The University of Newcastle

FACULTY OF SCIENCE HANDBOOK
CALENDAR 1988
VOLUME 10
THE UNIVERSITY OF NEWCASTLE

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Volume 1 -- Legislation
Volume 2 -- University Bodies and Staff
Volume 3 -- Faculty of Architecture Handbook
Volume 4 -- Faculty of Arts Handbook
Volume 5 -- Faculty of Economics and Commerce Handbook
Volume 6 -- Faculty of Education Handbook
Volume 7 -- Faculty of Engineering Handbook
Volume 8 -- Faculty of Mathematics Handbook
Volume 9 -- Faculty of Medicine Handbook
Volume 10 -- Faculty of Science Handbook
Also available are the Undergraduate Guide and Postgraduate Prospectus

This Volume is intended as a reference handbook for students enrolling in courses conducted by the Faculty of Science.

The colour band, Topaz BCC 4, on the cover is the lining colour of the hand of Bachelors of Science of the University.

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THE DEAN’S FOREWORD

Over the next few years, students attending University are likely to observe many changes. The Federal Government, which provides the larger part of funding for the tertiary education sector, has initiated a far-reaching inquiry into aspects of tertiary education such as the difference between Universities and CAEs, staff employment conditions and funding for research. Universities are under continual pressure to be ‘relevant’ and "to contribute to Australia’s economic development". The statements are made without any definition of what is meant by ‘relevance’ or "contribution to economic development". While Universities cannot afford to stagnate, it is also important that any change introduced should improve the education available to our young people. Simple demands to be ‘relevant’ or to direct research effort towards the needs of industry must not detract from the main function of Universities, which is to educate their students.

As students in the Faculty of Science, you are going to be exposed to a body of knowledge which is relevant to our everyday life, but which has, in some cases, hundreds of years to develop to our present level of understanding. The basic knowledge available to students in the Faculty of Science is also the knowledge which is the basis for much of our technological development. Almost all branches of engineering have grown from basic scientific disciplines, some, such as electrical engineering, assuming a separate identity from science within the last hundred years or less. You may regard yourself as privileged to be given the chance to follow the development of subjects such as physics, chemistry, geology, biological sciences, psychology and geography. In accepting the challenge to develop your knowledge in these areas, however, you are also accepting a responsibility to treat both the accumulation of the knowledge and the knowledge itself with respect.

During your study in Science, you will get from your studies a satisfaction commensurate with the effort you put into those studies. You can be assured that the hardest examination you will face in your career is the next one. As a rough guide to what the University expects of you, you should plan to spend at least one hour of your own time for every hour of contact you have with the various departments in which you will study. You must put in this amount of time from the very beginning of your course or subject. If you delay the start of your own programme, the amount of time per week you will have to spend in order to catch up with your subject will increase proportionately. A well planned, uniform programme of work to support your lectures, tutorials and laboratory will allow you both the time to develop your subject and the time to enjoy University life.

One of the most important things you will learn at University however, is how to use the resources available to achieve the result you want. Those resources are not only your own intellect and time, but also the things provided by the University. The Library is an essential resource for any student but there are other resources as well. These include your tutors, demonstrators and lecturers. Provided you are keen and show evidence of a desire to learn and understand, these members of staff will do all they can to help you. With care and a little effort, you can have a very enjoyable few years at University, while equipping yourself with the basis for a rewarding career afterwards.

B.A. ENGEL,
Dean
SECTION ONE

FACULTY OF SCIENCE STAFF

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Departmental Office Staff G. MacKenzie

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D.F. Schick, BSc, MTh(NSW), MS, PhD (Florida State)

Lecturer: vacant position

Departmental Secretary C.M. Clayton

SECTION TWO

FACULTY INFORMATION

INFORMATION FOR UNDERGRADUATES

Students may choose subjects from the Departments of Geology, Physics, Chemistry, Biological Sciences, Psychology, Geography, Mathematics, Statistics and Computer Science. A candidate for the degree of Bachelor of Science is, in general, permitted to enrol in one subject from among those offered by another Faculty. In very special circumstances a student may enrol in up to three subjects from another Faculty to be counted towards the degree of Bachelor of Science. A candidate for the degree of Bachelor of Science (Psychology) may, with the permission of the Dean, count two subjects offered in other degree courses in the University.

PROFESSIONAL EMPLOYMENT AND PROFESSIONAL RECOGNITION

Geology

For employment as a geologist students must have at least an ordinary BSc degree but preferably an honour degree. There are three professional organisations which graduates in geology may join - the Geological Society of Australia, Inc., the Australian Institute of Geologists and The Australian Society of Mining and Metallurgy which has several categories of membership according to qualifications and experience. The Australian Institute of Mining & Metallurgy has a code of ethics for professional behaviour to which members are expected to adhere. The Institute has foreshadowed that from 1992, Corporate Membership (Member or Fellow) of the Institute will require the basic qualifications of a degree or diploma involving four years of full-time or equivalent part-time study. Students who embark on a three-year course in 1984 or later are advised that this will not provide immediate eligibility for corporate membership and that a further year of formal study will be necessary. The Australian Institute of Geoscientists is a newly formed professional body charged with enhancing the status and welfare of geoscientists in Australia. It also has categories of membership based upon qualifications and experience. The Geological Society is currently working with the various State Governments and Federal Government to bring about legislation to provide for the registration of geologists.

Psychology

The Australian Psychological Society is the professional organisation of psychologists in this country. The objects of the Society are the advancement and diffusion of a knowledge of psychology and especially the promotion of the professional standing of its members by setting up a high standard of training and conduct, and by requiring the observance of rules of professional conduct. There are two categories of membership in the Australian Psychological Society - Fellowship and Membership. Provision is also made for Student Subscribers and Affiliates. Membership normally requires a four-year degree in psychology.
The Association is open to all interested students of Psychology and Other disciplines. The Association has been formed to provide a forum for the discussion of issues relevant to Psychology and other disciplines. The objectives of the Association are to:

1. To further the objectives of the University of Newcastle.
2. To provide a forum for the discussion of issues relevant to Psychology and other disciplines.

The Association meets regularly to discuss topics related to Psychology and other disciplines. The Association is open to all interested students of Psychology and other disciplines. Significant clashes have been identified for Science Faculty subjects. The Psychology Students' Association has been formed to address these issues.

The following study information is provided for the psychology discipline:

### Subject:

**Psychology**

**Advisory Prerequisites for Entry to the Faculty**

There are no prescribed prerequisites for entry to the Faculty of Science. Students are advised of the following advisory prerequisites:

- **Subject:** Advisory prerequisites
  - **Biology I:** Higher School Certificate Chemistry or 4-unit Science is appropriate and students are advised to include Chemistry I in their University programme.
  - **Chemistry I:** At least Mathematics (2-unit course), and Mathematics (2-unit course), with ranking in the top 50% in each case.
  - **Geology I:** 2-units of Science (preferably Chemistry) and at least 2-units of Mathematics.
  - **Mathematics I:** Mathematics (2-unit course). Nevertheless, students who have less than 3-units of preparation will usually find themselves seriously disadvantaged.

- **Physics I:** Students completing HSC in 1987 are strongly advised not to enrol in Physics I in 1988 unless they have a score of at least 360. Where entry is based on other than 1987 HSC performance, students should consult with the Department for advice.

- **Physics II:** Students completing HSC in 1987 are strongly advised not to enrol in Physics II in 1988 unless they have a score of at least 360. Where entry is based on other than 1987 HSC performance, students should consult with the Department for advice.

- **Physics III:** Students completing HSC in 1987 are strongly advised not to enrol in Physics III in 1988 unless they have a score of at least 360. Where entry is based on other than 1987 HSC performance, students should consult with the Department for advice.

### Faculty Information

**Mathematics**

- Mathematics II
- Mathematics III with (some topics only)

**Physics**

- Physics III with (some topics)

**Note:**

Although the timetable for one particular subject may clash with that of another, this may not necessarily mean that this combination cannot be done. Often an arrangement can be made by one or both Departmental representatives before deciding upon your final subject combination.

### Student Academic Progress

All students are reminded of the need to maintain satisfactory progress and, in particular, attention is drawn to the Regulations Governing Unsatisfactory Progress. The following should be borne in mind:

1. The Faculty Board requires that students shall pass at least one subject in their first year of full-time attendance or in their first two years of part-time attendance.
2. The Faculty Board requires that students shall pass at least four subjects at the end of the first two years of full-time attendance or four years of part-time attendance.
3. The Faculty Board has determined that students who fail a subject twice shall not be permitted to include that subject in their future programme, and that students who fail two subjects twice shall be excluded from further enrolment in the Faculty, in each case unless he shows cause to the satisfaction of the Faculty Board why he should be permitted to do so.
4. Notwithstanding paragraphs 1, 2 and 3, above, the Faculty Board may review the academic progress of students in the later years of the course.
5. Students should note that a terminating pass can be awarded only if a Part I or Part II subject and that no more than two terminating passes may count in a student's programme (with no more than one Part II level).

### Subject timetable clashes

Students are strongly advised to check on possible timetable clashes before enrolling. Clashes may force students to take subjects in different years. Although academic staff are always willing to advise students, it is the student's responsibility to ensure that chosen subjects may be studied concurrently. To help in this matter the following table of subjects clashes has been provided for Science Faculty subjects in 1988. However, Science students taking subjects from other faculties must examine the timetable to ensure that clashes do not exist in their proposed courses.

### Biological Sciences

**Subject:** Biological Sciences

- Biology I (with (some topics)
- Biology III with (some topics)
- Chemistry IIB
- Chemistry IIIA
- Physics IIA

### Chemistry

- Chemistry IIB
- Geography IIA
- Chemistry IIB
- Mathematics IIB
- Physics IIA

### Geology

- Geology IIB
- Chemistry IIB
- Geography IIA
- Mathematics IIB

### Physics

- Physics III with (some topics)
- Physics IIA with (some topics)
- Physics II with (some topics)

### French

- French IIB
- French IIA
- French IIIA

### Russian

- Russian IIB
- Russian IIA
- Russian IIIA

### Mathematics

- Mathematics IIB
- Mathematics IIIA
- Mathematics IIA

### Physics

- Physics II with (some topics)
- Physics IIA with (some topics)

### Psychology

- Psychology IIB
- Psychology IIA
- Psychology IIA

### ACADEMIC INFORMATION

This information is provided for the psychology discipline.

### Admission Information

This is a voluntary course designed to give students and members of staff a working knowledge of the Russian language, with proficiency in Russian. The course is open to students who have completed HSC in 1987 or thereafter.

### FORMAL ENROLMENT NOT NEEDED

The following study may be available during the year:

- **Prerequisites:** None, although familiarity with a modern language would be of advantage.
- **Hours:** Approximately 27 lecture hours.
- **Examination:** None

This study is a voluntary course designed to give students and members of staff a working knowledge of the Russian language, with proficiency in Russian. The course is open to students who have completed HSC in 1987 or thereafter.

### Note

- **Note:** This study is intended for students who have completed HSC in 1987 or thereafter.
- **Hours:** Approximately 27 lecture hours.
- **Examination:** None

### Contact Information

Further details may be obtained from the University of Newcastle.

### PREREQUISITES FOR DIPLOMA IN EDUCATION UNITS

Students who intend to proceed to a Diploma in Education should familiarise themselves with the prerequisites for units offered in the Course.

These prerequisites are stated in terms of subjects of the University of Newcastle. Applicants whose courses of study have included subjects which are deemed for this purpose to provide an equivalent foundation may be admitted to the Diploma course as special cases.
1. General

These Regulations prescribe the requirements for the ordinary degree of Bachelor of Science of the University of Newcastle and are made in accordance with the powers vested in the Council under By-law 5.2.1.

2. Definitions

In these Regulations, unless the context or subject matter otherwise indicates or requires:
- "course" means the total requirements prescribed from time to time to qualify a candidate for the degree;
- "Dean" means the Dean of the Faculty;
- "Department" means the degree of Bachelor of Science;
- "Department" means the Department offering a particular subject and includes any other body so doing;
- "Faculty" means the Faculty of Science;
- "Faculty Board" means the Faculty Board of the Faculty;
- "subject" means any part of the course for which a result may be recorded.

3. Admission and Enrolment

(1) A candidate's enrolment in any year must be approved by the Dean or the nominee of the Dean.

(2) A candidate may enrol in any year in any combination of subjects which is incompatible with the requirements of the timetable for that year.

(3) Except with the permission of the Dean given only if the Dean is satisfied that the academic merit of the subject is compatible with the requirements of the timetable for that year.

4. Qualification for Admission to the Degree

To qualify for admission to the degree a candidate shall pass nine subjects presented in accordance with the provisions of Regulations 9 and 10 of these Regulations.

5. Subject

(1) To complete a subject a candidate shall attend such lectures, tutorials, seminars, laboratory classes and field work and submit such written or other work as the Department shall require.

(2) To pass a subject a candidate shall complete it and pass such examinations as the Faculty Board shall require.

6. Standing

(1) The Faculty Board may grant standing in specified subjects as it may determine, in recognition of work completed in this university or another institution.

(2) A candidate may not be granted standing in more than four subjects which have already been counted towards a degree to which the candidate has been admitted or is eligible for admission.
SECTION THREE

UNDERGRADUATE DEGREE REGULATIONS

(d) Geology IIIb if either Geology IIIa or Geology IIIb is included;
(e) Psychology IIIb if either Psychology IIIa or Psychology IIIb is included.

A candidate may not present for the degree subjects

Irrespective of the order in which they are passed, the

following degree patterns:

(a) five subjects, being Mathematics I, Mathematics IIc, Mathematics IIIa, and another

Part III subject chosen to be from a

department other than that offering the Part III subject mentioned in (a); and

(c) the maximum total number of Arts Part I subjects and Science Part I subjects shall not exceed six.

19. Science/Mathematics

(1) A candidate shall qualify for admission to the ordinary degrees of Bachelor of Science and Bachelor of Arts, a candidate shall complete all the requirements for the degrees of Bachelor of Arts and Bachelor of Science other than those prescribed in Regulations 3(3) and 10, and shall pass fourteen subjects chosen from the Schedule of Subjects approved for the two degrees, provided that:

(a) at least six subjects, including at least one Part III subject, shall be chosen from Group I of the Schedule of Subjects approved for the degree of Bachelor of Arts;

(b) at least six subjects, including at least one Part III subject, shall be chosen from the Schedule of Subjects approved for the degree of Bachelor of Science, the Part III subject selected to be from a department other than that offering the Part III subject mentioned in (a); and

(c) the minimum number of Arts Part I subjects and Science Part I subjects shall not exceed six.

14. General

A candidate may complete the requirements for the degree in conjunction with another Bachelor's degree by completing a combined course approved by the Faculty Board and also the Faculty Board of the Faculty offering that other Bachelor's degree.

13. Relaxing Provision

In order to provide for exceptional circumstances arising in a particular case the Senate on the recommendation of the Faculty Board may relax any provision of these Regulations.

COMBINED DEGREE COURSES

1. Subjects offered in the Faculty of Mathematics.

2. Subjects approved by the Faculty of Science.

3. Preparatory subjects are those which students are strongly advised to have completed before enrolling in the subject for which a preparatory subject is recommended.

SECTION THREE

UNDERGRADUATE DEGREE REGULATIONS

REGULATIONS RELATING TO THE DEGREE OF BACHELOR OF SCIENCE (PSYCHOLOGY)

1. General

These Regulations prescribe the requirements for the degree of Bachelor of Science (Psychology) of the University of Newcastle and are made in accordance with the powers vested in the Council under By-law 5.2.1.

2. Definitions

In these Regulations, unless the context or subject matter otherwise indicates or requires:
"course" means the total requirements prescribed from time to time to qualify a candidate for the degree.
"Dean" means the Dean of the Faculty.
"the degree" means the degree of Bachelor of Science (Psychology).
"Department" means the Department offering a particular subject and includes any other body so doing.
"Faculty" means the Faculty of Science.
"Faculty Board" means the Faculty Board of the Faculty.
"subject" means any part of the course for which a result may be recorded.

3. Grading of Degree

(1) The degree may be conferred either as an ordinary degree or as an honours degree.
(2) There shall be three classes of honours: Class I, Class II and Class III. Class II shall have two divisions, namely Division I and Division 2.

4. Withdrawal

(1) A candidate may withdraw from a subject or the course only by informing the Secretary to the University in writing and the withdrawal shall take effect from the date of receipt of such notification.
(2) A candidate who withdraws from a subject after the last Monday in second term shall be deemed to have failed in the subject save that, after consulting with the Head of Department, the Dean may grant permission for withdrawal without penalty.

5. Prerequisites and Corequisites

Except with the permission of the Faculty Board granted after considering any recommendation made by the Head of Department, no candidate may enrol in a subject unless he has passed any subjects prescribed as its prerequisites at any grade which may be specified and has already passed or concurrently enrols in or is already enrolled in any subjects prescribed as its corequisites.

6. Subject

(1) To complete a subject a candidate shall attend such lectures, tutorials, seminars, laboratory classes and field work and submit such written or other work as the Department shall require.
(2) To pass a subject a candidate shall complete it and pass such examinations as the Faculty Board shall require.

7. Enrolment

(1) A candidate's enrolment in any year must be approved by the Dean or his nominee.
(2) A candidate may not enrol in any year in any combination of subjects which is incompatible with the requirements of the timetable for that year.
(3) Except with the permission of the Dean given only if he is satisfied that the academic merit of the candidate so warrants:
   (a) a candidate shall not enrol in more than four subjects in any one academic year;
   (b) a candidate enrolling in four subjects in any one academic year shall not enrol in a Part III subject nor more than two Part II subjects in that year;
   (c) a candidate enrolling in three subjects in any one academic year shall not enrol in more than one Part III subject in that year; and
   (d) a candidate enrolling in a Part IV subject shall not enrol in any other subject.

8. Qualification for Admission to the Degree

To qualify for admission to the degree a candidate shall pass ten subjects presented in accordance with the provisions of Regulations 10 and 11 of these Regulations.

9. Standing

(1) The Faculty Board may grant standing in specified and unspecified subjects to a candidate, on such conditions as it may determine, in recognition of work completed in this university or another institution.
(2) A candidate may not be granted standing in more than four subjects which have already counted towards a degree to which he has been admitted or is eligible for admission.

10. Choice of Subjects

The ten subjects presented for the degree shall be chosen in accordance with the following provisions, namely:-

   (a) A candidate shall include:
      (i) five subjects being Psychology I, Psychology II, Psychology IIIA, Psychology IV or Psychology IV;
      (ii) unless the Dean, after consultation with the Head of the Department of Psychology, otherwise permits in a particular case, at least two other Part I subjects, selected from the following:
         Biology I, Chemistry I, Computer Science I, Geography I, Geology I, Mathematics I, Mathematics II and Physics I or II.

11. Degree Patterns

Irrespective of the order in which they are passed, the subjects presented for the degree shall conform with one of the following degree patterns.

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<th>Part I</th>
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12. Results

The results obtained by a successful candidate in a Part I, Part II or Part III subject shall be recorded as Pass, Credit, Distinction or High Distinction; in Psychology IV Pass, Credit, Distinction or High Distinction; in Psychology IV Honours Class I, II(2) III(1) or I.

13. Relating Provision

In order to provide for exceptional circumstances arising in a particular case the Senate on the recommendation of the Faculty Board may relax any provision of these Regulations.

SCHEDULE 1 — SCHEDULE OF SUBJECTS

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<th>Part I</th>
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14. Admission and Enrolment

(1) A candidate's enrolment in any year must be approved by the Dean or the nominee of the Dean.
(2) A candidate may not enrol in any year in any combination of subjects which is incompatible with the requirements of the timetable for that year.
(3) Except with the permission of the Dean given only if the Dean is satisfied that the academic merit of the candidate so warrants:
   (a) a candidate shall not enrol in more than four subjects in any one academic year;
   (b) a candidate enrolling in four subjects in any one academic year shall not enrol in a Part III subject nor more than two Part II subjects in that year; and
   (c) a candidate enrolling in three subjects in any one academic year shall not enrol in more than one Part III subject in that year.

Notes for students interested in the BSc(Psychology) degree:

1. The Bachelor of Science degree with Honours in Psychology remains the preferred path for those who wish to complete a four-year Psychology course.
2. Students will not be permitted to transfer from Psychology IVP to Psychology IV, although the reverse may be permissible.

REGULATIONS RELATING TO THE DEGREE OF BACHELOR OF SCIENCE (AVIATION)

1. General

These Regulations prescribe the requirements for the degree of Bachelor of Science (Aviation) of the University of Newcastle and are made in accordance with the powers vested in the Council under By-law 5.2.1.

2. Definitions

In these Regulations, unless the context or subject matter otherwise indicates or requires:
"Board of Studies" means the Board of Studies in Aviation;
"course" means the total requirements prescribed from time to time to qualify a candidate for the degree;
"Dean" means the Dean of the Faculty;
"the degree" means the degree of Bachelor of Science (Aviation);
"Department" means the Department offering a particular subject and includes any other body so doing;
"Faculty" means the Faculty of Science;
"Faculty Board" means the Faculty Board of the Faculty;
"subject" means any part of the course for which a result may be recorded.

3. Grading of Degree

The degree shall be conferred as an ordinary degree only.

4. Admission and Enrolment

(1) A candidate's enrolment in any year must be approved by the Dean or the nominee of the Dean.
(2) A candidate may not enrol in any year in any combination of subjects which is incompatible with the requirements of the timetable for that year.
(3) Except with the permission of the Dean given only if the Dean is satisfied that the academic merit of the candidate so warrants:
   (a) a candidate shall not enrol in more than four subjects in any one academic year;
   (b) a candidate enrolling in four subjects in any one academic year shall not enrol in a Part III subject nor more than two Part II subjects in that year; and
   (c) a candidate enrolling in three subjects in any one academic year shall not enrol in more than one Part III subject in that year.

Notes for students interested in the BSc(Aviation) degree:

1. Students interested in the BSc(Aviation) degree are expected to meet the following requirements:
   (a) a candidate's enrolment in any year must be approved by the Dean or the nominee of the Dean.
   (b) A candidate may not enrol in any year in any combination of subjects which is incompatible with the requirements of the timetable for that year.
   (c) Except with the permission of the Dean given only if the Dean is satisfied that the academic merit of the candidate so warrants:
      (a) a candidate shall not enrol in more than four subjects in any one academic year;
      (b) a candidate enrolling in four subjects in any one academic year shall not enrol in a Part III subject nor more than two Part II subjects in that year; and
      (c) a candidate enrolling in three subjects in any one academic year shall not enrol in more than one Part III subject in that year.
SECTION THREE

UNDERGRADUATE DEGREE REGULATIONS

REGULATIONS RELATING TO THE DIPLOMA IN AVIATION SCIENCE

1. General

These regulations prescribe the requirements for the Diploma in Aviation Science of the University of Newcastle and are made in accordance with the powers vested in the Council under By-law 5.2.1.

2. Definitions

In these Regulations, unless the context or subject matter otherwise indicates or requires:

"Board of Studies" means the Board of Studies in Aviation;

"course" means the total requirements prescribed from time to time to qualify a candidate for the diploma;

"Dean" means the Dean of the Faculty;

"Department" means the Department offering a particular subject and includes any other body so doing;

"the Diploma" means the Diploma in Aviation Science;

"Faculty" means the Faculty of Science;

"Faculty Board" means the Faculty Board of the University of Newcastle;

"subject" means any part of the course for which a result may be recorded.

3. Admission to Candidature

An applicant for admission to candidature for the diploma shall satisfy the requirements of the Regulations Governing Admission and Enrolment concerning undergraduate admission.

4. Enrolment

(a) A candidate's enrolment in any year must be approved by the Dean or the nominee of the Dean.

(b) A candidate may enrol in a subject only by informing the Faculty Board in writing and the withdrawal shall take effect from the date of receipt of such notification.

(c) A candidate who withdraws from a subject after the last Monday in second term shall be deemed to have failed in that subject and the Dean may grant permission for withdrawal without penalty.

5. Qualification for Award of Diploma

To qualify for the award of the Diploma a candidate shall pass all subjects presented in accordance with the provisions of Regulation 10 and 11 of these Regulations.

6. Subject

(a) To complete a subject a candidate shall attend such lectures, tutorials, seminars, laboratory classes and field work and submit such written or other work as the Department shall require.

(b) A candidate may select up to two subjects from the following:

Aviation I, Aviation IIA, and Aviation III;

(b) no fewer than six subjects selected from the Schedule of Subjects to the Ordinary Degree of Bachelor of Science;

(c) at least two of the following:

Biology I, Chemistry I, Computer Science I, Geography I, Geology I, Mathematics I or Mathematics IS, Physics IA or Physics IB and Psychology I;

(d) at least one other Part I and one other Part II subject approved by the Dean.

(c) A candidate who withdraws from a subject after the last Monday in second term shall be deemed to have failed in that subject and the Dean may grant permission for withdrawal without penalty.

(d) A candidate obtaining a Terminating Pass in a subject shall be deemed not to have passed that subject for prerequisite purposes.

9. Withdrawal

(a) A candidate may withdraw from a subject or the course only by informing the Secretary to the University in writing and the withdrawal shall take effect from the date of receipt of such notification.

(b) A candidate who withdraws from a subject after the last Monday in second term shall be deemed to have failed in the subject save that, after consulting with the Head of Department, the Dean may grant permission for withdrawal without penalty.

10. Choice of Subjects

(a) The six subjects presented for the Diploma shall include:

Aviation I and Aviation IIA;

(b) not fewer than four subjects selected from the Schedule of Subjects to these Regulations; and

(c) at least one of the following:

Biology I, Chemistry I, Computer Science I, Geography I, Geology I, Mathematics I or Mathematics IS, Physics IA or Physics IB and Psychology I.

(b) A candidate may select up to two subjects from the following:

(a) Aviation I and Aviation IIA;

(b) no fewer than six subjects selected from the Schedule of Subjects to the Ordinary Degree of Bachelor of Science;

(c) at least two of the following:

Biology I, Chemistry I, Computer Science I, Geography I, Geology I, Mathematics I or Mathematics IS, Physics IA or Physics IB and Psychology I;

(d) at least one other Part I and one other Part II subject approved by the Dean.

(c) A candidate who withdraws from a subject after the last Monday in second term shall be deemed to have failed in that subject and the Dean may grant permission for withdrawal without penalty.

(d) A candidate obtaining a Terminating Pass in a subject shall be deemed not to have passed that subject for prerequisite purposes.

subject offered in the Faculty of Mathematics.

Subject offered in the Faculty of Mathematics.
SECTION THREE

UNDERGRADUATE DEGREE REGULATIONS

11. Diploma Pattern

Irrespective of the order in which they are passed, the subjects presented for the diploma shall conform with one of the following patterns:

**Part I subjects**      **Part II subjects**
3                    3
or
4                    2

12. Results

The result obtained by a successful candidate in a subject shall be:pass, credit, merit, distinction or high distinction.

13. Award of Diploma

The diploma shall be awarded in two grades, namely:

(a) Diploma in Aviation Science; and
(b) in cases where a candidate's performance has reached a level determined by the Faculty Board, on the recommendation of the Board of Studies, Diploma in Aviation Science with Merit.

14. Relating Provision

In order to provide for exceptional circumstances arising in a particular case the Senate on the recommendation of the Faculty Board may relax any provision of these Regulations.

**SCHEDULE OF SUBJECTS**

**Part I**

<table>
<thead>
<tr>
<th>Subject</th>
<th>Remarks</th>
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<tbody>
<tr>
<td>Aviition I</td>
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<td>BioIogy I</td>
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<tr>
<td>Chemistry I</td>
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<td>Computer Science I</td>
<td>Corequisite Mathematics I</td>
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<td>Geology I</td>
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<td>Mathematics I</td>
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<td>Physics I</td>
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<td>Psychology I</td>
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**Part II**

<table>
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<tr>
<th>Subject</th>
<th>Prerequisite</th>
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<td>Aviition I</td>
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<td>Aviition I</td>
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<td>Chemistry I</td>
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<td>Preparatory Subjects</td>
<td>Chemistry I</td>
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<td>Preparatory Subjects</td>
<td>Mathematics I</td>
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<tr>
<td>or Physics IB</td>
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<tr>
<td>Corequisite: a part III subject approved by the Faculty Board on the recommendation of the Head of the Dept. of Physics.</td>
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<td>Corequisite: Physics I or II</td>
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<td>or Mathematics I</td>
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<td>Corequisite: Mathematics I</td>
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<td>Geology II</td>
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<td>Statistics II</td>
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</tbody>
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**IMPORTANT REGULATIONS**

1. Students should note that degree and diploma regulations and requirements are intended to supplement the general regulations.

2. Attention is particularly drawn to the following groups of regulations:

   (a) Admission and Enrolment

   The most important of these Regulations are listed below.

   (b) Examination

   A summary of the Regulations is included in the centre pages of this Handbook.

   (c) Unsatisfactory Progress

   These Regulations are reprinted in the centre pages of this Handbook.

3. Undergraduate Admission

   (1) In order to be considered for admission for any qualification other than a postgraduate qualification an applicant shall be required to:

   (a) either:

   (i) obtain such aggregate of marks in approved subjects at the one New South Wales Higher School Certificate examination as may be prescribed by the Senate from time to time; or

   (ii) otherwise satisfy the Admissions Committee that he has reached a standard of education sufficient to enable him to pursue his approved course;

   and

   (b) satisfy any prerequisites prescribed for admission to the course leading to that qualification.

   (2) (a) The aggregate of marks prescribed by the Senate shall be determined by aggregating the marks gained in up to 10 units or, where more than 10 units are presented, the 10 units having the highest marks.

4. Record of Failure

   An applicant who has a record of failure at another tertiary institution should not be admitted unless he is first satisfied that:

   (a) the Faculty Board or the Doctoral Degree Committee for the Faculty as appropriate, in the case of a postgraduate qualification; or

   (b) the Admissions Committee, in the case of any other qualification; that there is a reasonable prospect that he will make satisfactory progress.

Enrolment

5. (1) In order to be admitted an applicant shall:

   (a) satisfy Regulation 3 of these Regulations;

   (b) receive approval to enrol;

   (c) complete the prescribed enrolment procedures; and

   (d) pay any fees and charges prescribed by the Council.

   (2) An applicant may be admitted under such conditions as the Admissions Committee may determine after considering any advice offered by the Dean of the Faculty.

6. (1) Except with the approval of the Faculty Board a candidate for a qualification shall not enrol in a subject which does not count towards that qualification.

   (2) A candidate for a qualification shall not enrol in a course or part of a course for another qualification unless he has first obtained the consent of the Dean of the Faculty and, if another Faculty is responsible for the course leading to that other qualification, the Dean of that Faculty: provided that a student may enrol in a combined course approved by the Senate leading to two qualifications.

   (3) A candidate for any qualification other than a postgraduate qualification who is enrolled in three quarters or more of a normal full-time programme shall be deemed to be a full-time student whereas a candidate enrolled in either a part-time course or less than three-quarters of a full-time programme shall be deemed to be a part-time student.

10. Enrolment Status

   (1) A candidate for a qualification shall enrol as either a full-time student or as a part-time student.

11. Non-Degree Students

   Non-standing anything to the contrary contained in these Regulations, the Admissions Committee may on the recommendation of the Head of a Department offering any part of a course permit a person, not being a candidate for a qualification of the University, to enrol in any year in that part of the course on payment of such fees and charges as may be prescribed by the Council. A person so enrolling shall be designated a "non-degree" student.

12. Re-enrolment

   A candidate for a qualification shall be required to re-enrol annually during the period of this candidature. Upon receiving approval to re-enrol the candidate shall complete the prescribed procedures and pay the fees and charges determined by the Council not later than the date prescribed for payment.

13. Limit on Admission

   Where the Council is of the opinion that a limit should be placed upon the number of persons who may in any year be admitted to a course or part of a course or to the University, it may impose such a limit and determine the manner of selection of those persons to be so admitted.

**COMBINED DEGREE COURSES**

Any student contemplating enrolment in a combined degree course under BSc or degree regulations 14-20 is required to consult the Deans of both Faculties with a view to determining his individual programme.

Sample programmes are shown below for guidance only.

**Science/Arts**

Normally the combined degree programme would be pursued in (a) or (b):

(a) **Year I:** Four Science Part I subjects passed with an average performance of credit level or higher.

(b) **Year II:** Three Science Part II subjects and an additional subject which will be an Arts Group I Part I subject if no Arts Group I subject has been passed.

**Year III:** At least one Science Part III subject and two or other subjects including an Arts Group I Part II subject has so far
SECTION THREE

UNDERGRADUATE DEGREE REGULATIONS

been passed. At the end of Year III students must have passed at least three Arts Group I subjects.

Year IV One subject which is an Arts Group I Part III subject if this requirement has not already been met (and is from a department different from that of the Science Part III subject) and two other subjects to complete the Requirements for the degree of Bachelor of Arts.

(b) Year I Four Arts Part I subjects passed with an average performance of credit level or higher.

Year II Three Arts Part II subjects and an additional subject which will be a Part I subject chosen from the B.Sc. Schedule if no subject included in that Schedule has been passed.

Year III At least one Arts Part III subject and two other subjects including a Science Part II subject if no Science Part II subject has so far been passed. By the end of this year at least three subjects from the B.Sc. Schedule of Subjects must be passed.

Year IV One subject, which is a Science Part III subject if this requirement has not already been met (and is from a department different from that providing the Arts Part III subject), and two other subjects to complete the Requirements for the degree of Bachelor of Science.

Science/Mathematics

Normally the combined degree programme would be pursued as follows:

Year I Mathematics I and three Part I subjects passed with an average performance of credit level or higher.

Year II Three Part II subjects including Mathematics IIA and Mathematics IIB, and another Part I subject.

Year III Mathematics IIA plus two other subjects which must include at least one Part III subject.

Year IV Either Mathematics IIB or a schedule B subject from the requirements for B.Math, plus two other subjects which will complete the requirements for the Science degree.

Science/Engineering

See details in Faculty of Engineering Handbook.

SECTION FOUR

BIOLICAL SCIENCES SUBJECT DESCRIPTIONS

GUIDE TO SUBJECT ENTRIES

Subject outlines and reading lists are set out in a standard format to facilitate easy reference. An explanation is given below of some of the technical terms used in this Handbook.

1.(b) Prerequisites are subjects which must be passed before a candidate enrols in a particular subject.

(b) Where a subject is marked Advisory, it refers to a pass in the Higher School Certificate. In such cases lectures will be given on the assumption that a pass has been achieved at the level indicated.

(c) Preparatory subjects are those which candidates are strongly advised to have completed before enrolling in the subject for which the preparatory subject is recommended.

2. Corequisites refer to subjects or topics which the candidate must either pass before enrolling the particular subject or be taking concurrently.

3. Texts are books recommended for purchase.

4. References are books relevant to the subject or topic which need not be purchased.

DEPARTMENT OF BIOLOGICAL SCIENCES
711100 BIOLOGY I

Note:

It is expected that in future this subject will not be offered in the evenings in even years.

Prerequisites

Students intending to study in the biological sciences are advised that facility with Chemistry is desirable. H.S.C. Chemistry or 4-unit Science is appropriate, and students are advised to include Chemistry I in their university programme. However, a series of 10 lectures in background chemistry will be offered during orientation week (15th to 19th February, 1988) between 10.00 a.m. and 12.00 noon each day in the Department of Biological Sciences lecture theatre, J.L.G.018 for those students enrolling in Biology I who have done little chemistry. Attendance at the lectures is optional.

Hour: 3 lecture hours and 3 hours of laboratory classes per week. A compulsory two-day excursion will be held in the May vacation.

Examination Three 2-hour papers.

Text

The course is organized into 3 units.

UNIT 1

Genetics

Lecturer B. Boothber


Population Biology

Lecturer B.A. Conroy

An introduction to ecology, population genetics and evolution.

Texts

Keeton, W.T. & Gould J.L.

Biological Science 4th edn (Norton 1986)

or

Curtis, H.

Biology 4th edn (Worth 1983)

Abercrombie, M., Hickman, C.J. et al

The Penguin Dictionary of Biology (Penguin 1985)

References

Ayala, F.M., & Kiger, J.A.

Modern Genetics (Benjamin Cummings 1984)

Clarke, R.B. & Panchon, A.L.

Synopsis of Animal Classification (Chapman & Hall)

Moroney, M.J.

Facts from Figures (Penguin)
Two second year subjects are offered, Biology IIA and Biology IIB. Biology IIA consists of Biological Methods and any 3 of the 6 topics listed below, while Biology IIB consists of any 3 of the 6 topics listed below which have not made up the subject Biology IIA.

UNIT 2

Cell Biology

Theme: The evolution and functional organization of cells.

Topics
- Biological molecules: the structure of proteins, carbohydrates and lipids.
- Cell organization: emphasis on organelle ultrastructure and principal function.
- Biological energy processes: photosynthesis, cellular respiration. Evolution of cells.

UNIT 3

Plant Diversity and Processes

Theme: Plant diversity as a consequence of adaptation for survival in a range of environments.

Topics
- The major plant groups and their life cycles. Higher plant structure and function.
- Growth and differentiation. Control of plant development.

UNIT 4

Animal Diversity - Form and Function

Theme: The variety of structural and functional adaptations which have allowed animals to exploit the wide range of available environments.

Topics
- The animal phyia - organization of tissues and organs, body plan, body cavities, pattern of development.
- Animal Function: digestion, circulation, respiration, integration and control, homeostasis, reproduction and development.

712108 BIOLOGICAL SCIENCES SUBJECT DESCRIPTIONS

712105 Biological Methods
712106 Animal Physiology
712107 Biochemistry
712108 Cell Biology
712109 Molecular Genetics
712110 Plant Physiology
712111 Population Dynamics

Prerequisites: For each subject in Biology I.

712108-Biological Methods

Content: Normal distribution, Tests of significance. Correlation, Regression. Tutorials will deal with biological topics of interest, and precede promtice in statistical evaluation of biological data. Theory of cell separation, electrophoresis and use of radioactive chemicals.

Examination: For each subject. Three 2-hour papers.

712109-Animal Physiology

Lecturer: R.C. Jones

Content: Consideration of the processes involved in the transport of oxygen in mammals and emphasizing the relation between structure and function. The course examines molecules, cell and tissue structure and function, particularly of nerve and muscle, the respiratory and cardiovascular systems, comparative energetics and control systems.

References
- Bloom, W. & Fawcett, A. Textbook of Histology 10th edn (W.B. Saunders, 1975)
- Prosser, C.L. Comparative Animal Physiology 3rd edn (Saunders 1973)
- Urey, T.W. & Feduccia, A. Morphogenesis of the vertebrates 4th edn (John Wiley 1979)

712110-Plant Physiology

Lecturer: J.W. Pollack

Content: The biochemistry of blood and the digestion and absorption of foodstuffs will also be major topics for consideration.

Examination: Three 2-hour papers.

712111-Population Dynamics

Lecturer: B.A. Conroy

Content: Physical and biological factors influencing the abundance and distribution of organisms. Theories of population and control.

Text: Krebs, C.J. Ecology 3rd edn (Harper & Row)

References
- Recker, H., Lunney, D. & Dunn, I. A Natural Legacy (Pergamon (eds) Press 1979)
**SECTION FOUR**  
**BIOLOGICAL SCIENCES SUBJECT DESCRIPTIONS**

**References**  
Lehninger, A.L.  
Principles of Biochemistry (Worth 1982)  

**713207 Ecology and Evolution**  
Lecturer: B.A. Conroy  
**Content**  
The majority of the practical component of the topic will be undertaken on two excursions.  
Text  
Krebs, C.J.  

**713109 Plant Structure and Function**  
Lecturer: C.R. Johnson  
**Content**  
The development of higher plant structure from meristematic tissue. The structure/function equation for fully differentiated vegetative organs. Structural adaptations ranging from gross morphology to cell ultrastructure to maintain growth under environmental stress.  
References  
Burgeff, J.  
An Introduction to Plant Cell Development (Cambridge U.P. 1985)  
Esau, K.  
Anatomy of Seed Plants (John Wiley & Sons 1960)

**713110 Reproductive Physiology**  
Lecturer: R.C. Jones  
**Content**  
Biological reproduction with particular emphasis on sexual differentiation and gamete physiology.  
References  
Johnson, M.H. & Everitt, B.J.  
Essential Reproduction (Blackwell 1980)  
Austin, C.R. & Short, R.V.  
Reproduction in Mammals Vol. 1-6 (Cambridge 1972)  
Setchell, B.P.  
The Mammalian Testis (Paul Elek 1978)  
Torr, T.W. & Feduccia, A.  
Morphogenesis of the oocytes 4th ed (John Wiley 1975)

**713105 IMMUNOLOGY**  
Lecturer: T.K. Roberts  
NOT OFFERED IN 1988

**713108 MOLECULAR BIOLOGY OF PLANT DEVELOPMENT**  
Lecturer: R.J. Rose  
NOT OFFERED IN 1988

**714100 BIOLOGY IV**  
**Prerequisites**  
Completion of Ordinary Degree requirements and permission of Head of Department.  
**Content**  
Carry out a research project and complete a thesis, essay, viva and two seminars.
GENERAL INFORMATION

Year IV

Term 1 Feb 1 — March 11 6 weeks
Term 2 March 14 — April 29 6 week term
plus Easter Term 1/4/88 8/4/88
March 31 — April 7 2 weeks
Vacation May 2 — May 13 2 weeks
Term 3 May 16 — June 24 6 weeks
Term 4 June 27 — Aug 5 6 weeks
GP Training Period 1 Aug 8 — Aug 17 1/2 week (inclusive)
GP Term 1 Aug 18 — Aug 26 1 1/2 weeks
Term 5 Aug 29 — Sept 27 6 weeks
Term 6 Oct 10 — Nov 18 6 weeks
Stavr Nov 21 — Nov 22 1 week
Assessments Nov 28 — Dec 1 2 week

Year V

GP Term 1 Feb 1 — Feb 12 2 weeks
Term 1 Feb 15 — Mar 18 5 weeks
Term 2 Mar 21 — April 3 5 week term
plus Easter Term 1/4/87 5/4/87
April 8 — May 5 6 weeks
Vacation May 6 — June 11 1 week
Term 5 June 20 — July 22 5 weeks
Shave July 25 — Aug 5 1 week
Assessment Period Aug 1 — Aug 3 3 weeks
Term 5 Aug 22 — Sept 3 5 weeks
Elective Sept 25 — Nov 18 6 weeks

ADVICE AND INFORMATION

For general enquiries about University regulations, Faculty rules and policies, students within the University and so on, students may consult:

Faculty of Science

Secretary Phone

Architecture Mrs Dianne Rigney 685711
Ms Julie Kien 685711
Arts Ms Chris Wood 685296
Economics & Commerce Mrs Linda Harrigan 685695
Education Mr Peter Day** 685417
Engineering Mr Geoff Gordon*** 685630
Mrs Dianne Rigney* 685711
Ms Julie Kien 685711
Mathematics Ms Helen Hotchkiss 685565
Medicine Mr Brian Kelhber 685413
Science Ms Helen Hotchkiss 685555

* Located in the Student and Faculty Administration Office on the ground floor of the McMullin Building
** Located in room 9220 in the Behavioural Sciences Building
*** Located in room E209 in the Engineering Building
**** Located in room 607A on the 6th floor of the Medical Science Building

For enquiries regarding particular studies within a faculty or departmental Sub-deans, Deans or Departmental Heads (see staff section) should be contacted.

Cahsier's office 1st Floor McMullin Building, located in the temporary building opposite Mathematics.

Careers and Student Employment Officer Mr Hugh Playen, phone 685466

located in the temporary building opposite Mathematics.

Counselling Service phone 685255 or 685501
located on the Lower Ground Floor (northern end) of the McMullin Building.

ENROLMENT OF NEW STUDENTS

Persons offered enrolment are required to attend in person at the Great Hall early in February to enrol and pay charges. Detailed instructions are given in the Offer of Enrolment.

TRANSFER OF COURSE

Students currently enrolled in an undergraduate Bachelor degree course who wish to transfer to a different undergraduate Bachelor degree course must complete an Application for Course Transfer form and lodge it with their Application for Re-enrolment at the Student Administration Office by 8 January 1988.

RE-ENROLMENT BY CONTINUING STUDENTS

There are four steps involved for re-enrolment by continuing students:

1. collection of the re-enrolment kit
2. lodging the Application for Re-enrolment form with details of your proposed programme
3. attendance at the Great Hall for enrolment approval, and
4. payment of the General Service Charge.

(Students who are in research higher degree programmes are exempted from paying the matriculation fee.)

Re-Enrolment Kits

Re-enrolment kits will be available for collection from 19 to 22 October 1987 from the Time service Bureau, Level Three University Union and thereafter from the Student Administration Office in the McMullin Building. The re-enrolment kit contains the student's Application for Re-enrolment form, the 1988 Class Timetables, the Statement of Charges Payable for 1988 and re-enrolment instructions.

Lodging of Application for Re-enrolment Form

The Application for Re-enrolment form must be completed carefully in accordance with the Student Administration Office and 8 January 1988. It can be lodged in November or December, but in general students should know their examination results before completing the form. There is no late charge for enrolment if the form is late, but it is very important that the Application for Re-enrolment form be lodged by 8 January 1988 as late lodgement will mean that enrolment approval will not be possible before the late re-enrolment session.

Enrolment Approval

All re-enrolling students (except those enrolled in the BMed) are required to attend at the Great Hall on a specific date and time during the period 9-15 February 1988. Enrolment Approval dates are on posters in University Noticeboards and are included in the enrolment kit issued to students in late January/early February. When attending for Enrolment Approval, students will collect their approved 1988 programmes and student card. Any variations to the proposed programme require approval. Enrolments in tutorial or laboratory sessions will be arranged. Staff from academic Departments will be available to answer enquiries.

For exceptions forms will also be issued, providing the General Services Charge has been paid.

A service charge of $10 will be imposed on students who re-enrol after the specified date.

Payment of Charges

The re-enrolment fee issued to re-enrolling students includes a Statement of Charges Payable form which must accompany the payment of the fee for 1988. These charges may be paid at any time after receiving the re-enrolment kit.

All charges, including debts outstanding to the University, must be paid before the re-enrolment — part payment of total amount due will not be accepted by the cashier.

Payment by mail is encouraged; alternatively by cheque or money order lodged in the internal mail deposit box outside the Cashier's Office in the McMullin Building. The receipt will be mailed to the student.

Payment by cash at the Casual Office may lead to queuing at enrolment time.

The Casual Office will be open for extended hours during the enrolment approval sessions in the period 9-15 February 1988. Afterwards any further payment should be by mail only.

Exemption from payment of Higher Education Administration Charge (see page viii)

LATE PAYMENT

Payment for the Overseas Service Charge is due before or upon re-enrolment. The final date for payment is the date of the Enrolment Approval Session for the course concerned in the period 9-15 February 1988, after which a late charge ap subscribed at the rate of

$10 if payment is received up to and including 7 days after the due date;

$20 if payment is received between 8 and 14 days after the due date; or

$30 if payment is received 15 or more days after the due date.

Should enrolment be cancelled if charges remain unpaid by 31 March.

STUDENT CARDS

When attending for Enrolment Approval, students will be given their Approved Programme form which incorporates the Enrolment form. The Student Card. The Student Card should be carried by students when at the University as evidence of enrolment. The Student Card and machine readable lecturing for use when borrowing books from the University Library, and contains the student's interim password for access to facilities of the Computing Centre.

Students are urged to take good care of their Student Card. If the card is lost or destroyed, there is a service charge of $5 payable before the card will be replaced.

A student, who withdraws completely from studies should return the Student Card to the Student Administration Office.

RE-ADMISSION AFTER ABSENCE

A person wishing to resume an undergraduate degree course who has been away from the University for a period of at least three months, shall be deemed to be a full-time student whereas a candidate enrolled in a part-time course or less than three-quarters of a full-time programme shall be deemed to be a part-time student.

A candidate for a postgraduate qualification shall enrol as either a full-time or a part-time student as determined by the Faculty.

CHANGE OF ADDRESS

Students are responsible for notifying the Student Administration Office of any change in their address. Change of Address form should be used and is available from the Student Administration Office.

Failure to notify changes could lead to important correspondence or course information not reaching the student. The University, charging extra responsibility, if official communications fail to reach a student who has not notified the Student Administration Office of a change of address.

It should be noted that examination results will be available for collection in the Drama Workshop in mid December. Results not collected will be mailed to students. Students who will be away during the long vacation from their regular address must make arrangements to have mail forwarded.

CHANGE OF NAME

Students who change their name should advise the Student Administration Office. Marriage or deed poll certificates should be presented for signing in order that the change can be noted on University records.

CHANGE OF PROGRAMME

Approval must be sought for any changes to the programme for which a student has enrolled. This includes adding or withdrawing from subjects (for example from full-time to part-time) or transferring to a different degree or faculty.

All proposed changes should be entered on the Variation of Programme section of your Approved Programme form. Reasons for changes and where appropriate documentary evidence in the form of written or official or appropriate certificates must be submitted.

WITHDRAWAL

Application to withdraw from a subject should be made on the Variation of Programme section of your Approved Programme form and lodged at the Student Administration Office or mailed to the Secretary.

Applications received by the appropriate date listed below will be processed and a withdrawal certificate will be issued. Applications received after the date listed will be dealt with as a failure to attend question.

WITHDRAWAL DATES

Full Year First Half-Year Second Half-Year
Fall 1988 Monday Monday
Spring 1989 Monday Monday
8 August 1988 23 April 1988 26 September 1988

Application forms may be obtained from the UCA or from the Student Administration Office and close with the UCA on 1 October each year. There is a $40 fee for late applications.

ATTENDANCE STATUS

A candidate for any qualification other than a postgraduate qualification who is enrolled in three quarters or more of a full-time programme shall be deemed to be a full-time student whereas a candidate enrolled in a part-time course or less than three-quarters of a full-time programme shall be deemed to be a part-time student.

A candidate for a postgraduate qualification shall enrol as either a full-time or a part-time student as determined by the Faculty.
Withdrawal after the above dates will normally lead to a failure being recorded against the subject or subjects unless the Dean of the Faculty grants permission for the student to withdraw without a failed result. If a student believes that a failure should not be recorded because of the circumstances leading to his or her withdrawal, it is important that full details of these circumstances be provided with the application to withdraw.

CONFIRMATION OF ENROLMENT

Students should ensure that all details on their Approved Programme Form are correct. Failure to check this information could create problems. A Confirmation of Enrolment Form will not be sent in 1988.

FAILURE TO PAY OVERDUE DEBTS

Any student who is indebted to the University by reason of non-payment of any fee or charge, non-payment of any fine imposed, or who has failed to pay any overdue debts shall not be permitted to:

- complete enrolment in a following year
- receive a transcript of academic record
- graduate or be awarded a Diploma, until such debts are paid.

Students are requested to pay any debts incurred without delay.

LEAVE OF ABSENCE

A student who does not wish to re-enrol for any period up to three years should write to the Dean of the Faculty and ask for leave of absence. Leave of absence is normally granted only to those students who are in good standing. Applications should be submitted before the end of the first week of the first year for which leave of absence is sought. Leave of absence cannot be granted for more than three years and will not be granted retrospectively.

In the case of the B.Med. degree the following applies:

at the completion of an academic year, a candidate whose performance is deemed to be satisfactory may be granted leave of absence under such conditions as the Faculty Board may determine. Such leave will not normally be granted for more than one year.

Application for re-admission to undergraduate degree courses must be made through the UCAC (see p. 9).

ATTENDANCE AT CLASSES

Where satisfactory attendance or progress has not been satisfactory, action may be taken under the Regulations Governing Unsatisfactory Progress.

In the case of illness or absence for some other unavoidable cause, a student may be examined for non-attendance at classes. All applications for exemption from attendance at classes must be made in writing to the Head of the Department offering the subject. Students who become liable for action under the Regulations Governing Unsatisfactory Progress will be informed accordingly by mail after the release of the End of Year examination results and will be informed of the times and results of the examinations.

Students who become liable for action under the Regulations Governing Unsatisfactory Progress who are candidates for a degree other than those who are candidates for a degree of Master or Doctor.

GENERAL CONDUCT

In accepting membership of the University, students undertake to observe the by-laws and other requirements of the University.

Students are expected to conduct themselves at all times in a socially fitting manner. Smoking is not permitted during lectures, in

examination rooms or in the University Library.Gambling is forbidden.

Members of the academic staff of the University, senior administrative officials, and other persons authorised for the purpose have authority to report any disorderly or improper conduct occurring in the University.

NOTICES

Official University notices are displayed on the notice boards and students are expected to be acquainted with the contents of those announcements which concern them.

A notice board is placed on the opposite wall to the Entrance Theatre which is the purpose of display of examination time-tables and other notices about examinations.

STUDENT MATTERS GENERALLY

The main notice board is the display point for notices concerning enrolment matters, scholarships, University rules and travel concessions, etc. This notice board is located on the path between the Union and the Library.

EXAMINATIONS

Tests and assessments may be held in any subject from time to time. In the assessment of a student's progress in a subject coursework will be considered in addition to the results of formal written examinations.

EXAMINATION PERIODS

Written examinations take place on prescribed dates within the following periods:

First of Term: 16 to 20 May, 1988
Mid Year: 27 June to 8 July, 1988
Second of Term: 15 to 19 August, 1988
End of Year: 7 to 25 November, 1988

Timetables showing the time and place at which individual examinations will be held will be posted on examination notice boards set out for the period of examinations notice board near Lecture Theatre B (opposite the Great Hall). Misreading of the timetables will not under any circumstances be accepted as an excuse for failure to attend an examination.

SITTING FOR EXAMINATIONS

Formal examinations, where prescribed, are compulsory. Students should consult the final list of time-tables in advance to find out the date, time and place of their examinations and should allow themselves plenty of time to get to the examination room so that they can take their seat before the examination commences. Formal examinations are usually held in the Great Hall area and (in November) the Aclumith Sports Centre. The seat allocation list for examinations will be placed on the Notice Board of the Department running the subject, and on a noticeboard outside the examination room. Students should note that formal examinations cannot be adjourned for the purposes of any misconduct.

1 A programmable calculator will be permitted provided program cards and devices are not taken into the examination room.
GENERAL INFORMATION

"Admissions Committee" means the Admissions Committee of the Senate constituted under By-law 2.2 (1) (a).

"Dean" means the Dean of a Faculty in which a student is enrolled.

"Faculty Board" means the Faculty Board of a Faculty in which a student is enrolled.

4. Where the progress of a student who is enrolled in a combined course or who has previously been excluded from enrolment in another course or Faculty is considered by the Faculty Board to be unsatisfactory, the Faculty Board shall refer the matter to the Academic Senate. The Academic Senate shall make such recommendation for such action as the Faculty Board considers appropriate.

5. (1) An appeal made by a student to the Admissions Committee pursuant to Regulation 3 (3) of these Regulations shall be in such form as may be prescribed by the Admissions Committee and shall be made within fourteen (14) days from the date of posting of the student of the notification of the decision of the Academic Senate committee which may accept any such appeal.

5. (2) In hearing an appeal the Admissions Committee may take into consideration any circumstances whatsoever including matters not previously raised and may seek such information as it thinks fit concerning the academic record of the appellant and the making of the determination by the Faculty Board. Neither the Dean nor the Sub-Dean shall act as a member of the Admissions Committee on the hearing of any such appeal.

6. The appellant and the Dean or his nominee shall have the right to be heard in person by the Admissions Committee.

7. (1) The Admissions Committee may confirm the decision made by a Faculty Board or may substitute for it any other decision which the Faculty Board is empowered to make pursuant to these Regulations.

8. (1) The Admissions Committee shall consider any case referred to it by a Faculty Board and may:

(a) make any decision which the Faculty Board itself could have made pursuant to Regulation 3 (1) (a), (b), (c) or (e) of these Regulations;

(b) exclude the student from enrolment in any subject, course, or Faculty as it thinks fit;

(c) exclude the student from the University.

2. Late Charges

Where the payment of charges is in arrears and the charges are paid at the rate set out below, a late charge will be levied on a late payment of charges.

- Course fees: $10
- Other fees: $15
- Re-enrollment fees: $30
- Waivers: $50
- Pensioners: $100
- Students with dependents: $150
- Students with disabilities: $200
- Concession Card: $250

GENERAL INFORMATION

HIGHER EDUCATION ADMINISTRATION CHARGE

Subject to certain exemptions listed below, the charge will be applied uniformly to students in universities and colleges of advanced education undertaking full award courses, or courses or individual subjects which could form part of a higher education award.

The charge will apply to students enrolling on a full-time, part-time or external basis and will be imposed at the time of enrolment.

The following categories of students will be exempted from the charge:

Category

- Evidence Required with Application

Concession Card (includes Transport Concession), or Social Security Card.

3. University of Newcastle Scholarships

The Vice-Chancellor may offer such awards to students whose progress is considered satisfactory.

4. Higher Education Administration Charge

- 2023 Higher Education Administration Charge $263

Applications forms are available at the Student and Faculty Administration Office.
The following groups will be effectively exempted from the student allowance payments arrangements.

- Overseas students who are liable for the Overseas charge to the University, but the OUC calculated each year will be reduced by the amount of the administration charge.

**Assistance**

(a) **Austudy**

Higher education students on Austudy allowance will receive a special payment of $526 to cover the administration charge.

(b) **Loans**

Loans are available to eligible students to pay university charges. The loan period is normally 3-6 months but in appropriate circumstances may be taken over 12 months. Enquiries should be directed to Mr J Birch, Student Administration Office.

**METHOD OF PAYMENT**

Students are requested to pay charges due by mailing their cheque and the Statement of Charges Payable form to the University Cashier. The Cashier's internal mail deposit box outside of the Cashier's Office in McMullin Building may also be used. Payment should be addressed to the Cashier, University of Newcastle, NSW 2308. Cheques and money orders should be payable to the University of Newcastle. Cheque payment must be made at the Cashier's Office or the First Floor McMullin Buildings, after which the Student Administration Office will process the payment. Cheques not processed will be returned.

**SCHOLARSHIP HOLDERS AND SPONSORED STUDENTS**

Students holding scholarships or receiving other forms of financial assistance must lodge with the Cashier their Statement of Charges Payable form together with a warrant or other written evidence that charges will be paid by the sponsor. Sponsors must provide a separate voucher warrant or letter for each student sponsored.

**LOANS**

Students who do not have sufficient funds to pay charges should seek a loan from their bank, building society, credit union or other financial institution. Applications for a loan from the Student Loan Fund should be made to Mr J Birch, Student Administration Office. Loans will be made in advance to avoid the risk of a late charge.

**REFUND OF CHARGES**

A refund of the General Services Charge paid on enrolment or part thereof will be made when the student notifies the Student and Faculty Administration Office of a complete withdrawal from studies by the following dates:

- Notification on or before 11th March 1988: 100% refund.
- Notification on or before 24th June 1988: 50% refund.
- After 24th June 1988: No refund.

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**SECTION FOUR**

**CHEMISTRY SUBJECT DESCRIPTIONS**

- Structure: coordination; acceptor complexes and organometallic compounds.
- Dynamics: Kinetic; chemical affinity; electrochemical cells.
- Thermodynamics: Basic laws, and applications to ideal and non-ideal systems.

**Texts**

- Purcell,K.P. & Koz, J.C. An introduction to Inorganic Chemistry (softback edn) (Holt-Scott 1980)

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**Course Descriptions**

- CHEMISTRY I
  - Prerequisites Nil
  - Advisory Prerequisites At least Mathematics (2-unit course), Physics (2-unit course) and Chemistry (2-unit course) with ranking in the top 50% in each case.
  - Hours: 3 lecture hours and 3 hours of tutorial and laboratory classes per week.
  - Examination: The subject is examined progressively with three examinations each of two hours distributed throughout the year.
  - Content: Inorganic Chemistry (30 lectures)
  - Revision of basic concepts; periodic properties of the elements and their compounds; bonding and structure; coordination compounds.
  - Organic Chemistry (30 lectures)
  - Historical development. The shapes, structures and names of organic compounds; reactions of common functional groups; synthesis, differentiation and structural elucidation of organic compounds.
- CHEMISTRY II
  - Prerequisites Chemistry I
  - Corequisites Chemistry II
  - Hours: 3 lecture hours and 4 laboratory hours per week and associated assignments. The subject is divided into 6 units.
  - Examination: Two, three hour examinations. The laboratory mark counts 15% towards the final grading. A pass in the laboratory course is required in order to pass the subject.
  - Content: An extension course in chemistry at second year level, particularly suitable for students intending to major in chemistry. In any one year six topics will be assigned from a group including environmental chemistry, organic analysis, applied inorganic chemistry, inorganic solids and non-aqueous systems, industrial organic chemistry, applications of spectroscopy in organic chemistry, polymers, physical chemistry of ionic solutions and solid state chemistry. The course in each year will be listed in the department.
  - Texts: To be advised
PART III

IIIA.

SECTION 723200 of laboratory work. Each student enrolling in Chemistry IIB must nominate nine topics from the list provided by the Department. Likewise, students enrolling in Chemistry IIIB must nominate nine topics from the IIIB listing.

Typical topic listings would be:

Chemistry IIA: Principles of Analysis; Mechanistic and Synthetic Organic Chemistry; Electrode Dynamics; Statistical Thermodynamics; Organometallic Chemistry; Transition Metal Chemistry; Carbohydrates, Amino Acids, Protein and Nucleic Acids; Predicting Reactivity in Organic Reactions; and Basic Quantum Chemistry.

Chemistry IIIB: Organic Synthesis; Organic Reaction Mechanisms; Electrochemical Solar Energy Conversion; Radiochemistry; Chromatography; Trace Analysis; Biologically Important Molecules; Co-ordination and Bioinorganic Chemistry; Electronic Spectroscopy; Cluster Chemistry and Metal-Metal Bonding.

All proposed programmes must be approved by the Head of the Department (or his nominee) before the start of the academic year.

Texts To be advised; see departmental topic summaries.

CHEMISTRY SUBJECT DESCRIPTIONS

723100 CHEMISTRY IIA

Prerequisites Mathematics I; or Mathematics IS Chemistry IIA. Chemistry IIA is a pre or corequisite for Chemistry IIIB.

Hours The two Part III subjects, offered by the Chemistry Department each involves about one hundred hours of lectures. Associated with each subject are 8 hours per week of laboratory work.

Examination Both subjects will be examined by progressive examinations. To pass each subject, students must achieve an acceptable aggregate mark and earn a pass grading in the specified laboratory program.

The laboratory mark counts 25% towards the final grading.

Content Each student enrolling in Chemistry IIA must select nine topics from the list provided by the Department. Likewise, students enrolling in Chemistry IIIB must nominate nine topics from the IIIB listing.

723200 CHEMISTRY IIIB

Prerequisite Mathematics II. Chemistry IIB is a pre or corequisite for Chemistry IIIB.

Hours The two Part III subjects, offered by the Chemistry Department each involves about one hundred hours of lectures. Associated with each subject are 8 hours per week of laboratory work.

Examination Both subjects will be examined by progressive examinations. To pass each subject, students must achieve an acceptable aggregate mark and earn a pass grading in the specified laboratory program.

The laboratory mark counts 25% towards the final grading.

Content Each student enrolling in Chemistry IIIB must nominate nine topics from the list provided by the Department. Likewise, students enrolling in Chemistry IIIA must nominate nine topics from the IIIA listing.

Typical topic listings would be:

Chemistry IIA: Principles of Analysis; Mechanistic and Synthetic Organic Chemistry; Electrode Dynamics; Statistical Thermodynamics; Organometallic Chemistry; Transition Metal Chemistry; Carbohydrates, Amino Acids, Protein and Nucleic Acids; Predicting Reactivity in Organic Reactions; and Basic Quantum Chemistry.

Chemistry IIIA: Organic Synthesis; Organic Reaction Mechanisms; Electrochemical Solar Energy Conversion; Radiochemistry; Chromatography; Trace Analysis; Biologically Important Molecules; Co-ordination and Bioinorganic Chemistry; Electronic Spectroscopy; Cluster Chemistry and Metal-Metal Bonding.

All proposed programmes must be approved by the Head of the Department (or his nominee) before the start of the academic year.

Texts To be advised; see departmental topic summaries.

724100 CHEMISTRY IV

Prerequisites Completion of ordinary degree requirements and permission of Head of Department.

Hours To be advised

Content A subject extending over one full-time academic year or its part-time equivalent, comprising:

(i) a minimum of 40 hours of lectures and tutorials, a course of directed reading and presentation of a seminar on an assigned topic;

(ii) a supervised research project, the results of which are to be embodied in a thesis and presented at a seminar.

The lecture and tutorial course will be assessed progressively, whereas the directed reading course will be examined by two papers, each of three hours duration.

Assessment of the grade of Honours to be awarded will be based on the standard achieved in the formal courses; the quality of the research project and thesis; and performance in the undergraduate programme.

Texts To be advised

SECTION FOUR

CHEMISTRY SUBJECT DESCRIPTIONS

731100 GEOLOGY I

Prerequisite Nil

Hours 3 lecture hours and 2 1/2 laboratory hours per week and 2 days field work.

Examination Two 3-hour papers, class assignments and practical examinations.

Content

Planet Earth

Geology of the Solar System, evolution of the Earth, continental drift, plate tectonics.

Earth Materials

Minerals: cycles of weathering/erosion; soils; sedimentary, metamorphic and igneous rocks.

Earth History

Paleoentology; stratigraphy; geological history of Australia.

Texts


732200 GEOLOGY II

Prerequisite Nil

Hours 3 lecture hours and 4 laboratory hours per week and 8 days field work which include photogrammetry and photogeology.

Examination Two 3-hour papers, class assignments and practical examinations.

Content

Mineralogy

Optical mineralogy

Petrology

Rock forming minerals; mature of and crystallization from a magma; chemical equilibrium studies; petrology of igneous rock associations; petrography and classification of igneous and sedimentary rocks; weathering and hydrothermal alteration.

Stratigraphy and Palaeontology

Stratigraphy of Australia; invertebrate palaeontology.

Structural Geology

Concept of stress and strain; mechanical behaviour of rocks; field mechanisms; cleavage; faulting.

Geosmathetics

Elementary introduction to basic mathematics and data processing in geology.

Texts

Clarke, E.N.K. Invertebrate Palaeontology and Evolution (Allen & Unwin 1979)


GEOLOGY SUBJECT DESCRIPTIONS

733100 GEOLOGY IIIB

Prerequisite Geology I, Geology IIIA.

Examination Two 3-hour papers, class assignments and practical examinations.

Content

A synthesis of a portion of the Lachlan and New England Fold Belts. The course, which comprises lectures and three weeks field work, includes field studies of weathering, mineralogy, stratigraphy, palaeontology, structural geology, metamorphic petrology, igneous petrology, ore geology and tectonics. Laboratory work includes stereographic projection and structural problems and microscopy.

733100 GEOLOGY IIIA

Prerequisites Geology I & II A

Examination Assignments and examinations.

Content

Mineralogy

Optical mineralogy

Petrology

Rock forming minerals; mature of and crystallization from a magma; chemical equilibrium studies; petrology of igneous rock associations; petrography and classification of igneous and sedimentary rocks; weathering and hydrothermal alteration.

Stratigraphy and Palaeontology

Stratigraphy of Australia; invertebrate palaeontology.

Structural Geology

Concept of stress and strain; mechanical behaviour of rocks; field mechanisms; cleavage; faulting.

Geosmathetics

Elementary introduction to basic mathematics and data processing in geology.

Texts

Clarke, E.N.K. Invertebrate Palaeontology and Evolution (Allen & Unwin 1979)


* This subject may be a corequisite.
application of mineralogical techniques to their compositions e.g. XRD, XRF, AAS, IR, DTA, TG, TEM, EMPA and SEM.

Micropalaeontology and Theoretical and Evolutionary Palaeontology

Micropalaeontology, principles of taxonomy, quantitative methods: species concepts, genetics, evolution: selected evolutionary patterns from the palaeontological record.

Geochronology and World Stratigraphy

Principles of age dating: regional geology of selected provinces of the world.

Exploration Geophysics

Geophysical techniques - their interpretation and application in petroleum and mining exploration, and hydrogeological and engineering investigations (undertaken by GEO248 at Macquarie University).

Text
Park R.G., Foundations of Structural Geology (Blackie 1983)


Hall, A., Igneous Petrology (Longman 1987)

733200 GEOLOGY III

Prerequisites: Geology I & II

Corequisite: Geology IIIA

Hours: 6 lecture hours and 6 laboratory hours per week and 4 days field work.

Examination: Two 3-hour papers, class assignments and practical examinations.

Content

Economic and Exploration Geology

Source, transport and precipitation of ore minerals; sulphide mineralogy, wallrock alteration; ore-forming fluids; sulphur, oxygen and lead isotopes in ore mineral genes; fluid inclusions; geochemical environments; dispersion of metals; geochemical exploration.

Sedimentology

Lithologic associations in relation to the depositional facies of their environment of formation with emphasis on the genetic connection between the geological setting of a depositional area and its sedimentary fill (basin analysis).

Stratigraphic Principles

Stratification; top and bottom criteria; stratigraphic breaks; facies changes; factors in lithostratigraphy (rock units, lithofacies, lithosomes); catastrophic stratigraphy, uniformitarianism and the processes of sedimentation; stratigraphic nomenclature; biostratigraphic zones; correlation; stratigraphic palaeontology.

Types of stratigraphic maps and sections; numerical analysis of data strings; numerical map analysis.

Coal Geology

Origin, source, migration, entrapment and distribution of petroleum and gas; the exploration and exploitation techniques for its detection, evaluation and recovery.

Mining and Engineering Geology

Mechanical properties and behaviour of rocks: movement picture and movement plan; stress-strain relationships; symmetry concepts.

Design and stability of structures in rocks; geological problems in engineering design and construction; rock mechanics.

Crustal Evolution

Geological evolution of Selected Archaean and Proterozoic terrains in Australia: comparisons and contrasts with modern tectonic environments to assess the processes of continental growth throughout geological time.

Metamorphic Petrology

Examination of the textures of rocks formed during prograde metamorphism and ductile shearing; determination of processes involved in the production of grain shapes and deformation features within grains.

Texts
Consult lecturers concerned.

734100 GEOLOGY IV

Prerequisites: Geology IIIA, completion of ordinary degree requirements and permission of the Head of Department.

Hours: To be advised.

Examination

(i) a viva voce examination

(ii) research work carried out and its presentation in a thesis.

(iii) a reading thesis

(iv) such other work, e.g. seminars, assignments, earlier academic record, which may be considered relevant.

Content

Part A

Lecture-tutorial work with directed reading in the following fields of geology: mineralogy and crystallography, geochemistry; igneous petrology; metamorphic petrology; coal petrology; sedimentology; stratigraphy, palaeontology; structural geology; economic geology; engineering geology.

Not all fields will be available every year.

Part B

A reading thesis and a research project, the results of which are to be embodied in a thesis.

664500 GEOLOGY/MATHEMATICS IV

Prerequisites: Geology IIIA or IIB and Mathematics IIIA and such additional work as is required for combined honours students by the Department of Mathematics. A student desiring admission to this subject must apply in writing to the Dean of the Faculty of Science before 7th December of the preceding year.

Hours: To be advised.

Examination

Content

At least four topics chosen from those available to students in Mathematics for the current year together with work offered by the Department of Geology for that year. The subject will also include a major thesis which embodies the results of a field research project involving the application of mathematical studies to a particular geological problem. Other work e.g., seminars and assignments may be required by either Department.

AVIATION

741200 AVIATION I

Prerequisites: Nil. However, for the Advisory Prerequisites for entry to the Faculty refer to page eight.

Hours: Six per week, consisting of lectures, tutorials and laboratory work.

Examination

Progressive assessment, with satisfactory progress in each strand needed for a pass in the subject as a whole. Assessment will be based on tests, assignments, tutorials and laboratory work.

Content

This subject provides an introduction to the academic study of aviation as well as a foundation upon which a professional preparation for careers in aviation can be developed. Topics covered are navigation, principles of flight, aircraft engines and systems, meteorology, aviation law, psychology, physiology and medicine.

Aviation IIA, Aviation IIB and Aviation III subject descriptions will be available in the 1989 Faculty of Science Handbook.

674200 ELECTRONICS & INSTRUMENTATION II

(Not offered in 1988)

Prerequisites: Physics IIA or IB

Hours: 3 lecture hours, 4 laboratory hours and 2 tutorial hours with directed assignments each week.

Examination

One 2 hour paper on each of the 3 topics selected.
Advisory Corequisite

in of the Topics D and F.

Topic D-

Topic A- Basic Theory of Techniques

Engineering students refer to Engineering Faculty Mathematics must also attend the lectures on Instrumentation Practice in Topic A as part of the directed assignments requirements.

Students who have not taken Physics II will be examined in Topics A, C and D.

Text

Malanet,H.V et al

Instrumentation for Scientists Series. Texts with Experiments Modules 1, 2, 3, & 4 (Benjamin)

742100 PHYSICS II

Prerequisites Physics IA and Mathematics I. Students achieving a pass at the level of credit or better in Physics IB may be admitted to Physics II but should seek the advice of the Head of Department.

Advisory Corequisite While Mathematics II is not an essential corequisite for Physics II, Physics II students who have completed only Mathematics I should include a Mathematics II subject in their course. It is suggested that in addition to Topic CO this should include Topic B and one of the Topics D and F.

Hours 3 lecture hours and 6 laboratory hours per week. Engineering students refer to Engineering Faculty Handbook.

Examination Equivalent of 6 hours total examination.

Examination Equivalent of 6 hours total examination.

Content

Mechanics
Thermodynamics
Quantum Physics
Electromagnetics

Physics

Texts Refer to the Physics Department notice board.

743100 PHYSICS IIIA

Prerequisites Physics II, at least one Mathematics II subject which should include in addition to topic CO (which counts as two topics), topic B and one of the topics D and F.

Hours Approximately 120 lecture hours and 240 laboratory and tutorial hours.

Examination Assessment of the equivalent of 12 1/2 hours of examination time.

Content

The areas of classical and quantum physics essential to the understanding of both advanced pure physics and the many applications of physics. Some electronics is also included.

Classical Physics
Mathematical methods, advanced mechanics, special theory of relativity, electromagnetics including waveguide and antenna theory.

Quantum Physics
Quantum mechanics, atomic and molecular physics, statistical physics, solid state physics, nuclear physics, electronics.

Laboratory
Parallels the lecture course in overall content, with at least one experiment available in each topic, although students are not expected to carry out all the experiments available.

Texts Refer to the Physics Department notice board. Students should retain their Physics II texts.

743200 PHYSICS IIIIB

This subject will not be offered in 1988.

Corequisite Physics IIIA

Hours 90 lectures, 180 hours laboratory total, and two Mathematics topics.

Examination Two 2-1/2 hour papers and assessment. The mathematics topics will be examined by the Department of Mathematics.

Content

The subject emphasizes the experimental and applied aspects of Physics. The Department considers it desirable that some mathematical studies should be continued through this level, so that the mathematics topics are included in Physics IIIA, to be selected in consultation with the Physics Department.

The Physics lecture course will treat the following topics:

Experimental Techniques
Photometry and Instrumental Optics

Nuclear measurements
Radio-frequence Spectroscopy
Electronics
Geophysics

Statistical Mechanics
Solid State Physics

Physics of Fluids

744100 PHYSICS IV

Prerequisite Physics IIIA. Attention is drawn to degree requirements for Honours, p.42

Normally a pass in Physics IIIA at the level of credit or better is required.

Hours 100-120 lecture hours and a research project.

Examination Assessment on each topic in the lecture course will be by agreement between the lecturer and students. It may take the form of formal examinations, essays, problems, open-book examinations etc. As a guide, there will be a 2-3 hour formal examination or equivalent for each 15 lecture core topic and 1-1/2 to 2 hours for each optional topic.

The research project is also assessed on the basis of the written report and a seminar on the project.

Contant

Physics IV is intended to give students an advanced understanding of the fundamentals of modern physics appropriate for an Honours graduate in the discipline as well as an exposure to the current interests of the Department viz. solid state and surface physics, space plasma physics, radar meteor physics, electromagnetic signal propagation, and aspects of applied physics.

In 1988, these aims will be achieved by offering three compulsory core topics: Quantum Mechanics, Theoretical Solid State Physics and Plasma Physics. Optional topics include Relativity, Applied Nuclear Physics, Surface Physics, Atomic Collisions in Solids, Radio Astronomy, Laser Physics, Particle Detection, Solar Terrestrial Physics, and Fourier Transforms. Additional topics may be added depending on visitors to the Department and all topics need not necessarily be offered in any one year.

RESEARCH PROJECT

The research project is carried out under the supervision of a staff member and results are embodied in a formal report.

The Department provides a list of topics for each student. Students may be admitted to Physics II but should seek the advice of the Physics Department.

Examination Assessment on each topic in the lecture course will be by agreement between the lecturer and students. It may take the form of formal examinations, essays, problems, open-book examinations etc. As a guide, there will be a 2-3 hour formal examination or equivalent for each 15 lecture core topic and 1-1/2 to 2 hours for each optional topic.

Four topics from Mathematics IV chosen for relevance to Physics, and topics from Physics IV, as approved by the Head, Department of Physics. Project work will normally begin in the first week of February.

Contant

Four topics from Mathematics IV chosen for relevance to Physics, and topics from Physics IV, as approved by the Head, Department of Physics. Project work will normally begin in the first week of February.

DEPARTMENT OF PSYCHOLOGY

The attention of candidates for the degree of Bachelor of Science (Psychology) is drawn to the two notes following.

1. The Bachelor of Science degree with Honours in Psychology remains the preferred path for those who wish to complete a four-year Psychology course.

2. Students will not be permitted to transfer from Psychology IV to Psychology IV, although the reverse may be permissible.

751100 PSYCHOLOGY I

Prerequisites Nil

Hours 3 lecture hours and one 2-hour practical/tutorial session

Examination An assessment of practical work counting for 50%, and two examination papers, normally of 2 hours' duration each (in July and November). Students must demonstrate competence in both components to pass the subject.

Contant


Texts To be advised. More specific information can be gained from the Psychology I Manual.

752100 PSYCHOLOGY II

Prerequisite Psychology I

Hours 3 lecture hours, one 2-hour practical session and one 2-hour tutorial per week.

Examination Two 3-hour papers and an assessment of practical work. A 2-hour Experimental Methodology examination in July.

Contant

This subject contains two themes which are developed in the Lectures and illustrated in the Laboratory classes.

(1) Cognitive Processes: These topics investigate the organism's acquisition of information from the environment and consist of material on information processing in organisms and humans which illustrates the mechanisms of perception, learning, memory and cognition.

(2) Individual Behaviour Process: These topics investigate the individual's adjustment to their environment and consist of material on development and social interaction, individual differences in personality, motivation and ability, and abnormal adjustment.

These themes are integrated by the study of Behavioural Neuroscience, Experimental Methodology and Computer Applications.

Texts


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**SECTION FOUR**

**PSYCHOLOGY SUBJECT DESCRIPTIONS**

**Cotman, C. & McQuaigh, J.**


**752200 PSYCHOLOGY IIB**

**Prerequisite Psychology I**

Corequisite Psychology IIA

Hours 3 lecture hours, one 2-hour practical session and 1 tutorial hour per week

Examination Where formal examination is the method of assessment for individual topics, 1st Term topics will normally be held mid-year, and remaining topics will be examined in November.

Content Will examine topics which complement and/or are supplementary to Psychology IIA. Topics will be in the areas of Cognitive Behaviour, Developmental Psychology, Drugs and Behaviour, Human Sexuality, Neuropsychology, Personality, Psychological Testing, and Sport Psychology.

Texts To be advised

**753100 PSYCHOLOGY IIIA**

**Prerequisite Psychology IIA**

Hours 4 lecture hours and up to 5 hours practical work per week

Examination Formal examinations at (i) mid-year for 1st Semester topics and (ii) end of year for 2nd Semester topic.

Assessment of practical work on a progressive basis.

Content Will examine topics such as Behavioural and Clinical Neurosciences, Experimental Methodology and Quantitative Psychology, Information Processing and Perception, Learning and Conditioning, Social and Developmental Psychology, Individual Differences, and Cross-Cultural Psychology.

The practical work is divided into

(a) Laboratory sessions - 3 hours per week. The work will be divided into four sessions of approximately 1/2 Semester duration. In some weeks the time requirement will vary from that shown above.

(b) Agreement investigation carried out under supervision and written up as a Research Report.

The topic will usually be selected by the student from a list available from the Department in January. The time requirement is a minimum of 2 hours per week for the full year.

Texts To be advised

**753200 PSYCHOLOGY III B**

**Prerequisite Psychology IIB**

Corequisite Psychology IIA

Hours 4 lecture/seminar hours and approximately 5 hours practical work per week. Some material may be presented in seminars or workshops.

Examination Examination of 1st Semester topics at mid-year and 2nd Semester topics at end of year. Material may be examined by formal examination or other forms of assessment.

Content Will examine topics which complement and/or are supplementary to Psychology IIIA. Such topics may include Abnormal and Clinical Psychology, Computer Applications, Developmental Psychology and Psychobiology, Experimental Methods, Human Motivation, Neurosciences, Personality, Self Awareness and Interpersonal Skills, Social Psychology and Cross-Cultural Psychology. Practical work comprises workshop and laboratory work for up to 3 hours per week plus a supervised independent theoretical examination of an area of psychological investigation.

Students may have some choice in the topics presented. A list of topics will be available from the Department in January.

Texts To be advised

**754100 PSYCHOLOGY IV**

**Prerequisites** Completion of 9 subjects of a Bachelor's degree course within the Faculty of Science, normally including a pass at or above Credit level in Psychology IIA or IIIA, as well as a Pass at any level in both Psychology IIA and IIIA, or permission of the Head of Department.

Hours To be advised

Examination Assessment of thesis (50%). Seminar material may be examined either by assignment during the year or by examination at the end of the year.

Content The student is expected to cover such fields as abnormal and clinical psychology, animal behaviour, neuropsychology, cross-cultural psychology, developmental psychology, health psychology, learning and cognition, motivation, perception, personality, scientific methodology and social psychology.

Texts To be advised

**754390 PSYCHOLOGY IV P**

**Prerequisites** Completion of 9 subjects of a Bachelor's degree course within the Faculty of Science, normally including Psychology IIIA, Psychology IIA and Psychology IIIB, or permission of the Head of the Department.

Hours To be advised

Examination Assessment of a project (25%). Seminar material and workshops may be examined either by assignment during the year or by examination at the end of the year.

Content The student is expected to cover such fields as abnormal and clinical psychology, animal behaviour, behavioural neuroscience, cross-cultural psychology, developmental psychology, health psychology, learning and cognition, motivation, perception, personality, scientific methodology and social psychology.

Texts To be advised

**664200 PSYCHOLOGY/MATHEMATICS IV**

**Prerequisites** Mathematics IIIA & Psychology IIB

Hours To be advised

Examination To be advised

Content To be advised

4 Mathematics topics chosen from the Part IV Mathematics topics (see Faculty of Mathematics Handbook).

A selection of seminars from Psychology IV which may include mathematical applications in Psychology.

**MASTER OF PSYCHOLOGY (CLINICAL)**

The course leading to the degree of Master of Psychology (Clinical) is offered in the Faculty of Science.

Prerequisites Honours degree in Psychology or other qualifications approved by the Faculty Board of the Faculty of Science.

It is considered desirable, but not essential, that candidates for this degree be concurrently employed in a position related to the practice of Clinical Psychology.

Hours The course extends over a period of at least 2 years. There are 9 hours of classwork per week plus a clinical internship usually organized as two full days per week.

Examination Assessment is continuous and is achieved by:

1. Evaluation of practical performance by academic and field supervisors.

2. Evaluation of written or other exercises required in specific course components.

3. Internal and external examination of research thesis.

Content There are three major sections of the course:

(i) Classwork includes a Problem Based Learning Course with additional seminars, plus a Clinical Skills Development course.

(ii) Clinical internship provides 2 days per week supervised clinical experience in professional settings outside that of the candidates' regular employment. It is intended to augment and consolidate instruction provided in classwork. A wide range of institutions and agencies are available for internship placements.

(iii) A Research Thesis is required embodying the results of a research investigation in an approved area.

**MASTER OF PSYCHOLOGY (EDUCATIONAL)**

Prerequisites A bachelor's degree including at least one Part III

Psychology subject, a Diploma in Education or equivalent qualification and at least two years teaching or other relevant practical experience approved by the Board of Studies in Psychology.

Hours 15 formal hours and six practical hours per week in the first year, 10 formal hours and 24 practical hours per week in the second year.

Examination Professional proficiency is evaluated through practical examinations and ongoing assessments. There is a formal examination at the end of the first year and an assessment of professional competence and progress of the thesis at the end of the second year.

Content First Year

Seminars on psychological development of the child, the child in school and society, cognitive development, exceptional and problem children, counselling theory and procedures, education systems and personal development.

Second Year

The course consists of seminars and workshops which extend the work from the first year in counselling theory and procedures, case work, consulting and communication skills. Work continues on the thesis begun in the previous year.
<table>
<thead>
<tr>
<th>Content</th>
<th>Geographical Methods</th>
</tr>
</thead>
<tbody>
<tr>
<td>An introduction to statistical and mathematical methods, and an introduction to computer techniques in geography. This course does not require prior knowledge of computing. A study of human activities within the context of space and time; in 1988 themes will be established around the following specific fields of interest. <strong>Economic Geography</strong></td>
<td></td>
</tr>
<tr>
<td><strong>A</strong> Lecturer M.R. Hall</td>
<td></td>
</tr>
<tr>
<td>Key questions in economic geography: trends in the location of economic activity through case studies in food availability and deficit patterns, in coal mining, in manufacturing and in international development strategies. <strong>Economic Geography B</strong></td>
<td></td>
</tr>
<tr>
<td>Lecturer K.W. Lee</td>
<td></td>
</tr>
<tr>
<td>Key concepts in agricultural geography; agribusiness and farming; the place of agriculture in developed economies, focussing on the food supply system. <strong>Human Ecology</strong></td>
<td></td>
</tr>
<tr>
<td>Lecturer D.N. Parkes</td>
<td></td>
</tr>
<tr>
<td>Study of the classical/neoclassical, the chronographic/time geographic, and the eco-behavioural approaches to geography. <strong>Environment and Behaviour</strong></td>
<td></td>
</tr>
<tr>
<td>Lecturer D.N. Parkes</td>
<td></td>
</tr>
<tr>
<td>An introduction to the study of human behaviour with special reference to the principles of human ecology, environmental perception and behavioural ecology. The course emphasises the study of conceptual and theoretical aspects of the relationship between human behaviour and environment. <strong>Contemporary Australian Environments</strong></td>
<td></td>
</tr>
<tr>
<td>Lecturer D.N. Parkes</td>
<td></td>
</tr>
<tr>
<td>The physical and human background; rural Australia; industrial and urban Australia; changing Australian society. <strong>Historical Geography</strong></td>
<td></td>
</tr>
<tr>
<td>Lecturer J.C.R. Conn</td>
<td></td>
</tr>
<tr>
<td>An introduction to historical geography with reference to the following topics, the development of settlement patterns and forms, agricultural land use, historical demography, and political geography. These topics will be illustrated by reference to case studies drawn from Europe and the New World. To be advised. <strong>Texts</strong></td>
<td></td>
</tr>
<tr>
<td>Pears, N. <em>Basic Geography</em> (Longman, 1985, 2nd edn.)</td>
<td></td>
</tr>
</tbody>
</table>
GEOGRAPHY SUBJECT DESCRIPTIONS

353200 GEOGRAPHY IIIIB: PHYSICAL GEOGRAPHY

Prerequisite Geography III

Hours Five hours of lectures/practicals/tutorials, and one hour of Geographical Methods* per week; up to eight days of fieldwork.

*Note: Students also enrolled in Geography IIIA must undertake both Geographical Methods and Problems and Issues in the Australian Environment.

Examination To be advised

Content
A continuation of the study of the physical environment. In 1988 themes will be established around the following specific fields of interest.

Geographical methods
Lecturer J. Symon
Study of geographical information systems, computerised statistical analysis, and the designing of experiments.

Advanced Climatology
Lecturers H.A. Bridgman, G.N. McIntyre
The application of principles studied in Geography IIIB to processes in agricultural climatology; and (ii) air pollution problems for the 1990s including acid rain, impacts of nuclear war, long range transport of pollutants, and anthropogenic impacts on climatic change.

Cold climate landforms and Quaternary geography of the southern hemisphere
Lecturer E.A. Colhoun
Glacial and periglacial processes and landforms, dating methods in geomorphology and southern hemisphere Quaternary landscapes.

Soil erosion and conservation
Lecturer R.J. Loughran
Processes of soil erosion, sediment transport and deposition in the context of the drainage basin; soil conservation and methods.

Biogeography
Lecturer J.C. Turner
An introduction to biogeography. Definition and scope of the subject will be examined and its interdisciplinary nature emphasised. Ways of describing and analysing the ranges or emphasis will be placed on rainforest for the illustration of Quaternary Glacial and periglacial processes and landforms, dating of fieldwork.

French, H.M.
The periglacial environment (Longman, 1976)

Gold, S.J.
Hen's teeth and horse's toes (Penguin, 1984)

Mowat, F.
Never cry wolf (Pan, 1979)

354100 GEOGRAPHY IV

Prerequisites
In order to qualify for admission to Geography IV, a student must normally have completed a sequence of Geography I, II and III subjects; two of these, including the Part III subject, should normally have been passed at Credit level or better. The student must also satisfy the Head of the Department of his/her ability in the area of study within which the proposed research topic lies.

Examinations As prescribed by the Head of the Department.

Content
A thesis embodying the results of an original investigation on a topic approved by the Head of the Department and coursework as prescribed.

Note:
A candidate who wishes to proceed to Honours should notify the Head of Department by the commencement of Second Term of the previous year, and must confirm this as soon as final results for the year are known. Candidates are expected to commence work on their theses after completion of their third year's work.

Pears, N.
Basic biogeography (Longman, 1985)

Sugden, D.E. & John, B.S.
Glaciers and landscape (Arnold, 1976)

GEOGRAPHY IIIA & IIIB

Students enrolled in both Geography IIIA and IIIB must take:

Problems of the Australian Environment
Lecturer K.W. Lee
A reading, discussion and project course that allows students to investigate selected problems of the Australian geographic environment.

SECTION FOUR

COMPUTER SCIENCE SUBJECT DESCRIPTIONS

681100 COMPUTER SCIENCE I

Corequisite Mathematics I

Hours 3 lecture hours and 2 laboratory hours per week.

Examinations Two 2-hour papers and one 2-hour mid-year paper.

Content
Introduction to the following aspects of computer science: The design of algorithms. The theory of algorithms. How algorithms are executed as programs by a computer. The functions of system software (compilers and operating systems). Applications of computers. Social issues raised by computers. An extensive introduction to programming in Pascal and a shorter introduction to programming in FORTRAN 77.

Texts
Goldschlager, L. & Lister, A., Computer Science, A Modern Introduction (2nd ed. Prentice-Hall 1987) and either

Cooper, D.
Condensed Pascal (Norton 1987)

or

Savitch, W.J.

682100 COMPUTER SCIENCE II

Prerequisite Computer Science I

Hours 4 lecture hours and approx. 4 hours of tutorials and practical work per week.

Examinations By topic

Content
This subject comprises the four topics:

Assembly Language

Commercial Programming

Comparative Programming Languages

Data Structures & Algorithms

Descriptions of these topics appear as the subject descriptions for the Diploma in Computer Science subjects of the same names. Refer to the Mathematics Faculty Handbook.

682900 COMPUTER SCIENCE III

Prerequisite Computer Science II, or Computer Science II passed before 1987

Hours See individual topics

Examination By topic

Content
The subject comprises five topics, including topics 1 to 4 of the list of topics given below. The fifth topic must be topic 5 of the list if that has not already been studied in Computer Science II or III; if topic 5 has already been studied, the fifth topic will be chosen from topics 6 to 9 of the list.

1. Software Engineering Principles
2. Compiler Design
3. Operating Systems
4. Database Design
5. Commercial Programming
6. Artificial Intelligence Programming Techniques
7. Computer Networks
8. Computer Graphics
9. Theory of Computation

Descriptions of these topics appear as the subject descriptions for the Diploma in Computer Science subjects of the same names. Refer to the Mathematics Faculty Handbook.
Students intending to study Mathematics I are advised that
there is no choice of topics; for Mathematics IIIA, III and IIC there is some choice available to students; for Mathematics IIB and IIIB there is a wider choice. No topic may be counted twice in making up distinct subjects.

Progressive Assessment
From time to time during the year students will be given assignments, tests, etc. Where a student's performance in the final examination, then the year's work will be taken into account in determining the final result. On the other hand, when a student's performance during the year has been worse than that student's performance in the final examination, then the year's work will be ignored in determining the final result. However, performance during the early part of the year is taken into account when considering exclusion for "unsatisfactory progress".

Further information about mathematics courses appears in the section Notes on Degrees and Diplomas.

**PART I MATHEMATICS SUBJECTS**

**661100 MATHEMATICS I**

**Advisory Prerequisite**

Students intending to study Mathematics I are advised that although the minimum assumed knowledge for Mathematics I is 2 units of Mathematics at the Higher School Certificate, nevertheless students who have less than 3 units of preparation will usually find themselves seriously disadvantaged.

**Hours**

4 lecture hours and 2 tutorial hours per week

**Examination**

Two 3-hour papers

**Content**

The following four topics:

- Algebra
- Real Analysis
- Calculus
- Statistics and Computing

**Texts**

University of Newcastle.

Mathematics I Tutorial Notes (1988)

Anton, H.

Elementary Linear Algebra 5th edn (Wiley 1987)

Blincoe, K.G.


Farrand, S. & Foxon, N.J.

Calculus (Harcourt Brace Jovanovich, 1986)

**References**

See under individual topics

---

**MATHMATICS I TOPIC DESCRIPTIONS**

**Algebra**

Lecturer P.K. Smrz


**References**

Bridley, W.

A Basis for Linear Algebra (Wiley 1973)

Johnson, R.S. & Vinson, T.O.

Elementary Linear Algebra (Harcourt Brace Jovanovich 1987)

Kolman, B

Elementary Linear Algebra (McMillan 1977)

Lieberh, H

Algebra for Scientists and Engineers (Wiley 1971)

Lipschutz, S

Linear Algebra (Schaum 1974)

**Real Analysis**

Lecturer J.R. Giles


**References**

Apostol, T.

Calculus Vol. 1 2nd edn (Blaisdell 1967)

Clark, C.W.

Elementary Mathematical Analysis (Wadsworth Brooks 1982)

Giles, J.R.

Real Analysis: An Introductory Course (Wiley 1972)

Spivak, M.

Calculus (Benjamin 1967)

**Calculus**

Lecturer R.F. Berghout


**References**

Ayres, F.

Calculus (Schaum 1974)
List of Topics for Part II Mathematics subjects

All Part II Topics have Mathematics I as prerequisite

<table>
<thead>
<tr>
<th>Topic</th>
<th>Corequisite or Prerequisite Topic</th>
<th>Part III Topic having this Part II Topic as Prerequisite</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Mathematical Models</td>
<td>CO</td>
</tr>
<tr>
<td>B</td>
<td>Complex Analysis</td>
<td>CO</td>
</tr>
<tr>
<td>CO</td>
<td>Vector Calculus &amp; Differential Equations</td>
<td>Double Topic</td>
</tr>
<tr>
<td>D</td>
<td>Linear Algebra</td>
<td>Q, W</td>
</tr>
<tr>
<td>E</td>
<td>Topic in Applied Mathematics e.g. Mechanics and Potential Theory</td>
<td>P, T, W, X, Z</td>
</tr>
<tr>
<td>F</td>
<td>Numerical Analysis &amp; Computing</td>
<td></td>
</tr>
<tr>
<td>G</td>
<td>Discrete Mathematics</td>
<td></td>
</tr>
<tr>
<td>K</td>
<td>Topic in Pure Mathematics e.g. Group Theory</td>
<td>T, W, X</td>
</tr>
<tr>
<td>L</td>
<td>Analysis of Metric Spaces</td>
<td>V, W</td>
</tr>
</tbody>
</table>

The selection rules and definitions of the Part II subjects follow.

Notes:
1. Students whose course includes a Schedule B subject may have their choice of topics specified further than is set out in the rules below.
2. Students whose course includes Physics IIIA are advised to include topics CO, B and at least one of D, F in their Mathematics Part II subjects.
3. Students who take all three subjects Mathematics IIA, IIB, IIC will be required to take the nine topics above together with either Probability and Statistics or Topic 2 (Geometry) with some other suitable third year topic. Such students should consult the Head of the Department concerning the appropriate choice.
4. Students who take Mathematics ICS together with Mathematics IIA will substitute a suitable topic for D in Mathematics IIA.

662100 MATHEMATICS IIA
Corequisite Mathematics I

<table>
<thead>
<tr>
<th>Hours</th>
<th>4 lecture hours and 2 tutorial hours per week</th>
</tr>
</thead>
<tbody>
<tr>
<td>Content</td>
<td>Topics B, CO and D. In exceptional circumstances and with the consent of the Head of the Department some substitution of topics may be allowed.</td>
</tr>
</tbody>
</table>

662200 MATHEMATICS IIB
Prerequisite Mathematics I

<table>
<thead>
<tr>
<th>Hours</th>
<th>4 lecture hours and 2 tutorial hours per week</th>
</tr>
</thead>
<tbody>
<tr>
<td>Content</td>
<td>List of Topics for Part III Mathematics Subjects: Students who are relying on second-year subjects taken before 1986 should consult the lecturers concerned for transition arrangements for prerequisite topics.</td>
</tr>
</tbody>
</table>

662300 MATHEMATICS IIIC
Prerequisite Mathematics IIA

<table>
<thead>
<tr>
<th>Hours</th>
<th>4 lecture hours and 2 tutorial hours per week</th>
</tr>
</thead>
<tbody>
<tr>
<td>Content</td>
<td>Some topics may be offered in alternate years, and, in particular, some may be available as Mathematics IV topics. The selection rules and definitions of the Part III subjects follow.</td>
</tr>
</tbody>
</table>

PART III MATHEMATICS SUBJECTS

The Department offers Mathematics IIIA and Mathematics IIIB, each comprising four topics chosen from the list below. Students proceeding to the degree of Bachelor of Mathematics and taking either Mathematics IIIA or Mathematics IIIB will be required to complete an essay on a topic chosen from the history or philosophy of Mathematics. Students wishing to proceed to Mathematics IV are required to take Mathematics IIIIA and at least one of Mathematics IIIIB, Statistics I or Computer Science III. Students who wish to proceed to Honours will normally be required to study additional topics as prescribed by the Heads of the Departments concerned. Students proceeding to Honours are required to prepare a seminar paper under supervision, and deliver it in a half-hour session. They may submit this paper as their essay requirement.

Both Mathematics IIA and IIC are prerequisites for entry to Mathematics IIIA. Mathematics IIA is the prerequisite for Mathematics IIIB. Students from other faculties who wish to enrol in particular Part III topics, according to the course schedules of those Faculties, should consult the particular of the list below, and should consult the licencet concerned. In particular, the prerequisites for subjects may not all apply to isolated topics.

List of Topics for Part III Mathematics Subjects

The Department offers Mathematics IIIA and Mathematics IIIB, each comprising four topics chosen from the list below. Students proceeding to the degree of Bachelor of Mathematics and taking either Mathematics IIIA or Mathematics IIIB will be required to complete an essay on a topic chosen from the history or philosophy of Mathematics.

1. Students aiming to take Mathematics IV may be required to undertake study of extra topics. They should consult the Head of Department concerning the arrangements.

663100 MATHEMATICS IIIA
Prerequisites Mathematics IIA & IIC

<table>
<thead>
<tr>
<th>Hours</th>
<th>4 lecture hours and 2 tutorial hours per week</th>
</tr>
</thead>
<tbody>
<tr>
<td>Content</td>
<td>The subject comprises Topics O, together with three other topics chosen from those listed above, at least one of which should be from the set (P, S, T, V, W, X) and one from (M, N, PD, Q, QS, Z). The final choice of topics must be approved by the Head of the Department.</td>
</tr>
</tbody>
</table>

663200 MATHEMATICS IIIB
Prerequisite Mathematics IIIC

<table>
<thead>
<tr>
<th>Hours</th>
<th>4 lecture hours and 2 tutorial hours per week</th>
</tr>
</thead>
<tbody>
<tr>
<td>Content</td>
<td>A subject comprising four topics chosen from those listed above. In some circumstances, a suitable third year topic from another Department in the Faculty of Mathematics may be included. Students should consult members of academic staff regarding their choice of topics. The final choice of topics must be approved by the Head of the Department.</td>
</tr>
</tbody>
</table>
SECTION FIVE

POSTGRADUATE COURSES

Studies may be undertaken for the following postgraduate qualifications:

- Bachelor of Science (Honours)
- Diploma in Coal Geology
- Diploma in Psychology
- Diploma in Science
- Master of Psychology (Clinical)
- Master of Psychology (Educational)
- Master of Science
- Master of Scientific Studies
- Doctor of Philosophy

REGULATIONS RELATING TO THE HONOURS DEGREE OF BACHELOR OF SCIENCE

1. General

These Regulations prescribe the requirements for the honours degree of Bachelor of Science of the University of Newcastle and are made in accordance with the powers vested in the Council under by-Law 5.2.1.

2. Definitions

In these Regulations, unless the context or subject matter otherwise indicates or requires:

- "course" means the total requirements prescribed from time to time to qualify a candidate for the degree.
- "Dean" means the Dean of the Faculty.
- "the degree" means the degree of Bachelor of Science (Honours).
- "Department" means the Department or Departments offering a particular subject and includes any other body so doing.
- "Faculty" means the Faculty of Science.
- "Faculty Board" means the Faculty Board of the Faculty.

3. Admission to Candidature

In order to be admitted to candidature for the degree an applicant shall:

(a) have completed the requirements for admission to the ordinary degree of Bachelor of Science or to any other degree approved by the Faculty Board;
(b) have completed any additional work prescribed by the Head of the Department offering the honours subject; and
(c) have obtained approval to enrol given by the Dean on the recommendation of the Head of the Department offering the honours subject.

4. Qualification for Admission to the Degree

To qualify for admission to the degree a candidate shall, in one year of full-time study or two years of part-time study, pass one of the following honours subjects:

- Biology IV
- Chemistry IV
- Geology IV
- Geology/Mathematics IV
- Physics IV
- Physics/Mathematics IV
- Psychology IV
- Psychology/Mathematics IV

5. Subject

(1) To complete the honours subject a candidate shall attend such lectures, tutorials, seminars, laboratory classes and field work and submit such written or other work as the Department shall require.

(2) To pass the honours subject a candidate shall complete it and pass such examinations as the Faculty Board shall require.

6. Withdrawal

(1) A candidate may withdraw from the honours subject only by informing the Secretary to the University in writing and the withdrawal shall take effect from the date of receipt of such notification.

(2) A candidate who withdraws from the honours subject after the last Monday in second term shall be deemed to have failed in the subject save that, after consulting with the Head of Department, the Dean may grant permission for withdrawal without penalty.

7. Classes of Honours

There shall be three classes of honours: Class I, Class II and Class III. Class II shall have two divisions, namely Division I and Division 2.

8. Relaxing Provision

In order to provide for exceptional circumstances arising in a particular case the Senate on the recommendation of the Faculty Board may relax any provision of these Regulations.

REGULATIONS RELATING TO THE DIPLOMA IN COAL GEOLOGY

1. These Regulations prescribe the requirements for the Diploma in Coal Geology of the University of Newcastle and are made in accordance with the powers vested in the Council under by-Law 5.2.1.

2. In these Regulations, unless the context or subject matter otherwise indicates or requires:

- "Department" means the Department of Coal Geology;
- "Diploma" means the Diploma in Coal Geology;
- "Faculty Board" means the Faculty Board of the Faculty of Science.

3. An applicant for admission shall:

(a) have satisfied the requirements for admission to a degree of the University of Newcastle or a degree, approved by the Faculty Board, of any other tertiary institution, provided that the course completed for that degree by the applicant included a major sequence in Geology;
(b) have other qualifications and professional experience deemed appropriate by the Faculty Board on the recommendation of the Head of the Department.

4. Admission to candidacy shall require the approval of the Faculty Board on the recommendation of the Head of the Department.

5. (1) To qualify for the Diploma a candidate shall enrol and shall complete to the satisfaction of the Faculty Board a programme consisting of:

   (a) lectures, tutorials and practical work as determined by the Faculty Board on the recommendation of the Head of the Department; and
   (b) two reports, each embodying the result of a project, at least one of which shall be field-oriented.

(2) Except with the permission of the Faculty Board given on the recommendation of the Head of the Department, the programme shall be completed in not less than two years of part-time enrolment.

6. A candidate may withdraw from the course only by notifying the Secretary to the University in writing and the withdrawal shall take effect from the date of receipt of such notification.

7. In cases where a candidate's performance in the programme has reached a level determined by the Faculty Board the Diploma may be awarded with merit.

8. In order to provide for exceptional circumstances arising in particular cases, the Senate, on the recommendation of the Faculty Board, may relax any of the provisions of these Regulations.

REQUIREMENTS FOR THE DIPLOMA IN PSYCHOLOGY

1. There shall be a Diploma in Psychology.

2. In these Requirements, unless the context or subject matter otherwise indicates or requires:

   "the Faculty Board" means the Faculty Board of the Faculty of Science;
   "the Board of Studies" means the Board of Studies in Psychology,
   "the Dean" means the Dean of the Faculty of Science.

3. A candidate for the Diploma shall register in one of the following specialisations:

   (a) Clinical Psychology;
   (b) Educational Psychology.

4. The Diploma shall be awarded in one grade only.

5. A candidate may withdraw from the course only by informing the Secretary to the University in writing and the withdrawal shall take effect from the date of receipt of such notification.

6. In exceptional circumstances, the Senate may, on the recommendation of the Faculty Board, relax any provision of these Requirements.

CLINICAL SPECIALISATION

7. An applicant for registration as a candidate for the Diploma in the Clinical Specialisation shall:

(a) have satisfied all of the requirements for admission to a Bachelor's degree with honours in Psychology in the University of Newcastle or to such a degree in another university approved for this purpose by the Faculty Board;
(b) be selected for admission to the course by the Board of Studies which shall, in making this determination, take account of the applicant's academic qualifications, experience, and the report of an interview which shall be conducted by a selection committee which the Board shall appoint.

8. (a) Notwithstanding the provision of subsection (a) of Section 7, the Faculty Board, on the recommendation of the Board of Studies, may permit to register as a provisional candidate a person who has satisfied all of the requirements for admission to a degree of the University of Newcastle or another university approved for this purpose by the Faculty, provided that the course completed for that degree by the applicant included a major study in Psychology.

(b) A candidate permitted to register provisionally under the provisions of subsection (a) of this Section shall complete the course and pass such examinations at Bachelor's degree honours level as may be prescribed by the Faculty Board before his registration may be confirmed by the Faculty Board.

9. A candidate for the Diploma in the Clinical Specialisation shall, in not less than two years of part-time enrolment, attend such lectures, seminars and tutorials; complete such written and practical work; and pass such examinations as may be prescribed by the Board of Studies.

EDUCATIONAL SPECIALISATION

10. An applicant for registration as a candidate for the Diploma in the Educational Specialisation shall:

(a) (i) have satisfied all of the requirements for admission to a Bachelor's degree in the University of Newcastle and have included in the qualifying course for that degree at least one Part III Psychology subject; or
   (ii) have satisfied all of the requirements for admission to an equivalent qualification in another university recognised for this purpose by the Faculty Board;
(b) have satisfied all of the requirements for the award of the Diploma in Education in the University of Newcastle or another teaching qualification approved for this purpose by the Faculty Board;
have at least two years teaching or other relevant practical experience approved by the Board of Studies;

(b) be selected for admission to the course by the Board of Studies which shall, in making this determination, take account of the applicant's academic qualifications; experience; and the report of an interview which shall be conducted by a selection committee which the Board shall appoint.

11. A candidate for the Diploma in the Educational Specialisation shall, in not less than two years of full-time enrolment or an equivalent period of part-time enrolment, attend lectures, seminars and tutorials; complete such written and practical work; and pass such examinations as may be prescribed by the Board of Studies.

REGULATIONS RELATING TO THE DIPLOMA IN SCIENCE

1. These Regulations prescribe the requirements for the Diploma in Science of the University of Newcastle and are made in accordance with the powers vested in the Council under By-Law 5.2.1.

2. In these Regulations, unless the context or subject matter otherwise indicates or requires:

"Department" means the Department offering the subject in which a person is enrolled or is proposing to enrol;

"Diploma" means the Diploma in Science;

"Faculty Board" means the Faculty Board of the Faculty of Science;

"a Part IV subject" means a Part IV subject offered in the course leading to the degree of Bachelor of Science.

3.(1) An applicant for admission to candidature for the diplomas shall have satisfied all the requirements for admission to a degree of the University of Newcastle, or to a degree, approved for this purpose by the Faculty Board, of any other tertiary institution.

(2) An applicant shall have met such requirements for entry to a Part IV subject as may be prescribed from time to time by the Head of the Department and approved by the Faculty Board or have achieved at another tertiary institution a standard of performance deemed by the Head of the Department to be equivalent.

4.(1) To qualify for the Diploma, a candidate shall enrol and shall complete the Part IV subject to the satisfaction of the Faculty Board.

(2) Except with the permission of the Faculty Board, the Part IV subject shall be satisfactorily completed in not less than one year of full-time study or not less than two years of part-time study.

5. To complete the Part IV subject a candidate shall attend such lectures, tutorials, seminars and laboratory classes, and submit such written and other work as the Faculty Board may require and pass such examinations as the Faculty Board may prescribe.

POSTGRADUATE DEGREE REGULATIONS

6.(1) A candidate may withdraw from the subject only by notifying the Secretary to the University in writing and the withdrawal shall take effect from the date of receipt of such notification.

(2) A candidate who withdraws from the subject after the last Monday in second term shall be deemed to have failed in that subject unless granted permission by the Dean to withdraw without penalty.

7. The Diploma shall be awarded in one of three classes, namely Class I, Class II and Class III. Class II shall have two divisons. The Classes shall indicate a level of achievement comparable with that of a candidate for the degree of Bachelor of Science (Honours).

8. The Diploma shall specify the Part IV subject completed.

9. In order to provide for exceptional circumstances arising in particular cases, the Senate, on the recommendation of the Faculty Board, may relax any provision of these Regulations.

REGULATIONS GOVERNING MASTERS DEGREES.

Part I — General

1.(1) These regulations prescribe the conditions and requirements relating to the degrees of Master of Architecture, Master of Arts, Master of Commerce, Master of Economics, Master of Educational Studies, Master of Engineering, Master of Engineering Science, Master of Mathematics, Master of Psychology (Clinical), Master of Psychology (Educational), Master of Science, Master of Medical Science, Master of Scientific Studies, Master of Special Education, Master of Surveying and Master of Letters.

(2) In these Regulations and the Schedules thereto, unless the context or subject matter otherwise indicates or requires:

"Faculty Board" means the Faculty Board of the Faculty of Science;

"a Part IV subject" means a Part IV subject offered in the course leading to the degree of Bachelor of Science.

3.(1) A candidate who has satisfied the requirements for admission to a degree of Bachelor of Science, or is proposing to enrol;

(2) A candidate who has satisfied the requirements for admission to a degree or equivalent qualification, approved for the purpose by the Faculty Board, in another tertiary institution; or

(3) A candidate against whom a decision of the Faculty Board has been made under Regulation 8(1) of these Regulations.

4. To qualify for admission to a degree of Master a candidate shall enrol and satisfy the requirements of these Regulations including the Schedule.

5. The programme shall be carried out:

(a) under the guidance of a supervisor or supervisors either appointed by the Faculty Board or by an applicant's academic qualifications; experience; and the report of an interview which shall be conducted by a selection committee which the Board shall appoint.

(b) as the Faculty Board may otherwise determine.

6. Upon request by a candidate the Faculty Board may grant leave of absence from the course. Such leave shall not be taken into account in calculating the period for the programme prescribed in the Schedule.

7.(1) A candidate shall complete the programme of research and study prescribed in the Schedule.

(2) A candidate who withdraws from any subject after the relevant date shall be deemed to have failed in that subject unless granted permission by the Dean to withdraw without penalty.

The relevant date shall be:

(a) in the case of a subject offered in the first half of the academic year - the eighth Monday in first term;

(b) in the case of a subject offered in the second half of the academic year - the second Monday in third term;

(c) in the case of any other subject - the sixth Monday in second term.

8.(1) If the Faculty Board is of the opinion that the candidate is not making satisfactory progress towards the degree then it may terminate the candidature or place such conditions on its continuation as it deems fit.

II — Examination and Results

10. The Examination Regulations approved from time to time by the Council shall apply to all examinations with respect to a Master of Degree with the exception of the examination of a thesis which shall be conducted in accordance with the provisions of Regulations 12 to 16 inclusive of these Regulations.

11. The Faculty Board shall consider the results in subjects, the reports of examiners and any other recommendations prescribed in the Schedule and shall decide:

(a) to recommend to the Council that the candidate be admitted to the degree;

(b) in a case where a thesis has been submitted, to permit the candidate to resubmit an amended thesis within twelve months of the date on which the candidate is deemed to have failed in that subject unless granted permission by the Dean to withdraw without penalty.

9. The Faculty Board may require any candidate to submit a report or reports on his progress. Such reports shall be submitted to the Faculty Board no later than the end of the second week immediately following the last Monday in each term.

12. The Faculty Board shall consider the results in each subject at the end of each term, and shall decide:

(a) to pass the candidate if he has satisfied the requirements for admission to the degree; or

(b) to fail the candidate.

13. The candidate shall give to the Secretary to the University in writing and with the signature of the Senator a statement in support of the candidate's thesis in accordance with the provisions of Regulation 6(1) of these Regulations.

14. The candidate shall give to the Secretary to the University in writing and with the signature of the Senator a statement in support of the candidate's thesis in accordance with the provisions of Regulation 6(1) of these Regulations.
SECTION FIVE

POSTGRADUATE DEGREE REGULATIONS

expect to submit a thesis and such notice shall be accompanied by any prescribed fee.  

14.(1) The candidate shall comply with the following provisions concerning the presentation of a thesis:  
(a) the thesis shall contain an abstract of approximately 200 words describing its content;  
(b) the thesis shall be typed and bound in a manner prescribed by the University;  
(c) three copies of the thesis shall be submitted together with:  
(i) a certificate signed by the candidate that the main content of the thesis has not been submitted by the candidate for a degree of any other tertiary institution; and  
(ii) a certificate signed by the supervisor indicating whether the candidate has completed the programme and whether the thesis is of sufficient academic merit to warrant examination; and  
(iii) if the candidate so desires, any documents or published work of the candidate whether bearing on the subject of the thesis or not.  

2. On the recommendation of the Head of the Department of Psychology, the Board shall appoint a course controller who shall recommend to the Board the nature and extent of the programme to be prescribed and shall be responsible for the collation of all written work submitted by candidates in pursuing those programmes.  

3. To be eligible for admission to candidature an applicant shall:  
(a) have satisfied all the requirements for admission to a degree of bachelor with honours level with the Faculty of Science of the University of Newcastle or an equivalent degree, approved for this purpose by the Faculty Board, of another university: OR  
(b) a report of the internal examiner made in consultation with the course controller on the candidate's performance in the work prescribed under section 5(a) of this Schedule, and  
(c) have at least two years teaching or other relevant experience, and also the report of an interview with the applicant as determined by the Board, which shall be a member of the staff of the University;  

5.(2) One examiner appointed pursuant to Regulation 16(1) of these Regulations shall be an internal examiner being a member of the staff of the University.  

7. Before a decision is made under Regulation 11 of these Regulations the Board shall consider:  
(a) the examiners' reports on the thesis; and  
(b) a report of the internal examiner made in consultation with the course controller on the candidate's performance in the work prescribed under section 5(a) of this Schedule;  
and shall submit these to the Faculty Board together with its recommendations. The Faculty Board shall make its decision in the light of these reports and on the recommendation of the Board.

SCHEDULE 10 — MASTER OF PSYCHOLOGY (EDUCATIONAL)  

1.(1) The Faculty of Science shall be responsible for the course leading to the degree of Master of Psychology (Educational).  

2. On the recommendation of the Head of the Department of Psychology, the Board shall appoint a course controller who shall recommend to the Board the nature and extent of the program to be prescribed for the candidate in the light of these reports and on the recommendation of the Board.

SECTION FIVE

POSTGRADUATE DEGREE REGULATIONS

3. To be eligible for admission to candidature an applicant shall:  
(a) have satisfied all the requirements for admission to a degree of bachelor with honours level with the Faculty of Science of the University of Newcastle or an equivalent degree, approved for this purpose by the Faculty Board, of another university: OR  
(b) have satisfied all the requirements for admission to a degree of bachelor with honours level with the Faculty of Science of the University of Newcastle or an equivalent degree, approved for this purpose by the Faculty Board, of another university: OR  
(c) have at least two years teaching or other relevant experience, and also the report of an interview with the applicant as determined by the Board, which shall be a member of the staff of the University;  

5.(2) One examiner appointed pursuant to Regulation 16(1) of these Regulations shall be an internal examiner being a member of the staff of the University.  

7. Before a decision is made under Regulation 11 of these Regulations the Board shall consider:  
(a) the examiners' reports on the thesis; and  
(b) a report of the internal examiner made in consultation with the course controller on the candidate's performance in the work prescribed under section 5(a) of this Schedule;  
and shall submit these to the Faculty Board together with its recommendations. The Faculty Board shall make its decision in the light of these reports and on the recommendation of the Board.

SCHEDULE 11 — MASTER OF SCIENCE  

1. A candidate for the degree of Master of Science may be enrolled in either the Faculty of Engineering or the Faculty of Science. The Faculty in which the candidate is enrolled will be responsible for the programme.  

2.(1) To be eligible for admission to candidature in the Faculty of Science an applicant shall:  
(a) have satisfied all the requirements for admission to the degree of Bachelor of Science with honours Class I or Class II of the University of Newcastle or to a degree, approved for this purpose by the Faculty Board of this or any other university; OR  
(b) have satisfied all the requirements for admission to the degree of Bachelor of Science of the University of Newcastle or another university and have satisfactorily completed a Part III Psychology subject or reached a standard in Psychology deemed by the Board to be equivalent; and  
(c) have at least two years teaching or other relevant practical experience approved by the Board.

4.(1) The Board shall consider each application for admission to candidature and shall make a decision thereon.  

2. Before approving an application for admission to candidature under Section 3 of this schedule the Board may require an applicant to complete such work and pass such examinations at honours level as may be prescribed by the Board.  

5.(1) To qualify for admission to the degree the candidate shall:  
(a) attend such lectures, seminars and tutorials and complete to the satisfaction of the Board such written and practical work and examinations as may be prescribed by the Board; and  
(b) submit a thesis embodying the results of an empirical investigation.

7. Before a decision is made under Regulation 11 of these Regulations the Board shall consider:  
(a) the examiners' reports on the thesis; and  
(b) a report of the internal examiner made in consultation with the course controller on the candidate's performance in the work prescribed under section 5(a) of this Schedule;  
and shall submit these to the Faculty Board together with its recommendations. The Faculty Board shall make its decision in the light of these reports and on the recommendation of the Board.

3. To be eligible for admission to candidature an applicant shall:  
(a) have satisfied all the requirements for admission to a degree of bachelor with honours level with the Faculty of Science of the University of Newcastle or an equivalent degree, approved for this purpose by the Faculty Board, of another university: OR  
(b) have satisfied all the requirements for admission to a degree of bachelor with honours level with the Faculty of Science of the University of Newcastle or an equivalent degree, approved for this purpose by the Faculty Board, of another university: OR  
(c) have at least two years teaching or other relevant experience, and also the report of an interview with the applicant as determined by the Board, which shall be a member of the staff of the University;  

5.(2) One examiner appointed pursuant to Regulation 16(1) of these Regulations shall be an internal examiner being a member of the staff of the University.  

7. Before a decision is made under Regulation 11 of these Regulations the Board shall consider:  
(a) the examiners' reports on the thesis; and  
(b) a report of the internal examiner made in consultation with the course controller on the candidate's performance in the work prescribed under section 5(a) of this Schedule;  
and shall submit these to the Faculty Board together with its recommendations. The Faculty Board shall make its decision in the light of these reports and on the recommendation of the Board.

4.(1) The Faculty of Science shall be responsible for the course leading to the degree of Master of Psychology (Educational).  

2. On the recommendation of the Head of the Department of Psychology, the Board shall appoint a course controller who shall recommend to the Board the nature and extent of the programme to be prescribed for the candidate in the light of these reports and on the recommendation of the Board.

5.(2) One examiner appointed pursuant to Regulation 16(1) of these Regulations shall be an internal examiner being a member of the staff of the University.  

7. Before a decision is made under Regulation 11 of these Regulations the Board shall consider:  
(a) the examiners' reports on the thesis; and  
(b) a report of the internal examiner made in consultation with the course controller on the candidate's performance in the work prescribed under section 5(a) of this Schedule;  
and shall submit these to the Faculty Board together with its recommendations. The Faculty Board shall make its decision in the light of these reports and on the recommendation of the Board.
To qualify for admission to the degree a candidate shall complete to the satisfaction of the Faculty Board a programme consisting of:

1. The Faculty of Science shall be responsible for the course leading to the degree of Master of Scientific Studies.
2. To be eligible for admission to candidature an applicant shall:
   (i) have satisfied the requirements for admission to a degree in Science or other tertiary institution approved for this purpose by the Faculty Board; or
   (ii) have satisfied the requirements for the Diploma in Science or Equivalent Honours in the University of Newcastle, or an equivalent qualification in another tertiary institution; or
   (iii) in exceptional cases produce evidence of possessing such other qualifications as may be approved by the Faculty Board; and
(b) satisfy the Faculty Board that he is academically competent to undertake the proposed programme.
3. (1) To qualify for admission to the degree the candidate shall complete to the satisfaction of the Faculty Board a programme prescribed by the Dean on the recommendation of the Heads of the Departments offering the units comprising the programme. The programme shall consist of 12 units of work of which not less than 2 nor more than 4 shall comprise the investigation and design.
   (2) The programme shall be completed:
   (a) in not less than two academic years except that, in the case of a candidate who has completed the requirements for a degree of Bachelor with honours or a qualification deemed by the Faculty Board to be equivalent or who has had previous research experience, the Faculty Board may reduce this period to not less than one academic year; and
   (b) except with the permission of the Faculty Board, in not more than 5 years.

4. (1) To qualify for admission to the degree a candidate shall complete to the satisfaction of the Faculty Board a programme consisting of:
   (a) conduct the major proportion of the research or design work in the University; and
   (b) take part in research seminars within the Department in which he is carrying out his research.

5. (1) To qualify for admission to the degree the candidate shall complete to the satisfaction of the Faculty Board a programme prescribed by the Dean on the recommendation of the Heads of the Departments offering the units comprising the programme. The programme shall consist of 12 units of work of which not less than 2 nor more than 4 shall comprise the investigation and design on a project specified by the Dean.

6. (1) To qualify for admission to the degree the candidate shall complete to the satisfaction of the Faculty Board a programme prescribed by the Dean on the recommendation of the Heads of the Departments offering the units comprising the programme. The programme shall consist of 12 units of work of which not less than 2 nor more than 4 shall comprise the investigation and design on a project specified by the Dean.

SCHEDULE 13 — MASTER OF SCIENTIFIC STUDIES

1. The Faculty of Science shall be responsible for the course leading to the degree of Master of Scientific Studies.
2. To be eligible for admission to candidature an applicant shall:
   (i) have satisfied the requirements for admission to a degree in Science or other tertiary institution approved for this purpose by the Faculty Board; or
   (ii) have satisfied the requirements for the Diploma in Science or Equivalent Honours in the University of Newcastle, or an equivalent qualification in another tertiary institution; or
   (iii) in exceptional cases produce evidence of possessing such other qualifications as may be approved by the Faculty Board; and
(b) satisfy the Faculty Board that he is academically competent to undertake the proposed programme.

SECTION SIX

The subjects selected should be written on the enrolment form in the following manner.

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<thead>
<tr>
<th>Computer Subject Name</th>
<th>Computer Names of Components Number</th>
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<tbody>
<tr>
<td>711100 BIOLOGY I</td>
<td>712108 Biological Methods</td>
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<tr>
<td>722100 CHEMISTRY I</td>
<td>721205 Animal Physiology</td>
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<tr>
<td>682100 COMPUTER SCIENCE II</td>
<td>721203 Biochemistry</td>
</tr>
<tr>
<td>662900 COMPUTER SCIENCE III - TRANSITION</td>
<td>721202 Cell Biology</td>
</tr>
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<td>742200 ELECTRONICS &amp; INSTRUMENTATION II</td>
<td>721204 Molecular Genetics</td>
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<tr>
<td>352100 GEOGRAPHY IIA: Human Geography</td>
<td>721206 Plant Physiology</td>
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<td>732200 GEOLOGY IIA</td>
<td>721207 Population Dynamics</td>
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<td>663100 MATHEMATICS IIA</td>
<td>662101 Topic A - Mathematical Models</td>
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<td>662200 MATHEMATICS IIB</td>
<td>662102 Topic B - Complex Analysis</td>
</tr>
<tr>
<td>662300 MATHEMATICS IIC</td>
<td>662103 Topic CO - Vector Calculus &amp; Differential Equations</td>
</tr>
<tr>
<td>662400 MATHEMATICS IVD</td>
<td>662104 Topic D - Linear Algebra</td>
</tr>
<tr>
<td>662500 MATHEMATICS IVE</td>
<td>662105 Topic E - Topic in Applied Mathematics e.g. Mechanics and Potential Theory</td>
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<td>662600 MATHEMATICS IVF</td>
<td>662106 Topic F - Numerical Analysis &amp; Computing</td>
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<td>692103 RP: Random Processes and Simulation</td>
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<tr>
<td>713100 BIOLOGY IIIA &amp;</td>
<td>692104 DAE: Design and Analysis of Experiences</td>
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<td>713200 BIOLOGY IIB</td>
<td>713104 Cell Processes</td>
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<td>713500 BIOLOGY V</td>
<td>713107 Mammalian Development</td>
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### SECTION SIX

**SUBJECT COMPUTER NUMBERS**

The subjects selected should be written on the enrolment form in the following manner.

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<td><strong>Number</strong></td>
</tr>
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<td>713109 Plant Structure and Function</td>
</tr>
<tr>
<td>713200</td>
<td>713106 Reproductive Physiology</td>
</tr>
<tr>
<td>713300</td>
<td>713105 Immunology (Not offered in 1988)</td>
</tr>
<tr>
<td>714100</td>
<td>713108 Molecular Biology of Plant Development (Not offered in 1988)</td>
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| 723100 | CHEMISTRY IIIA |
| 722200 | CHEMISTRY IIIB |
| 683100 | COMPUTER SCIENCE III |
| 683900 | COMPUTER SCIENCE IIIT |
| 353100 | GEOGRAPHY IIIA: Human Geography |
| 353200 | GEOGRAPHY IIIB: Physical Geography |
| 733100 | GEOLOGY IIIA |
| 733200 | GEOLOGY IIIB |

| 663100 | MATHEMATICS IIIA |
| 663200 | MATHEMATICS IIIB |
| 663101 | Topic M - General Tensors and Relativity |
| 663102 | Topic N - Variational Methods and Integral Equations |
| 663103 | Topic O - Mathematical Logic and Set Theory |
| 663104 | Topic P - Ordinary Differential Equations |
| 663105 | Topic PD - Partial Differential Equations |
| 663106 | Topic Q - Fluid Mechanics |
| 663125 | Topic QS - Quantum and Statistical Mechanics |
| 663107 | Topic S - Geometry |
| 663201 | Topic T - Basic Combinatorics |
| 663202 | Topic U - Introduction to Optimization |
| 663203 | Topic V - Measure Theory & Integration |
| 663204 | Topic W - Functional Analysis |
| 663217 | Topic X - Fields and Equations |
| 663207 | Topic Z - Mathematical Principles of Numerical Analysis |

| 743100 | PHYSICS IIIA |
| 743200 | PHYSICS IIIB (Not offered in 1988) |
| 753100 | PSYCHOLOGY IIIA |
| 753200 | PSYCHOLOGY IIIB |

| 693100 | STATISTICS III |
| 693102 | SS: Survey Sampling |
| 693107 | TSA: Time Series Analysis |
| 693106 | SI: Statistical Inference |
| 693105 | GLM: Generalized Linear Models |

| 714100 | BIOLOGY IV |
| 724100 | CHEMISTRY IV |
| 354100 | GEOGRAPHY IV |
| 734100 | GEOLOGY IV |
| 664100 | MATHEMATICS IV |
| 664500 | GEOLOGY/MATHEMATICS IV |
| 754100 | PSYCHOLOGY IV |
| 754300 | PSYCHOLOGY IVP |
| 664200 | PSYCHOLOGY/MATHEMATICS IV |
| 744100 | PHYSICS IV |
| 664300 | PHYSICS/MATHEMATICS IV |

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