics. Students with a different background of third-year courses may be accepted at the discretion of the Head of the Department of Pure Mathematics. Students in the Faculty of Arts are referred also to the requirements of Schedule III of the Degree of Bachelor of Arts.

Students are strongly advised to acquire a reading knowledge of a modern foreign language, preferably German, Russian or French.

The lecture course will be determined from year to year. Students will be required to make a selection from units offered by the Departments of Pure Mathematics, Applied Mathematics and Mathematical Statistics and by the School of Mathematics at the Flinders University of S.A., including some compulsory units in Algebra and Analysis; units offered by other Departments will also be available.

Each student will be assigned a supervisor who will advise him on his choice of lecture programme and guide him in the writing of a project on some topic in mathematics. Work on this project should begin in the Department in the first week of February and should be completed by the end of the third term's lecture programme.

SN99. Applied Mathematics for the Honours Degree of B.A. or B.Sc. (Honours Applied Mathematics IV.)

Students who are considering taking this subject are advised to see the Head of the Department as soon as possible, preferably before enrolling for their third-year courses.

All students are required to obtain the approval of the Head of the Department of Applied Mathematics before enrolling for Honours Applied Mathematics IV.

The normal pre-requisite in 1971 is Honours Mathmatics III (SM08) at a satisfactory level.

In 1972 and thereafter, the normal pre-requisites will be passes at a standard satisfactory to the Head of the Department in the following:

Applied Mathematics III (SN03), or

Applied Mathematics IIIM (SN83)

and one of

Pure Mathematics III (SM03)

Mathematical Statistics III (ST03)

Mathematical Physics IIIB (SF13)

Computing Science IIIA (SA13)

and such additional third-year units as may be required. Students with a different background of third-year courses may be accepted at the discretion of the Head of the Department of Applied Mathematics. Students in the Faculty of Arts are referred also to the requirements of Schedule III of the Degree of Bachelor of Arts.

Students are strongly advised to acquire a ready knowledge of a modern foreign language, preferably German, Russian, or French.

The lecture course will be determined from year to year. Students will be required to make a selection from units offered by the Departments of Applied Mathematics, Pure Mathematics, Mathematical Statistics, Computing Science, Mathematical Physics and by the School of Mathematics at the Flinders University of S.A. Students may normally take any third-year Applied Mathematics units which have not already been taken.

Each student will be assigned a supervisor who will advise him on and approve his choice of lecture programme and guide him in the writing of a project on some topic in Applied Mathematics. Possible topics should be discussed with the staff before the end of the preceding year. Work on the chosen project should begin in the Department in the first week of February and should be completed by the end of the third term's lecture programme.

STATISTICS

Students who intend to take advanced courses in Statistics are advised to include the following first- and second-year subjects in their course. *First Year*: Pure Mathematics I, Statistics IH. *Second Year*: Pure Mathematics II and Mathematical Statistics II.

Before enrolling in third year unit courses, all students *must* discuss their programmes with the Head of the Department of Statistics.

A student who wishes, or who thinks he may wish, to proceed to Honours Statistics is advised to discuss his course programme with the Head of the Department of Statistics as early as possible.

ST7H. Statistics IH.

No formal pre-requisites, but a knowledge of Matriculation Mathematics I or Matriculation Mathematics IS will be assumed.

This first year half subject comprises two lectures and one hour tutorial per week. The emphasis in this introductory course is on logical aspects of statistics. Topics covered include description of data, relative frequency and probability, probability calculus, distributions, random sampling, estimation, hypothesis testing, inference based on Binomial and other discrete variates, Chi-square tests of fit and of independence, non parametric methods, inference based on the Normal distribution, t-tests, simple linear regression, analysis of variance, principles of experimental design.

Text-book:

Hoel, P. G., *Elementary statistics*, 2nd edition (Wiley).

Reference books:

Snedecor, G. W., and Cochran, W. G., *Statistical methods*, 6th edition (Iowa State College Press).

Cramer, H., *The elements of probability theory* (Wiley).

Acton, F. S., *Analysis of straight line data* (Wiley).

ST02. Mathematical Statistics II.

Pre-requisite subject: Mathematics I (SM01) at Division I or higher standard (exceptionally, on approval of Head of Department of Statistics, Mathematics IM at Distinction level). Statistics IH is strongly recommended for students contemplating taking Mathematical Statistics II in 1972 or thereafter.

The course comprises five lectures per week in first term and four lectures per week in second and third terms plus one two-hour tutorial throughout the year.

Programming of statistical calculations forms an important part of Mathematical Statistics II. Students enrolled for this subject must take a preliminary course in Fortran programming on the CDC 6400 computer, given by the Staff of the Statistics Department in the two weeks prior to the start of the first term lectures. Exemptions may be given to students who have demonstrated beforehand a proficiency in Fortran programming on this computer to the satisfaction of the Head of Department.

Syllabus: Probability and probability distributions as mathematical models of statistical data, applications of the normal, binomial, Poisson, Chi-square, t and F distributions, simple and multiple regression, correlation, analysis of variance, experimental design, quality control, introduction to some elementary aspects of fiducial inference, programming of statistical computations.

Text-books:

Lindley, D. V., and Miller, J. C. P., *The Cambridge elementary statistical tables* (C.U.P.).

Control Data Corporation, *6400/6500/6600/ computer systems, FORTRAN reference manual.*

Reference books:

Cramer, H., *The elements of probability theory* (Wiley).

Hoel, P. G., *Introduction to mathematical statistics*, 2nd or 3rd edition (Wiley).

Fisher, R. A., *Design of experiments*, 8th edition (Oliver and Boyd).

Snedecor, G. W., and Cochran, W. G., *Statistical methods*, 8th edition (Iowa State College Press).

Fisher, R. A., and Yates, F., *Statistical tables for biological, agricultural and medical research*, 6th edition, revised and enlarged (Oliver and

ST03. Mathematical Statistics III.

Pre-requisite subjects for *any* units: Mathematical Statistics II (ST02) at Diviison I or higher standard, Pure Mathematics II (SM02) at Division II or higher standard.

The course comprises five lectures and two tutorial classes per week. Each unit will have two or three lectures and one tutorial per week for a term.

Units:

First Term: T301 Statistical Inference I. T304 Linear Models I.

Second Term: T302 Statistical Inference II. T305 Linear Models II.

Third Term: T303 Statistical Inference III. T306 Linear Models III.

Any unit in the second and third terms can only be taken after *all* units in *previous* terms in both Statistical Inference and Linear Models.

Prior to enrolling, all third year students taking unit courses should discuss their course with the Head of the Department.

T301 Statistical Inference I.

Frequency and distribution functions. Exact sampling distributions and distributions associated with the Normal distribution. General Theory of Estimation.

T302 Statistical Inference II.

Advanced estimation theory. Fiducial and Bayesian inference. Likelihood theory and tests of hypotheses. Interval estimation, tests of goodness of fit and contingency tables.

T303 Statistical Inference III.

Information theory and data transformation. Order statistics and some non-parametric tests. Canonical variables and component analysis, elements of sampling theory and design of experiment.

T304 Linear Models I.

Linear algebra, orthogonal projections, least squares, regression, orthogonalization, Gauss Markov theorem.

T305 Linear Models II.

Estimation and significance tests when error distributions are normal, multiple regression, analysis of variance and covariance.

T306 Linear Models III.

Multivariate analysis, variance components, non linear regression, experimental design.

All units involve programming of statistical computations.

Text-book:

Lindley, D. V., and Miller, J. C. P., *The Cambridge elementary statistical tables* (C.U.P.).

Reference books:

Hacking, I., *Logic of statistical inference* (C.U.P.).

Jeffreys, H., *Theory of probability* (O.U.P.).

Fisher, R. A., *Statistical methods and scientific inference* (Oliver and Boyd).

Kendall, M. G., and Stuart, A., *The advanced theory of statistics*, vols. I, II and III (Griffin).

Hogg, R. V., and Craig, A. T., *Introduction to mathematical statistics* (Macmillan).

Cramer, H., *Mathematical methods of statistics* (Princeton University Press).

Fisher, R. A., *The design of experiments* (Oliver and Boyd).

Scheffe, H., *Analysis of variance* (Wiley).

Rao, C. R., *Linear, statistical inference and its applications* (Wiley).

Williams, E. J., *Regression analysis* (Wiley).

Wilks, S. S., *Mathematical statistics* (Wiley).

Bliss, C. I., *Statistics in biology* (McGraw-Hill).

Fisher, R. A., *Statistical methods for research workers* (Oliver and Boyd).

Draper, N. R., and Smith, H., *Applied regression analysis* (Wiley).

Anderson, T. W., *Introduction to mulitvariate statistical analysis* (Wiley).

Plackett, R. A., *Principles of regression analysis* (Clarendon Pr.).

ST99. Statistics for the Honours Degree of B.A. or B.Sc. (Honours Statistics IV).

Pre-requisite subjects: Honours Mathematics III (SM08), or Pure Mathematics III (SM03), Mathematical Statistics III (ST03) and other prescribed courses, at a standard satisfactory to the Head of the Department. Pure Mathematics IIIM may be substituted for Pure Mathematics III with the approval of the Head of the Department of Statistics.

Students are strongly advised to acquire a reading knowledge of a modern foreign language, preferably French, German or Russian.

The course will be determined from year to year, and will comprise topics selected from the following: statistical inference, estimation theory, tests of goodness of fit, regression, analysis of variance, experimental design, non parametric methods, time series, multivariate analysis, measure theory, probability and stochastic processes, statistical programming, linear algebra, numerical analysis, plus a selection of other topics from Honours Mathematics IV and other subjects.

Students are required to write a detailed report on an assigned topic in Statistics under the supervision of a member of the Department; the topic should be discussed with the Head of the Department towards the end of the preceeding year. Work on this project begins in the Department in the first week of February and must be completed by the end of lectures.

MICROBIOLOGY.

THIRD-YEAR SUBJECTS IN MICROBIOLOGY.

Pre-requisite subjects: Biochemistry II (SY02) and a Division I Pass or higher standard in any two subjects from Group B, one of which can be Biochemistry II. Students who have not taken Biochemistry II as a Group B subject may be acceptable for Microbiology. Such students should consult the Professor of Microbiology in December of the year before they intend to begin the course.

The Department offers the following double-units, each of which consists of approximately 22 lectures, 18 hours of tutorials and seminars and 70 hours of practical work.

1. General Microbiology: First term.

   The course illustrates that while bacteria share with other forms of life many common features of structure, development and function, they also differ in some fundamental ways. An introduction to the bacteria will be given, followed by a more detailed consideration of the distinctive characteristics of their growth, sexual and asexual multiplication and genetic recombination. Bacterial viruses will be discussed in some detail.

2. Immunology: Second term.

   The aim of the course during the second term is to acquaint the student with the basic principles and concepts of immunological mechanisms whereby mature vertebrates resist invasion by bacteria, viruses and foreign tissue cells.

   The structure and diversity of antibodies and antigens will be considered, together with a discussion of the methods available for the detection of antibodies in relation to the specificity of antigen-antibody reactions. This will be followed by an examination of the kinetics of the immune response, with particular reference to the cells involved in antibody formation, immune tolerance, hypersensitivity reactions and immunity to transplanted foreign tissues. Finally, the genetic control of susceptibility to infection will be discussed on the basis of present knowledge of the immunological mechanisms involved in the removal of parasites from mammalian hosts.

3. Immunology: Third term.

   During the third term the general importance of the mechanisms of natural and acquired immunity to fundamental biology will be considered. The roles that phagocytic cells and humoral factors, including antibody and complement, play in the recognition and removal of foreign and effete materials in invertebrates and vertebrates will be discussed. Emphasis will

be placed on the evolutionary sequence and increasing complexity of the systems involved in recognition of unwanted materials. Consideration will be given to the role of the thymus in the development of immunological competence in foetal and newborn animals. Finally, various theories of antibody production will be considered in the light of present knowledge of the detailed structure of antibody molecules, including allotype specificities, the relationship of antibody structure to function and the genetic control of protein synthesis.

The subjects offered are:

SK03. Microbiology III.

A Group C(1) subject. Double-units 1, 2, 3.

SK13. Microbiology IIIA.

A Group C(2) subject. Double-units 1, 2 with two units or one double-unit from one other department approved by the Heads of the Departments concerned.

SK23. Microbiology IIIB.

A Group C(2) subject. Double-units 2, 3, with two units or one double-unit from one other department approved by the Heads of the Departments concerned.

Students taking the full course in Microbiology may take Genetics III.

Students interested in taking Honours Microbiology are recommended to take the full course in Microbiology.

Preliminary reading (for all subjects):

De Kruif, P. H., *The microbe hunters* (Harcourt, Bruce and Co.).

Nicol, H., *Microbes by the million* (Penguin).

Text-books (for all subjects):

Principles of microbiology and immunology, by B. D. Davis and others (Harper and Row).

Humphrey, J. H., and White, R. G., *Immunology for students of medicine*, 3rd edition (Blackwell).

Kabat, E. A., *Structural concepts in immunology and immunochemistry* (Holt, Rinehart and Winston).

Reference books:

Boyd, W. C., *Fundamentals of immunology*, 4th edition (Interscience).

Kabat, E. A., and Mayer, M. M., *Experimental immunochemistry*, 2nd edition (Thomas).

SK99. Microbiology for the Honours degree of B.Sc.

Pre-requisite subject: Students intending to take the Honours course in Microbiology are recommended to take the full course in Microbiology III. Students taking Microbiology IIIA or Microbiology IIIB or other suitable science disciplines will, however, be considered.

An intending candidate should consult the Professor of Microbiology some time during the year preceding the Honours year.

Candidates are required to give their full attendence for an entire academic year to a special course of study and laboratory work, and to participate in experimental work of a research character under the direction and supervision of staff members of the Department. A course in reading, which should be commenced during the long vacation prior to the Honours year, will be provided by the Department of Microbiology.

ADDITIONAL SUBJECTS.

SK74. Microbiology.

For syllabus see under Faculty of Medicine.

SK89. Microbiology for the Honours degree of B.Med.Sc.

See Schedule II of the Honours degree of Bachelor of Medical Science.

PHYSICS.

INTRODUCTORY NOTES.

Students intending to proceed at least as far as Physics II must take Physics I and Mathematics I in their first year, and are advised to take Applied Mathematics II concurrently with Physics II. Students interested primarily in physics and mathematics will normally take Pure Mathematics II as their third Group B subject, but any other Group A or B subject (e.g. Geology II, Physical and Inorganic Chemistry II), or two Group A half-subjects (e.g. Computing Science IH, Statistics IH) is entirely satisfactory.

In the third year, 13 "unit courses" are offered by the Physics Department covering a wide range of topics. Students taking Physics III choose six of these units. Up to four further physics units may be taken, depending on the other subject taken with Physics III. This other subject would, in general, be of a physical or mathematical nature, e.g. Physics IIIM, Mathematical Physics IIIA, Applied Mathematics III (or IIIM), Pure Mathematics III (or IIIM), Geophysics III, Computing Science IIIM, Physical and Inorganic Chemistry IIIB (or IIIM).

In the Honours year, a further range of unit courses is offered, some of which are related to the research interests of the Department. Honours students will also take some of the third year units which they did not take in third year.

All physics students should refer to the Laboratory rules, which are printed in this volume of the Calendar. For all laboratory classes students must provide stiff-covered practical notebooks with alternate pages ruled for graphical work.

SP01. Physics I.

There are no formal pre-requisites for Physics I, but a knowledge of Matriculation Physics and Matriculation Mathematics I and II (or Matriculation Mathematics IS) will be assumed.

The course comprises three lectures, one tutorial and three hours of practical work a week, and is given annually.

The course is given in the following parts:

Mechanics, including classical mechanics, special relativity, and introductory quantum physics.

Structure of matter, including atomic and nuclear properties, structure and properties of microscopic systems, and gravitation.

Oscillations and waves, including forced and natural oscillations, elastic waves, interference and diffraction, and an introduction to theories of light.

Electricity and magnetism, including electrostatics, electromagnetic effects, alternating currents, particles and fields.

Text-book:

Resnick, R., and Halliday, D., *Physics*, combined edition (Wiley-Toppan).

Reference books:

Gamow, G., *Matter, earth and sky*, 2nd edition (Prentice-Hall).

Weidner, R. T., and Sells, R. L., *Elementary modern physics* (Allyn and Bacon).

Feynman, R. P., and others, *The Feynman lectures on physics*, vol. 1 (Addison-Wesley).
Shortley, G., and Williams, D., *Elements of physics*, 4th edition (Prentice-Hall).
Taylor, E. F., *Introductory mechanics* (Wiley).
Jenkins, F. A., and White, H. E., *Fundamentals of optics*, 3rd edition (McGraw-Hill).
French, A. P., *Principles of modern physics* (Wiley).
Feather, N., *Vibrations and waves* (Pelican).
Ebbighausen, E. G., *Astronomy* (Merrill).
Bondi, H., *Relativity and common sense* (Heinemann).
Weidner, R. T., and Sells, R. L., *Elementary classical physics*, vol. 2 (*Electromagnetism and wave motion*) (Allyn and Bacon).

SP02. Physics II.

Pre-requisite subjects: Physics I (SP01) at Division I or higher standard and Mathematics I (SM01) (or with the approval of the Head of Department, Mathematics IM at Distinction level).

The course comprises three lectures, one tutorial and six hours practical work a week, and is given annually.

The following books are recommended in addition to those listed for Physics I (SP01):

Duffin, W. J., *Electricity and magnetism* (McGraw-Hill).
Eisberg, R. M., *Fundamentals of modern physics* (Wiley).
Brophy, J. J., *Basic electronics for scientists* (McGraw-Hill).
Jenkins, F. A., and White, H. A., *Fundamentals of optics* (McGraw-Hill).
Burcham, W. E., ***Nuclear physics*** (Longmans).
Brophy, J. J., *Semi-conductor devices* (McGraw-Hill).
Jonscher, A. K., *Solid semiconductors* (Routledge).
Livesey, D. L., *Atomic and nuclear physics* (Blaisdell).
MacFadyen, K. A., *Physics laboratory handbook for students* (University of London Press).

THIRD-YEAR SUBJECTS IN PHYSICS.

Pre-requisite subjects: Physics II (SP02) at Division I or higher standard and Pure Mathematics II (SM02) *or* Applied Mathematics II (SM12).

The Department offers the following units, each of which consists of about 16 lectures and 36 hours of laboratory work.

1. Electromagnetism
2. Electromagnetic Waves
3. Quantum Mechanics
4. Optics
5. Thermal Physics
6. Atomic Physics
7. Nuclear Physics
8. Solid State Physics
9. Relativity.
10. Astrophysics
11. Atmospheric Physics
12. Planetary Interiors
13. History and Philosophy of Physics

A pamphlet giving information on timetables of unit courses will be available from the Department during the enrolment period.

The subjects offered are:

SP03. Physics III.

A Group C(1) subject. Six units, including 1 and 3, but not more than two from units 10-13. The Mathematical Physics unit 3 (Mathematical Methods) may be taken in place of one of the units 2, 4-13 listed above. A minimum of nine hours' laboratory work each week is required.

SP83. Physics IIIM.

A Group C(3) subject. Four units from the list above with two units from one other Department selected with the approval of the Heads of the Departments concerned. With the approval of both Heads of Departments, a unit in Mathematical Physics may be taken in place of one of the units listed above. Two terms of laboratory work with a minimum of nine hours per week are required.

SUMMARY OF UNITS:

1. ELECTROMAGNETISM: First term.

The aim of this course is to discuss the ideas leading to Maxwell's equations of classical electromagnetism, and their interpretation in terms of the propagation of electromagnetic waves.

Text-book:

Duffin, W. J., *Advanced electricity and magnetism* (McGraw-Hill).

Reference-books:

Stratton, J. A., *Electromagnetic theory* (McGraw-Hill).

Feynman, R. P., *Lectures on physics*, vol. II (Addison-Wesley).

2. ELECTROMAGNETIC WAVES: Second term.

This course is concerned with the propagation, scattering and absorption of electromagnetic waves in neutral and weakly ionized gases, and the reflection of electromagnetic waves from dielectrics and conductors.

Text-book:

Ramo, S., and others, *Fields and waves in communication electronics* (Wiley).

Reference-book:

Stone, J. M., *Radiation and optics* (McGraw-Hill).

3. QUANTUM MECHANICS: First term.

Failure of classical mechanics. Wave-particle duality and need for a wave mechanics. Relation between wave and ray optics. Hamiltonian theory. Setting up a wave equation. Schroedinger's equation and Born's interpretation of Ψ. Expectation values. Ehrenfests theorem. Applications to one-dimensional problems. Operators. H. atom problems.

Text-book:

Dicke, R. H., and Wittke, J. P., *Introduction to quantum mechanics* (Addison-Wesley).

4. OPTICS: Third term.

Polarization, Fourier methods, Abbe theory of resolving power, phase contrast microscope, holography, partially coherent light, spatial and temporal coherence, intensity interferometer, and other related topics in modern optics.

Reference books:

Fowles, G. R., *Introduction to modern optics* (Holt, Rinehart and Winston).

Ditchburn, R. W., *Light*, 2nd edition (Blackie).

5. THERMAL PHYSICS: First term.

The course will provide an introdutcion to the concepts of thermal physics and its applications, approached from the point of view of statistical mechanics.

Text-book:

Reif, F., *Fundamentals of statistical and thermal physics* (McGraw-Hill).

6. ATOMIC PHYSICS: Third term.

This course aims to provide an introduction to the fundamentals of atomic physics including a discussion of some processes which are basic to Astrophysics.

Text-book:

Eisberg, R. M., *Fundamentals of modern physics* (Wiley).

Reference books:

Leighton, R. B., *Principles of modern physics* (McGraw-Hill).

Herzberg, G., *Atomic spectra and atomic structure* (Dover).

Kuhn, H. G., *Atomic spectra* (Longmans).

Series, G. W., *Spectrum of atomic hydrogen* (Oxford).

7. NUCLEAR PHYSICS: Second term.

The course will survey the field of nuclear physics at an advanced level but emphasizing the physical rather than the mathematical viewpoint.

Text-books:

Leighton, R. B., *Principles of modern physics* (McGraw-Hill).

Elton, L. R. B., *Introductory nuclear theory* (Pitman).

Burcham, W. E., *Nuclear physics* (Longmans).

8. SOLID STATE PHYSICS: Second term.

Crystal structure, reciprocal lattice. Crystal binding. Lattice vibrations. Dielectric properties. Free electron gas. Electrons in periodic lattice. Energy bands. Magnetic properties. Lattice imperfections. Semi-conductors.

Text-book:

Kittel, C., *Introduction to solid state physics* (Wiley).

9. RELATIVITY: Second term.

This course is common with the Mathematical Physics unit 4.

10. ASTROPHYSICS: Third term.

This course aims to provide an introduction to the basic ideas of astrophysics and stellar astronomy, including discussions of stellar radiation, stellar evolution, the interstellar medium and galactic structure.

Text-book:

Swihart, T. L., *Astrophysics and stellar astronomy* (Wiley).

11. ATMOSPHERIC PHYSICS: First term.

Pressure, density, temperature and composition of the atmosphere. Dynamics and thermodynamics. Radiation and heat balance. Cloud physics. Electrical phenomena in the lower atmosphere. Formation of the ionosphere.

Reference books:

Hess, S. L., *Introduction to theoretical meteorology* (Holt).

Craig, R. A., *The upper atmosphere, meteorology and physics* (Academic Press).

Hidy, G. M., *The winds: origins and behaviour of atmospheric motion* (Van Nostrand).

12. PLANETARY INTERIORS: Third term.

Elastic wave propagation; the outer layers of the earth; crustal reflection and refraction techniques (explosion seismology); evidence of large scale crustal movements. Detection of elastic waves and location of earthquakes. Travel time curves and structure of the deep interior of the earth; density and composition. The moon and the other planets.

Reference books:

Howell, B. F., *Introduction to geophysics* (McGraw-Hill).

Bullen, K. E., *An introduction to the theory of seismology* (Cambridge).

Stacey, F. D., *Physics of the earth* (Wiley).

13. HISTORY AND PHILOSOPHY OF PHYSICS: Third term.

The topics to be discussed in 1971 are: history of the theories of light; history and philosophy of special relativity; history and interpretation of quantum mechanics.

Reference books:

Mallik, D. N., *Optical theories* (Cambridge).

Crew, H. (ed.), *The wave theory of light: memoirs by Huygens, Young and Fresnel* (American).

Newton, I., *Optics* (Dover).

Whittaker, E., *A history of the theories of aether and electricity* (Dover).

Bohm, D., *The special theory of relativity* (Benjamin).

Jammer, M., *The conceptual development of quantum mechanics* (McGraw-Hill).

Schlipp, P. (ed.), *Albert Einstein: Philosopher-Scientist* (Tudor).

Born, M., *Natural philosophy of cause and chance* (Dover).

Bohm, D., *Causality and chance in modern physics* (Routledge and Keegan Paul).

LABORATORY WORK IN THIRD YEAR:

Electronic techniques course (three hours per week), terms 1 and 2;
Vacuum techniques course (three hours per week), term 3;
Research-type projects (at least 6 hours per week).

PHYSICS FOR THE HONOURS DEGREE OF B.Sc.

SP99. Honours Physics IV.

The Honours course will normally include courses of lectures or quantum mechanics, electromagnetism, experimental methods, thermal physics, fundamental particles, nuclear physics, solid state physics, Fourier methods, atmospheric physics, astrophysics, and atomic and molecular physics, but not all topics will necessarily be offered every year. Honours students will be required to take some compulsory courses, and a selection of optional courses, and they will also be required to take some third year units which they did not take in third year. Full details may be obtained on application to the Head of the Department. Students also carry out a research project, on which they submit a report.

Pre-requisites for Honours Physics are a pass in Physics III at a standard satisfactory to the Head of the Department of Physics, together with a pass in Physics IIIM, or Mathematical Physics IIIA, or Applied Mathematics III, or *any* other Group C subject.

PHYSIOLOGY.

Combinations of Physiology and Physics, Physical and Inorganic Chemistry, Organic Chemistry, Biochemistry or Mathematics are acceptable. Other combinations are possible, but it is recommended that students intending to proceed to Physiology II should have an adequate background in Mathematics, and Chemistry at least to second-year level. The student is advised to consult the Department of Physiology before commencing any course in Physiology.

SS02. Physiology II.

Pre-requisite subjects: Chemistry I (SC01), Zoology I (SZ01) or Biology I (SZ71). It is recommended that students should have completed Mathematics I (SM01) or Mathematics IS (SM71) or Mathematics IM (SM11).

This course consists of approximately equal parts of Histology and Physiology.

Histology: The course comprises about thirty lectures and eighty hours' practical work and includes microscopy; introductory cytology and cytochemistry; and the histology of intercellular substance, tissues and systems of the body. Emphasis is laid on the relationship of structure to function.

Students are provided with loan collections of slides. Some microscopes are available on loan.

Physiology: The course comprises thirty-six lectures and eighty hours' practical work. The subject matter deals with the function of the principal mammalian tissues, organs and systems, together with the hormonal and neural integrations of the organism.

Text-books:

For Histology:

Garven, H. S. D., *A student's histology* (Livingstone).

For Physiology:

Ganong, W. F., *Review of Medical Physiology* (Lange).

and

Florey, E., *An introduction to general and comparative physiology* (Saunders).

Bowsher, D., *Introduction to neuroanatomy* (Blackwell).

Reference books:

Abbie, A. A., *Principles of anatomy* (Angus and Robertson).

Brooks, C. McC., and others, *Humors, hormones and neurosecretions* (State University of New York, 1962).

Clark, Sir W. E. Le Gros, *The tissues of the body* (O.U.P.).

Bourne, G. H., *An introduction to functional histology* (Churchill).

Butler, J. A. V., *Inside the living cell* (Allen and Unwin).

Ruch, T. C., and Paton, H. D., *Physiology and Biophysics* (Saunders).

THIRD-YEAR SUBJECTS IN PHYSIOLOGY AND PHARMACOLOGY.

Pre-requisite subject: Physiology II at Division I pass or higher standard. Further, it is recommended that students should have completed the course in one of the following: Biochemistry II (SY02), Chemistry II (SC12), Organic Chemistry II (SO02), Physical and Inorganic Chemistry II (SC02).

The Department offers the following units, each of which consists of some 14 hours' lectures and 50 hours' practical work:

1. Passive Membrane Properties: First half of Term 1. Membrane structure, membrane resistance and capacitance. Donnan equilibria and membrane potentials. Core cable theory.
2. Active Membrane Properties: Second half of Term 1. Ionic fluxes, action potentials, synaptic mechanisms.
3. Systematic Physiology: First half of Term 2. Physiology and biophysics of circulation. Kidney and body fluids.
4. Reproductive Physiology:* Second half of Term 2. Physiology and Endocrinology of reproduction.
5. Neuropharmacology: Second half of Term 2. Neurotransmission in nerve and muscle and its modification by drugs (including biogenic amines).
6. Sensory-Motor Functions: First half of Term 3. Somaethetics, special-senses, and the motor system.
7. Central Nervous Integration: Second half of Term 3. Sleep, consciousness, the limbic system, memory.
8. General Pharmacology: First half of Term 3. Drug distribution, metabolism. Principles of drug action.
9. Systematic Pharmacology: Second half of Term 3. A survey of the pharmacology of the main organ systems commencing with the central nervous system. The course concludes with a discussion of problems of drug evaluation and toxicity, poison control, and pharmacology of the environment.

SS03. Physiology III.

A Group C(1) subject. Any six of the above units, other than the particular combination listed under SS33 and SS43. Students taking Physiology III (SS03) must nominate their units at the time of enrolment and have them approved by the Head of the Department.

SS33. Physiology IIIA (Physiology).

A Group C(1) subject. Units 1, 2, 3, 4, 6, 7.

SS43. Physiology IIIB (Pharmacology).

A Group C(1) subjects. Units 1, 2, 3, 5, 8, 9.

SS83. Physiology IIIM.

A Group C(3) subject. With approval of the Heads of the Departments concerned, a combination of four units from the above list (two terms' work) together with two units or one double-unit (one term's work) in another department.

Text-books (for units 1 and 2):

Katz, B., *Nerve, muscle and synapse* (McGraw-Hill).

(for unit 3):

Guyton, A. C., *Textbook of medical physiology*, current edition (Saunders).

(for units 5, 8 and 9):

Lewis, J., *An introduction to pharmacology*, 4th edition, ed. J. Crossland (Livingstone).

(for units 6 and 7):

Macleod, J. J. R., *Medical physiology*, 12th edition, ed. V. B. Mountcastle (Mosby).

Reference books (for all subjects):

Pitts, R. F., *Physiology of the kidney and body fluids* (Year Book).

Goldstein, A. *et al.*, *Principles of drug action* (Hoeber).

Goodman, L. J., and Gilman, A., *The pharmacological basis of therapeutics*, 4th edition (Macmillan).

PHARMACOLOGY OR PHYSIOLOGY FOR THE HONOURS DEGREE OF B.Sc.

SS89. Pharmacology for the Honours degree of B.Sc.

Pre-requisite subjects: Physiology III (SS03), Physiology IIIB (SS43), or the three units 5, 8, 9.

The course extends over three terms.

Candidates are required to give their full attendance for an entire academic year to a special course of study and laboratory work in the pharmacology laboratory, and to participate in experimental work of a research character under the direction and supervision of the Head of the Department. A course in reading, which should be commenced during the long vacation prior to the Honours year, will be published in the Department of Human Physiology and Pharmacology. Candidates may be required also to satisfy the Head of the Department that they have a reading knowledge of French and German.

SS99. Physiology for the Honours degree of B.Sc.

Pre-requisite subject: Physiology III (SS03), or Physiology IIIA (SS33).

The course extends over three terms.

Candidates are required to give their full attendance for an entire academic year to a special course of study and laboratory work in the physiology laboratory, and to participate in experimental work of a research character under the direction and supervision of the Professor of Physiology. A course in reading, which

should be commenced during the long vacation prior to the Honours year, will be published in the Department of Human Physiology and Pharmacology. Candidates may be required also to satisfy the Professor that they have a reading knowledge of French and German.

ADDITIONAL SUBJECTS.

SS73. Human Physiology.

For syllabus see under Physical Education.

SS12. Human Physiology.

SS13. Human Physiology.

SS74. Applied Physiology and Pharmacology.

SS69. Physiology for the Honours degree of B.Med.Sc.

SS79. Pharmacology for the Honours degree of B.Med.Sc.

See Schedule II of the Honours degree of B.Med.Sc.

SS22. Human Physiology.

SS23. Human Physiology.

For syllabuses see under Faculty of Dentistry.

ZOOLOGY.

EXAMINATIONS.—All assessments in Zoology include both practical and theoretical work; these cannot be taken separately.

PRACTICAL ZOOLOGY.—A record of all work done in the laboratory must be kept in a suitable notebook; these records will be inspected periodically and at the final assessment.

SZ01. Zoology I.

There will be seven hours of formal instruction each week of which not more than three will be spent on lectures.

The emphasis in this course is on the study of animals in relation to their environment. Some adaptations of animals that live in the sea, in fresh water and on land. Parasites and their environment.

The following topics are also dealt with: the principles of genetics, ecology, physiology and taxonomy, the mechanism of evolution, the nature of science and scientific method.

The lectures and the practical course centre around the following animals: *Amoeba, Euglena, Paramecium, Hydra, Dugesia, Megascolex, Cherax, Daphnia, Bufo; Ciona, Aldrichetta; Periplaneta, Helix, Rattus; Plasmodium, Fascolia, Taenia, Ascaris.*

Tutorials are given and discussions on topics concerned with human biology are held.

Text-books:

Villee, C. A., and others, *General zoology* (Saunders).

Buchsbaum, R. M., *Animals without backbones,* Vols. 1 and 2 (Penguin).

Hardin, G. T., *Thirty-nine steps to biology*, readings from Scientific American (Freeman). This book consists of selected articles from *Scientific American*. No lectures will be given on the book but prescribed articles must be read during the year.

Hardin, G. T. (ed.), *Population, evolution and birth control—a college of controversial ideas*, 2nd edition (Freeman).

Peel, J., and Potts, M., *A textbook of contraceptive practice* (C.U.P.).

Students should consult:

Romer, A. S., *Man and the vertebrates*, vols. 1 and 2 (Penguin).

Ramsay, J. A., *A physiological approach to the lower animals* (C.U.P.).

Wessells, N. K., *Vertebrate adaptations* (Freeman). Selected readings from *Scientific American*.

Dowdeswell, W. H., *The mechanism of evolution* (Heinemann).

Abercrombie, M., Hickman, C. J., and Johnson, M. L., *A dictionary of biology* (Penguin).

SZ02. Zoology II.

Pre-requisite subjects: Chemistry I, and a pass at Division I standard or higher in Zoology I: or Biology I (SZ71). Students wishing to count Biology as a pre-requisite are required to consult the Head of the Department of Zoology before January 30 in the year in which they wish to enrol in Zoology II. In special circumstances a candidate may be permitted to enrol in Zoology II without the pre-requiste of Chemistry I, subject to the approval of the Head of the Department of Zoology.

The course includes the following subjects: cellular physiology; selected topics in comparative animal biochemistry and whole animal physiology; quantitative biology; and evolution. Topics are selected for their relevance to courses in Zoology III (SZ03).

Text-books:

Clarke, G. M., *Statistics and experimental design* (Arnold).

Lerner, I. M., *Heredity, evolution and society* (Freeman).

Manwell, C., and Baker, C. M. A., *Molecular biology and the origin of species: heterosis, protein polymorphism and animal breeding* (Sidgwick and Jackson).

Russell-Hunter, W. D., *A biology of the higher invertebrates* (Macmillan).

Russell-Hunter, W. D., *A biology of lower invertebrates* (Macmillan).

Schmidt-Nielsen, K., *Animal physiology*, 3rd edition (Prentice-Hall).

Sheppard, P. M., *Natural selection and heredity* (Hutchinson).

Young, J. Z., *The life of the vertebrates*, 2nd edition (O.U.P.).

Scientific American, Vol. 223, Number 3.

Reference books:

Baldwin, E. H. F., *An introduction to comparative biochemistry*, 4th edition (C.U.P.).

Borradaile, L. A., and others, *The invertebrata*, 4th edition (C.U.P., 1961).

Bullough, W. S., *Practical invertebrate anatomy* (Macmillan).

Florkin, M., *Biochemical evolution*, edition translated and augmented by S. Morgulis (Academic Press).

Bresnick, E., and Schwartz, A., *Functional dynamics of the cell* (Academic Press).

Hyman, L. H., *The invertebrates*, Vols. 1-6 (McGraw-Hill).

Mayr, E., *Animal species and evolution* (Harvard U.P.).

Saunders, J. T., and Manton, S. M., *A manual of practical vertebrate morphology*, 4th edition (O.U.P.).

THIRD-YEAR SUBJECTS IN ZOOLOGY.

Pre-requisite subject for all third-year subjects in Zoology: Zoology II (SZ02) at Division I pass or higher standard. In special circumstances and with the permission of the Head of the Department, students may take one double-unit without the pre-requisite of Zoology II.

The Department offers the following double-units:

1. ECOLOGY AND MARINE BIOLOGY: 27 lectures and practicals during first term.

   About one-third of the course deals specifically with marine animals. The following topics will be discussed. The population in relation to the community and the ecosystem. The theory of environment: self-regulatory mechanisms; the control of numbers by other components of environment. Behavioural and physiological responses of animals to their environment. The marine environment: ocean currents, tides and waves, salinity, temperature and movement of water; the ocean floor. Plankton: adaptation to environment; migrations; nutrient cycles and food chains. Fisheries: growth-rates; age-determination; populations. Intertidal animals: environment; adaptations to environment; distribution.

   Text-books:

   Andrewartha, H. C., *Introduction to the study of animal populations*, 2nd edition (Methuen).

   Tait, R. V., *Elements of marine ecology* (Butterworth).

   Reference books:

   Andrewartha, H. G., and Birch, L. C., *The distribution and abundance of animals* (Chicago U.P.).

   Elton, C. S., *Animal ecology* (Sidgwick and Jackson).

   Fisher, R. A., *The design of experiments* (Oliver and Boyd).

   Ford, E. B., *Ecological genetics* (Methuen).

   Hardy, A. C., *The open sea*, parts I and II (Collins).

   Harvey, H. W., *The chemistry and fertility of seawaters* (C.U.P.).

   Odum, E. P., *Fundamentals of ecology*, 2nd edition (Saunders).

   Schmidt-Nielsen, K., *Desert animals* (O.U.P.).

   Sverdrub, H. V., and others, *The ocean* (Prentice-Hall).

2. EVOLUTION AND BEHAVIOUR: One hour lecture, two hours tutorials and seven hours practical work a week in second term.

   Evolution will occupy about a third of the course, and the following topics will be covered: modern theory of evolution; variation and its conservation; gene frequency; selection; polymorphism, speciation; isolating mechanisms; the evolution of genetic systems.

   The other two-thirds of the course will be devoted to animal behaviour. The course will be given as prescribed readings with associated tutorials. There will not be a formal examination; students will be assessed by means of essays and on their practical work. The following topics will be discussed: the concept of drive; hormones and behaviour; imprinting; the acquisition and processing of information; animal communications; the structure of animal societies; human behaviour as animal behaviour. The emphasis will be on behaviour as adaptation to environment.

   Text-books:

   Marler, P. R., and Hamilton, W. J., *Mechanisms of animal behaviour* (Wiley).

   Mednick, S. A., *Learning* (Prentice-Hall).

   Lorenz, K., *On aggression* (Methuen).

3. Biochemistry and Physiology: 24 lectures and practicals during third term.

Topics to be discussed include reproduction, osmotic and ionic regulation, respiration, circulation, nutrition, metabolism, muscle and neurophysiology. In addition, emphasis will be placed on topics in zoology where molecular methods are useful, including biochemical taxonomy, polymorphism in populations, adaptation, and evolution. Students will be expected to learn the necessary elementary biochemistry.

Text-books:

Gordon, M. S., *Animal function: principles and adaptations* (Macmillan, N.Y.).

Manwell, C., and Baker, C. M. A., *Molecular biology and the origin of species: heterosis, protein polymorphism and animal breeding* (Sidgwick and Jackson).

References:

Prosser, C. L., and Brown, F. A., *Comparative animal physiology* (Saunders).

Lockwood, A. P. M., *Animal body fluids and their regulation* (Holt, Rinehart and Winston).

Wrigglesworth, V. B., *Principles of insect physiology* (Methuen).

4. Cells and Embryos (given jointly with Botany): 27 lectures and practicals during third term.

Fertilisation; normal and asymmetric division of cells; differentiation of cells and regulation of cellular activities; polarity in spores, eggs and embryos; induction; control of growth and form in animals and plants.

Books: see entry under Botany.

5. Systematics and Biogeography: 27 lectures or tutorials and 27 practicals during third term.

Where possible, tutorials stemming from specified reading will be given in place of formal lectures. A proportion of the practicals will also be conducted informally, with each student investigating his or her own project in field and laboratory. Students will be assessed from their practical work and by means of essays. Topics discussed will include the following: Aspects of variation in relation to distribution; concepts of the species; function and taxonomic importance; types of classification; essentialism and weighting; phylogenetic systematics; numerical taxonomy and biogeography; taxonomic characteristics of the biota of isolated islands and lakes, high mountains, and the tropics; latitudinal gradients in diversity; relict faunas; the distribution of plants and animals in the southern cold temperate zone.

Text-book:

Mayr, E., *Principles of systematic zoology* (McGraw-Hill).

Reference books:

Cain, A. J. (ed.), *Function and taxonomic importance* (Systematics Association, London).

Darlington, P. J., *Zoogeography: the geographical distribution of animals* (Wiley).

Darlington, P. J., *The biogeography of the southern end of the world* (Harvard U.P.).

Good, R. D., *The geography of the flowering plants*, 3rd edition (Longmans).

International Congress of Zoology, 15th edition, London, 1958. *International code of zoological nomenclature*, ed. by N. R. Stoll and others (Internat. trust for zool. nomenclature).

Mayr, E., *Animal species and evolution* (Harvard U.P.).

Mayr, E., and others, *Methods and principles of sytematic zoology* (McGraw-Hill).

Hennig, W., *Phylogenetic systematics* (Univ. of Illinois Pr.).

The subjects offered are:

SZ03. Zoology III.

A Group C(1) subject. Double-units 1, 2, 3.

SZ13. Zoology IIIA.

A Group C(1) subject. Double-units 2, 3, 4.

SZ23. Zoology IIIB.

A Group C(1) subject. Double-units 1, 3, 4.

SZ33. Zoology IIIC.

A group C(1) subject. Double-units 1, 2, 4.

SZ53. Zoology IIID.

A Group C(1) subject. Double-units 1, 2, 5.

SZ63. Zoology IIIE.

A Group C(1) subject. Double-units 1, 3, 5.

SZ73. Zoology IIIF.

A Group C(1) subject. Double-units 2, 3, 5.

SZ83. Zoology IIIM.

A Group C(3) subject. With the approval of the Heads of the Departments concerned, a combination of two double-units from the above list (two terms' work), together with two units or one double-unit (one term's work) in another department.

Students who wish to enrol for Zoology IIIM and then to take an Honours degree in Zoology should consult the Head of the Department before they enrol for Zoology IIIM.

SZ71. Biology.

A course consisting of two lectures, one tutorial and one period of practical work each week throughout the year. Both day and evening classes will be held.

The course includes: an introduction to the structure, physiology and functional evolution of plants and animals; elementary biochemistry, cell physiology and genetics; the mechanisms of evolution, and the principles of ecology.

Text-books:

Villee, C. A., and others, *General zoology* (Saunders).

Raven, P. H., and Curtis, H., *Biology of plants* (Worth).

Reference books:

Browning, T. O., *Animal populations* (Hutchinson).

Cockrum, E. L., and others, *Biology* (Saunders).

Galston, A. W., *The life of the green plant,* 2nd edition (Prentice-Hall).

Hardin, G., *Biology, its principles and implications,* 2nd edition (Freeman).

Johnson, W. H., and others, *Biology,* 3rd edition (Holt, Rinehart and Winston).

SZ99. Zoology for the Honours degree of B.Sc.

Students enrolled in Zoology III, IIIA, IIIB, IIIC, IIID, IIIE, IIIF, or IIIM who wish to take an Honours degree in Zoology should consult the Professor some time during the third year.

Candidates are expected to attain a higher standard in general zoology than that required for the Ordinary degree. To this end, a course of reading and several essays are prescribed. In addition, candidates are expected to study more deeply one branch of Zoology, and to carry out research as an exercise in scientific method.

Students are expected to begin work during the long vacation, and to work full-time at their courses throughout the year.

B.Sc. DEGREE SUBJECTS TAUGHT BY OTHER FACULTIES.

WA12. Agriculture IB.

A course of one lecture each week for three terms.

FACTORS IN AGRICULTURAL PRODUCTION.

CLIMATE: World and Australian climates, length of growing season, soil/water balances; man's control of climatic factors: temperature, frost, rain, evaporation, wind. The microclimates of plants and animals.

SOILS: Their origin and constitution; the Great Soil Groups of the world; Australian soils; introduction to the chemistry of plant nutrients in soils and the physics of soil water.

ANIMAL PRODUCTION: Introduction to the growth, nutrition, physiology and distribution of domestic livestock. Efficiency concepts in animal production.

Text-book:

Australia, C.S.I.R.O., *The Australian environment,* 4th edition (M.U.P.).

Reference books:

Barry, R. G., and Chorley, R. J., *Atmosphere, weather and climate* (Methuen).

Blake, C. D. (ed.), *Fundamentals of modern agriculture* (S.U.P.).

Cole, H. H. (ed.), *Introduction to livestock production* (Freeman).

Davis, A. J., *Chiefly fine* (Hall's Book Store, Melbourne).

Flohn, H., *Climate and weather* (World University Library).

Leeper, G. W., *Introduction to soil science* (M.U.P.).

Molnar, I. (ed.), *A manual of Australian agriculture,* 2nd edition (Heinemann).

Rice, V. A., and Andrews, F. N., *Breeding and improvement of farm animals* (McGraw-Hill).

Russell, E. J., *Soils conditions and plant growth,* 9th edition (Longmans).

Stace, H. C. T., and other, *A handbook of Australian soils* (Rellim).

Stephens, C. G., *A manual of Australian soils* (C.S.I.R.O.).

Wadham, S. M., and others, *Land utilization in Australia* (M.U.P.).

MA13. Histology.

Pre-requisite subject: Physiology II (SS02) at Division I or higher standard.

The course consists of three lectures and not less than ten hours' practical work a week. From a morphological background it stresses the relationships between microscopic structure and function in mammalian cells and tissues.

The following subject matter is included: special methods in histology, including electron-microscopy; qualitative microscopic cyto- and histo-chemistry, general principles and localisation of various chemical substances, including enzymes; fine structure of cells and tissues and its relation to function; special study of tissues — differentiation and histogenesis, repair and transplantation, ageing; neurology and neurohistology; special senses.

Text-books:

Ham, A. W., *Histology,* 6th edition (Lippincott); *or*

Maximow, A. A., and Bloom, W., *A text-book of histology,* 9th edition, revised by W. Bloom and D. W. Fawcett (Saunders).

Books for reference and further reading:

McClung, C. E., *Handbook of microscopic technique* (Hoeber).

Pease, D. C., *Histological techniques for electron microscopy* (Academic Press).

Bourne, G. H., *Cytology and cell physiology* (Clarendon Press).

Pearse, A. G. E., *Histochemistry* (Churchill).

Mitchell, G. A. G., *Anatomy of the autonomic nervous system* (Livingstone).

Ranson, S. W., *The anatomy of the nervous system* (Saunders).

Smith, C. G., *Basic neuroanatomy* (Univ. of Toronto Press).

Toner, P. G., and Carr, K. E., *Cell structure. An introduction to biological electron microscopy* (Livingstone).

Fawcett, D. W., *An atlas of fine structure. The cell* (Saunders).

Rhodin, J. A. G., *An atlas of ultrastructure* (Saunders).

Schadé, J. P., and Ford, D. H., *Basic neurology* (Elsevier).

Other references will be given during the course.

PSYCHOLOGY

Special Note Concerning Psychology Courses (Science).

In 1971, the following Psychology courses will be offered in the Faculty of Science:

Psychology I (AY01) (a first-year subject); Psychology II (AY02) (a second-year subject replacing the Psychology I(S) course); Psychology III (AY23) (a third-year course replacing the Psychology II(S) course).

The pre-requisite for Psychology II (AY02) will be a Division I or higher level pass in Psychology I (AY01), and the normal pre-requisite for Psychology III (AY23) will be Psychology II (AY02).

(Students with a Division I pass in Psychology I(S) taken in earlier years and wishing to proceed to Psychology III (AY23) should consult the Head of the Department of Psychology.)

AY01. Psychology I.

This course provides a survey of the main fields of modern experimental psychology, and qualifies the student to take further psychology subjects. The topics covered are learning, perception, physiological psychology, personality, social psychology, thinking and language, elementary, descriptive and inferential statistics.

The course is made up of three lectures each week and two hours of practical laboratory work. In addition, students will be required to spend periods not exceeding a total of five hours in the year as participants in psychological experiments.

Background reading:

Carroll, J. B., *Language and thought* (Prentice-Hall).

Miller, G. A., *Psychology, the science of mental life* (Penguin Books).

Munn, N., *Psychology. The fundamentals of human adjustment*, 5th edition (Houghton Mifflin).

Text-books:

Deese, J. E., *Psycholinguistics* (Allyn and Bacon).

Hochberg, J. E., *Perception* (Prentice-Hall).

Millenson, J. R., *Principles of behavioral analysis* (Macmillan).

Runyon, J. R., and Haber, A., *Fundamentals of behavioral statistics* (Addison-Wesley).

Secord, P. F., and Backman, C. W., *Social psychology* (McGraw-Hill).

Tyler, L. E., *Tests and measurements* (Prentice-Hall).

For students intending to take further psychology subjects:

Thompson, R. F., *Foundations of physiological psychology* (Harper and Row).

For those students not intending to take further psychology subjects:

Teitelbaum, P., *Physiological psychology* (Prentice-Hall).

Approximately 20 *Scientific American* off-prints will be recommended in lectures during the year.

NOTES:

1. The books listed above will be discussed at the preliminary meeting of the class.
2. Extensions for written work to be submitted in Psychology I will be given only in those cases where a request in writing is accompanied by a medical certificate.

AY02. Psychology II.

Pre-requisite subject: Psychology I at Division I standard or higher.

The course comprises: (i) Theory: three lectures and one tutorial a week; (ii) Laboratory and Statistics: an average of three hours a week in terms I and II (including one hour a week of statistics), and one hour a week in term II relating to statistics. The laboratory time will be devoted to experimental work and demonstrations in general and social psychology, and the statistics will deal with sampling and statistical inference from parametric and non-parametric data.

Approximately 20 per cent of the lectures relate to physiological psychology and psychophysics, 46 per cent to topics in the areas of perception, learning and motivation, and 34 per cent to topics within social, personality and abnormal psychology.

This course is experimentally oriented with the main emphasis placed on contemporary behaviour theory. Extensions of experimental psychology are made to personality and social fields, and laboratory research is applied to problems of animal and human behaviour.

Reference books (students are expected to retain Psychology I text-books):

NOTE: An indication of the varying emphases placed on these books will be given at the preliminary meeting of the class.

Day, R. H., *Perception* (Wiley).

Edwards, A. C., *The measurement of personality traits by scales and inventories* (Holt, Rinehart and Winston.)

Garner, W. R., *Uncertainty and structure as psychological concepts* (Wiley).

Goldstein, H., and others (eds.), *Controversial issues in learning* (Appleton-Century-Crofts).

Haber, R. N., *Contemporary theory and research in visual perception* (Holt, Rinehart and Winston).

Hilgard, E. R., and Bower, G. H., *Theories of learning*, 3rd edition (Appleton-Century-Crofts).

Honig, W. K., *Operant behaviour* (Appleton-Century-Crofts).

Miller, G. A., *Language and communication* (McGraw-Hill).

Runyon, R. P., and Haber, A., *Fundamentals of behavioural statistics* (Addison-Wesley).

Secord, P. F., and Backman, C. W., *Social psychology* (McGraw-Hill).

Sidowski, J. B. (ed.), *Experimental methods and instrumentation in psychology* (McGraw-Hill).

Thompson, R. F., *Foundations of physiological psychology* (Harper and Row).

Vernon, P. E., *Personality assessment* (Methuen).

Welford, A. T., *Fundamentals of skill* (Methuen).

Young, P. T., *Motivation and emotion* (Wiley).

AY03. Psychology III.

Pre-requisite subject: Psychology II.

The course will consist of three lectures, one tutorial class and a practical work class each week throughout the year. The topics will include: Physiological Psychology; Psychological Statistics; Social Psychology; Personality; Cognition; Skills; Mathematical Models in Psychology; Theories of Perception; Motivation; and Comparative Psychology.

Sections of the course will include references to relevant research papers as well as to specialised texts. These will be noted during the course. The main general texts are listed below.

Text-books will be discussed at the preliminary meeting of the class.

Abrahamson, M., *Interpersonal accommodation* (Van Nostrand Insight Series. Paperback).

Coombs, C. H., and others, *Mathematical psychology: and elementary introduction* (Prentice-Hall).

Geiwitz, P. J., *Non-freudian personality theories* (Brooks/Cole. Basic Concepts Series).

Hays, W. L., *Statistics for psychologists* (Holt, Rinehart and Winston).

Hinde, R. A., *Animal behaviour: a synthesis of ethology and comparative psychology*, 2nd edition (McGraw-Hill).

Maier, N. R. F., *Frustration. The study of behaviour without a goal* (Ann Arbor Paperbacks. The University of Michigan Press).

McGill, T. E., *Readings in animal behaviour* (Holt, Rinehart and Winston).

McNemar, Q., *Psychological Statistics*, 4th edition (Wiley).

Morris, D. (ed.), *Primate Ethology* (Anchor Books).

Proshansky, H., and Seidenberg, B., *Basic studies in social psychology* (Holt, Rinehart and Winston).

Siegel, S., *Non-parametric statistics* (McGraw-Hill).

Steiner, I. D., and Fishbein, M. (eds.), *Current studies in social psychology* (Holt, Rinehart and Winston).

Thompson, R. F., *Foundation of physiological psychology* (Harper and Row).

Webb, E. J., and others, *Unobtrusive measures: nonreactive research in the social sciences* (Rand McNally).

Welford, A. T., *Fundamentals of Skill* (Methuen).

Wheeler, L., *Interpersonal influence* (Allyn and Bacon. Series in Social Psychology).

Yates, A. J., *Frustration and conflict* (Science Editions, Wiley).

Young, P. T., *Motivation and emotion* (Wiley).

AY89. Psychology for the Honours degree of B.Sc.

Candidates are required to give their full attendance for an entire academic year to a special course of study in the psychological laboratory. The course will include lectures and discussions on advanced topics. It will also involve the writing of a substantial essay and the presentation of a dissertation embodying the results of, and a survey of the literature relevant to, a research investigation carried out under the supervision of a member of the staff of the Department.

WB13. Soil Science I.

A course of two hours of lectures and three hours of practical work a week for three terms, dealing with soil formation and composition, and the chemistry and physics of soils in relation to soil fertility. Topics considered include: soil genesis, distribution of the major soil types of the world and Australia; composition of the inorganic and organic fractions of soils; clay mineralogy; chemistry of the plant nutrients in soils; the nitrogen cycle; air and water movements in soils; the physics of irrigation and drainage; soil erosion.

Practical work will consist of a number of field excursions, and laboratory work related to the above topics.

Text-books:

Russell, E. W., *Soil conditions and plant growth,* 9th edition (Longmans).
Leeper, G. W., *Introduction to soil science,* 3rd edition (M.U.P.).

Reference books:

Baver, L. D., *Soil physics,* 3rd edition (Wiley).
Bear, F. E., *Chemistry of the soil,* 2nd edition (Reinhold).
Clarke, G. R., *The study of the soil in the field,* 4th edition (O.U.P.).
Cooke, G. W., *The control of soil fertility* (Crosby Lockwood).
Jenny, H., *Factors of soil formation* (McGraw-Hill).
Stace, H. C. T., *et al., Handbook of Australian soils* (Rellim).
Stephens, C. G., *A manual of Australian soils,* 3rd edition (C.S.I.R.O.).

FACULTY OF TECHNOLOGY AND APPLIED SCIENCE

SYLLABUS NUMBERS.

The first letter identifies the Faculty of Technology and Applied Science: T.

The second letter identifies the School (of the S.A. Institute of Technology) teaching the subjects, as follows:

Accounting	**A**	**Electrical Engineering**	**E**
Building		**Electronic Engineering**	**L**
(subjects for old courses)	**D**	**General Studies**	**G**
(subjects for new courses)	**B**	**Mathematics**	**M**
Business Administration	**U**	**Mechanical Engineering**	
Chemical Technology		(subjects for old courses)	**J**
(subjects for old courses)	**I**	(subjects for new courses)	**K**
(subjects for new courses)	**H**	**Metallurgy**	**T**
Civil Engineering		**Mineral Engineering**	**N**
(subjects for old courses)	**V**	**Pharmacy**	**F**
(subjects for new courses)	**C**	**Physics**	**P**

The first digit

0–3: indicates (except in Mathematics: 0–2) that the subject is in sequence with another subject.

4–9: indicates (except in Mathematics: 3–9) that the subject is not in sequence with another subject.

The second digit

1–4: indicates year of subject, e.g. first, second, third or fourth.

9: indicates Honours.

SYLLABUSES

Hours a week

The figures at the right-hand side of the syllabus number and title indicate, respectively:

Number of **lectures** a week—number of hours of **tutorial work** a week—number of hours of **practical work** a week, throughout the three terms of the academic year.

A figure with a suffix, such as 2^2, means two hours a week for two terms.

Thus 2–2^2–1 indicates a subject having two lectures and one hour of practical work a week throughout the year, and two hours a week of tutorial work for two terms.

Reference books

Lists of reference books are not given. Such lists are supplied to students early in the academic year by the lecturers concerned.

DEGREES OF BACHELOR OF TECHNOLOGY, BACHELOR OF APPLIED SCIENCE AND BACHELOR OF PHARMACY

BACHELOR OF TECHNOLOGY (BUILDING TECHNOLOGY).

OLD COURSE.

THIRD YEAR

(To be offered for the last time in 1972.)

TD03. Building Science III (T). (2–0–3[1])

Pre-requisite: Building Science II(T).

Part A. Building Plant A.

The types, properties, uses and maintenance of plant. Planks, ropes (fibre and steel), slings and hooks, scaffolding, ladders. Office and sheds. Hoists, cranes and derrick poles. Portable and hand tools, woodworking machines. Pile driving equipment. Dewatering equipment, pumps. Formwork-wood and steel. Cement silos, aggregate hoppers, concrete mixers, concrete handling equipment, vibrators, pre-stressing equipment. Motors and engines. Large earth moving equipment. Transport vehicles.

Note: Visits to various building sites will be made.

Part B. Service and Equipment of Buildings I.

A course of lectures and visits to buildings dealing with the principles involved in the design and provision of mechanical equipment of buildings; study of codes and regulations involved.

The course includes: heating; ventilation; air conditioning; electrical and gas services; illumination; fire protection; vertical transportation.

Exercises, problems and calculations involved in the design of the above services and equipment.

TD13. Building Construction and Drawing III. (1–0–5)

Pre-requisite subject: Building Construction and Drawing II.

Concurrent subject: Building Administration II.

Lectures: Advanced and heavy construction methods used in: reinforced concrete, pre-stressed concrete, steel frames, timber engineering, piling, shoring, underpinning, excavation, timbering, sheet piling, soil stabilization. Specification writing. Preparation of working drawings.

Practical: Selected projects based on the above. Preparation of working drawings and specifications for more advanced buildings.

Text-book:

Australia. Commonwealth Experimental Building Station, *Notes on the science of building*.

TD33. Building Administration II. (2–0–3)

Pre-requisite subject: Building Construction and Drawing II, Building Administration I.

Part A. Building Law A.

The South Australian Building Act and relevant regulations.

Co-ordination of the requirements of legislation and local practice of building construction. Exercises in the checking of plans and specification for compliance, and in the administration of the Act and regulations.

Part B. Building Administration IIA.

The organisation and administration of the building contractor's office, yard and sites. Staffing, periodic accounting, costing, quantities and estimates, and final settlements. Stock and labour requirements. Site meetings. Site control. Law in relation to building sites. Elementary contract programming and scheduling.

Either

TD23. Quantity Surveying III. (3–0–0)

Pre-requisite subjects: Quantity Surveying II and Building Construction and Drawing II.

The course consists of three hours of lectures a week throughout the year.

A continuation of the course of instruction in the preparation of Bills of Quantities with respect to the following trades: plumbing, draining, structural steel work, stonework, joinery fittings, and specialised services, including electrical and mechanical.

Costing analysis. Professional practice, including arbitration by quantity surveyors.

Or

TU94. Supervision—Human Relations. (1½–0–0)

The role of the supervisor; analysing and planning the supervisory job; characteristics of organisation; individual differences; motives and motivation; work interest; communication; handling problems; report writing; leadership; grievances and complaints; maintaining discipline; absenteeism and labour turnover; employee selection; starting the new employee; the supervisor as an instructor; merit rating; understudy development; transfers, promotions, and dismissals; supervising women, juniors and older people; the new supervisor; the supervisor's personal development; morale.

Text-book:

Bittel, L. R., *What every supervisor should know* (McGraw-Hill).

and

TD43. Building Administration III. (1½–0–0)

Pre-requisite or concurrent subject: Building Administration II.

The course consists of lectures and class work in the form of written exercises.

The programming and scheduling of building projects. Critical path methods. Modified bar charts.

Integration of programme, progress and cost control, cost recording and estimating methods.

The computer in project planning and analysis.

Techniques of methods engineering.

TD93. Design of Structures. (1–0–3)

Pre-requisite subject: Strength of Materials (T).

An adaptation for students of Building Technology of the following course.

An introduction to the design of structures in concrete, timber and steel; the use of standard codes; design projects in concrete, steel and timber.

The relevant structural codes will form part of the course:

INT 350 (Minimum design loads on buildings).
INT 351 (Structural steel in buildings).
INT 352 (Manual metallic arc welding).
CA2 (Concrete code).

TD73. Estimating and Costing. (2–0–0)

The costing system, time studies, analysis of costs, cost control, estimating data and realistic estimating applicable to building and civil engineering works.

TA83. Bookkeeping and Accounts (2–0–0)

The conventional basis of accounting, recording, reporting analysis and interpretation. Sole traders, partnerships, limited liability companies. The nature of capital, sources of finance. The balance sheet. Subsidiary and classified records. Cash transactions and negotiable instruments. Costing concepts. The nature and classification of costs. The elements of cost. Simple collection and measurement of cost on a job cost basis. Office costing and expense rates. An introduction to budgetary control, financial budgets, capital budgets.

BACHELOR OF TECHNOLOGY (CIVIL ENGINEERING).

OLD COURSE.

THIRD YEAR

(To be offered for the last time in 1972.)

TV03. Structures II (T). (1–0–7)

Pre-requisite subject: Structures I (T).

Pre-requisite or concurrent subject: Civil Engineering A.

The course comprises one hour of lecture and seven hours of practical work a week throughout the year.

Design projects covering timber, concrete and steel construction.

A reading guide will be supplied at the beginning of the course.

TV33. Civil Engineering A. (3–1–4)

Pre-requisite subject: Structures I (T).

Lectures: Influence lines, statically indeterminate trusses, beams and frames, design of structures in steel and concrete, experimental methods.

Practical work: Design problems in conjunction with lectures, seminars (not restricted to topics relating to Civil Engineering A).

Text-book:

Michalos, J., and Wilson, E. N., *Structural mechanics and analysis* (Collier-Macmillan).

TV43. Civil Engineering B. (4–0–3)

Pre-requisite subjects: Surveying I (T), Applied Mathematics (T), Hydraulics (T), Mathematics I (Engineering) and Structures I (T).

The course comprises four hours of lectures and three hours of practical work a week throughout the year.

Lectures: Accommodation requirements; surface drainage, soil properties and tests; earth-works and earth-moving equipment; pavement design; plant and methods of general pavement construction and bituminous work; road surfaces; bases of soil; stabilized soil; gravel and stone pavements; bitumen, gravel-bitumen and bituminous macadam surfaces; cement concrete pavements; road design and practice; traffic engineering.

Sources of water supply; storage; design and construction of dams other than concrete and masonry; outlet and distribution works for water supply; examination and treatment of water and water supplies; population forecasts; systems of sewerage; sewer reticulation; hydrogen sulphide problems; sewage treatment and disposal.

Physical properties of soils, design and construction of foundations, earth retaining structures, silos, stability of slopes, earth dams, soil exploration and classification.

Geological formations; requirements of concrete materials; design of mixes; physical properties of concrete.

Practical work: Project on water supply and/or sewage. Laboratory work covering classification and testing of soils, concrete and road paving materials. Excursions to industrial plants and water and sewage treatment plant.

Text-books:

Terzaghi, K., and Peck, R. B., *Soil mechanics in engineering practice* (Wiley).

Hardenbergh, W. A., and Rodie, E. R., *Water supply and waste disposal* (International Text-book Co.).

TD83. Methods of Construction and Management. (1–0–0)

Pre-requisite or concurrent subject: Civil Engineering B.

A course of lectures dealing with management aspects of civil engineering construction and typical construction methods.

A study of management aspects of construction including:—Planning of construction, principles of organisation, contracts, personnel management, estimating, control costing and financial aspects.

A study of the methods employed in the basic processes of civil engineering construction as applied in typical construction projects.

Text-book:

Turner, B. T., *Management training for engineers* (Business books); *or*

Chironis, N. P., *Management guide for engineers and technical administrators* (McGraw-Hill).

TE83. Electrical Engineering IIA (T). (2–0–2)

Pre-requisite subjects: General Mathematics and General Physics.

Systems of units, standard symbols, network theorems, magnetic circuits, inductance, alternating currents, transients; polyphase systems, analogue computers for simulation, instruments and measurements, transformers, electro-mechanical power conversion: d.c. and a.c. machines.

Text-book:

Hughes, E., *Electrical technology* (Longmans).

TC82. Survey Camp.

Pre-requisite subject: Surveying I (T).

The survey camp is held annually, and is of two weeks' duration. A subject fee of $20 is charged. Accommodation and stretchers are provided, but bedding and transportation are the student's responsibility.

A charge is also made to cover the cost of meals provided. Each student must obey all regulations whilst in camp.

All plans, field notes and computations must be completed satisfactorily, and handed to the lecturer-in-charge at the closing of the camp.

A candidate whose work is deemed unsatisfactory by the lecturer-in-charge will not be credited with attendance at the camp, and he may be required to do additional practical work during the first term of the following year, or to attend another survey camp.

Entry for the camp must be made in the first term.

BACHELOR OF TECHNOLOGY (SURVEYING).

OLD COURSE.

THIRD YEAR

(To be offered for the last time in 1972.)

TV83. Soils Investigations. (1^{2}2^{1}–0–3)

The course consists of one hour a week lecture in the first and third terms and two hours a week in the second term, and three hours a week practical work throughout the year.

Engineering geology; classification of soils; field methods of sampling and testing; standard tests; application of soils mechanics.

Text-books:

Terzaghi, K., and Peck, R. B., *Soil mechanics in engineering practice* (Wiley).

TV53. Land Surveying Design and Drafting. (0–0–3)

The course consists of three hours of lectures a week throughout the year.

Introduction; use of drafting equipment; survey drafting; preparation of plans from field notes; map projection; special types of survey drafting (including engineering, hydrographical, geological, hydrological, geophysical, mining): graphical representation; drafting for reproduction; models.

Text-books:

Raisz, E., *General cartography* (McGraw-Hill).
Steers, J. A., *An introduction to the study of map projections* (U. of London P.).

TC83. Photogrammetry. (3–0–6)

A short history of the development of photography. Geometry of the aerial photograph: photographic materials. Aerial cameras and calibration. Ground control and flight planning. Radial and aerial triangulation. Rectification. Theory of plotting machines. Analytical methods. Terrestrial photogrammetry.

TC63. Geodesy. (3–0–3)

The oblate spheroid. Laplace equation: computations connected with triangulation, trilateration and traverses; computation in plane rectangular co-ordinates. Lines on the earth's surface.

Curve fitting to observational data. Adjustment of figures, level nets, trigonometric levelling, traverses, etc. Adjustments involving dissimilar quantities. Weighting. Weight of the adjusted value.

Inter-relation of the geoid and spheroid. Significance of data at the origin. Microwave distance–measurement.

Gravity measurements. Gravimeters. Reduction of gravity readings. Deflection determination. Gravity influence on trigonometric and geodetic levelling.

Text-books:

Heiskanen, W. A., *The earth and its gravity field* (McGraw-Hill).

Heiskanen, W. A., and Moritz, H., *Physical geodesy* (Freeman).

Bomford, G., *Geodesy* (O.U.P.).

Shchigolev, B. M., *Mathematical analysis of observations* (Iliffe).

TV93. Surveying Law. (2–0–0)

The course consists of two hours of lectures a week throughout the year.

The Acts and Regulations relating to:—

(a) Surveys of land for purposes of title; subdivision of land; opening and closing roads and rights-of-way; the acquisition of land for special purposes.

(b) Surveys of mines both surface and underground.

(c) Town planning and regional planning.

(d) Systems of tenure.

TV73. Planning Law. (1–0–0)

A survey of the history of the law and the courts with an analysis of the principles of law under the two western codes. Appeals, Arbitration and Conciliation methods. Selected legislation in Australia and overseas will be examined with specific reference to South Australia. A survey will be made of the planning law in force in all States of Australia. Methods of writing a planning act will be analysed from the view of the act as an instrument of policy.

TV63. Land Valuation Principles and Practice. (1–0–0)

The course consists of one hour of lecture a week throughout the year.

Definition of value, methods and principles of valuation, valuation of city, suburban and rural lands, valuation of improvements to land; depth tables, valuation of terminable interests; depreciation; inspection and valuation reports, subdivisions; business valuations and goodwill; compensation for compulsory acquisition; responsibilities and liability of a valuer.

TC73. Hydraulics (T). (1–0–3½)

Pre-requisite subject: General Physics.

Pre-requisite or concurrent subjects: Applied Mathematics (T), and Mathematics I (Engineering).

The course consists of one hour of lecture a week throughout the year and three hours of practical work a week in the third term only.

Properties of fluids; hydrostatics; principles of continuity, momentum and energy for fluids in motion; flow measurement; flow in pipes and open channels; dimensional analysis; laws of similarity and hydraulic models; hydraulic turbines and centrifugal pumps; water hammer; hydrology.

Text-book:

Daugherty, R. L., and Franzini, J. B., *Fluid mechanics with engineering applications* (McGraw-Hill).

BACHELOR OF TECHNOLOGY (ELECTRICAL ENGINEERING).

OLD COURSE.

THIRD YEAR

(To be offered for the last time in 1972.)

TE23. Electrical Engineering III (T). (2–0–2)

Pre-requisite subjects: Electrical Engineering II(T) and Mathematics I (Engineering).

Transformers under steady state and transient conditions. Harmonic analysis and applications, symmetrical components analysis. Rotating machines: synchronous, induction and commutator types. Rectifiers and frequency changers. Transmission lines.

Text-book:

Langsdorf, A. S., *Theory of alternating current machinery* (McGraw-Hill). *or*

Lawrence, R. R., and Richards, H. E., *Principles of alternating current machinery* (McGraw-Hill).

TE73. Automatic Control. (1–0–3)

Pre-requisite subjects: Electrical Engineering II(T) and Mathematics I (Engineering).

Theory of automatic control systems; application to position, velocity and acceleration control; transducers and power amplifiers; electro-mechanical analogies. Laboratory work based on lectures with tests on data transmission devices, rotating and magnetic amplifiers, electro-mechanical analogies.

Text-book:

Thaler, G. J., *Elements of servomechanism theory* (McGraw-Hill), *or*
West, J. C., *Text book of servomechanisms* (English Universities Press).

TL53. Applied Electronics. (1–0–2)

Pre-requisite or concurrent subjects: Mathematics IIC and Electrical Engineering IIC or Mathematics I (Engineering) and Electrical Engineering II(T) or IIA(T) or Electrical Engineering IA.

Fundamental concepts including semi-conduction, average, peak and RMS values, simple RC, LR and LC networks, ideal transformers; vacuum, semiconductor and gas-diodes as rectifiers; filtering; vacuum-tube and transistor amplifiers; graphical and equivalent circuit analysis; amplified response; feedback; oscillators; class C power amplifiers and applications; characteristics and application of the thyratron, ignition, silicon-controlled rectifier, uni junction, glow tube and zener diode; simple DC and AC timers; saw-tooth generators; electronic counters; stroboscope; operational amplifiers; multi-vibrators; logic; storage devices; transducers, varicaps, thermistors and other special devices; integrated circuits.

Preliminary reading:

Hawker, J. P., and Reddihough, J. A., *Electronics pocket book* (George Newnes).

TJ83. Machine Design. (2–0–3²)

Pre-requisite subjects: Engineering Drawing and Design II, Strength of Materials (T), Mathematics I (Engineering), and *either* Mechanical Engineering II (T) *or* Refrigeration Engineering II.

The course consists of two hours of lectures a week throughout the year and three hours of practical work a week for the first and second terms only.

Lectures: General design principles; fatigue; stress concentration; impact; combined stresses; gears—kinematics of involute teeth, strength and wear resistance of spur, bevel and worm gears; parts of reciprocating engines; journal bearings; velocity and acceleration diagrams; simple mechanisms; cams; dynamics of machines; balancing; linear and torsional vibrations; epicyclic gears.

Drawing Office: Project work supplementing lectures covering the design and drawing of mechanical units.

TJ33. Workshop Practice II. (1–0–3)

The mechanics, practices and economics of material deformation processes, plane strain deformation, slipline field analysis, friction, lubrication, basic processes, tube bending. The mechanics and practices of milling, grinding, vibrations in material cutting.

Development: in metal work processes.

TT82. Engineering Materials. (2–0–2)

Pre-requisite subjects: General Physics and Chemistry IA *or* Leaving Honours Physics and Chemistry.

The course consists of two lectures and two hours demonstration laboratory and tutorial work a week throughout the year.

The course covers the following topics: Metallic materials: the metallic bond; structure of metals and alloys; shaping and joining metals; mechanical testing; metallography of commercially important alloys, electrical and magnetic alloys; properties, applications and heat treatment of structural, constructional and tool steels; corrosion. Non-metallic materials: the physical, chemical and mechanical properties and engineering uses of ceramic materials (clay products, refractories, cement, glass, abrasives), polymers (plastics, rubbers), fuels (conventional and nuclear), explosives, lubricants (liquid, semisolid, solid, synthetic), protective coatings (organic, inorganic, metallic), electrical materials (semiconductors, ferrites), wood; water treatment.

The laboratory work, demonstrations and tutorials are designed to illustrate the subject matter of the lecture course.

Text-books:

Munro, L. A., *Chemistry in engineering* (Prentice-Hall).

Wulff, J. (ed.), *The structure and properties of materials*, Vols. I, III and IV (J. Wiley).

THIRD YEAR

(To be offered for the last time in 1972.)

TE23. Electrical Engineering III (T).

For syllabus see Subject Index.

TL33. Communication Engineering II. (2–1–3)

Pre-requisite subjects: Communication Engineering I and Mathematics I (Engineering).

Network analysis; use of matrix methods; networks for impedance transformation, filtering and equalizing; wave-motion on transmission lines; transmission line characteristic impedance and propagation constant; Smith chart; impedance matching; determination of field strength, radiation resistance and directive gain of simple antennas and antenna arrays; the receiving antenna; propagation of ground waves, sky waves and space waves; scatter propagation; devices for generation of UHF signals; wave-guides; microwave components; the principles of information transmission; effect of noise on information transmission; signal theory; correlation techniques.

Text-books:

Ryder, J. D., *Networks, lines and fields*, 2nd edition (Prentice-Hall).

Brown, J., and Glazier, E. V. D., *Telecommunications* (Chapman and Hall).

TE73. Automatic Control.

For syllabus see Subject Index.

TL63. Electronic Engineering Design. (1–0–2)

Pre-requisite or concurrent subjects: Communication Engineering II and Pulse Techniques.

Lectures:

Circuit and System Design: Design philosophy, component limitations, worst case and statistical design analysis, the place of analysis and laboratory work in circuit and system design, estimation of reliability, standards, patents, ergonomics.

A number of discrete circuits will be designed but the course is oriented toward the use of integrated circuits.

Practical:

Students will be required to design, construct and test a piece of electronic equipment which could come within the scope of an electronic engineer in design. A report is to be submitted and seminar presented on this design project.

Preliminary reading:

Krick, E. V., *An introduction to engineering and engineering design* (Wiley).

TL73. Electronic Measurements. (1–0–2)

Pre-requisite or concurrent subjects: Communication Engineering II and Pulse Techniques.

The course consists of one hour of lecture and two hours of practical work a week throughout the year.

Lectures:

Measurements involving lumped circuit principles: Units, moving coil instruments, vacuum tube voltmeters, power level measurements, component measurement with bridges and tuned circuits, Q meters, frequency measurement, oscilloscopes, harmonic analysers, phase measurement, sinewave and pulse testing of amplifiers, noise generators and noise measurements.

Measurements involving distributed circuit principles: Low frequency transmission line measurements, bolometers, high frequency transmission line and waveguide measurement of impedance, wavelength, phase, attenuation, power and noise, measurement of antenna impedance, radiation distribution, gain and field strength.

Special instruments and applications: Students will be given an individual study topic and will present a paper on their findings.

Practical work: Laboratory work on the above subject matter.

Text-book:

Terman, F. E., and Pettit, J. M., *Electronic measurements*, 2nd edition (McGraw-Hill).

TL93. Pulse Techniques. **(2–1–2)**

Pre-requisite subjects: Mathematics I (Engineering), Communication Engineering I and Applied Electronics (Short Course).

This course consists of two hours of lectures, two hours of practical work and one hour tutorial throughout the year.

Introduction to Laplace Transformation; wave-shaping by linear and non-linear circuit elements; transient response of transistor switching circuits; charge control analysis; multi-vibrators—saturating and non-saturating types, classification; negative resistance switching circuits; blocking oscillators; pulse transformers; voltage comparators; counting circuits; binary arithmetic; sampling techniques; logic, principles and circuits; binary codes; error detecting codes; integrated circuits; minimization techniques; digital computer techniques; machine arithmetic; memory devices.

Text-books:

Millman, J., and Taub, H., *Pulse, digital and switching waveforms* (McGraw-Hill).

Strauss, L., *Wave generation and shaping*, 2nd edition (McGraw-Hill).

BACHELOR OF TECHNOLOGY (MECHANICAL ENGINEERING—COURSE A).

OLD COURSE.

THIRD YEAR

(To be offered for the last time in 1972.)

TE83. Electrical Engineering IIA (T).

Either

TL53. Applied Electronics.

For syllabus see Subject Index.

Or

TI84. Process Control (T). **(1–0–3)**

Pre-requisite subjects: Chemistry I or IA, General Physics and Mathematics I (Engineering).

The dynamic behaviour of the various elements in a control loop. The characteristics of the control modes and their generation. Criteria for system stability concepts of transient and frequency response analysis. Graphical and analytical techniques used in process control system design, the techniques of simulation and computation.

Text-books:

Coughanowr, D. R., and Koppel, L. B., *Process systems analysis and control* (McGraw-Hill).

Harriott, P., *Process control* (McGraw-Hill).

TJ03. Mechanical Engineering III (T). (2–0–3)

Pre-requisite subjects: Mathematics I (Engineering), Applied Mathematics (T), Strength of Materials (T) and *either* Mechanical Engineering II (T) *or* Refrigeration Engineering II.

The course consists of two hours of lectures and three hours of practical work a week throughout the year.

Lectures: Fluid mechanics; mechanics of incompressible and compressible fluids; general equations of motion; dynamic similarity for inertia, gravity and viscous forces; laminar and turbulent flow; boundary layer; steady flow through orifices, nozzles, pipes; theory and operation of hydraulic machines and special problems associated with steam and gas turbines; advanced thermodynamics, applications of principles of thermodynamics; partial differential relations; heat transfer; refrigeration; power plant economy.

Practical work based on the above.

Text-books:

Pao, R. H. F., *Fluid mechanics.*

Holman, J. P., *Heat transfer*, 2nd edition (McGraw-Hill).

Knudsen, J. G., and Katz, D. L., *Fluid dynamics and heat transfer* (McGraw-Hill).

TJ93. Machine Design Project. (2–0–3)

Pre-requisite subjects: Engineering Drawing and Design II, Strength of Materials (T), Mathematics I (Engineering), and *either* Mechanical Engineering II (T) *or* Refrigeration Engineering II.

The course consists of two hours of lectures and three hours of practical work a week throughout the year.

Lectures: As for Machine Design.

Drawing Office: Project work supplementing lectures.

Project: The design of an approved prime mover, compressor, refrigerator or similar unit.

Text-books:

As for Machine Design.

TJ33. Workshop Practice II.

For syllabus see Subject Index.

TT74. Metal Fabrication. (1–0–0)

Pre-requisite subject: Engineering Materials.

Lectures: One hour per week for three terms covering theoretical and practical aspects of metal working processes—Rolling, Forging, Extrusion, Deep Drawing, Pressing, Wire drawing Powder Metallurgy, as a fabrication method, Joining Processes, Metallurgical Aspects of Deformation. Methods of assessing formability. Non-destructive testing of fabricated metal products.

Practical Work: Three hours per week for one term consisting of plant visits and work designed to illustrate lecture topics.

Text-books:

Dieter, G. E., *Mechanical metallurgy* (McGraw-Hill).

Rowe, G. W., *An introduction to the principles of metal working* (Edward Arnold).

TT94. Foundry Practice. (1–0–3)

Pre-requisite subject: Engineering Materials.

Lectures: One hour per week for three terms covering methods of casting, theoretical aspects of solidification of metals and risering and gating of castings. Control of metal composition, mould materials, gases in metals and stresses in castings. Continuous and semi-continuous casting. Structure, properties and casting techniques of main ferrous and non-ferrous materials.

Practical Work: Three hours per week for two terms consisting of plant visits and work designed to illustrate lecture topics.

Text-book:

Flinn, R. A., *Fundamentals of metal casting* (Addison-Wesley).

BACHELOR OF TECHNOLOGY (MECHANICAL ENGINEERING—COURSE B).

OLD COURSE.

THIRD YEAR

(To be offered for the last time in 1972.)

TJ23. Refrigeration Engineering III. (2–0–3²)

Pre-requisite subjects: Refrigeration Engineering II, and Chemistry I (Organic) (T).

The course consists of two hours of lectures and three hours of practical work a week for two terms.

Heat transfer, promotion, and prevention; advanced refrigeration theory, compound cycles, low temperature production; liquid refrigerant reticulation; absorption and adsorption machines; water vapour refrigeration; heat pumps; air conditioning; microbiology—the nature, distribution, detection, and identification of micro-organisms; destroying agencies; sterility; microflora of vegetables and fruit; causes of spoilage, methods of preservation of meat and fish, dairy produce, labile biological products; air sterilization; water purification; thermo-electric cooling.

Text-books:

Brown, A. I., and Marco, S. M., *Introduction to heat transfer*, 3rd edition (McGraw-Hill).

Threlkeld, J. L., *Thermal environmental engineering* (Prentice-Hall).

TE83. Electrical Engineering IIA (T).

Either

TL53. Applied Electronics.

For syllabuses see Subject Index.

Or

TA73. Principles of Business and Industry A. (2–0–0)

An introduction to the nature of economics; concepts of economic behaviour and development; the objectives and problems of current economic policy; the factors of production; the sectors within the economy. The forms of business organization; financing business enterprise. An introduction to accounting, recording and reporting; the published financial reports of companies; budgets; costing. An introduction to the law of contracts, principal and agent, sales of goods.

Text-books:

To be notified in class.

Or

TI84. Process Control (T).

TJ03. Mechanical Engineering III (T).

TT82. Engineering Materials.

TJ33. Workshop Practice II.

For syllabuses see Subject Index.

BACHELOR OF TECHNOLOGY (APPLIED PHYSICS)

OLD COURSE.

THIRD YEAR

(To be offered for the last time in 1972.)

TP13. Applied Physics IIA. (3–0–5)

Pre-requisite subjects: Applied Physics IA, Applied Physics IB, and Applied Mathematics II (T).

Vibrations, Waves and Sound: normal modes of vibration. damping wave equation; Fourier analysis; dispersion; shock waves, acoustic impedance; acoustic measurements; seismic waves ultrasonics.

Heat and Thermodynamics: elementary statistical thermodynamics; black-body radiation; low temperatures; high temperatures; heat transmission; convection; radiation physics.

Nuclear Physics: X-rays and crystal structure; health physics; nuclear properties; nuclear reactions; reactor physics.

Introductory Quantum Mechanics: photons, particles and waves; de Broglie hypothesis; Schroedinger wave equation and applications; Heisenberg Uncertainty Principle.

Text-books:

Kinsler, L. E., and Frey, A. R., *Fundamentals of acoustics* (Wiley).

King, A. L., *Thermophysics* (Freeman).

TP23. Applied Physics IIB. (3–0–5)

Pre-requisite subjects: Applied Physics IA, Applied Physics IB, and Applied Mathematics II (T).

The course comprises three lectures and five hours practical work a week.

Electricity and Magnetism; Maxwells' equations; electromagnetic waves; special relativity; Fresnel's relations; transmission of electromagnetic waves along wires and wave guides; micro-wave generators.

Electron and Plasma Physics: electron optics; electron microscope; mass spectrometry; equilibrium of plasma; plasma oscillations; ionospheric physics; containment of plasma.

Solid State Physics: crystalline state and atomic bonding; electrons in metals; strength of crystals; quantum electronics; applications of semi-conductors; magnetic materials; ferro-electricity; piezo-electricity.

Optics and Spectroscopy: light sources and coherence; monochromators; design of spectrometers; interference techniques; phase contrast microscopy; polarised light; magneto- and electro-optics.

Modern Physical Techniques: vacuum physics; space science; resonance spectrometry; Mössbauer Effect; experimental method.

Text-book:

Schwarz, W. M., *Intermediate electromagnetic theory* (Wiley).
Hutchison, T. S., and Baird, D. C., *The physics of engineering solids* (Wiley).

TI93. Industrial Instrumentation A. (2–0–4)

Pre-requisite subjects: Chemistry I *or* IA, General Physics and Mathematics I (Engineering) *or* Applied Mathematics II (T).

This course will cover the syllabus of Process Control (T), with an extended examination of some of the topics dealt with in that course. Selected topics of current interest such as optimalizing systems, sampled-data inputs. non-linear systems, etc., will also be discussed.

Text-books:

As for Process Control (T).

TT82. Engineering Materials.

For syllabus see Subject Index.

BACHELOR OF APPLIED SCIENCE (APPLIED CHEMISTRY —COURSE A).

OLD COURSE.

FOURTH YEAR

(To be offered for the last time in 1972.)

TE83. Electrical Engineering IIA (T).

TJ12. Engineering Drawing and Design II. (1–0–3)

Introduction to the design of machine elements and transmission systems, using codes and catalogues and applying knowledge gained in mechanics and engineering materials. Practical work including sketching and drawing of components and assemblies, and the selection of fits and tolerances.

Limits and fits, geometric tolerances; design properties, design factors; combined stresses; design of ductile materials for yielding or fatigue failure; design of machine members and fastenings; design of bolted, welded and glued joints; shafts, slope and deflection; seals; helical springs; antifriction bearings; belt and chain drives; couplings; wire ropes; geometry of cams and gears.

Either

T174. Analytical Chemistry. (1–1–3)

Pre-requisite subject: Chemistry IIA or Chemistry IIC—Inorganic and Physical or Chemistry IIA—Inorganic and Physical, or General Industrial Chemistry C.

Methods of analysis—polarography, potentiometry, conductimetric analysis, electrodeposition, emission spectroscopy, colorimetry, absorptiometry, spectrophotometry, radio-activity as an analytical tool; ion exchange, chromatography, extraction analysis, thermal analysis, titrimetric and gravimetric procedures using novel reagents or techniques, and other selected topics.

Text-book:

Willard, H. H., and others, *Instrumental methods of analysis,* 4th edition (Van Nostrand).

Or

TI84. Process Control (T).

For syllabus see Subject Index.

TI04. Process Technology II. (2–0–6)

Pre-requisite subjects: Process Technology I, Organic Chemistry IIA and either Applied Physical Chemistry and Mathematics I (Engineering) or General Mathematics and Chemistry IIA.

Lectures: Chemical process principles including mass and energy balances, thermo-dynamics, phase and reaction equilibria, reaction kinetics, process dynamics and control, and application in selected inorganic and organic unit processes. Bench scale projects.

Seminars: Presentation of short papers on selected topics.

Text-book:

Levenspiel, O., *Chemical reaction engineering* (Wiley).

Hougen, O. A., and others, *Chemical process principles,* vol. II, 2nd edition (Wiley).

Coughanowr, D. R., and Koppel, L. B., *Process systems: analysis and control* (McGraw-Hill).

TI94. Unit Operations. (1–3–3)

Pre-requisite subjects: Applied Physical Chemistry and Process Technology I.

Lectures: One hour a week throughout the year dealing with the theory of fluid flow; heat transfer; evaporation; distillation; absorption; extraction; humidification; drying; filtration; crystallisation.

Practical work: Three hours' work a fortnight with laboratory apparatus designed to illustrate the principles of unit operations.

Tutorials: Three hours' a fortnight on the solution of problems designed to illustrate the principles discussed in the lectures.

Text-books:

Foust, A. S., *et al., Principles of unit operations* (Wiley).

McCabe, W. L., and Smith, J. C., *Unit operations of chemical engineering* (McGraw-Hill).

TA94. Industrial Economics. (1^2–0–0)

Pre-requisite subject: Process Technology I.

Elementary business principles, and an introduction to industrial economics.

Davies, D. S., and McCarthy, M. C., *Introduction to technological economics* (Wiley).

BACHELOR OF APPLIED SCIENCE (APPLIED CHEMISTRY —COURSE B).

OLD COURSE.

FOURTH YEAR

(To be offered for the last time in 1972.)

TJ21. Refrigeration Engineering I.

Or

TJ73. Materials and Structures. (2–0–2)

Pre-requisite subject: General Physics.

Applications of Hooke's Law: complex stress (Mohr's circle); theory of elastic failure; beam theory; column formulae, torsion (including springs); strain energy theory; fatigue stress; velocity diagrams and application of instantaneous centre; acceleration diagrams; geared systems; gear geometry; flywheels; governors; friction drives; clutch.

Or

TI84. Process Control (T).

TI04. Process Technology II.

TI94. Unit Operations.

TA94. Industrial Economics.

For syllabuses see Subject Index.

TI14. Industrial Microbiology II. (2–0–6)

Pre-requisite subject: Industrial Microbiology I.

The course consists of at least two hours of lectures or seminars and six hours of practical work a week throughout the year.

More advanced study of the physiology and metabolism of micro-organisms including bacteriophage; variation and adaptation in micro-organisms and elementary microbial genetics; microbiological assay. The composition and microbiology of common foodstuffs; the principles of food preservation; food spoilage and its prevention. Industrial fermentations; their micro-flora and their control.

Practical work includes investigations of spoiled foods. Laboratory scale investigations of typical fermentation and other microbiological processes used in industry. Excursions to various factories. Investigations of the micro-flora of common foodstuffs; laboratory scale food-processing.

Text-books:

Prescott, S. C., and Dunn, C. C., *Industrial microbiology* (McGraw-Hill).

Salle, A. J., *Fundamental principles of bacteriology* (McGraw-Hill).

Reference books:

Underkofler, L. A. and Hickey, R. J., *Industrial fermentations* (Chemical Publishing Co.).

Rose, A. H., *Industrial microbiology* (Butterworth).

Rainbow, C., and Rose, A. H.: *Biochemistry of industrial micro-organisms* (Academic Press).

Tanner, F. W., *Microbiology of foods*

Baumgartner, J. G., and Hersom, A. C., *Canned foods.*

Cook, A. H., *Chemistry and biology of yeasts* (Academic Press).

Society of American Bacteriologists, *Bergey's manual of determinative bacteriology,* 7th edition.

BACHELOR OF APPLIED SCIENCE (PRIMARY METALLURGY).

OLD COURSE.

FOURTH YEAR

(To be offered for the last time in 1972.)

TT64. Mineral Processing. (2–1–3)

Pre-requisite subjects: Geology IA, Applied Physical Chemistry, and *either* Process Engineering I *or* Process Technology I.

An advanced course of lectures and tutorials on the theory of mineral separation processes and the application of the theory to mineral separation operations. The course includes experimental work to familiarise the student with laboratory techniques for examining and testing ores and designing separation processes. The course includes the use of digital computing techniques in the solution of problems.

Text-books:

Gaudin, A. M., *Flotation,* 2nd edition (McGraw-Hill).

Klassen, V. I., and Mokrousov, V. A., *An introduction to the theory of flotation* (Butterworth).

TT44. Extractive Metallurgy I. (2–1–3)

Pre-requisite subjects: Process Technology I and Applied Physical Chemistry.

Lectures: Two hours a week throughout the year dealing with the unit processes of pyrometallurgy (drying, calcining, roasting, sintering and agglomeration, smelting, converting and refining), hydrometallurgy (leaching, separation and precipitation), and electrometallurgy. Attention is given to plant operation and performance although the treatment is based essentially on physico-chemical principles.

Practical work: Three hours a week throughout the year of quantitative laboratory (bench scale) work designed to illustrate the principles of unit processes in extractive metallurgy.

Text-books:

Darken, L. S., and Gurry, R. W., *Physical chemistry of metals* (McGraw-Hill).

Bodsworth, C., *Physical chemistry of iron and steel manufacture* (Longmans-Green).

TI84. Process Control (T).

TA94. Industrial Economics.

Either

TI94. Unit Operations.

For syllabuses see Subject Index.

Or

TN02. Mineral Engineering I. (2–0–1)

A general study of the field of mineral engineering referred to metallic and non-metallic deposits. The theory of drilling, rock mechanics, ground support, fragmentation of rock and the design of underground and open cast mining methods. The principles of exploration, development, production and treatment of ores and minerals. The study of environmental factors, economics and legislation in the mineral industry.

Text-book:

Lewis, R. S., and Clark, G. B., *Elements of mining* (Wiley).

and

TC73. Hydraulics (T).

For syllabus see Subject Index.

TT84. Primary Metallurgy Projects. (0–0–7)

Pre-requisite or concurrent subjects: Mineral Processing, Extractive Metallurgy I.

A series of projects each of which involves a short literature survey, a programme of experiments and a report on selected topics in the fields of Mineral Processing and Extractive Metallurgy.

BACHELOR OF APPLIED SCIENCE (SECONDARY METALLURGY).

OLD COURSE.

FOURTH YEAR

(To be offered for the last time in 1972.)

TT34. Physical Metallurgy II. (2–1–0)

Pre-requisite subjects: Applied Physical Chemistry, Physics B (Engineering), Physical Metallurgy I.

Electron theory of metals and alloys; quantum mechanics, electrons in periodic field, Brillouin zones, density of states, energy bands and energy levels; electrical, magnetic, thermal and mechanical properties of metals and alloys. Dislocation theory; edge and screw dislocations, dislocation energy, dislocation motion (slip and climb), plastic deformation, dislocation mobility and multiplication, dislocation interaction. Topics of metallurgical interest, reviewed in the light of recent scientific and technological advancements.

Text-books:

Burke, J., *The kinetics of plane transformations in metals* (Pergamon).

Bodsworth, C., and Appleton, A. S. *Problems in applied thermodynamics* (Longmans Green).

Honeycombe, R. W. K., *The plastic deformation of metals* (Arnold).

TT74. Metal Fabrication.

TT94. Foundry Practice.

TA94. Industrial Economics.

For syllabuses see Subject Index.

TT54. Metallurgical Thermodynamics and Kinetics. (2–1–0)

Pre-requisite subjects: Applied Physical Chemistry and Physical Metallurgy I.

Two lectures and one tutorial period a week concerned with the application of classical and statistical thermodynamics to systems of metallurgical interest and the analysis of solid state reactions in terms of absolute reaction rate theory and its developments.

Text-books:

Burke, J., *The kinetics of phase transformations in metals* (Pergamon).

Bodsworth, C., and Appleton, A. S., *Problems in applied thermodynamics* (Longmans-Green).

TT24. Physical Metallurgy Projects. (0–0–17)

Pre-requisite or concurrent subjects: Physical Metallurgy II or IIA.

Seventeen hours a week for three terms devoted to a series of experimental projects in physical metallurgy designed to instruct in experimental techniques and in the collection, interpretation and presentation of data in the form of concise reports.

BACHELOR OF APPLIED SCIENCE (MINERAL ENGINEERING).

OLD COURSE.

FOURTH YEAR

(To be offered for the last time in 1972.)

TV94. Civil Engineering B (Min.). (3–0–3)

Pre-requisite subjects: Surveying I (T), Applied Mathematics (T), Hydraulics (T), Mathematics I (Engineering) and Structures I (T).

The course comprises four hours of lectures and three hours of practical work a week throughout the year.

Lectures: Accommodation requirements; surface drainage, soil properties and tests; earth-works and earth-moving equipment; pavement design; plant and methods of general pavement construction and bituminous work; road surfaces; bases of soil; stabilized soil; gravel and stone pavements; bitumen, gravel-bitumen and bituminous macadam surfaces; cement concrete pavements; road design and practice; traffic engineering.

Sources of water supply; storage; design and construction of dams other than concrete and masonry; outlet and distribution works for water supply; examination and treatment of water and water supplies; population forecasts; systems of sewerage; sewer reticulation; hydrogen sulphide problems; sewage treatment and disposal.

Physical properties of soils, design and construction of foundations, earth retaining structures, silos, stability of slopes, earth dams, soil exploration and classification.

Requirements of concrete materials; design of mixes; physical properties of concrete.

Practical work: Project on water supply and/or sewage. Laboratory work covering classification and testing of soils, concrete and road paving materials. Excursions to industrial plants and water and sewage treatment plant.

Text-books:

Terzaghi, K., and Peck, R. B., *Soil mechanics in engineering practice* (Wiley, 1948).

Hardenbergh, W. A., and Rodie, E. R., *Water supply and waste disposal* (International Text-book Co.).

TD83. Methods of Construction and Management.

TE83. Electrical Engineering IIA (T).

For syllabuses see Subject Index.

TN04. Mineral Engineering II. (3–0–3)

This course consisting of lectures, practical work and exercises, will be advanced treatment of the subject matter dealt with in Mineral Engineering I, and will also cover the development and exploitation of oil and gas fields.

It will include: the study of rock mechanics and its relation to controlled breaking, subsidence and the support of mine openings and surface excavations; the design of structures applicable to mining; the theory of air flow and heat transfer in mine openings; the application of hydraulic principles to mining operations; the study of mine planning and design, and the application of systems analysis and control; mine economics.

Students will be required to submit a satisfactory report on an approved subject within the field of Mining Engineering.

Text-books:

Isaacson, E. de Q., *Rock pressure in mines* (Mining Publications).

Woodruff, S., *Methods of working coal and metal mines*, vols. I, II and III (Pergamon).

Hartman, H. L., *Mine ventilation and air conditioning* (Ronald Press).

TV14. Structures IIA (T). (1–0–2)

Pre-requisite subject: Structures IA (T).

Pre-requisite or concurrent subject: Civil Engineering A (Min.).

A design project in constructional materials such as steel, concrete or timber. See syllabus for Structures II (T).

For text-books see syllabus for Structures II (T).

TN94. Mineral Exploration. (2–0–3)

Magnetic, electrical, induced polarisation, electromagnetic, radio-active prospecting. Airborne techniques, geophysical well logging. The causes of the geophysical properties of rocks. The measurement and interpretation of geophysical data. Examples and case histories in geophysics.

Text-books:

Parasnis, D. C., *Principles of applied geophysics.*

Griffiths, D. H., and King, R. F., *Applied geophysics for engineers and geologists* (Menthen Monographs).

BACHELOR OF APPLIED SCIENCE (DATA PROCESSING).

OLD COURSE.

FOURTH YEAR

(To be offered for the last time in 1972.)

TM84. Numerical Mathematics II. (3–1–0)

Pre-requisite subjects: Statistics; and Numerical Mathematics I.

The course consists of three lectures and one tutorial a week on the following topics:

Numerical integration, numerical solution of differential equations, relaxation methods, smoothing of data, harmonic analysis, approximations, error analysis, least squares methods, Monte Carlo techniques.

Practical computing and programming of programs in numerical mathematics.

Text-books:

To be announced later.

TM64. Theory of Systems (T). (2–2–0)

This subject may be taken only in the fourth year of the course and consists of two lectures and two tutorials a week on the following topics:

Analysis and description of systems, flow charting, decision tables, matrix analysis of data flow, data processing system design, O and M techniques, file structures and processing, error detection and correction techniques, introduction to information theory, automatic control, data acquisition and display, communications, E.D.P. system equipment, development and implementation of data processing systems, control and costing of systems, and operation of E.D.P. systems.

Text-books:

To be announced later.

TM74. Operations Research. (3–1–0)

This subject assumes a knowledge of sections 1, 2 and 4 of Mathematics IIA, and a familiarity with elementary probability concepts and computer programming.

Queueing theory—steady state results. Simulation. Markov chains. Inventory control. Linear programming; the simplex method, duality, parametric programming, transportation and assignment problems. Graph notation. Network flow. Critical path methods. Dynamic programming. Game theory.

Text-books:

Hillier, F. S., and Lieberman, G. J., *Introduction to operations research* (Holden Day).

Moder, J. J., and Phillips, C. R., *Project management with C.P.M. and PERT* (Reinhold).

Garvin, W. W., *Introduction to linear programming* (McGraw-Hill).

TU94. Supervision—Human Relations.

For syllabus see Subject Index.

TM94. Second Project.

Students should consult the Head of the School of Mathematics, S.A.I.T.

HONOURS COURSES IN APPLIED SCIENCE.

NH89. Applied Chemistry for the Honours degree of B.App.Sc.

NH79. Primary Metallurgy for the Honours degree of B.App.Sc.

NH69. Secondary Metallurgy for the Honours degree of B.App.Sc.

Candidates may choose one of Applied Chemistry, Primary Metallurgy, and Secondary Metallurgy as a principal subject. The course will consist of lectures, seminars and courses of reading in advanced aspects of the principal subject and in such other subjects as the Head of the Department may deem necessary. Each candidate will be required to give all the time not required for lectures to research and design projects. Candidates may be required to satisfy the examiners that they have a reading knowledge of French and German.

BACHELOR OF TECHNOLOGY (BUILDING TECHNOLOGY).

NEW COURSE.

FIRST YEAR

TM91. Mathematics IB. (3–2–0)

A knowledge of Mathematics I at Matriculation standard is assumed.

A course of three hours per week lectures and two hours per week tutorial throughout the year.

Set notation with applications. Elementary functions of the real variable. Differential calculus including partial differentiation and differentials. Integral calculus with applications. Elementary differential equations. Sequences and Series. Curve sketching and curve fitting. Logic and propositional calculus. Introduction to linear programming. Determinants and matrices. Difference calculus. Probability and statistics.

Text-books:

Bruckheimer, M., and others, *Mathematics for technology—a new approach* (Chatto and Windus).

Paradine, C. G., and Rivett, B. H. P., *Statistical methods for technologists* (English Universities Press).

Castle, F., *Five-figure logarithmic and other tables* (Macmillan).

TP91. Applied Physics IR. (2–1–2)

Properties of Matter: Harmonic motion. Elastic moduli, plasticity. Surface tension, capillary, water repellents, detergents.

Heat: Temperature measurement and control. Expansion, calorimetry. Specific heat. Kinetic theory and elements of thermodynamics. Vapours, hygrometry, equation of state. Heat transfer.

Optics: Light as a wave motion. Lens systems. Polarized light. Photometry. Colour.

Acoustics: Sound waves in gases and solids. Ultrasonics. The ear. Sound sources and receivers. Reverberation. Sound insulation.

Magnetism and Electricity: Kirchoff's laws, D.C. measurements, E.M. induction, Magnetic properties of matter. Inductance, capacitance, A.C. theory. Coupling. Filters, integrating and differentiating circuits. Valves, semiconductors and their uses. Transducers. X- and gamma rays.

TH81. Engineering Chemistry and Materials. (2–0–3)

Two hours lectures and three hours practical throughout the year.

Structural chemistry; physical and organic chemistry as applied to topics of industrial significance. The properties and principles underlying the fabrication treatment, testing, and use of metallic and non-metallic materials in the engineering, electronic and construction industries.

Laboratory work to illustrate the subject matter of the lectures.

Text-book:

Munro, A. L., *Chemistry in engineering* (Prentice-Hall).

Wulff, J. (ed.), *The structure and properties of materials*, vols. I, III and IV (Wiley).

TB21. Tectonics I. (3–1–6)

Draughting tools and techniques. Plant Geometry, Solid Geometry; Projections; Perspective Drawing; Grapic expression, object drawing; sketching; lettering.

Basic Building Elements in relation to single and two storey buildings. Walls; floors; roofs; doors; windows; fireplaces; working drawings.

Theory of Design—Lectures on Elements and Principles of Visual composition in 2 and 3 dimensions. Visual properties of materials. Exercises in the application of Basic Principles to Architectural, Interior, and Industrial Design.

The use of scales, figured dimensions, plans, sections, elevations and detailed drawings in relation to Bills of Quantities.

Systems of taking off and billing quantities.

Practical exercises linked with Constructional Projects.

Lectures and exercises on the work and inter-dependence of the various professions and trades involved in building; the architect, the builder, the quantity surveyor, the interior designer, the town planner, the landscape architect, the structural engineer, the building scientist, the artist, the sociologist.

Text-books:

Australia. Commonwealth Experimental Building Station, *Notes on the science of building* (Commonwealth Department of Works).

De Sausmarez, *Basic design: the elements of visual form* (Studio Vista).

A General Studies Elective.

TG91. Social and Technological History. (0–2–0)

The idea of progress, the Utopias; the importance of technology in history; Greek society and science; Islamic times and the Middle Ages; navigation and discovery; the slave trade; the rise of the Americas; institutions of Science; agrarian and industrial revolution; changing patterns of life; the political implications of technology; new sources of power; people, automation and industry.

TG81. Literature and Society. (0–2–0)

A thematic approach to certain aspects of the human situation as depicted in the literature of modern western societies. The course is designed to encourage discussion of some important social issues of the 20th century and of the ways in which different authors have thought about them, and to throw light on the role of the creative writer in a rapidly changing world.

Students will be required to select, each term, one from a number of suggested themes, which include:

War, society and the individual.

Authority and the individual.

The search for personal identity and a workable system of values.

Conflicts in modern societies.

TG71. Social and Technological History (C.E.). (0–2–0)

The influence which technological progress has exerted upon society and vice versa. The changes which have occurred in Engineering Technology from the time of stone-age man to the modern era; special emphasis on developments in the field of Civil Engineering; the background of social, economic and political events.

Text-books:

Finch, J. K., *The story of engineering* (Doubleday Anchor).

Kirby, and others, *Engineering in history* (McGraw-Hill).

TG61. Social and Technological History (S). (0–2–0)

The history of man's attempts to represent his world by means of surveying, astronomy and cartography is related to the prevailing social order and its philosophy.

Text-book:

Koestler, A., *The sleepwalkers* (Penguin).

TG51. Science and Modern Society (0–2–0)

Study of a selected group of scientific theories that have revolutionized science, technology and social institutions in modern times, through case studies that illustrate the process of discovery and the nature of the theories; scientific methods of enquiry and validation; the formation, role and responsibilities of scientists and scientific institutions; contemporary social changes due to science and technology; some scientific ideas of seminal value in other disciplines.

TG41. German Life and Literature. (0–2–0)

A study of German life and culture embracing German achievement especially in the fields of music, literature and art. The language may be taught at an elementary level. At least half of the course will be devoted to a study of modern German literature.

TG31. Political Science. (0–2–0)

Introductory: scope of politics, tentative definitions, preliminary identification of institutions, processes and persons involved. Politics at state level: electoral system, parties, evolution of parliamentary system. Sub-structure: voters, pressure groups, mass media, chief national parties. Federal level: federation, the constitution, parliament and the executive, commonwealth state relationships.

TG21. International Affairs—Asia. (0–2–0)

An introduction to Asian history and current affairs. Asian civilizations and the impact of the West; the emergence of new nations; industrialization of Japan; the attainment of Communist power in China; man, India since independence; international relationships.

TG92. Music. (0–2–0)

Pre C. 17th music; Baroque Period: contrapuntal forms and styles of the major composers of the period; Classical Period: the development and growth of sonata, symphony, concerts, with reference to Haydn, Mozart, Beethoven and Schubert; Romantic and Impressionist Period: programme music, musical drama; Debussy, Ravel; C. 20th Music: trends and concepts of modern composers.

TG82. Philosophy. (0–2–0)

The course consists of two parts. In the first half of the year the topics will include:

(1) The distinction between necessary and contingent truths, between scepticism and certainty, and between the broad concepts of empiricism and rationalism;

(2) the elements and decision procedures of propositional calculus.

In the second half of the year the student will select one of two options:

Option 1: The application of (1) and (2) above to such fundamental concepts of ethics and metaphysics as, the meaning of "good" and "right", ethical naturalism and non-naturalism, the existence of God.

Option 2: The nature of scientific laws, causal connections, discovery.

TG72. The Development of Economic Society. (0–2–0)

Pre-market economy; emergence of a market economy; commercial revolution; competition; supply and demand forces; the consumer; removal of market rigidities; laissez-faire; pace of technical change; mass market for consumer products; the entrepreneur/engineer inventor; rise of factory as centre of social and economic life; role of government; the automated state: management economy; creation of wants; the problems of affluence; negative taxes; monopoly power; socialism; the paramount position of production; planned obsolescence; inflation; problem of leisure; the Soviet solution; the capitalist solution; the cybernetic revolution; the international corporation.

Text-books:

Heilbroner, R. L., *The making of economic society*, 2nd edition (Prentice-Hall).

Gill, R. T., *Economic development past and present*, 2nd edition (Prentice-Hall).

TG62. Psychology and Human Organization. (0–2–0)

A course aimed to familiarise the student with the methods, subject matter, and findings of social psychology, to look into literature in the field, and to raise questions about his reading. Detailed examination of a few subjects within social psychology, which are particularly relevant to the problems of industrial society, with class discussions and reading on such subjects as motivation, perception, learning, personality, and experimental methods in such areas as behaviour change, leadership and mass media.

SECOND YEAR

TB02. Building Science IR. (2–0–3)

Pre-requisite subjects Mathematics IB, Applied Physics IR, Engineering Chemistry and Materials, Tectonics I, General Studies Elective.

Materials: Steel and concrete as building materials.

Environmental Physics: An introduction to the problems of sun, heat, light and sound in buildings. Review of heat, light, sound and solar effects.

TB12. Design of Structures IR. (1–1–2)

Statics, strength of materials. Theory of beams, frames, columns, in statically determinate cases. Use of tables, codes and handbooks in element design.

TB22. Tectonics IIB. (2–0–7)

Building Construction: Multi-storey buildings, their elements, erection and construction. Site visits and reports.

Quantity Surveying: Standard methods of taking off and billing more advanced building elements. The bill, re-measurement and settlement.

TC62. Surveying IB. (1–0–3)

The course consists of one hour lecture a week and three hours practical work a week throughout the year.

Lectures: The construction, adjustment and use of instruments, including the theodolite; chain surveys; levelling; traverses; measurement in setting out of earthwork; curve ranging; computation of traverses and levels; areas and volumes with straight and irregular boundaries; stadia measurements; plotting and finishing plans; sections and tracings, plane table. Errors and their effects in chaining, levelling and instrument use.

Practical Work: Three hours a week throughout the year; chainage, detail survey, levelling, stadia, compass survey, plane tabling, setting out works, adjustment of instruments, calculations and plans connected with above.

Text-books:

Bannister, A., and Raymond, S., *Surveying* (Pitman).
Clendinning, J., *Principles and use of survey instruments* (Blackie).
Clendinning, J., *Principles of surveying* (Blackie).

TB92. Building Law. (2–1–0)

History and principles of law. Common precedent and statute law. Industrial and contract law. Local authority law. Building regulations.

A General Studies Elective.

For syllabuses see page 926.

THIRD YEAR

TB03. Building Science IIR. (2–0–3)

Pre-requisite subjects: Building Science IR, Design of Structures IR, Tectonics IIA or Tectonics IIB.

Materials: Timber and metallic alloys as building materials.

Environmental Physics: Further studies in sun, heat, light and sound. Design problems.

Services: Heating, cooling, ventilation. Intra-building transportation. Gas, electrical, water and sanitary services.

TB13. Design of Structures IIR. (1–1–2)

Statically indeterminate structures. Plastic behaviour. Soil mechanics. Arches. Design of elements and simple statically indeterminate structures in steel, concrete (plain and pre-stressed), timber.

TB23. Tectonics IIIB. (2–0–5)

Building Construction: Industrialised building components, erection and construction of large buildings. Heavy construction. Site reports, visits and projects.

Quantity Surveying: (Option) Quantity surveying methods of more advanced buildings and structures. Cost-planning. Professional quantity surveying.

Building Administration: Site and head office administration.

Text-books:

Australian standard method of measurement of building works (Institute of Quantity Surveyors Aust.).
Great Britain Building Research Board, *Principles of modern building*, Vols. 1 and 2 (H.M.S.O.).

TA93. Building Accountancy. (2–2–0)

The basic accounting records and recording techniques. Estimating and costing in the building industry. Analysis, interpretation and reporting to management on the information drawn from accounting records. Managerial and legal requirements with respect to accounting records and reports. The significance of and limitations inherent in accounting data.

Internal and external sources of finance. Sources and application of funds; methods of finance; financial controls; budgets, estimates, actual results in financial terms.

Text-books:

Harrison, and others, *Accounting—a direct approach* (Cheshire).

TM83. Contract Programming (Computer Programming). (2–1–2)

Fortran computer language. Network analyses. Simulation techniques. Critical path methods. Cost, time and resource variable.

A General Studies Elective. (0–2–0)

For syllabuses see page 926.

BACHELOR OF TECHNOLOGY (CIVIL ENGINEERING).

NEW COURSE.

FIRST YEAR

TM01. Mathematics IA. (3–2–0)

A knowledge of Mathematics I and II at Matriculation is assumed. Set notation, elementary algebra of sets, Boolean algebra, complex numbers. Functions of a real variable. Calculus and applications. Vector algebra. Introduction to partial differentiation. Ordinary differential equations. Infinite series.

Text-book:

Purcell, E. J., *Calculus with analytical geometry* (Appleton, Century and Crofts).

TP01. Applied Physics I. (3–1–2)

This course provides a theoretical and experimental basis for further studies in Technology and Applied Science.

Units and dimensions, vector analysis.

Conservation laws, dynamics, relativity, vibrations, gravitation, geophysics, elasticity, kinetic theory, high pressures, vacuum technology, rheology, surface physics.

Wave properties, acoustics, ultrasonics, seismic waves, optics, polarization.

Electrostatics, current electricity, magnetic fields, electromagnetic interactions, thermo-electricity, A.C. theory, modern magnetism.

Conduction in gases, plasmas, quantum theory, atomic and nuclear theory, X-rays, spectroscopy, radioactive isotopes, health physics, electron emission from solids, vacuum and solid state devices.

Temperature measurement, equations of state, thermodynamics, heat transfer, low and high temperatures.

Text-books:

Yarwood, J., and Close, K., *Introductory atomic physics* (Longmans).
Resnick, R., and Halliday, D., *Physics*, parts I and II (Wiley).

TH81. Engineering Chemistry and Materials.

For syllabus see Subject Index.

TK61. Engineering Mechanics IA. (2–1–1[1])

Kinematics, Newton's Laws of Motion. Work, energy, power. Momentum and impulse. Conversative systems, friction. Equations of energy and angular momentum for motion of a rigid body about a fixed axis. Motion of the mass centre of a rigid body. Theorems of parallel and perpendicular axes.

Statics, conditions of equilibrium, parallel forces, couples and moments. Reduction of a system of forces. Centre of mass. Bending moment and shear force, light frameworks.

Elements of hydrostatics.

Text-book:

Beer, F. P., and Johnston, E. R., *Vector mechanics for engineers* (*Statics and dynamics*) (McGraw-Hill).

TC61. Civil Drawing. (0–0–3)

The course consists of three hours of practical work a week. Use of slide rule; preparation of charts, graphs, and nomorgrams; third and first angle projection; auxiliary projection; sectioning and dimensioning; interpenetration of solids; development of surfaces. Preparation of civil drawings, site plans; sections; mass haul diagrams; sounding and grading diagrams.

Preparation of simple mechanical and structural assemblies; pipe work layouts; reinforced concrete drawings.

Sketching associated with civil engineering projects.

Text-books:

AS. CZI, *Australian standard engineering drawing practice.*

Slaby, S. M., *Engineering descriptive geometry* (Barnes and Noble).

TK71. Basic Engineering Techniques (Part Course). (1–0–3[1])

An introductory course presenting the common practices adopted in engineering manufacture, and in the laboratory.

One hour per week lecture. Three hours per week practical for one term.

Lecture Topics:

Safety principles; foundry work; hand tools; cutting tools; machine tools; welding and associated processes; joining methods; and finishing processes.

Practical Work:

Elementary machining exercises, demonstrations of lecture material on: Turning, milling, grinding, shaping, welding, flame cutting, soldering, moulding, casting, glass blowing, electrical wiring, safety precautions, cleaning methods, vacuum practice, vacuum deposition.

A General Studies Elective.

For syllabuses see page 926.

SECOND YEAR

Syllabuses for Second Year Mathematics Subjects.

The subject matter is divided into units: each unit consists of one hour lecture and one hour tutorial a week for 15 weeks. Any six approved units constitute the subject TM02, Mathematics IIA, four approved units the subject TM12, Mathematics IIB, and two approved units the subject TM13, Mathematics IIC.

The following units have been approved for 1971:

COURSE AND SUBJECT	APPROVED UNITS
Applied Chemistry—Mathematics IIB	1, 2, 5, 6
Applied Physics—Mathematics IIA	1, 2, 3, 4, 5, 6
Civil Engineering—Mathematics IIA	1, 2, 3, 4, 5, 6
Data Processing—Mathematics IIA	1a, 2, 3, 4, 7, 12
Electrical Engineering—Mathematics IIB	1, 2, 3, 4
Electrical Engineering—Mathematics IIC	5, 6
Electronic Engineering—Mathematics IIB	1, 2, 3, 4
Electronic Engineering—Mathematics IIC	5, 6
Mechanical Engineering—Mathematics IIB	1, 2, 5, 6
Mechanical Engineering—Mathematics IIC	An approved choice of two units
Mineral Engineering—Mathematics IIB	1, 2, 5, 6
Mineral Engineering—Mathematics IIC	An approved choice of two units
Primary Metallurgy—Mathematics IIB	1, 2, 5, 6
Secondary Metallurgy—Mathematics IIB	1, 2, 5, 6
Surveying—Mathematics IIA	1, 2, 3, 4, 5, 6

UNIT 1.

Matrices and Linear Algebra: Basic concepts and properties, special forms, transformations, systems of linear equations, eigenvalues and eigenvectors, Markov chains.

UNIT 1a.

Matrices: Basic concepts and properties; applications. Partitioning. Elementary row and column operations; mappings. Inverse by adjoint method and row transformations. Simultaneous linear equations; row echelon form. Vector spaces, linear dependence and independence, basis, dimensions, rank applications to the existence of solutions of sets of equations. Change of basis. Eigenvalues and eigenvectors.

UNIT 2.

Ordinary Differential Equations: Laplace Transforms, elementary numerical. Partial Differential Equations. Basic solutions, separation of variables method, use of Fourier Series.

UNIT 3.

Vector Calculus: Differentiation of vectors, div. grad. and curl; integration and integral theorems; introduction to tensor notation.

UNIT 4.

Complex Variable Analysis: Functions of a complex variable; differentiation, integration, series, conformal mapping; applications.

UNIT 5.

Fortran Programming: Input and output statements, arithmetic statements, transfer of control statements, standard routines, subroutines.

UNIT 6.

Statistics: Probability; representation of data, measures of location and dispersion; Normal, Binomial and Poisson Distribution; quality control, significance testing, sampling, linear regression.

UNIT 7.

Gamma, Beta, and Error Functions: Orthogonal functions including Legendre polynomials; Series solutions of ordinary differential equations including Bessel functions. Asymptotic expansions.

UNIT 8.

Elementary Numerical Mathematics: Solution of equations; finite difference methods; integration; approximation; solution of differential equations.

UNIT 9.

Statics of Idealflexible Cables, Beams and Columns: Dynamics of systems of particles, plane motion of rigid bodies, 3D rotation of rigid body about a fixed point. Vibrations. Introduction to Lagrangian methods.

UNIT 12.

Calculus of Finite Differences, Antidifferences: Difference equations and recurrence relations. First order equations, linear difference equations with constant coefficients, special second order difference equations. Solution of difference equations, differential-difference equations and recurrence relations by Laplace transforms; generating functions. Applications.

TC12. Civil Engineering IIA (T). (2–2–3)

Pre-requisite or concurrent subject: Mathematics IIA.

The course consists of three hours of lectures and five hours of practical work and tutorials a week.

Simple connections, theories of failure, tests on the structural behaviour of components, statically determinate beams, and special problems. Columns, design of timber and steel members, basic indeterminate structures including intersecting beams, torsion, dynamic loads, forces in space.

Curved beams, thick and thin cylinders, elementary concept of plasticity, introduction to influence lines and moment distribution.

Reinforced and prestressed concrete, beams, footings and retaining walls, slabs, introduction to ultimate design, design of simple prestressed members.

Practical work in the laboratory and drawing office in conjunction with the above topics.

Text-books:

Michalos, J., and Wilson, E. N., *Structural mechanics and analysis* (Collier-Macmillan).

Popov, E. P., *Introduction to mechanics of solids* (Prentice-Hall).

TC22. Civil Engineering IIB (T). (3–1–3²)

Properties of materials including steel, concrete, timber, aluminium and its alloys.

Properties of cement and concrete materials, design of mixes, quality control, elastic properties and concrete.

Physical properties of soils and their measurements. Applications to simple retaining wall and foundation problems. Site exploration and soil sampling. Field texting. Classification.

A study of geology from the engineering point of view, with applications to engineering projects.

Properties of fluids; fluid statics; pressure measurement. Ideal fluid flow—continuity, Eulers' equation, Bernoulli's equation; rotational and irrotational motion.

Steady, real fluid flow—laminar and turbulent; hydraulic and energy lines; flow measurement; momentum; impulse turbines and rotodynamic machinery.

Potential flow, the flow net; dimensionless groups and dimensional analysis; hydrology.

Steady flow in closed conduits—uniform and non-uniform, the Moody chart; pipe networks; pipes with reservoirs.

Steady flow in open channels—uniform and non-uniform.

Text-book:

Daugherty, R. L., and Franzini, J. B., *Fluid mechanics with engineering applications*, 6th edition (McGraw-Hill).

TC01. Surveying I. (2–1–3²)

A course consisting of two hours of lectures, one hour of tutorial and three hours of practical work throughout the academic year.

The construction, adjustment and use of instruments, including levels, level compensation, theodolite, double image, subtense and diagrammatic methods of tacheometry. Chain surveys, levelling, traverses; measurement and setting out of earthworks; curve ranging; computation of traverses and levels; areas and volumes with straight and irregular boundaries; stadia measurements; errors and their effects in chaining. levelling; traversing and instrument use.

Underground and surface surveys connected with mining type operations; equipment, basic definitions; setting out and control of tunnels; plans; projections and models in relation to mining surveys; exploration surveys, shaft plumbing, bore hole data, various instruments used in mine surveying.

Practical Work:

Chaining, traversing, detail survey, levelling, tacheometry, compass survey, plane tabling, setting out works, adjustment of instruments; calculations and plans connected with the above.

Examination will consist of written papers, a practical examination in the use and adjustment of instruments, and the satisfactory completion of the practical programme.

Text-books:

Staley, W. W., *Introduction to mine surveying* (Stanford U.P.).
Clendinning, J., *Principles and use of survey instruments* (Blackie).
Clendinning, J., *Principles of surveying* (Blackie).
Chambers, *Shorter six figure mathematical tables.*
Bannister, A., and Raymond, S., *Surveying* (Pitman).

TE72. Electrical Engineering SC (T). (1–0–2²)

D.C. circuit analysis with applications to measurements and control circuits and including simple non-linear elements. Magnetic properties of materials and magnetic circuit analysis with applications to relays and related electromagnetic devices. A.C. circuit response, power factor correction and an introduction to three-phase systems and transformers. Transient response of linear circuits and the effects of transients in simple switching and control circuits. Characteristics, starting and control of d.c. and a.c. machines. Transducers and associated circuits. Analogue methods and analogue computation.

Text-book:

Fitzgerald, A. E., and others, *Basic electrical engineering* (McGraw-Hill, International Student Edition).

A General Studies Elective.

For syllabuses see page 926.

THIRD YEAR

TC13. Civil Engineering IIIA (T). (3–3¹–2)

Influence lines for determinate structures, deflection of structures, graphical methods. Moment distribution in rigid frames, column analogy.

Prestressed and reinforced concrete, ultimate design, composite construction, plastic analysis of steel structures. Model analysis of structures. Laboratory classes in conjunction with the above.

Text-book:

Michalos, J., and Wilson, E. R., *Structural mechanics and analysis* (Collier-Macmillan).

TC23. Civil Engineering IIIB (T). (4–0–3)

Pre-requisite subjects: Civil Engineering IIA and B (T), Surveying I.

This course consists of four hours of lecture and three hours of practical work a week.

Traffic data, geometric design of highways and railways, pavement materials and types, design of pavements, earthworks and drainage.

Transportation engineering; airports, highways, railways.

Plastic states in soil and applications to retaining wall and foundation problems.

Consolidation theory. Effective stress theories and stress paths. Elastic stress distribution. Settlement computations. Slopes. Earth dams, including seepage problems. Construction of foundations—cofferdams and caissons.

Unsteady flow in closed conduits; pipelines with pumps and turbines; water hammer; surge tank analysis.

Open channel flow—wave motion; energy dissipators for hydraulic structures; cavitation.

Boundary layer theory; fluid forces on a body in a free stream; flow through porous media; sediment transport.

Laws of similarity for hydraulic and aerodynamic models.

Hydrology; water resources planning.

Water supply, sources, storage, treatment and distribution, sewerage systems, treatment and disposal.

Text-books:

Henderson, F. M., *Open channel flow* (Macmillan).

Linsley, R. K., and Franzini, J. B., *Water resources engineering* (McGraw-Hill).

Terzaghi, K., and Peck, R. B., *Soil mechanics in engineering practice* (Wiley).

Hardenbergh, W. A., and Rodie, E. R., *Water supply and waste disposal* (International Textbook Co.).

TC33. Civil Engineering IIIC (T). (3–0–3²)

Pre-requisite or concurrent subjects: Civil Engineering IIIA and B (T).

This course consists of 3 hours of lectures a week along with seminars and projects.

Professional practice, report-writing, public speaking; a short course on the elements of design (aesthetics).

A study of management aspects of construction including: planning of construction; principles of organisation, contacts, personnel management, estimating, control costing and financial aspects.

A study of methods employed in the basic process of civil engineering construction as applied to typical construction projects.

Seminars and projects—students will be expected to prepare a written paper with a verbal summary thereof, based on a reading and/or laboratory project.

Text-books:

Turner, B. T., *Management training for engineers* (Business books).

Chironis, N. P., *Management guide for engineers and technical administrators* (McGraw-Hill).

TC93. Structural Design. (0–0–4)

Pre-requisite or concurrent subject: Civil Engineering IIIA (T).

Design projects covering timber, concrete and steel construction.

TC53. Engineering Computations. (1–0–2)

Pre-requisite or concurrent subject: Civil Engineering IIIA (T).

This course consists of one hour of lecture and two hours of practical work a week.

Fitting of curves to experimental results, construction of monographs, equations of structural analysis expressed in matrix form and their solutions, applications of partial differential equations to problems in hydraulics and structures, conformal mapping used in analysis of flow-nets.

A General Studies Elective.

For syllabuses see page 926.

BACHELOR OF TECHNOLOGY (SURVEYING).

NEW COURSE.

FIRST YEAR

TM01. Mathematics IA.

TP01. Applied Physics I.

TC01. Surveying I.

For syllabuses see Subject Index.

TN12. Applied Geology I (2–1–3)

Introduction: age, structure, geochemistry of the Earth; elements of mineralogy; volcanism and igneous rocks; surface processes (geomorphology); basic soil studies sedimentation, sediments, diagenesis; fossils and time; geological structures and maps; metamorphism; mineral deposits; elements of exploration; industrial uses of rocks; geology of Australia and South Australia in outline.

Text-book:

Longwell, C. R., and others, *Physical geology* (Wiley).

Dana, J. D., *Manual of mineralogy*, 17th edition, rev. by C. S. Hurlbut (Wiley).

A General Studies Elective.

For syllabuses see page 926.

SECOND YEAR

TM02. Mathematics IIA.

For syllabus see Subject Index.

TC02. Surveying IIA. (2–3–3)

(a) Engineering surveying: Surveys for roads, railways, water supply, irrigation and drainage. Transition and vertical curves. Earthworks. Control surveys for dam deflections, earth settlement and structural deflections. Hydrographic surveys. First order levelling.

(b) Cadastral surveying: Requirements of a sound cadastre. Field procedure on both local and national systems. Problems arising from a changed co-ordinate system (cadastral, not mathematical). Minor triangulation and traversing. Control surveys. Use of air photographs in cadastral surveys. The theory of error propogation in all surveying procedures, and its application in practice.

(c) Computations connected with (a) and (b).

(d) Practical work and assignments.

Text-books:

Bannister, A., and Raymond, S., *Surveying* (Pitman).

Chambers shorter six-figure mathematical tables.

Richardus, P., *Project surveying* (North Holland).

Whittaker, E. T., and Robinson, G., *Calculus of observations* (Dover).

TC72. Surveying IIB. (4–3–3)

(a) The concept of map projections; detailed treatment of the Cassini-Soldner and transverse mercator projections: Observational procedures. Triangulation, traversing and levelling for control purposes. Barometric heighting and trigonometric levelling. Control for photogrammetric mapping at all scales. Microwave distance measurement.

(b) Astronomy. Astronomical co-ordinates and the factors influencing them; reduction of mean to apparent place. Time. Simple and precise methods for the determination of azimuth latitude and longitude. The influence of systematic and random errors on star observations and on the selection of star programmes; accuracy to be expected from observations. Influence of instrumental errors. The receiving and recording of time signals.

A programme of approximately 70 observations is to be completed for the determination of latitude, longitude and azimuth together with investigation of the results.

Students must lodge the completed practical programme together with all relevant computations, programme details and investigations of results.

Text-books:

As for Surveying IIA, together with the following:

Woolard, E. W., and Clemence, G. M., *Spherical astronomy* (Academic Press).

Roelofs, R., *Astronomy applied to land surveying* (Ahrend).

Current edition of: *Star Almanac for Land Surveyors.*

TB82. Land Use. (1–0–0)

The interactions of movement and land uses are analysed in terms of the human use and enjoyment of urban and regional situations. The programme is designed to meet the needs of practitioners in related professions and will concentrate on the effects of planning policy on land use. Exercises will be made into the analysis of existing patterns on the basis of the theories of land use determinants and current practice. The elements of urban and regional plans, including residential, industrial, wholesaling, retailing, storage and business areas, open spaces, public service facilities, institutions, traffic, transportation and parking will be analysed in terms of the form and direction of growth. Case studies will be introduced and developed as exercises.

TC92. Cartography. (0–0–4)

Use of equipment, conventional signs, preparation of plans from field notes covering hydrographical, engineering, geological, hydrological, geophysical and mining surveys. Cadastral plans. Preparation of proposal and subsequent plans, road plans, etc., including calculations. Topographical mapping: scope and requirements. Compilation of source materials. Projections and their construction. Separation techniques, process photography, printing processes.

Text-books:

Raisz, E. J., *General cartography* (McGraw-Hill).

Steers, J. A., *Introduction to the study of map projections* (Univ. of London Press).

A General Studies Elective.

For syllabuses see page 926.

TC82. Survey Camp.

For syllabus see Subject Index.

THIRD YEAR

TC03. Surveying III. (4½²–0–2½)

This subject will consist of the following:

(a) Survey Law. 45 hours of lectures.

The elements of land and property law. Principles of land registration. Development of land registration in Australia. Principles of conveyancing Statutes in the Australian States and those of South Australia. Special statutes.

(b) Land valuation. 20 hours of lectures.

Definition of value, methods and principles of valuation. City suburban and rural lands. Valuation of improvements to land. Depth tables. Terminable interests. Depreciation. Reports. Subdivisions. Business valuations and goodwill. Compensation for compulsory acquisition.

(c) Planning Law. 20 hours of lectures.

A survey of the history of the law and the courts with an analysis of the principles of law under the two western codes. Appeals, arbitration and conciliation methods. Selected legislation in Australia and overseas will be examined with specific reference to South Australia. A survey will be made of the planning law in force in all states of Australia.

(d) Land Utilization. 20 hours of lectures.

Climate in relation to primary and secondary industries. Soil types in relation to primary production. Geological associations. Distribution and identification of the indigenous and exotic timbers in South Australia. Erosion and methods of erosion control.

(e) Town Planning. 30 hours of lectures.

Design and analysis of land use in development, including examples from history, with special references to the problems of the surveyor in practice.

TC63. Geodesy. (3–3–0)

Pre-requisite subjects: Mathematics I (Engineering), Surveying II, and Astronomy.

The oblate spheroid, reconnaissance surveys, base line measurement; recording methods; adjustments, computation of triangular, trilateration and traverses, computation in plane rectangular records; map projections. Gravity, influence on levelling; Gravity Surveys—use of gravity observations for earth figure determination; optical and mechanical principles; level compensation; precise alignment—axicon principles; double image, subtense, and diagrammatic methods of tacheometry; microwave distance measurements; geodetic theodolites.

Text-books:

Bomford, G., *Geodesy* (O.U.P.).
Heiskanen, W., and Moritz, H., *Physical geodesy* (Freeman).
Heiskanen, W. A., *The earth and its gravity field* (McGraw-Hill).
Shchigolev, B. M., *Mathematical analysis of observation* (Iliffe).

TC83. Photogrammetry.

For syllabus see Subject Index.

TC43. Engineering (T). (2–1–3)

Properties of fluids; fluid statics; pressure measurement. Ideal fluid flow—continuity, Euler's equation, Bernoulli's equation; rotational and irrotational motion.

Steady, real fluid flow—laminar and turbulent; hydraulic and energy lines; flow measurement; momentum; impulse turbines and rotodynamic machinery. Potential flow, the flow net; dimensionless groups and dimensional analysis; hydrology. Steady flow in closed conduits—uniform and non-uniform, the Moody chart; pipe networks; pipes with reservoirs. Steady flow in open channels—uniform and non-uniform.

Physical properties of soils and their measurements. Applications to simple retaining wall and foundation problems. Site exploration and soil sampling. Field testing. Classification.

Text-books:

Daugherty, R. L., and Franzini, J. B., *Fluid mechanics with engineering applications* (McGraw-Hill).

Terzaghi, K., and Peck, R. B., *Soil mechanics in engineering practice* (Wiley).

A General Studies Elective.

For syllabuses see page 926.

BACHELOR OF TECHNOLOGY (ELECTRICAL ENGINEERING).

NEW COURSE.

FIRST YEAR

TM01. Mathematics IA.

TP01. Applied Physics I.

TH81. Engineering Chemistry and Materials.

For syllabuses see Subject Index.

TE91. General Electrical Engineering A. (1–1–0)

An introduction to linear lumped circuit theory: Circuit elements, network theorems, a.c. circuits, constant voltage and current sources, maximum power transfer, measuring instruments. Electro-mechanical power conversion. Vacuum tubes and transistors as circuit elements. The use of the cathode ray oscilloscope.

TK81. Basic Engineering Techniques. (1–0–3)

An introductory course presenting the common practices adopted in engineering manufacture, engineering drawing, and in the laboratory.

One hour per week lecture. Three hours per week practical/tutorial.

Lecture Topics: Safety principles; foundry work; hand tools; cutting tools; machine tools; welding and associated processes; joining methods; and finishing processes.

Practical Work: Orthographic drawing; principal and auxiliary views; sections, conventional methods; simple dimensioning; pictorial drawing. Elementary machining exercises, demonstrations of lecture material on: turning, milling, grinding, shaping, welding, flame cutting, soldering, moulding, casting, glass blowing, electrical wiring, safety precautions, cleaning methods, vacuum practice, vacuum deposition.

Text-book:

The reading of technical drawings (McCarron Bird).

A General Studies Elective.

For syllabuses see page 926.

SECOND YEAR

TM12. Mathematics IIB. (2–2–0)

See pages 931-2.

TE02. Electrical Engineering IA. (2–1–2)

Steady state analysis of A.C. circuits, dual equivalents, phasor and locus diagrams, transform methods, transients in D.C. and A.C. circuits. Pole–zero diagrams, network functions. Magnetic circuits, energy storage, self and mutual inductance, saturable reactors, transformer essentials. Three-phase circuits, electro-mechanical power conversion and D.C. machines.

TE12. Electrical Engineering IB. (2–0–2)

Devices, diodes, transistor, FET, linear integrated circuits. Amplifiers, graphical analysis, biassing techniques, temperature stabilisation. Linear equivalent circuits, h, y, Tee, hybrid pi equivalents. Audio and videa amplifier small signal analysis, gain, bandwidth distortion. Feedback in amplifiers, oscillators and digital circuits. D.C. amplifier circuits, operational amplifiers, linear IC applications. Tuned amplifiers, single, double and stagger tuning. Power amplifiers, wideband and narrowband. Power supplies, rectification, filtering, regulation, DC-DC convertors, SCR in power control. Transducers, electromechanical and photo-electric, strain gauges, magnetic tape recording.

Text-books:

Baldwin, C. T., *Fundamentals of electrical measurements* (Harrap).

Charlesworth, A. S., and Fletcher, J. R., *Systematic analogue computer programming* (Pitman).

TK92. Mechanical Design S. (1–1–3)

Introductory service course in solid mechanics, dynamics and mechanical design with some practical work in drawing office and in mechanics' laboratory.

Concepts of stress and strain, analysis of forces and stresses in frames, beams, shafts and columns; section properties. Theories of elastic and fatigue failures.

Rigid body dynamics, inertia forces and torques, impulse and inpact, work and energy; friction mechanism.

Design of simple machine members, joints and fastenings, design philosophy, design factors, design properties; catologue selection of ball bearings and vee belts. Pressure vessels, pump and pipe systems. Limits of size, standard fits, tolerances in assemblies, introduction to geometric tolerances.

Text-books:

Hall, A. S., and others, *Theory and problems of machine design* (Schaum).

McLean, W. G., and Nelson, E. W., *Engineering mechanics* (Schaum).

Nash, W. A., *Strength of materials* (Schaum).

B.S. 1916, Part 2, 1953, *Guide to selection of limits and fits.*

A.S. CZ1-1966, *Australian standard engineering drawing practice.*

TK82. Thermo-Fluid Dynamics I. (2–1–12²)

An introductory course in applied thermodynamics and fluid dynamics.

Thermodynamics: ideal gases, gas laws, internal energy, enthalpy; energy equation, first law, second law, entropy; actual gases, vapours, gas-vapour mixtures, psychrometry, engine cycles, power, efficiencies; Rankine cycle, refrigeration cycles; combustion, fuels, excess air.

Dimensional analysis: Buckingham theorem, dimensionless groups, similarity.

Heat transfer: conduction, convection, radiation; heat exchangers, log. mean temperature difference, Wilson plot.

Fluid dynamics: hydrostatics; energy equation, continuity, momentum equation; incompressible flow, types of flow, flow in pipes and fittings, open channels, drag coefficients; compressible flow, nozzles: turbomachinery.

Mass transfer: elementary introduction.

Text-books:

Van Wylen, G. J., *Thermodynamics* (Wiley).

Callendar, H. L. and G. S., *Abridged Callendar steam tables* (*Fahrenheit units*), 5th edition.

Pao, R. H. F., *Fluid mechanics* (Wiley).

Rogers, G. F. C., and Mayhew, Y. R., *Engineering thermodynamics work and heat transfer* (Longmans).

Dougherty, R. L., and Franzini, J. B., *Fluid mechanics with engineering applications*, 6th edition (McGraw-Hill).

A General Studies Elective.

For syllabuses see page 926.

THIRD YEAR

TE03. Electrical Engineering IIA. (3–0–2)

Four terminal networks, generalised constants. Transmission lines with distributed elements, equivalent T and π networks, power circle diagrams. Transformers under steady state and transient conditions, multiple windings separate and auto connected, polyphase transformation. Complex wave forms. Harmonics in three-phase systems. Symmetrical components. Synchronous machines, salient and non-salient poles, two reaction theory, locus diagrams, parallel operation. Rectification and inversion, high voltage D.C. power links. Induction machines equivalent circuit, circle diagram, slip control, multi-speed, synchronous operation. Unbalanced and single-phase supply. Commutator machines, three-phase and single-phase.

TE13. Electrical Engineering IIB. (2–1–4)

Design principles for transformers, synchronous and induction machines, and other power conversion equipment. Power supply systems, stability, operation, protection. Fault conditions and circuit breakers. Utilization of plant and application of control systems. A project will be assigned, and preliminary studies made in the first term followed by investigation, design and construction in the second term. A written report and seminar will complete the work.

TE93. Automatic Control I. (1–1–2)

Open and closed loop systems, steady state and transient response, performance requirements. Control system components. Analysis of linear system response in the time, frequency and complex frequency domains. Synthesis of systems and compensation networks.

The application of the analogue computer to control system analysis and synthesis.

Introduction to non-linear system analysis.

TM13. Mathematics IIC. (1–1^2–0)

See pages 931-2.

TL53. Applied Electronics.

For syllabus see Subject Index.

A General Studies Elective.

For syllabuses see page 926.

BACHELOR OF TECHNOLOGY (ELECTRONIC ENGINEERING).

NEW COURSE.

FIRST YEAR

TM01. Mathematics IA.

TP01. Applied Physics I.

TH81. Engineering Chemistry and Materials.

TE91. General Electrical Engineering A.

TK81. Basic Engineering Techniques.

For syllabus see Subject Index.

A General Studies Elective.

For syllabuses see page 926.

SECOND YEAR

TM12. Mathematics IIB.

For syllabus see Subject Index.

TP92. Physics IIE. (2¹1²–1–3)

A course of approximately 45 lectures with a one-hour tutorial and a three-hour laboratory session per week. It will provide an introduction to the physics of materials and devices used in electronic and communication engineering.

Electricity and Magnetism: field theory and Maxwell equations, the production propagation and transmission of electromagnetic waves, dielectric and magnetic materials.

Electron Physics: the dynamics of charged particles in electric and magnetic fields, electron tubes, thermionic and photoelectric effects. Atomic theory, electrons and ions in gases, discharge physics. The wave nature of the electron, elements of quantum theory, band theory, metals, semiconductors and insulators, semiconductor devices.

Quantum Electronics: tunnelling, stimulated emission, masers, noise.

Text-books:

Hemenway, C. L., and others, *Physical electronics* (Wiley).

Skilling, H. H., *Fundamentals of electric waves* (Wiley).

TE82. Electrical Engineering SE (T). (2–0–2)

D.C. linear and non-linear circuits, A.C. circuits, bridges, three-phase systems, symmetrical components, harmonic analysis and simple non-linear circuits. Transients in linear circuits, transform techniques. Analogue computers for simulation. Magnetic materials and circuits, transformers and saturable reactors. Electro-mechanical power conversion, characteristics and control of D.C. and A.C. machines, servo-motors and transducers. Introduction to precision measurements.

TL02. Electronic Engineering IA. (2–1–2)

Mesh and nodal analysis of network; use of matrix methods; network analysis by topology; four terminal network theory; resonance; determination of amplitude and phase response from pole-zero plots; use of Laplace transform methods to determine network response for sinusoidal and non-sinusoidal excitation; use of Fourier series and Fourier transform in wave-form analysis; propagation characteristics of transmission networks; constant-k and m-derived filters; elementary network synthesis; wave-motion on transmission lines; Smith chart; electronic instruments including the vacuum-type voltmeter, Q-meter, power meter; A.C. bridge measurements.

Text-books:

As prescribed by lecturers.

TL12. Electronic Engineering IB. (2–1–2)

Characteristics of diodes, junction transistors, field effect transistors, linear integrated circuits; graphical analyses of vacuum tube and transistor amplifiers; biasing techniques; temperature stabilization; power dissipation; dynamic output quantities; linear equivalent circuits of vacuum tubes; transistor hybrid parameters and equivalent Tee circuits; basic transistor amplified configurations; piecewise linear equivalent circuits; bandwidth and gain of R-C coupled amplifiers; transformer coupling; single, double and stagger tuned couplings; untuned and tuned power amplifiers; DC amplifiers; general properties of feedback circuits; operational amplifiers; sinusoidal oscillators; rectification, filtering and regulation as applied to power supplies; DC-DC converters; use of thyratron, ignitron and SCR in power control; electromechanical and photoelectric transducers; strain gauges; magnetic tape recording.

Text-book:

Millman, J., and Halkias, C. G., *Electronic devices and circuits* (McGraw-Hill).

A General Studies Elective.

For syllabuses see page 926.

TM13. Mathematics IIC.

For syllabus see Subject Index.

THIRD YEAR

TL03. Electronic Engineering IIA. (2–1–3)

Modulation methods; principles of information transmission; the effect of noise on information transmission; signal theory; correlation techniques; RF transmission lines; the Smith chart; impedance matching; determination of field strength, radiation resistance and directive gain of simple antennas and antenna arrays; the receiving antenna; propagation of ground waves, sky waves and space waves; scatter propagation; devices for generating UHF signals; wave-guides; microwave components.

TL13. Electronic Engineering IIB. (2–1–3)

Wave-shaping by non-linear circuit elements; transient response of transistor switching circuits; charge control analysis; multi-vibrators—saturating and non-saturating types, classification; negative resistance switching circuits; blocking oscillators; pulse transformers; voltage comparators; counting circuits; binary arithmetic; sampling techniques; logic, principles and circuits; binary codes; error detecting codes; integrated circuits; minimization techniques; digital computer techniques; machine arithmetic; memory devices; instrumentation systems; A/D-D/A conversion; magnetic recording.

Text-books:

Millman, J., and Taub, H., *Pulse, digital and switching waveforms* (McGraw-Hill).

Strauss, L., *Wave generation and shaping*, 2nd edition (McGraw-Hill).

TL23. Electronic Engineering IIC. (1–1–4)

Lectures: *Circuit and system design*: Design philosophy, component limitations, worst case and statistical design, analysis, the place of analysis and laboratory work in circuit and system design, estimation of reliability, standards, patents, ergonomics.

A number of discrete circuits will be designed but the course is oriented towards the use of integrated circuits.

Production Techniques: Construction methods, quality control, quality assurance, programme evaluation review technique, electrical and environmental testing.

Preliminary reading:
Krick, E. V., *An introduction to engineering and engineering design* (Wiley).

TE93. Automatic Control I.

For syllabus see Subject Index.

A General Studies Elective.

For syllabuses see page 926.

BACHELOR OF TECHNOLOGY (MECHANICAL ENGINEERING).

NEW COURSE.

FIRST YEAR

TM01. Mathematics IA.

TP01. Applied Physics I.

TH81. Engineering Chemistry and Materials.

For syllabuses see Subject Index.

TK01. Engineering Mechanics I. ($2^2 1^1$–1–1^1)

Pre-requisite or concurrent subjects: General Mathematics and General Physics, or Mathematics IA and Applied Physics I.

Lectures: The course consists of two hours of lectures and one hour tutorial a week in first and third terms, and one hour lecture, one hour practical, and one hour tutorial a week in second term. Principles of statics; parallelogram of forces; equilibrium of forces in a plane; movement of a force; couples; force systems in space; simple trusses; funicular polygon; cables and chains; friction; virtual displacement; centre of gravity; static moments, first and second moments of area and moments of inertia.

Bending moment and shear force diagrams. Elastic stress and strain; Hooke's law; normal and shear stresses, tension; compression and shear bending of homogeneous beams; torsion of circular shafts.

Text-book:
Beer, F. P., and Johnston, E. R., *Vector mechanics for engineers* (McGraw-Hill International Student edition).

TK91. Engineering Drawing. (0–0–3)

The course presents the fundamental principles of orthographic drawing, their application to visual perception in three dimensions, and to the conventional practices of engineering drawings.

Lettering; orthographic drawing applied to the space relationship of points, lines, planes, surfaces and solids; intersections and development of surfaces; drawing of multi-view engineering drawings, auxiliary views, sections and conventional practices, fasteners; assembly drawings, introduction to dimensioning for fit and inter-changeability; axonometric projection; freehand sketching.

Text-books:
Wellman, B. L., *Technical descriptive geometry* (McGraw-Hill).
A.S. CZ1—1966, *Australian standard engineering drawing practice.*

TK11. Engineering Manufacturing Practice I. (1–0–3)

The subject covers descriptively the basic manufacturing processes with an introduction to factory organisation, safety principles and small tools. The range of metal cutting processes and machines. The basic "chipless" processes of pressing, rolling, swaging and drawing and extrusion. Metal joining by fusion, adhesion and mechanical connection. Casting, moulding and die injection processes. Electrolytic processes. Material finishing.

Text-book:

Begeman, M. L., and Amstead, B. H., *Manufacturing processes* (Wiley).

A General Studies Elective.

For syllabuses see page 926.

SECOND YEAR

TM12. Mathematics IIB.

TK82. Thermo-Fluid Dynamics I.

For syllabuses see Subject Index.

TK02. Engineering Mechanics II. (4–0–3)

A detailed coverage of solid mechanics and dynamics, with some experience in mechanical testing and experimental work on machines.

Mechanics of Solids: forces, stresses, strains and deflections in beams, columns, shafts, non-circular sections, springs; two dimensional stresses, strains in three dimensions; bolted and welded joints; failure theories for yielding and brittle fracture non-symmetrical bending of beams; strain energy applications; experimental stress analysis.

Dynamics: motion of points and rigid bodies; mechanisms, velocities and accelerations, fundamental law of gearing; kinetics of particles rigid bodies and connected systems, work, energy, impulse and momentum; clutches, brakes and belt drives; diversion of fluid streams, motion with varying mass, impact of bodies; free and forced vibrations, damping; balancing of rotors and engines.

Text-books:

Hirschorn, J., *Dynamics of machinery* (Nelson).

Beer, F. P., and Johnston, E. R., *Vector mechanics for engineers* (McGraw-Hill International Student edition).

TK22. Mechanical Design I. (1–3–0)

Introduction to the design of machine elements and transmission systems, using codes and catalogues and applying knowledge gained in mechanics and engineering materials. Practical work including sketching and drawing of components and assemblies, and the selection of fits and tolerances.

Limits and fits, geometric tolerances; design properties, design factors; combined stresses; design of ductile materials for yielding or fatigue failure; design of machine members and fastenings; design of bolted, welded and glued joints; shafts, slope and deflection; seals; helical springs; antifriction bearings; belt and chain drives; couplings; wire ropes; geometry of cams and gears.

Text-book:

A.S. CZ1, 1966, *Australian standard engineering drawing practice.*

TK12. Production Technology I (T). (2–0–3)

An introductory course in metrology and material cutting and forming with metallurgical considerations of heat treatment, fabrication and material properties.

Part A: The theory of measurement; basic instruments and their uses, accuracy and limitations; inspection methods, machine testing, surface-finish assessment.

The mechanics of orthogonal metal-cutting; friction; wear and lubrication, tool-life, machine-ability comparisons, introduction to oblique cutting, up-cut and down-cut milling and grinding.

Automatic and semi-automatic lathes; standard time data; economics of machining.

The theory and practice of press-forming of metals: blanking, drawing, re-drawing; progressive dies.

Part B: The metallurgy of heat-treatment of metals and alloys; annealing, normalizing, quenching, tempering, isothermal treatment age-hardening and mal-leabilising; surface hardening processes; development of special properties of metals and alloys for industrial use.

Metallurgical aspects of the joining of metals and alloys by welding, brazing and soldering.

Metallurgy of melting and casting: defect control, property optimisation through structure control; factors affecting the design of castings; metallurgy of powder processes; comparative treatment of available materials.

Text-books:

Puttock, M. J., *Notes on engineering metrology* (William Brooks).

Kalpalijian, S., *Mechanical processing of materials.*

Rollason, E. C., *Metallurgy for engineers* (Arnold).

A General Studies Elective.

For syllabuses see page 926.

THIRD YEAR

TM13. Mathematics IIC.

For syllabus see Subject Index.

TK33. Thermo-Fluid Dynamics II. (2–1^2–3^2)

An advanced course in applied thermodynamics and fluid dynamics establishing design capabilities in these topics.

Fluid dynamics: potential flow theory, stream function, velocity potential, circulation, vorticity, flow nets; continuity, energy and momentum equations, real fluid flow, turbulence, mixing length, incompressible duct flow, Moody chart; flow over bodies, lift, boundary layer, separation, friction, pressure and induced drag; compressible flow, nozzles, normal shock, frictional isothermal, frictional adiabatic, measurement; compressibility effects on lift and drag; cavitation; fluid hammer.

Heat transfer: conduction, lumped and distributed systems, transients, heat generation; convection, thermal boundary layer, forced, Reynold analogy, natural, empirical relationships; condensing heat transfer: pool boiling heat transfer; heat exchangers, effectiveness, extended surface, overall coefficients, pressure losses: radiation, absorptivity, emissivity, reflectivity, transmissivity, view factors, multiple surface interchange, transparent media, gas radiation, luminous flames, combined coefficients.

Reactive mixtures: combustion, thermodynamic laws, adiabatic flame temperature, properties, dissociation, actual processes.

Mass transfer: modes, coefficients, coupled heat transfer.

Fluid turbomachinery: Similarity, incompressible flow parameters, compressible flow parameters, performance design concepts.

Text-books:

Pao, R. H. F., *Fluid mechanics* (Wiley) .

Holman, J. P., *Heat transfer*, 2nd edition (McGraw-Hill).

Knudsen, J. G., and Katz, D. L., *Fluid dynamics and heat transfer* (McGraw-Hill).

TK03. Engineering Mechanics III. (1–1–0)

A continuation course in Dynamics covering mechanical vibration, automatic control and analogue techniques.

Analogue principles, distributed and lumped systems, mathematical models, analogies. Mechanical vibrations of two degrees of freedom systems, coupling, vibration isolation, dynamic vibration absorbers. Natural frequencies of multi-degree freedom lumped parameter systems, torsional oscillations, equivalent systems. Distributed parameter systems, critical speeds, whirling shafts. Introduction to non-linear vibrations.

Automatic control, open and closed loops, continuous and on-off feedback principles, time delays, relative power levels, limiting performance specifications, block diagrams, transfer functions, stability criteria, graphical displays, compensation. Analogue computation, flow diagrams, magnitude and time scaling for solution of ordinary differential equations, basic computer functions and circuits, solution of partial differential equations and algebraic equations.

TK23. Mechanical Design II. (1–1–0)

A continuation subject in the design of machine elements and systems. Practical work in the design and drawing of machines, including the tolerance of geometry.

Geometric tolerances; position tolerances for pinned assemblies; involute gear geometry; design of brittle materials; impact loading; contact stresses; extreme temperatures; interference fits; structural elements; connecting rods; crankshafts; springs; cams; power screws; flat plates; pressure vessels, piping; brakes and clutches; plain bearings; spur, helical and planetary tranmission units.

Text-books:

As for Mechanical Design I.

TK13. Production Technology II (T). (2–1^1–3^2)

The mechanics, practices and economics of basic mechanical material forming processes. Vibrations in metal-cutting processes. Developments in metal-working processes. Quality control, control charts, sampling systems, process study.

Non-destructive testing; sheet metal drawability testing, anisotropy effects in materials, comparative treatment of pressing materials. Metallurgy of creep, fatigue, brittle fracture and survey of properties of relevant materials. Corrosion, oxidation and surface treatment. Properties and formability of plastic and composite materials under stress, temperature, age, exposure to light and chemical attack. The selecting of engineering materials and specification of treatment to meet specified property requirements.

TK93. Mechanical Engineering Projects. (0–0–6)

Design and experimental investigations of topics related to the whole Mechanical Engineering course content, normally involving literature search, analysis, creative design, planning co-ordination of manufacturing facilities, budget control, and experimentation, with seminars and written reporting.

TK83. Electrical and Civil Engineering S. (3–0–2)

Part A: D.C. circuit response, simple non-linear circuits, practical measurement circuits. Magnetic properties of materials, magnetic circuit analysis, electromagnetic components. A.C. circuit analysis, power factor correction, regulation, three-phase systems transformers. Transient response of linear circuits, switching, control circuits. Characteristics and applications of common transducer elements,

photo-electric cells, thermo-couples, associated solid state and vacuum tube amplifiers. Characteristics, starting and control of common D.C. and A.C. machines. Electrical installations, switchboard and protection requirements, three-phase power measurement.

Part B: Elementary surveying instruments and methods, their application and limitations. Design and control of concrete mixes, elementary design of reinforced concrete beams, columns and footings. Physical properties of soils, exploration methods, design of foundations for static and dynamic loads.

A General Studies Elective.

For syllabuses see page 926.

BACHELOR OF APPLIED SCIENCE (APPLIED CHEMISTRY).

NEW COURSE.

FIRST YEAR

TM01. Mathematics IA.

TP01. Applied Physics I.

For syllabuses see Subject Index.

TH01. Chemistry I (T). (3–1–3)

Theoretical and physical chemistry: properties of the solid and liquid state; chemical equilibrium; chemical thermodynamics; chemical kinetics; redox reactions and electro-chemical cells; surface chemistry; diffusion.

Inorganic chemistry; non-aqueous solvents; acid-base theory.

Organic chemistry: A study of functional groups in aromatic and aliphatic compounds.

Text-books:

Mahan, B. H., *University chemistry*, 2nd edition (Addison-Wesley).

Lee, J. D., *Concise inorganic chemistry*, 2nd edition (Van-Nostrand).

Tedder, J. M., and Nechvatal, A., *Basic organic chemistry* (Wiley).

Richards, J. H., and others, *Elements of organic chemistry* (McGraw-Hill).

TH91. Basic Science Techniques. (1^1–3^1–3^2)

An introductory course in the preparation of reports; the use of the library; study techniques; elementary engineering drawing; laboratory techniques; workshop practice.

Text-book:

The reading of technical drawings (McCarron Bird).

TT81. Engineering Materials A. (1–0–3^1_2)

The properties and principles underlying the fabrication, testing, and use of metallic and non-metallic materials in the chemical industry.

Text-books:

Van Vlack, L. H., *Elements of materials science* (Addison-Wesley), *or*

Jastrzebski, Z. D., *Nature and properties of engineering materials* (Wiley).

A General Studies Elective.

For syllabuses see page 926.

SECOND YEAR

TH02. Chemistry II (T), Physical. (2–1–3)

Thermodynamics; chemical kinetics; surface chemistry; molecular spectroscopy; properties of electrons in solids; diffusion; radiochemistry.

TH12. Chemistry II (T), Organic. (2–0–3)

Theoretical organic chemistry with particular reference to structural chemistry and its effects on organic reactivity. Preparation, properties and reactions of aromatic compounds.

Text-books:

Morrison, R. T., and Boyd, R. N., *Organic chemistry,* 2nd edition (Allyn and Bacon).

Cram, D. J., and Hammond, G. S., *Organic chemistry,* 2nd edition (McGraw-Hill).

TH22. Applied Chemistry I. (2–2–0)

Mass and energy balances; thermodynamics; chemical processes; introductory chemical engineering operations; plant visits.

Text-books:

Himmelblau, D. M., *Basic principles and calculations in chemical engineering* (Prentice-Hall).

Stephenson, R. M., *Introduction to the chemical process industries* (Reinhold).

Sneeden, J. B., *Applied heat for engineers* (Blackie).

Coull, J., and Stuart, E., *Equilibrium thermodynamics* (Wiley).

TM12. Mathematics IIB.

For syllabus see Subject Index.

TH92. Engineering Service. (1–0–2)

Part A: An elementary introduction to mechanical design with material selected from the following topics: Stress and strain concepts; design philosophy; factors of safety; permissible stresses; section properties; design codes; members in tension, compression, bearing, shear and bending; theories of elastic and fatigue failure; code design of pipes and fittings.

Part B: Alternating quantities; use of CRO; A.C. circuits; concept and measurement of phase angle; phasor diagrams; A.C. measurements; power factor correction. Transformers. 3-phase systems; power measurement. Characteristics and uses of common D.C. and A.C. machines; non-linear conductors; diodes; A.C. to D.C. conversion triode and transistor characteristics and uses; D.C. bridge and potentiometer circuits. Transducers: electrical control circuits.

TT52. Fluid and Particle Dynamics. (1–0–3[1])

A study of fluid and particule dynamics leading to and including an introductory course on solid-liquid and solid-separation processes.

Text-book:

McCabe, W. L., and Smith, J. C., *Unit operations of chemical engineering,* 2nd edition (McGraw-Hill).

A General Studies Elective.

For syllabuses see page 926.

THIRD YEAR

TH23. Applied Chemistry II. (2–1–4)

Design of chemical processing systems.

An advanced treatment of selected topics in applied chemistry; application of computers to problems in these areas; presentation of seminars by students; practical projects.

Text-books:

Adamson, A. W., *Physical chemistry of surfaces*, 2nd edition (Interscience).

Peters, M. S., and Timmerhaus, K. D., *Plant design and economics for chemical engineers*, 2nd edition (McGraw-Hill).

Henley, E. J., and Rosen, E. M., *Material and energy balance computations* (Wiley).

TH53. Chemical Process Kinetics. (1–2–0)

The analysis of kinetic data and its application to the design and operation of chemical reactors.

Text-book:

Levenspiel, O., *Chemical reaction engineering* (Wiley).

TH63. Chemical Instrumentation. (2–0–3²)

Theory of instrumental techniques in modern analytical chemistry; application of analytical instruments in process plant control; measurement of representative process parameters.

Text-books:

Williard, H. H., and others, *Instrumental methods of analysis*, 4th edition (Van Nostrand).

Miller, J. T., *Revised course in industrial instrument technology* (United Trade Press).

TH83. Process Dynamics and Control. (1–1–3)

Theory of automatic control as applied in the chemical process industries; dynamic behaviour of process equipment, controllers and controlled systems. Methods of system analysis. Simulation; computer techniques in control; dynamic optimization; non-linear systems.

Text-books:

Harriott, P., *Process control* (McGraw-Hill).

Coughanowr, D. R., and Koppel, L. B., *Process systems analysis and control* (McGraw-Hill).

TH73. Transfer Operations. (2–1–3)

Heat, mass and momentum transfer as encountered in the chemical industry. General principles of countercurrent operation of stagewise and differential contact processes. Separation processes including leaching, distillation, gas absorption, liquid-liquid extraction, evaporation, crystallization, drying.

Text-books:

Foust, A. S., *Principles of unit operations* (Wiley).

McCabe, W. L., and Smith, J. C., *Unit operations of chemical engineering*, 2nd edition (McGraw-Hill).

A General Studies Elective.

For syllabuses see page 926.

BACHELOR OF APPLIED SCIENCE (APPLIED PHYSICS).

NEW COURSE.

FIRST YEAR

TM01. Mathematics IA.

TP01. Applied Physics I.

TH01. Chemistry I (T).

TK81. Basic Engineering Techniques.

For syllabuses see Subject Index.

A General Studies Elective.

For syllabuses see page 926.

SECOND YEAR

TM02. Mathematics IIA.

For syllabus see Subject Index.

TP02. Applied Physics II. (4–1–5)

A course of four lectures, one tutorial and one 5 hours laboratory per week for one year. The course will provide a theoretical and experimental basis for later specialised studies and an introduction to a number of topics in Applied Physics. It contains the following topics:

Electricity and magnetism: Fields, electromagnetic wave propagation and transmission, ionospheric physics.

Electron physics: Atomic spectra, electrons and ions in vacuum, in gases and in solids, introductory semiconductor physics.

Solid state: The properties and theory of perfect and imperfect crystalline materials.

Sonics: The production propagation properties and applications of sound waves of different frequencies.

Applied Optics: The theory and applications of interference and diffraction. Image forming systems, photography, spectroscopy.

Heat: Equations of state, random phenomena, heat transfer.

Text-books:

Pain, H. J., *The physics of vibrations and waves* (Wiley).

Skilling, H. H., *Fundamentals of electric waves* (Wiley).

Hutchison, T. S., and Baird, D. C., *The physics of engineering solids* (Wiley).

Richtmyer, F. K., and others, *Introduction to modern physics*, 6th edition (McGraw-Hill).

TM82. Mechanics I (T). (1^1–1^1–0)

Dynamics of a particle and systems of particles. Plane motion of rigid bodies. Forced and clamped vibrations. Central force motion. Motion in resisting media. Introduction to Lagrangian methods.

Text-book:

Stephenson, R. J., *Mechanics and properties of matter*, latest edition (Wiley).

TE92. Electrical Engineering SP(T). (1–0–2)

D.C. circuit analysis; non-linear conductors; applications to measurement and control systems. A.C. circuit analysis; phasor diagrams; voltage regulation; maximum power transfer; phase shift circuits; power factor correction; 3 phase systems. Magnetic circuits; relays and related magnetic devices. Transient circuit analysis. Transformers; magnetic amplifiers; common A.C. & D.C. machines. Transducers and uses. Analogue methods and analogue computation.

TL92. Electronics (T). (2–0–2)

Measuring instruments, multimeter, VTVM and oscilloscope; rectification, filtering and regulation as applied to power supplies; thyratrons; silicon controlled rectifiers; vacuum-tube, transistor and field-effect transistor amplifiers; modes of connection; biasing methods; graphical analysis; equivalent circuits; frequency response; multi-stage amplifiers; power amplifiers; difference amplifiers; band pass amplifiers; feedback amplifiers; operational amplifiers; oscillators; ultrasonics; servo amplifiers; regulated power supplies; simple amplitude, frequency and phase modulation; time division and frequency division multiplexing; linear and non-linear wave shaping; logic gates; inverters; multivibrators; counting, scalars, timing circuits, A/D and D/A converters, elements of a digital computer; storage devices; magnetic recording.

Text-book:

As prescribed by lecturer.

A General Studies Elective.

For syllabuses see page 926.

THIRD YEAR

TM03. Mathematics IIIA. (1–1–0)

A course of one-hour lecture and one-hour tutorial per week for one year.

Gamma, beta and error functions, asymptotic series, elliptic integrals. Fourier transforms. Generalised coordinates, and introduction to Lagrange's equations and Hamilton's equations. Series solution of ordinary differential equations. Bessel functions. Orthogonal series of polynomials, Legendre, Laguerre, Hermite and Chebycheff polynominals. Partial differential equations.

Text-book:

Bell, W. W., *Special functions for scientists and engineers* (Van Nostrand).

The series solution of ordinary differential equations; the methods of Frobenius and Picard; the Bessel, Legendre, Laguerre, Hermite and Chebycheff Polynomials; the spherical and Tesseral Harmonics. The general and series solution of partial differential equations. The theory of the complex variable; function, limit, continuity, derivative, Cauchy-Riemann equations, analytic functions, sequences and series, line integral in the complex plane, residues and the evaluation of real line integrals, mapping.

TP03. Applied Physics III. (5–1–10)

A course of five lectures, one tutorial and 10 hours work per week for one year. The course deals with the basic physics of some specialised topics and additional areas of applied physics.

Solid State: Transport properties of solids and the effects of electric and magnetic fields. Quantum properties of solids.

Nuclear Physics: Nuclear structure and reactions. Introductory reactor physics.

Structure Analysis: The uses of X-rays, electrons and neutrons in the determination of composition and structure.

Geophysics: Application of physical methods to problems concerned with the earth and its atmosphere.

Elements of Quantum Mechanics: The application of the Schrodinger equation. The physics of non-destructive testing.

Text-books:

Foster, A. R., and Wright, R. L., *Basic nuclear engineering* (Allyn and Bacon).

Parasnis, D. S., *Principles of applied geophysics* (Methuen).

Richtmyer, F. K., and others, *Introduction to modern physics*, 6th edition (McGraw-Hill).

Either

TT93. Metallurgy for Physicists. $(2^2–0–3^2)$

A course of two hours lectures and three hours practical per week for two terms, concerned with the following topics:

A qualitative treatment of the application of crystal defect theory to analysis of the yielding, work hardening, fatigue, creep and fracture of metal single and polycrystals; an introduction to phase transformations in metals and alloys in terms of the processes of nucleation and growth; solidification, recrystallisation, tions. Laboratory work to illustrate the subject matter of the lectures.

Text-book:

Smallman, R. F., *Modern physical metallurgy* (Butterworth); *or*

Hume-Rothery, W., *The structure of metals and alloys* (Institute of Metals).

and

TM93. Programming Project. $(0–1^1–3^1)$

A problem involving the application of computer techniques applied to practical physics will be set and supervised jointly by the Schools of Mathematics and Physics in the tutorial and practical periods allotted.

Text-book:

McCracken, D. D., *Fortran with engineering applications* (Wiley).

and

TP93. Control Studies. $(1^2–0–2^2)$

A course of one hour of lecture and two hours of laboratory work per week for two terms, to introduce the students to the field of automatic control and to the use of analogue computation, and covering the following topics:

Open loop and closed loop systems, steady state and transient response, performance requirements; control system components, including potentiometers, synchros, servomotors; analysis of response in the time and in the frequency domains and their correlation; analogies, simulation and introduction to analogue computation.

Or

SZ71. Biology.

For syllabus see Subject Index.

A General Studies Elective.

For syllabuses see page 926.

BACHELOR OF APPLIED SCIENCE (PRIMARY METALLURGY).

NEW COURSE.

FIRST YEAR

TM01. Mathematics IA.

TP01. Applied Physics I.

TH01. Chemistry I (T).

For syllabuses see Subject Index.

TT71. Basic Science Techniques (M). (1–0–3²)

Metallurgical laboratory techniques, including microscopy, metallography, photography and mechanical, magnetic, thermal and radiation testing of metals. Elementary principles of crystallography and the use of the stereographic projection.

Orthographic drawings, principal and auxiliary views, sections, conventional methods, simple dimensioning, pictorial drawing. Hand tools, machine tools, welding and other joining methods, finishing processes.

Text-books:

Kehl, G. L., *The principles of metallographic laboratory practice* (McGraw-Hill).

The reading of technical drawings (McCarron Bird).

Fenner, A. J., *Mechanical testing of materials* (Newnes).

TT91. Materials Science (T). (2–0–0)

The course covers the following topics: Materials selection. Introduction to mechanical testing: atomic bonding; Atomic arrangements: molecular structures, crystal structures, non-crystalline (amorphous) structures. Structural imperfections and atom movements: impure phases, crystal imperfections, atom movements. Metallic phases and their properties: single phase metals, multi-phase metals and equilibrium relationships. Organic materials and their properties: polymer chemistry, molecular architecture, polymer manufacture, modifying properties polymer fibres, surface coatings, survey of properties. Ceramic phases and their properties. Deformation of single crystals: slip, twinning, dislocations, strain fields. Iron-carbon system. Modifications of properties through changes in microstructure: heat treatment of steel, alloy steels. Further mechanical properties: toughness, fatigue, creep. Stability of materials in service environment: corrosion, oxidation, thermal stability, radiation damage. Composite materials. Fabrication. Nuclear metallurgy. Information services.

Text-book:

Van Vlack, L. H., *Elements of materials science* (Addison-Wesley).

A General Studies Elective.

For syllabuses see page 926.

SECOND YEAR

TM12. Mathematics IIB.

TH02. Chemistry II (T), Physical.

TT52. Fluid and Particle Dynamics.

For syllabuses see Subject Index.

TT62. Applied Mineralogy. (1²–2²–3)

A course of lectures especially designed to relate mineralogy to primary metallurgy, covering the following topics: geochemistry of the Earth; mineralogy; igneous, sedimentary and metamorphic rocks and minerals; mineral textures and intergrowths; mineral deposits; laboratory techniques of separation and identification of minerals; isomorphism, polymorphism, solid solution, exsolution; special mineralogical problems in metallurgy; brief study of concentrates and beach sands; elementary ore microscopy.

Text-books:

Dana, J. D., *Manual of mineralogy*, 17th revised edition by C. S. Hurlbut (Wiley).

Bateman, A. M., *Economic mineral deposits* (Wiley).

TT72. Extractive Metallurgy IB. (1–0–3¹)

Pre-requisite: Physical Chemistry I(T) (Part).

Industrial practices in the field of extractive metallurgy with reference to underlying principles of chemical thermodynamics and kinetics.

Text-books:

Gilchrist, J. D., *Extraction metallurgy* (Pergamon).

Newton, J., *Extractive metallurgy* (Wiley).

TT92. Industrial Metallurgy IA. (1–0–3¹)

An abbreviated version of Industrial Metallurgy I devoted to consideration of the uses of refractories and fuels and the machinery and techniques of commercial metal fabrication processes of particular interest to the Primary Metallurgist.

Text-books:

Gilchrist, J. D., *Fuels and refractories* (Pergamon).

TH92. Engineering Service.

For syllabus see Subject Index.

A General Studies Elective.

For syllabuses see page 926.

THIRD YEAR

TT63. Mineral Processing A. (2–1–3)

A study of the theory of comminution, the chemistry of flotation and the theory of separation processes leading to the design of integrated mineral separation processes.

Text-books:

As for Mineral Processing.

TT73. Extractive Metallurgy II. (2–2–3)

Pre-requisite subjects:

Extractive Metallurgy IB, Physical Chemistry IIT.

A study of the application of thermodynamics to extractive metallurgical processes, and a course of lectures, based on thermodynamics and kinetics, in extractive metallurgy process design.

Text-books:

Bodsworth, C., *Physical chemistry of iron and steel manufacture* (Longmans).

Bodsworth, C., and Appleton A. S., *Problems in applied thermodynamics* (Longmans).

Darken, L. S., and Gurry, R. W., *Physical chemistry of metals* (McGraw-Hill).

TH73. Transfer Operations.

TH83. Process Dynamics and Control.

For syllabuses see Subject Index.

TT83. Metallography IA. $(0\text{–}2^{1}\text{–}3^{1})$

Pre-requisite subjects: As for Metallography I and Physical Chemistry IIT.

An abbreviated version of Metallography II devoted to consideration of techniques and equipment of materials, observation and analysis of particular interest to the primary metallurgist.

A General Studies Elective.

For syllabuses see page 926.

BACHELOR OF APPLIED SCIENCE (SECONDARY METALLURGY).

NEW COURSE.

FIRST YEAR

TM01. Mathematics IA.

TP01. Applied Physics I.

TH01. Chemistry I (T).

TT71. Basic Science Techniques (M).

TT91. Materials Science (T).

For syllabuses see Subject Index.

A General Studies Elective.

For syllabuses see page 926.

SECOND YEAR

TM12. Mathematics IIB.

For syllabus see Subject Index.

TH82. Chemistry II (T), Physical (Part Course) $(2^{2}\text{–}1^{2}\text{–}6^{1})$

Thermodynamics; surface chemistry; chemical kinetics; properties of electrons in solids; diffusion.

TT02. Physical Metallurgy IA. (2–1–3)

Pre-requisite subjects: Basic Science Techniques Materials Science T, Applied Physics I.

A course of lectures and tutorials devoted to consideration of the characteristics and properties of pure metals, the principles of alloying, and the features of metallic phase diagrams. Non-equilibrium alloy structures. The fundamentals of crystallography and crystal defect theory. The application of diffraction phenomena to the study of these fundamentals. Practical classes to illustrate the content of the lecture course, and drawing office work to establish the fundamentals of crystallography.

Text-book:

Barrett, C., and Massalski, T. B., *Structure of Metals*, 3rd edition (McGraw-Hill).

TT22. Industrial Metallurgy I. (2–0–3^2)

Pre-requisite subjects: Applied Physics I, Materials Science T.

A course of lectures and tutorial periods devoted to the consideration of the uses of refractories and fuels in the metallurgical and engineering industries and a review of the machinery and techniques of commercial metal fabrication processes. Practical classes and works visits, to illustrate the content of the lecture course.

Text-books:

Gilchrist, J. D., *Fuels and refractories* (Pergamon).

Rollason, E. C., *Metallurgy for engineers* (Edward Arnold).

TT12. Metallography I. (1^2–1^2–3^2)

Pre-requisite subjects: Materials Science T, Basic Science Techniques, Applied Physics I.

A course of lectures, tutorials and practical sessions to introduce the student to modern techniques and equipment of materials preparation, treatment and property measurement.

Preparation of high purity metals and alloys-zone refining, levitation melting. Production of metal single crystals, strain/anneal techniques, Bridgman techniques. Modern methods of the experimental heat treatment and working of metals—use of high vacua, controlled atmospheres, quenching techniques.

Methods of measurement of the thermal, electrical, magnetic and mechanical properties of single and polycrystalline metals and alloys. Application of these measurements to the study of structural changes in metallic system.

TK92. Mechanical Design S.

For syllabus see Subject Index.

A General Studies Elective.

For syllabuses see page 926.

THIRD YEAR

TT03. Physical Metallurgy IIA. (4–2–3)

Pre-requisite subjects: Physical Metallurgy IA, Metallurgy I (Physical Chemistry IIT).

A course of lectures and tutorials devoted to the following topics. Introduction to modern alloy theory and its application. Classical and statistical thermodynamic analysis of solid and liquid metallic solutions. Detailed consideration of work hardening, fatigue, creep and fracture of metals in terms of crystal defect theory. Alloy phase transformations. Corrosion and oxidation of metals.

Practical classes to illustrate the content of the lecture course.

Text-books:

Burke, J., *The kinetics of phase transformations in metals* (Pergamon).

Bodsworth, C., and Appleton, A. S., *Problems in applied thermodynamics* (Longmans Green).

Honeycombe, R. W. K., *The plastic deformation of metals* (Arnold).

TT23. Industrial Metallurgy II. (4–1–5)

Pre-requisite subjects: Physical Metallurgy IA, Industrial Metallurgy I, Metallography I.

A course of lectures and tutorials covering the following topics: The casting of metals. Introduction to theory and practice of commercial metal fabrication processes. Practical metallurgical aspects of deformation and failure. Defects in metals, testing. Quality control. The selection of materials. Practical classes and works visits to illustrate the content of the lecture course.

Text-books:

Dieter, G. E., *Mechanical metallurgy* (McGraw-Hill).

Rowe, G. W., *An introduction to the principles of metal-working* (Edward Arnold).

Flinn, R. A., *Fundamentals of metal casting* (Addison-Wesley).

Uhlig, H. H., *Corrosion and corrosion control* (Wiley).

TT72. Extractive Metallurgy IB.

For syllabus see Subject Index.

TT13. Metallography II. ($(0–2^1–3^2)$)

A course of lectures, tutorials and practical sessions to introduce the student to modern techniques and equipment of materials observation and analysis. The observation and analysis of materials by modern penetrative radiation techniques. X-ray diffractometry and radiography, thin foil transmission, replica and scanning techniques of electron microscopy, electron beam, microanalysis, magnetic resonance, Mössbauer effect and field ionemission microscopy of metals, alloys and non-metallic materials.

TE63. Electrical Engineering SK(T). ($(1^2–0–2^2)$)

Alternating quantities; use of C.R.O.; A.C. circuits; concept and measurement of phase angle; phasor diagrams; A.C. measurements; power factor correction. Transformers. 3-phase systems; power measurements. Characteristics and uses of common A.C. and D.C. machines. Non-linear conductors; diodes; A.C.-D.C. conversion; triode and transistor characteristics and uses. D.C. bridges and potentiometer circuits: Transducers: Electrical control circuits.

A General Studies Elective.

For syllabuses see page 926.

BACHELOR OF APPLIED SCIENCE (MINERAL ENGINEERING).

NEW COURSE.

FIRST YEAR

TM01. Mathematics IA.

TP01. Applied Physics I.

TH81. Engineering Chemistry and Materials.

TK01. Engineering Mechanics I.

TK91. Engineering Drawing.

TK71. Basic Engineering Techniques (Part Course).

For syllabuses see Subject Index.

A General Studies Elective.

For syllabuses see page 926.

SECOND YEAR

TM12. Mathematics IIB.

TK02. Engineering Mechanics II.

TK82. Thermo-Fluid Dynamics I.

TN12. Applied Geology I.

For syllabuses see Subject Index.

TC52. Civil Engineering S(T). **(2^2 1^1–1^1–3^1 2^1)**

Physical properties of soils and their measurements. Applications to simple retaining wall and foundation problems. Site exploration and soil sampling. Field testing. Classification.

Properties of cement and concrete materials, design of mixes, quality control, elastic properties of concrete.

Reinforced and pre-stressed concrete beams, footings, retaining walls, slabs. Introduction to ultimate design.

Text-book:

Terzachi, K., and Peck, R. B., *Soil mechanics in engineering practice* (Wiley).

A General Studies Elective.

For syllabuses see page 926.

THIRD YEAR

TM13. Mathematics IIC.

TK22. Mechanical Design I.

TE72. Electrical Engineering SC(T).

For syllabus see Subject Index.

TN13. Applied Geology II. (3–0–4)

Mineralogy, including ore microscopy, of the common rock forming minerals and ore minerals. Petrology: constitution, origin, occurrence of the main types of rocks; internal features affecting use as engineering materials. Stratigraphy: classification, correlation. Structure: bedding planes, joints, faults, folds, schistosity, massive rocks; relation of structure to strength. Geologic processes: erosion, weathering, supergene alteration. Mineral deposits: natural fuels; metallic and non-metallic deposits, nature, origin, composition, character, distribution. Mineral Exploration: geological and geophysical prospecting, mapping, photointerpretation. Engineering geology: influence of rock types and structures on cuttings, tunnels, excavations; foundations for buildings, dams, roads, reservoirs; water supply; flooding, scouring, silting. Field trips.

Reference books:

Hatch, F. H., and others, *Petrology of the igneous rocks* (Murby).

Heinrich, E. W., *Microscope identification of minerals* (McGraw-Hill).

TN83. Mineral Engineering A. (3–0–4)

Rock mechanics: stresses in rocks, elastic properties, behaviour beyond the elastic limit; stresses around excavations; stress waves resulting from rock failure.

Soil mechanics: plastic states, consolidation, effective stress theories, stress distribution, settlement, seepage; application to mine filling, stability of earth dams, mine excavations.

Theory of rock breaking, strata control; blasting theory; subsidence and its control; design of mine openings, support.

Mine transportation and hoisting; roads, pavement design, tracks, conveyors, cableways, chutes, haulages; winding systems, ropes, power and velocity calculations, vibrations.

Mine surveying: construction, use and adjustment to instruments including level, theodolite, tacheometer; computations, setting out; errors and their adjustment; plotting.

Text-books:

Lewis, R. S., and Clark, G. B., *Elements of mining*, 3rd edition (Wiley).

Terzaghi, K., and Peck, R. B., *Soil mechanics in engineering practice* (Wiley).

Isaacson, E. de St.Q., *Rock pressure in mines* (Mining Publications).

TN73. Mineral Engineering B. (2^2 1^1–1–3^1)

Methods of working stratified and unstratified deposits; alluvial, open cast and underground metal mines, coal mines, petroleum reservoirs; mine design, planning, layout, scheduling.

Shaft sinking and tunnelling: selection of site, shape, optimum size; sinking, driving; lining, equipping.

Mine ventilation; environmental conditions, air flow and heat transfer; fan efficiencies, tests, selection; measurements; cooling.

Generation transmission, use of power in mines; diesel, electric, hydraulic and compressed air power.

Preparation of minerals: mineral separation; crushing, screening; grinding; classification, filtering; concentration processes; disposal of products, flow sheets; plant layout.

Prospecting; sampling, testing, evaluation. Mine economics; cost of mining, mine valuation. Organisation. Management. Seminars.

Text-books:

Hartman, H. L., *Mine ventilation and air conditioning* (Ronald).

Woodruff, S., *Methods of working coal and metal mines*, vols. II and III (Pergamon).

Truscott, S. J., *Mine economics* (Mining Publications).

A General Studies Elective.

For syllabuses see page 926.

BACHELOR OF APPLIED SCIENCE (DATA PROCESSING).

NEW COURSE.

FIRST YEAR

TM01. Mathematics IA.

TP01. Applied Physics I.

For syllabuses see Subject Index.

TM21. Programming I. (2–0–1)

Programming languages; Fortran; an introduction to Algol and an introduction to assembly language. Fundamentals of computers; history of computing, input-output devices, storage devices, number systems. Flow charting. Projects to be coded in Fortran.

Text-books:

Golden, J. T., *Fortran IV programming and computing* (Prentice-Hall).
I.C.L., *Fortran Manual* (TL 1167).

TA81. Accounting I. (2–1–1)

The nature and development of accounting. Functions of accounting reports as an aid to management. Profit determination and balance sheet preparation. The accounting period, measurement of revenue and expense, valuation of assets. Preparation of funds statement. Recording and control over cash, debtors, creditors, stocks, fixed assets, proprietorship, revenue and expenses. Cash budgets for management control. Effects on the design and operation of the system of ownership, activity, and functional division. Conventional accounting reports—inherent assumptions and limitations. An introduction to auditing concepts.

Text-books:

Harrison, J., and others, *Accounting—a direct approach* (Cheshire).
Mathews, R. L., *Accounting for economists* (Cheshire).

A General Studies Elective.

For syllabuses see page 926.

SECOND YEAR

TM02. Mathematics IIA.

For syllabus see Subject Index.

TM22. Programming II. (2–1–3)

The course, comprising two hours lectures, one hour tutorial and three hours practical per week, will cover the following topics:

Advanced Fortran: masking, variable format, encode, decode, program segmentation. Assembly language programming: subroutine linkage, macro instructions, the development of input-output systems, functions of a monitor, time sharing. Cobol—a comprehensive introduction. Logical design, electronic components, wave shaping logical operations. Project work in Fortran, Cobol and assembly language.

Text-books:

Appropriate Fortran, Cobol and assembly language reference manuals.

TM92. Statistics. (2–1–0)

Three hours of lectures and one hour tutorial a week throughout the year.

The theory of probability and probability distributions. The collection and representation of data. Significance tests based on the normal, t, F, and X^2 distribution. Simple and multiple linear regression. Randomization and design of experiments; the analysis of variance. Quality control. Non-Parametric Methods.

Text-books:

Aitchison, J., *Statistics I, Solving problems in mathematics series* (Oliver and Boyd).

Huitson, A., *The analysis of variance* (Charles Griffen and Co.).

TA92. Economics (T). (2–1–0)

Macro Economics: Economic laws and limitations. The functioning of an economic system. Economic growth. National income—meaning, measurement, determinants and fluctuations. Australian national income accounts. Public finance and fiscal policy. Australian Federal/State finance. Financial institutions and monetary policy. Micro Economics: Principles of production. Production costs. Demand theory. Market structure and performance. The equilibrium of the firm under different market structures. Income distribution and the prices of the factors of production. International Trade: Theory of trade. Foreign exchange. Balance of payments equilibrium. International financial institutions. Overseas borrowing and foreign ownership of industry.

Text-books:

To be notified in class.

TU92. Administration. (2–1–0)

The course comprises two hours lectures and one hour tutorial per week.

The business organisation—its nature and structure. Human behaviour in organisation, characteristics of organisation, group communications, motivation and work interest. Role of supervisor, leadership, handling personnel problems, maintaining discipline. Organisation of office work, office work flow and layout, physical conditions, office services, machines and equipment; scheduling office work, standards of quality and office work measurement. Production planning and control, purchasing and storekeeping systems and basic office procedures. Organisation and control of a computer department.

A General Studies Elective.

For syllabuses see page 926.

THIRD YEAR

TM73. Systems Analysis. (2–1–0)

The course comprises two hours lectures and one hour tutorial.

The nature of systems; management systems and organisation charts; scientific method, problem solving and decision-making; control systems. Preparing a project programme, data collection, document analysis forms, file analysis forms, work distribution charts, block diagrams, process flow charting, forms design, and layout charts. Development of improved methods, machine feasibility studies, implementation of a system, critical path method and scheduling an installation, site storage and preparation.

TM23. Programming III. (2–1–3)

Pre-requisite subject: Programming II.

Sorting techniques. Maintenance of tape and disc files. Auditing techniques in E.D.P. line balancing. Operating systems. Computer selection. Computer installation and maintenance. Study of a problem-oriented language. Hybrid computation. Elements of analogue computers, analogue-digital links, symbolic logic. Lectures by specialist lecturers. Project work, seminars.

Reference books:

Carnahan, B., and others, *Applied numerical methods* (Wiley).

Isaacson, E., and Keller, H. B., *Analysis of numerical methods* (Wiley).

Wilkinson, J. H., *Algebraic eigenvalue problems* (O.U.P.).

Davis, P. J., and Rabinowisz, P., *Numerical integration* (Blaisdell).

Abramowitz, M., and Stegun, I. A., *Handbook of mathematical functions* (Dover).

Great Britain, Nautical almanac office, *Interpolation and Allied Tables* (H.M.S.O.).

TM33. Numerical Mathematics. (3–1–2)

The course involves three hours lectures, one hour tutorial and two hours' practical work per week, and a selection of the following topics will be covered:

Solution of algebraic and transcendental equations.

Solution of linear systems, matrix inversion and algebraic eigenvalue problems.

Interpolation, numerical quadrature and differentiation.

Difference and differential equations and simple integral equations.

Use of analytic approximations.

TM63. Operations Research I. (3–1–0)

A knowledge of sections 1, 2 and 4 from Mathematics IIA is assumed, as is a familiarity with elementary probability concepts. Linear programming; the simplex method, duality, parametric programming, transportation and assignment problems: Critical path methods. Queueing theory—steady state results. Simulation. Game theory; manimax principle. Network flow. Dynamic programming.

Text-books:

Moder and Phillips, *Project management with CPM and PERT* (Reinhold).

Hillier and Lieberman, *Introduction to operations research* (Holden Day).

Garvin, W. W., *Introduction to linear programming* (McGraw-Hill).

A General Studies Elective.

For syllabuses see page 926.

DEGREE OF BACHELOR OF PHARMACY

FIRST YEAR

TM91. Mathematics IB.

TP01. Applied Physics I.

TH01. Chemistry I (T).

SZ71. Biology.

For syllabuses see Subject Index.

A General Studies Elective.

For syllabuses see page 926.

SECOND YEAR

TH72. Chemistry IIA (T), Organic (2½–0–4½)

Theoretical organic chemistry with particular reference to structural chemistry and its effect on organic reactivity. Preparation, properties and reactions of heterocyclic compounds and aromatic compounds. An introduction to natural products.

Text-books:

Morrison, R. T., and Boyd, R. N., *Organic chemistry,* 2nd edition (Allyn and Bacon).

Cram, D. J., and Hammond, G. S., *Organic chemistry,* 2nd edition (McGraw-Hill).

TF02. Pharmaceutical Chemistry I. (3^2 4^1–0–6^2 5^1)

Pre-requisite subjects: Chemistry I, General Physics, General Mathematics, Biology. Candidates who have not completed Pharmaceutics I must take it concurrently with Pharmaceutical Chemistry I.

The theoretical basis and practical application of classical and modern instrumental methods of analysis, including: titrametric and potentiometric procedures, radiochemical methods, spectroscopic methods, refractometry polarimetry, optical rotatory dispersion and light scattering. Chromatographic techniques, sedimentation, osmometry, diffusion and flow berefringence. Thermodynamics thermochemistry, reaction kinetics, rates and orders of reaction, influence of factors such as pH and temperature on reaction rates, catalysis.

The chemistry and properties of carbohydrates, proteins lipids and nucleic acids. Biological oxidations, preservation and transfer of energy, energy yielding pathways, biosynthetic pathways.

Text-books:

Pecsok, R. L., and Shields, L. D., *Modern methods of chemical analysis* (Wiley).

Williams, V. R., and Williams, H. B., *Basic physical chemistry for the life sciences* (Freeman).

Karlson, *Introduction to modern biochemistry* (Academic Press).

TF12. Pharmaceutics I. (4^2 3^1–0–6)

Pharmaceutical calculations, dosage forms and routes of administration. Surface active agents. Solubilization and emulsification. Rheology of Newtonian and non-Newtonian systems. Adsorption. Stability of pharmaceutical preparations. Shape and morphology of the bacterial cell; factors affecting the growth and death of bacteria. The mode of action of antibiotics and other chemotherapeutic agents. Drug resistance. The genetics of bacteria and their viruses. Immunology.

Dispensing and the preparation of selected pharmaceuticals from official formularies. Experiments illustrative of the physicochemical aspects of the lectures and practical exercises illustrative of the microbiology lectures.

Text-books:

British pharmacopia (Pharmaceutical Press).

Australian pharmaceutical formulary (P.A.A.).

Martin, A. N., *Physical pharmacy* (Lea and Febinger).

Bear, H. S., and others (eds.), *Advances in pharmaceutical sciences* 1 (Academic Press).

Carter, J. P., and Gunn, C. (eds.), *Dispensing for pharmaceutical students* (Pitman).

Cooper, J. W., and Dyer, F. J., *Dispensing for pharmaceutical students* (Pitman).

Stanier, R. Y., and others, *General microbiology* (Macmillan).

Fishburn, A. G., *An introduction to pharmaceutical formulation* (Pergamon).

Martin, A. N., *Physical pharmacy*, 2nd edition (Lea and Febinger).

Ansel, H. C., *Introduction to pharmaceutical dosage forms* (Lee and Febinger).

A General Studies Elective.

For syllabuses see page 926.

THIRD YEAR

TF03. Pharmaceutical Chemistry II. (3^2 2^1–0–6)

Pre-requisite subjects: Organic Chemistry II, Pharmaceutical Chemistry I, Pharmaceutics I.

Organic reaction mechanisms. Photochemistry, terpenes and steroids, alkaloids, chemical careinogenesis and selected topics in natural product chemistry. The relationship between physical and chemical structure and biological activity. Toxicology and the factors influencing the metabolism of foreign compounds in animals. Biological control, and the biochemical basis of cancer. The function of vitamins.

Text-books:

Albert, A., *Selective toxicity* (Wiley).

Parke, D. V., *The biochemistry of foreign compounds* (Pergamon).

TF13. Pharmaceutics II. (3–0–7)

The effect of formulation on drug availability. Complexation and protein binding of drugs. Kinetics of absorption, distribution and elimination of drugs. Drug-plastic interactions. Spray drying, freeze drying, tabletting, micromeritics, use of ternary diagrams in formulation of emulsified and solubilized systems. Radio-active materials. Methods of sterilisation and their pharmaceutical applications; the kinetics of disinfection and evaluation of bactericidal agents. Antibiotics. Industrial implications of pharmaceutical technology.

Preparation of sterile medicaments. Dispensing and formulation exercises. Physical pharmacy exercises illustrative of the lecture material.

Text-books:

As for Pharmaceutics I, together with:

Sprowls, J. B. (ed.), *Prescription pharmacy* (Lippincott).

Binns, T. B. (ed.), *Absorption and distribution of drugs* (Livingstone).

Sykes, G., *Disinfection and sterilization* (Spon).

TF73. Physiology and Pharmacology. (2–0–3²)

Pre-requisite subject: Pharmaceutical Chemistry I.

Fifty-four lectures; practical three hours a week for two terms. The course will comprise approximately half physiology and half pharmacology.

Physiology will comprise the function of the principal mammalian tissues together with the hormonal and neural integration of the organism. The practical is based on mammalian material and illustrates basic physiological principles.

In pharmacology, emphasis will be placed on the following topics: biological variation in response to drugs and principles of biological assay; physico-chemical factors in drug action; mechanisms of actions of drugs in common clinical use. Practical work will illustrate aspects of these topics.

Text-book:

Bowman, W. C., and others, *Textbook of pharmacology*, 1968 edition (Blackwell Scientific Publications).

Guyton, A. C., *Text-book of medical physiology*, 3rd edition (Saunders).

TF83. Forensic Pharmacy and Pharmaceutical Practice (2–0–0)

Forensic Pharmacy; National Health Act; pharmaceutical practice; commercial pharmacy and book-keeping; veterinary pharmacy; public health; International, British and Australian pharmacy.

A General Studies Elective.

For syllabuses see page 926.

TIME-TABLES FOR 1971

FACULTY OF ARTS
1971

Note: It is expected that the timetable for 1973 will be essentially the same as that for 1971.
For the probable timetable for 1972 see p. 970.

No. in Syllabus	Subject	Monday	Tuesday	Wednesday	Thursday	Friday
AC72	Ancient History	—	2.15	—	2.15	—
SN02	Applied Mathematics II	9(A)	9(A)	9(A)	—	9(A)
		12(B)	12(B)	12(B)	—	12(B)
	Tutorial (1 hour)	—	9, 10	—	9, 10	11
SN03	Applied Mathematics III (5 hours)	9, 10	9, 10, 12‡	9, 10	9, 10, 12‡	9, 10
AH72	Australian History	—	—	4.15	—	4.15
AE72	Australian Literature	—	9	—	9	—
AC31	Classical Studies I	—	9	—	9	—
AC23	Comparative Philology	—	5.15	—	5.15	—
AJ71	Economic Geography	—	—	5.15	—	5.15
EE01	Economics I	—	—	12(A)	—	12(A)
		—	—	5.15(B)	—	5.15(B)
EE02	Economics II	—	—	5.15	—	5.15
EE03	Economics III	10	—	10	—	10
EE12	Economic Development I	—	10	—	10	—
AC71	Elementary Greek	≠	≠	≠	≠	≠
AE01	English I	—	12(A)	—	12(A)	—
		—	5.15(B)	—	5.15(B)	—
AE02	English II	—	5.15	—	5.15	—
AE03	English III	11	—	11	—	11
AF01	French I	10(A)	—	10(A)	—	10(A)
		6.15(B)	—	6.15(B)	—	6.15(B)
AF02	French II	—	11	—	11	—
AF03	French III	—	9	—	9	—
AJ01	Geography I	—	5.15	—	5.15	—
AJ02	Geography II	10	—	10	—	10
AJ03	Geography III	4.15	4.15	—	—	4.15
	Practical	—	—	4.15-6.15	—	—
AG01	German I	—	—	11	3.15	—
				3.15		
AG11	German IA	9	10	9	10	9
AG02	German II	12	—	12	2.15	—
AG12	German IIA	10	—	12	—	9
AG87	German IIB	—	3.15-5.15	4.15	4.15	—
AG03	German III	—	11(A)	9(A)	11(A)	—
		6.15(B)	—	6.15-8.15(B)	—	—
AG88	German IIIB	—	3.15-5.15	10	3.15	—
AC11	Greek I	≠	≠	≠	≠	≠
AC12	Greek II	≠	2.15§	≠	2.15§	≠
AC13	Greek III	≠	≠	≠	≠	≠
AH01	History IA	—	4.15	—	4.15	—
AH11	History IB	—	—	4.15	—	4.15
AH02	History II	—	4.15	—	4.15	—
AH03	History IIIA	—	5.15	—	5.15	—
AH13	History IIIB	—	6.15	—	6.15	—
AH23	History IIIC	—	10	—	10	—
AC01	Latin I	12(A)	11(AA)	12(AB)	—	12(A)
		—	5.15(B)¶	—	5.15-7.15(B)¶	—
AC02	Latin II	—	10, 2.15*	—	10, 2.15*	—
AC03	Latin III	—	10, 2.15†	—	10, 2.15†	—
SM01	Mathematics I	10(A)	—	10(A)	10(A)	10(A)
		4.15(B)	—	4.15(B)	4.15(B)	4.15(B)
	Tutorial (2 hours)	11-1, 2-4	—	2-4	11-1	11-1, 2-4
SM11	Mathematics IM					
	Lectures	4.15	—	4.15	4.15	4.15
	Tutorial (2 hours)	11-1, 2-4	—	2-4	11-1	11-1, 2-4

FACULTY OF ARTS—Continued
1971

No. in Syllabus	Subject	Monday	Tuesday	Wednesday	Thursday	Friday
SM7H	Mathematics IH (half-subject) ..					
	Lectures	4.15	—	4.15	—	—
	Tutorial (2 hours)	11-1, 2-4	—	2-4	11-1	11-1, 2-4
ST02	Mathematical Statistics II	11	—	11	11	11
	Tutorial (2 hours)	≠	≠	≠	≠	≠
ST03	Mathematical Statistics III	11	11	11	11	11
UA51	Music I	—	4.15-6.15	—	4.15-6.15	—
UA52	Music II	—	—	4.15-6.15	—	4.15-6.15
UA53	Music III	—	4.15-6.15	—	4.15-6.15	—
AE87	Old and Middle English I	≠	≠	≠	≠	≠
AE88	Old and Middle English II	≠	≠	≠	≠	≠
AF77	Old and Middle French I	≠	≠	≠	≠	≠
AF78	Old and Middle French II ..	≠	≠	≠	≠	≠
AL01	Philosophy I	—	11(A)	—	11(A)	—
		—	5.15(B)	—	5.15(B)	—
AL02	Philosophy II	6.15	—	6.15	—	6.15
AL03	Philosophy IIIA	4.15	—	4.15	—	4.15
AL13	Philosophy IIIB	6.15	—	6.15	—	6.15
AP01	Politics I	—	10	—	10	—
AP32	Politics IIA (two lectures) } ..	2.15	6.15	7.15	6.15	2.15
AP42	Politics IIB (two lectures) }					
AP03	Politics IIIA	—	6.15	—	6.15	—
AP13	Politics IIIB	—	11	—	11	—
AY01	Psychology I	10(A)	—	10(A)	—	10(A)
		5.15(B)	—	5.15(B)	—	5.15(B)
AY02	Psychology II	5.15	—	5.15	—	5.15
AY03	Psychology III	5.15	—	5.15	—	5.15
SM02	Pure Mathematics II	9(A)	—	9(A)	9(A)	9(A)
		12(B)	—	12(B)	12(B)	12(B)
	Tutorial (1 hour)	—	9, 10	—	9, 10	—
SM03	Pure Mathematics III (5 hours) ..	9, 10, 12	9, 10	9. 10	9, 10	9, 10, 12
AG74	Science German	—	9	—	9	—
EE71	Social Economics	—	12	—	12	—

EDUCATION SUBJECTS—BOTH DIPLOMA AND MASTER COURSES

Full-time students—times for all subjects will be arranged at the commencement of lectures.
Part-time students—times for subjects available as under:

1971

No. in Syllabus	Subject	Monday	Tuesday	Wednesday	Thursday	Friday
	DIPLOMA IN EDUCATION:					
AD34	Educational Psychology I	—	—	—	—	Sat. 10.30
AD24	Sociology of Education I	—	—	—	—	Sat. 9
	MASTER OF EDUCATION:					
AD40	Comparative Education	5.10	—	—	—	—
AD30	Educational Psychology II	—	—	—	—	5.10
AD10	History of Education II	5.10	—	—	—	—
AD50	History and Theory of Science ..	5.10	—	—	—	—

Times for tutorials and/or practical work will be arranged at the commencement of lectures.
Alternatives are indicated by A, B, C, etc. For Latin I lecture times marked (A) are alternative to those marked (B); tutorial times marked (AA) are alternative to those marked (AB).
≠ Time to be arranged.
† Second term only.
¶ Available only if there are sufficient students.
German I, II and III are given in the evening in cycles of three years; German I, 1972; German II, 1973; German III, 1971.
‡ Optional unit only.
* First term only.
§ Third term only.

FACULTY OF ARTS—Continued

Probable timetable for 1972

No. in Syllabus	Subject	Monday	Tuesday	Wednesday	Thursday	Friday
AC72	Ancient History	—	2.15	—	2.15	—
SM12	Applied Mathematics II	9(A)	9(A)	9(A)	—	9(A)
		12(B)	12(B)	12(B)	—	12(B)
	Tutorial (1 hour)	—	9, 10	—	9, 10	11
SM13	Applied Mathematics III (5 hours)	9, 10	9, 10, 12‡	9, 10	9, 10, 12‡	9, 10
AH72	Australian History	—	—	4.15	—	4.15
AE72	Australian Literature	—	5.15	—	5.15	—
AC31	Classical Studies	—	9	—	9	—
AC23	Comparative Philology	—	5.15	—	5.15	—
EE12	Economic Development I	—	—	6.15	6.15	—
AJ71	Economic Geography	—	9	—	9	—
EE01	Economics I	—	—	12(A)	—	12(A)
		—	—	5.15(B)	—	5.15(B)
EE02	Economics II	—	—	10	—	10
EE03	Economics III	5.15	—	5.15	—	5.15
AC71	Elementary Greek	≠	≠	≠	≠	≠
AE01	English I	—	12(A)	—	12(A)	—
		—	5.15(B)	—	5.15(B)	—
AE02	English II	—	9	—	9	—
AE03	English III	5.15	—	5.15	—	5.15
AF01	French I	10(A)	—	10(A)	—	10(A)
		6.15(B)	—	6.15(B)	—	6.15(B)
AF02	French II	—	11	—	11	—
AF03	French III	—	9	—	9	—
AJ01	Geography I	—	11	—	11	—
AJ02	Geography II	4.15	—	4.15	—	4.15
AJ03	Geography III	12	—	12	—	12
	Practical	—	—	2.15-4.15	—	—
AG01	German I	—	—	11, 3.15(A)	—	11(A)
		6.15(B)	—	6.15-8.15(B)	—	—
AG11	German IA	9	10	9	10	9
AG02	German II	12	—	12	—	12
AG12	German IIA	10	—	12	—	9
AG87	German IIB	—	3.15-5.15	4.15	4.15	—
AG03	German III	—	11	9	11	—
AG88	German IIIB	—	3.15-5.15	10	3.15	—
AC11	Greek I	≠	≠	≠	≠	≠
AC12	Greek II	≠	2.15§	≠	2.15§	≠
AC13	Greek III	≠	≠	≠	≠	≠
AH01	History IA	—	4.15	—	4.15	—
AH11	History IB	—	—	4.15	—	4.15
AH02	History II	—	4.15	—	4.15	—
AH03	History IIIA	—	5.15	—	5.15	—
AH13	History IIIB	—	6.15	—	6.15	—
AH23	History IIIC	—	10	—	10	—
AC01	Latin I	12(A)	11(AA)	12(AB)	—	12(A)
		—	5.15(B)¶	—	5.15-7.15(B)¶	—
AC02	Latin II	—	10, 2.15*	—	10, 2.15*	—
AC03	Latin III	—	10, 2.15†	—	10, 2.15†	—
SM01	Mathematics I	10(A)	—	10(A)	10(A)	10(A)
		4.15(B)	—	4.15(B)	4.15(B)	4.15(B)
	Tutorial (2 hours)	11-1, 2-4	—	2-4	11-1	11-1, 2-4
ST02	Mathematical Statistics II	11	—	11	11	11
	Tutorial (2 hours)	—	—	2-4(A)	2-4(B)	—
ST03	Mathematical Statistics III	11	11	11	11	11
UA51	Music I	—	4.15-6.15	—	4.15-6.15	—
UA52	Music II	—	4.15-6.15	—	4.15-6.15	—
UA53	Music III	—	—	4.15-6.15	—	4.15-6.15

FACULTY OF ARTS—Continued

Probable timetable for 1972

No. in Syllabus	Subject	Monday	Tuesday	Wednesday	Thursday	Friday
AE87	Old and Middle English I	≠	≠	≠	≠	≠
AE88	Old and Middle English II ..	≠	≠	≠	≠	≠
AF77	Old and Middle French I	≠	≠	≠	≠	≠
AF78	Old and Middle French II ..	≠	≠	≠	≠	≠
AL01	Philosophy I	—	11(A)	—	11(A)	—
		—	5.15(B)	—	5.15(B)	—
AL02	Philosophy II	6.15	—	6.15	—	6.15
AL03	Philosophy IIIA	6.15	—	6.15	—	6.15
AL13	Philosophy IIIB	4.15	—	4.15	—	4.15
AP01	Politics I	—	—	6.15	—	6.15
AP32 AP42	Politics IIA (two lectures) Politics IIB (two lectures) ..	2.15	10	2.15	10	2.15
AP03	Politics IIIA	—	11	—	11	—
AP13	Politics IIIB	—	6.15	—	6.15	—
AY01	Psychology I	10(A)	—	10(A)	—	10(A)
		5.15(B)	—	5.15(B)	—	5.15(B)
AY02	Psychology II	5.15	—	5.15	—	5.15
AY03	Psychology III	10	—	10	—	10
SM02	Pure Mathematics II	9(A)	—	9(A)	9(A)	9(A)
		12(B)	—	12(B)	12(B)	12(B)
	Tutorial (1 hour)	—	9, 10	—	9, 10	—
SM03	Pure Mathematics III (5 hours) ..	9, 10, 12	9, 10	9, 10	9, 10	9, 10, 12
AG74	Science German	—	9	—	9	—
EE71	Social Economics	5.15	—	—	—	5.15

EDUCATION SUBJECTS—BOTH DIPLOMA AND MASTER COURSES

Full-time students—times for all subjects will be arranged at the commencement of lectures.

Part-time students—times for subjects available as under:

Probable timetable for 1972

No. in Syllabus	Subject	Monday	Tuesday	Wednesday	Thursday	Friday
	DIPLOMA IN EDUCATION:					
AD14	History of Education I	—	—	—	—	Sat. 9
AD04	Theory of Education I	—	—	—	—	Sat. 10.30
	MASTER OF EDUCATION:					
AD20	Sociology of Education II	—	—	—	—	5.10
AD00	Theory of Education II	5.10	—	—	—	—

Times for tutorials and/or practical work will be arranged at the commencement of lectures.
Alternatives are indicated by A, B, C, etc. For Latin I lecture times marked (A) are alternative to those marked (B); tutorial times marked (AA) are alternative to those marked (AB).
≠ Time to be arranged.
* First term only.
† Second term only.
§ Third term only.
¶ Available only if there are sufficient students.
German I, II and III are given in the evenings in cycles of three years: German I, 1972; German II, 1973; German III, 1971.
‡ Optional unit only.

EVENING LECTURES IN 1971

FACULTIES OF ARTS, ECONOMICS AND SCIENCE

No. in Syllabus	Subject	Monday	Tuesday	Wednesday	Thursday	Friday
EC00	Accounting (Business Management)	5.15	5.15	—	5.15	—
AH72	Australian History	—	—	4.15	—	4.15
SZ71	Biology—Lectures	—	5.15	—	5.15	—
	Tutorial	4	7, 8	—	7, 8	4
AC23	Comparative Philology	—	5.15	—	5.15	—
EC13	Commercial Law	—	5.15	—	5.15	—
EE01	Economics I	—	—	5.15	—	5.15
EE02	Economics II	—	—	5.15	—	5.15
EE13	Economic Development II	5.15	—	5.15	—	—
AJ71	Economic Geography	—	—	5.15	—	5.15
EE22	Economic Statistics I	5.15	—	—	5.15	—
EE32	Economic Statistics IA	5.15	—	—	5.15	—
EC01	Elements of Accounting	—	5.15	—	5.15	—
AE01	English I	—	5.15	—	5.15	—
AE02	English II	—	5.15	—	5.15	—
EC03	Financial Accounting	—	5.15	—	5.15	—
AF01	French I	6.15	—	6.15	—	6.15
AJ01	Geography I	—	5.15	—	5.15	—
AJ03	Geography III	4.15	4.15	—	—	4.15
AG03	German III	6.15	—	8.15	—	—
AH01	History IA	—	4.15	—	4.15	—
AH11	History IB	—	—	4.15	—	4.15
AH02	History II	—	4.15	—	4.15	—
AH03	History IIIA	—	5.15	—	5.15	—
AH13	History IIIB	—	6.15	—	6.15	—
	Industrial Sociology	—	—	5.15	—	5.15
EC10	Investment Planning and Business Finance	—	5.15	—	5.15	—
AC01	Latin I	—	5.15¶	—	5.15-7.15¶	—
SM01	Mathematics I	4.15	—	4.15	4.15	4.15
UA51	Music I	—	4.15-6.15	—	4.15-6.15	—
UA52	Music II	—	—	4.15-6.15	—	4.15-6.15
UA53	Music III	—	4.15-6.15	—	4.15-6.15	—
AL01	Philosophy I	—	5.15	—	5.15	—
AL02	Philosophy II	6.15	—	6.15	—	6.15
AL03	Philosophy IIIA	4.15	—	4.15	—	4.15
AL13	Philosophy IIIB	6.15	—	6.15	—	6.15
SP01	Physics I—Lectures	5.15	—	5.15	—	5.15
	Practical	—	—	6.15-9.15	—	—
AP03	Politics IIIA	—	6.15	—	6.15	—
AY01	Psychology I	5.15	—	5.15	—	5.15
AY02	Psychology II	5.15	—	5.15	—	5.15
AY03	Psychology III	5.15	—	5.15	—	5.15

* First term only. † Second term only. § Third term only.
¶ Available only if there are sufficient students.

FACULTY OF ECONOMICS
1971

Note: It is expected that the timetable ior 1973 will be essentially the same as that for 1971. The probable timetable for 1972 is printed below.

No. in Syllabus	Subject	Monday	Tuesday	Wednesday	Thursday	Friday
EE83	Agricultural Economics I	≠	≠	≠	≠	≠
EE13	Commercial Law	—	—	5.15	—	5.15
EE01	Economics I	—	—	12(A)	—	12(A)
		—	—	5.15(B)	—	5.15(B)
EE02	Economics II	—	—	5.15	—	5.15
EE03	Economics III—					
	Part A	—	—	10	—	10
	Part B (Public Finance) ..	10	—	—	—	—
	Part C (Economics of Labour)	10	—	—	—	—
	Part D (Agricultural Economics)	10	—	—	—	—
EE12	Economic Development I	—	10	—	10	—
EE13	Economic Development II	5.15	—	5.15	—	—
AJ71	Economic Geography	—	—	5.15	—	5.15
EE22	Economic Statistics I	5.15	—	—	5.15	—
EE32	Economic Statistics IA	5.15	—	—	5.15	—
EE23	Economic Statistics II	—	—	12	—	12
EE68	Economic Theory	—	2.15	—	2.15	—
EC01	Elements of Accounting	—	5.15	—	5.15	—
EC03	Financial Accounting	—	5.15	—	5.15	—
EE99	Honours Economics	≠	≠	≠	≠	≠
EC23	Industrial Sociology	—	—	5.15	—	5.15
EC02	Management Accounting	—	12	—	12	—
EE41	Mathematics (Economics)	—	—	11	—	11
EE52	Public Finance	—	—	—	9	—
EE71	Social Economics	—	—	12	—	12

Times for tutorial classes will be arranged at commencement of lectures.
≠ Time to be arranged. (A) and (B) are alternatives.

Probable timetable for 1972

No. in Syllabus	Subject	Monday	Tuesday	Wednesday	Thursday	Friday
EE83	Agricultural Economics I	≠	≠	≠	≠	≠
EC13	Commercial Law*	—	—	2.15	—	2.15
EE01	Economics I	—	—	12(A)	—	12(A)
		—	—	5.15(B)	—	5.15(B)
EE02	Economics II	—	—	10	—	10
EE03	Economics III—					
	Part A	—	—	5.15	—	5.15
	Part B (Public Finance) ..	5.15	—	—	—	—
	Part C (Economics of Labour)	5.15	—	—	—	—
	Part D (Agricultural Economics)	5.15	—	—	—	—
EE12	Economic Development I	—	—	6.15	6.15	—
EE13	Economic Development II	—	11	—	—	11
AJ71	Economic Geography	—	9	—	9	—
EE22	Economic Statistics I	—	—	12	—	12
EE32	Economic Statistics IA	—	—	12	—	12
EE23	Economic Statistics II	—	9	—	9	—
EE68	Economic Theory	—	2.15	—	2.15	—
EC01	Elements of Accounting	—	12	—	12	—
EC03	Financial Accounting	—	—	12	—	12
EE99	Honours Economics	≠	≠	≠	≠	≠
EC23	Industrial Sociology	—	10	—	—	10
EC02	Management Accounting	—	5.15	—	5.15	—
EE41	Mathematics (Economics)	—	—	5.15	—	5.15
EE52	Public Finance	5.15	—	—	—	—
EE71	Social Economics	5.15	—	—	5.15	—

* From 1972 onwards Commercial Law will be offered during the day for even years. Lecture times to be determined.

FACULTY OF ECONOMICS—Continued

Course for the degree of Master of Business Management

No. in Syllabus	Subject	Monday	Tuesday	Wednesday	Thursday	Friday
EC00	Accounting (Business Management)	5.15	5.15	—	5.15	—
EC30	Economic Institutions and Policy ..	3-5	—	—	—	—
EC50	Economic and Accounting Analysis	—	9-11	—	—	—
EC60	Business Statistics	—	—	—	—	8.30-11
EC70	Decision Making	8.30-11	—	—	—	—
EC80	Organization Theory and Behaviour	—	—	—	3-5.30	—

FACULTY OF ENGINEERING

No. in Syllabus	Subject	Monday	Tuesday	Wednesday	Thursday	Friday
	FIRST YEAR					
SC01	Chemistry I—					
	Lectures	9(A, B)	—	9(A, B)	—	9(A, B)
		5.15(C, D)	—	5.15(C, D)	—	5.15(C, D)
	Tutorial (1 hour)	—	—	11(A, C)	—	—
		—	—	12(B, D)	—	—
	Practical (3 hours)	—	2-5	—	2-5	2-5
NX01	Engineering I—					
	Lectures	11(A)	—	—	11(A)	11(A)
		12(B)*	12(B)*	—	—	12(B)*
	Tutorial	—	—	—	12	—
	Practical (3 hours)	—	10-1	—	2-5	2.5
SG1H	General Geology IH—					
	Lectures	—	9(A)	3(A, B)	—	—
		—	5.15(B)	5.15(A, B)	—	—
	Practical	2-5	10-1, 2-5	—	2-5**	—
	Tutorial	≠	≠	≠	≠	≠
SG2H	Physical Geology IH—					
	Lectures	—	—	3(A, B)	9(A)	—
		—	—	5.15(A, B)	5.15(B)	—
	Practical	2-5	10-1, 2-5	—	2-5**	—
	Tutorial	≠	≠	≠	≠	—
SM01	Mathematics I—					
	Lectures	10	—	10	10	10
	Tutorial (2 hours)	2-4	—	2-4	—	2-4
SP01	Physics I—					
	Lectures	9(C, D)	—	9(C, D)	—	9(C, D)
		5.15(A, B)	—	5.15(A, B)	—	5.15(A, B)
	Tutorial (1 hour)	—	—	11 (B, D)	—	—
		—	—	12(A, C)	—	—
	Practical (3 hours)	2-5	10-1, 2-5	—	2-5	—
	SECOND YEAR					
SM12	Applied Maths II—					
	Lectures	9	9	9	—	9
	Tutorial (1 hour)	—	—	—	9, 10	11
NH12	Chemical Engineering I—					
	Lectures	10	10	10	—	—
	Tutorial (3 hours)	2-5	11, 12	—	—	—
	Practical§§	—	2-5	—	—	—
NC02	Civil Engineering I—					
	Lectures	—	10	10	10	10
	Practical	10-1, 2-5**	—	2-5	2-5	—
NE03	Electrical Engineering I—					
	Lectures	11	—	11	—	11
	Tutorial	12(B)	—	12(A)	—	12
	Practical	—	10-1(B)	—	10-1(A)	—

FACULTY OF ENGINEERING—Continued

No. in Syllabus	Subject	Monday	Tuesday	Wednesday	Thursday	Friday
NX12	Engineering IIC—					
	Electrical Circuits and Machines—					
	Lecture	—	11	—	—	—
	Practical§	2-5	2-5	—	—	—
	Electronics—					
	Lecture	—	—	11	—	—
	Practical§	2-5	2-5	—	—	—
	Engineering Materials—					
	Lecture	—	—	—	11	—
	Practical§	2-5	—	—	—	2-5
NX42	Engineering IIM—					
	Stress Analysis—					
	Lecture	—	—	12	—	—
	Practical§	2-5	2-5	—	—	—
	Structural Engineering—					
	Lecture	—	11	—	—	—
	Practical	—	—	2-5	—	—
	Engineering Materials—					
	Lecture	—	—	—	11	—
	Practical§	2-5	—	—	—	2-5
NM02	Mechanical Engineering I—					
	Lectures	—	10	10	10	—
	Tutorial/Practical	10-1	—	—	2-5	—
SC02	Physical and Inorganic Chemistry II—					
	Lectures	12	—	12	—	12
	Tutorial	—	—	4	—	—
	Practical (6 hours)	—	—	—	10-5(B)	9-6(C)
SP02	Physics II—					
	Lectures	10	—	10	—	10
	Tutorial	—	—	2	—	—
	Practical	2-5(A)	10-1(A)	—	10-1(C)	2-5(B)
	(C at discretion of Department) ..	—	2-5(C)	—	2-5(B)	—
	THIRD YEAR					
NH13	Chemical Engineering IIA—					
	Lectures	9	9	—	—	9
	Tutorial	—	—	9, 10	—	10
	Practical	2-5	—	—	—	—
NH23	Chemical Engineering IIB—					
	Lectures	12	—	—	12	12
	Tutorial/Seminar	—	—	—	9, 10, 2-5	—
	Practical	—	—	—	—	2-5
NC03	Civil Engineering IIA—					
	Lectures	—	11	11	11	—
	Tutorial/Practical	10-1	—	—	2-5	—
NC13	Civil Engineering IIB—					
	Lectures	—	10	10	10	—
	Tutorial/Practical	2-5	—	2-5(A)	—	2-5(B)
NE13	Electrical Engineering II—					
	Lectures	10, 12	10		10	—
	Tutorial (2 hours)	—	9, 11	10(B)	12(A)	—
	Practical (6 hours)	—	—	2-5(B)**	2-5(B)**	9-5(A)

FACULTY OF ENGINEERING—Continued

No. in Syllabus	Subject	Monday	Tuesday	Wednesday	Thursday	Friday
NX53	Engineering IIIC—					
NX63	Theory of Machines—					
	Lecture	—	—	—	12	—
	Practical§	—	—	—	—	9-12(A) 10-1 (B)
	Machine Design—					
	Lecture	—	12	—	—	—
	Practical	—	2-5(A)	2-5(B)	—	—
	Mathematics III (Engineering)—					
	Lectures	—	—	9	—	9
	Tutorial	9	—	—	—	—
	Economics (Engineering)—					
	Lectures	—	—	12	—	12
	Tutorial	≠	≠	≠	≠	≠
NX23	Engineering IIE—					
	Stress Analysis—					
	Lecture	—	—	12	—	—
	Practical§	2-5	2-5	—	—	—
	Machine Design—					
	Lecture	—	12	—	—	—
	Practical	—	2-5(B)	2-5(A)	—	—
NX52	Engineering IIH—					
	Electrical Circuits and Machines—					
	Lecture	—	11	—	—	—
	Practical§	—	2-5	—	—	—
	Electronics—					
	Lecture	—	—	11	—	—
	Practical§	—	2-5	—	—	—
NX93	Engineering IIIH—					
	Stress Analysis—					
	Lecture	—	—	12	—	—
	Practical§	—	2-5	—	—	—
	Machine Design—					
	Lecture	—	12	—	—	—
	Practical	—	—	2-5	—	—
	Electrical Circuits and Machines—					
	Lecture	—	11	—	—	—
	Practical§	—	2-5	—	—	—
	Electronics—					
	Lecture	—	—	11	—	—
	Practical§	—	2-5	—	—	—

FACULTY OF ENGINEERING—Continued

No. in Syllabus	Subject	Monday	Tuesday	Wednesday	Thursday	Friday
NX73	Engineering IIIM—					
NX53	Electrical Circuits and Machines—					
	Lecture	—	11	—	—	—
	Practical§	2-5	2-5	—	—	—
	Electronics—					
	Lecture	—	—	11	—	—
	Practical§	2-5	2-5	—	—	—
	Electrical Instrumentation—					
	Lecture	—	—	—	11	—
	Practical§	—	—	2-5	—	—
	Mathematics III (Engineering)—					
	Lectures	—	—	9	—	9
	Tutorial	9	—	—	—	—
	Economics (Engineering)—					
	Lectures	—	—	12	—	12
	Tutorial	≠	≠	≠	≠	≠
ST02	Mathematical Statistics II—					
	Lectures	11	11†	11	11	11
	Tutorial (2 hours)	—	—	2-4	2-4	—
NM03	Mechanical Engineering IIA—					
	Lectures	12	12	—	12	—
	Tutorial	—	—	—	—	11
	Practical	—	—	—	—	2-5
NM13	Mechanical Engineering IIB—					
	Lectures	10	9	—	9	—
	Tutorial	—	—	—	—	10
	Tutorial/Practical	—	2-5	—	2-5	—
SM02	Pure Mathematics II—					
	Lectures	9	—	9	9	9
	Tutorial	—	9	—	—	—
	FOURTH YEAR					
	Time-table to be arranged by the Departments					

* Only if numbers exceed lecture room capacity.
**Only if numbers exceed laboratory capacity.
(A), (B), (C) and (D) indicate alternatives.
§ Eight three-hour practical sessions.
† First term only.
≠ Time to be arranged.

Note: In any subject where lecture, practical and tutorial groups are designated A, B, etc., a student allocated to lecture or practical group A must take tutorial Group A, etc. This does not apply between subjects.

FACULTY OF MUSIC

No . in Syllabus	Subject	Monday	Tuesday	Wednesday	Thursday	Friday
UM01	Theoretical Studies I	—	10-12, 2	—	—	—
UM11	Historical and Social Studies I ..	—	—	—	10-12, 4	—
UM21	Practical Studies I	—	—	—	3	—
UM02	Theoretical Studies II	—	10-12, 3	—	—	—
UM12	Historical and Social Studies II ..	—	5	—	10, 2-4	—
UM22	Practical Studies II	—	2	9-12*	11	—
UM03	Theoretical Studies III	—	—	—	—	12, 2-4
UM13	Historical and Social Studies III ..	—	—	10-12, 5	—	11
UM23	Practical Studies III	—	—	2-4	9-12*	—

Times for tutorials and additional seminars will be arranged at commencement of lectures.

* For Music in Education students only.

FACULTY OF SCIENCE

N.B. Heads of Departments concerned will allocate students to appropriate classes for which more than one session is provided. The combinations of subjects suggested in the Science Leaflet are compatible with the timetables.

No. in Syllabus	Subject	Monday	Tuesday	Wednesday	Thursday	Friday
	FIRST-YEAR SUBJECTS					
WA01	Agriculture IA	—	8 a.m.	—	—	—
SZ71	Biology I—					
	Lectures	—	9(A)	—	9(A)	—
		—	5.15(B)	—	5.15(B)	—
	Tutorial (1 hour)	10, 11, 12	10, 11, 12	—	10, 11, 12	10, 11, 12
		2, 3, 4	7, 8	—	7, 8	2, 3, 4
	Practical (4 hours)†	—	—	—	—	—
SB1H	General Biology IH (half-subject)—					
	Lecture	—	9(A)	—	—	—
		—	5.15(B)	—	—	—
	Tutorial (fortnightly)	—	12	—	—	—
	Practical	—	10-12	—	—	—
SB2H	Plant Biology IH (half-subject)—					
	Lecture	—	—	—	9	—
	Tutorial (fortnightly)	—	12	—	—	—
	Practical	—	—	—	10-12	—
SC01	Chemistry I—					
	Lectures	9(A, B)	—	9(A, B)	—	9(A, B)
		5.15(C, D)	—	5.15(C, D)	—	5.15(C, D)
	Tutorial (1 hour)	—	—	11(A, C)	—	—
		—	—	12(B, D)	—	—
	Practical (3 hours)	—	2-5	—	10-1	10-1
		—	—	—	2-5	2-5
SA7H	Computing IH (half-subject)—					
	Lectures	11	—	—	—	11
	Tutorial	3(A)	—	—	—	3(B)
SJ7H	Genetics and Human Variation IH (half-subject)—					
	Lecture	—	—	—	12	—
	Practical (fortnightly)	—	—	—	9-12(A)	—
		—	—	—	2-5(B)	—
SG1H	General Geology IH (half-subject)—					
	Lectures	—	9(A)	3(A, B)	—	—
		—	5.15(B)	5.15(A, B)	—	—
	Practical	2-5	10-1	—	—	—
		—	2-5	—	2-5**	—
	Tutorial	≠	≠	≠	≠	≠
SG2H	Physical Geology IH (half-subject)—					
	Lectures	—	—	3(A, B)	9(A)	—
		—	—	5.15(A, B)	5.15(B)	—
	Practical	2-5	10-1	—	2-5**	—
		—	2-5	—	—	—
	Tutorial	≠	≠	≠	≠	—
SM01	Mathematics I—					
	Lectures	10(A)	—	10(A)	10(A)	10(A)
		4.15(B)	—	4.15(B)	4.15(B)	4.15(B)
	Tutorial (2 hours)	11-1	—	—	11-1	11-1
		2-4	—	2-4	—	2-4
SM11	Mathematics IM—					
	Lectures	4.15	—	4.15	4.15	4.15
	Tutorial (2 hours)	11-1	—	—	11-1	11-1
		2-4	—	2-4	—	2-4
SM7H	Mathematics IH (half-subject)—					
	Lectures	4.15	—	4.15	—	—
	Tutorial (1 hour)	11-1	—	—	11-1	11-1
		2-4	—	2-4	—	2-4

FACULTY OF SCIENCE—Continued

No. in Syllabus	Subject	Monday	Tuesday	Wednesday	Thursday	Friday
SP01	Physics I—					
	Lectures	9(C, D)	—	9(C, D)	—	9(C, D)
		(3)E*	—	10(E)*	—	3(E)*
		5.15(A, B)	—	5.15 (A,B)	—	5.15(A, B)
	Tutorial (1 hour)	—	—	11(B, D)	—	—
		—	—	12(A, C)	—	—
	Practical (3 hours)	10-1	10-1	—	10-1	10-1
		2-5	2-5	—	2-5	—
				6.15-9.15		
AY01	Psychology I—					
	Lectures	10(A)	—	10(A)	—	10(A)
		5.15(B)	—	5.15(B)	—	5.15(B)
	Practical (2 hours)	≠	≠	≠	≠	≠
ST7H	Statistics IH (half-subject)—					
	Lectures	12	—	—	—	12
	Tutorial	3(A)	—	—	—	3(B)
SZ01	Zoology I—					
	Lectures	—	2	—	2	—
	Practical (5 hours)	—	10-12.30 (A)	—	10-12.30‡ (A)	—
		—	3-5.30(B)	—	3-5.30(B)‡	—

Alternatives are indicated by A, B, C, etc.

Note: In any subject where both lecture and tutorial groups are designated A, B, C . . . a student allocated to lecture group A must take tutorial group A, etc. This does not apply between subjects.

≠Time to be arranged.

* Physics: E to be held only if numbers exceed lecture theatre capacity.

**Geology: Practical class to be held only if numbers exceed laboratory capacity.

† Biology: The laboratories are open during the following hours:

9 a.m.— 6 p.m. Monday, Wednesday and Friday.

9 a.m.—10 p.m. Tuesday and Thursday.

Students may make their own arrangements to complete an average of 4 hours a week.

‡ Zoology: Tutorials are given on alternate Thursdays in the time allotted for practical work.

FACULTY OF SCIENCE—Continued

No. in Syllabus	Subject	Monday	Tuesday	Wednesday	Thursday	Friday
	SECOND-YEAR SUBJECTS					
WA02	Agriculture IB—					
	Lectures	—	8	—	—	—
SN02	Applied Mathematics II—					
	Lectures	9(A) 12(B)	9(A) 12(B)	9(A) 12(B)	— —	9(A) 12(B)
	Tutorial (1 hour)	—	9, 10	—	9, 10	11
SY02	Biochemistry II—					
	Lectures	9	9	—	—	9
	Tutorial	≠	≠	≠	≠	≠
	Practical (6 hours)	—	10-5(A)	10-5(B)	—	—
SB02	Botany II—					
	Lectures	11	—	—		11
	Practical (6 hours)	—	2-5	—	2-5	—
SC12	Chemistry II—					
	Lectures	12	—	12	—	12
	Practical (6 hours)	—	—	9-12, 2-5	—	—
SJ02	Genetics II—					
	Lectures	10	—	10	—	10
	Practical (4 hours)	2-4(A, B)	2-4(C, D)	2-4(A, C)	—	2-4(B, D)
	Tutorial (1 hour)					
SG02	Geology II—					
	Lectures	9	—	9	—	9
	Tutorial (1 hour)	≠	≠	≠	≠	≠
	Practical (6 hours)	2-5	9-12*	—	9-12*	2-5
	Monday and Tuesday are alternatives. Thursday and Friday are alternatives.					
ST02	Mathematical Statistics II—					
	Lectures	11	11**	11	11	11
	Tutorial (2 hours)	—	10-12(C)	2-4(B)	2-4(A)	—
	(B or C at discretion of Department)					
SO02	Organic Chemistry II—					
	Lectures	11	—	11	—	11
	Practical (6 hours)	—	10-5(A)	—	10-5(B)	—
SC02	Physical and Inorganic Chemistry II—					
	Lectures	12	—	12	—	12
	Tutorial (1 hour)	4(A)	—	4(B)	—	—
	Practical (6 hours)	—	10-5(A)	—	10-5(B)	9-6(C)†
SP02	Physics II—					
	Lectures	10	—	10	—	10
	Tutorial (1 hour)	—	—	2	—	—
	Practical (6 hours)	2-5(A)	10-1(A)	—	10-1(C)	2-5(B)
	(C at discretion of Department) ..	—	2-5(C)	—	2-5(B)	—
SS02	Physiology II—					
	Lectures	12	—	12	—	12
	Practical (6 hours)	—	—	9-5	—	—

Alternatives are indicated by A, B, C, etc. ≠ Time to be arranged.

* To be held only if numbers exceed laboratory capacity. ** Lecture in computing—first term only.

† Due to several lecture commitments in this period, these hours have been extended to provide a full six-hour practical period.

FACULTY OF SCIENCE—Continued

No. in Syllabus	Subject	Monday	Tuesday	Wednesday	Thursday	Friday
AY02	Psychology II—					
	Lectures	5.15	—	5.15	—	5.15
	Tutorial (1 hour)	≠	≠	≠	≠	≠
	Practical (4 hours)	≠	≠	≠	≠	≠
SM02	Pure Mathematics II—					
	Lectures	9(A)	—	9(A)	9(A)	9(A)
		12(B)	—	12(B)	12(B)	12(B)
	Tutorial (1 hour)	—	9, 10	—	9, 10	—
SZ02	Zoology II—					
	Lectures	—	12	—	12	—
	Practical (6 hours)	2-5(C)	9-12(A)	—	9-12(A)	—
		2-5(C)	2-5(B)	—	2-5(B)	2-5(C)

THIRD-YEAR SUBJECTS

Any student who is unable to pursue a combination of subjects due to an apparent clash in the hours set aside for practical work in these subjects should consult the appropriate Departments before making a final decision.

Note.—These timetables show the hours set aside for work in each Department. Students taking a particular modification of a subject, e.g. Zoology IIIA instead of Zoology III, should consult the timetable in the Department.

SY03	Biochemistry—					
SY53	Lectures	12	—	12	12	—
	Tutorial (1 hour)	≠	≠	≠	≠	≠
	Practical (8 hours)	all day	—	—	—	all day§
SB03	Botany—					
SB13	Lectures	10, 5*	—	10, 2*	9*	10
SB33	Practical (12 hours)	—	all day	all day*	all day	—
SA03	Computing Science—					
SA13	Lectures	4.15	4.15	4.15	4.15	4.15
	Tutorial	≠	≠	≠	≠	≠
SJ03	Genetics III—					
	Lectures (3 hours)	—	10, 12	—	9, 10	—
	Practical (8 hours)	≠	≠	≠	≠	≠
SG03	Geology—					
SG23	Lectures	9, 5	10, 3†	9°	10, 3†	9°, 5
SG43	Practical (12 hours)	all day	all day**	—	all day**	all day
SG73			(A)		(B)	
MA13	Histology—					
	Lectures	—	9	—	9	12
	Practical (10 hours)	all day	—	all day	—	—
SF03	Mathematical Physics IIIA—					
	Lectures (5 hours)	9, 10	9, 10, 3	9, 10, 3	9, 10, 3	9, 10
	Tutorial	≠	≠	≠	≠	≠
SF13	Mathematical Physics IIIB—					
	Lectures (5 hours)	11	12, 3	12, 3	12, 3	11
	Practical	—	—	—	all day	—
ST03	Mathematical Statistics III—					
	Lectures (4 hours)	11	11	11	11	11
	Tutorial (2 hours)	≠	≠	≠	≠	≠
SN03	Applied Mathematics III—					
	Lectures (5 hours)	9, 10	9, 10, 12‡	9, 10	9, 10, 12‡	9, 10
	Tutorial (1 hour)	≠	≠	≠	≠	≠
SM03	Pure Mathematics III—					
	Lectures (5 hours)	9, 10, 12	9. 10	9, 10	9, 10	9, 10, 12
	Tutorial (1 hour)	≠	≠	≠	≠	≠

FACULTY OF SCIENCE—Continued

No. in Syllabus	Subject	Monday	Tuesday	Wednesday	Thursday	Friday
SK03	Microbiology—					
SK13	Lectures	—	9	11	9	—
SK23	Tutorial	≠	≠	≠	≠	≠
	Practical (10 hours)	—	9-1, 2-5	—	9-1, 2-5	—
SO03	Organic Chemistry—					
SO43	Lectures	9, 4	—	9	—	9, 4
	Practical (12 hours)	all day°°	all day (A)	all day (A)	all day (B)	all day (B)
	Tutorial	≠	≠	≠	≠	≠
SG13	Palaeontology—					
	Lectures	≠	≠	≠	≠	≠
	Practical	≠	≠	≠	≠	≠
SC03	Physical and Inorganic Chemistry—					
SC13	Lectures	5***	9, 4	4, 5	9, 4	5***
SC73	Practical (12 hours)	all day (A)	all day (A)	all day (B)	all day (B)	all day‡
	Tutorial	≠	≠	≠	≠	≠
SP03	Physics—					
SP13	Lectures	11, 12	11, 12	11, 12	11, 12	11, 12
	Practical (9 hours)	all day	—	all day	all day	all day
SS03	Physiology—					
SS33	Lectures	11	—	11	—	11
SS43	Practical (9 hours)	—	—	—	all day	2-5§
SS53						
AY23	Psychology—					
	Lectures	5.15	—	5.15	—	5.15
	Tutorial (1 hour)	≠	≠	≠	≠	≠
	Practical (6 hours)	≠	≠	≠	≠	≠
SZ03	Zoology—					
SZ13	Lectures	9, 5*	2	9, 2*	9*	9
SZ23						
SZ33	Practical (9 hours)	2-5	2-5	all day	—	all day
SZ43		(A)	(B)	(B)		(A)
SZ53						
SZ63						
SZ73						

Alternatives are indicated by A, B, C, etc.

≠ Time to be arranged.

* Third term only for students taking Cells and Embryos—3 hours practical to be arranged. First and second term—one Botany double unit may be held at these times 3 hours practical to be arranged.

† Geophysics lectures—second and third terms only.

° Geochemistry lectures—second and third terms only.

** Geophysics and Geochemistry—alternatives will only be given if numbers so warrant.

°° Available only for those students who obtain prior permission from the Head of Department.

§ Special arrangements will be made for students taking both Physiology and Biochemistry.

*** Second term only. ‡ Optional unit only.

TIME-TABLES FOR AGRICULTURAL SCIENCE, ARCHITECTURE, COMPUTING SCIENCE, DENTISTRY, LAW, MEDICINE, PHYSICAL EDUCATION, PHYSIOTHERAPY, AND TECHNOLOGY AND APPLIED SCIENCE.

Particulars of the time-tables for subjects in these courses may, after enrolments are completed, be obtained as follows:

Course	*Particulars from*
I. AGRICULTURAL SCIENCE	
(a) First- and second-year subjects.	Faculty of Science time-tables (page 980).
(b) Third-year subjects:	
Agricultural Economics I	Faculty of Economics time-tables (page 973).
Other third-year subjects	The Dean, Waite Agricultural Research Institute.
(c) Fourth-year subjects:	
Genetics II	Faculty of Science time-tables (page 973).
Other fourth-year subjects	The Dean, Waite Agricultural Research Institute.
II. ARCHITECTURE	Architecture General Office.
III. COMPUTING SCIENCE	Department of Computing Science.
IV. DENTISTRY	
(a) First-year subjects	Time-tables of the Faculties of Arts (page 968). and Science (page 980).
(b) Second- and later-year subjects	Dental School Office.
V. LAW	Law School Office.
VI. MEDICINE	
(a) First-year subjects	Time-tables of the Faculties of Arts (page 968) and Science (page 980).
(b) Second- and third-year subjects	Departments of Anatomy, Biochemistry, and Human Physiology.
(c) Clinical subjects	Medical School Office.
VII. PHYSICAL EDUCATION	Senior Lecturer-in-Charge, 83 Finnis Street, North Adelaide.
VIII. PHYSIOTHERAPY	Department Office.
IX. TECHNOLOGY AND APPLIED SCIENCE including PHARMACY (Degree)	The Academic Secretary, South Australian Institute of Technology.

TABLE OF DEPARTMENTS

° School of the South Australian Institute of Technology.

TABLE OF SYLLABUS NUMBERS

TABLE OF SUBJECTS