CONTENTS

Faculty of Architecture

Page

A. General Information
4 Faculty Staff
5 Location
5 University of Newcastle Architectural Students' Association
5 Professional Recognition and Professional Association
5 Advisory prerequisites
5 Student representation in Faculty affairs
5 Awards
6 Prizes
6 Drawing office equipment
6 Academic dress
B. Degree Requirements
7 Bachelor of Science (Architecture)
8 Schedules A & B
9 Bachelor of Architecture
10 Schedules C & D
11 Master of Architecture
C. Faculty Policies
14 Criteria for award of degree with merit & honours
15 Conditions for the granting of standing
15 Student progression
15 Unsatisfactory progress
16 Subjects incompatible with B.Sc.(Arch.) & B.Arch. elective requirements
16 List of subjects offered as electives
D. Subject Descriptions
17 Year I Subjects
24 Year II Subjects
34 Year III Subjects
42 Year IV Subjects
46 Year V Subjects
48 Electives offered by the Department of Architecture
52 Design Data Check Lists
55 Subject Computer Numbers

General Information — Between pages 28 & 29
A. GENERAL INFORMATION

Faculty Staff

Dean
Professor E. C. Parker, HonMArch, ASTC, FRAIA

Sub-Dean
S. C. Morton, ASTC, AACA, FRAIA, ARIBA, MRAPI

Faculty Secretary
B. J. Kelleher, BE, BCom

Department of Architecture

Professor
E. C. Parker, HonMArch, ASTC, FRAIA

Associate Professor
R. M. Deamer, MArch, ASTC, FRAIA

Senior Lecturers
H. G. Appleby, MArch, Dip TCP (Sydney)
H. K. Banarjee, BE(Calcutta), M Tech(Indian Institute of Technology), PhD(Glasgow), MBA(Western Australia)
H. C. Clarke, BArch(Auckland), ARAIA, ARIBA, ANZIA
P. Drew, BArch(New South Wales), MArch(Sydney)
E. L. Harkness, BArch, MBdgSc(Sydney), MArch, FRAIA
S. C. Morton, ASTC, AACA, FRAIA, ARIBA, MRAPI

Lecturers
R. J. Donaldson, BArch, ARIBA
M. F. Park, BArch(New South Wales), ASTC, ARAIA
J. R. Rockey, BArch(New South Wales), PhD(Anglican, Rome), DPhil(Oxford), FRAIA

Tutor
Vacant

Computer Programmer
R. M. Jacombs, BSc, BE(Sydney)

Departmental Office Staff
Diane L. McNeil

Location
The Faculty of Architecture functions in a self-contained building on the University campus where it is located across the western footbridge beyond the Library and Union over the ring road and adjacent to the Metallurgy building. The nearest general car park is north of the Metallurgy building. See the frontispiece plan for further details.

The postal address is:
Faculty of Architecture
The University of Newcastle. N.S.W. 2308

The University telephone number is 68 0401.
The Departmental Office extension number is 361.

University of Newcastle Architectural Students' Association
Membership is open to both students and staff of the Faculty of Architecture as well as members of the architectural profession. Students of other faculties may be admitted as associate members. The Association aims at bringing together students at all levels within the Faculty and holds functions, both social and academic, including lectures by prominent members of the profession.

Announcements of the Architectural Students' Association's activities are posted on the Notice Board in the Architecture building.

Professional Recognition
Holders of the degree of Bachelor of Architecture of the University are eligible to be registered as architects under the New South Wales Architects Act (No. 8, 1921, as amended) and the Regulations under that Act.

An up-to-date copy of the Act and Regulations is held in the Departmental Office as is a stock of forms for application for registration as an architect.

Registered architects may apply to the New South Wales Builders Licensing Board for a license to practise as builders under the Builders Licensing Act (N.S.W. 1971).

Professional Association
Students enrolled in the Faculty of Architecture are advised to apply for student membership of the Royal Australian Institute of Architects. The Institute issues a wide range of publications and holds numerous functions both social and educational at specially reduced rates for students, all of which should be of interest and value to the student architect.

Advisory Per-requisites for Entry to the Bachelor of Science (Architecture) Degree in 1981
Students admitted to the Faculty of Architecture as candidates for the degree of Bachelor of Science (Architecture) in 1981 will be assumed to have completed at least two units of Mathematics and two units of Physics at the 1980 H.S.C. examination or its equivalent.

Student Representation in Faculty Affairs
Provision is made for student representatives to be elected to the Faculty Board of the Faculty. The Faculty Board has responsibility for the teaching and research activities of the Faculty.

Awards
N. B. Pitt — James Hardie Scholarship, tenable for one year in Australia or overseas, is awarded to a University of Newcastle Bachelor of Architecture of not more than 3 years standing or a Bachelor of Architecture final year student for postgraduate study or research into environmental problems having particular regard to the Newcastle area.
Prizes

Newcastle Gas Co. Prize
This prize, donated by the Newcastle Gas Co. Ltd., is awarded at the end of 3rd year to the outstanding student in Architecture IIB, Architecture IIIB and Architecture IIIIB.

P.G.H. Prize
The P.G.H. prize, donated by P.G.H. Industries Ltd., is awarded to the outstanding student graduating with the B.Sc.(Arch.) (3rd year).

Board of Architects of New South Wales Prize
The Board of Architects of N.S.W. Prize is awarded for the best academic performance in the Bachelor of Architecture degree course, if of sufficient merit.

Further information on prizes and awards may be obtained from University Administration.

Drafting Equipment

At the commencement of the course recommendations for draughting equipment will be given.

Academic Dress

The Academic Dress worn by graduates of the Faculty of Architecture of the University of Newcastle is as follows:

Gowns
(a) Degree of Bachelor
   A gown of black cloth as worn by Bachelors of Arts of the University of Cambridge.
(b) Degree of Master
   A gown of black cloth as worn by Masters of Arts of the University of Cambridge.
(c) Degree of Doctor of Philosophy
   A gown of garnet cloth faced with silver grey to a width of 4 inches.

Caps and Bonnets
(a) Degree of Bachelor and Master
   Men — a black cloth trencher cap.
   Women — a black Canterbury cap.
(b) Degree of Doctor of Philosophy
   A black velvet bonnet with a silver cord.

Hoods
(a) Degree of Bachelor of Science (Architecture)
   A full hood of black silk lined to a depth of 6 inches with garnet and a 1½ inch edging of silver grey.
(b) Degree of Bachelor of Architecture
   A full hood of black silk lined to a depth of 6 inches with garnet.
(c) Degree of Master of Architecture
   A full hood of black silk lined with garnet.
(d) Degree of Doctor of Philosophy
   A hood of garnet lined with silver grey.

B. DEGREE REQUIREMENTS

REQUIREMENTS FOR THE DEGREE OF BACHELOR OF SCIENCE (ARCHITECTURE)

1. Definitions
In these Requirements, unless the contrary intention appears, "the Faculty" means the Faculty of Architecture and "the Faculty Board" means the Faculty Board of the Faculty of Architecture.

2. Timetable Requirements
No candidate may enrol in any year for any combination of subjects which is incompatible with the requirements of the timetable for that year.

3. Annual Examinations
The Annual Examinations shall normally be held at the end of Third Term.

4. Special Examinations
A candidate may be granted a special examination in accordance with the provisions of the Examination Regulations.

5. Examination Grades
The results of successful candidates at Annual Examinations and Special Examinations shall be classified:
   Pass, Credit, Distinction, High Distinction.

6. Grading of Degree
The degree of Bachelor of Science (Architecture) may be conferred as an ordinary degree or as a degree with merit.

7. Relaxing Clause
In order to provide for exceptional circumstances arising in particular cases, the Senate, on the recommendation of the Faculty Board, may relax any requirement.

8. Qualification for Degree
To qualify for the degree, a candidate shall:
   (a) pass the subjects prescribed in Schedule A; and
   (b) satisfy the Elective Requirements prescribed in Schedule B.

9. A Subject
   (a) To complete a subject qualifying towards the degree, hereinafter called a subject, a candidate shall attend such lectures, tutorials, seminars, laboratory classes and field work and submit such written work as the Department concerned shall require.
   (b) To pass a subject a candidate shall satisfy the requirements of the previous clause and pass such examinations as the Faculty Board concerned shall require.

10. Prerequisites and Corequisites
   (a) Except with the permission of the Dean acting on the recommendation of the Head of Department offering the subject, a candidate may not enrol in any subject unless he has satisfied the requirements for prerequisites and has enrolled in or has already passed the corequisite prescribed for that subject.
   (b) A candidate shall not enrol in a Part III subject until he has passed all Part I subjects prescribed for the course.
11. **Standing**
A candidate may be granted such standing in the course in recognition of work completed in another course, faculty or tertiary institution as may be determined by the Faculty Board.

12. **Withdrawal**
(a) A candidate may withdraw from a subject or 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 after the sixth Monday in second term from a subject in which he has enrolled shall be deemed to have failed in the subject save that, after consultation with the Head of Department concerned, the Dean may grant permission for withdrawal without penalty.

13. **Progression**
(a) Progression in the course shall be by subject;
(b) A candidate may not enrol in more than four subjects in any one academic year. The Dean may, in individual cases, relax this Requirement but only if he is satisfied that exceptional circumstances exist or the academic merit of the candidate warrants such relaxation.

**SCHEDULE OF SUBJECTS — SCHEDULE A**

<table>
<thead>
<tr>
<th>Subject</th>
<th>Prerequisites</th>
<th>Corequisites</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Part I</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Architecture IA</td>
<td></td>
<td>Architecture IA and</td>
</tr>
<tr>
<td>Architecture IB</td>
<td></td>
<td>Architecture IB</td>
</tr>
<tr>
<td>Architecture IC</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Elective I</td>
<td></td>
<td>See Schedule B</td>
</tr>
<tr>
<td><strong>Part II</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Architecture IIA</td>
<td></td>
<td>Architecture IIA</td>
</tr>
<tr>
<td>Architecture IIB</td>
<td></td>
<td>Architecture IIB</td>
</tr>
<tr>
<td>Architecture IIC</td>
<td></td>
<td>Architecture IIC</td>
</tr>
<tr>
<td>Elective II</td>
<td></td>
<td>See Schedule B</td>
</tr>
<tr>
<td><strong>Part III</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Architecture IIIA</td>
<td></td>
<td>Architecture IIIA</td>
</tr>
<tr>
<td>Architecture IIIB</td>
<td></td>
<td>Architecture IIIB</td>
</tr>
<tr>
<td>Architecture IIIC</td>
<td></td>
<td>Architecture IIIC</td>
</tr>
<tr>
<td>Elective III</td>
<td></td>
<td>See Schedule B</td>
</tr>
</tbody>
</table>

**SCHEDULE OF SUBJECTS — SCHEDULE B**

**ELECTIVE REQUIREMENTS**

A candidate shall select either:
(a) a subject or subjects offered by a department other than the Department of Architecture and approved by the Dean provided that the subject or subjects selected have not been passed previously by the candidate; or
(b) a subject offered by the Department of Architecture and approved by the Dean from the list of subjects approved for this purpose by the Faculty Board provided that the subject selected has not been passed previously by the candidate.

**REQUIREMENTS FOR THE DEGREE OF BACHELOR OF ARCHITECTURE**

1. **Definitions**
In these Requirements, unless the contrary intention appears, “the Faculty” means the Faculty of Architecture and “the Faculty Board” means the Faculty Board of the Faculty of Architecture.

2. **Registration as a Candidate**
(a) An application to register as a candidate for the degree shall be made on the prescribed form and lodged with the Secretary by the closing date indicated.
(b) To be eligible for registration as a candidate an applicant shall —
   (i) have satisfied all requirements for admission to the degree of Bachelor of Science (Architecture) in the University of Newcastle; or
   (ii) have satisfied all requirements of another university for an equivalent qualification approved for this purpose by the Faculty Board; or
   (iii) in exceptional circumstances hold such other academic and professional qualifications as may be approved by Senate on the recommendation of the Faculty Board.

3. **Timetable Requirements**
No candidate may enrol in any year for any combination of subjects which is incompatible with the requirements of the timetable for that year.

4. **Annual Examinations**
The Annual Examinations shall normally be held at the end of Third Term.

5. **Special Examinations**
A candidate may be granted a special examination in accordance with the provisions of the Examination Regulations.

6. **Examination Grades**
The results of successful candidates at Annual Examinations and Special Examinations shall be classified:
Pass, Credit, Distinction, High Distinction.

7. **Grading of Degree**
(a) the degree of Bachelor of Architecture may be conferred as an ordinary degree or as a degree with honours;
(b) there shall be two classes of Honours, namely Class I and Class II.

8. **Medals**
The Faculty Board may recommend for the award of a University medal any candidate qualifying for admission to the degree with 1st Class Honours who, in its opinion, has displayed outstanding ability.
9. **Relaxing Clause**
In order to provide for exceptional circumstances arising in particular cases, the Senate, on the recommendation of the Faculty Board, may relax any requirement.

10. **Qualification for Degree**
To qualify for the degree, a candidate shall:
(a) pass the subjects prescribed in Schedule C; and
(b) satisfy the Elective Requirements prescribed in Schedule D.

11. **Prerequisites and Corequisites**
Except with the permission of the Dean acting on the recommendation of the Head of Department offering the subject, a candidate may not enrol in any subject unless he has satisfied the requirements for prerequisites and has enrolled in or has already passed the corequisite prescribed for that subject.

12. **A Subject**
(a) To complete a subject qualifying towards the degree, hereinafter called a subject, a candidate shall attend such lectures, tutorials, seminars, laboratory classes and field work and submit such written work as the Department concerned shall require.
(b) To pass a subject a candidate shall satisfy the Requirements of the previous clause and pass such examinations as the Faculty Board concerned shall require.

13. **Standing**
A candidate may be granted such standing in the course in recognition of work completed in another course, faculty or tertiary institution as may be determined by the Faculty Board.

14. **Withdrawal**
(a) A candidate may withdraw from a subject or 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 after the sixth Monday in second term from a subject in which he has enrolled shall be deemed to have failed in the subject save that, after consultation with the Head of Department concerned, the Dean may grant permission for withdrawal without penalty.

15. **Progression**
(a) Progression in the course shall be by subject;
(b) A candidate may not enrol in more than four subjects in any one academic year. The Dean may, in individual cases, relax this Requirement but only if he is satisfied that exceptional circumstances exist or the academic merit of the candidate warrants such relaxation.

---

**SCHEDULE OF SUBJECTS — SCHEDULE C**

<table>
<thead>
<tr>
<th>Subject</th>
<th>Prerequisites</th>
<th>Corequisites</th>
</tr>
</thead>
<tbody>
<tr>
<td>Part IV</td>
<td>Architecture IVA</td>
<td>Architecture IVA or Architecture IVB</td>
</tr>
<tr>
<td>Architecture IVB</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Architecture IVC</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Elective IV</td>
<td>See Schedule D</td>
<td></td>
</tr>
</tbody>
</table>
(ii) have satisfied the requirements for admission to a degree or equivalent qualification, approved for the purpose by the Faculty Board, in another tertiary institution; or
(iii) have such other qualifications and experience as may be approved by the Senate on the recommendation of the Faculty Board or otherwise as may be specified in the Schedule; and
(b) have satisfied such other requirements as may be specified in the Schedule.

2. Unless otherwise specified in the Schedule, applications for admission to candidature shall be considered by the Faculty Board which may approve or reject any application.

3. An applicant shall not be admitted to candidature unless adequate supervision and facilities are available. Whether these are available shall be determined by the Faculty Board unless the Schedule otherwise provides.

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 as otherwise prescribed in the Schedule; or
   (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 may withdraw from a subject or course only by informing the Secretary to the University in writing and such withdrawal shall take effect from the date of receipt of such notification.
   (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.

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.
   (2) For the purpose of assessing a candidate's progress, the Faculty Board may require any candidate to submit a report or reports on his progress.
   (3) A candidate against whom a decision of the Faculty Board has been made under Regulation 8(1) of these Regulations may request that the Faculty Board cause his case to be reviewed. Such request shall be made to the Dean of the Faculty within seven days from the date of posting to the candidate the advice of the Faculty Board's decision or such further period as the Dean may accept.
   (4) A candidate may appeal to the Vice-Chancellor against any decision made following the review under Regulation 8(3) of these Regulations.

9. In exceptional circumstances arising in a particular case, the Senate, on the recommendation of the Faculty Board, may relax any provision of these Regulations.

Part 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 degree of Master 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; or
   (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 advised of the result of the first examination or within such longer period of time as the Faculty Board may prescribe; or
   (c) to require the candidate to undertake such further oral, written or practical examinations as the Faculty Board may prescribe; or
   (d) not to recommend that the candidate be admitted to the degree, in which case the candidature shall be terminated.

Part III — Provisions Relating to Theses

12. (1) The subject of a thesis shall be approved by the Faculty Board on the recommendation of the Head of the Department in which the candidate is carrying out his research.
   (2) The thesis shall not contain as its main content any work or material which has previously been submitted by the candidate for a degree in any tertiary institution unless the Faculty Board otherwise permits.

13. The candidate shall give to the Secretary to the University three months' written notice of the date he expects 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) The Faculty Board shall determine the course of action to be taken should the certificate of the supervisor indicate that in the opinion of the supervisor the thesis is not of sufficient academic merit to warrant examination.

* At present there is no fee payable.
15. The University shall be entitled to retain the submitted copies of the thesis accompanying documents and published work. The University shall be free to allow the thesis to be consulted or borrowed and, subject to the provisions of the Copyright Act, 1968 (Com), may issue it in whole or any part in photocopy or microform or other copying medium.

16. (1) For each candidate two examiners, at least one of whom shall be an external examiner (being a person who is not a member of the staff of the University) shall be appointed either by the Faculty Board or otherwise as prescribed in the Schedule.

(2) If the examiners’ reports are such that the Faculty Board is unable to determine, under regulation 3(1) of the Regulations Governing Unsatisfactory Progress, whether a candidate has failed to maintain a satisfactory rate of progress if:

(a) he or she fails Architecture IA, IB, IC and Elective I in the Bachelor of Science degree; or

(b) he or she fails a subject for a second time.

(b) To qualify for the degree of Bachelor of Architecture with Honours Class I, a candidate’s performance expressed as an average of the marks obtained for all subjects of that course shall be 72% or better and there shall be no failure in any subject of that course or in any component unit of such subject.

c) To qualify for the degree of Bachelor of Architecture with Honours Class II, a candidate’s performance expressed as an average of the marks obtained for all subjects of that course shall be less than 72% and equal to or better than 65% and there shall be no failure in any subject of that course or in any component unit of such subject.

For the purposes of this policy, a failure in a component unit or sub-unit of a subject shall be deemed to result when the mark obtained in that unit or sub-unit is less than 50%.

Conditions for the Granting of Standing as determined by the Faculty Board, Faculty of Architecture pursuant to clause 11 of B.Sc.(Arch.) and clause 12 of the B.Arch. degree requirements

(a) Subject to the approval of the Dean of the Faculty of Architecture, standing may be granted in a subject, subject-unit or subject sub-unit in recognition of work completed in another course in this university or any other tertiary institution.

(b) For the purpose of determining eligibility for the award of a degree with merit in the case of the B.Sc.(Arch.) degree or with honours in the case of the B.Arch. degree, of students admitted to either degree course with standing, results of those subjects completed within the University of Newcastle, N.S.W., only shall be taken into account in accordance with the relevant degree requirements.

Student Progress
As indicated in the degree requirements and the schedule of subjects, students proceed by subject and not by year. A student who is required to repeat a subject may, in exceptional circumstances and at the discretion of the Head of the Department, be granted standing in any passed unit or sub-unit of that subject. A student who has failed a subject should apply to the Head of the Department to determine whether any standing will be granted in units/sub-units of that subject.

Unsatisfactory Progress
Under the Regulations Governing Unsatisfactory Progress the Faculty Board may review the academic performance of a student who does not maintain a rate of progress considered satisfactory by the Faculty Board. The following statement has been approved by the Faculty Board, Faculty of Architecture, with respect to its powers of review under the Regulations Governing Unsatisfactory Progress.

1. A student shall be considered to have failed to maintain a satisfactory rate of progress if:

(a) he or she fails Architecture IA, IB, IC and Elective I in the Bachelor of Science (Architecture) degree course or Architecture IVA, IVB, IVC and Elective IV in the Bachelor of Architecture degree course at the first attempt; or

(b) he or she fails a subject for a second time.

2. The academic progress of students who fall into either or both of the above categories shall be reviewed by the Dean of the Faculty of Architecture who may determine, under regulation 3(1) of the Regulations Governing Unsatisfactory Progress:

(a) that the student be permitted to continue the course;

(b) that the student be permitted to continue the course subject to such conditions as the Dean may decide;

(c) that the student be excluded from further enrolment:

(i) in the course; or

Criteria for the Award of the Degree with Merit and Honours
(a) To qualify for the degree of Bachelor of Science (Architecture) with Merit, a candidate’s performance expressed as an average of the marks obtained for all subjects of that course shall be 65% or better and there shall be no failure in any subject of that course or in any component unit or sub-unit of such subjects.

FACULTY POLICIES

Faculty Board policies of special interest to students are as follows —

C. FACULTY POLICIES

Criteria for the Award of the Degree with Merit and Honours

(a) To qualify for the degree of Bachelor of Science (Architecture) with Merit, a candidate’s performance expressed as an average of the marks obtained for all subjects of that course shall be 65% or better and there shall be no failure in any subject of that course or in any component unit or sub-unit of such subjects.
(ii) in the course and any other course offered in the Faculty; or
(iii) in the Faculty; or
(d) that the case be referred to the Admissions Committee together with a
recommendation for such action as the Dean considers appropriate.

Subjects incompatible with the elective requirements for the B.Sc.(Arch.) and
B.Arch. degree courses.
The following subjects offered by departments other than the Department
of Architecture, shall not be approved as elective subjects in respect of clause
8 Qualification for Degree sub clause (b) of the B.Sc. degree requirements
and clause 10 Qualification for Degree sub clause (b) of the B.Arch. degree
requirements because their content overlaps substantially with core subjects
in the degree courses:
- Introductory Quantitative Methods
- Commercial EDP
- Legal Studies

Students may not enrol in the units CE111 Statics and ME111 Graphics
and Engineering Drawing offered by the Faculty of Engineering.

List of subjects approved by the Faculty Board as electives to be offered by
the Department of Architecture.

B.Sc.(Arch.) Degree Course
Elective I may be chosen from:
- Urban Design A
- Fine Arts

Electives II and III may be chosen from:
- Fine Arts
- Movements in Contemporary Architecture
- Urban Design A
- Urban Design B

B.Arch. Degree Course
Electives IV and V may be chosen from:
- Architectural Research
- Fine Arts
- Movements in Contemporary Architecture
- Urban Design A
- Urban Design B

Note: Students are advised that not all subjects listed will necessarily be offered in 1981
and that additional subjects may be added to the list.

D. SUBJECT DESCRIPTIONS

Preface
Subject descriptions are currently under review in the Department of Architecture and
any variations and additional information to that shown below will be issued from the
Departmental Office after the 1st February, 1981.
Subject Outlines and Reading Lists are set out in a standard format to facilitate easy
reference. The policy adopted in this Handbook for interpretation of the various sections
is set out below. This may not necessarily be the same policy adopted for other Faculty
Handbooks.

(1) Name
The official subject name as included in the Schedule of the degree requirements.
This name must be used when completing any forms regarding enrolment or
variation of enrolment.

(2) Prerequisites
Before enrolling in a subject, a student shall have passed the subjects listed as
prerequisites. In some cases an advisory prerequisite is stated and although this is
not compulsory, it would be a distinct advantage for the student to have passed
such a subject.

(3) Corequisite
A corequisite is a subject which should be taken concurrently with another subject
if not previously passed.

(4) Hours
Subject hours may include lectures, tutorials or studio periods. The periods vary in
length, but are normally of one or two hours duration. Students should read the
timetable for details.

(5) Examination
The formal examination requirements are stated, however, progressive assessment
is used in many subjects and students are required to make submissions of work as
specified by lecturers and tutors. Periodic examinations are usually held during the
year. Work completed during the year will be taken into account in assessing
students' final resultant grades. Failure to submit written work may involve
exclusion from examinations in accordance with the University By-Laws.

(6) Content
An outline of subject content.

(7) Suggested Preliminary Reading
A list of reading material which should help the student gain a basic understanding
of a subject. This material should be read before attending the first lecture on the
subject.

(8) Texts
Essential books which are recommended for purchase.

(9) References
Students should not restrict their reading to texts. Lists of other references will be
issued to cover various aspects of the subject. Students may need to read all or part
of a reference to gain an appreciation of a particular topic.

(10) Electives
A list of subject electives with relevant details will be available from the Faculty
Secretary.

211700 Architecture IA

Prerequisites Nil

Hours See individual unit requirements

Examination See individual unit requirements
Content

Arch. 1A consists of the following units:
(i) 211701 Visual Studies
(ii) 211702 Data Processing
(iii) 211705 Man Environment Studies

(i) 211701 VISUAL STUDIES

Hours 3½ hours

Content

(a) Descriptive Geometry
Topics covered include:
- Plane Geometry, Orthographic Projection, Sectional and Auxiliary Projection, Surface Development, Pictorial Projections (Isometric, Axonometric and Oblique), Shadow Projection, Perspective Projection (1P, 2P, 3P, Direct, Shadows and Reflections)

(b) Studio
Projects include:
A. Introductory — Material, Media, Light/Shade
B. Lettering, Graphics, Visual Communication
C. Colour, 2-D Organisation
D. 3-D Organisation, Sketching
E. Visual Aspects of Building Detail

Unit Requirements

(a) Weekly Lecture, Studio and/or Field Sessions will be held.
(b) Submissions:
   (i) Descriptive Geometry
       Regular assignments will be set.
   (ii) Work as carried out in the Studio Projects A, B, C, D and E will be submitted at the completion of each project.

Assessment and Examination

(a) Descriptive Geometry — Value 50%
   Marks for the regular assignments will be directly averaged.
(b) Studio — Value 50%
   Marks for the Studio Projects will have the following percentage value:
   - A — 5%
   - B — 10%
   - C — 10%
   - D — 10%
   - E — 15%

The marks awarded in the Descriptive Geometry and Studio Sections will be used as the basis to determine the Final Mark and Grade for the Unit — however, the development of a student may also be taken into account, and consequently a student may be requested to resubmit all or part of the year’s work for review at the end of Term 3.

References

Atkin, W. W. Architectural Presentation Techniques
(Van Nostrand Reinhold Co. 1976)
Reekie, R. F. Draughtsmanship 2nd edn (Edward Arnold 1974)
Gill, R. W. Basic Perspective (Thomas & Hudson 1974)
Itten, J. The Elements of Colour (Van Nostrand Reinhold)

(ii) 211702 DATA PROCESSING

Hours 1 hour lecture and 1 hour tutorial per week.

Content

Data Processing consists of the following sub-units:
(a) 211703 Information Handling
(b) 211704 Computing Studies

(a) 211703 INFORMATION HANDLING
   The use of libraries. Information filing.
(b) 211704 COMPUTING STUDIES
   Introduction to Computer Programming using FORTRAN.
   Some architectural applications such as shadow and sunlight penetration calculations. The use of packages such as Perspective Plotting and Structural Frame Analysis.

Unit Requirements

Approximately 15 assignments (which include the running of computer and packages) and one essay (on information retrieval).

Assessment and Examination

One midyear test and one end of year test at the time of the final examinations, each of equal value of approximately 30%.
The assignments will count approximately 20% towards the final assessment.
The essay will count approximately 20% towards the final assessment.

Text

Watters, J. Fortran Programming (Heinemann 1972)

(iii) 211705 MAN ENVIRONMENT STUDIES

Content

Man Environment Studies consists of the following sub-units:
(a) 211706 Human Factors Engineering
(b) 211707 History of Architecture

(a) 211706 HUMAN FACTORS ENGINEERING
   (Anthropometrics and Ergonomics)

Content

Approx. ¾ hour of formal class commitment per week plus not less than ½ hours per week private supporting study.

Hours

(a) First Term:
   Introductory lectures and discussions of anthropometrics and ergonomics.
   The students carry out a limited anthropometric survey to familiarise themselves with the measure of man.
(b) Second Term:
   Full size models are made of any article that has its form determined ergonomically.
   In preparation for making the model the student is required to carry out an investigation of the selected topic including, as appropriate, a bibliographic survey and/or field survey; and to justify conclusions and design proposals in a seminar submission.
(c) Third Term:
   Seminar sessions on selected topics.
   Topics studied in detail by students in past years include the design of office chairs, lounge chairs,
cutlery, crockery, door handles, stair handrails, car seats, beds, surf boards, drafting table with chair, toilet seats, public outdoor seating, special design requirements for infants, school children, physically and mentally handicapped persons and geriatrics.

Sub-Unit Requirements
Within the outline of activities listed above:
(a) Students are required to attend all lectures and seminar discussions, to participate in discussion and take notes of all sessions — for it is the purpose of the course to assist the student to develop an ability in solving ergonomic problems. Practical experience is seen as a valuable vehicle toward that goal.
(b) the nature of submissions will be a function of the topic under study and will be determined in consultation with staff. Submissions may be in the form of an essay, orthographics, models, and/or seminars in which any visual, audio or any other means of communication may be used.
(c) Students may elect to work on projects individually or in groups. Some projects may be specified to be individual submissions.

Assessment and Examination
Assessment will be progressive based on project submissions and seminars.

References
Chapanis, A. Man-Machine Engineering (Tavistock Publications 1965)
Chapanis, A. Research Techniques in Human Engineering (John Hopkins Press)
Sinaiko, H. W. Selected papers on human factors in the Design and use of control systems (Dover Publications 1961)

(b) 211707 HISTORY OF ARCHITECTURE

Hours 1 hour per week
Assessment Two essays 30% ea. 60%
Content A study of Egyptian, Greek, Roman, Early Christian, Romanesque and Gothic architecture based on the theory of architecture as a concretization of existential space centreing on the spatial properties of works drawn from each period. The structural analysis of landscape and settlement, building, articulation, and space conception and development is used to disclose the particular existential meanings of the architectural forms.

Texts: Norberg-Schulz, C Meanings in Western Architecture

Recommended Reading:
Norberg-Schulz, C

211800 Architecture IB

Prerequisites Nil

Hours See individual unit requirements

Examination See individual unit requirements

Content Arch. IB consists of the following units:
(i) 211801 Structures
(ii) 211802 Construction
(iii) 211803 Environmental Technology

(i) 211801 STRUCTURES

Hours 1½ hours per week — includes lecture and tutorial

Content Deals with two dimensional and three dimensional statics, internal actions in rigid bars and pin jointed frames.

Unit Requirements
Weekly tutorial and home assignments, two term examinations and final examination.

Assessment and Examination
First term examination 20%
Second term examination 20%
Final examination 40%
Tutorial and home assignments 20%
Each assignment carries equal weight.


(ii) 211802 CONSTRUCTION

Hours Lecture 1 hour per week
Tutorial/Studio ¼ hours per week
Field Trips Approx. 2 hours each for 3 trips per term
Excursions No set time but usually on the basis of 1 full day excursion per term

Content The unit offers an introduction to methods of building construction based on the limitations of
1) walk up
2) light framed construction
3) simple load bearing construction

This involves the coverage of
1) Conventional and light timber framed domestic construction
2) Post and beam portal frames and non load bearing in-fills
3) Alternatives to the above including proprietary metal framing systems

21
Complementary to this is a coverage of site investigation methods. Fabrication, joinery, materials and finishes are covered in relation to the content matter and all elements are reviewed in their context as design elements.

Techniques of documentation and communication are covered using drafted, written and 3D model methods.

Assessment of submissions is orientated towards providing an adequate feedback of information after submission. Lectures and tutorials are arranged in similar order to those processes occurring on the building site to display the need for complete job/trade co-ordination.

**Unit Requirements**

Drawn submissions include both freehand and mechanical scaled detail drawings of the various elements being treated. Generally assignments are set on the basis of one per week and submission times based on the particular problem in hand.

All assignments set must be submitted by the end of the term in which they were set. Specialised reports are called for which include:

1) footing failure in a selected building
2) several detailed reports on the total progress of a selected building under construction
3) the demolition of a building displaying traditional methods of construction and observing those elements which have failed or remained effective.

Group work includes the submission of various scaled construction models. Attendance is considered a matter for the individual student but attendance at studio sessions as a working group is highly stressed.

**Assessment and Examination**

Assignments are set generally on a weekly basis but include extensive investigation reports which are submitted at the end of each term. Marks for these assignments are averaged with those for short term quizzes and this result is used as the end of year result.

The final result becomes 1/3 of the final subject result along with Environmental Technology and Structures. Assignments are reviewed and commented upon by the lecturer and a grading only given.

**Texts and References**

To be advised.

---

**iii) 211803 ENVIRONMENTAL TECHNOLOGY**

**Content**

Environmental Technology unit consists of the following sub-units:

(a) 211804 Properties of Materials
(b) 211805 Building Services

---

(a) 211804 PROPERTIES OF MATERIALS

**Hours**

<table>
<thead>
<tr>
<th>Lecture</th>
<th>1 hour per week</th>
</tr>
</thead>
<tbody>
<tr>
<td>Field Trips</td>
<td>1 per section as required</td>
</tr>
<tr>
<td>Excursions</td>
<td>These are usually combined with field trips in Construction</td>
</tr>
</tbody>
</table>

**Content**

The sub-unit investigates the properties of most building materials including:

1) Cement and Concrete
2) Timber

---

(b) 211805 BUILDING SERVICES

**Hours**

<table>
<thead>
<tr>
<th>Lecture</th>
<th>1 hour per week</th>
</tr>
</thead>
<tbody>
<tr>
<td>Field Trips</td>
<td>1 per section as required</td>
</tr>
<tr>
<td>Excursions</td>
<td>These are usually combined with field trips in Construction</td>
</tr>
</tbody>
</table>

**Content**

The sub-unit extending over 3 terms provides an introduction to services connected to or located within a building. This involves an investigation of the following:

1) Water Supply and Reticulation
2) Sanitation Appliances
3) Waste and Soil Services (Structural)
4) Drainage Services
5) Refuse Disposal
6) Electrical Installation
7) Gas Services
8. Heating, Ventilating and Air Conditioning
9. Vertical and Horizontal Transport systems

Particular attention is offered to

1. Integration and co-ordination of Services
2. Economy
3. Efficiency
4. Human Aspects
5. Technical Aspects

No attempt is made at this stage to offer expertise in the design of systems in detail. However a general understanding and working knowledge of services is aimed at. Detailed expertise is expected to come from later years in this sub-unit. Students are expected to attain an understanding of what services exist or are necessary, what they do, where they are situated, how they work, how they co-ordinate and their advantages and disadvantages.

Sub-Unit Requirements
Assignments are set which involve the submission of research reports, diagrams, sketches, etc. of services under investigation. Students are required to complement the lecture course by personal investigation of and consequent reporting on selected examples of service installations.

Assessment and Examination
The results of section assignments are averaged with the results of term quizzes all of which are assessed and graded by the lecturer. This result is used as the end of year result. The final result produced is averaged with that for the Properties of Materials sub-unit to form 1/3 of the total result for Architecture IB along with Structures and Construction.

Texts and References
To be advised.

21900 Architecture IC

Prerequisites
Nil

Corequisites
Architecture IA & IB

Further details of Architecture IC may be obtained from the Department of Architecture.

212800 Architecture IIA

Prerequisites
Architecture IA

Hours
See individual unit requirements

Examination
See individual unit requirements

Content
Arch. II A consists of the following units:
(i) 212801 Visual Studies
(ii) 212802 Data Processing
(iii) 212805 Man Environment Studies

(i) 212801 VISUAL STUDIES

Hours
3 hours per week

Content
Projects will include:

<table>
<thead>
<tr>
<th>Term</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>Field Sketching</td>
</tr>
<tr>
<td></td>
<td>Building recording and description</td>
</tr>
<tr>
<td>II</td>
<td>Art Project</td>
</tr>
<tr>
<td></td>
<td>Building Detail Project</td>
</tr>
<tr>
<td></td>
<td>Sun-Dial</td>
</tr>
<tr>
<td>III</td>
<td>Field Sketching</td>
</tr>
<tr>
<td></td>
<td>Urbanxcape Project</td>
</tr>
</tbody>
</table>

Unit Requirements
(a) Weekly Studio and/or Field sessions will be held.
(b) Submissions.
The work as carried out in the various projects will be submitted as required at the end of each term.

Assessment and Examination
Each project will have a percentage value as follows:

- A — 15%
- B — 7.5%
- C — 20%
- D — 30%
- E — 7.5%
- F — 10%
- G — 10%

The marks awarded will be used as the basis to determine the Final Mark and Grade for the Unit — however, the development of a student may also be taken into account, and consequently a student may be requested to resubmit all or part of the year's work for review at the end of Term 3.

Reference
Further to references scheduled in Visual Studies I.
Cullen, G. *The Concise Townscape* (Architectural Press 1973)

(ii) 212802 DATA PROCESSING

Content
Data Processing consists of the following sub-units:
(a) 212803 Statistics
(b) 212804 Computing Studies

(a) 212803 STATISTICS

Hours
Lecture one and a half hours/week
Tutorials to be integrated with lecture

Content
1. Introduction
   Nature of statistics, History of statistics.
2. Sets and Probability
3. Distribution and Random Variables

4. Organisation of Data
   Tabular Method, Graphical Methods, Measures of Central Tendency and Dispersion.

5. Mathematical Expectations

6. Probability Distributions and Applications
   Binomial, Hypergeometric, Poisson & Normal Distributions. Use of Normal Distribution Curve and Table.

Sub-Unit Requirements
   It is a one-term sub-unit of lectures and tutorials.

Assessment and Examination
   Class Assignments 50%
   End of Term Examination 50%

Text
   To be advised

References
   Neter, J. & others Fundamental Statistics for Business and Economics (Allyn & Bacon)
   Sherlock, A. J. An Introduction to Probability and Statistics (Edward Arnold)
   Clark, T. C. & Schkade, L. L. Statistical Methods for Business Decisions (South Western)

(b) 212804 COMPUTING STUDIES
   Hours 1 hour per week
   Content Lectures and tutorials on the FORTRAN computing language and batch processing on the ICL 1904 A computer.
   Development of a computer program to calculate solar altitude and azimuth angles for any time of day for any day of year.
   Use of this program to calculate position of shadows.
   Use of perspective package PERSDRAW.
   Use of plane frame stress package PLANEFRAM.

Assessment and Examination
   Two 1½ hour examinations together with assignments.

Text
   Watters, J. Fortran Programming (Heinemann 1972)

(b) 212807 HISTORY OF ARCHITECTURE
   Hours 1 hour per week
   Assessment Two essay assignments 30% ea. 60%
   One 3-hour examination 40%.

Content
   The subject of the course is the development of Renaissance, Mannerist and Baroque architecture of Europe which is analysed in terms of its spatial composition, corporeal form, visible form and pupose intention. The development of architectural theory and its application to built works will be emphasised.

Prescribed Text:
   Norberg-Schulz, C. Meaning in Western Architecture.

Recommended Reading:
References:
Benevolo, L.
Scott, G.
Summerson, J.
Wittkower, R.

The Architecture of Humanism
The Classical Language of Architecture
Architectural Principles in the Age of Humanism.

212820 Architecture IIB

Prerequisite
Architecture 1B

Hours
See individual unit requirements

Examination
See individual unit requirements

Content
Arch. IIB consists of the following units:
(i) 212821 Structures
(ii) 212822 Construction
(iii) 212823 Environmental Technology

(i) 212821 STRUCTURES

Hours
1½ hours per week including lectures and tutorials

Content
1. **Uniaxial Loading**
   Force/deflection relationships; elastic and non-elastic behaviour; stress and strain; material properties; Poisson effect; axial deflections; strain energy; axially loaded curved members.

2. **State of Stress**
   Direct stresses and shear stresses; general 3-dimensional state of stress; uniaxial, biaxial and triaxial loading as special cases; principal stresses and maximum shear stresses and their directions; Mohr’s stress circle.

3. **State of Strain**
   Normal, area and volumetric strains; shear strain; general state of strain; principal strains, maximum shear strains and their directions, Mohr’s strain circle.

4. **Elastic Stress Strain Relationships**
   Principal stresses and principal strains; shear stresses and shear strains; combined normal and shear stresses and strains; Young’s Modulus, Poisson’s Ratio, Shear modulus.

5. **Internal Force Diagrams**
   Axial force, shear force, bending moment and torsion diagrams; use of static equilibrium to derive external reactions and internal forces.

6. **Bending and Shear Stresses in Flexure**
   Cross-section properties, centroid location, first and second moment of area. Computation of direct bending stresses; elastic and elastic-plastic behaviour. Flexural stiffness; computation of flexural deflections by integration of moment-curvature relationship. Shear force, computation of shear stresses in flexure; combined direct and shear stresses in flexure-resultant principal stress directions.
The University of Newcastle Calendar consists of the following volumes:

Volume 1 — Legislation: *The Act, By-laws and Regulations*

Volume 2 — University Bodies and Staff:
- Part 1 — Principal Officers, Council, Senate, Boards and Committees.
- Part 2 — The Professors and Staff.

Volume 3 — Handbook, *Faculty of Architecture*

Volume 4 — Handbook, *Faculty of Arts*

Volume 5 — Handbook, *Faculty of Economics and Commerce*

Volume 6 — Handbook, *Faculty of Education*

Volume 7 — Handbook, *Faculty of Engineering*

Volume 8 — Handbook, *Faculty of Mathematics*

Volume 9 — Handbook, *Faculty of Medicine*

Volume 10 — Handbook, *Faculty of Science*

Volume 11 — *Annual Report*

All volumes, except Volume 1 — Legislation, are published annually.

Volume 1 — Legislation is published irregularly the last issue being 1980.

All volumes except Volumes 2 Staff and 11 Annual Report are available on microfiche.

**Other Publications**
- Undergraduate Prospectus
- Postgraduate Prospectus
- Information for Students
- University News
- Gazette

**CONTENTS**

I PRINCIPAL DATES 1981

II GENERAL INFORMATION
- Enrolment of New Students
- Re-enrolment
- Student Cards
- Library Cards
- Re-admission after absence
- Attendance Status
- Change of Address
- Change of Name
- Change of Programme
- Withdrawal without Academic Penalty
- Confirmation of Enrolment
- Leave of Absence
- Attendance at Classes
- General Conduct
- Notices
- Student Matters Generally

III EXAMINATIONS
- Examination Periods
- Sitting for Examinations
- Rules for Formal Examinations
- Examination Results
- Special Examinations
- Deferred Examinations

IV UNSATISFACTORY PROGRESS
- Regulations Governing Unsatisfactory Progress

V CHARGES
- Payment of Charges
- Scholarship Holders and Sponsored Students
- Higher Degree Candidates
- Refund of Charges
- Extension of time to Pay

VI CAMPUS TRAFFIC & PARKING
I PRINCIPAL DATES 1981

January
1 Thursday Public Holiday — New Year's Day
9 Friday Last day for return of Re-Enrolment Forms — Continuing Students
12 Monday Deferred Examinations begin
23 Friday Deferred Examinations end
26 Monday Public Holiday — Australia Day
31 Saturday Closing date for applications for residence in Edwards Hall

February
11 Wednesday New students attend in person to enrol and pay charges
12 Thursday Late enrolment session for new students

March
2 Monday First Term begins

April
17 Friday Good Friday — Easter Recess commences
22 Wednesday Lectures resume
22 Wednesday Last day for withdrawal without academic penalty from first half year subjects
25 Saturday Public Holiday — Anzac Day

May
9 Saturday First Term ends
25 Monday Examinations begin
29 Friday Examinations end

June
1 Monday Second Term begins
8 Monday Public Holiday — Queen's Birthday
12 Friday Last day for return of Confirmation of Enrolment forms
30 Tuesday Closing date for Applications for Admission to the Bachelor of Medicine course in 1982

July
6 Monday Last day for withdrawal without academic penalty from full year subjects
6 Monday Examinations begin
10 Friday Examinations end

August
8 Saturday Second Term ends
10 Monday Examinations begin
14 Friday Examinations end
31 Monday Third Term begins

September
7 Monday Last day for withdrawal without academic penalty from second half year subjects

October
1 Thursday Closing date for Applications for Admission 1982 (Undergraduate courses other than Medicine)
5 Monday Public Holiday — Eight Hour Day

November
2 Monday Annual Examinations begin
20 Friday Annual Examinations end

Note: Term dates for students in the Bachelor of Medicine course are printed in Calendar Volume 9 — Medicine Handbook.

January
1982
18 Monday Deferred Examinations begin
29 Friday Deferred Examinations end

March
1 Monday First Term begins
II GENERAL INFORMATION

Enrolment of New Students

Persons offered admission are required to attend in person at the Great Hall in mid-February to enrol and pay charges. Detailed instructions are given in the Offer of Admission.

Enrolment of Continuing Students

The University makes arrangements for continuing students to enrol by mail. There are two steps involved:

— Lodging the Enrolment form with details of your proposed programme,
— Completing enrolment by lodging the Authority to Complete Enrolment form with the cashier with charges payable.

1. Lodging Enrolment Forms

Re-enrolment materials will be mailed to all undergraduate students in mid-December. Those who wish to enrol in 1981 and who are eligible to do so (see Regulations Governing Unsatisfactory Progress) should complete the enrolment form as soon as possible after the release of the 1980 annual examination results, and forward it to The Secretary, University of Newcastle, N.S.W., 2308.

Enrolment forms from continuing students are due by 9 January 1981 except in the case of a student who is required to take a special or deferred examination in which case the enrolment form must be submitted within seven days of the release of those examination results.

Submission of enrolment forms after the due date will render the student liable to a late lodgement charge of $14.00.

Students, for good reason, are unable to submit their enrolment forms by the due date, may apply for an extension of time. The request, with details of the reason for the extension must reach the Secretary by the due date if the late lodgement charge is to be avoided. The By-laws provide that no enrolment will be accepted after 31 March without the approval of the Secretary which shall be given only in exceptional circumstances.

2. Completing Enrolment

When the proposed programme has been approved, an Authority to Complete Enrolment form will be mailed to the student showing charges payable. Students are required to complete enrolment by lodging the form with the Cashier with the charges payable. This can be done by mail or in person. The Cashier’s office is open 10 am to 12 noon and 2 pm to 4 pm Monday to Friday. At least 21 days notice is required from the date of posting to the date by which charges must be paid if a late charge is to be avoided.

Student Cards

The Authority to Complete Enrolment form incorporates the student’s identification card which is returned to him after payment of charges. It should be carried by students when at the University. It serves as evidence that the student is enrolled and must be presented when applying for travel concessions, a parking permit or to confirm membership of the University Union.

If a student loses his Student Card he should pay the replacement charge of 50 cents to the Cashier and present the receipt at the Student Administration Office when seeking a replacement card.

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

Library Cards

Students should present their Student Card to the Library desk to be issued with their Library Borrowers Card. This card, which has machine readable lettering, must be presented when borrowing books from the Library.

Re-admission after Absence

A person who has been enrolled previously at the University of Newcastle, but not enrolled in 1980, is required to lodge an Application for Admission if further undergraduate enrolment is desired. Applications are available from the Student Administration Office and should preferably be lodged by 1 October 1980.

Attendance Status

Students enrol as full-time or part-time students as may be determined by the Dean of the Faculty.

Change of Address

Students are responsible for notifying the Student Administration Office in writing of any change in their address. A 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 cannot accept 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, re-enrolment and other correspondence will be mailed to students in December and January. Students who will be away during the long vacation from the address given to the University for correspondence should make arrangements to have mail forwarded to them.

Change of Name

Students who change their name should advise the Student Administration Office. Marriage, deed poll or naturalisation etc. certificates should be presented for sighting 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 subjects, changing attendance status (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 form available at the Student Administration Office. Reasons for changes and where appropriate documentary evidence in the form of medical or other appropriate certificates must be submitted.

Withdrawal without Academic Penalty

A student is regarded as having failed in a subject if he enrols in it and does not pass the examination (not sitting for the examinations is regarded as not passing the examinations) unless withdrawal without penalty has been approved.

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

Withdrawal will normally be approved without penalty if the application to withdraw is received by the Secretary before the date shown below.

<table>
<thead>
<tr>
<th>Full Year Subjects</th>
<th>Withdrawal Dates</th>
<th>Second Half-year Subjects</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sixth Monday in</td>
<td>First Half-year</td>
<td>Second Monday in</td>
</tr>
<tr>
<td>Second Term</td>
<td>Subjects</td>
<td>Third Term</td>
</tr>
</tbody>
</table>

Unless the Dean of the Faculty grants permission for withdrawal without penalty a student who withdraws after the date shown above will be deemed to have failed in the subject or subjects.

(vii)
Confirmation of Enrolment

In May each year the University mails to all students a **Confirmation of Enrolment** form which also serves as the application to sit for examinations. This form must be checked carefully, signed and returned by all students (including non-degree students and postgraduate students not taking formal subjects) to confirm that they are actively pursuing subjects for which they are enrolled and that the information on University records is correct and complete.

**Indebtedness**

The Council of the University has directed that students who are indebted to the University because of unpaid charges, library fines or parking fines may not:

- complete enrolment in a following year;
- receive a transcript of academic record; or
- graduate or be awarded a Diploma.

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 apply 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 first term in the first year for which leave of absence is sought. Leave of absence will not be granted for more than three years and will not be granted retrospectively.

Any student who does not enrol for a period of two years and does not obtain leave of absence, must apply for re-admission to the University when he wishes to resume his studies.

**Attendance at Classes**

Students are expected to be regular and punctual in attendance at classes in the course or subjects in which they are enrolled.

Where a student’s 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 excused 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. Where tests or term examinations have been missed, this fact should be noted in the application.

The granting of an exemption from attendance at classes does not carry with it any waiver of the General Services Charge.

**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 seemly fashion. 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 officers, and other persons authorised for the purpose have authority, and it is their duty, to check and report on 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 on the wall opposite the entrance to Lecture Theatre B01 is used for the specific purpose of displaying examination time-tables and other notices about examinations.

---

**III EXAMINATIONS**

Tests and assessments may be held in any subject from time to time. In the assessment of a student’s progress in a university course, consideration will be given to laboratory work, tutorials and assignments and to any term or other tests conducted throughout the year. The results of such assessments and class work may be incorporated with those of formal written examinations.

**Examination Periods**

Formal written examinations take place on prescribed dates within the following periods:

- **End of First Term:** 25 to 29 May, 1981
- **Mid Year:** 6 to 10 July, 1981
- **End of Second Term:** 10 to 14 August, 1981
- **End of Year:** 3 to 20 November, 1981

Timetables showing the time and place at which individual examinations will be held will be posted on the examinations notice board near Lecture Theatre B01.

**Misreading of the timetable 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 timetable 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 advantage of the 10 minutes reading time that is allowed before the examination commences. Formal examinations are usually held in the Great Hall area and (in November) the Auchmuty Sports Centre. The seat allocation list for each examination will be on a noticeboard outside the room.

Students can take into any examination any writing instrument, drawing instrument or calculating instrument. Logarithmic tables may not be taken in: they will be available from the supervisor if needed.

Calculators may be used, if permitted by the examiner in any examination. They must be hand held, battery operated and non-programmable* and students should note that no concession will be granted:

(a) to a student who is prevented from bringing into a room a programmable calculator;
(b) to a student who uses a calculator incorrectly; or
(c) because of battery failure.

**Rules for Formal Examinations**

Regulation 15 of the Examination Regulations sets down the rules for formal examinations, as follows:

(a) candidates shall comply with any instructions given by a supervisor relating to the conduct of the examination;
(b) before the examination begins candidates shall not read the examination paper until granted permission by the supervisor which shall be given ten minutes before the start of the examination;

* A programmable calculator will be permitted provided program cards and devices are not taken into the examination room.
and candidates will be advised by mail of the times and results of the examinations.

The Boards of the Faculties of Architecture, Engineering, and Mathematics may grant a student's work during the year or during the examinations. Any student who considers circumstances such as illness, encloaming a medical certificate (see Regulation 12 (3) of the Examination Regulations, Calendar Volume 1), or personal problems which may have seriously affected a student's enrolment in a subject may be terminated by the Head of Department offering that subject if that student does not maintain a rate of progress considered satisfactory by the Head of the Department. In determining whether a student is failing to maintain satisfactory progress the Head of Department may take into consideration such factors as:

- unsatisfactory attendance at lectures, tutorials, seminars, laboratory classes or field work;
- failure to complete laboratory work;
- failure to complete written work or other assignments; and
- failure to complete field work.

(2) The enrolment of a student in a subject shall not be terminated pursuant to regulation 2 (1) of these Regulations unless he has been given prior written notice of the intention to consider the matter with such particularity and in detail as the Faculty Board may decide; or the student has been given a reasonable opportunity to make representations either in person or in writing or both.

(3) A student whose enrolment in a subject is terminated under regulation 2 (1) of these regulations may appeal to the Faculty Board which shall determine the matter.

(4) A student whose enrolment in a subject is terminated under this Regulation shall be deemed to have failed the subject.

3. (1) A Faculty Board may review the academic performance of a student who does not maintain a rate of progress considered satisfactory by the Faculty Board and may determine:

- that the student be permitted to continue the course;
- that the student be permitted to continue the course subject to such conditions as the Faculty Board may decide;
- that the student be excluded from further enrolment;
- (i) in the course; or
- (ii) in the course and any other course offered in the Faculty; or
- (iii) in the Faculty.

The University has adopted Regulations Governing Unsatisfactory Progress which are set out below.

Students who become liable for action under the Regulations will be informed accordingly by mail after the release of the End of Year examination results and will be informed of the procedure to be followed if they wish to "show cause". Appeals against exclusion must be lodged together with re-enrolment forms by Friday 9 January 1981.

The Faculty's progress requirements are set out elsewhere in this volume.

Regulations Governing Unsatisfactory Progress

1. (1) These Regulations are made in accordance with the powers vested in the Council under By-law 5.1.2.

(2) These Regulations shall apply to all students of the University except those who are candidates for a degree of Master or Doctor.

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

"Admissions Committee" means the Admissions Committee of the Senate constituted under By-law 2.3.5;
"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.

2. (1) A student's enrolment in a subject may be terminated by the Head of the Department offering that subject if that student does not maintain a rate of progress considered satisfactory by the Head of the Department.

In determining whether a student is failing to maintain satisfactory progress the Head of Department may take into consideration such factors as:

- unsatisfactory attendance at lectures, tutorials, seminars, laboratory classes or field work;
- failure to complete laboratory work;
- failure to complete written work or other assignments; and
- failure to complete field work.

(2) The enrolment of a student in a subject shall not be terminated pursuant to regulation 2 (1) of these Regulations unless he has been given prior written notice of the intention to consider the matter with such particularity and in detail as the Faculty Board may decide; or the student has been given a reasonable opportunity to make representations either in person or in writing or both.

(3) A student whose enrolment in a subject is terminated under regulation 2 (1) of these regulations may appeal to the Faculty Board which shall determine the matter.

(4) A student whose enrolment in a subject is terminated under this Regulation shall be deemed to have failed the subject.

3. (1) A Faculty Board may review the academic performance of a student who does not maintain a rate of progress considered satisfactory by the Faculty Board and may determine:

- that the student be permitted to continue the course;
- that the student be permitted to continue the course subject to such conditions as the Faculty Board may decide;
- that the student be excluded from further enrolment;
- (i) in the course; or
- (ii) in the course and any other course offered in the Faculty; or
- (iii) in the Faculty;

Deferred Examinations

The Boards of the Faculties of Architecture, Engineering, and Mathematics may grant deferred examinations. Such examinations, if granted, will be held in January-February and candidates will be advised by mail of the times and results of the examinations.
(d) if the Faculty Board considers its powers to deal with the case are inadequate, that the case be referred to the Admissions Committee together with a recommendation for such action as the Faculty Board considers appropriate.

(2) Before a decision is made under regulation 3 (1) (b) (c) or (d) of these Regulations the student shall be given an opportunity to make representations with respect to the matter, either in person or in writing or both.

(3) A student may appeal against any decision made under regulation 3 (1)(b) or (c) of these Regulations to the Admissions Committee which shall determine the matter.

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 Admissions Committee together with a 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 to the student of the notification of the decision or such further period as the Admissions Committee may accept.

(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.

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

(4) 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.

6. (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) or (c) of these Regulations; or
(b) exclude the student from enrolment in such other subjects, courses, or Faculties as it thinks fit; or
(c) exclude the student from the University.

(2) The Committee shall not make any decision pursuant to regulation 6 (1)(b) or (c) of these Regulations unless it has first given to the student the opportunity to be heard in person by the Committee.

(3) A student may appeal to the Vice-Chancellor against any decision made by the Admissions Committee under this Regulation.

7. Where there is an appeal against any decision of the Admissions Committee made under Regulation 6 of these Regulations, the Vice-Chancellor may refer the matter back to the Admissions Committee with a recommendation or shall arrange for the appeal to be heard by the Council. The Council may confirm the decision of the Admissions Committee or may substitute for it any other decision which the Admissions Committee is empowered to make pursuant to these Regulations.

8. (1) A student who has been excluded from further enrolment in a Faculty may enrol in a course in another Faculty only with the permission of the Faculty Board of that Faculty and on such conditions as it may determine after considering any advice from the Dean of the Faculty from which the student was excluded.

(xii)

(2) A student who has been excluded from further enrolment in any course, Faculty or from the University under these regulations may apply for permission to enrol therein again provided that in no case shall such re-enrolment commence before the expiration of two academic years from the date of the exclusion. A decision on such application shall be made:

(a) by the Faculty Board, where the student has been excluded from a single course or a single Faculty; or
(b) by the Admissions Committee, in any other case.

9. (1) A student whose application to enrol pursuant to Regulation 8(1) or 8(2)(a) of these Regulations is rejected by a Faculty Board may appeal to the Admissions Committee.

(2) A student whose application to enrol pursuant to Regulation 8(2)(b) of these Regulations is rejected by the Admissions Committee may appeal to the Vice-Chancellor.

V CHARGES

Enrolment is completed by lodging with the Cashier the approved Authority to Complete Enrolment form with a remittance to cover all charges due or evidence that a sponsor will meet these charges.

New students are required to pay charges when they attend to enrol.

For re-enrolling students at least 21 days notice is allowed from the date of mailing the Authority to Complete Enrolment form to the date by which charges must be paid. The actual date, which is usually after mid February, will be printed on the form. A later date will be set if approval of the proposed programme has been delayed or if the student has taken Special or Deferred examinations.

<table>
<thead>
<tr>
<th>Charges</th>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. General Services Charge</td>
<td>Full-time students</td>
<td>$120.50</td>
</tr>
<tr>
<td></td>
<td>Per annum</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Part-time students</td>
<td>$115.50</td>
</tr>
<tr>
<td></td>
<td>Per annum</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Plus Students joining Newcastle University Union for the first time</td>
<td>$10</td>
</tr>
<tr>
<td></td>
<td>Union charge</td>
<td>$56</td>
</tr>
<tr>
<td></td>
<td>Per annum</td>
<td></td>
</tr>
</tbody>
</table>

The above charges must be paid in full by the prescribed date.

2. Late Charges

(a) Late Lodgment of Enrolment Form

- Where a continuing student does not lodge application by Friday, 9 January, 1981 | $14 |
- where a candidate for a special or deferred examination in January does not lodge re-enrolment application by Monday, 16 February, 1981 | $14 |

(b) Late Lodgment of Authority to Complete Enrolment Form with Cashier

- Where the Authority to Complete Enrolment Form together with
  (i) General Services Charge payable; or
  (ii) evidence of sponsorship (e.g. scholarship voucher or letter from Sponsor); or

(xiii)
The refund will be based on the date of notification of withdrawal, as follows:

**Scholarship Holders and Sponsored Students**

Students who notify the Student Administration Office of a complete withdrawal from their courses should also lodge a claim form for a refund of charges. A refund cheque will be mailed to the student or, if applicable, to the sponsor.

The refund will be based on the date of notification of withdrawal, as follows:
- Notification on or before Monday, 2 March, 1981: 100%
- Notification on or before Friday, 27 March, 1981: 90%
- Notification on or before Friday, 26 June, 1981: 50%

No refund will be made before 31 March 1981.

**Higher Degree Candidates**

Higher degree candidates are required to pay the General Services charge and Union Entrance charge, if applicable. Where the enrolment is effective from First or Second Term, the General Services charge covers the period from the first day of the term to the Friday immediately preceding the first day of First Term in the following academic year. Where enrolment is on or after the first day of Third Term, the General Services charge paid will cover liability to the end of the long vacation following the next academic year.

**Payment of Charges**

Enrolment is completed by lodging with the Cashier the approved Authority to Complete Enrolment Form together with warrants or other evidence that charges will be paid by sponsors. Sponsors must provide a separate voucher, warrant or letter for each student sponsored.

**Extension of Time to Pay Charges**

Students who have finalised their programme and been issued with their Authority to Complete Enrolment Form but who, due to circumstances beyond their control, are unable to pay the charges due, may apply for an extension of time to pay charges. The Extension of Time form should be completed and presented in person at the Student Administration Office where arrangements will be made for the student to be interviewed.

**Refund of Charges**

The refund will be based on the date of notification of withdrawal, as follows:
- Notification on or before Monday, 2 March, 1981: 100%
- Notification on or before Friday, 27 March, 1981: 90%
- Notification on or before Friday, 26 June, 1981: 50%

No refund will be made before 31 March 1981.

**VI CAMPUS TRAFFIC AND PARKING**

Persons wishing to bring motor vehicles (including motor cycles) on to the campus are required to obtain and display on the vehicle a valid permit to do so. Permits may be obtained from the Attendant (Patrol) Office which is located off the foyer of the Great Hall. Permit holders must comply with the University's Traffic and Parking Regulations including parking in approved parking areas, complying with road signs and not exceeding 35 k.p.h. on the campus.

If the Vice-Principal, after affording the person a period of seven days in which to submit a written statement is satisfied that any person is in breach of Regulations, he may:
- warn the person against committing any further breach; or
- impose a fine; or
- refer the matter to the Vice-Chancellor.

The range of fines which may be imposed by the Vice-Principal in respect of various categories of breach include:
- Parking in areas not set aside for parking ........................................... $4
- Parking in special service areas, e.g. loading bays, fire hydrants, etc. ........................................... $10
- Failing to display a valid permit ........................................... $4
- Driving offences: including speeding and dangerous driving ....... up to $25
- Failing to stop when signalled to do so by an Attendant (Patrol) ....... up to $25
- Refusing to give information to an Attendant (Patrol) .......... up to $25
- Failing to obey the directions of an Attendant (Patrol) ........ up to $25

The Traffic and Parking Regulations are stated in full in the Calendar, Volume I.
7. **Combined Bending and Axial Load**  
Elastic case; computation of maximum and minimum stresses.

8. **Column Behaviour**  
Short columns buckling, Euler critical load, intermediate bracing, effective length; end conditions; critical stress, eccentric loading.

9. **Torsion**  
Shear flow, shear centre, solid circular section, hollow sections, open sections.

**Unit Requirements**
Weekly tutorial and home assignments, limited amount of laboratory work and submission of laboratory report on group basis, two term examinations and final examination.

**Assessment and Examination**

<table>
<thead>
<tr>
<th>Examination</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>First term examination</td>
<td>20%</td>
</tr>
<tr>
<td>Second term examination</td>
<td>20%</td>
</tr>
<tr>
<td>Final examination</td>
<td>40%</td>
</tr>
<tr>
<td>Tutorial and home assignments</td>
<td>20%</td>
</tr>
</tbody>
</table>

Each assignment carries equal value but each laboratory report carries weight equal to five assignments.

**Text**
To be advised

**Reference**
Timoshenko, S. *Strength of Materials* Part I (Van Nostrand)

(ii) **212822 CONSTRUCTION**

**Hours**
A total of 2½ hours per week including lectures, studio work and excursions.

**Content**
Following the precept that design is indivisible and that the subject and its units, the technologies, the unit construction is considered as an area of study in collaboration with the projects required to be accomplished and integrated with the synthesis subject of Group II.

The constructional studies are concerned with the basic technology of load bearing wall construction up to five stories in height.

The student should become acquainted with technical literature, constructional detail, methods appropriate to the course content. The series of lectures includes consideration of:

**Foundations**
Soils,  
Safe bearing values,  
Cut and fill,  
Larger projects with mixed foundations,  
Site, including sampling and testing methods of soil strata,  
Excavation and earth moving,  
Requirements of local Government Building Ordinance No. 70.

**Footings**
Use and application of all types of footings for various structural systems.
Basements and Cellars
- Retaining walls,
- Sub soil drainage,
- Waterproofing,
- Cantilever slabs,
- Hydrostatic pressure,
- Methods of de-watering.

Masonry Walls
- Load bearing construction methods,
- Jointing of dissimilar materials,
- Wall thicknesses required by Ordinance 70,
- Expansion joints,
- Applications of damp proof courses and flashings,
- Wall facings in brick, stone, masonry, veneers, plastering,
- Ceramic tiles,
- Terracotta,
- Applied finishes,
- Floors,
- Concrete floors on fill and suspended,
- Formwork for concrete slabs,
- Beams and columns,
- Materials used for supporting formworks and stripping methods,
- Upper timber floor constructions,
- Floor finishes,
- Granolithic terrazzo sheet and tile materials.

Roofs
- Truss forms and their construction in timber and steel,
- Jointings and fastenings,
- Ventilation and glazing,
- Sheet roof coverings,
- Box gutters,
- Parapets and verges.

Unit Requirements
The student will be expected to progressively read and carry out a literature research for each of the lectures and to prepare a report, including sketches, on each of the six major subsections of the unit subject unit and to prepare fully communicative detailed drawings for each subsection.

During the second or third term, depending on the synthesis project working drawings and give detail sheets of the students submission in the C subject is required. The prepared folio of working drawings and details is to be submitted with a report of 3,000 words, typed, fully describing and commenting on the constructional methods used.

Attention at lectures and studio periods for discussions with lecturers is an essential co-requisite as will be seen from the method of assessment and examination.

Assessment and Examination
All assignments and submissions will be assessed and marked by the lecturer who will award marks in percentages for:
(a) Each of the six assignments.
(b) Working drawings and detail assignment which will have a factor of seven.

(c) Each of the two term tests set.
(i) The total of the marks so awarded in a, b, and c, will be directly averaged to determine a year's mark which shall form 60% of the final mark in the subject unit.
(ii) The final end of year examination percentage mark will form 40% of the final mark in the subject unit.

By adding the resultant marks of (i) and (ii) so will be determined the final mark and grade in the subject unit.

Texts and References
To be advised.

(iii) 212823 ENVIRONMENTAL TECHNOLOGY
Content Environmental Technology consists of the following sub-units:
(a) 212824 Building Science
(b) 212825 Building Services

(a) 212824 BUILDING SCIENCE
Hours Approx. 1.5 hours of formal class commitment per week plus not less than 3 hours per week private supporting study.

Content Lectures, seminars, laboratory work and field survey studies in the assessment of the thermal environment, natural ventilation and solar radiation control.
There will be emphasis placed upon fenestration design that integrates design for the internal thermal environment, natural ventilation or air-conditioning, and solar radiation control with the structure and fabric of the external walls of a building. The aim will be that the student no longer thinks in terms of a sun screening device but rather in terms of fenestration design and building envelope design.
A lecture series will be offered on detailed fenestration design of modern buildings in cities throughout the world.

As a vehicle to gaining an insight into basic rationale in design for climate, students will research and present in seminar form studies of indigenous architecture in a variety of climatic zones and cultures.

Sub-Unit Requirements
(a) Students are required to attend all lectures, laboratory sessions and seminars and to submit all assignments.
(b) The student should determine by discussion with the lecturer, the appropriate method of communicating submissions.
Assignments will include analytical numerate calculations, subjective field surveys, three dimensional analysis or orthographics and scale model analysis and design.
Scale model analysis will be carried out for solar radiation control and design for natural ventilation. The student is advised to establish a store of model materials including cardboard, coloured papers, glue, masking tape, balsa wood and perspex as model work will be carried out not only in this subject but also in a number of other subjects.

Note: Students are advised to orient their behaviour to working on models in the architecture building where advice and guidance can be obtained during tutorial sessions. It is not possible to effectively
advise a student on the appropriateness of his design if the student insists that he works on his model at home and delivers it as a “fait accompli” on the submission date.

Assessment and Examination
Students' grading in the subject will be based upon 60% progressive assessment for assignments and seminars presented throughout the year; and 40% for an end of year examination. Progressive assessment has been accepted as fundamental to the method of presenting this subject and students must make submissions by the due date.

Texts
Giovoni, B.  Man. Climate and Architecture (Elsevier 1969)
Commonwealth Experimental Building Station, Sydney.
  Technical Studies:
  No. 24 Climate and House Design
  No. 36 Selected Australian Climate
  Data for use in Building Design
  Bulletins:
  No. 3 Climate and House Design
  No. 6 Designing Houses for Australian Climate
  Notes on the Science of Building:
  No. 1 Design for Climate — Hot, Arid & Humid
  No. 21 Design for Climate — Temperate Climate
  No. 32 Design for Climate — Cold Winter Climate.

References
Bedford, T.  Basic Principles of Ventilation and Heating (H. K. Lewis 1948)

Students will be issued with a comprehensive bibliography on commencement of study in this sub-unit.

(b) 212825 BUILDING SERVICES

Hours  1 hour per week

Content  The sub-unit provides a detailed investigation of selected services from the point of view of the Architect's responsibility.

The following areas will be dealt with:

House Drainage in sewered areas
Materials used, correct use of fittings, house drainage design, house drainage principles, inspection, testing.

Drainage in unsewered areas
Disposal of liquid wastes in unsewered areas.

Sanitary Plumbing
Materials used, stock design in relation to the type of building and positioning of fixtures. Positioning of fixtures to simplify and reduce sanitary plumbing costs. Flushing systems.

Water supply in reticulated areas
Primary formalities for supply, service from main to meter, materials, sizes. Position of service in relation to water main and building. Service pipes from meter to fixtures, laid underground, above ground, concealed in the building. Water supply to high rise buildings, pumping, storage, pressure vessel storage.

Hot water supply
Central heating and distribution is not discussed. The following question is posed: The Architect is commissioned to design (a) a home, (b) block of home units, (c) block of residential flats, i.e., Bachelor flat, one bed room unit, family unit, etc. The available systems are discussed (not brands) merits and demerits, the hot water needs according to number of people and their occupations, running costs, the discussion being the basis on which the Architect will advise his client regarding the hot water system to be installed.

Gas Services
The basis of design of the service and formula (recorded only in notes) for pipe sizing. Position of gas services on or within the building and effect on building appearance.

The final 1/3 of the year involves the detailed consideration of the following:

1. Security and Protection equipment
   a) Lighting services
   b) Fire Fighting hydrants and services.
2. Waste Processing
   Collection, disposal, utilisation, maintenance and cleaning equipment, stand by plant.
3. Co-ordination of services
   Planning, By-Laws, Sub-contracts for engineering services.

Sub-Unit Requirements
Assignments are set which involve the submission of research reports, diagrams, sketches, etc. of services under investigation. Students are expected to complement the lecture/tutorial/demonstration course by personal investigation of and consequent reporting on selected examples of service installation.

Assessment and Examination
The results of set projects are used to produce a progressively assessed result for the sub-unit. No formal examination is offered. The result produced is averaged with that for lighting/acoustics sub-unit to form 1/3 of the total result for Architecture IIB along with structures and construction.

Texts and References
To be advised.

212840 Architecture IIC

Prerequisite  Architecture IC
Corequisites  Architecture IIA or IIB

Further details of Architecture IIC may be obtained from the Department of Architecture.
Prerequisite: Architecture IIA

Hours: See individual unit requirements

Examination: See individual unit requirements

Architecture IIA consists of the following units:
(i) 213801 Visual Studies
(ii) 213802 Data Processing
(iii) 213801 Man Environment Studies

(i) 213801 VISUAL STUDIES

Hours: 1½ hours per week

Content:
Projects will include:
   Term 1
      A. Photography
   Term 2
      B. Building Detail Project
      C. Life Drawing
      D. Man/Space Projects
   Term 3
      E. Visual Aspects of Architecture
      F. Light pattern description
      G. Light/Kinetics

Unit Requirements:
(a) Weekly Studio and/or Field Sessions will be held.
(b) Submissions:
The work carried out in the various projects will be submitted as required.

Assessment and Examination:
Each Project will have a percentage value as follows:
   A — 15%
   B — 50%
   C — 12½%
   D — 10%
   E — 10%
   F — 12½%

The marks awarded will be used as the basis to determine the Final Mark and Grade for the Unit — however, the development of a student may also be taken into account, and consequently a student may be requested to resubmit all or part of the year's work for review at the end of Term 3.

References:

(ii) 213802 DATA PROCESSING

Content: Data Processing consists of the following sub-unit:
(a) 213803 Statistics

(a) 213803 STATISTICS

Hours: 1 hour per week

Content:
1. Sampling Theory
   Sampling Distributions, Sampling Distributions of the Mean, Sampling Distribution of the Differences of the Mean, Student's t Distribution, Chi-square Distribution, F Distribution.
2. Estimation Theory
3. Tests of Hypothesis
   Hypotheses about the State of the World, Types I & II Errors, One-tailed and Two-tailed Tests, Testing Concerning Means and Variances, Goodness of Fit Test, Test for Independence, Sign & Tests.
4. Regression and Correlation
   Linear Regression, Estimation of Parameters Prediction, Test for Linearity of Regression, Correlation.
5. Computer Applications
   Use of standard packages,

Sub-Unit Requirements:
It is a one-term sub-unit of lectures and tutorials.

Assessment:
Class Assignments 50%
End-of-Term Examination 50%

Text: To be advised

References:
   b) Neter, J. & others Fundamental Statistics for Business and Economics (Allyn & Bacon)
   c) Sherlock, A. J. An Introduction to Probability and Statistics (Edward Arnold)
   d) Clark, T. C. & Schkade, L. L. Statistical Methods for Business Decisions (South-Western)

(iii) 213804 MAN ENVIRONMENT STUDIES

Content:
Man Environment Studies consists of the following sub-units:
(a) 213805 Social Sciences
(b) 213806 History of Architecture

(a) 213805 SOCIAL SCIENCES

Hours: 1 hour per week

Content:
This subject extends and complements the Social Sciences course of the previous year by studying the effects of the built environment on individuals and communities. Architectural psychology examines questions of colour, space and pace while sociological problems of group dynamics illustrate how far Architecture goes beyond the disciplines of art, building...
The course is modified as new ideas derived from competitions, visiting lecturers or conferences arise. The papers throughout the year reinforce the direction of the lectures, although students are free at any time to select their own topic as interest or occasion demands so long as their choice is directly applicable to architecture. The courses aim to strengthen the students' independence of thought, to trust their intuitive appreciation of the built environment and to encourage the logical formulation of positions they might take. The term papers should be seen as introductory exercises to the architectural research elective offered in the second degree course.

The aim of both streams of Social Sciences is to unite the immaterial and physical aspects of architecture and to emphasise the primacy of human over technological values, without denying either. However, the impulses of the whole man, his search for the divine, his need of community, personal identity and respect, physical well-being and shelter are inseparable from the profession of architecture.

**Assessment and Examination**

Term papers and seminar.

**References**

Hall, E. *The Hidden Dimension* (London 1969)
Lynch, K. *The Image of the City* (MIT 1960)

**213806 HISTORY OF ARCHITECTURE**

**Hours**

<table>
<thead>
<tr>
<th>Content</th>
<th>Hours per week</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assessment</td>
<td>1 hour per week</td>
</tr>
<tr>
<td>Hours</td>
<td>2 essay 30% each</td>
</tr>
<tr>
<td>Examination</td>
<td>1/3 hour per week</td>
</tr>
<tr>
<td>Hours</td>
<td>1/3 hour per week</td>
</tr>
<tr>
<td>Content</td>
<td>3-hour examination</td>
</tr>
</tbody>
</table>

**Content**

The course includes a study of predisposing factors from the nineteenth century, namely the evolution of new potentialities and the demand for morality in architecture, leading to the advent of the modern movement in architecture. The modern movement is analysed in terms of the development of theory and its application to design.

**Prescribed Text**

Banham, R. *Theory and Design in the First Machine Age*

**Recommended Reading**

Conrads, U. (ed.) *Programmes and Manifestos on 20th Century architecture*

**References**

Benevolo, L. *History of Modern Architecture*

Collins, P. *Changing Ideals in Modern Architecture 1750-1950*

Giedion, S. *Space Time and Architecture: The Growth of a New Tradition*

Hatje, G. (ed.) *Encyclopaedia of Modern Architecture*

Hitchcock, H. R. *Architecture, Nineteenth and Twentieth Centuries*

**213820 Architecture IIIB**

**Prerequisite**

Architecture IIIB

**Hours**

See individual unit requirements

**Examination**

See individual unit requirements

**Content**

Architecture IIIB consists of the following units:

(i) 213821 Structures
(ii) 213822 Construction
(iii) 213825 Environmental Technology

**213821 STRUCTURES**

**Hours**

1 1/3 hours per week

The following areas will be covered:

**Wind Forces AS1170 Part II**

Basic principles. Design wind velocity and pressure. Pressure coefficients. Slides and example computations.

**Dead and Live Loads AS1170 Part I**


**Construction, Fire and Earthquake Loading**

Combustible content, fire testing and fire ratings, fire protection.

**Qualitative Consideration of the Criteria of Structural Design**

Strength, Deflection, Creep, Torsional Buckling, Lateral Buckling, Instability.

**Qualitative Consideration of the Structural Behaviour of Superstructure**

Isostatic and Determinate, Simple Beams, Trusses, King Post, Warren Girder, Member Joints, Space Frames, Hypostatic and Indeterminate, Fixed End/Continuous Beams, Rigid Frames, Portals, Multi-storey Frames, Vierendeel Girders, R.C. Frame, Flat Plate/Slab.

**Review of SAA Building Codes and Material Specifications**

Loading Codes, Steel Structures, Cold-formed Structures, Welding Code, High Strength Bolting Code, Lift Code, Crane and Hoist Code, Concrete Structures, Prestressed Concrete, Brickwork Code, Concrete Block Masonry Code, Light Timber Framing Code.

**Steel Structures AS1250**

Design of Beams, Trusses, Columns and Struts, Tension Members, Design examples. Design Aids — AISC Safe Load Tables for Structural Steel.
Concrete Structures AS1480

Brickwork Code AS1640

Designation of Architectural Foundations with some Basic Calculations
Classification of Soils, Methods of Testing, Bearing Capacity, Settlement and Deformation, Problems and Failures.

Architectural Foundations
Pad and Strip Footings, Raft Floors, Bearing on Rock, Piling Retaining Walls.

Subject Requirements
Lectures, tutorials, assignments and reports.

Assessment and Examination
The lecturer will award marks in grades for the assignments and term tests and these will be combined with the marks of the final examination to determine the final mark and grade in the subject.

Texts and References
The Building Codes and Standards as set out in the content section above.

(ii) 213822 CONSTRUCTION

Hours
Lectures: 1 hour up to 2 hours per week
Studio: 1 hour up to 2 hours per week

Assessment and Examination
Progressive assessment of assignments. Each assignment will have equal value and the final mark will be the average of marks awarded for the assignments set.

Content
Lectures and assignments covering the following aspects of framed construction as applied to high-rise and heavy industrial buildings:
Performance and maintenance, foundations — footings — building failures, framing systems, bracing, connection of members, basements, floors, walls, roofs, cladding, internal elements and finishes, service installations, fire protection, fire resisting construction, special consideration of industrial building types, control joints, sealants, finishes and performance of materials.

Subject Requirements
Assignments, drawing, reports, and three or four organised field trips.

Texts and References
To be advised.

(iii) 213825 ENVIRONMENTAL TECHNOLOGY

Content
Environmental Technology consists of the following sub-units:
(a) 213826 Building Science
(b) 213827 Building Services

(a) 213826 BUILDING SCIENCE

Hours
Approx. 1½ hours per week of formal class commitment plus not less than 3 hours of supporting private study per week.

Content
Lectures, tutorials, seminars, laboratory work and field surveys in the assessment of, and design for, electric lighting, day lighting and architectural acoustics.

Unit Requirements
Lighting:
Most calculation assignments will be carried out under tutorial conditions.
Assignments will include electric illumination design for incandescent and fluorescent installations, daylight illumination and permanent supplementary artificial lighting of interiors. Students will be required to collate for their personal reference a catalogue of luminaires currently available including general purpose, commercial, industrial and special purpose luminaires for auditorium and stage design.
One tenth full size models will be used to design for effective integrated design of daylighting. Solar radiation control and permanent supplementary artificial lighting of interiors — for which purpose the Department of Architecture’s artificial skies and heliodon table will be made available to students at any time that the Architecture building is generally agreed to be open.
The use of models is aimed at visual integration of design concepts and their objective and subjective analysis which would otherwise be abstract. The use of models is argued as an alternative means of design and perhaps a preferable means. Certainly the models offer experience in the three dimensional revelation of a design concept otherwise denied the student.
Experience gained working with models may lead to confidence in making abstract calculated design proposals.

Acoustics:
A series of lectures will be offered on the basic concepts of hearing, noise control, transmission of airborne and structure borne sound, absorption of acoustic material, transmission loss and control of sound together with acoustic requirements of special purpose auditoria.
Students will engage in field surveys and record ambient sound pressure levels, transmission loss in building and analyse the reverberation time, and diffusion properties of auditoria. Laboratory work will include measurement of the sound absorption of materials, some aspects of psychoacoustics and model analysis.
Students will research selected topics and present their findings in seminars. Students may work in groups or individually.
Students must attend all lecture, tutorial and seminar sessions and complete all assignments issued.

Assessment and Examination
Progressive assessment of assignments, term tests, seminars will constitute a value of 60% of the student’s final assessment. The remaining 40% will be based upon an end of year examination.

Texts
Parkin, P. H. & Humphreys, H. R. Acoustics Noise and Buildings
Lawrence, A. Acoustics in Building
British Lighting Council Interior Lighting Design.
References
Beranek, L. L. Music Acoustics and Architecture
Krudsen, V. O. & Harris, C. N. Acoustical Designing in Architecture
Furrer, W. Room and Building Acoustics and Noise Abatement
Hopkinson, R. G. Architectural Physics: Lighting
Westinghouse Lighting Handbook.
I.E.S. Lighting Review (Journal).

(b) 213827 BUILDING SERVICES

Hours
Approximately ½ hour per week

Content
The subject unit is presented by way of a series of lectures and installation inspections offering the student further detailed design information on particular engineering services incorporated in the building of larger projects.

The building services studies are concerned with the technology and economics and the special skills of the design of complex environmental systems and systematic engineering techniques applicable in the field of design and paralleled to those of Architecture. The students should become acquainted with technical literature and details of engineering services and installations in buildings together with methods appropriate to equipment and distribution for those services included in the course content.

The series of lectures includes:

1. Co-ordination of engineering services
   Conceptual design,
   Economics and performance,
   Cost investment.

2. Air Supply
   Types of systems,
   Zoning,
   Distribution,
   Duct design,
   Plant design,
   Noise transmission.

3. Power Supply
   Electrical installation,
   Distribution of power,
   Sub-stations,
   Heating and refrigeration systems,
   Heat, exchanges,
   Gas installation,
   Appliances and fittings for each of the power services.

4. Water Supply
   Steam installation,
   Water storage,
   Water sprinkler systems,
   Hot and cold water distribution systems.

5. Transportation
   Principles of lift designs,
   Cues,
   Control and planning,
   Escalators,
   Pneumatic tubes,
   Moving footways.

6. Communication Services
   Telephones,
   Television,
   Sound amplifying and monitoring systems.

7. Contractural Co-ordination
   Planning of structure,
   Structural codes,
   By-laws,
   Sub-Contract pertaining to Engineering services.

Sub-Unit Requirements
The student will be expected to carry out a series of lectures and installation inspections offering the student further detailed design information on particular engineering services incorporated in the building of larger projects. The building services studies are concerned with the technology and economics and the special skills of the design of complex environmental systems and systematic engineering techniques applicable in the field of design and paralleled to those of Architecture. The students should become acquainted with technical literature and details of engineering services and installations in buildings together with methods appropriate to equipment and distribution for those services included in the course content.

Attendance at lectures and discussions with lectures is an essential corequisite as a means for the student to gain a professional understanding of engineering service problems in order that he may incorporate such equipment and services as may be required for his submission in the C subject of Group 3.

Assessment and Examination
All assignments and submissions will be assessed and marked by the lecturer who will award marks in percentages for:

(a) Each of the seven assignments.
(b) The engineering services design submission.
(c) For term tests set.

(i) The total of the marks so awarded in a, b and c will be directly averaged to determine a year’s mark which shall form 60% of the final mark in the subject unit.
(ii) The final end of year examination percentage mark will form 40% of the final mark in the subject unit.

By adding the resultant marks of (i) and (ii) so will be determined the final mark and grade in the subject unit.

Texts
Kinzey & Sharp Environmental Technologies in Architecture (Prentice-Hall)
Maver, T. Building Services Design (RIBA Publications)
Burberry, P. Environment and Services (Batsford)
Woods, R. I. Noise Control in Mechanical Services (Sound Alternators Ltd)
Whiteley, R. A Guide to Engineering Services in Buildings for Australian Architects (Univ. N.S.W. Students Union)

Selected journal articles.

213840 Architecture IIIC
Prerequisite Architecture IIC
Corequisites or Prerequisites Architecture IIIA or IIIB
Further details of Architecture IIIC may be obtained from the Department of Architecture.

214700 Architecture IV A
Prerequisites Nil
Hours See individual unit requirements
Examination See individual unit requirements
Content Architecture IV A consists of the following units:
(i) 214701 Professional Practice
(ii) 214704 Management for the Architect
(iii) 214705 Law for the Architect

(i) 214701 PROFESSIONAL PRACTICE
Hours 1 hour per week
Examination To be advised
Content The architecture profession; aims, functions, education, registration, institutes and associations. Architectural services; description, client agreements, fees, briefs, responsibility. Consultants; description, services, agreements, fees, co-ordination. Sequence for a hypothetical project; obtaining commission, correspondence and communications; agreements; briefing; surveys; client and other approvals; project analysis; consultants and cost control; preliminary sketches and estimates; client meetings; minutes; final sketch plans and estimates; preliminary working drawings and schedules; tender documents and procedures; contract documents and formalities; bills of quantities; specifications; consultants’ documents; contract administration; clerk of works, inspection, reports, instructions; site meetings and minutes; certificates; checks re bonds, insurances, times, etc.; variations; trade detail; P.C. items; provisional sums and nominated sub-contracts; practical and final completion certificates; maintenance and defects liability period; maintenance manuals and work as executed drawings; final accounts. Competitions. Communication; verbal and written expression, letters, reports and specifications. Social patterns; human relationships and judgment, professional ethics, clients professionals, builders, sub-contractors, public and private works, building finance.

(ii) 214704 MANAGEMENT FOR THE ARCHITECT
Hours 1 hour per week
Assessment and Examination Grades will be determined after the assessment of two of the following examination papers:
Term 1 2 hour paper
Term 2 2 hour paper
Term 3 3 hour paper
Candidates who sit the Term 3 paper will be required to answer questions from Term 3 topics and the topics from one other term.
Content Theories and research results relevant to problems of administration from the behavioural sciences viewpoint. Topics include behavioural models, values and attitudes, learning, perception, motivation, creativity, problem-solving, communications, group dynamics and leadership. These are treated in relation to the classical managerial functions, and the management of specialised functional areas, such as personnel, marketing, production and finance.

Texts
Leavitt, H. J. & Pondy, L. R. Readings in Managerial Psychology (Chicago University Press)
Luthans, F. Organisational Behaviour (McGraw-Hill)

(iii) 214705 LAW FOR THE ARCHITECT
Hours 2 hours per week over half the academic year
Examination To be advised
Content Nature and source of law (including case law and the doctrine of precedent, Commonwealth and State court systems and statute law and statutory interpretation; derivation of the Australian legal system and the Australian federation; “the adversary system” (including lawyers, litigation, procedure and evidence and the “expert” witness); classifications and areas of law; aspects of administrative law relating to the regulation of practising professions; aspects of contract law (e.g. interpretation of express terms and the implication of terms); aspects of the law of tort, viz. the development of liability for professional negligence.

Texts
Shetin, B. J. L. & An Introduction to Business Law 3rd edn (Law Book Co. 1977)
Chisholm, R. & Nettnejm, G. Understanding Law (Butterworths 1974)
Notes supplied by Department of Legal Studies.

References
Vermeesch, R. B. Business Law of Australia 3rd edn (Butterworths) & Lindgren, K. E.
214800 Architecture IVB

Prerequisites
Nil

Hours
See individual unit requirements

Examination
See individual unit requirements

Content
Architecture IVB consists of the following units:
(i) 214801 Construction
(ii) 214802 Specification
(iii) 214803 Estimating

(i) 214801 CONSTRUCTION
Hours
1½ hours per week
Assessment and Examination
First Term Assignment 15%
Second Term Assignment 20%
Attendances 15%
Final Examination 50%

Content
(i) Multi-storey Buildings
(ii) Floor Systems
(iii) Prestressed Concrete Structures
Introduction, materials; prestressing systems, end anchorages; loss of prestress; friction; analysis of sections for flexure, shapes of prestressed concrete sections, partial prestress and non prestressed reinforcements, continuous beams, slabs, design examples, case studies.
(iv) Shell Structures

References
A list of references is available from the Department of Architecture.

(ii) 214802 SPECIFICATIONS
Hours
To be advised
Assessment and Examination
First Term Assignment 15%
Second Term Assignment 20%
Attendances 15%
Final Examination 50%

Content
(a) History of Specifications and Early Forms of Contract Administration.
(b) Introduction to Specification Writing and Evolution and Purposes of the Document.
(c) Tender Documents.
(d) Contract Documents and Legal Significance.
(e) Modes and Methods of Specification Writing.
(f) Sources of Information and Methods of Collating.
(g) Format and Layout. Terms and Discussion of Various Units.
(h) Study of Formal Guide Specification and its manipulation and adaption to various forms of Contract.

Text
Marsh, D. F. Specification Writing (Hill of Content)

(iii) 214803 ESTIMATING
Hours
To be advised
Assessment and Examination
First term examination 25%
Second term examination 25%
Third term examination 25%
Library work and report writing and drawings 25%
Each report and drawing carries equal value.

Content
(a) History of Estimating and Quantity Surveying.
(b) Development of Modern Contract Documents and Quantity Surveying.
(c) Introduction to Preparation of Cost Estimates for Building Works.
(d) Sources of Availability of Information and Pricing Information.
(e) Methods of Estimating.
(f) Study of the Unit “Rate” System for Compilation of Estimates.
(g) Bills of Quantities. Types utilised and modes of preparation and use in the Industry.
(h) Elemental Cost Analysis Systems and Introduction to Cost Planning Processes.
(i) Legal Significance of Estimates; Valuations and Appraisals.
(j) Study of Rise and Fall Procedures.

Texts
Nil

214900 Architecture IVC

Prerequisites
Nil

Corequisites
Architecture IVA or IVB

Further details of Architecture IVC may be obtained from the Department of Architecture.
215500 Architecture VA

Prerequisite
Architecture IVA

Hours
See individual unit requirements

Examination
See individual unit requirements

Content
Architecture VA comprises the following units:
(i) 215501 Professional Practice
(ii) 215502 Management for the Architect
(iii) 215503 Law for the Architect

(i) 215501 PROFESSIONAL PRACTICE

Hours
1 hour per week

Examination
To be advised

Content

Text
To be advised.

(ii) 215502 MANAGEMENT FOR THE ARCHITECT

Hours
2 hours per week

Examination
To be advised

Content
Management for the design and construction of buildings; conventional systems, management consultants, construction management, project management. Framework for the management of any project; concepts and principles, definitions development and implementation. Project control; concepts and techniques structure and life cycle. Network analysis scheduling and control; CPA/CPM, PERT, Precedence Networks. System methodology; theory models for definition, planning scheduling and control phases. Conventional and fast-track systems. Case studies. Interpersonal dynamics; communication, leadership and conflict in project team organisation. Force field analyses; recognition of personal ego states and definition of transactional games. Management games and case study exercises. Seminars with practicing professionals, consultants, builders and other members of the building industry.

Text
To be advised.

(iii) 215503 LAW FOR THE ARCHITECT

Hours
2 hours per week over half the academic year

Examination
To be advised

Content
Commercial arbitration and the Arbitration Act 1902; Parts XI-XII of the Local Government Act 1919 (NSW) and the general nature and structure of town-planning schemes in N.S.W.; a detailed study of the standard forms of building contract in use in N.S.W.; aspects of the law relating to copyright in architects’ drawings and plans; the Architects Act 1921 (NSW); the Builders’ Licensing Act 1973 (NSW).

References

To be advised.

215520 Architecture VB

Prerequisites
Architecture IVB

Hours
See individual unit requirements

Examination
See individual unit requirements

Content
Architecture VB consists of the following units:
(i) 215521 Construction
(ii) 215522 Specifications
(iii) 215523 Estimating

(i) 215521 CONSTRUCTION

Hours
2 hours per week

Examination
To be advised

Content
First Phase: To develop a design proposal to a stage where structural and service problems have been satisfactorily solved and the solutions presented in a drafted and specified form. Second Phase: To integrate the constructional structural and services into the design process and illustrate by drafted and written means the solutions in respect of a particular project.

References
As required for each individual project.

(ii) 215522 SPECIFICATIONS

Hours
1 hour per week

Examination
To be advised

Content
Detailed dissection and analysis of guide specifications for a range of building types from simple to complex construction. Review of preliminaries, all trade sections, services specifications, specification for nominated sub-contractors and specialist works. Case studies and exercises in specification analysis, writing and production. Performance specifications, dimensional co-ordination, computer techniques, word processing and production.

Texts and References
To be advised.

(iii) 215523 ESTIMATING

Hours
1 hour per week

Examination
To be advised

Content
Detailed dissection and analysis of construction estimating. Preliminaries and all trade sections are reviewed. Contractors and nominated sub-contractors
tenders and quotations are analysed, assessed and reported. Estimating exercises and case studies. Building construction economics, cost planning and cost control.

Texts and References
To be advised.

215540 Architecture VC

Prerequisites
Architecture IVC

Corequisites
Architecture VA or VB

Further details of Architecture VC may be obtained from the Department of Architecture.

ELECTIVES OFFERED BY THE DEPARTMENT OF ARCHITECTURE

216005 Architectural Research

Hours
4 hours per week

Prerequisite
Bachelor of Science (Architecture)

Assessment and Examination
Projects will be assessed by staff supervisors.

Content
This Elective subject is offered to students enrolled in the Bachelor of Architecture degree course to afford the opportunity to those who wish to pursue in depth a course of study and research into an aspect of architecture of particular interest to them.

Subject Requirements
Students proposing to enrol in this subject are required to propose a research project under the supervision of an appropriately qualified member of staff of the Department of Architecture. Subject to the approval in principle of the Head of Department of the proposed programme, the student will work under the direction of the supervisor and carry out such work and present such reports and other submissions as may be directed by the supervisor. The student may be required to give seminars on the selected topic, and attend occasional meetings so that the problems and experiences of field, laboratory or library research may be shared.

Guidance is given on the methods of research, thesis writing, and the preparation of manuscripts. Regular submission of work and attendance to research throughout the year is encouraged so as to forestall last minute rushes that are largely impossible in this elective which imposes rather different demands than those experienced in architectural design and graphic presentation.

Texts and References
Specific Research Topics: These will relate to the approved subject.

Research generally:
Lindsay, H. *So you Want to Be a Writer* (Sydney 1977)
Berry, R. *How to Write a Research Paper* (Oxford 1966)

NOTE: Architectural Research is only available as Elective IV or V of the B.Arch. course.
Students are also reminded that one copy of their research document will be required for the departmental library.
Standard layout and format sheets are available.

216013 Fine Arts

Hours
4 hours per week

Prerequisite
Nil

Content
An overview of the development of painting and sculpture in Western art to the end of the 19th Century.

General consideration is given to the following period:
1. Prehistoric
2. Ancient Near East, Egyptian, Aegean, Greek, Etruscan, Roman
3. Middle Ages Early Christian and Byzantine, Carolingian and Ottonian, Romanesque, Gothic and Late Gothic
4. Renaissance Early Renaissance, 15th Cent. in Italy, 15th Cent. in Northern Europe, High Renaissance, Mannerism, Late Renaissance
5. 17th Century Italy, France, Flanders, Holland, Spain
6. 18th Century Continent, England
7. 19th Century Neo-Classicism and Romanticism, Realism, Impressionism, Post-Impressionism

Particular consideration is given to the use of the human figure and consequently an emphasis is given to certain periods and artists.

Subject Requirements
(a) Weekly Lecture/Tutorials are held.
(b) Attendance on visits to the National Gallery of Victoria and Art Gakkert of New South Wales is required.
(c) Submissions Term 1 - Essay Term 3 - Essay and/or Seminar Presentation.
(d) Visual Test given to each student at the end of Term 3.

Assessment and Examination
Marks as percentages are awarded for each of the following requirements and directly averaged.
(a) Term 1 Essay
(b) Term 3 Essay and/or Seminar Presentation
(c) Visual Test.

The marks awarded are used as the basis to determine the Final Mark and Grade for the Subject — however a student's attendance at Lecture/Tutorials and Gallery visits may also be taken into account.

References
Gombrich, E. H. *The Story of Art* (Phaidon Press Ltd.)
Clark, Kenneth *Civilisation* (BBC and John Murray)
Janson, H. W.  
Hartt, F.  
de la Croix, H. & Tansey
Hartt, F.  
Bazin, G.  
Levey, M.  
Daniel, Howard  
Clark, Kenneth  
Clark, Kenneth

**216014 Movements in Contemporary Architecture**

**Hours**  
3½ hours per week, seminar and research work. There will be a number of one day excursions through the year.

**Prerequisite**  
Architecture IIA — History of Architecture sub-unit.

**Assessment and Examination**  
The three seminar papers will have a value of 10% each of the final assessment, and the research report, the remaining 70%. Assessment of student papers will be carried out by the lecturer and the student group. Assessment will be progressive, there being no end of the year examination.

**Content**  
The aim of this course is to give students an opportunity to familiarise themselves with the current philosophical issues in contemporary architecture and to enable him to investigate some selected movement, group, or aspect to which he is particularly drawn.

There will be no formal lectures, rather a programme of seminars will be planned which will allow each student to present his findings on a selected topic and to discuss this with his fellow students.

Topics for discussion and research may include:

**Subject Requirements**  
The course will consist of a series of seminars and research assignments. Each student will be required to prepare three papers and present them to the class group. In addition, there will be a single major research assignment.

---

Jencks, C.  
Jencks, C.  
Venturi, R.

**Texts and References**


The Language of Post-Modern Architecture (1977)

Architecture 2000 (Studio Visits 1977)

Complexity and Contradiction in Architecture (Museum of Modern Art 1966)

216012 Urban Design A

**Hours**  
4 hours per week

**Prerequisite**  
Nil

**Assessment and Examination**  
Projects will be assessed by the student and lecturer. Both will propose a grade for the year's work, though the lecturer will be responsible for the final grade.

**Content**  
Topics may include:
Urban history, physical planning, locational factors, social factors, built form studies, communication systems, urban economics, legal and political studies, urban design projects.

**Subject Requirements**  
The student will initiate his or her own projects in co-operation with the lecturer, who will act as a resource and facilitator.

**Texts and References**

To relate to projects

216003 Urban Design B

**Hours**  
4 hours per week

**Prerequisite**  
Urban Design A

**Assessment and Examination**  
As for Urban Design A

**Content**  
This subject carries on the studies of Urban Design A.

**Subject Requirements**  
As for Urban Design A.

**Texts and References**

To relate to projects.
(iii) 211705 MAN ENVIRONMENT STUDIES

(a) 211706 HUMAN FACTORS ENGINEERING

Term 1  Anthropometrics — the measure of man: consideration for the accommodation of persons of various stature as opposed to designing for an ‘average person’.

Term 2  Preferred ergonomic design of: door handles, handrails, steps, taps, toilet pedestals, baths, sinks, stoves, cupboards, dining chairs and tables, office furniture, theatre seating, drafting furniture or of any item used by man in buildings which an architect might be required to take responsibility for selection or design.

Term 3  Before designing an item first assess the suitability of existing items. A thorough study of existing items might reveal a preferred ergonomically designed item.

211800 Architecture 1B

(ii) 211802 CONSTRUCTION

1. Can the project be erected with materials, methods and labour available?
2. Is the system efficient and economical?
3. Does the system make use of efficient and rational technology?
4. Have alternative systems been considered?
5. Is the construction system an integral part of the project?
6. Has the construction been considered since the conception of the project? Has it been “tacked on” later with enforced compromises in the project?
7. Can the project be easily disassembled or altered and extended?
8. Is the project waterproof, draughtproof, tolerably flexible, stable?
9. Can the structure and components accommodate movement, deflection, thermal and moisture movement?
10. Is the system acceptable to local authorities?

(iii) 211803 ENVIRONMENTAL TECHNOLOGY

(a) 211804 PROPERTIES OF MATERIALS

1. Are materials used rationally?
2. Are materials selected appropriate for the particular location?
3. Is each material used an integral part of the project?
4. Have the materials used been considered since the conception of the project?
5. Is the material(s) visually acceptable?
6. Have alternative materials been investigated?
7. Cost efficiency — resource/energy “index”?
8. What is the expected or anticipated life of the project?
9. Are materials permanent, compatible?
10. What short/long term problems are expected from the selection of materials?
11. How difficult is maintenance? Is it necessary? How costly? Will components require replacing? Do all materials have a similar expected life?
12. Is the material usage acceptable to local authorities?
13. Is there any risk to human comfort? — Heating, freezing, oxidation, toxic solutions, soiling, abrasion, odour, etc.

(b) 211805 BUILDING SERVICES

1. Co-ordination between service installations.
2. Integration of services into proposal.
3. Have services been considered since conception of project?
4. Access to services for alterations, additions or maintenance.
5. Compliance with the requirements of local authorities.
6. Selection of suitable materials for the project.
7. Selection of suitable fittings for the project.
8. Does each service installation provide optimum human comfort conditions? These need to be defined — noise, temperature, speed, acceleration, vibration, re-fill time, privacy, safety, etc.
9. Is the service proposal efficient? Can waste products be recycled for use within the proposal or by other services?
10. Is there a services proposal?

212820 Architecture IIIB

(iii) 212823 ENVIRONMENTAL TECHNOLOGY

(a) 212824 BUILDING SCIENCE

1. Altitude and bearing of the sun.
2. Vertical and horizontal shadow angles from any wall.
3. Design of non-redundant sunscreen including orthographies, development of surfaces and model construction.
5. Calculation of solar heat loads on walls and glazing behind sunscreens.
6. The effect on human thermal comforts of air temperature, relative humidity, radiant temperature, air movement, cooling power of the air as a function of air speed.
7. Effective temperature indices.
8. Natural ventilation.
9. Condensation.
10. Experience in the use of computer programs relevant to sunlight penetration and solar heat loads.
11. Passive and active design for the optimal utilisation of solar energy in building design including solar air conditioning.
12. Orientation of a building, its form and fenestration texture as a function of optimal utilisation of solar light and heat energy.

213820 Architecture IIIB

(iii) 213825 ENVIRONMENTAL TECHNOLOGY

(a) 213826 BUILDING SCIENCE

Lighting

1. Effect of sunscreens for particular orientations upon the quality and quantity of daylight admitted.
2. Glare — direct or by reflection.
3. Discomfort glare, disability glare.
4. Electric lighting to supplement daylighting.
6. Use of models — particularly for daylight design — which integrate the many variables of fenestration design, surface colour, form and texture and interior design.
Acoustics
1. Planning principles in locating noisy and quiet areas.
2. Sound reduction in rooms.
3. Sound transmission loss through walls.
4. Desirable acoustic environments.
5. Form, texture, volume, materials, reverberation time, reflection, sequence of room types: lecture room, drama theatre, cinema, church, opera house, music rehearsal room, broadcasting studio, concert hall.
6. Design for speech intelligibility in over reverberant rooms.
7. Assessment of acoustic environments.

NOTE: Further Checklists will be available from the Department of Architecture office.

<table>
<thead>
<tr>
<th>Computer Number</th>
<th>Subject Name</th>
<th>Computer Number</th>
<th>Names of Components</th>
</tr>
</thead>
<tbody>
<tr>
<td>211700</td>
<td>Architecture IA</td>
<td>211701</td>
<td>Visual Studies</td>
</tr>
<tr>
<td></td>
<td></td>
<td>211702</td>
<td>Data Processing</td>
</tr>
<tr>
<td></td>
<td></td>
<td>211703</td>
<td>Information Handling</td>
</tr>
<tr>
<td></td>
<td></td>
<td>211704</td>
<td>Computing Studies</td>
</tr>
<tr>
<td></td>
<td></td>
<td>211705</td>
<td>Man Environment Studies</td>
</tr>
<tr>
<td></td>
<td></td>
<td>211706</td>
<td>Human Factors Engineering</td>
</tr>
<tr>
<td></td>
<td></td>
<td>211707</td>
<td>History of Architecture</td>
</tr>
<tr>
<td>211800</td>
<td>Architecture IB</td>
<td>211801</td>
<td>Structures</td>
</tr>
<tr>
<td></td>
<td></td>
<td>211802</td>
<td>Construction</td>
</tr>
<tr>
<td></td>
<td></td>
<td>211803</td>
<td>Environmental Technology</td>
</tr>
<tr>
<td></td>
<td></td>
<td>211804</td>
<td>Properties of Materials</td>
</tr>
<tr>
<td></td>
<td></td>
<td>211805</td>
<td>Building Services</td>
</tr>
<tr>
<td>211900</td>
<td>Architecture IC</td>
<td>211900 Elective I</td>
<td>Elective component(s)</td>
</tr>
<tr>
<td>219100</td>
<td>Elective I</td>
<td></td>
<td></td>
</tr>
<tr>
<td>212800</td>
<td>Architecture IIA</td>
<td>212801</td>
<td>Visual Studies</td>
</tr>
<tr>
<td></td>
<td></td>
<td>212802</td>
<td>Data Processing</td>
</tr>
<tr>
<td></td>
<td></td>
<td>212803</td>
<td>Statistics</td>
</tr>
<tr>
<td></td>
<td></td>
<td>212804</td>
<td>Computing Studies</td>
</tr>
<tr>
<td></td>
<td></td>
<td>212805</td>
<td>Man Environment Studies</td>
</tr>
<tr>
<td></td>
<td></td>
<td>212806</td>
<td>Social Sciences</td>
</tr>
<tr>
<td></td>
<td></td>
<td>212807</td>
<td>History of Architecture</td>
</tr>
<tr>
<td>212820</td>
<td>Architecture IIB</td>
<td>212821</td>
<td>Structures</td>
</tr>
<tr>
<td></td>
<td></td>
<td>212822</td>
<td>Construction</td>
</tr>
<tr>
<td></td>
<td></td>
<td>212823</td>
<td>Environmental Technology</td>
</tr>
<tr>
<td></td>
<td></td>
<td>212824</td>
<td>Building Science</td>
</tr>
<tr>
<td></td>
<td></td>
<td>212825</td>
<td>Building Services</td>
</tr>
<tr>
<td>212840</td>
<td>Architecture IIC</td>
<td>212840</td>
<td></td>
</tr>
<tr>
<td>219200</td>
<td>Elective II</td>
<td>219200 Elective II</td>
<td>Elective component(s)</td>
</tr>
<tr>
<td>213800</td>
<td>Architecture IIIA</td>
<td>213801</td>
<td>Visual Studies</td>
</tr>
<tr>
<td></td>
<td></td>
<td>213802</td>
<td>Data Processing</td>
</tr>
<tr>
<td></td>
<td></td>
<td>213803</td>
<td>Statistics</td>
</tr>
<tr>
<td></td>
<td></td>
<td>213804</td>
<td>Man Environment Studies</td>
</tr>
<tr>
<td></td>
<td></td>
<td>213805</td>
<td>Social Sciences</td>
</tr>
<tr>
<td></td>
<td></td>
<td>213806</td>
<td>History of Architecture</td>
</tr>
<tr>
<td>213820</td>
<td>Architecture IIIB</td>
<td>213821</td>
<td>Structures</td>
</tr>
<tr>
<td></td>
<td></td>
<td>213822</td>
<td>Construction</td>
</tr>
<tr>
<td></td>
<td></td>
<td>213823</td>
<td>Construction</td>
</tr>
<tr>
<td></td>
<td></td>
<td>213824</td>
<td>Estimating</td>
</tr>
<tr>
<td></td>
<td></td>
<td>213825</td>
<td>Environmental Technology</td>
</tr>
<tr>
<td></td>
<td></td>
<td>213826</td>
<td>Building Science</td>
</tr>
<tr>
<td></td>
<td></td>
<td>213827</td>
<td>Building Services</td>
</tr>
<tr>
<td>213840</td>
<td>Architecture IIIIC</td>
<td>213840</td>
<td></td>
</tr>
<tr>
<td>219300</td>
<td>Elective III</td>
<td>219300 Elective III</td>
<td>Elective component(s)</td>
</tr>
</tbody>
</table>

Subject Computer Numbers for Architecture Courses

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

B.Sc. (ARCH.)
The subjects selected should be written on the enrolment form in the following manner.

### B.A.R.C.H.

<table>
<thead>
<tr>
<th>Computer Number</th>
<th>Subject Name</th>
<th>Computer Number</th>
<th>Names of Components</th>
</tr>
</thead>
<tbody>
<tr>
<td>214700</td>
<td>Architecture IVA</td>
<td>214701</td>
<td>Professional Practice</td>
</tr>
<tr>
<td></td>
<td></td>
<td>214704</td>
<td>Management for the Architect</td>
</tr>
<tr>
<td></td>
<td></td>
<td>214705</td>
<td>Law for the Architect</td>
</tr>
<tr>
<td>214800</td>
<td>Architecture IVB</td>
<td>214801</td>
<td>Construction</td>
</tr>
<tr>
<td></td>
<td></td>
<td>214802</td>
<td>Specifications</td>
</tr>
<tr>
<td></td>
<td></td>
<td>214803</td>
<td>Estimating</td>
</tr>
<tr>
<td>214900</td>
<td>Architecture IVC</td>
<td>219400</td>
<td>Elective IV</td>
</tr>
<tr>
<td>219400</td>
<td>Elective IV</td>
<td></td>
<td>Elective component(s)</td>
</tr>
<tr>
<td>215500</td>
<td>Architecture VA</td>
<td>215501</td>
<td>Professional Practice</td>
</tr>
<tr>
<td></td>
<td></td>
<td>215502</td>
<td>Management for the Architect</td>
</tr>
<tr>
<td></td>
<td></td>
<td>215503</td>
<td>Law for the Architect</td>
</tr>
<tr>
<td>215520</td>
<td>Architecture VB</td>
<td>215521</td>
<td>Construction</td>
</tr>
<tr>
<td></td>
<td></td>
<td>215522</td>
<td>Specifications</td>
</tr>
<tr>
<td></td>
<td></td>
<td>215523</td>
<td>Estimating</td>
</tr>
<tr>
<td>215540</td>
<td>Architecture VC</td>
<td></td>
<td></td>
</tr>
<tr>
<td>219500</td>
<td>Elective V</td>
<td></td>
<td>Elective component(s)</td>
</tr>
</tbody>
</table>

### Electives Offered by the Department of Architecture

<table>
<thead>
<tr>
<th>Computer Number</th>
<th>Elective Subject Name</th>
<th>Computer Number</th>
<th>Elective Component(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>219500</td>
<td>Electives V (for example)</td>
<td>216005</td>
<td>Architectural Research</td>
</tr>
<tr>
<td></td>
<td></td>
<td>216013</td>
<td>Fine Arts</td>
</tr>
<tr>
<td></td>
<td></td>
<td>216014</td>
<td>Movements in Contemporary Architecture</td>
</tr>
<tr>
<td></td>
<td></td>
<td>216012</td>
<td>Urban Design A</td>
</tr>
<tr>
<td></td>
<td></td>
<td>216003</td>
<td>Urban Design B</td>
</tr>
</tbody>
</table>