

**THE UNIVERSITY
OF ADELAIDE**

HANDBOOK OF COURSES 1972



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September, 1971.

APPLICATIONS FOR ADMISSION IN 1972

EVERY PERSON SEEKING ADMISSION
to any first degree course in 1972
IS REQUIRED TO APPLY FOR SUCH ADMISSION,
on the prescribed form, as follows:

Form A (grey):

for **new students**, i.e. applicants **not** previously enrolled
in either The University of Adelaide or The Flinders
University of South Australia.

Form B (green):

for students enrolled in either University in 1971 or
previously, who wish to enrol in 1972 in a **different**
course.

The completed form must be sent to:

The Admissions Office for Higher Education,
Box 128,
Rundle Street P.O.,
Adelaide, S.A., 5000.

The closing date for all applications is

30 NOVEMBER, 1971

except that applications from students enrolled in 1971 in either Adelaide
or Flinders, who wish to enrol in 1972 in a different course, and whose
intentions may be influenced by their 1971 examination results, will be
accepted up to 3 January, 1972.

An application received after the prescribed last date may
not be accepted. If it is accepted it will be subject to a **LATE**
FEE of \$10, which must be paid when the application is
lodged.

FURTHER INFORMATION

This handbook is intended to provide in brief readable form most of the information required by a student who is considering the possibility of entering a course at the University.

More detailed information about the requirements of the various courses may be found in Volume II of the University Calendar which contains:

- The Regulations and Schedules of the courses offered.
- The Syllabuses, Timetables and Fees for the subjects given in these courses.
- Certain Rules such as those for the use of the Barr Smith Library.

Volume II of the Calendar for 1972 will be available in late December from the University Office. Price 25c (plus postage).

A leaflet of general information is also available from the University Office. This contains basic general information about the University in a condensed form and is particularly suitable for persons making a first general enquiry about courses, admission conditions and so on.

Forms of Application for Admission in 1972 are available, free of charge, from the University Office.

Persons who have read the various publications and wish to obtain further information or advice are invited to write to the Academic Registrar.

All correspondence should be addressed to:

The Academic Registrar,
The University of Adelaide,
North Terrace,
Adelaide, S.A., 5001.

The University's telephone number is 23 4333, and its telegraphic address is UNIVAD.

H. E. WESLEY SMITH,
Academic Registrar.

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FOREWORD

BY THE VICE-CHANCELLOR

If you are still at school, or if you have completed the Matriculation Examination, you will be doing some hard thinking about your future. What further education do you need for your full educational development? What courses of study are available? What career do you intend to follow, and what qualifications are required to enable you to follow this career?

It is possible to drift into a university course with no clear goal before you, because your parents expect it, because most of your friends are doing so, or for some similar reason. Such reasons are generally found, in time, to be inadequate. Your own interests and your own capabilities are the things that matter. It is your future and your career which are in question, and in the end it is you who must make the decisions.

If you *have* reached a decision about your need for further education, and a tentative decision on the nature of your future career, you are in a position to consider the courses of study which are available at the Teachers' Colleges, the South Australian Institute of Technology, The Flinders University of South Australia, The University of Adelaide, and elsewhere; and the choice between them may not be an obvious one and may not be easy. If you wish to teach the Teachers' Colleges may provide the courses you need. If you wish to study architecture, or engineering, or accounting, you will have to choose between the courses provided at the S.A. Institute of Technology and at the University of Adelaide; and the courses are not necessarily of the same length or of the same content. Similarly, if you want to be a chemist, or a physicist, there are courses at both universities as well as at the Institute, and again you will have to try to decide which is the best one for your particular needs and aspirations.

On the other hand there are some fields of study which are peculiar to one institution. If you wish to become a dentist, or to study agricultural science to degree level or beyond, then you need to enrol at the University of Adelaide. If you wish to study German, or Law, you will do the same. If you hope to study Italian, or Spanish, or Oceanography, then Flinders University is the place for you because alternative courses are not provided elsewhere; and so on.

All the tertiary institutions publish handbooks designed to help you select the course or courses which will most closely meet your own individual needs. This Handbook aims to give you, in brief and readable form, most of the general information about first degree courses offered by the University of Adelaide in 1972; and a word or two about the University may be of interest.

The University of Adelaide is now nearing its centenary because it was established by Act of Parliament in 1874 and given five acres of land 'on the parklands opposite Pulteney Street'. Teaching in Arts and Science began two years later with sixty students. At that time there were only two other universities in Australia: Sydney and Melbourne.

Since those early days the University of Adelaide has grown so that it now enrolls more than 8,500 students; and there are about 600 members of the academic staff and about 1,200 non-academic staff. The total population is therefore well over 10,000. The University's buildings on the North Terrace campus now occupy a site of 33 acres. The Waite Agricultural Research Institute, which is the University's agricultural school, was established in 1924, and occupies some 380 acres at Glen Osmond. The University also has a number of experimental stations, agricultural and other, scattered throughout the State. It has 45 acres of playing fields in the parklands north of the River Torrens, and a further 15 acres of playing fields at the Waite Institute. It is developing additional areas at a site adjacent to Adelaide Airport.

The University is, therefore, a large and complex institution; but it is not large enough to be able to accept every student who wishes to undertake each of its courses. Competition for places in some courses is keen; for others, all students who have matriculated can be accepted. If a selection has to be made it is done on academic merit as judged by the results obtained at the Matriculation Examination. It may be, however, that if you are unsuccessful in the

selection for one course you will be successful for another course. That is why we ask you to indicate your priorities on the form of application for admission to the universities, or to the S.A. Institute of Technology.

A number of the University's courses (Dentistry, Medicine) can be taken only by full-time study. Arts and Economics can be taken by either full-time or part-time study. Agricultural Science, Architecture, Engineering, Law, Music, and Science may, in certain circumstances, be taken either wholly or in part by part-time study, but only if you are able to attend during the day.

In general, the University would prefer you to be a full-time rather than a part-time student, so that you can study under the conditions most likely to lead to success, and to enable you to enter fully into the life of the University.

Nevertheless there may sometimes be advantages in part-time study; and in any case that may be the only way in which you can hope to achieve a university education.

If part-time study seems to be the only practicable approach from a financial point of view, it is nevertheless desirable to think this through. The demands made by part-time study are considerable; but success can be achieved if you are willing and able to devote the necessary time, throughout the year, to academic work.

Then there is the question of residence. Where will you live during your time as an undergraduate? It may be that you will continue to live with your parents, as most students do; but if not, where?

The University does not provide accommodation. Single students who wish to live in lodgings are usually able, after some searching, to secure reasonably satisfactory living accommodation. The Warden of the Union will do all he can to help find such accommodation if this is what you require.

There is another possibility, however, which needs to be considered seriously. Under the University Act, provision is made for affiliation of residential colleges in which students can enjoy the advantages of residence, and of tuition which is supplementary to that given by the staff of the University itself.

There are five residential colleges affiliated with the University. St. Mark's, Aquinas and Lincoln are for men; St. Ann's is for women; and Kathleen Lumley College is for students working for postgraduate degrees. If you are attracted to the idea of living in a University College you can obtain particulars of admission, fees and so on, by applying directly to:

The Master, St. Mark's College, 46 Pennington Terrace, North Adelaide, 5006.

The Principal, St. Ann's College, 187 Brougham Place, North Adelaide, 5006.

The Rector, Aquinas College, 19 Palmer Place, North Adelaide, 5006.

The Master, Lincoln College, 45 Brougham Place, North Adelaide, 5006.

The Master, Kathleen Lumley College, 51 Finmiss Street, North Adelaide, 5006.

Let us suppose that you have selected your course, have been successful in gaining a place in the quota, and have a suitable place to live either at home, in lodgings, or in a College. What now?

The purpose of a university is education, the intellectual development of the individual, the advancement of learning, and the welfare of the community in which the university exists. Training for a particular career may be an important factor in your thinking, but a university does not succeed in its task unless it make you an interesting person, unless your thinking processes are stimulated, unless it excites your imagination.

There are more things to a university than the lectures, tutorials and practical work. The library needs to be explored and its collections (more than 500,000 books at the University of Adelaide) examined for items which broaden your interests and open new avenues of thought. Dialogues and arguments with other students and with members of the staff, membership of clubs and societies, and friendships fostered by participation in sports and other activities: all these are part of university education. Osbert Sitwell once said that he educated himself

in the holidays from Eton, and there was probably just enough truth in this to emphasise the fact that education is a personal matter. Nevertheless, 'teaching is the expediting of learning'. If we did not believe this universities might as well close their doors. So the formal courses must always be important.

How does university work and study differ from that at school? The main difference, I think, is 'freedom'. You are free—within the restriction of the quotas—to choose the course best suited to your own interests and aspirations. You are free to plan your own time with little or no control. You are free to study when you will, or to talk or relax, or to take part in all sorts of other activities with little constraint. You will be expected to attend practical classes at the set times, and you will be required to attend tutorials at the set times, and you may be required (but not always) to attend lectures at the set times; but you will have to plan your private study periods, and your time in the library, yourself. If you neglect your study, no one will run after you, because freedom carries its own responsibility.

You may find it hard to adapt to this new freedom, to the need to organise work without outside pressure, to prepare assignments without assistance, and generally to exercise self reliance. It means self discipline, under a heavy load of work, hand in hand with enjoyment gained from the new sort of community in which you will be living.

Physical environment is important for academic work: one's private room has to be turned into a study, with the books and other material needed close at hand, and external noise eliminated as far as possible. Most people find it necessary to work at regular hours, and for long hours, to read, to write, to make notes, and to return again and again to difficult concepts until they are fully understood. It is, of course, necessary to maintain a sensible balance between work and relaxation with physical exercise, because no one can concentrate for long periods without rest and without exercise.

A university course therefore means hard work and long hours; but the intellectual rewards are great. If this is what you want, then the University of Adelaide will extend you a warm welcome.

14 September, 1971.

G. M. BADGER,
Vice-Chancellor.

PART I: GENERAL INFORMATION

I. ADMISSION

(a) Restrictions

After careful consideration of the teaching facilities available, the Council has been obliged to impose restrictions on the number of new students that may be admitted to first degree courses.

The University, in conjunction with The Flinders University of South Australia and the S.A. Institute of Technology, has established an Admissions Office to receive and process applications for admission to such courses in either University in 1972 and to Diploma in Technology courses in the Institute. Selection of those to be offered admission will be based as far as practicable on academic merit within the student's preference as to institution and course.

(b) Applications

All persons seeking admission for the first time in 1972 to first degree courses are required to apply for such admission, on the prescribed form. [For details, see page 1.]

The completed form must be sent to:

The Admissions Office for Higher Education,
Box 128,
Rundle Street P.O., Adelaide, S.A., 5000.

Closing date for receipt of all applications: **30 November, 1971**, except that applications from persons enrolled in either University in 1971 will be accepted up to 3 January, 1972. Application forms may be obtained from the Admissions Office, at the University Office, or on request to the Academic Registrar.

Persons whose educational qualifications were obtained otherwise than at Public Examinations in South Australia must write to the Academic Registrar as soon as possible, and in any case not later than **30 November, 1971**, submitting full details of their qualifications (with copies of certificates) and asking that their position, including their eligibility to be considered, be determined. This action must be taken in addition to lodging the prescribed form with the Admissions Office.

(c) Eligibility

(i) Local candidates

Persons (including overseas students) who qualified for matriculation at Public Examinations in South Australia, or who expect to become so qualified after publication of the results of the 1971 Matriculation Examination, are eligible to be considered, if they submit applications by 30 November, 1971.

(ii) Overseas students

For overseas students, for this purpose defined as students who are resident in (or who hope to come to) Australia for study purposes only, special conditions apply. All such students should read carefully the relevant paragraphs in Section 10 of the leaflet "General Information".

For overseas students whose entry qualifications were obtained at examinations other than Public Examinations in South Australia, the closing date for initial enquiry for 1972 is **1 November, 1971**.

Every candidate whose initial enquiry has been made before 1 November, and who has been informed by the University that he has been placed on a short list, must complete the prescribed application form and lodge it with the Admissions Office for Higher Education on or before **30 November, 1971**. Selection of those to be offered admission will be made as early as possible in January; and in general the students to be admitted will be required to be in Adelaide by the last week of February.

(iii) Other candidates from outside South Australia

A candidate for admission to a course (other than an overseas student—see (ii) above) who is not ordinarily resident in South Australia, and whose qualifications were obtained otherwise than at Public Examinations in South Australia, must first be declared **eligible to be considered**. For this purpose he should obtain from the Academic Registrar a Form of Preliminary Application (Form PF10) which must be completed and returned by **30 November** together with a statement setting out, as fully as possible, his reasons for asking that he be declared eligible.

A candidate will be declared eligible to be considered if he:

- i. seeks entry to a course not provided in his home State; or
- ii. has taken up permanent residence in South Australia for reasons other than admission or prospective admission to the University. (For example, the son or daughter of a parent transferred to South Australia by his employers might be in this category); or
- iii. has had his secondary education in another State (e.g. Victoria), if his parents are *bona fide* residents of South Australia; or
- iv. has his home in the Northern Territory, Broken Hill, Mildura or some other district close to the South Australian border and completed his secondary education in his home area.

Normally the University will not regard as eligible to be considered an applicant who has not lived in South Australia for the twelve months preceding the academic year in which entry is sought; and it will not normally consider for admission to a course an applicant who has previously been precluded from continuing his studies in the same or in a similar course in another University. Nevertheless, any person may submit his case to the University.

Every candidate declared eligible to be considered will then compete for selection within the normal quota, provided that he submits his application to the Admissions Office for Higher Education by 30 November.

(d) Selection

The selection of students for admission to the various courses is based as far as practicable on academic merit.

In the case of candidates who qualify for matriculation at a South Australian Matriculation Examination academic merit will be assessed initially on the aggregate of a candidate's marks in his best five subjects. However the relevant Selection Committee will give consideration to any special circumstances such as additional qualifications, National Service, genuine interruptions to formal education, or handicaps to education (e.g. illness, financial problems, limited school facilities, ect.), and an applicant wishing to claim consideration for any such circumstances should ensure that documentary evidence in support of his claim is submitted with his form of application for admission.

Some applicants take the Matriculation Examination a second or third time. In any such case the applicant's complete academic record, i.e. his results at each attempt, is taken into account; and accordingly every such applicant is advised to submit, for the information of Selection Committees, a statement of his reasons for making a second (or third) attempt, and of the conditions under which he did so.

II. MATRICULATION

(a) General

Before entering upon a course of study at the University, a student must matriculate. To become qualified to do so he must:

- i. have satisfied the requirements of the current Matriculation Statute; *or*
- ii. have satisfied the requirements (when they were operative) of any former Matriculation Statute; *or*
- iii. be declared qualified for matriculation on account of educational qualifications obtained outside South Australia.

A student who is qualified to matriculate and who has been authorised to enrol may matriculate by signing his name, in the presence of an authorised officer, to the prescribed declaration in the Students' Roll. This is normally done as part of the enrolment procedure.

(b) Matriculation Statute

The present Matriculation Statute (September, 1971) is as follows:

GENERAL

1. To become a matriculated student of the University a candidate shall:
 - (a) have satisfied the educational requirements specified below; and
 - (b) at an appointed time, in the presence of the Academic Registrar or other duly appointed person, sign the following declaration in the Students' Roll:

'I undertake to obey the Statutes and Regulations of the University of Adelaide and to comply with such rules as may from time to time lawfully have been made by or with the authority of the Council of the University.'

THE MATRICULATION EXAMINATION

2. A Matriculation Examination shall be held towards the end of each calendar year. The examination shall be designed, in general scope and standard, for candidates who have completed five years of academic secondary education (following seven years of primary education) in South Australia.

3. (a) The subjects available at the Matriculation Examination shall be:

Group I: Ancient History, Classical Greek, Classical Studies, Economics, English, French, Geography, German, Italian, Latin, Modern History, Music, Russian, Spanish and such other subjects as may be approved by the Council on the recommendation of the Joint Matriculation Committee.*

Group II: Biology, Chemistry, Geology, Mathematics I, Mathematics II, Physics and such other subjects as may be approved by the Council on the recommendation of the Joint Matriculation Committee.†

‡(b) Candidates' results in each subject shall be classified (not necessarily for publication) in the grades A, B, C, D, E, F and G in descending order of merit.

EDUCATIONAL REQUIREMENTS FOR MATRICULATION

4. To fulfil the educational requirements for matriculation a candidate shall:
 - (a) present at one Matriculation Examination not less than five subjects which shall include at least one subject from each of Group I and Group II, provided that Ancient History and Classical Studies shall not both be counted; and
 - ** (b) attain in five subjects so presented an aggregate of scaled marks not less than a figure determined from time to time by the Council, provided that if a candidate present more than five subjects the aggregate of marks shall be his highest five scaled marks in subjects which comply with the requirements of section (a) of this Clause.

SPECIAL MATRICULATION EXAMINATION

5. A candidate may be permitted by the Joint Matriculation Committee to present himself for a special examination in one or more subjects:

- (a) if he produces evidence satisfactory to the Joint Matriculation Committee that he was prevented by illness from attending or completing the Matriculation Examination in the subject or subjects concerned;
- (b) on such other grounds as may be approved by the Joint Matriculation Committee and for which he has produced such evidence as may be required.

* Japanese and Indonesian have been so approved for 1972.

† Mathematics IS has been so approved for 1972; provided that a candidate presenting that subject may not also present either Mathematics I or II.

‡ See footnote 1 on page 12.

** See footnotes 2 and 3 on pages 12 and 13.

6. Special examinations, when granted, shall be held as soon as practicable after the Matriculation Examination.

7. For the purpose of complying with Clause 4, the results obtained by a candidate at a Matriculation Examination and an immediately ensuing Special Matriculation Examination shall be regarded as having been obtained at the one Matriculation Examination.

THE MATRICULATION BOARD

8. There shall be a Matriculation Board consisting of the Vice-Chancellor and three members appointed by the Council on the recommendation of the Education Committee. Each appointed member shall serve for three years except that, of the first members, one shall be appointed to hold office until the end of 1970, one until the end of 1971 and one until the end of 1972.

9. The Board shall advise the Council on all applications under this Statute for status, for provisional matriculation, and for adult matriculation and on such other matters as the Council may refer to it.

THE JOINT MATRICULATION COMMITTEE

10. (a) There shall be a Joint Matriculation Committee of The University of Adelaide and The Flinders University of South Australia, consisting of eleven members.

(b) Each University Council shall appoint five members.

(c) The ten appointed members shall elect a chairman. If an appointed member be elected chairman he shall thereupon cease to be an appointed member, and the resultant vacancy shall be filled by the relevant University Council.

11. In addition to its powers under Clauses 3 and 5, the Joint Matriculation Committee shall advise the Councils of the two Universities on any matters related to matriculation referred to it by the Council of either University.

STATUS

12. A candidate who submits satisfactory evidence of educational qualifications gained otherwise than at the Matriculation Examination may, on the recommendation of the Matriculation Board, be declared qualified for matriculation or be granted such status towards matriculation as shall be determined in each case.

13. A candidate who under Clause 12 is granted status towards matriculation on account of educational qualifications obtained outside South Australia may be required to satisfy the Matriculation Board that his knowledge of English is sufficient for the purpose of undertaking University studies.

PROVISIONAL MATRICULATION

14. On the recommendation of the Matriculation Board and on such conditions as may be determined in each case, a candidate who has not fulfilled the educational requirements for matriculation specified in Clause 4 may be admitted to provisional matriculation for a specified period. Only in exceptional circumstances may such provisional matriculation be renewed.

15. (a) A candidate admitted to provisional matriculation shall comply with section (b) of Clause 1 and shall be deemed during the period of provisional matriculation to be a matriculated student of the University; and his fulfilling the conditions prescribed within the period specified shall *ipso facto* confirm his status as a matriculated student from the date of his signing the Students' Roll.

(b) If a candidate admitted to provisional matriculation fails to comply with the conditions prescribed within the period specified his status as a matriculated student shall thereupon lapse and an entry to that effect shall forthwith be made in the Students' Roll.

ADULT MATRICULATION

16. On the recommendation of the Matriculation Board the Council may make such modifications in the provisions of this Statute as it deems fit for a person who has attained the age of twenty-one years or who for a continuous period of at least thirty-three months has ceased to undergo full-time secondary education.

OPERATIVE DATE

17. This Statute shall come into force on 1st April, 1969, when the Matriculation Statute in force on 31st March, 1969, shall be repealed.

SAVING CLAUSE

18. (a) Notwithstanding the provisions of Clause 1(a), a candidate who before 1st April, 1969, had fulfilled the educational requirements for matriculation under any former Matriculation Statute by passing in appropriate subjects at the matriculation examination prescribed in that Statute shall remain qualified for matriculation.

(b) A candidate who, on or before 31st March, 1969, had partially fulfilled the educational requirements for matriculation under Clause 9(a) of the Matriculation Statute in force on 31st March, 1969, may complete his qualifications for matriculation by attaining at any Matriculation Examination a grade of D or higher in any subject which is available at the Matriculation Examination and would have qualified him for matriculation under the former Statute.

Allowed 9th January, 1969.

FOOTNOTES (which do not form part of the Statute):

1. *Grades*

Results in each subject are classified in the grades A, B, C, D, E, F and G, in descending order of merit.

The method of determining the grades in each subject is as follows:

The chief examiner in the subject, in consultation with the other examiners, determines a minimum mark for the award of grade D.

Of the candidates who achieve that mark or better, the first 10% are awarded grade A, the next 25% grade B, the next 45% grade C, and the remaining 20% grade D.

Of the remaining candidates the first 30% are awarded grade E, the next 50% grade F, and the remaining 20% grade G.

It should be noted that the stated percentages cannot in general be achieved exactly, since a number of candidates at about the calculated division between two grades may obtain the same mark and must accordingly be awarded the same grade.

2. *Scaling of marks*

For the purpose of comparing candidates' achievements in different groups of subjects and thus obtaining aggregates to be used, for example, as a basis for matriculation, for University admission and for the award of Commonwealth Open Entrance University Scholarships, the marks awarded by examiners in each subject are scaled. The scaling is carried out in two steps:

- (a) To ensure that the distribution of marks is approximately the same for all subjects, the examiners' marks in each subject are first scaled so that the top score is 100 and the 5th, 25th, 50th and 75th percentiles are allotted scores of 75, 55, 45 and 35 respectively (the scaling being linear within the resulting intervals).
- (b) Since the foregoing process takes no account of possible differences of quality between the groups of candidates taking different subjects, the scores in each subject are adjusted within the range of 0-100 so that, to a close approximation, the average score of the candidates in each subject is equal to the average score obtained by those candidates in all other subjects taken by them.

Scaling of marks for subjects with small numbers of candidates (less than 100) is impracticable, and a percentage mark is used in these cases.

3. Prescribed aggregate mark

Students who obtain a total of at least 225 "scaled" marks in five required subjects at the Matriculation Examination will qualify to matriculate at the University.

Under the system of scaling, which ensures a comparable distribution of students' performances in the various subjects of the Matriculation Examination, the median mark in each subject is 45.

If a candidate presents more than five subjects the aggregate of his five highest scaled marks in subjects which comply with this Statute will be used to determine whether he has qualified to matriculate.

(c) Further Information

Any intending student who is in doubt about his matriculation position is invited to apply in writing to the Academic Registrar or to call at his Office, for clarification of his position and (if necessary) advice as to what he needs to do to qualify for matriculation.

(d) Preparation for University Studies

In deciding the Matriculation subjects he will attempt or the course to which he will seek entry a student should bear in mind that while there are no formal pre-requisites for admission, the nature of some university courses is such that a student who has not studied certain subjects at matriculation level is at a considerable disadvantage.

A number of first year university subjects for example are taught on the assumption that students have studied certain subjects at matriculation level.

Mathematics: In 1972, there will be three first year courses in Mathematics. Mathematics I assumes a knowledge of Matriculation Mathematics I and II. Mathematics IM assumes a knowledge of Matriculation Mathematics IS. Mathematics IH (a half subject for students not wishing to take further studies in Mathematics) also assumes a knowledge of Matriculation Mathematics IS.

Physics: The course in Physics I assumes a knowledge of Matriculation courses in Physics and Mathematics I and II or Mathematics IS. Students attempting University Mathematics I, which is a pre-requisite for Physics II, will be assumed to have a knowledge of Matriculation Mathematics I and II.

Chemistry: The course in Chemistry I assumes a knowledge of Chemistry, Physics, and Mathematics I or Mathematics IS at the Matriculation Examination. Students proceeding to second year courses in Physical and Inorganic Chemistry will normally be required to pass also in either University Mathematics IM, which assumes a knowledge of Matriculation Mathematics I or Mathematics IS, or in University Mathematics I which assumes a knowledge of Matriculation Mathematics I and II. Students who intend to proceed to third year courses in Organic Chemistry are also advised to take either University Mathematics IM or University Mathematics I.

Biology, Botany, Zoology and Geology: It is advisable for every student taking any of these subjects to have a knowledge of Matriculation Mathematics I or Mathematics IS, Physics and Chemistry.

Languages: The courses in Greek I, Latin I, English I and French I assume a knowledge of the course in the corresponding subject for the Matriculation Examination.

Statistics: The first year half subject Statistics IH assumes a knowledge of Matriculation Mathematics I or Mathematics IS.

In general the following may be of some help to students in selecting their matriculation subjects:

Science: The Faculty of Science recommends that prospective science students should have a knowledge of the matriculation subjects Physics, Chemistry, Mathematics I, Mathematics II. The combination Physics, Chemistry, Mathematics IS and Biology may also be suitable; but a student who has not taken Mathematics I and II may be restricted in the range of studies open to him in the Science course.

Agricultural Science, Dentistry, Medicine: These are science-based courses and students proposing to seek entry are strongly advised to include Physics, Chemistry and either Mathematics I and II or Mathematics IS and Biology in their matriculation subjects.

Engineering, Architecture: For both the Bachelor of Engineering and Bachelor or Architecture courses, prospective students are advised to study Physics, Chemistry, Mathematics I and Mathematics II at matriculation level.

Economics, Law: The Faculties of Economics and Law have not recommended the study of particular matriculation subjects and a prospective student should plan his course according to his particular interests and abilities.

Arts: The position is broadly similar for prospective Arts students although some language and literature subjects in the first year assume that students have taken the corresponding matriculation subject.

Music: As one would expect, musical aptitude is necessary for this course and prospective students must satisfy the Head of the Department of Music that they have sufficient ability and preparation. A special examination may be required. Many of those who will seek entry to the Music course will study matriculation Music which is not essential but is strongly recommended.

In planning his matriculation studies a student will normally receive assistance from his school Headmaster and his staff, from a variety of written information (such as this Handbook) and from other sources.

III. FEES AND OTHER COSTS

(a) General

All fees are prescribed in Statutes or Regulations, or in Schedules made by the Council. They include tuition fees and certain incidental fees (including, where necessary, late fees).

Except in cases approved in advance by the Academic Registrar, all fees shall be paid at the time of enrolment; provided that fees for tuition during the second and third terms may be paid during the first fortnight of the respective term.

It should be noted that the fees stated below may be increased for 1972.

(b) Tuition Fees

For undergraduate and sub-graduate courses, the guiding principles of the fees are that a candidate taking a standard academic year's work shall pay fees for attendance (or re-attendance) at lectures, tutorial and practical work and annual examination, as follows:

In the Faculties of Arts, Economics, and Music	\$360 a year
In the Faculties of Agricultural Science, Architecture and Town Planning, Engineering, and Science	\$410 a year
In the Faculty of Law	\$390 a year
In the Faculties of Medicine and Dentistry—		
First year	\$410
Subsequent years	\$440 a year
For the Honours year in any course (except Architecture, Engineering, and Law, where different fees apply)	\$360 a year

Full details of tuition fees (including, where appropriate, the fees for individual subjects) may be found in the University Calendar, Volume II. The 1972 edition of this volume will be available in late December, 1971.

(c) Fees other than Tuition

There is a *Union Entrance Fee* of \$20 which is normally paid in two equal instalments of \$10 in the first and second years of a student's enrolment.

Payment of the Entrance Fee and of a compulsory *Statutory Annual Fee* entitles students to be members 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. It also entitles them to take full part in the activities of the Students' Association and of the University Sports Association, and to avail themselves of the University Health Service.

The Statutory Annual Fee is \$48.

For part-time students the Statutory Annual Fee may be reduced.

When a student has completed his course of study for a first degree a *Graduation Fee* of \$24 is payable.

In some subjects or courses attendance at excursions or at camps (usually during vacation) forms a compulsory part of the associated practical work. A student must meet the travel and living costs involved in addition to the tuition and other fees prescribed for the subjects or courses concerned.

(d) Books and Stationery

The cost of books will vary according to the course, and the subjects, being studied; but in general a first-year student should allow \$60-\$80 for books and necessary stationery.

Lists of the prescribed books will be found in the Syllabuses, available in December. In general, students are expected to have their own copies of text books; but books set for reference only need not be bought and may be consulted in the Library.

Sometimes second-hand books are available. However, only the prescribed edition of any text book should be bought.

A sale of second-hand books is conducted annually by the Adelaide University Book Exchange, usually in the period from the middle of February to the middle of March. Enquiries, preferably in writing, may be made at the Students' Association Office in the Union Buildings.

(e) Equipment

Attention is drawn to the fact that in some courses, and in some subjects, students are required to provide themselves with certain equipment. In Medicine, for instance, each second-year student must possess a microscope of an approved pattern and a set of bones; and when entering upon the clinical section of the Medical Course a student must obtain his own set of clinical instruments. Again, in most subjects of a biological nature the associated practical work requires the use of dissecting and other instruments; in Architecture and Engineering, students require specialised equipment including drawing instruments; and so on.

Allowance for the costs of any necessary equipment must be made in any assessment of the overall costs of a University course.

IV. FINANCIAL ASSISTANCE

(a) Commonwealth University Scholarships

General

For particulars of Commonwealth Scholarships, enquiries may be made to the Department of Education and Science, Red Cross House, 228 North Terrace, Adelaide, S.A. 5000. (Telephone 23 2416.)

The Scholarships may be used for either full-time or part-time study. Students contemplating taking a course on a part-time study basis are not eligible for a Living Allowance and should consult the Department of Education and Science before making a final decision.

A Scholarship can be continued for an Honours degree for a student accepted for an Honours course by the University. Application to have a Scholarship extended to cover the Honours year must be made to the Department of Education and Science.

Scholarships involve certain obligations during training, but there is no obligation to serve the Commonwealth Government on completion of the course.

Open Entrance University Scholarships

In South Australia, Open Entrance University Scholarships are at present awarded on the results obtained in the applicant's best five Matriculation subjects, taken at one time. In general, applicants must reside in Australia with their parents, and must be under 30 years on January 1 of the year in which they intend to commence their course, irrespective of when they sat for the Matriculation Examination.

An applicant must fulfil the entrance requirements for his chosen course before he can use his Scholarship.

A successful applicant may request deferment for 12 months. However, if he contemplates a degree course but is not qualified for matriculation at the time of gaining a Scholarship, he can NOT defer the Scholarship in order so to qualify. In such a case he would have to agree to undertake a course not requiring matriculation on a different scholarship or relinquish his University Scholarship.

Later Year University Scholarships

Scholarships, called Later Year Scholarships, are available each year for students under 30 years of age who did not obtain scholarships on their Matriculation Examination results but who have had a sufficiently high level of success in an approved course.

Mature Age Scholarships

A few Mature Age Scholarships are available to persons over the age of 30.

These scholarships may be awarded on results obtained at the Matriculation Examination or on the basis of performance in a later approved course.

Value

Commonwealth Scholarships pay for most compulsory fees, but do not cover fees for subjects taken a second time, or excursions; nor do they contribute to the costs of books or instruments.

Subject to a Means Test, a Commonwealth Scholar who is a full-time student may qualify for a Living Allowance. The maximum Living Allowance is \$1,100 for a student living away from home, and \$700 for a student living at home. The maximum Living Allowance will be payable where the "adjusted family income" amounts to \$2,800 or less. The "adjusted family income" consists of the gross income of the father and mother for the previous financial year, less \$300 for each dependent child under 21 in full-time education. The maximum Living Allowance is decreased by 20 cents for each dollar by which the "adjusted family income" exceeds \$2,800 between \$2,800 and \$5,600 and by 30 cents for every dollar above \$5,600.

Applications

Applications must be made on the prescribed form. The closing date for awards is 30 September, and applications must be lodged with the Department of Education and Science by that date. If awarded a Scholarship, the student is required to sign a formal acceptance. Subject to satisfactory progress the scholarship will be continued for the duration of the course. Applications for Living allowance must be lodged annually by 30 November.

Students under bond cannot be awarded a Commonwealth Scholarship. Students who have resigned a bond and have satisfied the requirements of the bonding authority are eligible to apply.

(b) Fees Concession

Under a scheme announced by the State Government in August, 1965, assistance with the payment of fees by students not holding scholarships, cadetships and so on will be related to adjusted family income. A leaflet about the scheme may be obtained on request from the University office, or on written request addressed either to the Academic Registrar or to the Secretary of the Fees Concession Scheme, Box 498D, G.P.O., Adelaide, S.A., 5001.

(c) Cadetships and Studentships for University Study

A number of organisations outside the University offer Cadetships, etc., which provide financial assistance to University students. The conditions attached to them, and their monetary value, vary widely; but in most cases University fees are met either wholly or in part, and a salary or living allowance is also paid. In some cases students are employed by the organisation concerned and are given "time off" for part-time study, with or without payment of fees. But most Cadetships provide for full-time study, with generous pay and other conditions.

The following is a list of some of the more important Cadetships and Studentships:

<i>Title</i>	<i>Field</i>	<i>Enquiries and Further Information</i>
Commonwealth Cadetship	May include, e.g., Agricultural Economics, Agronomy, Architecture, Bacteriology, Biochemistry, Chemistry, Economics, Engineering, Forestry, Geology, Meteorology, Mathematics, Statistics and Veterinary Science	The Commonwealth Public Service Inspector, Da Costa Building, 68 Grenfell Street, Adelaide
Australian Agricultural Council Awards	Agricultural Science	Department of Primary Industry, National Mutual Building, 80 King William Street, Adelaide
S.A. Public Service Studentship	Agricultural Science, Architecture, Chemistry, Dentistry, Engineering, Geology, and Medicine	The Chairman of the Public Service Board, Reserve Bank Building, Victoria Square, Adelaide
S.A. Education Department Teachers College Studentship	Teaching	The Director-General of Education, Education Department, 31 Flinders Street, Adelaide
Commonwealth Forestry Scholarship	Forestry	The Director-General, Forestry and Timber Bureau, Canberra, A.C.T.
University of Adelaide Cadetship	Various University Departments	The Registrar, The University of Adelaide
Undergraduate Schemes of the Australian Regular Army, Royal Australian Air Force, Royal Australian Navy	Dentistry, Education, Medicine	The Deputy Director of Recruiting, 125 Pirie Street, Adelaide

In general, acceptance of a full-time Cadetship or Studentship involves an obligation to serve the organisation concerned for a specific number of years after the course of study has been completed. Financial liability is incurred by a person who fails to meet such obligation.

Whether the obligation to serve is an advantage or a disadvantage will depend on a student's circumstances. It is an advantage in that it is a guarantee of employment after graduation, under conditions usually known in advance; further, it normally ensures good opportunities for experience and additional training. On completion of the obligation, the former cadet is free to resign, if he wishes. But the obligation may be a disadvantage if after entering on a Cadetship a student's

interests change, and for financial reasons he then finds himself forced to continue in a course in which he is no longer interested or for which he may indeed be found to be unsuitable. Again, sometimes a cadet who on completion of his first degree wishes to do research or advanced study may find that he is prevented from doing so. Despite these considerations, however, for many students a Cadetship has great advantages.

A student who is uncertain of exactly what career he would wish to follow, and who is in a position to afford to retain his independence of action, would be well advised to weigh the situation carefully before making his decision whether or not to apply for a Cadetship.

A matriculation qualification is usually a minimum requirement, but some Cadetships are awarded only to persons who have already completed successfully at least one year of a University course.

Most Cadetships are advertised in the daily press, and in pamphlets issued by the organisations concerned.

The Secretary of the Appointments Board at the University has information about a number of Cadetships and other financial assistance schemes offered to undergraduates by industry and private firms; and he will be glad to answer enquiries.

(d) Soldiers' Children Education Scheme

The children of ex-servicemen who, as a result of war service, have died or have been totally and permanently incapacitated or blinded, and the children of certain ex-servicemen who are suffering from tuberculosis, may be eligible to receive educational benefits including fees and living allowance. Particulars may be obtained from the Deputy Commissioner, Repatriation Department, 186 Pulteney Street, Adelaide.

(e) Vacation Employment

Many University students work during the long vacation (approximately December-February inclusive), and thereby supplement their financial resources. In many cases the amount earned is sufficient to cover the cost of University fees for the ensuing year.

Assistance in finding vacation employment is given by the Commonwealth Employment Service, 99 Currie Street, Adelaide. The Secretary of the Appointments Board at the University is also able to help in this respect.

(f) Students' Loan Fund

The University has a small Students' Loan Fund, which may be used to assist a student in temporary financial difficulty. Help from this fund is normally confined to students well advanced in their courses; only in extraordinary circumstances is it available to students in the early years of their courses.

(g) The A. R. Riddle Bequest Fund

This is a fund which may be used to provide help, in the form of loans or grants, to students who might otherwise be prevented by financial circumstances from completing their courses of study at the University.

(h) Travelling Concessions

In certain circumstances students may be eligible for fare concessions when travelling on M.T.T. buses, by train or by air. Particulars may be obtained from the relevant travel authority.

V. PRINCIPAL DATES, 1972

- January 24 Public Holiday.
- February 7 Enrolments begin.
NOTE: In some courses, enrolments will close on 12 February; in others, some days later. Particulars of the procedures for enrolment, and the dates of the enrolment periods, will be available in January.
- February 28 First term (and academic year) begins.
NOTE: Students are required to attend such preliminary meetings of classes in the first week of term as may be announced. Details will be on notice-boards from 21 February.
Orientation week begins.
- March 6 Lectures begin.
- March 31-
April 3 Easter.
- May 6 First term ends.
- May 22 Terminal examinations begin.
- May 29 Second term begins. Second term fees due.
- June 16 *Last day* for payment of second term fees.
- July 1 Entry for annual examinations may be lodged after this date.
Entry as early as possible is desirable.
- July 29 Second term ends. *Last day* of entry for annual examinations.
- August 21 Terminal examinations begin.
- August 28 Third term begins. Third term fees due.
- September 8 *Last day* for payment of third term fees.
- October 28 All lectures end.
- November 6 Annual examinations, in general, begin.
- December 9 Third term (and academic year) ends.

VI. CAREERS

This Handbook has, as its sole aim, the provision of information about the University and its courses. Accordingly, it does not include descriptions of the careers to which University courses might lead.

However, the University realises that many intending students will wish to have information about possible careers, and about the employment opportunities likely to be open to University graduates. It suggests that such information might be obtained from the paper "Careers and Courses", published by the University Appointments Board in association with the Graduates Union, which contains information about a wide range of occupations; and from the series of pamphlets published by the Department of Labour and National Service, entitled "Choosing a Career". The series covers occupations in some 90 fields, including many of those to which University courses lead.

The Regional Director of the Department of Labour and National Service has informed the University—

- (a) that sets of the pamphlets have been sent to all secondary schools; and
- (b) that enquiries about them may be directed to any District Office of the Commonwealth Employment Service, or to the Youth Section, Department of Labour and National Service, 99 Currie Street, Adelaide, 5000. (Telephone 51 0441.)

The University's Counselling Service, and its Appointments Board, offer an opportunity for the perusal "on campus" of material about careers and, if desired, for discussion of any uncertainty about career choice. The Counselling Service is located in the Union buildings at the south-western end of the Cloisters, on the lower level of the University grounds, and the Appointments Board is on the ground floor of the building immediately to the north of the Mitchell Building (see Building 5c in the plan on pages 28-9). Both the Counselling Service and the Appointments Board are available to prospective students as well as to those already enrolled.

The attention of prospective Arts, Economics or Science students is drawn to Part III of this Handbook (pages 54-56).

PART II: COURSES

Introduction

(a) The following table gives particulars of the courses, leading to first degrees, that are available to new students in 1972.

Course	Degree	Length of course in years	Examples of careers to which course gives access
Agricultural Science	B.Ag.Sc.	4	Agricultural Scientist; Agricultural Adviser
Architecture	B.Arch.	5	Architect
Arts	B.A.	3	Teacher (School or University); Librarian; Psychologist; Social Worker; Administrative Officer; Careers in Broadcasting, Journalism, Publishing
Dentistry	B.D.S.	5	Dental Practitioner; Dental Scientist
Economics	B.Ec.	3	Economist; Accountant; Careers in Business, Industry and the Public Services
Engineering	B.E.	4	Professional Engineer (Chemical, Civil, Electrical, Mechanical)
Law	LL.B.	4	Legal Practitioner; Legal or Administrative Officer in the Public Service, Commerce or Industry
Medicine	M.B., B.S.	6	Medical Practitioner
Music	B.Mus.	3	Composer, Performer, Teacher
Science	B.Sc.	3	Biochemist, Geologist, Physicist, Teacher

(b) There are a number of other courses in which teaching is provided but which are not listed in the table above. These include some which are being phased out and, are not therefore available to new students, such as the courses for the degrees of Bachelor of Applied Science, Bachelor of Pharmacy and Bachelor of Technology and for the Diplomas in Physical Education and Physiotherapy. They also include a number of courses not thought to be of immediate interest to new students such as the course for the Honours degree of Bachelor of Medical Science, which is available only to medical students who have passed in at least the first professional examination in the medical course, or the courses for the postgraduate Diplomas in Applied Psychology, Education and Computing Science. Further, only limited reference is made to Masters degrees, which are offered by the University in fourteen different fields, and to the various Doctorates.

(c) Further details of each course are in the Regulations, Schedules, Syllabuses and Timetables for 1972. These may be found in Volume II of the University Calendar for 1972, available in late December, 1971; and they should be carefully studied by each intending student. Some students will find it useful to look up the detailed syllabuses—and perhaps some of the text-books—of subjects in the later years of any course in which they are interested, and in this way to gain a better insight into the kind of work covered in that course.

(d) Honours degrees are available in all degree courses, except Medicine. Every student capable of proceeding to Honours is encouraged to do so.

AGRICULTURAL SCIENCE

1. Introduction

Broadly speaking, Agricultural Science is concerned with soils, plants and animals, and their interaction with one another. These are complex matters requiring an understanding of basic sciences such as Chemistry, Biology, Physics and Mathematics, as well as of the more specialized sciences relevant to agricultural practices and problems.

The Faculty of Agricultural Science provides courses leading to both the Ordinary degree and the Honours degree of Bachelor of Agricultural Science (B.Ag.Sc.). A student may obtain either degree, or both. In addition, suitably qualified persons may proceed, by advanced study and research in one of the many specialized aspects of Agricultural Science, to either the degree of Master of Agricultural Science, or the degree of Doctor of Philosophy.

2. Degree of Bachelor of Agricultural Science

(a) General

The course for the Ordinary degree requires four years of full-time study. It can be taken on a part-time basis, although evening classes are available only in some of the first-year subjects. An additional year is required for Honours.

The course comprises studies in the various sciences, both pure and applied, that are basic to agriculture. Candidates may select their subjects from a wide range. They may obtain a broad training by taking subjects covering almost the whole field; or, alternatively, they may begin to specialize at a relatively early stage by taking a sequence of subjects related to a particular field.

The first two years are taught in the Faculty of Science at North Terrace; in the third and fourth years students study at the University's Waite Agricultural Research Institute.

All students must satisfy the requirement for thirty-six weeks of practical experience on farms and in other approved agricultural activities. A student who holds the diploma of Roseworthy Agricultural College is, however, exempted from this requirement.

(b) Subjects Available

The subjects available in each of the four years are set out below. It will be seen that certain subjects in each year are compulsory. A student may be permitted to include an appropriate subject from those offered by the Faculty of Arts, or the subject Engineering I, in lieu of one Group A subject.

The subjects available in the first year are the same as those available in the first year of the Science course; and details of them may be found on pages 51-53. See also pages 13 and 14.

Group A (1st Year)

Whole subjects: Agriculture I (Part A), Biology I, Chemistry I, Mathematics I or IM, Physics I, Zoology I.

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

Of these subjects a candidate must present Chemistry I and three other subjects, or the equivalent if half-subjects are included. These must include either (i) General Biology IH, Plant Biology IH and Zoology I, or (ii) Biology I. (But he cannot present two over-lapping subjects such as Biology I and either Plant Biology IH or General Biology IH.

Plant Biology IH and General Biology IH, and Zoology I are normally prerequisites for Botany II and Zoology II, respectively. Students may however be permitted to proceed to Botany II and Zoology II from Biology I.

All students must take Agriculture I (Part A), which is examined along with Agriculture I (Part B), in the second year.

Group B (2nd Year)

Agriculture I (Part B), Applied Mathematics II, Botany II, Chemistry II, Genetics II, Geology II, Pure Mathematics II, Zoology II.

Candidates must present Agriculture I (Part B) and either three other subjects from this group or two other subjects from this group and one subject (or two half-subjects) from Group A not previously taken.

Group C (3rd Year)

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

Candidates must present Agriculture II and Agricultural Microbiology, and *either* Biometry I and three other subjects from this group, *or* Mathematical Statistics II and two other subjects from this group.

Group D (4th Year)

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

Candidates must present Agriculture III and *either* two other subjects from this group, *or* one other subject from this group and two subjects from Group C not previously taken.

Agriculture III is part of an integrated series with Agriculture I and II in Groups B and C, and is designed to give the student an understanding of the structure of world and Australian agriculture.

(c) Choice of Subjects

The choice of subjects during the whole four-year course depends largely upon the field in which a student may wish to specialize. The optional fourth-year or Group D subjects represent the major sciences underlying Agriculture and each follows on a similar subject in Group C, but takes the study to much greater depth. The present structure of the course allows a student to specialize by taking two of the Group D optional subjects, or to gain a broader coverage by taking one of the Group D optional subjects and two of the Group C optional subjects not previously taken.

An outline of the field covered in each of the Group D optional subjects is set out below.

Agricultural Biochemistry deals with the fundamental chemistry and interactions of living matter which control growth, function and differentiation. Major topics include: the structure of viruses and their effect on the metabolic pathways of living cells; the detailed chemical and kinetic study of the metabolic pathways and control mechanisms involved in storage, production and utilization of energy in living cells and in the synthesis of cellular constituents; the role of the nucleic acids in biochemical genetics and in cell growth, division and differentiation.

Agronomy is the study of the growth of crops and pastures in the field. The course deals with the origin and botany of crop plants, their growth and nutrition, the relationship of plants to the soil and climate, and to management practices in crop and pasture production.

Animal Physiology and Production deals with the anatomy, histology, chemical composition and physiological organization of the main types of animals involved in agriculture. Considerable attention is given to growth, reproduction, lactation and cellular functions. Animal Production is studied in terms of the role of pasture quality in animal nutrition and growth.

Biometry and *Mathematical Statistics* are concerned with the mathematical and statistical aspects of Agricultural Science, including the use of computers. *Mathematical Statistics* provides the basic mathematical and practical training for those wishing to specialize either as biometricians or in the mathematical aspects of other fields of Agricultural Science. *Biometry* provides a background in statistical methods for agricultural experimentation.

Agricultural Economics I deals with the role of agriculture in the Australian economy. To understand this role the forces determining the level of economic activity are studied as part of macro-economics. The theory of the individual firm (micro-economics) is applied to the agricultural firm in choosing crop-livestock combinations. The impact of Government on agriculture is studied through the economic policy measures adopted to affect agricultural firms—support price schemes, bounty policies, marketing policies.

Agricultural Economics II is concerned with production economics particularly with respect to resource efficiency on the individual farm, between farms and between agriculture and other industries. The more advanced theoretical concepts in farm management will be developed and their application to farm planning and decision making will be studied.

Entomology is the study of insects and the course relates to insects in agriculture. An introductory course deals with some physiological processes in insects, and with insects as pests and as useful animals. The advanced course covers in greater depth insect physiology, the kinds of insects and changes in their numbers.

Genetics deals with the study of inheritance in all types of living organisms. Attention is given to the application of the principles of genetics to physiology and biochemistry, plant and animal breeding and population theory.

Horticultural Science deals with all aspects of the physiology of vegetative and reproductive growth of fruit and vegetable crops. Methods used and problems encountered in commercial aspects of these crops are also studied.

Plant Breeding deals with the production of better varieties of crop plants and pasture plants. Many of the great advances in agriculture have been due to the development of superior varieties by plant breeders and the course deals with the breeding methods used to achieve increased yield and better quality in agricultural products.

Plant Pathology deals with the causes, effects and control of disease in plants. The micro-organisms (bacteria, fungi, viruses and nematodes) which cause plant disease are studied in some detail, as are the principles underlying infection processes, disease spread and control.

Soil Science is concerned with the factors which determine the ability of soil to support plant growth, and the reasons for the differences between soils and the factors governing the distribution of different soil types.

(d) Honours Degree

The Honours degree requires one year of full-time work beyond the Ordinary degree, making five years in all. The work comprises advanced study, together with a research project. A candidate for Honours must first—

- i. have qualified for the Ordinary degree of B.Ag.Sc.; and
- ii. have completed all the Ordinary degree courses in the subject in which he wishes to take Honours, together with such other pre-requisite subjects (if any) as may be prescribed in the Honours syllabus; and
- iii. obtain the approval of the Head of the Department concerned.

The disciplines in which the Honours degree may be obtained are as follows:

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

An Honours degree is the normal pre-requisite for students who wish subsequently to proceed to a Master's or Ph.D degree and to responsible positions in tertiary education and research institutions. The Faculty of Agricultural Science recommends that every student capable of proceeding to Honours should aim to do so.

ARCHITECTURE

1. Introduction

The Faculty of Architecture and Town Planning provides courses at both undergraduate and postgraduate levels.

The undergraduate course leads either to the Ordinary or the Honours degree of Bachelor of Architecture (B.Arch.). The aim of this course is predominantly to prepare graduates for the practice of Architecture, a discipline which embraces a wide variety of fields of study.

The practising Architect is a professional consultant in all matters connected with the art and technique of building. Primarily he is concerned with the planning and design of structures of all kinds, and the supervision of their construction. It has been truly said that in his work art, science and technology meet.

The B.Arch. course is recognised by both the Royal Australian Institute of Architects and the Royal Institute of British Architects; and subject to his completing certain practical requirements the new architectural graduate is eligible to apply for Associate Membership of either or both of these bodies.

In addition to the B.Arch. course the Faculty also offers postgraduate courses leading to the degrees of Master of Architecture, Master of Town Planning, and Doctor of Philosophy.

2. The Degree of Bachelor of Architecture

(a) The Ordinary Degree

A candidate for the degree is required to complete a course of full-time study extending over five years. In addition, before being admitted to his degree he must show that he has had at least twelve months' practical experience, not necessarily consecutive, in approved professional work. At least six months of such experience is usually obtained during the fourth year, in an approved architectural office; the remainder can normally be gained during the long vacations at the end of each academic year.

Throughout each of the five years of the course the subjects of study include Building Construction, Structures, Building Science, and Architectural Design and Planning; and the practical application of theoretical work in all these subjects is undertaken concurrently in the Studio. In the first year, additional subjects are History of Architecture (continued also in the second year), Architectural and Free Drawing, and an elective such as Art History and Appreciation.

In each of the second, third, fourth and fifth years the work in the basic subjects becomes more advanced and specialized; and subjects such as Professional Practice, and Urban and Regional Planning and Urban Design, are added. The work of the fifth (or final) year includes an Architectural Thesis, which involves the study and design of a large architectural project and takes up the major part of the student's time.

(b) The Honours Degree

Candidates are required to complete all the work prescribed for the Ordinary degree, and pass the examinations at a higher standard than is required for the Ordinary degree. During the fourth and fifth years of study they undertake additional work in some specialized aspect of Architecture, concurrently with the normal work required in those years.

3. Subjects of the First Year

Note: These subjects are introductory ones only. For a more realistic picture of the scope and content of the work of the Architecture course, reference should be made to the syllabuses of the subjects of the later years. (See Volume II of the University Calendar.)

Building Construction I

This course deals with the general principles and functional requirements of buildings generally; the building team; the building contractor. Foundations. External and internal walls. Ground floor construction and fireplaces. Roofs. Joinery—doors and windows. Masonry.

Structural Mechanics

This subject consists of a revision of the mathematics needed for an understanding of structural behaviour, together with lectures on statics and elementary structures.

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 assessments; natural ventilation.

History of Architecture

The architecture of Egypt, Mesopotamia, the Aegean, Greece and Rome; and of the Early Christian, Byzantine, Romanesque, and Gothic periods.

Architectural Design and Planning I

The role and function of the architect in society, historically and today; the elements of architectural design; the theory and use of colour.

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.

Studio Work I

The practical application of theoretical work in architectural and free drawing, architectural design, building construction, building science, and the history of architecture.

This subject forms an important part of the course and candidates are required to spend non-programmed times in specially equipped studios.

Elective

One of a range of subjects designed to widen the student's outlook and interests, and to relate his professional work to the society in which it will be performed. Art History and Appreciation will be given in 1972.

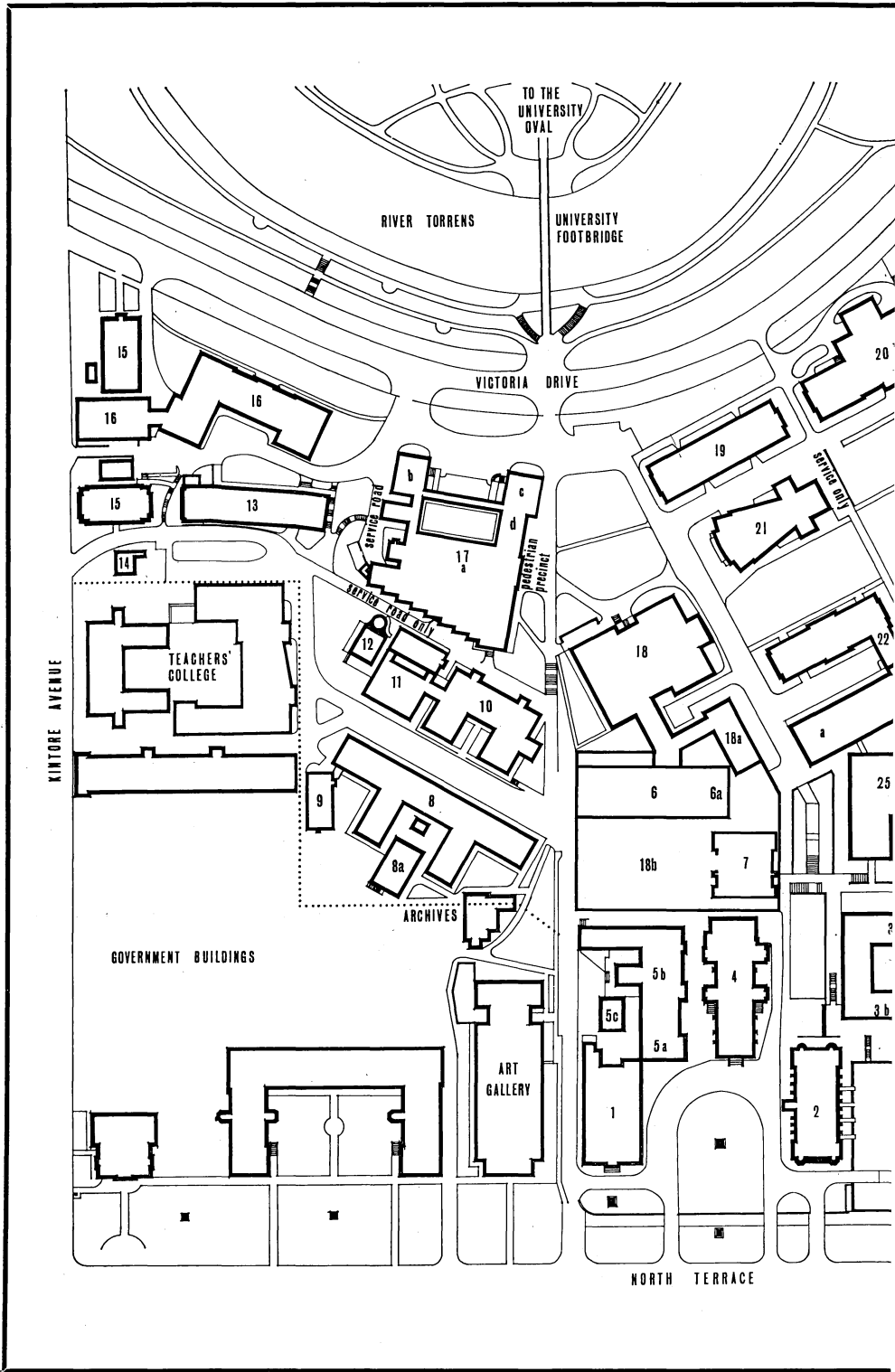
4. Other Information

(a) Expenses

In addition to tuition fees annual amounts of approximately \$100 for text books, and \$50 for paper and other consumable materials, should be allowed for. New students will be required to buy drawing equipment costing approximately \$50, but are advised not to do so until they have consulted members of the staff of the Department of Architecture and Town Planning.

(b) Student Memberships

The Architectural Students' Society arranges meetings, conventions and socials throughout the year. It is strongly recommended that all students join the Society, and that they join also the Royal Australian Institute of Architects as student members.

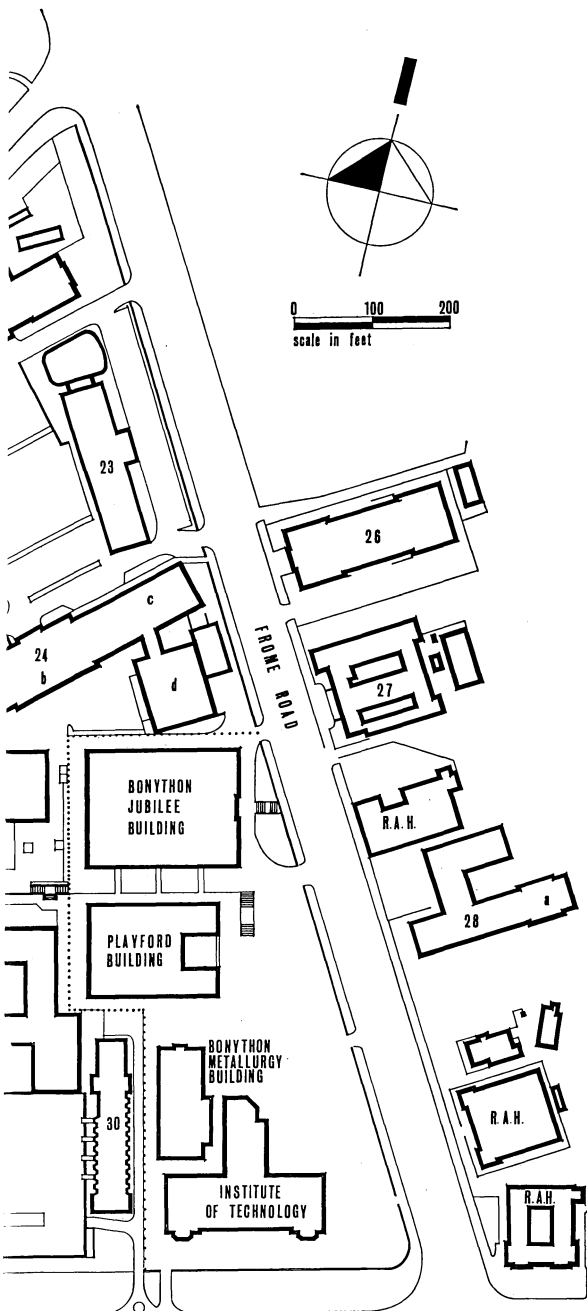




THE UNIVERSITY OF ADELAIDE

KEY TO PLAN

1. Mitchell Building:
 - Administration.
2. Bonython Hall.
3. Napier Building:
 - a. Economics, Commerce.
 - b. Arts Departments.
4. Elder Conservatorium: Music.
5. Prince of Wales Building:
 - a. Administration.
 - b. Psychology.
 - c. Administration.
6. Library.
- 6a. Computing Science.
7. Staff Club.
8. Physics.
- 8a. Maintenance and Physics Workshops.
9. Mawson Institute, Physics, Mathematical Physics.
10. Darling Building: Biochemistry.
11. Bragg Laboratories: Physics.
12. Observatory.
13. Organic Chemistry.
14. Maintenance Superintendent's Residence.
15. C.S.I.R.O.
16. Johnson Laboratories: Physical and Inorganic Chemistry.
17. The Union:
 - a. Refectories.
 - b. Lady Symon Building.
 - c. George Murray Building.
 - d. Union Bookshop.
18. Barr Smith Library.
- 18a. Architecture, Horace Lamb Lecture Theatre and Library.
- 18b. Adult Education, Architecture, Computing, Health Service, Library.
19. Benham Laboratories: Botany.
20. Mawson Laboratories: Geology, Economic Geology.
21. Union Hall.
22. Mathematics Building.
23. R. A. Fisher Laboratories: Genetics, Zoology.
24. Engineering Building:
 - a. Civil Engineering.
 - b. Electrical Engineering.
 - c. Chemical Engineering.
 - d. C.S.I.R.O. Civil and Electrical Engineering.
25. Mechanical Engineering.
26. Medical School: Anatomy, Pathology, Physiology, Microbiology.
27. Dental School and Hospital.
28. Institute of Medical and Veterinary Science:
 - a. Verco Lecture Theatre.
29. Physical Education: At Mackinnon Parade.
30. Ligertwood Building: Law, Classics, Philosophy.
31. Waite Agricultural Research Institute at Urrbrae: Agricultural Science.



ARTS

1. Introduction

At the undergraduate level the Faculty of Arts provides courses leading to both the Ordinary degree and the Honours degree of Bachelor of Arts (B.A.). At the postgraduate level are courses leading to the degree of Master of Arts (M.A.), to the Diploma in Education (Dip.Ed.) and to the degree of Master of Education (M.Ed.). In addition, suitably qualified persons may proceed by full-time work to the degree of Doctor of Philosophy (Ph.D.).

The degree of Doctor of Letters (D.Litt.) may be awarded to a graduate of the University who through his publications has made an original, substantial and scholarly contribution to some branch of letters.

2. Degree of B.A.

(a) General

The course for the Ordinary degree of B.A. extends over three years of full-time study or the equivalent, while the course for the Honours degree requires four years. A student may obtain either degree, or both.

The Arts course involves the study of subjects chosen from a wide range of disciplines often loosely referred to as the Languages, the Humanities and the Social Sciences. A brief description of the subjects for the Ordinary degree is given in Section 3 on pages 31-34.

(b) Ordinary Degree

The Ordinary degree requires passes in nine subjects, of which four will normally be taken in the first year, three in the second and two in the third.

Students have considerable freedom in choosing their subjects. However, the schedules are designed to ensure both breadth and depth of study.

For many years there was a requirement that every course for the Bachelor of Arts degree include at least one of the following subjects: Latin I, Greek I, French I, German I, German IA, Philosophy I, Mathematics IM, Mathematics I, Jurisprudence.

This requirement no longer exists having been abolished in 1971. However, many students will doubtless wish to include one or more of these subjects in their degree courses.

In general an approved degree course must include:

- i. not more than three Science subjects (a Science subject is not compulsory);
- ii. not more than four specified first-year subjects;
- iii. at least two three-year sequences such as English I, II, III.

There are a number of other provisions in addition to these main ones; and an intending Arts student should study the Schedules carefully before deciding on the details of his plan of study for the degree, which must be approved by an Assistant to the Dean.

(c) Honours Degree

An Honours degree may be obtained in one of the following Schools:

Classical Studies	History
Classics	Latin
Computing Science	Pure Mathematics
Economics	Applied Mathematics
English Language and Literature	Music
French Language and Literature	Philosophy
Geography	Politics
German Language and Literature	Psychology
	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.

The University recommends that every student capable of taking Honours should do so. However, before enrolling for Honours a student must obtain the approval of the Head of the School concerned. This approval will not be given until after the student has passed in at least one subject in that School. Thus an intending Honours student will not, in his first year, be distinguished from an Ordinary degree student.

The subjects available for the Honours degree are those available for the Ordinary degree, except that Elementary Greek may be taken in the Honours Schools of Latin and Classics, and additional special subjects are prescribed in the Honours Schools of English, French and German.

The requirements of the Honours degree in each of the Honours Schools are set out in Schedule III, but in general an approved Honours student—

- i. will take eight subjects (instead of nine as for the Ordinary degree). These must be approved by the Head of the Department concerned and be completed before he begins his fourth year;
- ii. must complete such additional Honours work in the second or third year, or both, as may be required; and
- iii. must devote the whole of his fourth year to Final Honours work.

The Faculty of Arts recommends that the normal pattern of study for the Honours degree should include four subjects in the first year. Students intending to enter the Honours Schools of Classics, English, French, German, or Latin should include an appropriate language other than English among their first-year subjects.

3. Subjects in the Arts Course, Ordinary Degree

Brief Description (set out under the Departments which provide them)

Classics

Greek I, II and III.

Latin I, II and III.

Either prose composition *or* literary studies of various kinds and unprepared translation work; the detailed study of prescribed books; Greek or Roman history (as the case may be) and the study of Greek (or Roman) society and thought.

For students who have no previous knowledge of Greek the Department provides a preparatory course entitled Elementary Greek. This course does not count as a subject for the Ordinary B.A. degree, and its main function is to act as a preparatory course for Greek I.

Classical Studies I, II and III.

The study of the literature and social and cultural background of the classical world of Greece and Rome. No knowledge of Greek or Latin is required since classical literature is studied in translation.

Classical Studies I, is an introduction to the classical world and is concerned with the literature of classical Greece and its social and cultural background. Classical Studies II, to be introduced in 1972, is concerned with the social and cultural development of Rome from the time of the Second Punic War to the principate of Nero; while Classical Studies III, to be offered in 1973, will be concerned with comparative studies in Greek and Roman literature and with the literature and society of the later Roman Empire.

Comparative Philology.

This is a second- or third-year subject providing a general introduction to linguistic study. It deals mainly with the Indo-European language group, but includes lectures on phonetics, general linguistic history, and elementary Greek.

Ancient History.

This, a second-year subject, deals with the political, social and cultural development of Greece (600-400 B.C.) and Rome (133 B.C.-180 A.D.).

Computing Science

Candidates for the degree of Bachelor of Arts may include studies in computing science in their courses. A first-year half-subject Computing IH is offered and two third-year subjects are available. A description of computing science studies and a brief syllabus for Computing IH may be found on pages 49 and 52.

Economics

Economics may be defined as "a study of the forces that determine the level of economic activity in the community".

The Department offers two first-year subjects: Social Economics I, designed for students who intend to take only a one-year course in Economics; and Economics I. Only one of these may be counted towards a degree.

Social Economics I: 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.

Economics I and II: A brief description of these subjects may be found under Faculty of Economics on page 38.

Economics III: Is available for Arts students only and consists of the half-subject Macroeconomics and International Trade IIIH (see page 39), together with one of the following half-subjects:

- Public Finance IIIH
- Economics of Labour IIIH
- Agricultural Economics IIIH
- Managerial Economics IIIH
- History of Economic Thought IIIH
- Economic History IIIH

English Language and Literature

English I

- (a) The history and structure of the English language.
- (b) A critical study of some of the main types of English Literature at various periods, with a detailed knowledge of a number of prescribed books of poetry, drama, fiction.

English II

- (a) English Literature from 1550 to 1780.
- (b) Shakespeare and Elizabethan drama.
- (c) A special study, such as the Restoration Period; English picaresque fiction; Chaucer.

English III

A study of English Literature since 1780, with special, but not exclusive, reference to a number of prescribed works relating to romantic poetry, Victorian literature, and twentieth-century literature.

Australian Literature

A second-year subject, for which English I is a pre-requisite. Authors and works; cultural analysis embracing writings of a historical, descriptive and discursive nature; special topics.

French Language and Literature

French I

A general course, designed both as an introduction for those students who intend to go further in the study of France, its language and its literature, and as a short but comprehensive survey for those students whose French studies will be confined to one year.

Lectures are given on the French civilisation, treating in outline the geography of France and its history, institutions and literature. French literary texts are set for reading, and for translation into English. The pronunciation of French is studied in a course of Phonetics and by means of regular exercises in a language laboratory. The French Club exists to present monthly programmes in French, organised by a student committee.

French II and III

Each of these subjects comprises free composition in French and translation from English into French; translation of unseen and prescribed French texts into English; oral work, including *explication de textes*; and the study of a period of French literature.

French IIA is an additional subject which does not alone qualify a student for admission to French III. The subject comprises an elementary introduction to old French language and literature and includes a survey of sixteenth century French literature.

German Language and Literature

The Department offers two first-year subjects: German I, for students who have studied German to at least Leaving level; and German IA, for students with little or no knowledge of German.

All students must pass an oral test at the end of each year. Practice in conversation, pronunciation, intonation, etc., is also given in regular tutorial classes; and students are encouraged to attend the meetings (conducted in German) of the German Club and of the Goethe Society.

German I, IA, II, IIA and III

Each of these subjects comprises studies of German life, culture, and literature; and translation, prose composition and essay writing.

Geography

There are two first-year subjects, Geography I and Economic Geography I. The latter may not be counted as well as Geography I, and does not lead on to Geography II.

Economic Geography I: Natural environment—a brief outline; and economic activities—a detailed study.

Geography I: Introduction to climatology and biogeography. Principles of Human Geography. Relations between physical and human factors in shaping the geography of Australia at different stages of its development.

Practical work: Interpretation of topographic maps; preparation of graphs and diagrams; and at least two field exercises.

Geography II: Principles of physical and human geography, and a Field Camp.

Geography III: The subject has three parts:

(a) and (b) Two electives to be chosen from the following three groups, not more than one elective from any group:

- i. Biogeography, Climatology, Geomorphology, Cartography;
- ii. Agricultural Geography, Cultural Geography, Historical Geography, Cartography;
- iii. Australian Development, South and South-east Asia.

(c) A Field Camp.

History

The topics offered to new students in 1972 are:

First Year: *Either* Europe from the 16th to the 18th centuries *or* Australian History.

Second Year: *Either* Europe in the 19th and 20th centuries *or* the expansion of the European economy in the 17th and 18th centuries.

Third Year: East and South-east Asian History; South Asian History; History of the U.S.A.; Pacific History. (Up to two of these may be taken, subject to the approval of the Head of the Department of History.)

Mathematics

Mathematics may be studied as a major sequence for either the B.Sc. or the B.A. degree.

After the first year, a student may proceed in one or more than one of the following branches: Pure Mathematics, Applied Mathematics, Mathematical Statistics.

A description of the nature of university studies in mathematics and brief syllabuses for first-year mathematics subjects may be found on pages 50 and 52.

Music

In Music I, II and III emphasis is laid on historical and analytical aspects of music rather than on composition or performance. No pre-requisites are necessary for admission to Music I, but an initial four-week course of intensive study will be prescribed for those who do not have knowledge of the rudiments of music.

Music I

Theory of music; an introductory survey of European music from the Middle Ages to the present day; introduction to ethnomusicology, including preliminary studies of Asian culture and minority groups.

Music II

Analysis of music; the history and development of music during the 16th, 17th and 18th centuries; aspects of music in Western culture.

Music III

Analysis of music; history and development of music during the 19th and 20th centuries; history of musical notation; introduction to music aesthetics and music philosophy.

Philosophy

This subject has been described as "an endeavour to think clearly about confusing questions".

Philosophy I: A general introduction to logic, metaphysics, and ethics.

Philosophy II: General philosophy, including logic, leading on from Philosophy I.

Philosophy IIIA: Further general philosophy including logic, metaphysics and epistemology.

Philosophy IIIB: Mainly ethics.

Politics

Politics I: Democratic politics.

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.

Politics IIA and IIB: A selection from the following fields: Political theory, Political Sociology, American politics, European politics, Asian politics.

Politics IIIA: Industrial society and theories of community.

Politics IIIB: International politics.

Psychology

Psychology may be studied as a major sequence for either the B.A. or the B.Sc. degree.

A description of the nature of psychology and brief syllabuses may be found on pages 51 and 53.

Statistics

Statistics may be studied as a sequence for the B.A. degree, the subjects Mathematical Statistics II and Mathematical Statistics II following Mathematics I. A first-year half-subject, Statistics IH is also available.

A description of studies in Statistics and a brief syllabus for Statistics IH may be found on pages 51 and 53.

DENTISTRY

1. Introduction

The course for the Ordinary degree of Bachelor of Dental Surgery (B.D.S.) extends over five years of full-time study after matriculation. The degree is recognised, for registration, by all Australian Dental Registration Boards and by the General Dental Council of the United Kingdom. There is no formal agreement, however, with countries outside the British Commonwealth for recognition and registration.

The Honours degree requires an additional year of full-time study.

A Bachelor of Dental Surgery may apply to become a candidate for the degree of Master of Dental Surgery. Normally a candidate should have completed the Honours degree at a satisfactory standard but others may be accepted provisionally subject to passing a qualifying examination. Persons who hold an Honours or Master's degree, or who have passed a qualifying examination, may apply to be registered as candidates for the degree of Doctor of Philosophy. In addition the degree of Doctor of Dental Science is offered by the University, being awarded for an original and substantial contribution to knowledge in some branch of Dental Science.

2. The Degree of Bachelor of Dental Surgery

(a) General

The course is designed to provide a sound education, together with the necessary background and skills for the clinical practice of dentistry.

In broad principles, the course is similar to that undertaken in medicine. It prepares the graduate to enter a profession which is one of the health sciences and which has as its main aim the prevention of dental disease and the correction of dental deformities. The course begins with studies first in the basic sciences, then in the biomedical sciences. This is followed by training in general and dental aspects of disease leading finally to clinical instruction in prevention, diagnosis and treatment. Although the majority of graduates will enter private practice the foundation is also laid for specialist practice or for entry to academic life, which includes research into dental and associated problems.

(b) The Ordinary Degree

The course for the Ordinary degree of B.D.S. extends over five years of full-time study.

During the first year, candidates undertake courses in Physics, Chemistry, Biology and a fourth subject chosen from those that are available for the degree of Bachelor of Arts or Bachelor of Science. The courses in Physics, Chemistry and Biology are the standard first-year science courses. They provide a foundation for much of the later work.

In the second year, candidates undertake studies in the biomedical sciences—Anatomy, Histology, Biochemistry and Physiology—with special reference to the requirements of a dental course; and at the same time they begin attendance at demonstrations and practical work, at the School of Dental Science, in Oral Anatomy and in Dental Materials.

At the beginning of the third year, candidates attend an integrated course of pre-clinical instruction which emphasises the relation of the basic sciences to clinical work. The subjects of instruction during the year are: Human Physiology, General Pathology, Microbiology, Oral Pathology, Pharmacology, Conservative Dentistry, Prosthetic Dentistry. Candidates also attend at the Dental Department of the Royal Adelaide Hospital for clinical instruction.

During the fourth and fifth years, medical aspects are continued with instruction and general hospital tutorials in General Medicine and Surgery. Dental instruction continues in Materia Medica, Oral Pathology, Oral Surgery and Anaesthesia, Applied Physiology, Periodontics, Orthodontics, Principles of Dental Practice, Children's Dentistry, and Conservative and Prosthetic Dentistry.

Clinical work occupies much of the student's time in the fourth and fifth years.

(c) Costs in the Dental Course

In addition to University fees (see page 14) a student must allow for the cost of text-books (which at 1971 prices is about \$200 for the five-year course), and equipment costs.

In the first two years of the course the equipment required is not expensive (about \$10).

In each of the second, third, fourth and fifth years microscopes are made available at an annual hire fee of \$12.

The equipment and instruments required for the treatment of patients are provided by the Hospital. In the clinical years students pay (i) a deposit of \$20, at the beginning of the third year; and (ii) an annual hire fee of \$40. The deposit is refunded, subject to loss and damage of instruments.

(d) The Honours Degree

To qualify for the Honours degree a candidate must, in addition to satisfactorily completing the course of study for the Ordinary degree, undertake a defined course of full-time study extending over one year. Honours courses are available in a number of biomedical and clinical sciences.

Any able student and particularly a person who may wish to enter a research career or attempt postgraduate study should carefully consider the possibility of undertaking an Honours course.

With the approval of the Head of the Department concerned a candidate may interrupt his studies at the end of the third or fourth year in order to take the course of study for the Honours degree; or the course may be taken after the final examination for the Ordinary degree has been passed. In some subjects the Honours course may only be taken after the course for the Ordinary degree has been completed.

It is possible that beginning in 1972, candidates may be permitted in special circumstances to spread the work of the Honours course over two years of half-time study.

3. Subjects in the First Year

Physics I; Chemistry I; Biology I; and an approved fourth subject selected from those which may be presented for the Ordinary degrees of Bachelor of Arts or Bachelor of Science.

A brief description of these subjects may be found in the appropriate sections under Science (pages 51-53) or Arts (pages 31-34).

See also pages 13 and 14.

ECONOMICS

1. Introduction

At the undergraduate level the Faculty of Economics provides courses leading to both the Ordinary degree and the Honours degree of Bachelor of Economics (B.Ec.).

At the postgraduate level suitably qualified persons may work towards the degrees of Master of Economics (M.Ec.), Master of Business Management (M.B.M.), or Doctor of Philosophy (Ph.D).

2. Degree of Bachelor of Economics

(a) General

The course for the Ordinary degree of B.Ec. extends over three years of full-time study, or the equivalent period of part-time study, while the course for the Honours degree requires four years. It is possible for students to complete the Ordinary degree by part-time study. The fourth year of Honours work is normally taken full-time but in special circumstances may be taken part-time. Every student capable of taking Honours is encouraged to do so.

For the first two years of full-time study, no distinction is made between an Ordinary and an Honours student.

(b) The Ordinary Degree

The Ordinary degree requires passes in ten subjects, of which four are normally taken in the first year, and three in each of the second and third years of full-time study. The normal course structure is as follows:

First year of full-time study

Economics I
Elements of Accounting I
Economic Geography I *or* Mathematics (Economics) I
Another first-year subject.

Second year

Economics II
Economic Statistics II *or* IIA
Economic History II *or* Management Accounting II.

Third year

The student may choose from a range of third-year half-subjects and other subjects to complete the following course of study:

Macroeconomics and International Trade IIIH and another half-subject.
Economic Development III or two half-subjects.
Another second- or third-year subject or two half-subjects (or, for students admitted to preliminary Honours work, Economic Theory).

SPECIAL COMBINATIONS

Students will notice that there are a number of choices in the course structure outlined above. Faculty Advisers give assistance to students in planning their individual course patterns. The range of Economics and Arts subjects and half-subjects available allow considerable flexibility, and course patterns may emphasise one or more of the following fields:

Quantitative methods.
Accountancy.
Economic History, Economic Development and other social sciences.
Economic policy and theory.

These directions of emphasis are suggestions only and are in no way binding upon the student. Many students will not want to concentrate their studies in one direction only and others may change their minds during the course of their studies.

Quantitative methods

A course including Mathematics (Economics) I, Economics Statistics IIA, Econometrics IIIH, and either one or both of Introduction to Operations Research IIIH, and Information Systems and Data Processing IIIH.

Accountancy

For students who wish to obtain professional accountancy qualifications a course including Management Accounting II, Accounting Theory IIIH, Commercial Law II, and Information Systems and Data Processing IIIH.

Economic History and Development

A course including some or all of the following: Economic Geography I, Economic History II, Economic Development III, History of Economic Thought IIIH and Economic History IIIH.

Behavioural Science

A course including Psychology I and II or Politics I and II, and Industrial Sociology III.

3. Subjects Provided by the Faculty of Economics

Brief Description

Economics is a large subject, but it may be briefly described as being concerned with the growth and distribution of the national income, and with ways of using physical resources to achieve maximum results. Among the problems studied are the causes of poverty, methods of maintaining full employment and of avoiding inflation, the balance of payments, taxation, the monetary system, and the organization of industry. Alfred Marshall, a famous English economist, once described economics as "a study of mankind in the ordinary business of life".

First-Year Subjects

Economics I

The basic course for all later work in economics.

- (a) Scope of economics. National income—its production, distribution and disposal. The structure of the modern economy.
- (b) Introduction to the theory of prices and value.
- (c) Introduction to the theory of outlay and employment.

Economic Geography I (provided by the Department of Geography)

Climate, soils and natural vegetation, as well as human cultures, are taken into account in explaining the various forms of agriculture and the location of modern industry. Problems associated with selected commodities and the balance between food supplies and world population are also emphasized.

Mathematics (Economics) I

Introductory calculus and its economic applications: matrix algebra and economic models using systems of equations.

Elements of Accounting I

This is both a one-year terminal course for students who do not expect to continue with accounting studies, and the basic accounting course for all students taking further accounting subjects. It comprises an outline of accounting methods, with emphasis on the conceptual and theoretical basis of accounting.

Second-Year Subjects

Economics II

- (a) Money, banking and finance, with special reference to the general level of economic activity.
- (b) Industrial and agricultural organizations; pricing theory; government policy in industry.

Economic History II

The analysis of the economic development of Great Britain, United States of America and Australia since the 18th century.

Management Accounting II

Accounting in the service of management: planning, control, information for decision making. Financial management in the modern corporation.

Economic Statistics II

An introduction to statistical methods with special reference to economic applications, and a discussion of the compilation and uses of Australian economic statistics.

Economic Statistics IIA

The course is designed for students proceeding to Econometrics IIIH, and has a more theoretical approach to the subject than has Economic Statistics II. A good pass in Mathematics (Economics) I is required for admission to Economic Statistics IIA.

Commercial Law II

The law relating to companies and partnerships, preceded by certain relevant principles of the law of contract.

Third-Year Subjects

Economic Development III

Theories of growth in relation to the problems of developing countries, and a comparative study of economic systems.

Industrial Sociology III

The study of human behaviour in industry, and the influence of the work group, management, the union, and the environment in which the firm operates.

Third-Year Half-Subjects

Macroeconomics and International Trade IIIH (compulsory)

The theory of economic activity and the trade cycle; wages; the general price level; balance of payments; international economics; introduction to the theory of growth; international money.

Public Finance IIIH

Agricultural Economics IIIH

Economics of Labour IIIH

History of Economic Thought IIIH

Managerial Economics IIIH

Economic History IIIH

Accounting Theory IIIH

Introduction to Operations Research IIIH

Information Systems and Data Processing IIIH

Econometrics IIIH

4. Degree of Bachelor of Arts

Economics I, II and a combination of Macroeconomics and International Trade IIIH with another appropriate third-year half-subject (counting as Economics III) may be presented as a sequence for the Ordinary degree of B.A., for which the Department of Economics provides also the one-year terminal course Social Economics covering the economic basis of social welfare. Thus it is possible, in the Arts course, to combine the study of Economics with a wide range of subjects in the general areas of the languages, the humanities and the other social sciences.

ENGINEERING

1. Introduction

Engineering is a profession based on the physical sciences and mathematics, and developed through a wide range of applied or engineering sciences to achieve specified objectives.

The art of synthesis or design to satisfy the scientific, technical, economic and human factors involved in meeting a specification is the factor differentiating engineering from science. At the research level, however, it is sometimes difficult to distinguish between the work of the engineer and the scientist.

The aim of engineering is to control and use natural forces and materials, to meet the physical needs of mankind. Engineering is a dynamic art whose boundaries are continually extending due to new basic discoveries and to new inventions and techniques.

Areas for creative development include materials, structures, equipment, machines, processes, power, communications, transport, public works, and so on.

The professional engineer is concerned with ideas and their realisation, from research to application. He pioneers new developments, and leads the way in technical innovation and organisation. He may direct large numbers of technical and other ancillary staff in governmental and industrial enterprises, and may plan the efficient utilisation of vast resources and systems.

Engineering degree courses seek to provide a sound basic education in appropriate scientific and mathematical disciplines; in a broad spectrum of applied or engineering sciences and in a narrower selection of these in depth; in the art and practice of design; and in the principles of economics, organisation and management. The emphasis is on logical analysis of engineering problems and creative design synthesis. In the later stages of courses student seminars and projects provide experience in the discussion and assessment of complex situations in the defining of problem-areas for experimental and analytical study and in the presentation of reports and theses.

2. Courses Offered

The Faculty of Engineering provides courses leading to the degree of Bachelor of Engineering (B.E.) in the following four basic branches of engineering: Chemical, Civil, Electrical and Mechanical.

At the postgraduate level suitably qualified persons may proceed either to the degree of Master of Engineering or to the degree of Doctor of Philosophy, in any one of the major branches of engineering. Such postgraduate studies are increasingly necessary for those seeking to become specialists in their profession.

Chemical Engineering

Chemical Engineering is concerned with the development and application of manufacturing processes in which chemical or certain physical changes of materials are involved. These processes may usually be resolved to a co-ordinated series of unit physical operations and chemical processes (e.g. distillation, evaporation, heat transfer, filtration, crushing, grinding etc.).

The work of the Chemical Engineer is concerned primarily with the design, construction and operation of equipment and industrial plants in which these operations are applied.

Civil Engineering

Civil Engineering covers a wide range of activities which may, for convenience, be classified as follows:

- (a) *Structural Engineering*: The design of load-bearing structures of various kinds, e.g. large public or industrial buildings, bridges, jetties, dams and other large earth works.
- (b) *Hydraulic Engineering*: The control of the flow of water and other liquids, e.g. in irrigation, water conservation, hydro-electric power production, the movement of water in pipes and channels etc.
- (c) *Transport Engineering*: The design and construction of roads, railways, docks and harbours.

Electrical Engineering

The Electrical Engineer is concerned with the applications of electricity in all its forms. These usually entail the transmission either of information in the form of electric signals, or of large amounts of electrical energy. He may be involved in the design or operation of electronic systems for communication networks or radio and television; the design and application of digital computing and instru-

mentation systems; the use and control of electrical energy in industrial processes; the design, construction or operation of power stations and their associated sub-stations and distribution networks; and in situations ranging from research and development to management and commercial engineering.

Mechanical Engineering

The Mechanical Engineer is concerned with the engineering sciences of the Mechanics of Fluids, Heat, Mechanism and Materials, and with their application over a wide range of activities. These include power generation by energy conversion from such sources as hydraulic, solar, and chemical and nuclear fuels; power utilization through an ever-increasing variety of machines and processes in home, office, farm, factory, mine, construction and all forms of transport by sea, land, air and space. He may specialize in one of many areas such as industrial, environmental, marine, aeronautical, agricultural or power engineering, and in any of these he may operate in research and development, design, production, commercial organization or management.

The branches of engineering overlap to some extent; and the various kinds of Engineer often work closely with each other (and with Applied Scientists also in research and development work). For instance, the Civil Engineer constructing a large reservoir will use pumping machinery designed by the Mechanical Engineer, containing materials resulting from the work of the Chemical Engineer, and controlled by electronic devices designed by the Electronic Engineer. Likewise any sophisticated transport vehicle for land, sea, air or space involves contributions from all major branches of engineering for its design, construction, operation and control.

3. Degree of Bachelor of Engineering

(a) General

Each course for the Ordinary degree of Bachelor of Engineering requires the equivalent of four years of full-time study. The courses are not designed for part-time students, although some of the work can be taken in this way, but not by evening studies alone. Second and later-year subjects are given only during the day.

All subjects require attendance at lectures. Engineering and Science subjects also require practical work, which may involve workshop or laboratory sessions in excess of three hours a week for each subject. Tutorials and field work in some subjects are also prescribed.

During the vacations of the first three years of the B.E. course a student must obtain a total of sixteen weeks' practical experience in work appropriate to the course he is following. Chemical Engineering students must spend at least eight weeks of the sixteen in an approved chemical factory or research establishment on plant operation, industrial research or development.

(b) The Honours Degree

The Honours degree is available in each of the four courses, Chemical, Civil, Electrical and Mechanical Engineering. All work for this degree is taken concurrently with the professional subjects of the final year of the Ordinary degree course, and is additional to the work for the Ordinary degree. The Honours course consists of lectures and examinations at an advanced level beyond the Ordinary degree requirements. The Honours classification is assessed on the student's overall performance. The Faculty encourages able students to undertake the Honours course.

(c) Combining the B.E. and B.Sc. Courses

For students contemplating work in certain fields of Engineering research there are advantages in completing a Bachelor of Science degree in addition to the Bachelor of Engineering degree.

In Electrical Engineering the usual pattern is for students to complete the first three years of the B.E. course and then interrupt their course to spend a year to qualify for the B.Sc. degree. It is also possible for Chemical Engineering students to complete the requirements for the B.Sc. and B.E. degrees within a period of five years of full-time study. Students intending to complete both degrees should consult the Assistant to the Dean of the Faculty of Engineering.

4. First-year Subjects—Brief Description

The first-year course in Chemical, Electrical and Mechanical Engineering comprises the subjects Mathematics I, Physics I, Chemistry I, and Engineering I. Civil Engineering students are required to take Geology I in place of Chemistry I. Mechanical Engineering students may substitute Psychology I for Chemistry I.

A candidate who has completed the first year in any Engineering course and who wishes to enrol in the second year of any other Engineering course should consult the Assistant to the Dean of the Faculty of Engineering.

Engineering I

The course involves three lectures, one tutorial and three hours' practical work a week. It is divided into five parts: Statics, Kinematics and Dynamics, Graphics, Engineering Drawing and General Engineering. The course is designed to provide a broad introduction to Engineering studies.

Mathematics I, Physics I, Chemistry I, Geology I and Psychology I.

For a brief description of these subjects see under Science (pages 48-53). See also pages 13 and 14.

LAW

1. Introduction

The Faculty of Law provides an undergraduate course for the Ordinary degree of Bachelor of Laws (LL.B.). Students may also qualify for the Honours degree of Bachelor of Laws.

Suitably qualified students may proceed to the degrees of Master of Laws (LL.M.) or Doctor of Philosophy (Ph.D.) by presenting a thesis on a subject approved by the Faculty. The degree of Doctor of Laws may be awarded for outstanding contribution to the study of law.

For undergraduates, the Law School seeks to provide a broadly based, liberal education. It also aims to provide courses of vocational value for those students who wish to become legal practitioners. While a large proportion of graduates enter into the practice of the law, a number of graduates enter government service (both Commonwealth and State), and others join commercial enterprises or take up other similar occupations. A law degree is regarded as an acceptable qualification for many positions not directly related to the law.

2. Degree of Bachelor of Laws

(a) General

The course for the Ordinary degree of Bachelor of Laws extends over four years of full-time study. The Honours degree of Bachelor of Laws is also normally completed in the same period. It is possible to take both degrees by part-time study. Important classes in all subjects, and more particularly lectures, are normally only given during the day, however, and no special provision can be made for students unable to attend. Regular attendance at tutorials and seminars is compulsory, unless special dispensation is specifically permitted by the Faculty in each *individual* case. For the first three years of full-time study there is no distinction between the basic courses of study for Ordinary and Honours students, but a student must have achieved a high level of performance in those years to be qualified to enter the Honours course. These studies will also affect the level of Honours he may ultimately be awarded.

(b) *The Normal Course Structure*

First Year: Four subjects are taken by a full-time student. These are:

- i. *Elements of Law:* consisting of an intensive introductory course to the study of law in the first weeks of the academic year, preceeding classes in other first-year subjects, followed by one lecture a week in which historical and other matters concerned with the working of the legal system are examined. This should be the first subject taken by a part-time student.
- ii. *Constitutional Law I:* an introductory study on the Australian governmental system, with special reference to the constitutional principles ordering the operation of the Commonwealth and State Parliaments, the role of the Crown, the working of the Cabinet system of government and the protection of civil liberties.
- iii. *Criminal Law:* an examination of the substantive principles of criminal law. In this course studies cover such crimes as murder, manslaughter, larceny, the criminal liability of corporations and attempts to commit crimes.
- iv. *Torts:* this subject is concerned basically with circumstances where private citizens seek damages through court actions as a result of what are termed civil "wrongs". In this course such topics as the law of negligence, (a legal basis for court actions for damages resulting from car accidents, for example), nuisance and trespass are examined.

Second Year: Full-time students undertake three subjects. These are *The Law of Contract, The Law of Property* and *Constitutional Law II*.

Third Year: A normal third year consists of *Equity, Commercial Transactions*, a seminar course or *Legal History*, and two optional subjects.

Fourth Year: In this year students take *The Law of Evidence, Procedure*, a seminar course and two optional subjects. Honours students prepare a dissertation in lieu of the seminar course.

The optional subjects which may be taken in either third or fourth year are:

Administrative Law	Jurisprudence
Family Law	Private International Law
Industrial Law	Roman Law
International Law	

Optional subjects normally available only to fourth-year students are:

Associations	Taxation Law
Institutional Business Transactions	

The seminar courses offered in any particular year are determined annually by the Faculty. These may cover a variety of subjects which could include Criminology, Restrictive Trade Practices, Civil Liberties and the Law of the Sea.

A student who wishes to qualify for practice in South Australia must also, in the fourth year or a later year, complete a course in Legal Ethics and Accounts.

(c) *Nature of the Course*

Tuition in the Law School in most subjects consists basically of lectures, tutorials and in some instances discussion group classes. An integral part of course work is the preparation of essays, and other written work. This, in addition to mid-year tests and end of year examinations is taken into account in determining the final standing of students in each subject.

In the case of the seminar courses special written assignments provide the basis for assessment.

3. Concurrent Arts—Economics Studies

No provision is made for combined courses in Arts/Law or Commerce/Law. Initially students are admitted to one Faculty only (e.g. Law or Arts or Economics).

After a student has completed one year of study in one Faculty he may apply to enter another and if admitted may subsequently undertake courses from both Faculties. The method of such application is described in Section II of this handbook. Students should discuss proposals for concurrent study with the Assistant to the Dean. Law students admitted to the Faculty of Arts may count three law subjects, Constitutional Law II, Jurisprudence and The Law of Property towards the Bachelor of Arts degree.

4. Admission to Practice

Students who have completed the degree of LL.B. including subjects specified by the Supreme Court of South Australia and have satisfactorily completed a course of lectures in Legal Ethics and Accounts must complete a twelve month period of articles of clerkship with a legal practitioner after graduation before they are qualified for admission to practise law by the Supreme Court of South Australia. The Rules of the Supreme Court require that legal practitioners be British subjects.

Students intending to seek admission to practise Law in jurisdictions other than South Australia after completion of their degree, are strongly advised to seek guidance as soon as possible from appropriate authorities in those places as to the requirements for admission there.

MEDICINE

1. Introduction

The Faculty of Medicine provides courses leading to the degrees of Bachelor of Medicine and Bachelor of Surgery (M.B., B.S.), and to the Honours degree of Bachelor of Medical Science (B.Med.Sc.). At the postgraduate level students may proceed by advanced study and research to the degrees of Doctor of Philosophy (Ph.D.), Doctor of Medicine (M.D.), and Master of Surgery (M.S.). No provision is made for specialist postgraduate diplomas.

2. Degrees of Bachelor of Medicine and Bachelor of Surgery

The course extends over six years of full-time study. During the first year candidates undertake courses in Chemistry I, Biology and Physics I and in an approved fourth subject selected from those which may be presented for the Ordinary degrees of Bachelor of Arts or Bachelor of Science, and take the Preliminary Examination in November. A brief description of these subjects may be found in the appropriate sections under Science (pages 48-53) or Arts (pages 31-34). See also pages 13 and 14.

During the second and third years the work covers Human Biology (Anatomy, Biochemistry and Human Physiology), and Medicine in the Community. The First Professional Examination is 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.

The clinical section of the course begins in the third term of third year, and during that term the work covers Applied Physiology and Pharmacology, General Pathology, General Microbiology and Medicine in the Community. In the fourth year the student attends courses of systemic topic instruction in Medicine, Surgery, Mental Health, Microbiology, Pathology, Human Physiology, Pharmacology, Clinical Biochemistry, Applied Anatomy, Community Medicine and Public Health. The Second Professional Examination is held in November of the fourth year.

During the fifth year the work covers Obstetrics and Gynaecology, Paediatrics, Medicine and Surgery, and Mental Health. The student resides in a hospital for about 10 weeks during the year. Part I of the Final Professional Examination is held in November.

During the sixth and final year the student is attached to hospital clinics and studies Medicine, Surgery and Mental Health. Part II of the Final Professional Examination is held in November.

3. Honours Degree of Bachelor of Medical Science

An undergraduate who has passed the appropriate examinations in the medical course may, with the approval of the Head of the Department concerned, interrupt his course for one year to proceed to the Honours degree of Bachelor of Medical Science, by taking advanced work in one of the following fields: Anatomy, Biochemistry, Physiology, Genetics, Microbiology, Psychology, Pathology, Pharmacology, Clinical Science.

4. Registration of Medical Practitioners

Before being admitted to full registration as a medical practitioner in South Australia a medical graduate must, after graduation, serve at least twelve months as a Resident Medical Officer in an approved hospital. The degrees awarded by the University and the period of service as a Resident Medical Officer are recognised for the purpose of registration by all Australian Medical Registration Boards and by the General Medical Council in Great Britain. There is no formal agreement with countries outside the British Commonwealth for recognition and registration.

5. Cost of the Medical Course

In addition to University fees (see page 14) a student must allow for the cost of text-books and instruments, which at the prices prevailing in September 1971 is about \$1,500 for the whole course. This cost would be reduced considerably if second-hand books and equipment were bought.

MUSIC

1. Introduction

The Faculty of Music provides courses leading to both the Ordinary degree and the Honours degree of Bachelor of Music (B.Mus.). At the postgraduate level the degrees of Master of Music (M.Mus.), and of Doctor of Philosophy (Ph.D.) are offered.

The degree of Doctor of Music (D.Mus.) may be awarded to a candidate who furnishes to the University satisfactory evidence that he has made an original and substantial contribution of distinguished merit to some branch of music.

2. Degree of Bachelor of Music

(a) General

The course for the Ordinary degree of B.Mus. extends over three years of full-time study, while the Honours degree requires four years. Before admission to the course a candidate must show sufficient musical aptitude and may be required to pass a special entrance examination for this purpose. Candidates who have passed examinations conducted by the Australian Music Examinations Board in Practical at seventh grade and Theory or Perception at fifth grade will be considered to have sufficient musical aptitude. The Matriculation subject, Music, though not compulsory, is strongly recommended.

(b) Ordinary Degree

The course provides a general musical training, including studies particularly related to the requirements of future teachers of music.

(c) Honours Degree

Every encouragement is given to suitably talented students to proceed to the Honours degree which is available in Performance, Composition, Musicology (Ethnomusicology, Historical Musicology, or Systematic Musicology) and Music in Education. Candidates taking Musicology will be required to have a reading knowledge of a language or languages necessary for the course of study involved.

Candidates approved to take Honours in Performance or Composition commence specialised honours courses in second year; for Musicology specialisation begins in third year, and those taking Honours in Music in Education complete the Ordinary Degree before entering the Honours course.

3. Subjects of the Ordinary Degree Course

The three subjects which together comprise a normal academic year of study are:

Theoretical Studies
Historical and Social Studies
Practical Studies

Theoretical Studies I, II and III

Aural training, aural and written analysis and music diagnostics; creative writing; studies in Western techniques of composition; score reading; continuo realisation and improvisation; orchestration and texture.

Historical and Social Studies I, II and III

Historical studies of Western music; introduction to ethnomusicology including preliminary studies of music in pre- and post-literature traditions and minority groups; aspects of music in Western culture; music philosophy; social and educational aspects of music.

Practical Studies I, II and III

A study of acoustics and instruments; style and interpretation in performance. Students in first year are required to study two instruments or voice and one instrument, in second and third year normally one instrument or voice, and classes in composition and arranging, singing, conducting, ensemble playing, and orchestral instruments.

4. Subjects of the Honours Degree Course

Subjects of the Honours degree course are as for the Ordinary degree course in Theoretical Studies and in Historical and Social Studies. Practical Studies I is also taken by all Honours students. In second and third year those taking honours in performance and composition take Preliminary Honours courses in lieu of Practical Studies II and III. Those taking honours in Musicology take Preliminary Honours course in lieu of Practical Studies III. All Honours students must take a fourth year of advanced work which is normally done full-time, but may, in special circumstances, be done part-time over not more than two years.

5. Degree of Bachelor of Arts

Music I, II and III may be presented as a sequence for the Ordinary degree of B.A. (see page 30); that is to say, the Arts course provides an opportunity for Music to be combined with other subjects. A suitably qualified candidate may proceed to the Honours degree of B.A. in the school of Music.

SCIENCE

1. Introduction

The Faculty of Science provides courses leading to both the Ordinary degree and the Honours degree of Bachelor of Science (B.Sc.).

The aim of the Ordinary degree course is to produce graduates with a sound knowledge and understanding of the particular branches of science chosen, rather than a professional training in one narrow branch. Accordingly, the course is designed to give a broad scientific grounding in the first year, followed by increasing specialization in the later years.

At the postgraduate level, students may proceed by advanced study and research to either the degree of Master of Science (M.Sc.) or the degree of Doctor of Philosophy (Ph.D.).

The degree of Doctor of Science (D.Sc.) may be awarded to a candidate who furnishes to the University 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 of Science is directly concerned.

The Faculty is also responsible for administering the postgraduate Diploma in Computing Science (Dip.Comp.Sc.). To qualify for this Diploma a candidate must 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.

2. Degree of Bachelor of Science

(a) General

The course for the Ordinary degree of Bachelor of Science requires three years of full-time study or the equivalent. It can be taken on a part-time basis, but not by evening studies alone; indeed only some of the first-year subjects can be taken after 5.00 p.m. Second- and third-year subjects are given only during the day.

All Science subjects involve attendance at lectures and tutorials and, with the exception of Mathematics, involve laboratory work as well. This work may vary from 3 hours a week for some first-year subjects to as much as 12 hours a week in some third-year subjects. Some subjects, such as Botany and Geology, also involve field work.

Every intending Science student should have a thorough knowledge, at least to matriculation standard, of Physics, Chemistry and Mathematics.

(b) The Ordinary Degree

The subjects available for the B.Sc. degree are:

Group A subjects (First-year):

Biology I, Chemistry I, Mathematics I, Mathematics IM, Physics I, Psychology I, Zoology I.

Group A half-subjects (First-year):

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 (Second-year):

Applied Mathematics II, Biochemistry II, Botany II, Chemistry II, Genetics II, Geology II, Mathematical Statistics II, Mathematics IIM, Organic Chemistry II, Physical and Inorganic Chemistry II, Physics II, Physiology II, Psychology II, Pure Mathematics II, Zoology II.

Group C subjects (Third-year):

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 (Third-year):

Physical and Inorganic Chemistry IIIA.

Group E subjects (Third-year):

Botany IIIP, Palaeontology III.

In general terms, to qualify for the Ordinary degree a candidate must present four subjects from Group A or their equivalent; either three subjects from Group B, or two subjects from Group B and a fifth subject from Group A or its equivalent; and two subjects from Group C, or one subject from Group D. (But he cannot present overlapping subjects such as Biology I and Botany I.) A candidate may also take Engineering I or a first-year subject given within the Faculty of Arts instead of one Group A subject.

In order to be able to satisfy the pre-requisites for admission to many second-year and third-year subjects students are advised to plan their whole courses for the degree at the beginning of their University studies; and by consulting the syllabuses for later-year subjects make sure that they take, in the preceding year, the subjects necessary for their more advanced studies.

The third year of the course has been designed to allow students *either* to take subjects from two separate departments *or* to study subjects covering areas of knowledge in which the conventional divisions of Science overlap.

(c) The Honours Degree

The Honours degree requires one year of full-time work beyond the Ordinary degree, making four years in all. The work comprises advanced study and, in most departments, a research project. A candidate for Honours must first:

- i. have qualified for the Ordinary degree of B.Sc.; and
- ii. have completed all the Ordinary degree courses in the subject in which he wishes to take Honours, together with such other pre-requisite subjects (if any) as may be prescribed in the Honours syllabus; and
- iii. obtain the approval of the Head of the Department concerned.

The subjects in which the Honours degree may be obtained are as follows:

Biochemistry	Organic Chemistry
Botany	Pharmacology
Computing Science	Physical and Inorganic Chemistry
Genetics	Physics
Geology	Physiology
Mathematical Physics	Psychology
Pure Mathematics	Statistics
Applied Mathematics	Zoology
Microbiology	

An Honours degree is the normal pre-requisite for students who wish subsequently to proceed to a Master's or Ph.D. degree and to responsible positions in tertiary education and research institutions.

The Faculty of Science recommends that every student capable of proceeding to Honours should aim to do so. At an early stage in his course he should consult the Head of the Department in which he proposes to work; and he should study carefully the syllabus of his proposed Honours course to ensure that he will have the correct pre-requisites for it.

3. The subjects taught by the Faculty of Science

The following is intended to give a brief indication of the nature of the various science disciplines which may be studied for the degree particularly those with which students may not be familiar from their school studies.

Biochemistry

Biochemistry, literally the chemistry of life, deals with all living processes in terms of behaviour of molecules; and indeed an important section of it is referred to as Molecular Biology. It covers the chemical reactions of the cell by which energy is obtained with the synthesis of the components of the living cell and the manner in which such reactions are controlled. The subject is also intimately concerned with the molecular processes in cell reproduction and information transfer—DNA structure and replication, chemistry of gene action, protein synthesis, virus infection and reproduction and the like. Biochemistry includes phenomena of life in chemical terms and thus areas such as antibiotic and drug action, the nature of genetic disease, the structure and mode of action of enzymes, evolution of protein molecules etc., are all within its scope.

The study of Biochemistry requires an adequate preparation in Chemistry and is therefore not available until the second year of the course. Since the subject bridges between Biology and Chemistry there is a place in it both for those mainly interested in Biology and for those mainly interested in the more chemical aspects.

Botany

Botany embraces the application to plants of a wide range of biological sciences. Major topics include ecology and environmental biology; the biochemistry, structure and function of cells; the structure and physiology of whole plants; the mechanism of evolution and the course that plant evolution has taken; the classification of all types of living and fossil plants.

Chemistry

Physical and Inorganic Chemistry, like Organic Chemistry, interprets the properties of matter mainly from a molecular viewpoint. There are two main aims, present in varying degrees, of most investigations in Physical and Inorganic Chemistry; (a) the deduction and testing of laws and principles describing the properties of chemical materials; and (b) the preparation of new compounds and the determination of their structure and reactions. Compounds of all the metals and non-metals are investigated; there are strong links with organic chemistry especially in studies of carbon compounds. Physico-chemical principles and experimental techniques have important applications in the biological sciences and geology as well as in technology.

Organic Chemistry, like Physical and Inorganic Chemistry, is a major branch of molecular science. It is concerned with all aspects of the molecular structure, physical properties, and chemical reactions of compounds containing carbon, a large and diverse family which includes pharmaceuticals, drugs, dyes, plastics, fibres, fuels and indeed most of the familiar materials of everyday life. Reactions of organic compounds provide the very basis of life itself, and a knowledge of organic chemistry is indispensable to the detailed study of molecular biology. Investigations in organic chemistry range from the theoretical and physico-chemical study of bonding in simple systems to the synthesis and investigation of the reactions of proteins and similar molecules of great complexity. The principles and techniques of organic chemistry have important application in the biological, geological and medical sciences.

Computing Science

Computing Science relates to the study of the organization of automatic digital computers and to their application in both numerical and non-numerical fields. Elementary courses are concerned with developing an understanding of how computers can be used. This includes a study of programming languages such as BASIC and FORTRAN. Later courses are concerned with more advanced topics, both abstract and practical. Abstract topics include the theoretical study of computing procedures and programming languages. Practical subjects relate mainly to the study of computer supervisory systems and to methods by which computers may be used to solve problems and process information.

Genetics

Genetics is the study of inheritance and variation in all forms of life from viruses to man. It is concerned with the nature of the genetic material, its replication, transmission, organisation and functioning and its role in development and evolution. An introductory course is devoted to the genetics of Man while the courses in second and third year deal with the subject in its many aspects.

Geology

Geology literally is the science of the earth. It combines its own special methods with the application of other sciences in the study of the physical and chemical constitution of the earth, the processes which are constantly modifying these characters, and the history of the earth through geological time (approximately 4,500 million years). The phenomena of volcanism and earthquake activity are among the most fundamental and spectacular of geological processes.

Geophysics supplements basic Geology in bringing physics to bear on the study of the structure, physical properties and deformation of crystals, minerals, rocks and the earth as a whole.

Geochemistry applies chemical methods to the study of the constitution of minerals and rocks and to the processes which have produced them.

Palaeontology is concerned with the study of the structure and function of living organisms of the past and with their evolution.

Histology

Histology is offered as a third-year level subject for the degree. The course deals with more detailed microscopic structure and its relation to function. Topics included are: the study of cells and tissues with the electron microscope, the localization of chemical substances in cells using histochemical "staining" methods, the arrangement and microscopic structure of the nervous system and the microscopic features of changes that occur during the growth, development and repair of tissues.

Mathematical Physics

Mathematical Physics is concerned with the fundamental principles of the physical sciences, their mathematical formulation, and their applications. Historically the subject has developed from Newton's laws of motion, Faraday's and Maxwell's theories of electricity and magnetism, thermodynamics and the kinetic theory of matter, Einstein's theory of relativity, and the quantum theory of atomic and nuclear phenomena. Today the most important developments are occurring in high energy particle physics and nuclear physics, cosmology, the statistical mechanics of matter, and plasma dynamics. Subjects in mathematical physics are available at third-year level.

Microbiology

Microbiology is the study of micro-organisms and generally deals with bacteria and viruses. The course deals with the chemical structure and physiology of these organisms, the manner in which they synthesise the various components of their structure and the way in which genetic material may be transferred from one organism to another.

Many bacteria and viruses are parasites of various species of animals and cause diseases. Particular emphasis in the course is placed on the manner in which animals are able to resist these infective agents. This involves a study of antibodies, their structure, how they are produced, the cells involved in their production and the mechanisms which enable the phagocytic cells of the animal to recognise the presence of these parasites and remove them.

Finally the course deals with the evolution of this recognition process and the development of the process in foetal and newborn animals. Studies in microbiology begin at the third-year level.

Mathematics

Mathematics. The science of mathematics began when man first began to count and can be defined as the science of number and quantity. Mathematics has a very real importance in science and technology, made even more so by the widespread use of the electronic computer. The techniques which the computer has made available to mathematicians have enabled them to solve problems which in the past it was impracticable to attempt.

After the first year undergraduate course, in which general mathematical principles are taught, mathematics is taught in two separate branches: pure mathematics and applied mathematics.

Pure mathematics is the study of fundamental mathematical ideas and the development of new ideas. The undergraduate course includes the study of calculus, analysis, algebra, geometry, topology and number theory.

Applied mathematics is concerned with the application of mathematical techniques to physical problems in science and engineering. The undergraduate course includes the study of vectors, differential equations, mechanics, dynamics, elasticity, hydrodynamics, operations research, queueing theory, mathematical programming probability, statistics and computing.

Physics

Physics is the most fundamental of the sciences and deals with the nature of matter and energy and their interactions. The Physics courses aim to provide a foundation of fundamental experimental and theoretical principles on which to build a broad understanding of the physical world; and courses are provided covering such basic areas of physics as mechanics, relativity, quantum mechanics, statistical physics, optics, electromagnetism, electronics, and atomic, nuclear and solid state physics. At third-year and honours level a very broad range of additional optional topics is offered including courses in environmental physics, atmospheric physics, astrophysics and biophysics.

Physiology and Pharmacology

Physiology and Pharmacology. The first part of the course is mainly histology and deals with the relationships between structure and function of cells. The emphasis then shifts to the organisation and functions of tissues, organs, and systems, and the integration of the various functions of the body. Pharmacology deals with the effects of drugs on physiological systems. Subjects begin at second-year level.

Psychology

The nature of Psychology. Psychology is the systematic study of human and animal behaviour, and of human experience. Academic psychology is founded on experiments, and on the statistical analysis of observations of behaviour. Aspects of behaviour studied include learning, perception physiological processes, personality differences, social interactions, thinking, and speech. Explanations are sought in terms of patterns of responses, physiological mechanisms, theories of a mathematical nature, analogies based on physical systems, and so on. Psychology is clearly related to many other branches of science, but has its own special interests and methods. During the present century psychology has become a well-established scientific discipline.

Statistics

Statistics is the science of the analysis and interpretation of data, whether from experiments, sample surveys or naturally occurring. Courses combine theory and practice. Statistical theory develops the reasoning which guides the methods by which data is analysed. It is both logical and mathematical. Statistical practice involves use of computers and testing of methods on data.

For Mathematical Statistics II, Mathematics I is pre-requisite and Statistics IH is strongly recommended. Mathematics I assumes a knowledge of Matriculation Mathematics I and II.

Zoology

Zoology. A major course in Zoology taken over three years covers the diversity of animals especially the diversity of physiological and behavioural adaptations that fit animals to their environments. Special attention is paid to the mechanisms of evolution by which animals become adapted to their environment and to the principles of ecology which explain how the environment determines the distribution and abundance of animals. First year provides a general introduction; second year introduces special aspects of physiology and functional morphology and biometry; in the third year special courses in behaviour, ecology, physiology and zoogeography are taught.

4. First-year Science Subjects—Brief Description

Botany

Two half-subjects in Botany are given at the first-year level. Both consist of one lecture and two hours practical work a week and one tutorial a fortnight through the year.

General Biology IH: The principles of Biology which are applicable to all living things (cell structure and function, elementary biochemistry, genetics, evolution, the species concept, general ecological principles).

Plant Biology IH: The principles of Biology which relate to plants as organisms, evolutionary relationships of plants, ecology, structure, physiology and reproduction of plants.

Biology I

A course of two lectures, one tutorial, and one period of practical work a week. It 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.

Chemistry I

The course consists of three lectures, three hours practical work and one tutorial each week.

The course is given in three sections corresponding to the three terms:

Chemical Structure, including molecular and crystal structure, methods of structure determination, bonding models.

Energetics, including an introduction to thermodynamics, energetic considerations in the synthesis and stability of compounds, intermolecular forces, gases, liquids and solutions.

Reaction Mechanisms, including the kinetics of chemical reactions, the synthesis of compounds with reference to both organic and inorganic systems.

Computing Science IH

It consists of an introduction to algorithmic processes, computer organisation and programming and to information structure. Two lectures and one tutorial a week are given throughout the year.

Genetics and Human Variation IH

The course is intended to provide an introduction to the principles of human genetics as a means of understanding the diversity and the underlying unity of mankind. It consists of one lecture a week and a three-hour practical class a fortnight throughout the year.

Geology

Two half-subjects in Geology are given at the first-year level.

General Geology IH deals with materials of the earth's crust, the basis of the geological record and earth resources.

Practical work involves the study of crystals, minerals, rocks and fossils.

The course consists of two lectures and one tutorial a week for the first half of the year and one lecture and three hours practical work a week for the second half.

Physical Geology IH deals with the physical properties of minerals and rocks, structural Geology and Geomorphology, Geophysical methods and global Geophysics.

The practical work involves the study of physical properties of rocks and minerals and the interpretation of elementary geological maps.

Mathematics

There are three first-year Mathematics subjects. Mathematics I, which pre-supposes a knowledge of Matriculation Mathematics I and II, and is intended for students whose main interests are in Mathematics or its application to Physical Science or Engineering; Mathematics IM, which pre-supposes a knowledge of Matriculation Mathematics IS, and which permits the student to proceed to certain later-year work in Mathematics; and Mathematics IH, a half-subject, which assumes a knowledge of Matriculation Mathematics IS, and is intended for students who do not wish to proceed to further courses in Mathematics.

Mathematics I and IM both comprise four lectures and one two-hour tutorial session a week. Mathematics IH comprises two lectures a week and a one-hour tutorial session a week.

The syllabuses are as follows:

Mathematics I: Sequences and series; functions of one and two real variables; elementary differential equations; vectors; modern linear algebra.

Mathematics IM: 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.

Mathematics IH: Differential and integral calculus, differential equations, vectors and 2 and 3 dimensional coordinate geometry, linear equations, matrices and determinants.

Physics I

The course comprises three lectures, one tutorial and three hours of practical work a week.

The course is given in the following parts:

Mechanics, including classical mechanics, gravitation, special relativity, and introductory quantum physics.

Structure of Matter, including atomic and nuclear properties, structure and properties of microscopic systems.

Oscillations and Waves, including forced and natural oscillations, elastic waves, interference and diffraction.

Electricity and Magnetism, including electrostatics, electromagnetic effects, alternating currents, particles and fields.

Psychology I

An introductory survey of the main topics of modern experimental Psychology. The topics cover: learning, perception; physiological psychology; personality; social psychology; thinking; and language. A laboratory course covering practical experience of laboratory work, experimental design, and statistics as applied to psychological observations, is given as part of this course.

Statistics IH

The course provides a study of the basic logical aspects of Statistics and of the important elementary statistical methods. It comprises two lectures and one tutorial a week throughout the year.

Zoology I

Seven hours of formal instruction a week, of which not more than three hours are spent on lectures.

The emphasis 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 will also be dealt with: the principles of genetics, ecology, physiology and taxonomy, the mechanism of evolution, the nature of science and scientific method.

PART III:

EMPLOYMENT OPPORTUNITIES

ARTS

In general, the aim of an Arts course is not professional or vocational, and accordingly it may best be thought of as providing a good general education rather than as a preparation in the narrow sense for one particular career. For employment purposes it usually needs to be supplemented by more specific training or experience, to meet the needs of the occupation eventually entered.

For many occupations the subjects studied in an Arts course may be particularly relevant: e.g. a graduate with an Honours degree in Psychology, or one with an Ordinary degree which included third-year courses in Psychology, may be fitted on graduation for appointment as a Psychologist in an appropriate field such as vocational guidance, or clinical or industrial psychology. Depending in part on the subjects included in their degree some graduates will work as linguists, or geographers, or mathematicians, or economists, or historians. In general, however, the subjects taken by an Arts graduate may be thought of mainly as being one of the most important of the media by which he becomes an educated person.

An Arts graduate will, of course, have the special knowledge derived from his study of his subjects; but more than this, his Arts degree will in effect be a certificate that he has been subject to a rigorous intellectual training; that he has had the opportunity of learning how to think logically, how to make objective judgements rather than biased ones, and how to apply orderly and soundly-based methods in whatever he does. If he has benefited from his studies he will be flexible and adaptable, able to see the part in relation to the whole, and able to cope with new situations from first principles.

With these qualities, the Arts graduate will be in a good position to proceed to further studies, or to undertake any task of a general administrative nature. In recent years there has been a growing awareness amongst employers of the value of an Arts degree, especially of an Honours degree, and it is not true for parents and prospective students to say—as some do say—that an Arts course should be avoided because it does not lead to any career except teaching.

The careers open to Arts graduates include the following:

Social Work—after adding to Arts studies a course of study and training for a Diploma in Social Studies or in Social Administration.

Teaching—at primary school, secondary school, or university level. (For teaching at university level a good Honours degree, followed by advanced study, is usually required.)

Intending teachers should supplement their Arts studies either with professional training through a Teachers' College or by a course of university study leading to the Diploma in Education and subsequently, perhaps, to the degree of Master of Education.

Librarianship—by obtaining experience in a library and undertaking professional librarianship studies.

The Church—Most denominations encourage candidates for the ministry to obtain an Arts degree.

Administration—Openings for Arts graduates exist in the Commonwealth Public Service including the Department of External Affairs, and in State Public Services. A growing number of industries and business firms are interested in recruiting Arts graduates who have done courses of good standard and who have acceptable personal qualities. The usual pattern here is for the graduate to be given a period of comprehensive training lasting perhaps two years after which, if he has proved suitable, he will be given executive responsibility.

Miscellaneous Careers—An increasing number of openings for Arts graduates is occurring in fields such as publishing, journalism, drama, broadcasting, television, advertising and public relations.

ECONOMICS

A recent Melbourne University survey of the men and women who graduated as Bachelors of Commerce between 1950 and 1965 indicates that 45 per cent. of those graduates are engaged in industry, commerce or professional practice, 32 per cent. are employed by schools, colleges and universities, and 23 per cent. by other government or semi-government bodies. A survey of the destination of the 1968 and 1969 graduates of the University of Adelaide in the year after their graduation yielded the following figures: of 102 B.Ec. graduates (Ordinary) for whom information was available, 61 were engaged in industry or commerce, 22 in government or semi-government and 5 in teaching; 14 were continuing full-time study including study for an Honours degree.

The demand by employers for Economics graduates over the years has been consistently strong and shows no signs of slackening. The sources of this demand are very widespread: in the private sector, they include public accountants, stock-brokers, banking and financial institutions, mass media, motor, chemical, and oil companies, textile, food and drink manufactures, wholesalers and retailers; in the public sector, they include the Bureau of Census and Statistics, the Bureau of Agricultural Economics, the Reserve Bank, several Commonwealth government departments (Treasury, Trade, etc.), and the State Public Service.

The Melbourne survey also lists the principal types of work in which those graduates are engaged. In industry and commerce, they work mainly in accounting, marketing, and administration; in banks, trade associations and government organizations, they are more likely to be engaged in economic research.

Students who are interested in pursuing a career in industry or commerce should take Management Accounting II and Economic Statistics IIA in their second year; in third year, inclusion of Managerial Economics IIIH, Industrial Sociology III, Information Systems and Data Processing IIIH and Introduction to Operations Research IIIH would be advisable.

Those interested in economic research or a public service career should, if possible, include Econometrics IIIH in their curriculum; those who wish to enter public accounting should include Accounting Theory IIIH, Information Systems and Data Processing IIIH, and Commercial Law II.

In order to be allowed to enrol for Econometrics IIIH or Introduction to Operations Research IIIH in third year, students must have done well in Economic Statistics IIA; admission to Economic Statistics IIA is conditional on a good result in the first-year mathematics course. In the latter course, a knowledge of Matriculation Mathematics I or IS is assumed; it would thus be an advantage to have taken at least one Mathematics subject at the Matriculation Examination. But advanced work in mathematics is not essential for the study of economics: in the past, many first-rate economists without a strong mathematical background have risen to high positions.

The Honours degree requires an extra year, but it gives the student a much better understanding of economics and a wider view generally, and may improve his starting salary and his prospects of promotion.

It is possible to take economics as a major subject within an Arts degree, in combination with such other subjects as history, psychology, politics, or mathematics. This provides a desirable general education, but lack of familiarity with accounting and statistics may prove a handicap in tackling practical problems involving the use of economic data.

Although at present relatively few women are studying economics at the University, there is no reason why they should not do as well in economics as men: there are ample opportunities for the employment of women in accounting, statistics, economic research, teaching, journalism, and social work.

SCIENCE

Although the aim of courses in Science is to provide a sound knowledge of the particular branches of Science chosen, rather than a professional training in one narrow branch of Science, the extent to which this object is achieved varies considerably and is dependent on the subjects studied in the final, third year. Thus whilst it is not easy to predict the branch of Science that a person majoring in physics, chemistry or mathematics may enter, those majoring in geology, biochemistry or physiology generally seek a position in which their speciality will be directly and immediately used.

A wide variety of employment possibilities exists for Science graduates including industry, government establishments, hospital laboratories, and teaching at schools, technical colleges and universities. The work could involve laboratory or mathematical work, e.g., for chemists, physicists, biochemists, microbiologists, etc.; field work, e.g., for geologists and biologists, etc.; technical service and technical sales in industrial firms, and administration. In general, industrial firms employ Science graduates first in laboratories; and they may later move, as opportunity arises, to technical service or administration positions. Graduates with Ordinary degrees may be employed as Experimental Officers in government laboratories, but are unlikely to obtain promotion to higher grades, such as Research Scientist, without at least an Honours and more often a higher degree.

For a career in scientific research in universities, government establishments, and industry, a higher degree is essential. A Master's degree is the minimum qualification generally required, but the Ph.D. degree is generally preferred. Such work generally involves membership of a research group, and promotion is possible to group leader and higher positions. In government research laboratories the Ph.D. degree is generally an essential qualification for promotion to the higher grades. In industry it is becoming more common to recruit executive staff from the research staff. The careers open to Science graduates include the following:

Government Establishments—The Ordinary degree will lead to a variety of positions and these will generally involve laboratory, mathematical or field work. For a research career a higher degree, generally the Ph.D., is essential.

Industry and Private Firms—The Ordinary degree will lead to various positions involving laboratory, mathematical or field work. Positions in technical service or administration may also be or become available.

Teaching—At secondary school and college level the Ordinary degree is often sufficient, but an Honours degree is to be preferred. At University level a higher degree, generally a Ph.D. and post-doctoral experience are usually the minimum requirement.

Intending school teachers should supplement their Science course with either professional training at a Teachers' College or by a course of university study leading to a Diploma in Education or to the degree of Master of Education.

Research—Research opportunities exist in government establishments, e.g., C.S.I.R.O., and industrial firms generally have research laboratories which are expanding as industry expands. Research is also a major function of scientific departments of universities and there are a few specialist research foundations in Australia. For a research career a higher degree—usually the Ph.D.—is essential with preferably some post-doctoral experience in another university or research establishment. Recruitment from research scientists into the higher grades of administration is occurring increasingly in industry and in government establishments.

