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

The colour band, Garnet BCC 160, on the cover is the lining colour of the hood of Bachelor of Architecture of this University.

The information in this Handbook is correct as at 1 September 1983.
A. GENERAL INFORMATION

Faculty Staff

Dean
M. P. Carter, BA(Nottingham), PhD(Edinburgh)

Sub-Dean
R. J. Donaldson, BArch, ARIBA

Faculty Secretary
B. J. Kelleher, BE, BCom

Department of Architecture

Professor
(Vacant)

Associate Professor
R. M. Deamer, MArch, ASTC, (Head of Department)

Senior Lecturers
H. G. Appleby, MArch, Dip TCP (Sydney)
H. K. Banerjee, BE(Calcutta), Mtech(Indian Institute of Technology), PhD(Glasgow), MBA(Western Australia)
H. C. Clarke, BArch(New Zealand), FRAIA, ARIBA, ANZIA, AAIM
E. L. Harkness, BArch, MBdgSc(Sydney); MArch, FRAIA
J. R. Rockey, BArch(New South Wales), PhD(Angelicum, Rome), DPhilt(Oxford), FRAIA

Lecturers
R. J. Donaldson, BArch, ARIBA
M. F. Park, BArch(New South Wales), ASTC

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 Pre-requisites for Entry to the Bachelor of Science (Architecture) Degree in 1984
Students admitted to the Faculty of Architecture as candidates for the degree of Bachelor of Science (Architecture) in 1984 will be assumed to have completed at least two units of Mathematics and two units of Physics at the 1983 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 IB, 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.

Sydney C. Morton Prize
This prize is awarded annually to the graduating student who achieves the highest aggregate of marks in the technology subjects or units of the Bachelor of Science (Architecture) and Bachelor of Architecture degree courses, currently comprising the subjects Architecture IB, Architecture IIIB, Architecture IIIIB, Architecture IVB and Architecture VB, provided his work is of sufficient merit.

Neville Clouten Architectural Synthesis Prize
This prize is awarded annually to the student, being enrolled in one of the five Architecture C subjects of the B.Sc.(Architecture) or B.Arch degree courses, who best demonstrates the design process by a project completed during the year. The prize shall be awarded on the recommendation of the Head of the Department of Architecture.

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

Drafting Equipment
At the commencement of the course recommendations for drafting 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 1 1/2 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 REGULATIONS

REGULATIONS GOVERNING BACHELOR DEGREES OFFERED IN THE FACULTY OF ARCHITECTURE

1. General
These Regulations are made in accordance with the powers vested in the Council under By-law 5.2.1 and prescribe the conditions and requirements relating to the degrees of Bachelor of Science (Architecture) and Bachelor of Architecture.

2. Definitions
(1) In these Regulations and the Schedules thereto unless the context or subject matter otherwise indicates or requires:
“course” means the total requirements as prescribed in the Schedule to qualify a candidate for the award of the degree;
“Dean” means the Dean of the Faculty of Architecture;
“department” means the department or departments offering a particular subject and includes any other body doing so;
“Faculty Board” means the Faculty Board, Faculty of Architecture;
“Schedule” means the Schedule to these Regulations relevant to the degree in which a person is enrolled or proposing to enrol;
“subject” means any part of the course for which a result may be recorded.

3. Admission and Enrolment
(1) An applicant for admission to candidature shall satisfy the requirements of the Regulations Governing Admission and Enrolment and such other additional requirements as may be specified in the Schedule.
(2) In any year a candidate shall enrol only in those subjects approved by the Dean or his nominee.

4. Standing
(1) The Faculty Board, on the recommendation of the Head of the Department concerned, may grant a candidate standing in specified subjects in recognition of work completed in this University or elsewhere, on such conditions as the Faculty Board may determine.
(2) The standing granted under this Regulation shall not exceed the limit specified in the Schedule.

5. Prerequisites and Corequisites
Except with the approval of the Dean, a candidate may not enrol in a subject unless he or she has passed any subject prescribed as its prerequisite and has already passed or concurrently enrols in or is already enrolled in any subject prescribed as its corequisite.
6. Withdrawal
   (1) A candidate may withdraw from enrolment in a subject or the degree only by informing the Secretary to the University in writing and the withdrawal shall take effect from the date of receipt of such notification.
   (2) A candidate who withdraws from any subject after the relevant date shall be deemed to have failed in that subject unless granted permission by the Dean to withdraw without penalty. The relevant date shall be:
      (a) in the case of any subject offered only in the first half of the academic year, the last Monday of first term;
      (b) in the case of any subject offered only in the second half of the academic year, the fourth Monday of third term;
      (c) in the case of any other subject, the last Monday of second term.

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

8. Grading of Degrees
   (1) The degree shall be conferred as an ordinary degree except that in cases where a candidate's performance in the course has reached a standard determined by the Faculty Board, the degree may be conferred with merit or with honours as provided in the Schedule.
   (2) A degree with honours shall be conferred in one of the following grades:
      (a) Class I;
      (b) Class II.

9. Admission to Degree
   To qualify for admission to the degree a candidate shall satisfy the requirements prescribed in the Schedule.

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

SCHEDULE I — BACHELOR OF SCIENCE (ARCHITECTURE)

1. To qualify for admission to the degree of Bachelor of Science (Architecture) a candidate shall pass all the subjects listed in the Appendix to this Schedule in accordance with the following conditions:
   (a) Except with the permission of the Dean given in exceptional circumstances, a candidate shall not enrol in more than four subjects in any one academic year.
   (b) A candidate shall not enrol in a subject designated as a Part III subject until that candidate has passed all subjects designated as Part I subjects.
   (c) Electives shall be selected from the list of subjects approved for this purpose by the Faculty Board and offered by the Department of Architecture and departments outside the Faculty.

2. A candidate may be granted standing in a maximum of six subjects under the provisions of Regulation 4 of these Regulations.

3. The degree of Bachelor of Science (Architecture) may be conferred with merit.

SCHEDULE 2 — BACHELOR OF ARCHITECTURE

1. To be eligible for admission to candidature an applicant shall:
   (a) have satisfied the requirements for admission to the degree of Bachelor of Science (Architecture) in the University of Newcastle; or
   (b) have satisfied the requirements for admission to a degree in another university or a qualification approved by the Faculty Board as a degree or qualification equivalent to the University's degree of Bachelor of Science (Architecture); or
   (c) in exceptional circumstances hold such academic and professional qualifications as may be approved by the Faculty Board.

2. To qualify for admission to the degree of Bachelor of Architecture a candidate shall pass all the subjects listed in the Appendix to this Schedule in accordance with the following conditions:
   (a) Except with the permission of the Dean given in exceptional circumstances, a candidate shall not enrol in more than four subjects in any one academic year.
   (b) Electives shall be selected from the list of subjects approved for this purpose by the Faculty Board and offered by the Department of Architecture and departments outside the Faculty.

3. A candidate may be granted standing in a maximum of four subjects under the provisions of Regulation 4 of these Regulations.

4. The degree of Bachelor of Architecture may be conferred with honours.

APPENDIX TO SCHEDULE 2

<table>
<thead>
<tr>
<th>Subjects</th>
<th>Prerequisites</th>
<th>Corequisites</th>
</tr>
</thead>
<tbody>
<tr>
<td>Architecture IVA</td>
<td></td>
<td>Architecture IVA and Architecture IVC</td>
</tr>
<tr>
<td>Architecture IVB</td>
<td></td>
<td>Architecture IVB</td>
</tr>
<tr>
<td>Architecture IVC</td>
<td></td>
<td>Architecture IVC</td>
</tr>
</tbody>
</table>

Elective IV
<table>
<thead>
<tr>
<th>Subjects</th>
<th>Prerequisites</th>
<th>Corequisites</th>
</tr>
</thead>
<tbody>
<tr>
<td>Architecture VA</td>
<td></td>
<td>Architecture VA and Architecture VB</td>
</tr>
<tr>
<td>Architecture VB</td>
<td></td>
<td>Architecture VB</td>
</tr>
<tr>
<td>Architecture VC</td>
<td></td>
<td>Architecture VC</td>
</tr>
</tbody>
</table>

Elective V
REGULATIONS GOVERNING THE DEGREE OF MASTER OF ARCHITECTURE

Part I — General

1. (1) These Regulations, including the Schedules thereto, prescribe the conditions and requirements relating to the degrees of Master of Architecture, Master of Arts, Master of Commerce, Master of Education, Master of Educational Studies, Master of Engineering, Master of Engineering Science, Master of Mathematics, Master of Psychology (Clinical), Master of Psychology (Educational) and Master of Science.

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

"Faculty Board" means the Faculty Board of the Faculty responsible for the course in which a person is enrolled or is proposing to enrol;

"programme" means the programme of research and study prescribed in the Schedule;

"Schedule" means the Schedule of these Regulations pertaining to the course in which a person is enrolled or is proposing to enrol; and

"thesis" means any thesis or dissertation submitted by a candidate.

3. (1) To be eligible for admission to candidature an applicant shall:

(a) (i) have satisfied the requirements for admission to a degree of Bachelor in the University of Newcastle as specified in the Schedule;

(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.

The relevant date shall be:

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

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

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

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

(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.

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 microfilm 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 make its decision pursuant to Regulation 11 of these Regulations, a third examiner shall be appointed either by the Faculty Board or otherwise as prescribed in the Schedule.

* At present there is no fee payable.

SCHEDULE I — MASTER OF ARCHITECTURE

1. The Faculty of Architecture shall be responsible for the course leading to the degree of Master of Architecture.
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 a Faculty Progress Review Committee consisting of the Sub-Dean of the Faculty and the Head of the Department of Architecture, which 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
      (ii) in the course and any other course offered in the Faculty; or
      (iii) in the Faculty;
   (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 for the B.Sc.(Arch.) degree or the B.Arch. degree because their content overlaps substantially with core subjects in the degree courses:

- Introductory Quantitative Methods
- Commercial EDP
- Legal Studies I

Students may not enrol in the units CE III Statics and ME III 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:
- Fine Arts A
- Landscape Design
- Urban Design A

Electives II and III may be chosen from:
- Fine Arts A
- Fine Arts B
- Landscape Design
- Urban Design A
- Urban Design B

**B.Arch. Degree Course**

Electives IV and V may be chosen from:
- Advanced Building Science
- Architectural Research
- Fine Arts A
- Fine Arts B
- Landscape Design
- Urban Design A
- Urban Design B

Note: Students are advised that not all subjects listed will necessarily be offered in 1984 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, 1983.

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.
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.

Texts
Essential books which are recommended for purchase.

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.

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

(ii) 211701 VISUAL STUDIES

Hours 5 hours per week

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)
(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. Building Detail Project

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.

Texts and References
There are no texts recommended for this unit. A reading list will be issued to students enrolled in this unit at the beginning of first term.

(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 1½ 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
Dreyfuss, H. Human Factors Engineering 2nd edn (McGraw-Hill 1964)
Chapanis, A. Man-Machine Engineering (Tavistock Publications 1965)
Chapanis, A. Research Techniques in Human Engineering (John Hopkins Press)

(b) 211707 HISTORY OF ARCHITECTURE

Hours
1 hour per week
Assessment
Two essays 30% ea. 60%
One 3-hour examination 40%
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 centring 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. Meaning in Western Architecture
Recommended Reading:
Norberg-Schulz, C. Existence, Space and Architecture

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.

Text

References
Werner Structure (MacMillan 1972)
Rosenthal, H. Structures or Why Things don't fall down (Plenum Press 1978)
(ii) **211802 CONSTRUCTION**

**Hours**
- Lecture: 1 hour per week
- Studio: 2 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

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**
- Lecture: 1 hour per week
- Field Trips: 1 per section as required
- Excursions: These are usually combined with field trips in Construction.

**Content**
The sub-unit investigates the properties of most building materials including:
1) Cement and Concrete
2) Timber
3) Ceramic Materials
4) Concrete products
5) Metals
6) Stone
7) Plastics
8) Glass
9) Protective Coatings and Preservatives.

Particular attention is offered to the
1) Properties
2) Characteristics
3) Hazards
4) Special requirements
5) Grading, measuring
6) Use as a technical element
7) Use as a design element of each of or a group of the materials covered.

Guest lecturers representing various trade bodies are invited to offer special information on their products in the light of future developments in availability, relative cost, efficiency, etc. Various manufacturing processes are visited.

**Sub-Unit Requirements**
Assignments are set at the completion of each stage which involve the submission of research reports, diagrams, sketches of the work covered and include an assignment dealing with a material or combination of materials which explore an “alternative material technology”.

---

**Notes**
- Texts and References to be advised.
- Specialised reports include footing failure in a selected building, several detailed reports on the total progress of a selected building under construction, and 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
The results of section assignments are averaged with the results of term quizzes all of which are assessed and marked 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.

(b) 211805 BUILDING SERVICES

Hours
Lecture 1 hour per week
Field Trips 1 per section as required
Excursions These are usually combined with field trips in Construction.

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

Particular attention is offered to:

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

A general understanding and working knowledge of services is aimed at. 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.

211900 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. IIA consists of the following units:
(i) 212801 Visual Studies
(ii) 212802 Data Processing
(iii) 212805 Man Environment Studies

(i) 212801 VISUAL STUDIES

Hours 4 hours per week

Content
Projects will include:

Term I
A. Field Sketching — Part I
B. Building recording and rendering

Term II
C. Building Detail Project
D. Art Project

Term III
E. Field Sketching — Part II
F. Urbanscape Project

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.

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

A — 15%
B — 15%
C — 30%
D — 20%
E — 10%
F — 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.

Texts and References
There are no texts recommended for this unit. A reading list will be issued to students enrolled in this unit at the beginning of first term.
(ii) **212802 DATA PROCESSING**

**Content**
Data Processing consists of the following sub-units:

(a) **212803 STATISTICS**
**Hours**
Lecture: one and a half hours/week
Tutorials: to be integrated with lecture

**Content**
1. **Introduction**
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**
- 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**
- Approximately 1½ hours 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 PLACEFRAM.

**Assessment and Examination**
- Two 1½ hour examinations together with assignments.

**Text**
- Watters, J. *Fortran Programming* (Heinemann 1972)

(iii) **212805 MAN ENVIRONMENT STUDIES**

**Content**
Man Environment Studies consists of the following sub-units:

(a) **212806 SOCIAL SCIENCES**

**Hours**
1 hour per week

**Content**
Social Sciences sets out to examine how Architecture serves man's spiritual, aesthetic and physical needs. The transmission of value systems through the built environment are illustrated by discussion on the influences of social, political and economic thought on the designer. Studies on the history of technological innovation, human institutions and ideas of social progress will portray how ideals and movements shape society and determine architectural expression. Selected assignments into the social aspects of Architecture aim to assist the student's development and awaken his professional convictions by exercising his ability to refine research material, define social objectives, and understand the complexity of social phenomena.

The Social Sciences courses are being formed into a sociological and philosophical study of Architecture and cover those social and political aspects of life that have shaped the profession, its practitioners and their work. The meaning and purpose of Architecture is central to this debate and hence emphasis has been put on an understanding of the theories of Architecture and historical movements within Architecture. These have been approached from multidisciplinary points of view, such as architectural psychology, urban sociology and social history, and seek to complement the analysis of styles proper to architectural history.

**Assessment and Examination**
- Term papers and seminars.

**Texts and References**
- *Small is Beautiful: A Study of Economics as if People Mattered* (Abacus 1974)

Pacey, A. *People mattered*
(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 purposive 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:**
Frankl, P. *Principles of Architectural History: The Four Phases of Architectural Style, 1420-1900.*

**References:**
Scott, G. *The Architecture of Humanism*
Summerson, J. *The Classical Language of Architecture*
Wittkower, R. *Architectural Principles in the Age of Humanism.*

---

212820 Architecture II

**Prerequisite**
Architecture IIB

**Hours**
See individual unit requirements

**Examination**
See individual unit requirements

**Content**
Arch. IIB consists of the following units:
1. **212821 STRUCTURES**
   - Hours: 1½ hours per week including lectures and tutorials
   - **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.
   - **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.
   - **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.

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

5. **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.

6. **Combined Bending and Axial Load**
   - Elastic case; computation of maximum and minimum stresses.

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

**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**
- First term examination 20%
- Second term examination 20%
- Final examination 40%
- Each assignment carries equal value but each laboratory report carries weight equal to five assignments.

**Texts**
Croxton, P. C. L. *Structures & Materials: A Programmed Approach*  
Martin, L. H. (Bradford 1974)
Mills, G. M. *Structures* (Prentice-Hall 1980)

**Reference**
Timoshenko, S. *Strength of Materials Part I* (Van Nostrand)
Schodeck, D. L. *Structures*  

---

(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:
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.

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.
The University of Newcastle Calendar consists of the following volumes:

Volume 1 — Legislation:
  Part 1 — The University of Newcastle Act,
  Part 2 — By-laws and Regulations,
  Part 3 — Bodies Established by Resolution of Council,
  Part 4 — Scholarships, Prizes and Financial Assistance.

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 1982.

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

Other Publications
Undergraduate Prospectus
Postgraduate Prospectus
An ABC for New Students
University News
Gazette

CONTENTS

I PRINCIPAL DATES 1984

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
Confirmation of Enrolment
Indebtedness
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
Extension of time to pay charges
Refund of Charges
Higher Degree Candidates

VI CAMPUS TRAFFIC & PARKING
### I PRINCIPAL DATES 1984

**January**

1. Sunday  
   New Year's Day
2. Monday  
   Public Holiday
6. Friday  
   Last day for return of Re-Enrolment Forms — Continuing Students
16. Monday  
   Deferred Examinations begin
27. Friday  
   Deferred Examinations end
30. Monday  
   Public Holiday
31. Tuesday  
   Closing date for applications for residence in Edwards Hall

**February**

6. Monday  
   New students attend in person to enrol and pay charges
15. Wednesday  
   Late enrolment session for new students
22. Wednesday  
   First Term begins
27. Monday  
   Good Friday — Easter Recess commences

**April**

20. Friday  
   First Term ends
25. Wednesday  
   Public Holiday — Anzac Day
26. Thursday  
   Lectures resume
30. Monday  
   Last day for withdrawal without academic penalty from first half year subjects
   (See page (vii) for Dean’s discretion)

**May**

4. Friday  
   Examinations begin
21. Monday  
   Examinations end
25. Friday  
   Second Term begins

**June**

11. Monday  
   Public Holiday — Queen's Birthday
15. Friday  
   Last day for return of Confirmation of Enrolment forms
30. Saturday  
   Closing date for Applications for Admission to the Bachelor of Medicine course in 1985

**July**

2. Monday  
   Examinations begin
6. Friday  
   Examinations end

**August**

6. Monday  
   Last day for withdrawal without academic penalty from full year subjects
   (See page (vii) for Dean’s discretion)
10. Friday  
   Second Term ends
13. Monday  
   Examinations begin
17. Friday  
   Examinations end

**September**

3. Monday  
   Third Term begins
24. Monday  
   Last day for withdrawal without academic penalty from second half year subjects
   (See page (vii) for Dean’s discretion)

**October**

1. Monday  
   Third Term ends
   Public Holiday — Eight Hour Day
   Closing date for Applications for Admission 1985
   (Undergraduate courses other than Medicine)

**November**

2. Friday  
   Third Term ends
5. Monday  
   Annual Examinations begin
23. Friday  
   Annual Examinations end

**December**

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

### 1985

**January**

14. Monday,  
   Deferred Examinations begin
25. Friday  
   Deferred Examinations end

**February**

25. Monday  
   First Term begins
II GENERAL INFORMATION

Enrolment of New Students

Persons offered admission are required to attend in person at the Great Hall early in February to enrol and pay charges. Detailed instructions are given in the Offer of 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 1984 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 1983 annual examination results, and forward it to The Secretary, University of Newcastle, N.S.W., 2308.

Enrolment forms from continuing students are due by 6 January 1984 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 who, 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.

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 14 days notice is allowed 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 Borrower Number. This card, with its 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 1983, 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 1983.

Attendance Status

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

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

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

Application to withdraw from a subject should be made on a Variation of Programme form and lodged at the Student Administration Office or mailed to the Secretary. Applications received by the appropriate date listed below will be approved for withdrawal without a failure being recorded against the subject or subjects in question.

Withdrawal Dates

<table>
<thead>
<tr>
<th>Full Year Subjects</th>
<th>First Half-Year Subjects</th>
<th>Second Half-Year Subjects</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monday</td>
<td>Monday</td>
<td>Monday</td>
</tr>
<tr>
<td>6 August 1984</td>
<td>30 April 1984</td>
<td>24 September 1984</td>
</tr>
</tbody>
</table>

Withdrawal after the above dates will normally lead to a failure being recorded against the subject or subjects unless the Dean of the Faculty grants permission for the student to withdraw without a failure being recorded.
If a student believes that a failure should not be recorded because of the circumstances leading to his withdrawal, it is important that full details of these circumstances be provided with the application to withdraw.

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 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.

General Conduct
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 to 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.

End of First Term: 21 to 25 May, 1984
Mid Year: 2 to 6 July, 1984
End of Second Term: 13 to 17 August, 1984
End of Year: 5 to 23 November, 1984

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.

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

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:

<table>
<thead>
<tr>
<th>Period</th>
<th>Dates</th>
<th>Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>End of First Term</td>
<td>21 to 25 May, 1984</td>
<td></td>
</tr>
<tr>
<td>Mid Year</td>
<td>2 to 6 July, 1984</td>
<td></td>
</tr>
<tr>
<td>End of Second Term</td>
<td>13 to 17 August, 1984</td>
<td></td>
</tr>
<tr>
<td>End of Year</td>
<td>5 to 23 November, 1984</td>
<td></td>
</tr>
</tbody>
</table>

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 on the path between the Union and the Library.

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;

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

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.

Defered 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.

Defered 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.

Defered 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.

Defered 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.

Defered 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.

Defered 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.

Defered 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.

Defered 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.

Defered 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.

Defered 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.

Defered 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.

Defered 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.

Defered 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.

Defered 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.

Defered 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.

Defered 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.

Defered 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.

Defered 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.

Defered 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.

Defered 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.

Defered 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.

Defered 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.

Defered 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.

Defered 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 it 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.

(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 5 (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 written evidence that a sponsor will meet all charges.

New students are required to pay all charges when they attend to enrol. For re-enrolling students at least 14 days notice is allowed from the date of mailing the Authority to Complete Enrolment form to the date by which charges must be paid if late charges are to be avoided. The actual date, which will not be before 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.

### Charges

1. **General Services Charge**

   - **Students Proceeding to a Degree or Diploma**
     - Full-time students ........................................ $135 Per annum
     - Part-time students ....................................... $130 Per annum

   - **Plus Students joining Newcastle University Union for the first time.**
     - $10 Per annum

   - **Non-Degree Students**
     - Newcastle University Union charge .......................... $61 Per annum

   The exact amount must be paid in full by the prescribed date.

2. **Late Charges**

   - **Late Lodgement of Enrolment Form**
     - Where a continuing student does not lodge the Enrolment form by Friday, 6 January, 1984 .................. $14
     - Where a candidate for a special or deferred examination in January does not lodge the Enrolment form by Monday, 13 February, 1984 .......................... $14

   - **Late Lodgement 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
Students holding scholarships or receiving other forms of financial assistance must lodge their Authority to Complete Enrolment form with the University Cashier by the Due Date prescribed by the Secretary on the Authority to Complete Enrolment form.

(c) Late Payment of Charges

Where all charges have not been paid by the Due Date

(i) if not more than 14 days overdue $8
(ii) if more than 14 days overdue $14

3. Other Charges

(a) Examination under special supervision $15 per paper
(b) Review of examination results $8 per subject
(c) Statement of matriculation status for non-members of the University $8
(d) Academic statements in excess of six per annum 15c per copy
(e) Replacement of student cards 50c each

Payment of Charges

Enrolment is completed by lodging with the University Cashier the approved Authority to Complete Enrolment Form with a remittance to cover all charges due or written evidence that a sponsor will meet these charges. Payment by mail is encouraged. Money Orders should be made payable at the Newcastle University Post Office, N.S.W. 2308. The Cashier's Office is located on the First Floor of the McMullin Building and is open from 10 am to 12 noon, and 2 pm to 4 pm.

Students are urged to pay charges by mail and a pre-addressed envelope will be forwarded with the Authority to Complete Enrolment form.

Scholarship Holders and Sponsored Students

Students holding scholarships or receiving other forms of financial assistance must lodge with the University Cashier their Authority to Complete Enrolment Form together with warrants or other written 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

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 that they have paid. 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, 27 February, 1984 100%
Notification on or before Friday, 23 March, 1984 90%
Notification on or before Friday, 29 June, 1984 50%
No refund will be made before 31 March 1984.

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.

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:

(a) warn the person against committing any further breach; or
(b) impose a fine; or
(c) refer the matter to the Vice-Chancellor.

The range of fines which may be imposed in respect of various categories of breach includes:

- 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.
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. Attendance 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 orthographies 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.

212825 BUILDING SERVICES
Hours 1 hour per week
Content The sub-unit extending over 3 terms continues on from Building Services in Architecture IB.
This section investigates the following:
1. Electrical services
2. Gas services
3. Communication services
4. Vertical and Horizontal Transport Services
5. Helio-thermal Services and the energy-efficient building

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.
Term 2
B. Continued
C. Life Drawing and Man/Space Projects

Term 3
D. Visual Aspects of Architecture
E. 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 — 12½%
B — 50%
C — 12½%
D — 12½%
E — 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.

Texts and References
There are no texts recommended for this unit. A reading list will be issued to students enrolled in this unit at the beginning of first term.

213802 DATA PROCESSING
Content
Data Processing consists of the following sub-unit:
(a) 213803 Statistics

213803 STATISTICS
Hours 1 hour per week
Content
1. Sampling Theory
Sampling Distributions, Sampling Distributions 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 60%
End-of-Term Examination 40%

Text

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)

(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 place while sociological problems of group dynamics illustrate how far Architecture goes beyond the disciplines of art, building and business. 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.
The changing conditions of the profession and means of adaptation are discussed. Social Science projects are set in conjunction with those of Architectural Design and cover the preparation of architectural briefs, feasibility studies and post completion-post occupancy evaluation. These introduce the student to the breadth of the advisory service required of architects as offices move into project management.

Assessment and Examination
Term papers and seminar.

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

(b) **213806 HISTORY OF ARCHITECTURE**

<table>
<thead>
<tr>
<th>Hours</th>
<th>1 hour per week</th>
</tr>
</thead>
</table>
| Assessment | Two essays 30% each 60%  
One 3-hour examination 40% |
| 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*
Jencks, C. *Modern Movements in Architecture*
Peckner, N. *Pioneer of Modern Design: from William Morris to Walter Gropius*
The Open University: *History of Architecture and Design* 1890-1939 Units I-22

---

213820 Architecture IIIB

<table>
<thead>
<tr>
<th>Prerequisite</th>
<th>Architecture IIB</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hours</td>
<td>See individual unit requirements</td>
</tr>
<tr>
<td>Examination</td>
<td>See individual unit requirements</td>
</tr>
</tbody>
</table>

---

213821 STRUCTURES

<table>
<thead>
<tr>
<th>Hours</th>
<th>1¼ hours per week</th>
</tr>
</thead>
</table>
| Content | 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, Orsional 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
The Building Codes and Standards as set out in content section above.

References
Warner, Rangaw & Reinforced Concrete (Pitman 1977)
Hall Schodeck, D. Structures (Prentice-Hall 1980)

(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
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. Krudsen, V. O. & Harris, C. N. Music Acoustics and Architecture
- 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

1 hour per week

Content

This sub-unit, which is complementary to the Building Services sub-units of Architecture IB and IIB, completes an over-view of services connected to or located within a building.

It involves an investigation of the following services:

1. Heating services
2. Ventilation (mechanical)
3. Refrigeration
4. Air Conditioning
5. Fire Prevention and Control Systems
6. Building Security and Key Systems
7. Building Maintenance and Cleaning
8. Dangerous Goods Storage

Sub-Unit Requirements

Assignments are set which involve the submission of research reports, diagrams, sketches of the services under investigation. Students are expected to complement the formal sessions with personal investigation of and consequent reporting upon selected examples of services installations.

Assessment

The result of the set projects are used to produce a progressively assessed result for the sub-unit. No formal examination is set.

A component of the assessment will be based on the resolution of all building services related to the major Architecture IIIIC projects for the year.

The overall sub-unit result is averaged with that of the Building Science sub-unit to form 1/3 of the total result in Architecture IIIIB.

Texts

To be advised

---

213840 Architecture IIIIC

Prerequisite

Architecture IIIC

Corequisites or Prerequisites

Architecture IIIA or IIIB

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

214700 Architecture IVA

Prerequisites

Nil

Hours

See individual unit requirements

Examination

See individual unit requirements

Content

Architecture IVA 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.

Texts and References

To be advised.
(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.

Chisholm, R. & Lindgren, K. E. Understanding Law (Butterworths 1974)

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 Specifications
(iii) 214803 Estimating

(i) 214801 CONSTRUCTION

Hours 1¼ hours per week
Assessment and Examination To be advised
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 nonprestressed reinforcements, continuous beams, slabs, design examples, case studies.

(iv) Shell Structures

References Schodeck, D. Structures (Prentice-Hall 1980)
ASCE-IABSE Publications on Tall Buildings (1980)

(ii) 214802 SPECIFICATIONS

Hours To be advised

Examination and Assessment
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.

(iii) 214803 ESTIMATING

<table>
<thead>
<tr>
<th>Hours</th>
<th>Test Assesment and Examination</th>
</tr>
</thead>
<tbody>
<tr>
<td>First term examination</td>
<td>25%</td>
</tr>
<tr>
<td>Second term examination</td>
<td>25%</td>
</tr>
<tr>
<td>Third term examination</td>
<td>25%</td>
</tr>
<tr>
<td>Library work and report writing and drawings</td>
<td>25%</td>
</tr>
</tbody>
</table>

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.  

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

(ii) 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; 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; driving and restraining forces. Transactional 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 1VB

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 constructural 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 1VC

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

216017 Advanced Building Science

Hours: 4 hours per week

Assessment and Examination: Progressive assessment based on laboratory and field work

Content:
1. Architectural Acoustics to include —
   Musical acoustics theory
   Computer Modelling
   Scale Physical Modelling
   Measurements in Auditoria and Laboratory Analysis

2. Building Envelope Design to include —
   Advanced applications of solar geometry in fenestration design and envelope form
   Computer modelling of the thermal environment

This elective is designed to give students specific professional skills.

Texts and References: To be advised.

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 wishing to enrol in this subject are required to propose a research project and to seek the supervision of an appropriately qualified member of staff of the Department of Architecture. Subject to the approval in principle of the proposed programme by the Head of Department, the student will carry out work and present 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: A Beginner's Guide* (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 submission will be required for the departmental library.
Theses, or reports, of any substance should be bound in black buckram with the author's surname, title of subject, "U of N", and year printed in gold leaf lettering on front and spine.
Standard layout and format sheets are available.

**216019 Fine Arts A**

**Hours**  5 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 periods:

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, 16th Cent.
   - 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 Australian National Gallery, the National Gallery of Victoria and Art Gallery of New South Wales is required.

(c) Submissions:
   - Term 1 — Essay
   - Term 2 — 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 2 Essay
(c) Term 3 Essay and/or Seminar Presentation
(d) 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.

**Texts and References**

There are no texts set for this subject. A reading list will be issued to students enrolled in this subject at the beginning of first term.

**216020 Fine Arts B**

**Hours**  5 hours per week

**Prerequisite**  Fine Arts A

**Assessment and Examination**

Marks as percentages are awarded for each of the Essays and the Seminar Presentation and directly averaged to determine the Final Mark and Grade for the subject.

**Content**

20th Century Art and Australian Art — Selected and approved topics

**Subject Requirements**

(i) Regular individual contact with the Lecturer.
(ii) Group lectures, tutorials and seminars by arrangement.
(iii) Attendance on visits to the Australian National Gallery, the National Gallery of Victoria and the Art Gallery of New South Wales.
(iv) Submissions — Two Essays
   - One Seminar Presentation to FINE ARTS A Group

**216018 Landscape Design**

**Hours**  4 hours per week

**Content**

This subject will provide an opportunity for understanding Landscape and the design process and the construction techniques used in the Landscape industry.
The emphasis will be on the altered landscape, man's apparent needs and his relationship to his environment. The "man-made" landscape is a product of pressure and changes brought about by agriculture, religion, shelter, industry, travel and recreation and one of our aims will be the understanding of these changes and the potential influence of the designer on their impact on the environment.

The programme will be developed to include —

a. Site appraisal techniques
b. Development of design analysis methods
c. Study of natural elements as design components
d. Study of the built environment, materials and techniques
e. Practical application of skills acquired, by developing proposals for specific problems.

The materials and techniques of construction will be studied in detail and through this study an appreciation will be developed of the controls and requirements of the built environment. A vocabulary of construction details and their appropriate application will be built up through a study of a variety of examples in the studio and through field trips to landscape projects.

Practical examples of completed works will be discussed and related assignments presented to allow a steady development of design ability. Observation and recording exercises will be used to provide readily available methods of establishing physical site data.

Lectures will be given on specific elements and wherever possible they will be illustrated by slide material or drawings. Studio sessions will be allotted to student design development of specific assignments both singly and in groups.

Some field trips are scheduled and these will include visits to landscape projects, and investigation of particular materials, techniques and environments.

A report on each field trip will be required.

Some attention will be given to relating the design studies to other subjects, particularly Architecture C-stream subjects.

**Examination and Assessment**

Examination is based on assignments which will vary from short exercises to more comprehensive take home studies. The majority of assignments will be marked and the final mark for each term arrived at using these marks and marks for class participation.

Investigation and experimentation and working with others will be encouraged allowing maximum freedom of design thought and the steady development of individual skills.

**Texts and References**

To be advised

**216012 Urban Design A**

**Hours**

4 hours per week

**Assessment and Examination**

One seminar per term. The content of these is to be summarised and redrafted, in the light of discussion and criticism, and presented in the last week of each term as typewritten papers of not more than 3000 words.

**Content**

This elective aims to expose a student to different aspects of urbanism and make him aware of the political, social and economic forces that have shaped and are continuing to shape cities. Civilization, progress and decadence are linked with urbanization and are reflected in the physical environment and the quality of our lives. The student should decide for himself whether he would like to examine the physical or social aspects of cities, or combine both.

**Subject Requirements**

Seminar topics to be selected at the beginning of the year from prepared lists:

Term 1 is devoted to the History of Urbanism.

Term 2 to Characteristics of Urbanism.

Term 3 to Urban reformers.

Two seminars to be conducted each week are —

(a) general; illustrating socio-economic factors, philosophical and political influences and defence and,

(b) specific; illustrating extant or rediscovered cities through reference to climate, geography, population, layout and architecture.

**Texts and References**

To relate to seminar topics

**216003 Urban Design B**

**Hours**

4 hours per week

**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.

**DESIGN DATA CHECK LISTS**

211700 Architecture IA

(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.
(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 as 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.

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.

(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?

(ii) 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 orthographics, 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. Effective temperature indices.
7. Natural ventilation.
8. Condensation.
9. Experience in the use of computer programs relevant to sunlight penetration and solar heat loads.
10. Passive and active design for the optimal utilisation of solar energy in building design including solar air conditioning.
11. Orientation of a building, its form and fenestration texture as a function of optimal utilisation of solar light and heat energy.
12. Design for climate: specifically for hot-dry, hot-wet, temperate and cold climates.

(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.
Subject Computer Numbers for Architecture Courses

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

<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</td>
<td>Elective component(s)</td>
</tr>
<tr>
<td>219100</td>
<td>Elective I</td>
<td>212800</td>
<td>Architecture IIA</td>
</tr>
<tr>
<td></td>
<td></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>212820</td>
<td>Structures</td>
</tr>
<tr>
<td></td>
<td></td>
<td>212821</td>
<td>Construction</td>
</tr>
<tr>
<td></td>
<td></td>
<td>212822</td>
<td>Environmental Technology</td>
</tr>
<tr>
<td></td>
<td></td>
<td>212823</td>
<td>Building Science</td>
</tr>
<tr>
<td></td>
<td></td>
<td>212824</td>
<td>Building Services</td>
</tr>
<tr>
<td>212840</td>
<td>Architecture IIC</td>
<td>212840</td>
<td>Elective component(s)</td>
</tr>
<tr>
<td>219200</td>
<td>Elective II</td>
<td>213800</td>
<td>Architecture IIIA</td>
</tr>
<tr>
<td></td>
<td></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>213820</td>
<td>Structures</td>
</tr>
<tr>
<td></td>
<td></td>
<td>213821</td>
<td>Construction</td>
</tr>
<tr>
<td></td>
<td></td>
<td>213822</td>
<td>(A) Construction</td>
</tr>
<tr>
<td></td>
<td></td>
<td>213823</td>
<td>(B) Estimating</td>
</tr>
<tr>
<td></td>
<td></td>
<td>213824</td>
<td>Environmental Technology</td>
</tr>
<tr>
<td></td>
<td></td>
<td>213825</td>
<td>Building Science</td>
</tr>
<tr>
<td></td>
<td></td>
<td>213826</td>
<td>Building Services</td>
</tr>
</tbody>
</table>

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

<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>213840</td>
<td>Architecture IIC</td>
<td>213840</td>
<td>Elective component(s)</td>
</tr>
<tr>
<td>219300</td>
<td>Elective III</td>
<td>214700</td>
<td>Architecture IVA</td>
</tr>
<tr>
<td></td>
<td></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>214900</td>
<td>Elective IV</td>
</tr>
<tr>
<td>219400</td>
<td>Elective IV</td>
<td>215500</td>
<td>Architecture VA</td>
</tr>
<tr>
<td></td>
<td></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>215520</td>
<td>Elective component(s)</td>
</tr>
<tr>
<td>215540</td>
<td>Architecture VC</td>
<td>215540</td>
<td>Elective component(s)</td>
</tr>
<tr>
<td>219500</td>
<td>Elective V</td>
<td>219500</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>219500</td>
<td>Advanced Building Science</td>
</tr>
<tr>
<td></td>
<td></td>
<td>216005</td>
<td>Architectural Research</td>
</tr>
<tr>
<td></td>
<td></td>
<td>216019</td>
<td>Fine Arts A</td>
</tr>
<tr>
<td></td>
<td></td>
<td>216020</td>
<td>Fine Arts B</td>
</tr>
<tr>
<td></td>
<td></td>
<td>216018</td>
<td>Landscape Design</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>