FACULTY OF ARCHITECTURE

1973 HANDBOOK

THE UNIVERSITY OF NEW SOUTH WALES

80 CENTS

FACULTY OF ARCHITECTURE

1973 HANDBOOK

EIGHTY CENTS

THE UNIVERSITY OF NEW SOUTH WALES
P.O. Box 1, Kensington, N.S.W., 2033.
Phone: 663 0351

The University of New South Wales Library has catalogued th
work as follows:

UNIVERSITY OF NEW SOUTH WALES— 378.94405
Faculty of Architecture NEW
Handbook. Annual. Kensington.

University of New South Wales—*Faculty of Architecture*—
Periodicals

TABLE OF CONTENTS

FOREWORD

Since the dawn of civilization man has sought to endow his environment with physical and spiritual qualities appropriate to his way of life, to explore the limits of his materials and techniques, and in so doing, to create buildings of enduring beauty. In each great culture of the past this search produced a characteristic architecture which was a true reflection of the aspirations and capabilities of its age.

Today's architects, builders and town planners face the same age-old problem, but their task is made infinitely more difficult by the complexity of modern requirements and the diversity of new materials and techniques available to them. For the first time in history material progress threatens to outstrip man's visionary powers and to overwhelm his capacity for assimilation.

Within the next twenty years the world must face a gigantic population explosion. Our building industry must undergo a revolution if it is to meet even the most elementary needs of the community, and our search for appropriate building forms must be related to the practical necessities of mass production on a hitherto unprecedented scale. The pressure will be felt in every field of human endeavour, but to those who choose to enter the land-use professions it will represent the greatest challenge and the greatest opportunity of all time.

CALENDAR OF DATES FOR 1973

Session 1: March 5 to May 12
May Recess: May 13 to May 20
May 21 to June 16
Midyear Recess: June 17 to July 22

Session 2: July 23 to August 11
August Recess: August 12 to August 26
August 27 to November 10

JANUARY

Friday 12	Last date for application for review of results of annual examinations
Monday 15	Last day for acceptance of applications for admission to University degrees and diplomas
Friday 19	Last day for application for deferred examinations Last day for acceptance of applications to enrol by new students and students repeating first year
Monday 29	Australia Day—Public Holiday
Tuesday 30	Deferred examinations begin

FEBRUARY

Saturday 10	Deferred examinations end
Monday 19	Enrolment period begins for new students and students repeating first year
Monday 26	Enrolment period begins for students re-enrolling (second and later years)

MARCH

Friday 2	Last date for application for review of deferred examination results
Monday 5	**Session 1 commences**
Thursday 15	Faculty of Architecture meeting, 2 p.m.
Friday 16	Last day for acceptance of enrolments by new students (late fee payable)
Friday 30	Last day for changes in course programmes
Saturday 31	Last day for acceptance of enrolments by students re-enrolling (late fee payable)

APRIL

Friday 6	Last day for discontinuation without failure of subjects which extend over the first session only
Thursday 19	Last day for acceptance of corrected enrolment details forms
Friday 20 to Monday 23	Easter
Wednesday 25	Anzac Day—Public Holiday

MAY

Monday 7	Provisional timetable for June/July examinations published
Sunday 13	May Recess begins
Sunday 20	May Recess ends Last date for discontinuation without failure of subjects which extend over the academic year

JUNE

Tuesday 5	Timetable for June/July examinations published
Monday 11	Queen's Birthday—Public Holiday
Thursday 14	Faculty of Architecture meeting, 2 p.m.
Saturday 16	**Session 1 ends**
Sunday 17	Midyear Recess begins
Tuesday 19	Midyear examinations begin
Saturday 30	Last day for acceptance of applications for re-admission after exclusion under rules governing re-enrolment

JULY

Tuesday 3	Midyear examinations end
Sunday 22	Midyear Recess ends
Monday 23	**Session 2 begins**

AUGUST

Thursday 2	Foundation Day
Thursday 9	Faculty of Architecture meeting, 2 p.m.
Sunday 12	August Recess begins
Wednesday 22	Last day for acceptance of corrected enrolment details forms

Friday 24	Last date for discontinuation without failure of subjects which extend over the second session only
Sunday 26	August Recess ends

SEPTEMBER

Monday 10	Provisional timetable for annual examinations published

OCTOBER

Monday 1	Eight Hour Day—Public Holiday
Thursday 11	Faculty of Architecture meeting, 2 p.m.
Tuesday 30	Timetable for annual examinations published

NOVEMBER

Saturday 10	**Session 2 ends**
Tuesday 13	Annual examinations begin

DECEMBER

Tuesday 4	Annual examinations end
Tuesday 25	Christmas Day—Public Holiday
Wednesday 26	Boxing Day—Public Holiday

1974

Session 1: March 4 to May 19
May Recess: May 20 to May 26
May 27 to June 16
Midyear Recess: June 17 to July 21

Session 2: July 22 to August 25
August Recess: August 26 to September 1
September 2 to November 3
Study Recess: November 4 to November 10

JANUARY

Friday 11	Last date for application for review of results of annual examinations
Monday 14	Timetable for deferred examinations published
Tuesday 15	Last date for application for admission to University degrees and diplomas
Friday 18	Last date for application for deferred examinations

Tuesday 29 to Saturday 9	Deferred examinations

FEBRUARY

Monday 18	Enrolment period begins for new students and students repeating first year
Monday 25	Enrolment period begins for students re-enrolling (second and later years) Results of deferred examinations available

FACULTY OF ARCHITECTURE

Dean—Professor G. E. Roberts

Chairman—Professor J. M. Freeland

SCHOOL OF ARCHITECTURE

Professor of Architecture and Head of School

G. E. Roberts, BArch MCD (*Liv.*), FRAIA, FRAPI, ARIBA, MRTPI

Professor of Architecture

J. M. Freeland, DFC, MArch DTRP *Melb.*, MArch DLitt *N.S.W.*, LFRAIA, FRSA

Associate Professors

N. J. Anderson, BArch *Syd.*, MArch *Liv.*, DipTP *Lond.*, FRAIA, MRTPI

E. C. Daniels, MArch *N.S.W.*, FRAIA, Hon.MIES, ASTC

L. P. Kollar, MArch *N.S.W.*, ASTC, ARAIA

G. Molnar, OBE, DiplIngArch *T.U. Bud.*, FRAIA

P. Spooner, DipLD *Durh.*, ASTC, FRAIA, FAILA, FILA, ARIBA

Senior Lecturers

R. D. Chalmers, BSc(Eng) *Lond.*, MIEAust, AAIB, MAAS

J. Conner, DipArch (Aberd.), MArch *N.S.W.*, ARIAS, ARIBA, ARAIA

Mrs. Anita B. Lawrence, MArch *N.S.W.*, FRAIA, MAAS

A. E. R. Purkis, MArch *N.S.W.*, ARIBA, FRAIA

C. W. Stevens, MArch *N.S.W.*, DipTCP *Syd.*, ASTC, ARAIA

Lecturers

R. E. Apperly, BArch *Syd.*, ARAIA

C. L. Bell, BA(Arch) *Calif.*

R. A. G. Head, ASTC, FRAIA

R. C. Irving, ARMTC, FRAIA

P. A. Johnson, BArch *Syd.*, DipCD *N.S.W.*, ARAIA

D. Lennon, BArch *Syd.*, FRAIA

Lorna M. Nimmo, ASTC, FRSA

P. T. Oppenheim, BArch *Cape T.*, MArch *N.S.W.*, ARAIA, ARIBA

S. C. Palmer, BArch *Syd.*, MArch *N.S.W.*, FRAIA
I. R. Patrick, ASTC, ARIBA, ARAIA
Mrs. Nancy C. Peterson, BArch *N.Z.*, MBdgSc *Syd.*, ANZIA, ARAIA
P. R. Proudfoot, BArch *Syd.*, MArch *Penn.*, Rome Scholar
P. L. Reynolds, BArch *N.S.W.*
W. A. Selle, BArch *Syd.*, FRAIA
B. V. Wollaston, BArch *Syd.*, FRAIA
K. J. Wyatt, BE *Qld.*, MBldgSc *Syd.*, MIEAust

Senior Tutor
H. A. Stephens, BArch DipLD *N.S.W.*, ARAIA

Administrative Assistant
C. L. Durant, SC

SCHOOL OF BUILDING

Professor of Building and Head of School
E. Balint, MCE *Melb.*, FIEAust, FICE, FAIB

Senior Lecturers
C. W. Anderson, MBuild *N.S.W.*, ASTC, FAIB
A. A. Jack, MBuild *N.S.W.*, ASTC, AAIB

Lecturers
G. E. Levido, BBuild *N.S.W.*, AAIB
J. F. Mooney, ASTC, FIQSA
C. D. Smythe, MBuild *N.S.W.*, ASTC, AAIB

Research Fellow
J. Ridyard, BScTech *Manc.*, MBuild *N.S.W.*, FAIB, AIOB, AMCT

SCHOOL OF TOWN PLANNING

Professor of Town Planning and Head of School
J. H. Shaw, BE DipTCP *Syd.*, MCD *Liv.*, PhD *N.S.W.*, FRAPI, MRTPI, MIEAust

Senior Lecturers
E. D. Duek-Cohen, MA *Oxon.*, BArch *Liv.*, DipTP *Lond.*, MRTPI, MRAPI, ARIBA, ARAIA
J. L. King, BArch MTCP *Syd.*, FRAPI

Lecturers
Mrs. Zula Nittim, BArch *Melb.*, DipCD PhD *N.S.W.*, FRAIA
K. C. Short, BA *N.E.*, MA *N'cle* (*N.S.W.*)

GENERAL INFORMATION

ADMISSIONS OFFICE

The Admissions Office which is located in the Chancellery on the upper campus provides intending students (both local and overseas) with information regarding courses, admission requirements, scholarships and enrolment. Office hours are from 9 a.m. to 1 p.m. and 2 p.m. to 5 p.m. Monday to Friday and an evening service is provided during the enrolment period.

Applications for special admission, admission with advanced standing and from persons relying for admission on overseas qualifications should be lodged with the Admissions Office. The Office also receives applications from students who wish to transfer from one course to another, resume their studies after an absence of twelve months or more, or seek any concession in relation to a course in which they are enrolled. It is essential that the closing dates for lodgment of applications are adhered to, and, for further details the sections on "Rules Relating to Students" and "Enrolment Procedure for Undergraduate Courses" should be consulted.

Applications for admission to undergraduate courses from students who do not satisfy the requirements for admission (see section on "Requirements for Admission"), from students seeking admission with advanced standing, and from students who have had a record of failure at another university, are referred by the Admissions Office to the Admissions Committee of the Professorial Board.

Students seeking to register as higher degree candidates should discuss their proposals initially with the Head of the School in which they wish to register. An application is then lodged on a standard form and the Admissions Office, after obtaining a recommendation from the Head of the School, refers the application to the appropriate Faculty or Board of Studies Higher Degree Committee.

Details of the procedure to be followed by students seeking entry to First Year courses at the University may be obtained from the Admissions Office or the Metropolitan Universities Admissions Centre.

Persons seeking entry to First Year Courses in one or more of the three Universities in the Sydney Metropolitan Area (Macquarie University, the University of New South Wales and the University of Sydney) are required to lodge a single application form with the Metropolitan Universities Admissions Centre, Third Floor, 13-15

Wentworth Avenue (near Museum Station), Sydney (P.O. Box 7049 G.P.O. Sydney, 2001.) On the application form provision is made for applicants to indicate preferences for courses available in any of the three Universities. Students are notified individually of the result of their applications and provided with information regarding the procedures to be followed in order to accept the offer of a place at this University and complete their enrolment at the Enrolment Bureau, Unisearch House, 221 Anzac Parade, Kensington.

REQUIREMENTS FOR ADMISSION

A person who seeks to become a candidate for any degree of Bachelor of the University must first have qualified for matriculation and have satisfied the requirements for admission to the particular Faculty, course or subject chosen.

In addition to complying with these conditions candidates must be selected before being permitted to enrol in a course. In 1973 it will be necessary for the University to limit the number of students enrolling in all undergraduate courses.

Special Assistance for Aboriginal Students

The University may admit suitably qualified persons of Aboriginal descent outside of any quota restrictions.

Upon receipt of an application under this provision, the University will assess the applicant's potential to cope with University studies, and will make Student Counsellors available to discuss the choice of a course and subsequent career opportunities.

All enquiries relating to this scheme should be directed to the Registrar.

A candidate who has satisfied the conditions for matriculation and for admission to a course of study shall be classed as a "matriculated student" of the University, after enrolment.

A person who has satisfactorily met the conditions for admission may be provided with a statement to that effect on the payment of the prescribed fee.

Section A

General Matriculation and Admission Requirements

1. A candidate may qualify for matriculation by attaining in recognized matriculation subjects at one New South Wales Higher School Certificate Examination or at one University of Sydney Matriculation Examination a level of performance determined by the Professorial Board from time to time.

2. The level of performance required to qualify for matriculation shall be
   (*a*) passes in at least five recognized matriculation subjects, one of which shall be English and three of which shall be at Level 2 or higher; and
   (*b*) the attainment of an aggregate of marks, as specified by the Professorial Board, in not more than five recognized matriculation subjects, such marks being co-ordinated in a manner approved by the Board.
3. The following subjects, and such other subjects as may be approved by the Professorial Board from time to time, shall be recognized matriculation subjects:—

English	Greek	Chinese
Mathematics	Latin	Japanese
Science	French	Hebrew
Agriculture	German	Dutch
Modern History	Italian	Art
Ancient History	Bahasa Indonesia	Music
Geography	Spanish	Industrial Arts
Economics	Russian	

4. A candidate who has qualified to matriculate in accordance with the provisions of Clauses 1, 2 and 3 may be admitted to a particular Faculty, course or subject provided that:—
   (*a*) his qualification includes a pass at the level indicated in the subject or subjects specified in Schedule A as Faculty, course or subject pre-requisites; or
   (*b*) the requirements regarding these particular Faculty, course or subject pre-requisites, as specified in Schedule A, have been met at a separate Higher School Certificate or University of Sydney Matriculation Examination.
5. Notwithstanding any of the provisions of Clauses 1 to 4, the Professorial Board may grant matriculation status to any candidate at the Higher School Certificate or University of Sydney Matriculation Examination who has reached an acceptable standard and may admit him to any Faculty, course or subject.

Note:

1. For the purposes of clause 2(a), Mathematics and Science *both passed* at first level or second level full course shall together count as three subjects.

2. For the purposes of clause 2(b), Mathematics and Science *taken* either singly or together at first level or second level full course shall each count as one and one half subjects.

Schedule A*

Faculty or Course	Faculty or Course Pre-requisites
Applied Science (excl. Applied Geography, and Wool and Pastoral Sciences courses) Biological Sciences Engineering Industrial Arts Course Medicine Military Studies (Engineering course and Applied Science course) Science Bachelor of Science (Education)	(*a*) Science at Level 2S or higher AND (*b*) either Mathematics at Level 2F or higher; OR Mathematics at Level 2S, provided that the candidate's performance in this subject and his general level of attainment are at standards acceptable to the Professorial Board.
Architecture Applied Geography and Wool and Pastoral Sciences Courses (Faculty of Applied Science)	(*a*) Science at Level 2S or higher AND (*b*) Mathematics at Level 2S or higher
Arts Social Work Degree course	English at Level 2 or higher
Commerce	(*a*) Mathematics at Level 2S or higher AND (*b*) either English at Level 2 or higher OR English at Level 3, provided that the candidate's performance in this subject and his general level of attainment are at standards acceptable to the Professorial Board.
Law Combined Jurisprudence/Law Combined Arts/Law Combined Commerce/Law	Nil Nil As for Arts As for Commerce
Military Studies (Arts course)	English at Level 2 or higher OR English at Level 3, provided that the candidate's performance in this subject and his general level of attainment are at standards acceptable to the Professorial Board, and provided that a candidate so qualified shall not enrol in a course of English literature.

*For subject prerequisites see University Calendar.

Section B

Supplementary Provisions for Matriculation

Notwithstanding the provisions of Section A above, candidates may be accepted as "matriculated students" of the University under certain conditions laid down by the Professorial Board, and which may be found in the University Calendar.

RULES FOR PROGRESSION

General Rules

1. A student shall be required to pass all subjects of any year (or its two corresponding part-time stages) before being permitted to proceed to the next year or its corresponding stages except that, subject to the specific course rules set out below, one subject only may be carried with the subjects of the next higher year or its corresponding stages.
2. A student who fails in two or more subjects of a year may be required at the discretion of the Head of the School to repeat any or all the subjects of that year.
3. A student can be enrolled concurrently in the subjects of only two consecutive years, but this will not apply to students entering with advanced standing in their first year of attendance.
4. In exceptional cases the general and specific rules may be varied by the Head of the School.

Specific Course Rules

I Architecture: A student enrolled in the Bachelor of Science (Architecture) Course shall not progress to any subject in second year or its part-time equivalent until he has passed Graphic Communication I and Construction I or their part-time equivalents. A student of either the Bachelor of Science (Architecture) or Bachelor of Architecture Course may not progress to any subject of a higher year or its part-time equivalent until he has passed Design and Construction in the immediately preceding year or its part-time equivalent except that this rule shall not apply to the subject of Design I.

II Building: A student enrolled in the Building Course shall not progress to a higher year or its part-time equivalent until he has passed Building Construction or Building Graphics in the immediately preceding year or corresponding stages.

III Town Planning: A student enrolled in the Town Planning

Course shall not progress to any subject in second year until he has passed Graphic Communication I nor shall he progress to any subject of a higher year until he has passed Town Planning Theory and Practice in the immediately preceding year.

ADMISSION WITH ADVANCED STANDING

Any person who makes application to register as a candidate for any degree or other award granted by the University may be admitted to the course of study leading to such degree or award with such standing on the basis of previous attainments as may be determined by the Professorial Board provided that:

(i) the Board shall not grant such standing under these rules as is inconsistent with the rules governing progression to such degree or award as are operative at the time the application is determined;

(ii) where a student transfers from another University such student shall not in general be granted standing in this University which is superior to that which he would enjoy in the University from which he transfers;

(iii) the standing granted by the Board in the case of any application based on any degree/s or other award/s already held by the applicant, shall not be such as will permit the applicant to qualify for the degree or award for which he seeks to register without completing the courses of instruction and passing the examinations in at least those subjects comprising the latter half of the course, save that where such a programme of studies would involve the applicant repeating courses of instruction in which the Board deems the applicant to have already qualified, the Board may prescribe an alternative programme of studies in lieu thereof;

(iv) the standing granted by the Board in the case of any application based on partial completion of the requirements for any degree or other award of another institution shall not be such as will permit the applicant to qualify for the degree or award for which he seeks to register by satisfactory completion of a programme of study deemed by the Board to be less than that required of a student in full-time attendance in the final year of the course in which the applicant seeks to register;

(v) the standing granted by the Board in the case of any application based on the partial completion of the requirements for

any degree or other award of the University may be such as to give full credit in the course to which the applicant seeks to transfer for work done in the course from which the student transfers.

Where the identity between the requirements for any award of the University already held and that of any other award of the University is such that the requirements outstanding for the second award are less than half the requirements of that award, then a student who merely completes such outstanding requirements shall not thereby be entitled to receive the second award but shall be entitled to receive a statement over the hand of the Registrar in appropriate terms.

ENROLMENT PROCEDURE

It is the policy of the University to endeavour to admit all properly qualified applicants who have lodged applications by the appropriate closing date. In 1973, however, facilities available to the University will make it necessary to impose quotas in the Faculty of Architecture.

First Enrolments

(a) New South Wales residents already qualified for admission and persons who are applying for enrolment on the basis of qualifications gained or about to be gained outside New South Wales must lodge an application for enrolment with the Metropolitan Universities Admissions Centre, 13-15 Wentworth Avenue, Sydney (P.O. Box 7049 G.P.O., Sydney) by 27th October, 1972.

(b) New South Wales residents qualifying for admission by the 1972 New South Wales Higher School Certificate Examination or the 1973 Sydney University Matriculation Examination and those who have attended a University in New South Wales in 1972 must apply for enrolment to the Metropolitan Universities Admissions Centre, 13-15 Wentworth Avenue, Sydney (P.O. Box 7049 G.P.O., Sydney) by 19th January, 1973.

Students whose applications for enrolment are accepted will be required to complete their enrolment at a specified appointment time before the start of Session 1. Course details must be completed and fees paid on the day of the appointment. However, in special circumstances and provided class places are still available students may be allowed to complete their enrolment after the prescribed week subject to the payment of a late fee.

Application forms for enrolment and details of the application procedures may be obtained on application to the Registrar, P.O. Box 1, Kensington 2033.

First Year Repeat Students. First year students who failed more than half their programme at the 1972 Annual Examinations and who were not granted any deferred examinations will NOT follow the above procedure. They are required to 'show cause' why they should be allowed to continue in the course, and should await instructions in writing from the Registrar as to the procedure.

Later Year Enrolments. All students enrolling other than for the first time and not included above should enrol through the appropriate School and bring with them their notification of examination results for the previous year. This enrolment must be effected before or during the week before the commencement of Session 1 in accordance with the special arrangements made by the individual Schools.

Students who have completed the final examinations but have a thesis still outstanding are required to enrol for the period necessary to complete the thesis and to pay the requisite fees.

Miscellaneous Subject Enrolments. Students may be permitted to enrol for miscellaneous subjects (i.e. as students not proceeding to a degree or diploma) provided the Head of the School offering the subject considers it will be of benefit to the student and there is accommodation available. Only in exceptional cases will subjects taken in this way count towards a degree or diploma. Where a student is under exclusion he may not be enrolled in miscellaneous subjects unless given approval by the Professorial Board.

Final Dates for Completion of Enrolment. No enrolments will be accepted from *new students* after the end of the second week of Session 1 (16th March, 1973) except with the express approval of the Registrar and the Head of the School concerned; no *later year enrolments* will be accepted after 31st March without the express approval of the Registrar which will be given in exceptional circumstances only.

Post-graduate Enrolments. Students enrolling in post-graduate courses which include formal instruction are required to attend the appropriate enrolment centre as prescribed annually in the leaflet "Enrolment Procedure for Students Re-enrolling".

University Union Card

All students other than miscellaneous students are issued with a

University Union Membership Card. This card must be carried during attendance at the University and shown on request.

The number appearing on the front of the card above the student's name is the student registration number used in the University's records. This number should be quoted in all correspondence.

The card must be presented when borrowing from the University libraries, when applying for travel concessions and when notifying a change of address. It must also be presented when paying fees on re-enrolment each year when it will be made valid for the year and returned. Failure to present the card could result in some inconvenience in completing re-enrolment.

A student who loses a Union card must notify the University Union as soon as possible.

New students will be issued with University Union cards at the University Union Enquiry Desk as soon as practicable after payment of fees. In the meantime, fees receipt form should be carried during attendance at the University and shown on request. A period of at least three weeks should be allowed to elapse after payment of fees before making application for the card. Cards will not be posted under any circumstances.

FEES*

Fees for Undergraduate Courses

Fees for undergraduate courses in Architecture, Building and Town Planning are assessed on a session basis.

A full-time course fee will be charged for any session where more than 15 hours' per week instruction, etc., is involved.

(i) Full-time Course Fee (more than 15 hours' attendance per week)	$270 per session
(ii) Part-time Course Fee (over 6 hours' and up to 15 hours' attendance per week) ...	$135 per session
(iii) Part-time Course Fee (6 hours' or less attendance per week)	$67.50 per session

Fees for Higher Degrees (research)

An approved applicant shall be required to pay the following fees:

(i) Qualifying Examination	$19
(ii) Registration Fee	$8
(iii) Internal Full-time Student Annual Fee ...	$114
Internal Full-time Student Session Fee ...	$57

* The fees quoted may be amended by Council without notice.

(iv) Internal Part-time Student Annual Fee ... $57
Internal Part-time Student Session Fee ... $28.50
(v) External Student Annual Fee† $39
(vi) Final Examination (including Graduation fee) $57
(vii) Thesis Resubmission Fee† $57

Fees for Higher Degrees requiring formal study and Graduate Diplomas

(i) Registration Fee, $8.
(ii) Graduation Award of Diploma Fee, $11.
(iii) Course Fee—calculated on the basis of a session's attendance at the rate of $14.50 per hour per week. Thus the fee for a programme requiring an attendance of 24 hours per week for the session is $348 per session.
(iv) Thesis or Project Fee, $57 (an additional fee of $39† is payable by students who have completed their final examinations for the degree or diploma but have not completed the thesis or project for which they have been previously enrolled).

Other Fees

Students in any of the above categories are also required to pay the following fees:

Library Fee—annual fee		$19
University Union§ (entrance fee)		$20
STUDENT ACTIVITIES FEES		
University Union§—annual subscription	$30	
Sports Association§—annual subscription	$4	
Students' Union§—annual fee	$7	
Miscellaneous	$17	
Total	$58	

Late Fees

Session 1—First Enrolments

Fees paid on the late enrolment session and before the commencement of Session 1 ... ... $10

† Students in this category are not required to pay the Student Activities Fees or the Library Fee.

§ Life members of these bodies are exempt from the appropriate fee or fees.

Fees paid during the 1st and 2nd weeks of Session 1	$20
Fees paid after the commencement of the 3rd week of Session 1 with the express approval of the Registrar and Head of the School concerned ...	$40
Session 1—Re-enrolments	
Failure to attend enrolment centre during enrolment week	$10
Fees paid after the commencement of the 3rd week of Session 1 to 31st March	$20
Fees paid after 31st March where accepted with the express approval of the Registrar	$40
Session 2—All Enrolments	
Fees paid in 3rd and 4th weeks of Session 2 ...	$20
Fees paid thereafter	$40
Late lodgement of corrected enrolment details forms (late applications will be accepted for three weeks only after the prescribed dates) ...	$8

Withdrawal From Course

1. Students withdrawing from a course are required to notify the Registrar in writing. Fees for the course accrue until a written notification is received.
2. Where notice of withdrawal from a course is received by the Registrar before the first day of Session 1 a refund of all fees paid other than the matriculation fee will be made.
3. Where a student terminates for acceptable reasons a course of study within 30 days of the commencement of first session a refund of fees paid, less a sum of $39, may be made in respect of all fees except the University Union Entrance and membership fees, the University of New South Wales Students' Union fee and the University of New South Wales Sports Association fee, in regard to which fees refunds may be made as shown hereunder.
4. Where a student terminates for acceptable reasons a course of study: (1) after the lapse of 30 days and before the lapse of half the first session, one half of each of the course fee, the library fee and the miscellaneous student activities fee may be refunded; (2) before the lapse of half the second session one half of the session's course fee may be refunded.
5. Where a student terminates a course of study after half a

session has elapsed, no refund may be made in respect of that session's fees.

6. No portion of the Matriculation fee is refundable on withdrawal.
7. On notice of withdrawal a partial refund of the University Union Entrance Fee is made on the following basis: any person who has paid the entrance fee in any year and who withdraws from membership of the University Union after the commencement of Session 1 in the same year, or who does not renew his membership in the immediately succeeding year may on written application to the Warden receive a refund of half the entrance fee paid.
8. On notice of withdrawal a partial refund of the Student Activities Fees is made on the following basis:
   University Union—$7.50 in respect of each half session.
   University of New South Wales Students' Union—where notice is given prior to the end of the fifth week of Session 1, $3.50, thereafter no refund.
   University of New South Wales Sports Association—where notice is given prior to 30th April a full refund is made, thereafter no refund.
9. Where initial registration is made at commencement of Session 2 in any year and the student subsequently withdraws, a refund of fees based on the above rules may be made.

PAYMENT OF FEES

Completion of Enrolment

All students are required to attend the appropriate enrolment centre during the prescribed enrolment period* for authorization of course programme. Failure to do so will incur a late fee of $10.

First Year students (including students repeating First Year) must complete enrolment (including fee payment) before they are issued with class timetables or permitted to attend classes. A First Year student who has been offered a place in a course to which entry is restricted and fails to complete enrolment (including fee payment) at the appointed time may lose the place allocated.

Fees should be paid during the prescribed enrolment period but will be accepted during the first two weeks of Session 1. (For late

* The enrolment periods for Sydney students are prescribed annually in the leaflets "Enrolment Procedure for New Students" and "Enrolment Procedure for Students Re-enrolling".

fees see above.) No student is regarded as having completed an enrolment until fees have been paid. Fees will not be accepted (i.e. enrolment cannot be completed) from new students after the end of the second week of Session 1 (i.e. 16th March, 1973), and after 30th March from students who are re-enrolling, except with the express approval of the Registrar, which will be given in exceptional circumstances only.

Payment of Fees by Session

Students who are unable to pay their fees by the year may pay by the session, in which case they are required to pay the first session's course fees and other fees for the year, within the first two weeks of Session 1. Students paying under this arrangement will receive accounts from the University for Session 2 fees. These fees must be paid within the first two weeks of Session 2.

Assisted Students

Scholarship holders or Sponsored Students who have not received an enrolment voucher or appropriate letter of authority from their sponsor at the time when they are enrolling should complete their enrolment paying their own fees. A refund of fees will be made when the enrolment voucher or letter of authority is subsequently lodged with the Cashier.

Extension of Time

Any student who is unable to pay fees by the due date may apply in writing to the Deputy Registrar (Student Services) for an extension of time. Such application must give year or stage, whether full-time or part-time, and the course in which the applicant wishes to enrol, state clearly and fully the reasons why payment cannot be made and the extension sought, and must be lodged before the date on which a late fee becomes payable. Normally the maximum extension of time for the payment of fees is one month for fees due in Session 1 and for one month from the date on which a late fee becomes payable in Session 2.

Where an extension of time is granted to a First Year student in Session 1, such student may only attend classes on the written authority of the Registrar, but such authority will not normally be given in relation to any course where enrolments are restricted.

Failure to Pay Fees

Any student who is indebted to the University and who fails to make a satisfactory settlement of his indebtedness upon receipt of

due notice ceases to be entitled to membership and privileges of the University. Such a student is not permitted to register for a further session, to attend classes or examinations, or to be granted any official credentials.

No student is eligible to attend the annual examinations in any subject where any portion of his course fees for the year is outstanding after the end of the *fourth week of Session 2 (17th August, 1973)*.

In very special cases the Registrar may grant exemption from the disqualification referred to in the two preceding paragraphs upon receipt of a written statement setting out all relevant circumstances.

GENERAL CONDUCT

Acceptance as a member of the University implies an undertaking on the part of the student to observe the regulations, by-laws and other requirements of the University, in accordance with the declaration signed at the time of the enrolment.

In addition, 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 also forbidden.

Members of the academic staff of the University, senior administrative officers, and other persons authorized for the purpose, have authority, and it is their duty, to check and report on disorderly or improper conduct or any breach of regulations occurring in the University.

ATTENDANCE AT CLASSES

Students are expected to be regular and punctual in attendance at all classes in the course or subject in which they are enrolled. All applications for exemption from attendance at lectures or practical classes must be made in writing to the Registrar.

In the case of illness or of absence for some other unavoidable cause a student may be excused by the Registrar from non-attendance at classes for a period of not more than one month, or on the recommendation of the Dean of the appropriate Faculty for any longer period.

Applications to the Registrar for exemption from re-attendance at classes, either for lectures or practical work, may only be granted on the recommendation of the Head of the appropriate School. The granting of an exemption from attendance does not carry with it exemption from payment of fees.

Application forms for exemption from lectures are available at

the Admissions Office and should be lodged there (with a medical certificate where applicable). If session examinations have been missed this fact should be noted in the application.

Where a student has failed a subject at the annual examinations in any year and re-enrols in the same course in the following year, he must include in his programme of studies for that year the subject in which he has failed. This requirement will not be applicable if the subject is not offered the following year; is not a compulsory component of a particular course; or if there is some other cause, which is acceptable to the Professorial Board, for not immediately repeating the failed subject.

Where a student has attended less than eighty per cent of the possible classes, he may be refused permission to sit for the examination in that subject.

APPLICATION FOR ADMISSION TO DEGREE OR GRADUATE DIPLOMA

Application for admission to a degree or graduate diploma must be made on the appropriate form by 15th January. Applicants should ensure that they have completed all requirements for the degree or diploma, including industrial training where necessary.

INDEBTEDNESS TO THE UNIVERSITY

Any student who is indebted to the University and who fails to make a satisfactory settlement of his indebtedness upon receipt of due notice ceases to be entitled to membership and privileges of the University. Such a student is not permitted to register for a further session, to attend classes or examinations, or to be granted any official credentials.

In very special cases the Registrar may grant exemption from the disqualification referred to in the preceding paragraph upon receipt of a written statement setting out all relevant circumstances.

COURSE TRANSFERS

Students wishing to transfer from one course to another must apply on an application form obtainable from the Admissions Office, Chancellery, by Friday, 19th January. As quotas will operate on entry to all Faculties and the Board of Vocational Studies, failure to apply by 19th January, 1973, will probably result in the application for transfer being unsuccessful.

Students whose applications to transfer are successful are required

to comply with the enrolment procedures for the year/stage of the new course in which they expect to enrol. Unless otherwise instructed they must present the letter granting approval of the transfer to the enrolling officer.

Students who have not received advice regarding their application to transfer before the date on which they are required to enrol should check with the Admissions Office.

Students should also advise the Enrolling Officer of the School in which they are enrolled of their intention to transfer.

CHANGES IN COURSE PROGRAMMES AND WITHDRAWAL FROM SUBJECTS

Students seeking approval to substitute one subject for another, add one or more subjects to their programme or discontinue part or all of their programme must make application to the Registrar through the Head of the School responsible for the course on forms available from School offices. The Registrar will inform students of the decision. Application to enrol in additional subjects must be submitted by 31st March.

Approval of withdrawal from subjects is not automatic, each application being determined after considering the circumstances advanced as justifying withdrawal.

It is emphasized that:

1. withdrawal from a subject, tuition in which extends over the academic year, at any time after the May recess;
2. withdrawal from a subject, tuition in which extends over only one session, at any time after one month from the commencement of the subject; or
3. failure to sit for the examinations in any subject in which the student has enrolled,

shall be regarded as failure to satisfy the examiners in the subject, unless written approval to withdraw without failure has been obtained from the Registrar.

STUDENT RECORDS

All students will receive enrolment details forms by 4th April and 7th August. It is not necessary to return the forms unless any information recorded thereon is incorrect. Amended forms must be returned to the Examinations and Student Records Section by 19th April and 22nd August respectively. Amendments notified after the closing date will not be accepted unless exceptional circumstances exist and

approval is obtained from the Registrar. Where a late amendment is accepted, a late fee of $8 will be payable. Amended forms returned to the Registrar will be acknowledged in writing within fourteen days.

RESUMPTION OF COURSES

Students wishing to resume their studies after an absence of twelve months or more are required to apply to the Admissions Office for permission to re-enrol by 19th January, 1973. Students re-enrolling in this way will normally be required to satisfy conditions pertaining to the course at the time of re-enrolment. This condition applies also to students who have been re-admitted to a course after exclusion under the rules restricting students re-enrolling.

ANNUAL EXAMINATIONS

Most annual examinations are held in November-December and examinations in many subjects are also held during the mid-year recess. Timetables indicating the dates and times of examinations and notices of the location of examinations are posted on the central notice boards in the Wallace Wurth Medical School, Biological Sciences Building, the Chancellery, Central Lecture Theatre Block, Dalton (Chemistry) School, Main Building (Mining and Physics), outside the Science Theatre and in the Western Grounds Area.

Misreading of the timetable is not an acceptable excuse for failure to attend an examination.

A student suffering from a physical disability which puts him at a disadvantage in written examinations should apply to the Registrar in writing, as early as possible, for special provisions to be made for him to take examinations. The request should be supported by medical or other evidence.

Examinations are conducted in accordance with the following rules and procedures:—

(*a*) Candidates are required to obey any instruction given by an examination supervisor for the proper conduct of the examination.

(*b*) Candidates are required to be in their places in the examination room not less than ten minutes before the time for commencement.

(*c*) No bag, writing paper, blotting paper, manuscript or book, other than a specified aid, is to be brought into the examination room.

(*d*) No candidate shall be admitted to an examination after thirty minutes from the time of commencement of the examination.

(*e*) No candidate shall be permitted to leave the examination room before the expiry of thirty minutes from the time the examination commences.

(*f*) No candidate shall be re-admitted to the examination room after he has left it unless during the full period of his absence he has been under approved supervision.

(*g*) A candidate shall not by any improper means obtain, or endeavour to obtain, assistance in his work, give, or endeavour to give, assistance to any other candidate, or commit any breach of good order.

(*h*) Smoking is not permitted during the course of examinations.

(*i*) All answers must be in English unless otherwise directed. Foreign students who have the written approval of the Officer-in-Charge of Examinations may use standard translation dictionaries.

(*j*) A candidate who commits any infringement of the rules governing examinations is liable to disqualification at the particular examination, to immediate expulsion from the examination room and to such further penalty as may be determined in accordance with the By-laws.

A student who through serious illness or other cause outside his control is unable to attend an examination is required to bring the circumstances (supported by a medical certificate or other evidence) to the notice of the Registrar not later than seven days after the date of the examination, and may be required to submit to medical examination. A student who attempts an examination yet claims that his performance is prejudiced by sickness on the day of the examination, must notify the Registrar or Examination Supervisor, before, during or immediately after the examination and may be required to submit to medical examination.

A student who believes that his performance at an examination has been affected by serious illness during the year or by other cause outside his control, and who desires these circumstances to be taken into consideration in determining his standing is required to bring the evidence (supported by medical certificates or other evidence) to the notice of the Registrar not later than seven days after the date of the examination.

In the assessment of a student's progress, consideration is given to work in laboratory and class exercises and to any term or other

tests given throughout the year, as well as to the results of written examinations.

Examination results are posted to the term addresses of students and it is therefore essential that any change of address be advised to the Examination and Student Records Section. Results are also posted on School notice boards. No examination results will be given by telephone.

Examination results may be reviewed for a fee of $11 a subject which is refundable in the event of an error being discovered. Such a review will consist primarily in ensuring that all questions attempted by candidates have been marked and that the total of all marks awarded are correct. Applications for review must be submitted on the appropriate form to the Examinations and Student Records Section, together with the necessary fee by the date indicated on the notification of results.

EXAMINATION RESULTS

Graded Passes:

Passes will be graded as follows:—

High Distinction—Indicates a quite superior performance.

Distinction—Indicates a superior performance.

Credit—Indicates a good but not superior performance.

Pass—Indicates the achievement of an acceptable minimum level of competence in relation to the course objectives.

Pass Conceded:

A pass conceded may be granted to students where the mark in the subject is slightly below the required standard and whose overall performance warrants it.

Terminating Pass:

A terminating pass may be granted where the mark for the subject is below the required standard. A terminating pass will not permit a student to progress further in the subject or to enrol in any other subject for which a pass in the subject is a co-requisite or pre-requisite. A student granted a terminating pass may attempt a deferred examination, if available, to improve his performance, but if the student fails the deferred examination, the terminating pass will stand.

DEFERRED EXAMINATIONS

Deferred examinations may be granted in the following cases:—

(i) When a student through illness or some other acceptable

circumstance has been prevented from taking the annual examination or has been placed at a serious disadvantage during the annual examinations. Applications for deferred examination in this category must be lodged with the Registrar with appropriate evidence of the circumstances (e.g., medical certificate) not later than seven days after the examination concerned. All such applications shall be reported to the Head of the School responsible for the subject. Before a deferred examination is granted on medical grounds, regard shall be paid to the student's class and assignment work in the subject, to his general performance in the year, and to the significance of the annual examination in compiling the composite mark.

(ii) To help resolve a doubt as to whether a student has reached the required standard in a subject.

(iii) To allow a student by further study to reach the required standard in a subject. The granting of a deferred examination in such cases will be based on the general quality of the student's performance.

(iv) Where a student's standing at the annual examinations is such that his progression or graduation could depend on his failure in one subject only, then his position in that subject shall be again reviewed with a view to determining whether a deferred examination may be granted notwithstanding his failure otherwise to qualify for such concession.

Deferred examinations must be taken at the centre in which the student is enrolled, unless he has been sent on compulsory industrial training to remote country centres or interstate. An application to take an examination away from the centre in which enrolled must be lodged with the Registrar immediately examination results are received. Normally, the student will be directed to the nearest University for the conduct of the deferred examination.

A student eligible to sit for a deferred examination must lodge with the Accountant an application accompanied by the fee of $8 per subject, by the date indicated on the notification of results.

RESTRICTION UPON STUDENTS RE-ENROLLING

The University Council has adopted the following rules governing re-enrolment with the object of requiring students with a record of failure to show cause why they should be allowed to re-enrol and

retain valuable class places. These rules apply retrospectively from 1st January, 1972.

1. (i) A student shall show cause why he should be allowed to repeat a subject in which he has failed more than once. (Failure in a deferred examination as well as in the annual examination counts, for the purpose of this regulation, as one failure). Where such subject is prescribed as a part of the student's course he shall be required to show cause why he should be allowed to continue the course.

   Notwithstanding the provisions of Clause 1 (i)

   (ii) A student enrolled in the first year or first stage of any course, other than the medical course, who has failed in more than half the programme in which he is enrolled for that year or stage shall be required to show cause why he should be allowed to continue in the course.

   (iii) A student enrolled in the first year of the Medical course who has failed in more than one subject of that year shall be required to show cause why he should be allowed to continue in the Medical course.

   (iv) The provisions of sections (ii) and (iii) of this rule shall be deemed to apply to any student on transfer from another course or institution whose programme of studies in the first year of enrolment immediately following transfer is comprised of subjects so chosen that half or more of such subjects are listed in the University Calendar as first year subjects.

2. Notwithstanding the provisions of clause 1, a student shall be required to show cause why he should be allowed to continue a course which he will not be able to complete in the time set down in the following schedule:—

Number of years in course	Total time allowed from first enrolment to completion (years)
3	5
4	6
5	8
6	9
7	11
8	12

3. No full-time student shall, without showing cause, be permitted to continue a course unless all subjects of the first year of his

course are completed by the end of his second year of attendance. No student in the Faculty of Arts shall, without showing cause, be permitted to continue a course unless he completes four subjects by the end of his second year of attendance. No full-time student in the Bachelor of Social Work course shall without showing cause be permitted to continue with the course unless he completes the equivalent of four full subjects by the end of his second year of attendance.

No part-time student in a course in which progression is by stage shall without showing cause be permitted to continue a course in which he will not be able to complete all subjects of the first two stages by the end of his fourth year of attendance and all subjects of the third year and fourth stages of his course by the end of his seventh year of attendance.

No part-time student in the Science course shall without showing cause be permitted to continue a course in which he will not be able to complete level one Mathematics and six other level one units by the end of his fourth year of attendance and fourteen units inclusive of at least three at level two of his course by the end of his seventh year of attendance.

No student in the Faculty of Medicine shall, without showing cause, be permitted to continue with the medical course unless he completes the second year of the course by the end of his third year of attendance, and the third year of the course by the end of his fourth year of attendance.

4. A student who has a record of failure in a course at another University shall be required to show cause why he should be admitted to this University. A student admitted to a course at this University following a record of failure at another University shall be required to show cause, notwithstanding any other provisions in these rules, why he should be permitted to continue in that course if he is unsuccessful in the annual examinations in his first year of attendance at this University.

5. Any student excluded under any of the clauses 1-3 may apply for re-admission after two academic years and such application shall be considered in the light of any evidence submitted by him.

6. A student wishing "to show cause" under these provisions shall do so in writing to the Registrar. Any such application shall be considered by a committee, hereinafter referred to as the Re-

enrolment Committee, appointed by the Professorial Board, which shall determine whether the cause shown is adequate to justify his being permitted to continue his course or re-enrol as the case may be.

7. The Vice-Chancellor may on the recommendation of the Re-enrolment Committee exclude from attendance in a course or courses any student who has been excluded from attendance in any other course under the rules governing re-enrolment and whose record at the University demonstrates, in the opinion of the Re-enrolment Committee and the Vice-Chancellor, the student's lack of fitness to pursue the course nominated.

8. A student who has failed, under the provisions of Clause 6 of these rules, to show cause acceptable to the Re-enrolment Committee why he should be permitted to continue in his course, and who has subsequently been permitted to re-enrol in that course or to transfer to another course, shall also be required to show cause, notwithstanding any other provisions in these rules, why he should be permitted to continue in that course if he is unsuccessful in the annual examinations immediately following the first year of resumption or transfer of enrolment as the case may be.

9. Any student who is excluded from attendance in any course or subject under the provisions of these rules may appeal to an Appeal Committee constituted by Council for this purpose. The decision of the Appeal Committee shall be final.

10. The notification to any student of a decision by the Re-enrolment Committee to exclude the student from attendance in any course or subject shall indicate that the student may appeal against the decision to an Appeal Committee. In lodging such appeal the student shall ensure that a complete statement is furnished of all grounds on which the appeal is based and shall indicate whether or not the student wishes to appear in person before the Appeal Committee.
    In considering an appeal the Appeal Committee, on the basis of the student's academic record and the stated grounds of appeal, shall decide:
    (i) whether there are grounds which justify the Committee seeing the student in person, or
    (ii) whether there is sufficient information available to the

Committee to allow decision without seeing the student in person

and so proceed to determine the application accordingly.

RE-ADMISSION AFTER EXCLUSION

Applications for re-admission must be made on the standard form and lodged with the Registrar not later than 30th June of the year prior to that for which re-admission is sought. An application should include evidence of appropriate study in the subjects (or equivalents) on account of which the applicant was excluded. In addition, evidence that the circumstances which were deemed to operate against satisfactory performance at the time of exclusion are no longer operative or are reduced in intensity, should be furnished. An applicant may be required to take the annual examinations in the relevant subjects as qualifying examinations in which case re-admission does not imply exemption from the subject. Late applications cannot be considered where, in the opinion of the University, insufficient time will be available for the student to prepare himself for any qualifying examinations which may be required.

It should be noted that a person under exclusion may not be enrolled in miscellaneous subjects unless he has received the approval of the Professorial Board on the recommendation of the Admissions Committee.

Persons who intend applying for re-admission to the University at a future date may seek advice as to ways in which they may enhance their prospects of qualifying for re-admission. Enquiries should be made on a form obtainable from the Examinations Branch, and lodged with the Registrar.

OWNERSHIP OF STUDENTS' WORK

The University reserves the right to retain at its own discretion the original or one copy of any drawings, models, designs, plans and specifications, essays, theses or other work executed by students as part of their courses, or submitted for any award or competition conducted by the University.

CHANGE OF ADDRESS

Students are requested to notify the Student Records Section of the Registrar's Division of any change in their address, as soon as possible. Failure to do this could lead to important correspondence not reaching students. The University cannot accept responsibility

if official communications fail to reach students, who have not notified their change of address. A Change of Address Advice form is available at Faculty and School offices and at the Enquiry Counters on the Ground Floor of the Chancellery Building.

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.

LOST PROPERTY

All enquiries concerning lost property should be made to the Superintendent on Extension 2503 or to the Lost Property Office at the Union.

PARKING WITHIN THE UNIVERSITY GROUNDS

Because of the limited amount of parking space available, only the following categories of students may apply for a permit; motor cycle owners (annual fee $3.90); higher degree students (limited issue, annual fee $7.80); postgraduate, and senior undergraduate students who have completed three years of a full-time or part-time course (annual fee $3.90). A permit will allow access to the campus between 5 p.m. and 11 p.m. on weekdays and during library hours on Saturdays, Sundays and public holidays. Enquiries should be made to the Property Section, Room 240, the Chancellery Building, or phone 663 0351, extension 2920. It should be noted that increasing demand for parking space may require the imposition of further restrictions.

APPLICATION OF RULES

General

Any student who requires information on the application of these rules or any service which the University offers, may make enquiries from the Admissions Office, the Student Counselling Centre or the Registrar.

Appeals

Section 5(*c*) of Chapter III of the By-laws provides that "Any person affected by a decision of any member of the Professorial Board (other than the Vice-Chancellor) in respect of breach of discipline or misconduct may appeal to the Vice-Chancellor, and in the case of disciplinary action by the Vice-Chancellor, whether on appeal or otherwise, to the Council".

STUDENT SERVICES AND ACTIVITIES

LIBRARY

The University Library is on the upper campus and adjacent to the Chancellery, and the Arts and Commerce Buildings. The Bio-Medical Library is in the Biological Sciences Building with a branch at Prince Henry Hospital ('Phone: 661-0111). The Law Library is temporarily housed on the 4th Floor of the Science Building on the upper campus. There are services at other centres as follows:—

Broken Hill Division—W. S. & L. B. Robinson University College Buildings, Broken Hill. 'Phone: 6022/3/4.

Wollongong University College—Wollongong. 'Phone: B-7301.

Water Reference Library—Manly Vale. 'Phone: 948-0261.

Each library provides a reference and lending service for staff and students, and is open in both Sessions 1 and 2 during day and evening periods, except the Water Reference Library which is only open during the day.

Staff and students must use a machine readable identification card to borrow from the main University Library. Personal identification is required in the other libraries listed. For students a current Union card is acceptable. Staff must apply to the Library for a library card.

THE UNIVERSITY UNION

The University Union, housed in the circular building and joined by a courtyard to an adjacent rectangular building, is located near the entrance to the Kensington campus from Anzac Parade. The third building in the Union complex was completed in 1971. Membership of the Union is compulsory for all registered students of the University and is also open to all members of staff and graduates of the University.

The full range of facilities provided by the Union includes a cafeteria service and other dining facilities, a large shopping centre, cloak room, banking and hairdressing facilities, showers, a women's lounge, common, games, reading, meeting, music, practice, craft and dark rooms. Photocopying, sign printing, and stencil cutting services are also available.

The Union also sponsors and conducts courses in many facets of the arts including weaving, photography, creative dance and yoga.

STUDENT ACCOMMODATION
RESIDENTIAL COLLEGES

The Kensington Colleges

Accommodation for students is provided within the group of The Kensington Colleges which comprise Basser College, Goldstein College and Philip Baxter College. The group houses 450 men and women students, as well as staff members. Tutors in residence provide tutorial assistance in a wide range of subjects.

Board and residence fees, which are payable on a session basis, amount to $308 per session. Intending students should apply in writing to the Master, Box 24, Post Office, Kensington, N.S.W. 2033, from whom further information is available.

International House

International House accommodates over 110 students of whom half are Australian; the remaining half is made up of students from some 20 different countries. First-year students who have come to the University straight from school are not eligible for residence because preference is given to mature undergraduates and post-graduate students. Fees are $23.50 per week.

Students should apply as soon as possible if they wish to reside at International House at a later date. They should write to the Warden, International House, P.O. Box 88, Kensington, N.S.W. 2033 for information.

New College

This Church of England College is the first of the independent Colleges on the Campus of the University. There are no religious tests, and accommodation is available for 210 men in single study-bedrooms. Fees are $25 per week.

Enquiries should be addressed to the Master, New College, Anzac Parade, Kensington, N.S.W. 2033.

Warrane College

This College, an affiliated Roman Catholic residential college, was completed in 1970, and provides accommodation for 200 students and fourteen resident tutors.

Basic fees are $24 per week for board and residence, payable on a session basis, and a registration fee of $20. Intending students should write to The Master, Warrane College, Box 123, P.O. Kensington, N.S.W. 2033.

The Jewish College

The Jewish College will provide accommodation for 86 men and

women students when it is ready for occupation in 1973. The basic fee for residents will be $28 a week. Non-resident membership will be available to students who wish to avail themselves of the Kosher dining room and tutorial facilities.

Applications for residence and further information should be addressed to The Master, The Jewish College, The University of New South Wales, Box 1, P.O. Kensington, N.S.W. 2033.

Other Accommodation

Students requiring other than Residential College accommodation may make personal application to the Housing Officer (Extn. 3260) at the Student Amenities Unit. Current lists are kept of accommodation available at recognized boarding houses, private homes, and in serviced and unserviced apartments.

STUDENT AMENITIES UNIT

The Amenities Unit is concerned with student welfare and its activities are associated with sport and recreation, travel and student accommodation. It works in close liaison with the Sports Association, assisting the various clubs, and administers sporting facilities for both grade and social competitions. The Unit also has the added responsibility of the Physical Education and Research Centre where attractive recreational programmes for students and staff are provided. Concessional application forms for all types of travel may also be obtained at the Enquiry Desk in the Chancellery or at the Student Amenities Unit. A Housing Officer is also available to assist students with any off-campus accommodation problems.

Location: The Student Amenities Unit is located in Hut B at the foot of Basser Steps.

Phone: 663 0351, Extension 2235 Sports Association
3271 Physical Education and Recreation Centre
3261 Travel
3260 Accommodation

PHYSICAL EDUCATION AND RECREATION CENTRE

The Physical Education and Recreation Centre consists of eight squash courts and a main building. The latter has a large gymnasium and ancillary practice rooms for fencing, table tennis, judo and weightlifting. The Supervisor of Physical Recreation is responsible

for this Centre and provides a recreational programme for both students and staff. Those who desire to participate in the recreational programmes should contact the Supervisor on Extension 3271.

STUDENT EMPLOYMENT UNIT

The Student Employment Unit offers assistance with career employment for final year students and graduates of the University. This service includes the mailing of regular job vacancy notices to registered students and a campus interview programme for final year students. Careers advice and assistance is also available to undergraduates. Assistance is offered in finding vacation employment which gives either course related experience or industrial training experience where this is a course requirement. Information and advice regarding cadetships, undergraduate and postgraduate scholarships is also available.

The Service is located in the Chancellery on the ground floor.

Telephone: 663 0351 ext. 3259 for employment and careers advice
or
663 0351 ext. 2086 for cadetships and industrial training information.

STUDENT HEALTH UNIT

A student health and first aid centre is situated within the University. It is staffed by two qualified medical practitioners, assisted by a nursing sister and secretary. The medical service, although therapeutic, is not intended to replace private or community health services. Thus, where chronic or continuing conditions are revealed or suspected, the student is referred to a private practitioner or to an appropriate hospital for specialist opinion and/or treatment. The health service is not responsible for fees incurred in these instances. The service is confidential and students are encouraged to attend for advice on matters pertaining to health.

The service is available to all enrolled students by appointment, free of charge, between 9 a.m. and 5 p.m. Mondays to Fridays, and additionally to part-time students from 6 p.m. to 8 p.m. on Tuesdays and Thursdays during session. For staff members, immunizations are available, and first aid service in the case of injury or illness on the campus.

The centre is located in Hut E on the northern side of the campus in College Road.

Appointments may be made by calling at the centre or by telephoning extension 2679 or 3275 during the above hours.

STUDENT COUNSELLING AND RESEARCH UNIT

The Student Counselling and Research Unit offers a free, confidential counselling service to help students, individually or in groups, to deal with problems, and to make plans and decisions associated with their personal, academic, and vocational progress.

Interviews, and group programmes, are available between 9 a.m. and 8 p.m. each week-day. Appointments may be made at the Unit, which is located at the foot of Basser Steps, or by ringing 663-0351, extensions 2600-2605 between 9 a.m. and 5 p.m.

CHAPLAINCY SERVICE

This service is provided for the benefit of students and staff by five Christian Churches and by the Jewish congregation. Chaplains are in attendance at the University at regular times. A Chapel is also available for use by all denominations.

The University Chapel and full-time chaplains are located in Hut F near the Chemistry Building. They may be contacted by phone at the following extensions: Anglican, 2684; Jewish, 3273; Roman Catholic, 2379; Churches of Christ, Methodist and Seventh Day Adventist, 2683.

FINANCIAL ASSISTANCE TO STUDENTS

The Students' Union and the University have co-operated to provide assistance to students who are in financial difficulties which are considered likely to prejudice their progress with their studies.

Three main forms of assistance are available:

1. *Deferment of Payment of Fees*
   Deferments may be granted for a short period, usually one month, without the imposition of a late fee penalty, provided the deferment is requested prior to the due date for fee payments.

   In exceptional circumstances the University may consider granting deferments for up to twelve months or even longer. In cases where payment is deferred to 31st December, examination results will not be published or made available until such time as the outstanding fees are paid. Where deferments are granted to a date beyond 31st December, the University may require the student to enter into a formal agreement to repay the fees.
2. *Short Term Cash Loans*
   Donations from the Students' Union, the University Union and other sources have made funds available for urgent cash loans

not exceeding $100.00. These loans are normally repayable within one month.

3. *Long Term Cash Loans*
   An amount of up to $300.00 is available from this fund, repayable usually after twelve months or within twelve months of graduation or upon withdrawal from the course. This scheme is funded jointly by the University and the Students' Union. Students are required to enter into a formal agreement with the University to repay such a loan.

In all cases assistance is limited to students with reasonable academic records and whose financial circumstances warrant loans.

Applications may be made personally to the Deputy Registrar (Student Services).

FINANCIAL ASSISTANCE TO ABORIGINAL STUDENTS

Financial assistance is available from a number of sources to help Aboriginal students. Apart from Open Entrance Commonwealth University Scholarships, there is also a Commonwealth Aboriginal Study Grant Scheme. Furthermore, the University may assist Aboriginal students with some essential living expenses or the waiving of course fees in exceptional circumstances.

All enquiries relating to this scheme should be directed to The Deputy Registrar (Student Services).

STUDENTS' UNION

The Students' Union was formed in 1952 as an organisation, duly recognised by the University Council, to represent the student body and to provide a central organisation for the administration of student activities. In the words of its constitution, "The Union is formed for the purpose of advancing the interests of University men and women, facilitating their general scientific and technical education, and fostering a University spirit among them."

The Union affords a recognised means of communication between the student body and the University authorities, and represents its members in all matters affecting their interests. It aims to promote the cultural, educational and recreational life of the University and to encourage a permanent interest among graduates in the life and progress of the University.

Membership of the Union is compulsory for all registered students of the University and is open to graduates of the University and to members of its academic staff. The annual subscription is $7.

The Union is governed by a Council consisting of student representatives from the various faculties of the University, representatives of Life Members, overseas students, and of the University and the Sports Association. The Council is elected annually.

SPORTS ASSOCIATION

The Sports Association is a student organization within the University, and it caters for a variety of competitive sports for both men and women.

In December 1952 the University Council approved the establishment of the Sports Association which consisted of five clubs. As the University has grown, the Association has expanded, and today includes over thirty clubs.

The controlling body of the Association is the General Committee which consists of a President, Secretary, Treasurer, eight Vice-Presidents and two delegates from each of the affiliated clubs.

Membership of the Association is compulsory for all registered students, and the annual subscription is $4.

STUDENT CLUBS AND SOCIETIES

Students have the opportunity of joining a wide range of clubs and societies. Affiliated with the Students' Union are the School and Faculty associations, and the numerous religious, social and cultural clubs. There are also many sporting clubs (33) affiliated with the Sports Association.

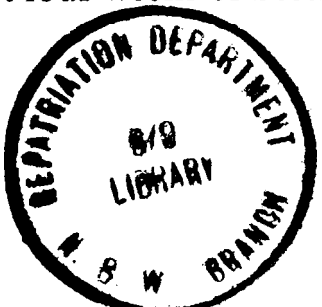
Clubs and societies seeking to use the name of the University in their title, or seeking University recognition, must submit their constitutions either to the Students' Union or the Sports Association if they wish to be affiliated with either of these bodies, or to the Registrar for approval by the University Council.

UNIVERSITY CO-OPERATIVE BOOKSHOP LTD.

Membership is open to all students, on payment of a fee of $5, refundable when membership is terminated. Members receive an annual rebate on purchases of books.

CASHIER'S HOURS

The cashier's office is open for the payment of fees from 9.30 a.m. to 1.00 p.m., and from 2.00 p.m. to 4.30 p.m. Monday to Friday. It is open for additional periods during the first four weeks of Session 1



and three weeks of Session 2. Students are advised to consult notice-boards for details.

THE UNIVERSITY REGIMENT

Enquiries should be made to the Adjutant at the Regimental Depot in Day Avenue just west of Anzac Parade.

THE N.S.W. UNIVERSITY SQUADRON

Enquiries should be made to the Commanding Officer at Squadron Headquarters at the corner of City and Darlington Streets, Darlington 2008.

ROYAL AUSTRALIAN NAVY

Enquiries should be made to the Royal Australian Naval Liaison Officer, Professor J. S. Ratcliffe, Commander, R.A.N.V.R., at the School of Chemical Engineering. Phone 663-0351, ext. 2406.

SCHOLARSHIPS, BURSARIES AND CADETSHIPS

A wide range of scholarships and cadetships will be offered to students commencing University courses in 1973.

Except where otherwise specified, applications on the forms obtainable from the Admissions Office ('phone: 663-0351, ext. 2485) must be lodged with the Registrar, the University of New South Wales, P.O. Box 1, Kensington, within seven days of the publication of the results of the N.S.W. Higher School Certificate Examination.

UNIVERSITY SCHOLARSHIPS

The University annually awards up to fifteen scholarships tenable in degree courses to students who have matriculated at the Higher School Certificate Examination; ten scholarships to students who have completed certificate courses (Department of Technical Education); ten scholarships to students who have completed Trade Courses (Department of Technical Education); and ten scholarships to part-time students who have taken the Diploma Entrance course of the Department of Technical Education. The scholarships are tenable in any Faculty and exempt the holder from payment of course fees during the currency of the scholarship. Scholarships will be awarded in order of merit on Higher School Certificate Examination results. They may be held only be persons who do not hold another award and whose parents are permanent residents of Australia. Applications for these scholarships, on forms available from the Registrar, must be lodged with the Registrar within seven days of the publication of the award of Commonwealth University Scholarships.

COMMONWEALTH UNIVERSITY SCHOLARSHIPS

Students enrolling in first degree courses at the University are eligible. Benefits include payment of all tuition fees and other compulsory fees, and living allowances (these latter being subject to a means test). The closing date for applications is 30th September in the year immediately preceding that for which the scholarship is desired. Full particulars and application forms may be obtained from the Department of Education and Science, La Salle Building,

70 Castlereagh Street, Sydney, 2000, or Box 3987, G.P.O. Sydney, 2001. Phone 2-0323.

BURSARIES AWARDED BY THE BURSARY ENDOWMENT BOARD

A number of Bursaries tenable at the University are awarded to candidates of merit at the Higher School Certificate Examination whose family income falls within certain limits prescribed by the Bursary Endowment Board.

Applications should be made to the Secretary, Bursary Endowment Board, Box 7077, G.P.O. Sydney, 2001.

COMMONWEALTH SERVICE CADETSHIPS

The Commonwealth Service offers each year a number of cadetships in a wide variety of fields. British subjects, with Australian citizenship, under the age of twenty-eight years, are eligible to apply. These cadetships enable selected students to complete their courses full-time and receive a salary while doing so according to the scale below:

Under 18 years	$2,080
At 18 years	$2,426
At 19 years	$2,807
At 20 years	$3,154
Adult Rate	$3,203-$3,342

Fees are refunded to the cadet on a proportionate basis according to his salary.

Applicants will be required to enter into a bond undertaking to remain in the Commonwealth Public Service for a period of up to five years after graduation. Either full-time or part-time courses may be undertaken if available.

Details of vacancies at any one time may be obtained from the University's Student Employment and Scholarships Unit or the Commonwealth Public Service Inspector's Office, Commonwealth Centre, Chifley Square, Sydney. Telephone 259-3969.

REGENT SCHOLARSHIP

The Regent Scholarship is open to students who qualify at the annual examinations for admission to the Final Year course in Architecture. The scholarship provides a living allowance of at least $200 p.a. payable in session instalments.

Applications must be made on the approved form and lodged with the Registrar not later than 13th January each year.

INSTITUTE OF QUANTITY SURVEYORS OF AUSTRALIA, N.S.W. CHAPTER, SCHOLARSHIP

The Institute of Quantity Surveyors of Australia offers a scholarship to the value of $2,000, to be awarded quadrennially to a student eligible for admission to the Bachelor of Building course. The award will be made upon the recommendation of the Dean, subject to Institute concurrence, and will be paid to the successful applicant in four annual instalments of $500, commencing with initial enrolment in the BBuild course, and thereafter at the beginning of Years 2, 3 and 4.

It is a condition of the scholarship that the recipient shall become a student member of the Institute of Quantity Surveyors of Australia, and that payment of successive instalments shall be contingent upon satisfactory progress.

UNDERGRADUATE PRIZES

Bachelor of Science (Architecture) Course

Marley Australia Ltd.	$50	Best student, Year I.
Byrne & Davidson (Mfg.) Pty. Ltd.	$100	Best student in History of Architecture I.
Dunlop Rubber Aust. Ltd. ...	$52.50	Best student, Year III.

Architecture Degree Course

Autohot Industries Pty. Ltd. ...	$600	Best student, Final Year.
James Hardie & Co. Pty. Ltd.	$100	General excellence in the architectural subjects of the course.
Royal Australian Institute of Architects, N.S.W. Chapter	$50	Excellence in Design and allied subjects in final two years of course.
Board of Architects of N.S.W.	$40	Subject selected by Head of School.
Frank W. Peplow	$24	Best student in ecclesiastic architecture.

Architecture

Chamber of Manufactures of N.S.W.	$10	Subjects selected by Head of School.

Building Degree Course

Byrne & Davidson (Mfg.) Pty. Ltd.	$100	Best student, Year III.
James Hardie & Co. Pty. Ltd.	$50	Best student, Year I.
Institute of Quantity Surveyors	$50	Quantity Surveying — subject selected by Head of School.

Master Builders' Association of N.S.W.	$200	To be allocated at the discretion of the Head of the School.

Town Planning Degree Course

The State Planning Authority of N.S.W.	$150	General proficiency in the Fifth year of the course.
Royal Aust. Planning Institute, N.S.W. Division	$100	BTP, Year 3.

POSTGRADUATE AWARDS

Commonwealth Postgraduate Research Awards

The Commonwealth Government each year provides a number of awards for postgraduate study and research tenable in Australian universities. Applications for awards tenable in this University must be lodged with the Registrar by 31st October each year.

Commonwealth Postgraduate Course Awards

The Commonwealth Government provides a number of awards for full-time postgraduate study in courses leading to the degree of Master by formal course work. Applications for awards tenable in this University must be lodged with the Registrar by 30th September each year.

Byera Hadley Scholarship

The Byera Hadley Scholarship is open to graduates and diplomates of all recognized Schools of Architecture in New South Wales. Candidates must be British subjects and must make application within three years of passing their final degree or diploma examinations. Value $3,000.

Sir Manuel Hornibrook Travel Grant

The Sir Manuel Hornibrook Travel Grant is open to Licentiate or Student members of the Australian Institute of Builders, from whom the Council of the Institute may invite applications in each alternate year.

The object of the Travel Grant is to advance the study and practice of building by competition for the award, and by subsequent travel overseas or interstate. The Travel Grant shall be of such value as the Council may from time to time determine. Details are obtainable from the Australian Institute of Building, N.S.W. Chapter.

Master Builders' Association Postgraduate Scholarship

The Master Builders' Association of N.S.W. offers a scholarship valued at $500. The terms of the award state that it shall be made annually to a student who has enrolled in the Master of Science (Building) Course. In practice it has been found more appropriate to award two such scholarships biennially. Successful applicants will receive $250 at the commencement of their studies and a further $250 upon entry to their second year.

Alex Rigby Award

The Alex Rigby Award, consisting of a certificate and cheque for $105 is available to a candidate for the degree of Master of Building, and will be awarded upon the recommendation of the Head of the School to the author of a worthy Thesis, submitted within the year ending March 31st.

Australian Acoustical Society Bursary

The Australian Acoustical Society offers a bursary valued at $350 to a student undertaking the Master of Science (Acoustics) Course.

Building Research Fellowship

A Fellowship, valued at $4,000 per annum and tenable for two years, is available for full-time, postgraduate study and research for the degree of Master of Building or Doctor of Philosophy in the Faculty of Architecture. The Fellowship is financed from a Fund built up by contributions from a group of companies in the building industry. Appointment shall be made upon the recommendation of the Dean, but initial enquiries should be directed to the Head of the School of Building.

UNDERGRADUATE COURSES

The Faculty of Architecture conducts undergraduate courses in Architecture, Building and Town Planning. These courses provide a thorough training in the arts and sciences which today govern the design and construction of buildings and the balanced growth of cities. In addition to professional and vocational training, the courses include general studies in order to provide graduates with a broad understanding of the humanities and social sciences. The Faculty comprises the School of Architecture, School of Building and School of Town Planning.

THE COURSE IN ARCHITECTURE

Architects play a vital part in the nation's physical and cultural growth. Their contribution to society is primarily one of design, but includes consideration of such practical factors as economy, efficiency and durability. Indeed architecture may be defined as a complete synthesis of art and science, and the syllabus of study has been arranged to achieve this end.

The early years of the course provide fundamental training in the basic sciences underlying building technology in order to familiarize students with the new materials, methods and ideas characteristic of present-day architecture, and to prepare the way for their later, more advanced education. Instruction in the principles of Mathematics and Physics is included as a basis for studies in building science and structural design. Concurrently the students' creative abilities are developed by progressive exercises in imaginative design, which commence as simple projects but become more complex in each successive year.

In the latter part of the course architectural design assumes major importance, for it is through this subject that students learn to integrate all the contributory training they have received. However, the common core subjects taken by all students are handled in such a manner as to allow a student to concentrate on those aspects which most interest him. In addition, a wide variety of elective subjects allows the student to choose so that he may extend his study either in breadth or depth.

The 1968 Course

This course was introduced for the first time in 1968 and is referred to as the 1968 course. The course which operated in 1967 and before is referred to as the 1967 course, a description and details of which are given in the Calendar of the University of New South Wales 1967. The 1968 course is being implemented progressively, i.e. Year 1 in 1968, Years 1 and 2 in 1969, Years 1, 2 and 3 in 1970 etc.

First year of the 1967 course was withdrawn in 1969, and successive years will be withdrawn annually.

Subjects in the 1967 course will be phased-out by substituting approximately equivalent subjects from the 1968 course. Students enrolled in the 1967 course should refer to the Head of School for their programmes of study. Students enrolled in the 1967 course will be required to complete their studies in the number of years/stages remaining in their course in 1970, plus one.

General Description of the 1968 Course

The normal course in Architecture consists of six years of which all except the fourth year require full-time attendance at the University. On satisfactory completion of the first three years a student is awarded the degree of Bachelor of Science (Architecture). The fourth year of the course requires no formal attendance at the University. In this period the student is required to obtain practical experience (see *Practical Experience* below). Admission to the fifth and sixth years is selective and is based upon the ability revealed and the performance achieved up to the awarding of the first degree at Pass level.* On satisfactory completion of the fifth and sixth years of the course the student is awarded a second degree of Bachelor of Architecture (BArch).

The Part-time Programme

There is only one course in Architecture in respect of subjects, content, examinations and standards, which in the first three years leading to the BSc(Arch) and to meet the varying needs of students, may be taken on an attendance timetable which is wholly or largely full-time or wholly or largely part-time. The part-time programme requires up to three half-days' attendance each week during the day with the balance of the attendance in the evenings.

---

* Applications for admission to the BArch course must be lodged with the Registrar not later than 30th November in the year preceding that in which enrolment is sought.

The subjects of two part-time stages are equivalent in all ways to those of one full-time year. At the end of the first or second year, or the second and fourth stages (i.e. Stages 1B and 2B), a student may elect to transfer to a different attendance programme. *The fifth and sixth years of the course are available by full-time attendance only.*

Practical Experience

During the whole of the part-time period of the programme being followed a student is required to be employed on architectural work under the supervision of an approved architect. For this purpose an architect registered under any Australian State Architects' Registration Act is considered to be an approved architect. Students wishing to gain their practical experience under the supervision of any other person must submit the circumstances to the Head of School for approval.

Honours

Honours are awarded on the basis of quality of performance during the fifth and sixth years of the course and in accordance with current Faculty regulations.

Registration and Professional Recognition

The degree of Bachelor of Architecture of the University of New South Wales is recognized by the Board of Architects of New South Wales for the purposes of legal registration provided the candidate can satisfy the following requirements:—

(*a*) produce evidence of two years' approved practical experience, at least one of which has been subsequent to successful completion of the course; and

(*b*) pass a special examination in Architectural Practice.

Graduates who satisfy the registration requirements of the Board of Architects of New South Wales as listed above under (*a*) and (*b*) are eligible for Associate Membership of the Royal Australian Institute of Architects, and thereby of the Royal Institute of British Architects.

The foregoing is a general statement, and students are strongly advised to obtain further particulars from the Institutes and the Board of Architects of New South Wales.

337. BACHELOR OF SCIENCE (ARCHITECTURE)—COURSE BSc(Arch)

		Hours per week for 2 sessions		
		FULL-TIME PROGRAMME	PART-TIME PROGRAMME	
YEAR 1			Stage 1A	Stage 1B
11.111	Design I	1	1	0
11.121	History of Architecture I	1	1	0
11.131	Graphic Communication I	9	0	0
11.1311	Graphic Communication IA	0	5	0
11.1312	Graphic Communication IB	0	0	3
11.201	Construction I	5	0	4
11.221	Structures I	3	3	0
11.271	Architectural Science I	9	0	0
11.2711	Architectural Science IA	0	3	0
11.2712	Architectural Science IB	0	0	6
		28	13	13
YEAR 2			Stage 2A	Stage 2B
11.112	Design II	7	0	7
11.122	History of Architecture II	1	0	1
11.132	Graphic Communication II	6	6	0
11.212	Construction II	6	0	6
11.222	Structures II	3½	3½	0
11.272	Architectural Science II	2	2	0
	General Studies Elective	1½	1½	0
		27	13	14
YEAR 3			Stage 3A	Stage 3B
11.113	Design III	7	0	7
11.123	History of Architecture III	1	0	1
11.133	Graphic Communication III	3	3	0
11.213	Construction III	8	0	0
11.2131	Construction IIIA	0	5	0
11.2132	Construction IIIB	0	0	3
11.223	Structures III	3	3	0
11.273	Architectural Science III	2½	2½	0
11.331	Estimating and Specifications	1	0	1
	General Studies Elective	1½	0	1½
		27	13½	13½

330. BACHELOR OF ARCHITECTURE—COURSE (BArch)

YEAR 4		Hours per week for 2 sessions
	Practical Experience*	—

YEAR 5		Hours per week SESSION 1	SESSION 2
11.151	Architecture A	15	15
	Electives†	6	6
11.171A	Thesis‡	1	1
36.411	Town Planning	2	0
		24	22

YEAR 6		Hours per week for 2 sessions
11.152	Architecture B	15
11.321	Professional Practice	2
	Electives*	5
11.171B	Thesis‡	1
		23

* Students who have satisfactorily completed at least three years of part-time study (at least one of which shall be equivalent to Stage IIIB) and have obtained approved practical experience during the whole of the period of part-time attendance shall not be required to complete the fourth year of the Bachelor of Architecture degree course.

† Fifth year electives to a total minimum weekly time of six hours to be freely selected from the following, at least one hour being taken from either sub-section (b) or (c):

(a)		Hours per week for one session
11.2241	Structures A1	2
11.2242	Structures A2	2
11.226	Properties of Materials	2
11.227	Behaviour of Materials	2
11.8111	Theory of Architecture A1	2
11.8112	Theory of Architecture A2	2
11.8211	Construction A1	2
11.8212	Construction A2	2
11.8411	Architectural Science A1	2
11.8412	Architectural Science A2	2
11.8511	Historical Research A1 } Both parts must be	2
11.8512	Historical Research A2 } taken	2
11.8711	Landscape Design A1	2
11.8712	Landscape Design A2	2
36.412	Town Planning A	2

Any other subject offered within the Faculty of Architecture, subject to the approval of the Head of the School of Architecture and the agreement of the professor responsible for the subject.

(b) Any Arts or Commerce subjects consistent with the rules for enrolment of the Faculty concerned.

(c) Any Humanities subjects consistent with the rules for enrolment of the Department of General Studies.

Sixth year electives to a total minimum weekly time of five hours to be freely selected from the following:

(d) Any subjects under (a), (b) or (c) above.

(e)

		Hours per week for one session
11.2251	Structures B1 ⎫ Both parts must	2
11.2252	Structures B2 ⎭ be taken	2
11.8121	Theory of Architecture B1	2
11.8122	Theory of Architecture B2	2
11.8221	Construction B1	2
11.8222	Construction B2	2
11.8421	Architectural Science B1 ⎫ Both parts must	2
11.8422	Architectural Science B2 ⎭ be taken	2
11.8521	Historical Research B1 ⎫ Both parts must	2
11.8522	Historical Research B2 ⎭ be taken	2
11.8721	Landscape Design B1	2
11.8722	Landscape Design B2	2

‡ The subject of the thesis will be submitted by the student for the approval of the Head of the School at the beginning of fifth year and submitted for examination towards the end of the sixth year. Staff supervision will be available for one hour per week.

DEGREE COURSE IN BUILDING—BBuild

The course in Building provides a basic training for management and executive careers in the building industry. It aims to develop in the student a sound conception of the related requirements and functions of the building-owner, the architect, the numerous building consultants, the materials manufacturer and the builder in the process of planning, management, detailing, erection and fabrication of buildings.

The course places emphasis on subjects dealing with law, management, construction, accounting and applied building economics. The course has relevance to a wide variety of careers in the management and supervision of building enterprises, building materials production and many other activities in building technology, administration and research—both in private and public employment.

General Description of the Course

The normal full-time course leads to the degree of Bachelor of Building (BBuild), and covers four years, three years being full-time attendance and the fourth year part-time.

The Building degree course also provides University training in Quantity Surveying.

The Part-time Programme

There is only one course in Building in respect of subjects, content, examinations and standards which, to meet the varying needs of students, may be taken on an attendance timetable which is largely full-time or wholly or largely part-time. The part-time programme could require up to three half-days' or equivalent attendance per week during the day with the balance of the attendance in the evenings.

The subjects of two part-time stages are equivalent in all ways to one full-time year. At the end of the first and second years or the second and fourth part-time stages a student may elect to transfer to a different attendance programme. Students desiring to change course pattern are required to give notice in writing of their intention not later than 30th September.

Practical Experience

Students are required to be in approved employment related to their course during the whole of the part-time period of their programme. The type of employment proposed must be submitted to the Professor of Building for approval.

Honours

In the Bachelor of Building degree Honours are awarded on the basis of quality of performance with particular emphasis on the later years and in accordance with current Faculty regulations.

Professional Recognition

The award of the degree, Bachelor of Building, is recognized for admission to membership by the Australian Institute of Building and the Australian Institute of Quantity Surveying.

Course Structure

The course detailed below is being implemented progressively, that is, year 1 in 1972, year 2 in 1973 etc. Students enrolled in the "old" course will be required to complete their course in the number of years/stages remaining in their course by 1975, plus one year.

Details of the "old" course may be found in the 1971 Calendar.

333. BUILDING DEGREE COURSE

Bachelor of Building

		Hours per week for 2 sessions		
		FULL-TIME PROGRAMME	PART-TIME PROGRAMME	
YEAR 1			Stage 1	Stage 2
11.121	History of Architecture I	1	1	0
14.001	Introduction to Accounting ...	2	0	2
35.001	Building Construction I	5½	0	0
35.0011	Building Construction IA	0	1	0
35.0012	Building Construction IB	0	0	4½
35.011	Building Science I	9	0	0
35.0111	Building Science IA	0	5	0
35.0112	Building Science IB	0	0	4
35.021	Building Graphics I	6	0	0
35.0211	Building Graphics IA	0	2	0
35.0212	Building Graphics IB	0	0	3
35.171	Building Management I	1	1	0
35.391	Building Structures I	3	3	0
		27½	13	13½

YEAR 2			Stage 3	Stage 4
14.012	Accounting for Builders	2	0	2
35.032	Building Construction II	8	0	0
35.0321	Building Construction IIA ...	0	3	0
35.0322	Building Construction IIB	0	0	5
35.042	Building Science II	4	4	0
35.132	Quantity Surveying I (Measurement)	3	3	0
35.152	Estimating I	2	0	2
35.182	Building Management II	2	0	2
35.202	Soil Mechanics for Building.....	1½	0	1½
35.392	Building Structures II	3½	3½	0
	General Studies Elective	1½	0	1½
		27½	13½	14

		Hours per week for 2 sessions		
		FULL-TIME PROGRAMME	PART-TIME PROGRAMME	
YEAR 3			Stage 5	Stage 6
14.051	Law for Builders I	2	0	2
14.081	Introduction to Business Finance	2	0	2
35.053	Building Construction III	9½	0	0
35.0531	Building Construction IIIA	0	4½	0
35.0532	Building Construction IIIB	0	0	5
35.063	Building Science III	3	3	0
35.143	Quantity Surveying II (Billing)	2	2	0
35.163	Estimating II	2	0	2
35.193	Building Management III	2	0	2
35.393	Building Structures III	3	3	0
	General Studies Elective	1½	1½	0
		27	14	13

		Hours per week	
YEAR 4—PART-TIME PROGRAMME ONLY		SESSION 1	SESSION 2
14.052	Law for Builders II	2	0
35.074	Building Construction IV	2	2
35.084	Building Management IV	1	2
35.094	Quantity Surveying III (Cost Planning)	2	0
35.104	Building Project	1½	4½
35.124	Building Specifications	0	2
35.384	Building Design	1	2
36.411	Town Planning	2	0
	General Studies Elective	1½	1½
		13	14

SCHOOL OF TOWN PLANNING

DEGREE COURSE IN TOWN PLANNING—BTP

The basic objective of the course is to train the "general practitioner" in town planning, that is, a graduate who is well equipped to play a significant role in the work of government and local government planning agencies.

The course places emphasis on the several steps in the planning process, from decision making through civic survey, plan preparation, plan approval, to plan implementation and review. As planning is concerned with the creation of a better urban environment, as well as with policies for determining the best use of land at national, regional and local levels, students are also trained in aesthetic and civic design principles. Further attention is given to planning methodology and urban research techniques.

General Description of the Course

The course is of five years' duration. The first and second years are full-time, the third and fourth years part-time requiring up to three half-days' attendance with the balance in the evenings, and the fifth year full-time.

The course leads to the degree of Bachelor of Town Planning (BTP).

Practical Experience

For the two part-time years the students must be engaged in approved employment related to the course; for example, in government planning and housing authorities, in municipal and shire councils preparing or implementing town and country planning schemes, in private development companies or with planning consultants. The type of employment proposed must be submitted to the Professor of Town Planning for approval.

Honours

Honours are awarded in the Bachelor of Town Planning degree, on the basis of quality of performance throughout the whole course, with particular emphasis on the later years and in accordance with current Faculty regulations.

Professional Recognition

The course is recognized by the Royal Australian Planning Institute as an academic qualification for corporate membership. The Institute requires that for corporate membership graduates must also

have at least one year of practical experience subsequent to graduation.

336. TOWN PLANNING DEGREE COURSE

Bachelor of Town Planning

		Hours per week	
YEAR 1		SESSION 1	SESSION 2
11.111	Design I	1	1
11.121	History of Architecture I	1	1
11.131	Graphic Communication I	9	9
11.211	Construction I	5	5
11.221	Structures I	3	3
11.271	Architectural Science I	9	9
		28	28
YEAR 2			
11.132	Graphic Communication II	6	6
36.431	Town Planning Theory and Practice I	3	3
36.441	Design II for Town Planners	9	6
36.451	History of Town Planning	2	0
36.461	Civic Engineering	2	2
27.293	Physical Geography for Land Assessment	0	4
	General Studies Elective	1½	1½
		23½	22½
YEAR 3—PART-TIME PROGRAMME			
29.431	Surveying and Cartography	0	4
36.432	Town Planning Theory and Practice II	3	2
36.471	Planning Law and Administration	2	2
	Two General Studies Electives	3	3
		8	11
YEAR 4—PART-TIME PROGRAMME			
36.433	Town Planning Theory and Practice III	0	4
36.436	Urban Geography	2	0
53.321	Urban Sociology	2	0
54.113	Political Science IIIA (Option 3)	1	1
	An Advanced General Studies Elective	1½	1½
		6½	6½

YEAR 5		Hours per week SESSION 1	SESSION 2
8.012F	Transportation Engineering	1	1
19.521	Statistical Methods and Data Processing	1	1
36.434	Town Planning Theory and Practice IV ...	12	12
36.435	Civic Survey Camp	—	—
36.442	Civic and Landscape Design	4	4
36.481	Land Valuation and Economics	2	2
36.491	Thesis	1	1
		21	21

EXTENSION COURSES

The Schools within the Faculty from time to time conduct extension courses in specialist fields of study related to architecture, building and town planning. These courses are normally open to qualified members of the various land-use professions, upon payment of a fee appropriate to the length of the particular course.

POSTGRADUATE STUDY

HIGHER DEGREES—RESEARCH

Following the award of a first degree in Architecture, Building or Town Planning of the University of New South Wales or other approved university, graduates may apply to register for the degree of Master of Architecture, Master of Building, Master of Landscape Architecture or Master of Town Planning. Facilities are also available for research towards the degree of Doctor of Philosophy. For details concerning this degree consult the Calendar or write to the Dean.

Summary of the Conditions for the Award of a Master's Degree

(1) Every candidate for the degree shall be required to carry out a programme of advanced study, to take such examinations, and to perform such other work as may be prescribed by the Faculty. The programme shall include the preparation and submission of a thesis embodying the results of an original investigation or design relative to architecture, building, landscape architecture or town planning. The candidate may also submit any work published, whether or not such work is related to the thesis.

(2) No candidate shall be considered for the award of the degree until the lapse of four complete sessions from the date from which the registration becomes effective, save that in the case of a candidate who has obtained the degree of Bachelor with Honours or who has had previous research experience, this period may, with the approval of the Faculty, be reduced by not more than two sessions.

(3) For each candidate there shall be two examiners appointed by the Professorial Board, one of whom shall, if possible, be an external examiner.

(4) Every candidate shall submit three copies of the thesis as specified in the University Calendar, and it shall be understood that the University retains the three copies of the thesis and is free to allow the thesis to be consulted or borrowed. Subject to the provisions of the Copyright Act, 1968, the University may issue the thesis in whole or in part in photostat or micro-film or other copying medium.

Admission

An application to register as a candidate for the degree of Master of Architecture, Master of Building, Master of Landscape Architecture or Master of Town Planning shall be made on the prescribed form, which shall be lodged with the Registrar at least one full calendar month before the commencement of the session in which the candidate desires to register.

POSTGRADUATE COURSES

In addition to the facilities available for the pursuit of higher degrees by research, formal courses are offered as follows:

(1) Master of Science (Acoustics)
(2) Master of Science (Building)
(3) Graduate Diploma in Housing and Neighbourhood Planning
(4) Graduate Diploma in Landscape Design.

Duration

Each course is programmed over two years of part-time study in the University, involving attendance on two or three evenings per week. In the case of Housing and Neighbourhood Planning a one-year full-time programme may be offered subject to demand.

SCHOOL OF ARCHITECTURE

MASTER OF SCIENCE (ACOUSTICS)
MSc (Acoustics)

This course provides for postgraduate study in several important aspects of acoustics, e.g. noise control in buildings, community noise control, auditorium design, machine, ventilation and air conditioning noise control and acoustical systems and structures. It is designed for graduates in architecture, engineering or science who wish to specialize in acoustics, and is suitable for those who wish to practise as consultants or to find employment in industry, research establishments or in larger architectural and engineering offices.

Admission Requirements

General conditions governing registration as a candidate for the degree of Master of Science (Acoustics) are given in the University Calendar, but the attention of intending applicants is directed to the following specific requirements.

(1) A candidate for admission holding the degree of Bachelor of Science (Architecture) of the University of New South Wales, or equivalent qualification will be required to complete a qualifying year, consisting of qualifying subjects marked * before admission to the course.

(2) A candidate for admission holding the degree of Bachelor of Architecture, Bachelor of Building, Bachelor of Science or Bachelor of Engineering of the University of New South Wales, or equivalent qualification, may be required to complete certain qualifying subjects before admission to the course. Generally candidates from engineering or science faculties will be required to complete the subjects marked † unless they have already studied similar topics in their first degree courses.

Course Structure

The course has a duration of four sessions of part-time study. A credit point system has been adopted, one credit point being awarded for each hour/week timetabled. Session 1 provides 7 credit points and Session 2, 9 credit points. Each student must obtain 16 credit points before being permitted to enrol in Year 2. Year 2 consists of a compulsory Graduate Project (6 credit points total) and electives

(4 credit points each). Each student must complete at least 3 electives. Thus the minimum number of credit points for the award of the degree is (16+6+12) = 34. The number of electives offered in any session will depend on student numbers and interests.

810. MASTER OF SCIENCE (ACOUSTICS) COURSE

		Hours per week	
QUALIFYING YEAR		SESSION 1	SESSION 2
*1.281G	Vibration and Wave Theory I	3	0
*1.287G	Vibration and Wave Theory II	0	3
†11.990G	Construction, Contracts and Documentation I	3	0
†11.991G	Construction, Contracts and Documentation II	0	3
*†35.360G	Computer Techniques	3	0
*†35.370G	Experimental Techniques	0	2

*† See admission requirements.

YEAR 1

1.282G	Acoustic Theory	2	0
1.283G	Acoustic Measuring Systems	1	0
1.284G	Electro-acoustics	0	1
1.286G	Acoustic Laboratory	0	3
5.651G	Mechanical Noise Sources	2	0
11.992G	Acoustics of Speech and Music	1	0
11.993G	The Ear and Hearing	1	0
11.994G	Hearing Conservation	0	1
11.995G	Community Noise	0	4
		7	9

YEAR 2*

11.996G	Graduate Project (equivalent hours)	3	3
	Electives†		
1.285G	Acoustical Systems and Structures	4	0
5.652G	Noise Suppression Techniques	4	0
11.997G	Auditorium Acoustics	4	0
11.998G	Airborne and Impact Noise Control in Buildings	0	4
11.999G	Advanced Acoustics of Speech and Music	0	4

* In addition to formal course work, there will be occasional field excursions.
† The electives offered in any session will depend on circumstances.

521. GRADUATE DIPLOMA IN LANDSCAPE DESIGN (GradDip)

This course, the first of its kind to be offered in Australia, has been designed to extend the knowledge of architects to embrace an important environmental study closely associated with that of their own profession. It is a discipline which has so far received little attention in this country, yet may be expected to play a significant part in the future shaping of our environment.

Admission Requirements

An applicant for admission to the Landscape Design course shall be—

(i) a graduate in Architecture of the University of New South Wales; or

(ii) a person with such other qualifications as may be approved by Faculty.

Course Structure

		Hours per week			
		SESSION 1		SESSION 2	
YEAR 1—PART-TIME		Lec.	Prac.	Lec.	Prac.
11.910G	History of Landscape Design	1	0	0	0
11.912G	Landscape Engineering	2	0	0	0
27.293	Physical Geography for Land Assessment	0	0	2	2
43.211G	Botany and Ecology*	1	2	1	2
		4	2	3	4
YEAR 2					
11.913G	Theory and Practice of Landscape.....	1	0	1	0
11.914G	Forestry and Horticulture*	2	1	2	1
11.915G	Landscape Design	0	3	0	3
		3	4	3	4

* Practical work will include a number of Saturday excursions.

SCHOOL OF BUILDING

221. MASTER OF SCIENCE (BUILDING)
MSc (Building)

This two year, part-time course has been designed to provide opportunities for advanced study in the science of construction. It allows a certain amount of specialization in three inter-related areas:

(*a*) planning and management aspects of a design or construction organization, including programming, evaluation, costing, performance feedback, feasibility, and the valuation and management of properties;

(*b*) operations and control aspects of a design or construction organization, concentrating on estimating and cost analysis, contract or design administration and construction techniques; and

(*c*) development and research aspects of construction with relevance to design, construction, product manufacture or research.

The course aims at attracting the practising qualified architect or builder who wishes to widen his knowledge and understanding of construction planning, operation and development.

Admission Requirements

The general conditions governing registration as a candidate for the degree of Master of Science (Building) are given earlier, but the attention of intending applicants is directed to the following specific requirement:

BSc(Arch) graduates of the University of New South Wales must complete a preparatory year. This consists of a programme totalling a maximum of 9 hours per week for two sessions, selected from the following subjects with the approval of the Faculty Higher Degree Committee.

		Hours per week for two sessions
14.001	Introduction to Accounting	2
14.051	Law for Builders I	2
14.052	Law for Builders II	1
35.0531	Building Construction IIIA (Part only) ...	3
35.182	Building Management II	2
35.193	Building Management III (Part only)	1

Course Structure

The course is based on a *credit points* system: every lecture hour per week per session has a *one* credit point rating. All the subjects in Sessions 1 and 2 and the graduate project in Sessions 3 and 4 are compulsory components of the course, completion of which requires a total of 30 credit points.

		Hours per week	
YEAR 1		SESSION 1	SESSION 2
35.210G	Building Contracts and Documentation	2	0
35.220G	Building Economics and Property Valuation	2	0
35.230G	Operations Planning I	0	4
35.240G	Graduate Project	0	1
35.360G	Computer Techniques	3	0
35.370G	Experimental Techniques	0	2
	Credit points	7	7

YEAR 2

35.240G	Graduate Project	2	2

In addition, 12 credit points accrue from a selection of the following subjects, grouped according to the specializations described above.

		Hours per week for one session
Group (*a*)		
35.250G	Office and Personnel Management	2
35.260G	Architectural Programming	2
35.270G	Estate Management	2
35.280G	History of Building	2
Group (*b*)		
35.290G	Advanced Construction I	4
35.300G	Advanced Construction II	4
35.310G	Advanced Equipment and Services	2
Group (*c*)		
35.320G	Operations Planning II	4
35.330G	Cost Planning and Analysis	2
35.340G	Computer Applications I	2
35.350G	Computer Applications II	2

The grouping is arbitrary, and the student is allowed to select subjects from any one of the three groups *if they are available*. Availability depends on the number of enrolments and on the numbers of students wishing to specialize in each of the groups. While the intention is to offer as many electives as possible, students should realize that the full range may not be offered in any one year.

SCHOOL OF TOWN PLANNING

The School offers a postgraduate course leading to the award of a Graduate Diploma in Housing and Neighbourhood Planning (GradDip). This course is normally conducted over two years part-time, but may be offered over one year full-time, depending upon demand.

520. HOUSING AND NEIGHBOURHOOD PLANNING GRADUATE DIPLOMA COURSE (GradDip)

This course provides for postgraduate study in the design and layout of residential areas. It is concerned with the study of the physical structure and form of new and old residential neighbourhoods; and of the elements of the neighbourhood including dwellings, open spaces, shopping and community centres. In addition to design considerations, specific study will be made of social and economic factors in the provision of public and private housing.

Admission Requirements

A candidate shall be—

(i) a graduate in Architecture of the University of New South Wales; or

(ii) a person with such other qualifications as may be approved by Faculty.

Course Structure

		Hours per week	
YEAR 1—PART-TIME		SESSION 1	SESSION 2
36.920G	Theory of Neighbourhood Planning	1	1
36.921G	Practice of Neighbourhood Planning ...	3	3
36.923G	Land and Housing Economics	0	2
36.924G	Urban Sociology	2	0
		6	6
YEAR 2			
36.921G	Practice of Neighbourhood Planning ...	4	4
36.922G	Communications and Public Utilities ...	0	2
36.925G	Housing Law and Administration	2	0
		6	6

Enquiries

Initial enquiries regarding postgraduate courses should be addressed to:

The Dean,
Faculty of Architecture,
University of New South Wales,
P.O. Box 1,
Kensington,
New South Wales, Australia, 2033.

BUILDING RESEARCH LABORATORY

The Faculty controls a Building Research Laboratory situated in the University of New South Wales Research Station, King Street, Randwick. The Laboratory which concentrates on postgraduate research and research for industry has sections equipped for work on Environment and Climate, Materials, Model Testing, Services, Lighting and Acoustics. The Laboratory has extensive testing and research equipment and workshop facilities including a wind-rain machine, a weatherometer, an artificial sky, a structural testing bay and a controlled atmosphere chamber. The equipment and facilities of the Laboratory are continually being added to. Research work and testing programmes carried out in the Laboratory include:

Efficiency of tiled roofs of various pitch, under extreme weather conditions.

Study of the performance of bricks and brickwork.

Condensation behaviour of double-glazed windows.

Abrasion properties of floor materials.

Transfer of heat and moisture through wall elements.

Vibration characteristics of large pre-stressed concrete structures.

Applications of mortar-mesh (ferro-cimento) structures in building.

Penetration of moisture into and through concrete.

DESCRIPTION OF SUBJECTS

The following brief synopses are intended to outline the scope of individual subjects. The subjects are grouped under the School responsible for them, and are further subdivided, when appropriate, under classifications of Design, Construction, Structures, etc. Postgraduate subject descriptions follow the Undergraduate synopses in each case.

Subject synopses are followed by lists of recommended text and reference books. In cases where no list appears students will be informed of their requirements at the beginning of the year.

The Board of Studies in General Education has published a handbook in which details concerning the general studies subjects may be found. The handbook also contains information regarding general studies text and reference books, and is available free of charge.

SCHOOL OF CIVIL ENGINEERING

8.012F Transportation Engineering

History and development of transport. Characteristics of the principal modes—rail, road, sea, air, walking. Transfer terminals. Interaction between land use and transport—traffic demand. Fundamentals of transport system performance—capacity, speed, level of service, travel time/flow relationships. Allocation of passengers and freight between modes. Evaluation of transport system output and performance.

SCHOOL OF ARCHITECTURE

Undergraduate Subjects

DESIGN

The design and construction of building and environment, including the solution of functional problems, study and application of specialized building techniques, engineering services and equipment; documentation; estimating and building job organization. In all years theoretical aspects are covered in lectures and applied by the student in studio work. The first three years give a basic understanding primarily in the functional and practical aspects of architecture; the last two years involve the student additionally in aesthetic and philosophic values.

11.111 Design I

An introductory survey of the visual environment of man: large scale environment, natural, modified by man and man-made; man's settlements: cities, towns and villages. Urban precincts, squares, streets, parks. The "equipment" of public environment. Buildings. Architectural provisions for individual man.

(In studio work of other subjects the principles of two- and three-dimensional composition are introduced and exercises are given beginning with the simple

elements including building elements and simple spaces with simple functions.)

TEXTBOOK

Rowland, K. *Looking and Seeing.* Parts 1 to 4. Cheshire.

REFERENCE BOOKS

De Sausmarez, M. *Basic Design: the Dynamics of Visual Form.* Studio Vista.
Gauldie, S. *Architecture* (The Appreciation of the Arts, Vol. 1.). Oxford U.P.
Pye, D. *The Nature of Design.* Studio Vista.
Smith, A. *The Body.* Pelican.

11.112 Design II

Introduction to the design process. Design for needs of individuals and small groups based on physical factors of health, comfort, safety and convenience. Emphasis on internal environment.

Inter-relation of people within small groups. Relationship between internal and external spaces. Design of small and simple multi-cell buildings. Influence of climate, structure and materials on architecture.

REFERENCE BOOKS

Alexander, C. *Notes on the Synthesis of Form.* Harvard U.P.
Chermayeff, S., and Alexander, C. *Community and Privacy.* Penguin.
Gregory, S. A., ed. *The Design Method.* Butterworths.
Hall, E. T. *The Hidden Dimension.* Bodley Head.
Proshansky, H., and others. *Environmental Psychology.* Holt, Rinehart & Winston.

11.113 Design III

Design process and its application in larger and more complex architectural problems. Larger groups of people and adequate provision for their needs. Design of buildings becoming more complex in function, form and structure. Related buildings with simple functions and massing, and control of external spaces. Design for comfort and efficiency under diverse conditions. Design of buildings with special requirements of structure, material and/or equipment.

REFERENCE BOOKS

Chermayeff, S., and Alexander, C. *Community and Privacy.* Penguin.
Cook, P. *Architecture: Action and Plan.* Studio Vista.
Hatje, G., ed. *Encyclopaedia of Modern Architecture.* Thames & Hudson.
Rapoport, A. *House Form and Culture.* Prentice-Hall.
Thompson, R. *The Psychology of Thinking.* Penguin.

11.151 Architecture A

Discussion and application in the studios. The study of various theories and philosophies of architecture with the emphasis on aesthetics. The aims and responsibilities of the architect. Study of spatial relationships. Group building design and equipment of interior and exterior spaces. Landscaping. The development of the concept of the totality of architecture and an awareness of the inter-relation of the multiplicity of factors and influences which determine the final result. Problems in design within the concept of total architecture, involving the creation and control of the human environment, its construction and implementation in all aspects.

11.152 Architecture B

The development of a personal philosophy of architecture with the emphasis on mental and spiritual needs. The continuation at a more detailed and complex level of the concept of "total architecture". Problems involving the mental and spiritual needs of the individual and the society. Advanced planning involving urban environmental design and the associated questions of economics and services.

11.8111 Theory of Architecture A1 (Elective)

The process of synthesis in architectural creation. Sources and inter-relation of form. Economy and priorities. Decision-theory. Problem models and the process of synthesis. Inter-relation between the whole and the part and between its formal characteristics and its physical manifestation.

11.8112 Theory of Architecture A2 (Elective)

The philosophical and spiritual intentions in architecture. Questions of and relationships between honesty and falsehood in architecture; legitimate and false styles; the original and the copy; architectural ethics. Philosophy of aesthetics, and the qualities of perfection, goodness, truth and beauty as reflected in great architecture.

11.8121 Theory of Architecture B1 (Elective)

Pre-requisites: 11.8111 Theory of Architecture A1 and
11.8112 Theory of Architecture A2

The causal, ideal and physical manifestation order in relation to architecture. Metaphysical questions and architecture. Geometry re-examined as the basis of spatial order.

11.8122 Theory of Architecture B2 (Elective)

Pre-requisites: 11.8111 Theory of Architecture A1 and
11.8112 Theory of Architecture A2

The sacred and architecture. Sacred geometry and the elements of sacred architecture in a general sense. Introduction to symbolism in architecture according to Christian, Moslem, Hindu and Buddhist doctrines. The expression of the sacrificial idea in the primitive house, the altar, the tent, the temple, the cathedral. Sacred architecture.

11.8711 Landscape Design A1 (Elective)

Physiography and Soils. An examination of landscape forms with reference to their origin and progressive modification through natural forces. The origin, classification and distribution of soils. Erosion and soil stabilization techniques with particular reference to the Australian continent.

11.8712 Landscape Design A2 (Elective)

Plants and Plant Selection. Elementary plant morphology and physiology with special reference to problems associated with site development and atmospheric

pollution. Ecology as a basis of Landscape Design and plant selection. Distribution of major plant species in New South Wales with special reference to the coastal zone.

11.8721 Landscape Design B1 (Elective)

Landscape Rehabilitation. Landscape problems attendant upon our increasingly urbanized society—industrial blight—extractive industries, commercial forestry, foreshore protection and reinstatement, pollution and regeneration. Control and management of national parks and outdoor recreational areas.

11.8722 Landscape Design B2 (Elective)

Urban Landscaping. Street planting in urban and suburban locations. City parks, malls, plazas, and roof-top gardens. Street furniture and paving. Microclimatic phenomena associated with the urban environment.

HISTORY OF FINE ARTS AND ARCHITECTURE

11.011H History of Fine Arts (General Studies Elective)

The course, concerned with the painting and sculpture of Western civilization, aims to show the art of the past in perspective with that of the present and to separate the aesthetic of critical appreciation from that of uncritical liking. The major emphasis is placed on the development of late nineteenth and early twentieth century art as the critical area from which contemporary art forms emerge. The movements concerned in the development of modern painting and sculpture are examined and the stylistic background of the European tradition is surveyed briefly.

TEXTBOOKS

Chipp, H. B. *Theories of Modern Art. A Source Book by Artists and Critics.* U.C.P. Los Angeles and London, 1970.
Lake, C. and Maillard, R. *A Dictionary of Modern Painting.* 3rd ed. Methuen, London, 1964.
Lucie-Smith, E. *Movements in Art since 1945.* Thames & Hudson, London, 1969.

REFERENCE BOOKS

Apollinaire, G. *The Cubist Painters.* 2nd rev. ed., Wittenborn, New York, 1962.
Brion, M. ed. *Art Since 1945.* Thames & Hudson.
Brion, M. *Modern Painting from Impression to Abstract Art.* Thames & Hudson.
Ernst, M. *Beyond Painting.* Wittenborn.
Golding, J. *Cubism: a History and an Analysis 1907-1914.* Faber & Faber.
Hospers, J. *Introductory Readings in Aesthetics.* Free Press.
Kandinsky, W. *Concerning the Spiritual in Art.* Wittenborn.
Newton, E. *European Painting and Sculpture.* Pelican ed., Penguin, 1945.
Ragnar, M. *Modern Painting.* Skira.
Read, H. *A Concise History of Modern Sculpture.* Thames & Hudson.
Read, H. *The Meaning of Art.* 3rd ed. Faber, London, 1951.
Rosenblum, R. *Cubism and Twentieth Century Art.* Thames & Hudson.
Seuphor, M. ed. *A Dictionary of Abstract Painting.* Methuen.
Seuphor, M. *The Sculpture of This Century.* Zivemmer.

11.021H History of Architecture (General Studies Elective)

The role of the architect; architecture as an art, a science, and a profession; the origins of architectural form in ancient civilizations, and the development of these forms throughout the Middle Ages and the Renaissance; the effects of the Industrial Revolution and its aftermath, and the growth of modern architecture; the development of an Australian idiom in architecture and building.

TEXTBOOKS

Boyd, R. *The Walls Around Us.* Cheshire, Melbourne, 1962.
Pevsner, N. *An Outline of European Architecture.* Pelican, London, 1963.
Richards, J. M. *An Introduction to Modern Architecture.* Pelican, London, 1963.

REFERENCE BOOKS

Cottrell, L. *The Penguin Book of Lost Worlds.* Vols I & II Pelican, London.
Jordan, R. F. *European Architecture in Colour.* Thames & Hudson, London, 1962.
Wells, H. G. *A Short History of the World.* Penguin, London.

11.121 History of Architecture I

A broad and general treatment of the history of architecture from the earliest times to the present day.

(a) Introduction. A framework of reference for architectural history: (i) Architecture as the "built environment"—a partnership of man and nature. (ii) The human and environmental influences that affect architecture throughout history.

(b) A general chronological survey: part (i)—Primitive and communal architecture; the ancient world; the Classic world of Greece and Rome; the Dark Ages; Medieval architecture; Renaissance architecture.

(c) A general chronological survey: part (ii)—Baroque and Rococo architecture; Rationalism, Romanticism and the Industrial Revolution; the twentieth century.

REFERENCE BOOKS

Banham, R. *Guide to Modern Architecture.* Architectural Press.
Copplestone, T. ed. *World Architecture: an Illustrated History.* Hamlyn.
Fleming, J., and others. *The Penguin Dictionary of Architecture.* Penguin.
Gloag, J. *Guide to Western Architecture.* Allen & Unwin.

11.122 History of Architecture II

A more detailed treatment of some aspects of history of architecture and their relevance today

(a) A brief history of planning as a response to human needs and its expression as architectural space.

(b) A study of some important structural, constructional, technological and organizational innovations and their influences, particularly in the Middle Ages, nineteenth and twentieth centuries.

(c) An outline of the evolution of form, proportion and detail, and other related visual aspects of architecture, particularly in Classic, Renaissance and twentieth century architecture.

REFERENCE BOOKS

Giedion, S. *Space, Time and Architecture.* 5th ed. Harvard U.P., Cambridge, Mass., 1970.
Hatje, G., ed. *Encyclopaedia of Modern Architecture.* Thames & Hudson.
Jordan, R. F. *Victorian Architecture.* Pelican.
Kidson, P., and others. *A History of English Architecture.* Pelican.
Mumford, L. *The City in History.* Secker & Warburg.
Pannell, J. P. M. *An Illustrated History of Civil Engineering.* Thames & Hudson.
Pevsner, N. *The Sources of Modern Architecture and Design.* Thames & Hudson.

11.123 History of Architecture III

A history of architecture in Australia, in which the general studies of first and second years find more particular application.

(a) The historical, human and environmental context of Australian architecture.
(b) Architecture from the foundation of the colony to the end of World War I.
(c) Architecture since World War I.

TEXTBOOKS HISTORY OF ARCHITECTURE I, II, and III

Fletcher, Sir B. F. *A History of Architecture on the Comparative Method.* 17th ed., Athlone Press, London, 1961.
Pevsner, N. *An Outline of European Architecture.* 7th ed., Penguin Books, Melbourne, 1963.

(for History of Architecture III only)—

Freeland, J. M. *Architecture in Australia: A History.* Cheshire,Melbourne, 1968.

REFERENCE BOOKS

Australian Council of National Trusts. *Historic Homesteads of Australia.* Cassell.
Australian Council of National Trusts. *Historic Public Buildings of Australia.* Cassell.
Boyd, R. *Australia's Home: Its Origins, Builders and Occupiers.* M.U.P.
Casey, M., and others. *Early Melbourne Architecture, 1840-1888.* O.U.P.
Cox, P., and Freeland, J. M. *Rude Timber Buildings in Australia.* Thames & Hudson.
Herman, M. *The Early Australian Architects and Their Work.* A. & R.
Morgan, E. J. R. and Gilbert, S. H. *Early Adelaide Architecture, 1836-1886,* O.U.P.
Oldham, J. and R. *Western Heritage.* Paterson, Brokensha.
R.A.I.A.—Queensland Chapter. *Buildings of Queensland.* R.A.I.A.
Sharland, M. *Stones of a Century.* Oldham, Beddome & Meredith.

11.8511 Historical Research A1
11.8512 Historical Research A2 } (Electives)

A basic knowledge and training in research in the field of Australian architectural history. An appreciation of the purpose of the research, familiarization with sources of materials and the way in which these are best used; proper techniques in the recording and cataloguing of material together with its critical assessment and evaluation and its integration, interpretation and presentation. Application and practice in a small but thorough research project.

11.8521 Historical Research B1
11.8522 Historical Research B2 (Electives)

Pre-requisites: 11.8511 Historical Research A1; 11.8512 Historical Research A2

A development of Historical Research A in which the student's endeavours are directed towards the initiation and completion of an original research project in Australian architectural history.

CONSTRUCTION

The study of the fabric of buildings: the materials, elements, systems, procedures for erection and performance of the fabric determined by considerations of building functions, material properties, environment, climate and site: methods of communicating information. The order of study is from simple buildings for basic functions to buildings for multiple functions and complex procedures.

Theoretical lecture material reinforced by visits to factories and building works and applied and integrated with design in the studio and special projects.

11.211 Construction I

Unit shelter for simple activity: single storey: level site. (a) Single roofs: solid and framed walls: footings. Stones, bricks, tiles, slates, sheets, timber, lime and cement. (b) External doors: cavities, d.p.c.; floors, linings. Wrot timber, concrete, plasters, d.p. materials. (c) Windows, ventilators. Glass, metals. Cold water supply, waste and rain water disposal.

REFERENCE BOOKS

Australia. C.E.B.S. *Notes on the Science of Building.* Progressively revised and extended.

Australia—Department of Labour and National Service—Industrial Training Division. Technical Publications on: *Bricklaying. Drainage. Gasfitting. Sanitary Plumbing and Water Supply.*

McKay, W. B. *Building Construction.* Vols 1 & 2. Longmans.

Mitchell, C. F. *Elementary Building Construction.* 23rd ed. Batsford, London, 1959.

N.S.W. Parliament—Statutes, Ordinances under the Local Government Act. *Ordinance No. 71.* Metric ed., Govt. Printer, Sydney.

N.S.W.—*Standard Minimum Requirements for Home Building.* Issued jointly by government lending institutions and banks.

Nield, D. *Walls and Wall Facings.* 2nd ed. Spon, London, 1955.

Randerson, H. Y. *Australian Sanitary Engineering Practice.* 8th ed. A. & R., Sydney, 1964.

Sharp, W. *Australian Methods of Building Construction.* 4th ed. A. & R., Sydney, 1969.

Standards Association of Australia. *SAA Light Timber Framing Code.* Metric ed. CA 38, 1971.

11.212 Construction II

Single and two-storey, multi-cell shelters: group activity shelter; sloping sites.

(a) Ridged roofs: partitions: storage fitments. Plywood, finishes, hardware. Plane surveys, chaining, angular measurement. The level, differential levelling, booking: contours: the theodolite. Setting out.

(b) Upper timber floors, stairs: retaining walls and membranes, semi-basements, concrete floors on the ground. Fuels and power supplies; thermal insulation: condensation; vapour barriers. Hot water supply; drainage and sanitary plumbing.

(c) Roof coverings; lighting. Introduction of steel and concrete as structural materials; simple trusses and connections; single span r.c. floors. Tiles, renders, paints, steel sections, concrete mixes. Ventilation, ducting, pumps. Heating and cooling appliances and plant.

REFERENCE BOOKS

Billington, N. S. *The Thermal Behaviour of Buildings.* Cleaver-Hume.
Boyne, D. A. *Architects' Working Details.* Architectural Press.
Cook, P. *Experimental Architecture.* Studio Vista, London.
Dietz, A. G. H. *Plastics for Architects and Builders.* M.I.T. Press, London, 1970.
Faber, O. *Heating and Ventilating.* 2nd ed. Spon, London, 1959.
Gt. Britain—Building Research Station. *Principles of Modern Building.* Vol. 1, 3rd ed. 1965, Vol. 2, 1961, H.M.S.O., London.
International Building Classification Committee. SfB/UDC *Building Filing Manual.* R.I.B.A. Technical Information Service, London, 1961.
McGuinness, W. J. and others. *Mechanical and Electrical Equipment for Buildings.* 5th ed. Wiley, N.Y., 1971.
McKay, W. B. and J. K. *Building Construction.* Vols 3 & 4. 2nd ed. Longmans, London, 1963, 1967.
Mitchell, C. F. *Advanced Building Construction.* 17th ed. Vols 1 & 2. Batsford, London, 1959-63.
Ramsey, C. G. and Sleeper, H. R. *Architectural Graphic Standards.* 5th ed. Wiley, N.Y., 1956.
Rogers, T. S. *The Thermal Design of Buildings.* Wiley.
Standards Association of Australia. CC1: *Rules for the Electrical Equipment of Buildings, Structures and Premises.* Part 1. S.A.A.
Whiteley, R. *A Guide to Engineering Services in Buildings for Australian Architects.* U.N.S.W. Students' Union.

11.213 Construction III

Buildings requiring structural frames: multiple activities.

(a) Framing systems and floors. Water and drainage services, fire protection and fire-fighting. Lifts and escalators.

(b) Roofs, claddings, internal provisions. Central conditioning plant. Light fittings. Integration of services.

(c) Basements, tanking, footings. Additions and alterations, adjustable and demountable structures. Procedures, economics. Communication systems.

11.2131 Construction IIIA

The same theoretical and lecture material, together with specific construction assignments as for Construction III.

11.2132 Construction IIIB

The construction assignments of Construction III taken in connection with Design III.

TEXTBOOKS—11.211, 11.212 and 11.213

Australia—Department of Housing. *A Short Glossary of Building Terms.* 4th ed., The Department, Canberra, 1965.
Australia—Commonwealth Experimental Building Station. *Notes on the Science of Building.* No. 1 to latest issue (serial).

N.S.W.—Parliament—Statutes, Ordinances under the Local Government Act. *Ordinance No. 71*, amended to date, Govt. Printer, Sydney.
N.S.W.—Parliament—Statutes. *Sydney Corporation Act By-laws 51 to 58*, amended to date, Govt. Printer, Sydney.
Standards Association of Australia. *Architectural and Building Drawing Office Practice*. No. C.A.25, The Association, Sydney, 1955 (serial).

REFERENCE BOOKS

Bassett, C. R. and Pritchard, M. D. W. *Environmental Physics: Heating*. Longmans. London, 1968.
Carson, A. B. *General Excavation Methods*. Dodge.
Cassie, W. F. and Napper, J. H. *Structure in Building*. 3rd ed. Architectural Press, London, 1966.
Faber, O. and Kell, J. R. *Heating and Air Conditioning of Buildings*. 4th ed. Arch. Press, London, 1966.
Huntington, W. C. *Building Construction*. 3rd ed. Wiley, N.Y., 1963.
McKay, W. B. and J. K. *Building Construction*. Vol. 4. 2nd ed. Longmans, London, 1967.
Merritt, F. S. ed. *Building Construction Handbook*. McGraw-Hill.
Michaels, L. *Contemporary Structure in Architecture*. Reinhold.
Mitchell, C. F. *Advanced Building Construction*. Vol. 2, Batsford, London, 1963.
Oppenheimer, S. P. *Erecting Structural Steel*. McGraw-Hill.
Standards Association of Australia.
CA2 : *SAA Code for Concrete in Buildings*. 1963.
CA3 : Parts I, II, III, IV, V, VI and X. *SAA Lift Code*.
CA15: *Automatic Fire Alarm Installations*. 1965.
CA16: *Automatic Sprinkler Installations*. 1962.
Warland, E. G. *The Technique of Building*. E.U.P.

11.8211 Construction A1 (Elective)

The study in depth of the principles of construction in relation to stability, loadings, safety and special applications of services. Topics also include principles of earthquake resistant construction, non-structural function of the building fabric, movement in buildings; plant and erection techniques.

11.8212 Construction A2 (Elective)

A study of methods and research into new forms of construction, modular co-ordination, standardization and tools of research. Topics include flat-plate and lift-slab construction, prefabrication, construction planning and management, computer application to communication, erection, quality and management control.

11.8221 Construction B1 (Elective)

Experimental investigation and research and interpretation of the results in an elected construction subject. Seminars for the exchange of discovered information. The topics will concentrate on development methods and techniques in construction including research tools, computers and model analysis.

11.8222 Construction B2 (Elective)

Current and future trends in construction. Topics include limitation and disposal of waste, mechanical devices in building, industrialized building, con-

struction planning and control, maintenance planning and replacement policy. Seminars to discuss results of research in Construction B1.

REFERENCE BOOKS 11.8211, 11.8212, 11.8221, and 11.8222

Antill, J. M. *Civil Engineering Construction.* A. & R.
Campion, D. *Computers in Architectural Design.* Elsevier.
Chronowicz, A. *The Design of Shells: a Practical Approach.* 3rd ed. rev. Crosby Lockwood, London, 1968.
Cowan, H. J. and others. *Models in Architecture.* Elsevier.
Diamant, R. M. E. *Industrialised Building.* 3 Vols. Iliffe, London, 1964, 1965, 1968.
International Council for Building Research—CIB. ed. *Towards Industrialised Building.* Elsevier.
Lewicki, B. *Building with Large Prefabricates.* Elsevier.
McGuinness, W. J. and Stein, B. *Mechanical and Electrical Equipment for Buildings.* 5th ed. Wiley, N.Y., 1971.
Modular Building Standards Association. *Modular Practice.* Wiley.

STRUCTURES

The course covers structures as it affects the architect and the builder. Exercises in structural design and testing work in Structure Laboratory supplement the theoretical work.

11.221 Structures I

Force, stress, strain. Equilibrium. Properties of sections. Bending moment and shear force for determinate beams. Bending stresses and shear stresses. Basic design of timber beams. Loadings on structures. Bracing of buildings. Forces in determinate plane frames; polygon of forces, method of sections, resolution of forces. The Link Polygon. Laboratory work in connection with the above.

TEXTBOOK

Morgan, W. and Williams, D. T. *Structural Mechanics.* 2nd ed., Pitman, London, 1963.

REFERENCE BOOKS

Hirschhorn, J. *Materials and Structures I.* U.N.S.W. Students' Union.
Singer, F. L. *Strength of Materials.* 2nd ed. Harper, London, 1962.
Timoshenko, S. and Young, D. H. *Engineering Mechanics.* 4th ed. Part 1, McGraw-Hill, N.Y., 1956.

11.222 Structures II

Buckling of columns and struts related to timber, steel and concrete. Design of beams in timber, steel and concrete. Design of reinforced concrete slabs and stairs. Design of masonry retaining walls. Design of trusses. Three-hinged arch. Indeterminate beams. Deflection of beams. Unsymmetrical bending. Principal stresses and Mohr circle. Simple building systems. Materials of construction: concrete (ingredients, properties, mix design, manufacture), steel, timber and plywood, etc. Laboratory work associated with the above.

TEXTBOOKS

Cassie, W. F. and Napper, J. H. *Structure in Building.* 3rd ed Architectural Press, London, 1966.

Morgan, W. and Williams, D. T. *Structural Mechanics.* 2nd ed., Pitman, London, 1963.
Standards Association of Australia:
(i) *Code for Concrete in Buildings*, CA2, 1963.
(ii) *Steel Structures Code*, CA1, 1972.
(iii) *Dimensions of Hot-Rolled Steel Shapes and Sections for Structural Purposes*, A1, 1965.

REFERENCE BOOKS

Broken Hill Proprietary Co. Ltd. *Steel Shapes and Sections.* B.H.P.
Grinter, L. E. *Elementary Structural Analysis and Design.* 2nd ed. Macmillan, N.Y., 1965.
Morgan, W. *The Elements of Structure.* Pitman.
Parker, H. E. *Simplified Design of Structural Timber.* 2nd ed. Wiley, N.Y., 1963.
Parker, H. E. *Simplified Mechanics and Strength of Materials.* 2nd ed. Wiley, 1961.
Pearson, R. G. and others. *Timber Engineering Design Handbook.* 2nd ed. Jacaranda Press, Melbourne, 1962.
Salvadori, M. and Levy, M. *Structural Design in Architecture.* Prentice-Hall.
Singer, F. L. *Strength of Materials.* 2nd ed. Harper, London, 1962.
Standards Association of Australia. *S.A.A. Loading Code* CA 34, 1969.

11.223 Structures III

Analysis of indeterminate frames: moment distribution, three-moment equation, computers. Arches, portals, multi-storey frames. Design of two-way slabs. Design of columns, retaining walls and footings in reinforced concrete. Prestressed concrete elements. Flat plates. Ultimate design methods. Structural sandwich panels. Cold-rolled and tubular steel sections. Space structures. Laboratory work in connection with the above.

TEXTBOOKS

Grinter, L. E. *Elementary Structural Analysis and Design.* 2nd ed., Macmillan, New York, 1965.
Standards Association of Australia:
(i) *Code for Concrete in Buildings.* CA 2. The Association, Sydney, 1963 (serial).
(ii) *Code for Welding in Buildings.* CA 8, Part I. The Association, Sydney, 1965 (serial).
(iii) *Steel Structures Code.* CA 1. The Association, Sydney, 1968 (serial).

REFERENCE BOOKS

American Concrete Institute. *Manual of Standard Practice for Detailing Reinforced Concrete Structures.* 4th ed. A.C.I., Detroit, 1965.
American Concrete Institute. *Reinforced Concrete Design Handbook.* 2nd ed. A.C.I., Detroit, 1955.
Concrete Reinforcing Steel Institute, U.S.A. *Design Handbook.* 2nd ed. C.R.S.I., 1957.
Ferguson, P. M. *Reinforced Concrete Fundamentals with Emphasis on Ultimate Strength.* 2nd ed. Wiley, N.Y., 1965.
Gaylord, E. H. and C. N. *Design of Steel Structures, Including Applications in Aluminium.* McGraw-Hill.
Gray, C. S. *Steel Designers' Manual.* 2nd ed. Lockwood, London, 1966.

Halperin, D. A. *Building with Steel.* 2nd ed. American Technical Society, Chicago, 1960.
Husband, J. and Harby, W. *Structural Engineering.* 5th ed. Longmans, London, 1947.
Institute of Welding, London. *Handbook for Welded Structural Steelwork.* The Institute.
Morgan, W. *Elementary Reinforced Concrete Design.* 2nd ed. E. Arnold, London, 1958.
Norris, C. H. and Wilbur, J. B. *Elementary Structural Analysis.* 2nd ed. McGraw-Hill, N.Y., 1960.
Parker, H. E. *Simplified Design of Reinforced Concrete.* 2nd ed. Wiley, N.Y., 1960.
Parker, H. E. *Simplified Design of Structural Steel.* 3rd ed. Wiley, N.Y., 1965.
Parker, H. E. *Simplified Engineering for Architects and Builders.* 4th ed. Wiley, N.Y., 1967.
Robb, I. *Steel Frame Design Examples.* 2nd ed. Macmillan, London, 1965.

11.2241 Structures A1 (Elective)

A study in depth of the mathematical analysis and design of basic architectural structures with an extension of the study into advanced and complex systems and future trends in the field. Typical topics include timber and plywood structures and stressed skin panels.

11.2242 Structures A2 (Elective)

A similar study to that of Structures A1, but encompassing large spans, space frames and shells.

TEXTBOOK

Salvadori, M. and Levy, M. *Structural Design in Architecture.* Prentice-Hall, Englewood Cliffs, N.J., 1967.

11.2251 Structures B1
11.2252 Structures B2
(Electives)

Studies in depth by model and physical analysis of the design of basic architectural structures with an extension of the study into advanced and complex structures.

11.226 Properties of Materials (Elective)

New materials and new applications of old materials; their physical and chemical properties; economics; correct and incorrect uses. Topics covered include: structure of solids; linear and non-linear elastic materials in compression and tension; inelastic behaviour; strain hardening; elastic action and yielding in pure bending; complex stress analysis; torsion, elastic, inelastic and plastic; triaxial stresses; dynamic and thermal effects; creep, fatigue; hardness; corrosion; experimental methods used in determining these properties.

11.227 Behaviour of Materials (Elective)

Lectures and demonstrations by visiting specialists on the behaviour and characteristics of a range of building materials covering in particular the aspects of corrosion, abrasion, strength, fatigue, thermal and acoustic properties. Emphasis is given to the interaction between different materials.

ARCHITECTURAL SCIENCE

The application of the methods and findings of science to the design and construction of buildings.

Study commences with basic physical phenomena and their mathematical description. The principles so established are applied to the analysis of the functional requirements of buildings, in terms of their ability to withstand and control the natural environment, and to satisfy human, thermal, visual and auditory requirements.

11.271 Architectural Science I

Mathematics

(a) Elementary computer programming; differentiation and integration of simple functions; the definite integral.
(b) Application to curve sketching, arc lengths, areas and volumes, moments of inertia, fluid pressures.
(c) Plane curves; conics and surfaces of revolution; quadric surfaces; ruled and warped surfaces; convex bodies; spherical trigonometry; projective configurations.

Physics

(a) *Mechanics and Properties of Matter:* Kinematics, Newton's Laws of Motion, work and energy. Atomistic description of mechanical properties of matter. Atomic structure of matter, elasticity, plasticity—dislocation, fracture, viscosity.
(b) *Electrostatics, Electromagnetism and D.C. Circuits:* Coulomb's Law, electric field, electric potential, capacitance. Electrical energy sources, conductors, resistivity, atomic view of conduction, e.m.f., Kirchoff's Law. Magnetic induction, torque on a coil in magnetic field, moving coil meter, Wheatstone Bridge, potentiometer, resistive-capacitive circuits, inductance, Faraday's Law, resistive-inductive circuits.
(c) *Wave Motion, Heat, Light and Sound:* Simple harmonic motion, wave motion, interference, Doppler effect, energy transfer. Sound, longitudinal waves, overtones, intensity levels, decibels, quality of sound. Light, e.m. spectrum, Huygens Principle, curved mirrors, lenses, dispersion, interference, polarization, photometry, colorimetry. Heat, heat capacity, Joule's equivalent, thermometry, convection, conduction, radiation, black body, emittance, absorptance.

Architecture

Properties of building materials. Density, porosity, elasticity and mechanical properties; thermal and moisture expansion, durability and weathering. Climatology, temperature, humidity air flow, human reactions. Elements of statistics, numerical methods, dimensional analysis.

TEXTBOOKS

Fairweather, L., and Sliwa, J. A. *A.J. Metric Handbook*. 3rd ed. Architectural Press, London, 1970.

Halliday, D. and Resnick, R. *Physics Parts 1 and 2*. Combined Edition. Wiley, New York, 1966.

REFERENCE BOOKS

Blatt, J. M. *Introduction to Fortran IV Programming*. Goodyear.

Moroney, M. J. *Facts from Figures*. Pelican.

Ragsdale, L. A. and Raynham, E. A. *Building Materials Practice*. Arnold.

11.272 Architectural Science II

(a) The sky as a sphere; map projections as representations of a spherical surface; geometrical aspects of natural lighting and sun control. Sky factors, Waldram diagrams, daylight protractors.
Sun position and its representation by solar charts; radiant energy from the sun; design of hoods; louvres and sun control devices.

(b) Thermal properties of buildings, heat transmission and insulation. Hygrometry and condensation. Principles of heating, cooling and natural ventilation. Fire in buildings; fire load, fire resistance of materials.

TEXTBOOK

Phillips, R. O. *Sunshine and Shade in Australasia*. Australia—Commonwealth Experimental Building Station, Bulletin No. 8, 1963 (serial).

REFERENCE BOOKS

Givoni, B. *Man, Climate and Architecture*. Elsevier.

Van Straaten, J. F. *Thermal Performance of Buildings*. Elsevier.

Walsh, J. W. T. *The Science of Daylight*. MacDonald.

11.273 Architectural Science III

(a) The lighting of buildings; the eye and vision; general requirements of good lighting. Natural lighting from non-uniform skies; inter-reflected light. Use of charts, tables and other design aids. Artificial lighting; light sources and their spectral characteristics. Luminaires and light control; the lumen method of design. Quality of lighting and glare control.

(b) Acoustics, basic concepts and units. The ear and hearing. Transmission of air-borne and structure-borne sound; methods of noise control and sound insulation. Design of auditoria including analysis of shape and control of reflected sound; sound absorbent materials. Simple sound reinforcement systems. Application to various building types.

TEXTBOOKS

Interior Lighting Design. 3rd ed. (Metric) Lighting Industry Federation Ltd., London, 1970.

Parkin, P. H. and Humphreys, H. R. *Acoustics, Noise and Buildings*. Faber & Faber, London, 1958.

REFERENCE BOOKS

Lawrence, A. B. *Architectural Acoustics*. Elsevier.

Lynes, J. A. *Principles of Natural Lighting*. Elsevier.

Standards Association of Australia. AS Code CA 30. *Artificial Lighting of Buildings.* S.A.A., 1965.
Stevens, W. R. *Building Physics: Lighting.* Pergamon.

11.8411 Architectural Science A1 (Elective)

Lighting Design. Provides the student with an understanding of the basic principles and methodology necessary to execute lighting designs. Includes factors influencing the design of the visual field, analysis of design methods, interior installations, lighting equipment and methods of light control.

TEXTBOOK
Hopkinson, R. G. and Collins, J. B. *The Ergonomics of Lighting.* MacDonald.

REFERENCE BOOKS
Bean, A. R. and Simons, R. H. *Light Fittings, Performance and Design.* Pergamon.
Kornerup, A. and Wanscher, J. H. *Methuen Handbook of Colour.* Methuen.
Stevens, W. R. *Building Physics—Lighting.* Pergamon.
Weston, H. G. *Sight Light and Work.* Lewis & Co.

11.8412 Architectural Science A2 (Elective)

(a) *Acoustics and Sound Insulation.* Emphasizes the practical application of theoretical material. Principal topics include sound insulation and noise reduction in buildings and the use of acoustic models in auditoria design;
or
(b) *Computer-Aided Design.* The use of the computer and the availability of programmes in architecture including computer graphics. Queues and linear programming and the techniques of information storage and retrieval. Practice in the production and application of programmes.

TEXTBOOK
Lawrence, A. B. *Architectural Acoustics.* Elsevier.

REFERENCE BOOKS
Blatt, J. M. *Introduction to Fortran IV Programming.* Goodyear.
Campion, D. *Computers in Architectural Design.* Elsevier.

11.8421 Architectural Science B1 / 11.8422 Architectural Science B2 (Electives)

Pre-requisites: 11.8411 Architectural Science A1 or
11.8412 Architectural Science A2

Supervised individual or group student research into an approved topic within the Architectural Science field.

GRAPHIC COMMUNICATION

The development of visual awareness and the practical skills basic to the observation, analysis and recording of appearance and to the construction of visualization and co-ordination drawings.

11.131 Graphic Communication I

Graphic Structure. Theory applied in technical and visual drawing. Vision and perception. Vision and illusion. Plastic elements. Symbol elements. Analysis and experiment with traditional media and grounds. Synthesis and application in the graphic design problems. The dependance of pictorial content on pictorial structure.

Technical Drawing. Plane geometry. Plane curves of loci. Conics. Parallel projections of solid figures. Sections, intersections and interpenetrations. Surface developments. Architectural drawing conventions.

Visual Drawing. Perspective projection theory, and construction methods. Expedients and mechanical aids. Sciagraphy. Relationship to the three-dimensional illusion. Testing of theory through observation and experiment.

11.1311 Graphic Communication IA
11.1312 Graphic Communication IB
} The syllabus of Graphic Communication I taken over two years.

REFERENCE BOOKS

Brandt, R. *Watercolour Landscape.* Reinhold.
Gregory, R. L. *The Intelligent Eye.* Weidenfeld & Nicholson.
Harlan, C. *Vision and Invention.* Prentice-Hall.
Martin, C. L. *Design Graphics.* 2nd ed. Macmillan, N.Y., 1968.
Rowland, K. *Looking and Seeing.* Parts 1-4. Cheshire.
William, C. W. *Seeing and Perceiving.* Pergamon Press.
Wittaker, F. *Wittaker on Watercolour.* Reinhold.

11.132 Graphic Communication II

Graphic Structure. Analysis and synthesis, in theory and in practice, of a communication process. Studies in the development of symbolic and literal systems of representation. Media studies include the more sophisticated contemporary range.

Technical Drawing. Extension and development from the Stage 1 series in the context of the Architectural design and construction programme.

Visual Drawing. Extension and development from the Stage 1 series in the construction of visualization and co-ordination drawings.

11.133 Graphic Communication III

Further extension of Graphic Communication II with special emphasis on analytical observation and the capacity to construct visualization and co-ordination drawings.

TEXTBOOKS—11.131, 11.132 and 11.133

Biggs, J. R. *The Craft of Lettering.* Blandford.
Center, R. A. *Architectural Shadow Projection.* Cassell.
De Sausmarez, M. *Basic Design: the Dynamics of Visual Form.* Reinhold.
Fairweather, L. and Sliwa, J. A. *A.J. Metric Handbook.* 3rd ed. Architectural Press, London, 1970.
Hollis, H. F. *Teach Yourself Perspective Drawing.* E.U.P.

MANAGEMENT

11.321 Professional Practice

The ethical, legal and common standards and responsibilities governing the relations between the architect, the client and the builder; office practices and procedures; financial aspects of the practice of architecture and building.

(a) Historical background; professional institutions; code of ethics; conditions of engagement; scale of professional charges; specialist consultants.

(b) The Architects' Registration Act of New South Wales, Laws of contract; types of contract; articles of agreement; relationship of contracting parties and the architect; architects' responsibilities; negligence; arbitration; litigation; statutory controls; copyright.

(c) Office administration; correspondence; reports; insurance; finance; tenders; contract administration; organization of the building industry; problems of practice.

11.331 Estimating and Specifications

(a) *Estimating*

Methods used for estimating; standard mode of measurement; examples of "building up" the elements of a unit cost for pricing a bill of quantities; typical problems in estimating costs of building works.

Measuring and methods of adjusting variation; analysis of costs for alternative methods of construction; preparation of preliminary estimates from sketch plans.

(b) *Specifications*

The principles and methods and the changing trends involved in the compilation of a specification complementing other architectural documents.

Definition, objects and purposes of a specification; specification as a contract; relationship to Bill of Quantities and drawings; schedules; reference material; "Master" specifications; outright and performance specifications; prime cost and provisional sums; specification sections, clauses and language; preparation and format; printing, binding and distribution.

Explanation of documents; general conditions; specifications of individual "trades"; schedule of p.c. and provisional sums; specifications for alterations, additions and new works; specification assignment.

REFERENCE BOOKS

Cooper, B. M. *Writing Technical Reports*, Penguin.
Marsh, D. R. *Specification Writing*. 2nd ed. Hill of Content, Melbourne, 1971.

THESES

11.171A and 11.171B Thesis (Architecture)

A specialized individual study taken under staff supervision with the object of allowing the student either to gain knowledge in some aspect of architecture which is not covered in the course or to increase his knowledge of some aspect which has been covered. As such the thesis is essentially evidence of this individual

study. The study does not require original experimental research for the purpose of discovering new facts or the testing of an hypothesis. Neither is it an essay permitting the student's unsupported opinion. The topic of the thesis is submitted by the student for the approval of the Professor of Architecture at the beginning of the fifth year and the completed thesis submitted for examination towards the end of the sixth year.

SCHOOL OF ACCOUNTANCY

14.001 Introduction to Accounting

An introduction for non-commerce students to the nature, purpose and conceptual foundation of accounting. Information systems including accounting applications. Analysis and use of accounting reports. Relevance of accounting to managerial and technological functions including planning, decision making and control.

PRELIMINARY READING

Anthony, R. N. *Essentials of Accounting.* Addison-Wesley, 1964.

TEXTBOOK

Fertig, P. E., Istvan, D. F. and Mottice, H. J. *Using Accounting Information.* 2nd ed. Harcourt Brace, 1971.

14.012 Accounting for Builders

A treatment of accounting information for management purposes. Management planning and control, including such techniques as critical path method.

PRELIMINARY READING

Miller, D. W. and Starr, M. K. *The Structure of Human Decisions.* Prentice-Hall, 1967.

Wasson, C. R. *The Economics of Managerial Decision.* Appleton Century-Crofts, 1968.

TEXTBOOKS

Fertig, P. E., Istvan, D. F. and Mottice, H. J. *Using Accounting Information.* 2nd ed. Harcourt Brace, 1971.

Moore, C. L. and Jaedicke, R. K. *Managerial Accounting.* 3rd ed., South-Western, 1972.

14.051 Law for Builders I

Introduction to the law, including brief outline of sources of law in New South Wales and the system of judicial precedent.

General principles of law of contract. Some special forms of building contract. General principles of law of agency. Sale of goods and hire purchase law. Law of negotiable instruments. Law of partnership. General principles of insurance law. Commercial arbitration. General introduction to the law of bankruptcy and company law.

TEXTBOOK

Vermeesch, R. B. and Lindgren, K. L. *Business Law in Australia.* 2nd ed. Butterworths, 1972.

14.052 Law for Builders II

Introduction to industrial law, including reference to Commonwealth and State statutory provisions dealing with conciliation and arbitration. State and Commonwealth awards. Industrial disputes. Employers' associations. Trade unions. Introduction to real property and local government law.

TEXTBOOKS

Cullen, C. L. and Macken, J. J. *An Outline of Industrial Law*. 3rd ed. Law Book Co., 1972.

O'Dea, R. *Industrial Relations in Australia*. 2nd ed. West, 1970.

14.081 Introduction to Business Finance

The course objective is to provide students, other than those enrolled within the Faculty of Commerce, with an understanding of the basic concepts and principles necessary to make effective financial management decisions.

The nature of financial management; the business environment; financial analysis; planning and control; capital investment decisions; organization of the financial structure; operating and working capital management; growth and development; and the causes and prevention of financial instability and failure. Specific industry studies.

PRELIMINARY READING

Halford, D. R. C. *Business Planning*, Pan Books, 1968.

Wasson, C. R. *The Economics of Managerial Decision*. Appleton Century-Crofts, 1968.

TEXTBOOKS

Helfert, E. A. *Techniques of Financial Analysis*, Rev. ed., Irwin, 1967.

Weston, J. F. and Brigham, E. F. *Essentials of Managerial Finance and related Students Study Guide*, 2nd ed., Holt, Rinehart and Winston, 1971.

SCHOOL OF TRANSPORTATION AND TRAFFIC

19.521 Statistics Methods and Data Processing

A descriptive introduction to statistical ideas and methods with emphasis on practical applications in planning. Collection, classification, tabulation, presentation and analysis of data. Sampling, probability, testing of hypotheses. Correlation, ranking methods, index numbers. Sources of Commonwealth and other published statistics on population, work force, housing, traffic, etc. Electronic data processing.

SCHOOL OF GEOGRAPHY

27.293 Physical Geography for Land Assessment

Physical determinants of land character: climate geology, landforms, soils and vegetation. Emphasis on Australian land types. Inherited land characters, Principles and techniques of land classification with special reference to work in Australia. Classification for land potential. Laboratory classes will support the

study of physical factors determining land character, and will also illustrate the use of airphotos in the identification and mapping of land types. There will be a one-day field tutorial in the Sydney region.

TEXTBOOKS

Corbett, J. R. *The Living Soil.* Martindale.

C.S.I.R.O. *The Australian Environment.* Melbourne U.P.

Longwell, C. R., Flint, R. F. and Sanders, J. E. *Physical Geography.* Wiley.

REFERENCE BOOKS

American Society of Photogrammetry. *Manual of Photographic Interpretation.* George Banker.

Branagan, D. F. and Packham, G. H. *Field Geology of New South Wales.* Science Press.

Griffiths, J. F. *Applied Climatology.* O.U.P.

Gunn, R. H. et al. *Lands of the Queanbeyan-Shoalhaven Area. A.C.T. and N.S.W.* C.S.I.R.O. Land Research Series No. 24.

Stace, H. C. T. et al. *A Handbook of Australian Soils.* Rellim.

Stewart, G. A. ed. *Land Evaluation.* Macmillan.

Storey, R. et al. *General Report on the Lands of the Hunter Valley.* C.S.I.R.O. Land Research Series No. 8.

U.S.A.—Dept. of Agriculture. *Soil Survey Manual.* U.S. Govt. Printer.

SCHOOL OF SURVEYING

29.431 Surveying and Cartography

History of surveying and its relationship to town planning. Types of survey; methods of linear measurement, corrections, chain surveys. The level, differential levelling, contours, volumes of earthworks. The theodolite, applications in building; traversing, setting out; plotting and plan drawing; measurement of areas by planimeters. Basic concepts of land tenure, land registration and cadastral surveying; plan registration. Mapping and map projections; control surveys; photogrammetry and orthophotographs.

REFERENCE BOOKS

Foxall, H. G. *Handbook for Practising Land and Engineering Surveyors.* 2nd ed. Institution of Surveyors, N.S.W. Division, Sydney, 1970.

Whyte, W. S. *Basic Metric Surveying.* Butterworths.

Wright Perott, S. *Surveying for Young Engineers.* rev. 3rd ed. Chapman & Hall, 1970.

SCHOOL OF BUILDING

Undergraduate Subjects

CONSTRUCTION

An investigation of the principles of construction and fabrication of low, medium and high rise residential, commercial, industrial and special purpose buildings. Studies dealing with materials and methods of construction, building systems, prefabrication, modular coordination and the integration of mechanical

and electrical services are closely associated with visits to factories, building sites and research laboratories. Building services are considered as an integral part of the building fabric and therefore feature prominently in the treatment of most topics.

35.001 Building Construction I

General introduction to the principles of building construction, pertaining mainly to the functional requirements of simple components in low-rise buildings.

The syllabus of 11.211 Construction I with additional lecture material dealing with the structural and non-structural functions of the principal building elements.

35.0011 Building Construction IA
35.0012 Building Construction IB

The syllabus of Building Construction I taken over two years.

REFERENCE BOOKS

Australia—Commonwealth Experimental Building Station. *Notes on the Science of Building*. No. 1+

Sharp, W. W. *Australian Methods of Building Construction*. 4th ed. A. & R., Sydney, 1969.

Standards Association of Australia. *Engineering Drawing Practice*. AS CZ1, S.A.A., 1966.

Timber Development Association *Technical Timber Guide*. No. 1+T.D.A.

35.032 Building Construction II

Construction methods, details and services appropriate to typical medium-rise residential, commercial and industrial buildings.

Building Construction. Site work procedures; concrete as a building material; foundations and footings; types of wall construction; basement, ground floor and upper floor construction; methods of roofing; waterproofing; construction of staircases; joinery; steel as a building material; internal finishes; introduction to principles and methods of surveying.

Building Services. Regulations governing building services; hot and cold water reticulation; sewer and stormwater drainage; sanitary plumbing; fuels and heating appliances; mechanical ventilation; central heating systems; heat load calculations and zoning, package air-conditioning units; municipal and on-site garbage disposal; security and communication systems; fire fighting equipment; electricity distribution for residential buildings.

35.0321 Building Construction IIA
35.0322 Building Construction IIB

The syllabus of Building Construction II taken over two years.

REFERENCE BOOKS

Cement and Concrete Association of Australia. *Reinforced Concrete Detailing Manual*. The Association.

Cement and Concrete Association of Australia. *Connection Details for Precast Prestressed Concrete*. The Association.

Standards Association of Australia. *Steel Structures: Part 8—Fabrication, Part 9—Erection.* S.A.A.
Standards Association of Australia. *Adequate Electrical Installations.* CC12. S.A.A.

35.053 Building Construction III

Construction methods and mechanical services pertaining to high-rise buildings. Building analysis project dealing with the study of buildings under construction.

(a) *Building Construction.* Survey of systems of construction; stability of structures; building loads and load factors; footings; retaining walls and basement construction; movement in building construction; prestressed concrete construction; flat plate and lift slab construction; principles and application of fire protection; cladding of structural frames; precast concrete wall cladding; metal and glass curtain walls.

Building Analysis Project—a study of the functional, structural and equipment relationships of various types of buildings. Suitable projects for analysis are selected by the student and are based on construction in progress or proposed buildings. Emphasis is placed on the integration of structural, mechanical and electrical systems within the overall architectural scheme.

(b) *Building Services.* Integration of mechanical services; sanitary plumbing systems suitable for multi-storey buildings; air-conditioning loads, psychrometrics, central and package plant and air distribution; electricity supply and distribution, systems of wiring and trunking; fire fighting services and equipment; electric lifts—main drive and power systems, electro-hydraulic lifts, control systems, equipment and installation; escalators and moving walks; mechanical garaging; communication systems, telephone, fire alarms, intercoms, pneumatic tubes and mechanical mail conveyors; planned building maintenance; pollution, disposal of special wastes and an introduction to closed ecological systems.

35.0531 Building Construction IIIA
35.0532 Building Construction IIIB

The syllabus of Building Construction III taken over two years.

REFERENCE BOOKS

Babbitt, H. E. *Plumbing.* 2nd ed. McGraw-Hill, New York, 1950.
Fullerton, R. L. *Building Construction in Warm Climates.* Vols 1 and 2. Oxford U.P.
McGuinness, W. J. and others. *Mechanical and Electrical Equipment for Buildings.* 4th ed. Wiley, N.Y., 1964.
Sherratt, A. F. C. *Air Conditioning System Design for Buildings.* Elsevier.

35.074 Building Construction IV

A detailed study of special systems of construction pertaining to high-rise buildings and building systems in general. The provision of mechanical services

on a community basis is discussed in relation to recent advances in allied disciplines.

(a) *Building Construction.* Special systems of construction, including lift slab, slip form, tilt slab, jack block and suspended floors; comparative survey of building systems, market evaluation and future trends; prefabrication and modular coordination; design aspects of special structures; influence of recent advances in allied disciplines.

(b) *Building Services.* Municipal heating and cooling reticulation; special services; hospital services, food services and solar heating; closed ecological systems.

TEXTBOOKS—35.001, 35.032, 35.053 and 35.074

Antill, J. M. and Ryan, P. W. S. *Civil Engineering Construction.* 3rd ed. A. & R., Sydney, 1967.

Gt. Britain—Building Research Station. *Principles of Modern Building.* Vols. 1 and 2. H.M.S.O., London, 1964.

N.S.W.—Parliament—Statutes. *Scaffolding and Lifts Act, 1912-1965.* N.S.W. Govt. Printer.

N.S.W.—Parliament—Statutes (Local Government Act 1919) *Ordinance No. 71.* N.S.W. Govt. Printer.

N.S.W.—Parliament—Statutes. *Sydney Corporation Act By-Laws 51-58.* N.S.W. Govt. Printer.

REFERENCE BOOKS

Diamant, R. M. E. *Industrialised Building.* 3 Vols. Iliffe.

Lewicki, B. *Building with Large Prefabricates.* Elsevier.

35.104 Building Project

A specialized individual or group study under staff supervision with the object of allowing students to either gain knowledge in some aspect of the Building Process not covered in the course or to integrate aspects of Construction, Management and Building Science treated partly or wholly in the course. While the study does not require original experimental research, it would normally have some experimental or survey content.

35.202 Soil Mechanics for Building

Determination of simple soil properties. Formation and classification of soils, classification tests. Fundamental characteristics of soils—clay mineralogy. Compaction. Permeability; stratification. Pore pressure and effective stress, seepage pressure, critical hydraulic gradient. Compression of soils. Retaining walls. Introductory foundation analysis. Principles of shear strength and application to slope stability.

BUILDING SCIENCE

Analysis and application of the physical principles which are known to control the building environment. Detailed studies are undertaken in the topics of the structure and properties of materials, the thermal environment, natural and artificial lighting, the transmission and measurement of sound, room acoustics and sound insulation, with emphasis throughout on constructional implications.

Operations research techniques and digital computers, respectively, are considered as the principal procedures and calculating tools available for optimizing the functional aspects of the building environment.

35.011 Building Science I

The syllabus of Architectural Science I (11.271) with additional lecture material:

(a) *Mathematics B:* Elementary computer programming; introduction to numerical methods; dimensional analysis.

(b) *Building Science:* The thermal environment, physiological aspects, indices of thermal stress, thermal comfort factors, introduction to thermal control by building design; natural ventilation; heat flow and insulation, conditions of heat flow, thermal conductivity, steady state heat transfer, insulation and insulating materials, moisture transfer and condensation, removal of heat by ventilation; natural lighting, units of lighting, minimum light levels, outdoor illumination levels, the daylight factor, measurement of daylight and use of models, colour; computer applications.

35.0111 Building Science IA
35.0112 Building Science IB

The syllabus of Building Science I taken over two years.

TEXTBOOKS

Blatt, J. M. *Introduction to Fortran IV Programming.* Goodyear.

Halliday, D. and Resnick, R. *Physics.* Part 1 and 2 combined ed. Wiley, New York, 1966.

Moroney, M. J. *Facts from Figures.* Pelican.

Oakley, C. O. *The Calculus.* Barnes & Noble.

REFERENCE BOOKS

Drysdale, J. W. *Designing Houses for Australian Climates.* Bulletin No. 6. Australia—Commonwealth Experimental Building Station, Sydney, 1952.

Van Straaten, J. F. *Thermal Performance of Buildings.* Elsevier.

35.042 Building Science II

Artificial lighting, artificial light sources, the visual field and apparent brightness, polar diagrams, characteristics and classification of luminaires, properties and control of glare, the lumen method of lighting design, permanent supplementary artificial lighting of interiors; transmission and measurement of sound, definitions and sound units, perception of sound by the ear, conservation of hearing, absorption of sound, the concept of reverberation time, measurement of sound with a Sound Level Meter; speech communication and acoustics, speech interference levels, masking sound and sound blankets, masking sound systems in practice, introduction to concert hall acoustics; application of statistics to material control and sampling techniques; data-processing and computing problems requiring computer application.

REFERENCE BOOKS

Furner, W. *Room and Building Acoustics and Noise Abatement.* Butterworths.

Hopkinson, R. G. and Day, J. D. *The Lighting of Buildings.* Faber.

Jones and others. *Acoustics*. E.U.P.
Kinzey, B. Y. and Sharp, H. M. *Environmental Technologies in Architecture*. Prentice-Hall.
Lynes, J. A. *Principles of Natural Lighting*. Elsevier.
McGuinness, W. J. and others. *Mechanical and Electrical Equipment for Buildings*. 4th ed. Wiley, N.Y., 1964.
Parkin, P. H. and Humphreys, H. R. *Acoustics, Noise and Buildings*. Faber & Faber.
Phillips, R. O. *Sunshine and Shade in Australasia*. Bulletin No. 8, Australia—Commonwealth Experimental Building Station, Sydney, 1963.
Purkis, H. J. *Building Physics: Acoustics*. Pergamon.
Stevens, W. R. *Building Physics: Lighting*. Pergamon.
Walsh, J. W. T. *The Science of Daylighting*. MacDonald.

35.063 Building Science III

Noise control and insulation, air-borne and solid-borne sound, air-borne noise insulation (resonance, coincidence effect, sandwich barriers, multiple barriers), solid-borne noise insulation, common noise sources (ventilation noise, industrial process noise, residential noise, road and air transport noise); non-parametric statistics; elastic and inelastic behaviour of materials of construction, shrinkage, permanent expansion, creep, rheological models for steel, concrete, timber and plastics; computer applications.

REFERENCE BOOKS

Beranek, L. L. *Noise Reduction*. McGraw-Hill.
Day, B. F. and others, eds. *Building Acoustics*. Elsevier.
Harris, C. M. *Handbook of Noise Control*. McGraw-Hill.
Polakowski, N. H. and Ripling, E. J. *Strength and Structure of Engineering Materials*. Prentice-Hall.

BUILDING GRAPHICS

35.021 Building Graphics I

The syllabus of 11.131, Graphic Communication I with the exclusion of Freehand Drawing.

35.0211 Building Graphics IA
35.0212 Building Graphics IB

The syllabus of Building Graphics I taken over two years.

MANAGEMENT

35.124 Building Specifications

Principles and methods involved in the compilation of a specification for building works. Objects of a specification. The specification as a contract document; relationship to Bill of Quantities and drawings; schedules; reference

materials; "master" specifications; outright and performance specifications; prime cost and provisional sums; specification sections, clauses and language; preparation and format; printing, binding and distribution.

35.132 Quantity Surveying I (Measurement)

Introduction to Quantity Surveying; the origin and development of the Australian Standard Method of Measurement, its importance and application; brief study of A.S.M.M. practice notes. The subject is intended to cover:

(*a*) elementary Quantity Surveying of single storey buildings.
(*b*) the correlation of plans and specifications.
(*c*) checking plans and specifications.
(*d*) "taking off" quantities from plans and specifications.
(*e*) method of recording dimensions.
(*f*) fundamentals of compiling "bill" descriptions.

35.143 Quantity Surveying II (Billing)

Advanced Quantity Surveying of multi-storey construction; detailed study of the Australian Standard Method of Measurement and all A.S.M.M. practice notes.

The subject is intended to cover in greater detail the subject matter introduced in Quantity Surveying I and in addition:

(*a*) interpretation of terms.
(*b*) application of regulations to hydraulic services.
(*c*) detailed "billing" procedures for single items and complete trades.
(*d*) study of techniques of measurement.
(*e*) on site measurement of building quantities.

35.094 Quantity Surveying III (Cost Planning)

Detailed study of advanced Quantity Surveying including practical exercises in:

(*a*) Methods of Cost Control.
(*b*) Liaison with consultants (i.e. members of the architectural planning and construction team).

35.152 Estimating I

Methods used for estimating the cost of building work; determination of unit rates for various trades and building operations.

TEXTBOOK
Thackray, R. N. *Estimating*. N.S.W.U.P., Sydney, 1960.

35.163 Estimating II

Pricing of a selected Bill of Quantities; preparation of tenders and cost variations; cost analyses of alternative building methods; construction scheduling to determine the duration of building projects; preliminary estimates for building projects at the planning stage.

35.171 Building Management I

Introduction to scientific methods of construction planning and control, network analysis, determinants and matrices, layout techniques, linear programming and queuing theory.

35.182 Building Management II

Introduction to scientific management principles, administration and supervision; principles of organization, individual and group behaviour; the structure of the building industry, building acts and regulations, codes, Local Government Authority powers, fees and approvals; types of contracts and contract documents; industrial relations, employment, industrial organization; safety and accident prevention; technical supervision; decision making procedures.

REFERENCE BOOKS

Clough, R. H. *Construction Contracting.* 2nd ed. Wiley, N.Y., 1960.
Kazmier, L. J. *Principles of Management.* 2nd ed. McGraw-Hill, N.Y., 1969.
McGregor, D. *The Human Side of Enterprise.* McGraw-Hill.

35.193 Building Management III

Management functions, planning, organizing, staffing, directing, coordinating, controlling and appraisal; construction planning and control, critical path (computerized) as a tool; functions of personnel, job specification, organization structure; administrative procedures; conditions of contract; cost analysis, statistical data and work study; reports and records, conduct of meetings and technical supervision; practical assignments.

REFERENCE BOOKS

Antill, J. M. and Woodhead, R. W. *Critical Path Methods in Construction Practice.* Wiley.
Battersby, A. *Network Analysis for Planning and Scheduling.* H. Martin.
Clough, R. H. *Construction Contracting.* 2nd ed. Wiley, N.Y., 1960.
Coombs, W. E. *Construction, Accounting and Financial Management.* McGraw-Hill.
Creswell, H. B. *The Honeywood File.* Faber.
Deatherage, G. E. *Construction Company Organization and Management.* McGraw-Hill.
Kazmier, L. J. *Principles of Management.* 2nd ed. Wiley, N.Y., 1960.

35.084 Building Management IV

Construction management, analysis and preplanning; construction methods, appraisal and quantitative decision making; case studies and models for construction planning involving guest lecturers and consultants; services aspect of construction; practical assignments.

35.384 Building Design

Introduction to building design principles and the appreciation of their application in practice. Discussion and application in the studio of concepts based on the inter-relation of the multiplicity of factors and influences involved in the design and construction of high-rise buildings.

BUILDING STRUCTURES

35.391 Building Structures I
35.392 Building Structures II
35.393 Building Structures III

These subjects are similar to 11.221 Structures I, 11.222 Structures II and 11.223 Structures III of the B.Sc.(Arch.) course, but with different emphases on certain topics. For synopses and reference books see the latter subjects, listed under the School of Architecture.

TOWN PLANNING

36.411 Town Planning

The study of factors influencing the direction of the development and use of land in the public interest.

Objectives of town and regional planning; historical background; contemporary planning techniques; New South Wales planning law and administration; elements of urban design; new towns; parks and playing fields; housing and neighbourhood planning; traffic and transport; the central area; elements of civic design; the city of the future.

TEXTBOOK

Brown, A. J. and Sherrard, H. M. *An Introduction to Town and Country Planning.* 2nd ed. A. & R., Sydney, 1969.

REFERENCE BOOKS

Abercrombie, P. *Town and Country Planning.* 3rd ed. O.U.P., London, 1959.
Colman, J. *Planning and People.* A. & R.
Mumford, L. *The City in History.* Secker & Warburg.
Stretton, H. *Ideas for Australian Cities.* Griffin Press.

36.412 Town Planning A (Elective)

Pre-requisite: 36.411 Town Planning

An extension of 36.411 Town Planning with seminars and studio work in neighbourhood and town design in the Australian context.

36.431 Town Planning Theory and Practice I

Fundamental human needs. Improving the quality of human life in urban areas. Improving the physical environment. The planning process: objects, civic survey, plan preparation and implementation. The nature and purpose of zoning.

The elements of a residential neighbourhood. Studio and field exercises in civic survey, environmental studies, and the layout of residential areas.

TEXTBOOK

Brown, A. J. and Sherrard, H. M. *An Introduction to Town and Country Planning.* 2nd ed. A. & R., Sydney, 1969.

REFERENCE BOOKS

Carver, H. *Cities in the Suburbs.* Toronto U.P.

Howard, E. *Garden Cities of Tomorrow.* Faber & Faber.

Jackson, J. N. *Surveys for Town and Country Planning.* Hutchinson, 4th ed. Estates Gazette, London, 1969.

36.432 Town Planning Theory and Practice II

The town—its function, elements and form. Principles and practice of re-planning existing towns and planning new towns. Expanded towns. The "new towns" movement in Great Britain and its international significance. New towns overseas and in Australia. Special purpose towns such as mining towns. New national capital cities. Studio exercises in town design, townscape and urban renewal.

TEXTBOOK

Gibberd, F. *Town Design.* 4th ed., Architectural Press, London, 1962.

REFERENCE BOOKS

Abrams, C. *Man's Struggle for Shelter in an Urbanizing World.* M.I.T. Press.

Anderson, M. *The Federal Bulldozer.* M.I.T. Press.

Frieden, B. *The Future of Old Neighbourhoods.* M.I.T. Press.

Gallion, A. B. and Eisner, S. *The Urban Pattern.* 2nd ed. D. Van Nostrand, Princeton, 1963.

Jacobs, J. *The Death and Life of Great American Cities.* Jonathan Cape.

Johnson-Marshall, P. *Rebuilding Cities.* Edinburgh U.P.

Llewelyn-Davies, Weeks and Partners. *Washington New Town.* Washington Development Corporation, England.

London County Council. *The Planning of a new Town.* L.C.C.

McHarg, I. L. *Design with Nature.* Doubleday.

Rothenberg, J. *Economic Evaluation of Urban Renewal.* Brookings Institute.

Osborn, F. J. and Whittick, A. *The New Towns: the Answer to Megalopolis.* rev. ed. M.I.T. Press, Cambridge, Mass., 1969.

Saarinen, E. *The City.* Reinhold.

Troy, P., ed. *Urban Redevelopment in Australia.* ANU Research School of Social Sciences.

36.433 Town Planning Theory and Practice III

The metropolis—its concept and form. Factors affecting metropolitan structure. Objectives in metropolitan planning. Types of metropolitan plan. Special purpose plans. Transportation studies. Metropolitan planning authorities, plan implementation. Metropolitan economy. Capital budgeting. Public and private sector investments. Growth models. How effective are metropolitan plans? Studies of metropolitan plans in Australia.

TEXTBOOK

Rodwin, L. ed. *The Future Metropolis.* Constable, London, 1962.

REFERENCE BOOKS

Blumenfeld, H. *The Modern Metropolis.* M.I.T. Press.
Bollens, J. C. and Schmandt, H. J. *The Metropolis: its People, Politics and Economic Life.* Harper & Row.
Chapin, S. *Urban Land Use Planning.* 2nd ed. Illinois U.P., Urbana, 1965.
Isard, W. *Methods of Regional Analysis.* M.I.T. Press.
Lynch, K. *The Image of the City.* M.I.T. Press.
Stretton, H. *Ideas for Australian Cities.* Griffin Press.
Thompson, W. B. *A Preface to Urban Economics.* Johns Hopkins.
Vernon, R. *The Myth and Reality of our Urban Problems.* Harvard U.P.
Vernon, R. *Metropolis, 1985.* Harvard U.P.

36.434 Town Planning Theory and Practice IV

National and regional planning concepts. National and regional planning activity overseas. Evolution of regional planning in New South Wales. Regional development committees and advisory councils. Responsibilities of Commonwealth, State and Local Governments for planning policies. Industrial development and decentralization issues. Planning strategies. Operational models. Existing and emerging techniques in the collection, analysis and projection of planning data. Urban research objectives and techniques.

TEXTBOOK

Rose, A. J. *Patterns of Cities.* Nelson.

REFERENCE BOOKS

Andrews, J. *Australia's Resources and their Utilization.* rev. ed., University of Sydney—Dept. of Adult Education, Sydney, 1965.
Australia—C.S.I.R.O. *The Australian Environment.* 4th ed. C.S.I.R.O. and Melbourne U.P., Melbourne, 1970.
Davidson, F. G. *The Industrialization of Australia.* 4th ed. M.U.P., Melbourne, 1969.
Development Corporation of N.S.W. *Report on Selective Decentralization.* N.S.W. Govt. Printer.
Dickinson, R. E. *City and Region—a Geographic Interpretation.* Routledge & Kegan Paul.
Gillie, F. B. *Basic Thinking in Regional Planning.* Mouton.
McLoughlin, J. B. *Urban and Regional Planning: a Systems Approach.* Faber & Faber.
Neutze, G. M. *Economic Policy and the Size of Cities.* A.N.U. Press.
Rose, A. J. *Patterns of Cities.* Nelson.
Wadham, S., Wilson, A. K. and Wood, J. *Land Utilization in Australia.* 4th ed. M.U.P., Melbourne, 1964.

36.435 Civic Survey Camp

Fifth year students are required to attend a Civic Survey Camp of up to two weeks' duration. The camp will be held in or near an appropriate country centre. Students under staff supervision will study the character and function of a regional centre, patterns of rural settlement, and rural land use classifications.

36.436 Urban Geography

Nature and scope of urban geography. Rise and diffusion of urbanism, world urban patterns. Economic base studies. Functional classification of towns. Central place theory. Theories of internal urban zonation. Urban centres as market places. Industrial location. Suburban growth, urban sprawl and the rural/urban fringe. Urban transportation. Urban site and situation. Urban settlement in Australia.

TEXTBOOK

Rose, A. J. *Patterns of Cities.* Nelson.

REFERENCE BOOKS

Berry, B. J. L. and Horton, F. E. *Geographic Perspectives in Urban Systems.* Prentice-Hall.

Dickinson, R. E. *City and Region—a Geographical Interpretation.* Routledge & Kegan Paul.

Fairbairn, K. J. and May, A. D. *Geography of Central Places.* Rigby.

Gottman, J. and Harper, R. A. *Metropolis on the Move.* John Wiley.

Hauser, P. M. and Schnore, L. F. eds. *The Study of Urbanization.* John Wiley.

Johnson, J. H. *Urban Geography—an Introductory Analysis.* Pergamon Press.

Mayer, H. M. and Kohn, C. eds. *Readings in Urban Geography.* Chicago U.P.

Scott, P. *Geography and Retailing.* Hutchinson Univ. Library.

Smailes, A. E. *The Geography of Towns.* 5th ed. Hutchinson Univ. Library, London, 1966.

36.441 Design II for Town Planners

Studio work consisting of exercises in the simple planning and analysis of urban elements such as streets, plazas and building groups. A series of seminars on design analysis and planning values runs concurrently with the studio work.

REFERENCE BOOKS

Alexander, C. *Notes on the Synthesis of Form.* Harvard U.P.

Banz, G. *Elements of Urban Form.* McGraw-Hill.

Beazley, E. *Design and Detail of the Space Between Buildings.* Architectural Press.

Broady, M. *Planning for People.* Bedford Square Press.

McHarg, I. *Design with Nature.* Doubleday.

Sharp, T. *Town and Townscape.* John Murray.

Sitte, C. *City Planning According to Artistic Principles.* Phaidon Press.

Stipe, R. E. ed. *Perception and Environment: Foundations of Urban Design.* University of North Carolina—Institute of Government, 1966.

Worskett, R. *The Character of Towns.* Architectural Press.

36.442 Civic and Landscape Design

Relationship of buildings, spaces and landscape. Street architecture, street furniture. Height, floor space and building regulations; architectural controls. Design envelopes. Three dimensional redevelopment schemes. Preservation of buildings of architectural and historic interest. History and principles of landscape design. Open spaces. Trees and tree planting.

REFERENCE BOOKS

Bacon, E. N. *The Design of Cities.* Thames & Hudson.

Cullen, G. *Townscape.* Architectural Press.

Gibberd, F. *Town Design*. 4th ed. Architectural Press, London, 1962.
Gt. Britain—Ministry of Housing and Local Govt. *Design in Town and Village*. H.M.S.O.
Lynch, K. *The Image of the City*. M.I.T. Press.
Rowland, K. *The Shape of Towns*. Cheshire.
Sharp, T. *Town and Townscape*. John Murray.
Simonds, J. O. *Landscape Architecture: the Shaping of Man's Natural Environment*. Iliffe.
Sitte, C. *City Planning According to Artistic Principles*. Phaidon Press.
Worskett, R. *The Character of Towns*. Architectural Press.
Zucker, P. *Town and Square*. Columbia U.P.

36.451 History of Town Planning

The origin of urban centres. Geographical, social, economic and political factors influencing urban settlement. Elements of Egyptian, Greek and Roman town planning. Medieval communities. The meaning of the Renaissance. The Baroque city. The Agrarian and Industrial Revolutions. Nineteenth century social reforms and planning theories. The Garden City movement. The City Beautiful movement. The City of Tomorrow. Colonial towns: U.S.A. and Australia.

TEXTBOOK

Mumford, L. *The City in History*. Secker & Warburg, London, 1961.

REFERENCE BOOKS

Argan, G. C. *The Renaissance City*. Studio Vista.
Burke, G. *Towns in the Making*. Edward Arnold.
Childe, G. *What Happened in History*. Penguin.
Creese, W. L. *The Search for Environment*. Yale U.P.
Gallion, A. B. and Eisner, S. *The Urban Pattern*. 2nd ed. D. Van Nostrand, N.Y., 1963.
Giedion, S. *Space, Time and Architecture*. 5th ed. Harvard U.P., 1970.
Hiorns, F. R. *Town Building in History*. George Harrap.
Howard, E. *Garden Cities of Tomorrow*. Faber & Faber.
Moholy-Nagy, S. *Matrix of Man*. Pall Mall.
Power, E. *Medieval People*. Methuen.
Rasmussen, S. E. *Towns and Buildings*. Liverpool U.P.
Saarinen, E. *The City: Its Growth, Its Decay, Its Future*. Reinhold.
Schneider, W. *Babylon is Everywhere*. Hodder & Stoughton.
Stewart, C. *A Prospect of Cities*. Longmans Green.

36.461 Civic Engineering

Road location, design and construction. The provision of public utility services: town water supply, sewerage treatment and disposal, electricity and gas supply, telephone communications. Drainage. Ports, railways, aerodromes.

REFERENCE BOOKS

Aird, W. V. *The Water Supply, Sewerage and Drainage of Sydney*. Halstead Press.
Ashworth, R. *Highway Engineering*. Heinemann.
Brierley, J. *Parking of Motor Vehicles*. C. R. Books.
Gt. Britain—Ministry of Transport. *Traffic in Towns*. H.M.S.O.
Hardenbergh, W. A. and Rodie, E. R. *Water Supply and Waste Disposal*. International Textbook Co.

Randerson, H. Y. *Australian Sanitary Engineering Practice.* 8th ed. A. & R., Sydney, 1964.
Ritter, P. *Planning for Man and Motor.* Pergamon.
Seeley, I. H. *Municipal Engineering Practice.* Macmillan.
Sherrard, H. M. *Australian Road Practice.* M.U.P.

36.471 Planning Law and Administration

The purpose of town planning legislation and its evolution in the United Kingdom. The N.S.W. Local Government Act, 1919 (and relevant Ordinances), in particular Parts XI, XII and XIIA; residential district proclamations, subdivision regulations; preparation, approval and implementation of planning schemes. Interim development control, compensation, betterment, resumption, appeals. The State Planning Authority Act, 1963. Nature of legislation in other States.

TEXTBOOK

N.S.W.—Parliament—Statutes. *Local Government Act 1919.* Govt. Printer, Sydney, 1966.

REFERENCE BOOKS

Blundell, L. A. and Dobry, G. *Town and Country Planning.* Sweet & Maxwell.
Cullingworth, J. B. *Town and Country Planning in England and Wales.* 2nd ed. rev. Allen & Unwin, London, 1967.
Every-Burns, J. W. *Local Government Law Affecting Property.* Butterworths.
Heap, D. *Introducing the Land Commission Acts.* Sweet & Maxwell.
Heap, D. *An Outline of Planning Law.* 5th ed. Sweet & Maxwell, London, 1969.
Heap, D. *Encyclopedia of the Law of Town and Country Planning.* Sweet & Maxwell.
Jennings, W. I. *The Law Relating to Town and Country Planning.* 2nd ed. Charles Knight, London, 1946.
Megarry, R. E. *Lectures on the Town and Country Planning Act, 1947.* Stevens.
Starke, J. G. *Town and Country Planning in New South Wales.* Butterworths.
Wilcox, M. R. *The Law of Land Development in New South Wales.* Law Book Co.

36.481 Land Valuation and Economics

The need for land valuations. Legal background to valuation. Economic basis of land valuation. Valuations under Valuation of Land Act (N.S.W.) Legislative schemes for the acquisition of land for public purposes. Compensation. Betterment. Inter-relationship of planning, valuation and rating.

The nature of economics. Theory of production, cost, consumer behaviour, demand. Market models. Efficiency and welfare. Concepts of costs and benefits. Measuring costs and benefits. Investment decision formulas.

TEXTBOOKS

Kolsen, H. M. *The Price Mechanism and Resource Allocation.* Cheshire.
N.S.W.—Parliament—Statutes. *Valuation of Land Act 1916-1961.* Govt. Printer.

REFERENCE BOOKS

Brennan, M. J. *The Theory of Economic Statics.* Prentice-Hall.
Collins, C. M. *Valuation of Property, Compensation and Land Tax.* 3rd ed. Law Book Co., Sydney, 1949.

Karmel, P. H. and Brunt, M. *The Structure of the Australian Economy.* rev. ed. Cheshire, Melbourne, 1963.
Lean, W. and Goodall, B. *Aspects of Land Economics.* Estates Gazette.
Leftwich, R. H. *The Price System and Resource Allocation.* Holt, Rinehart & Winston.
Lipsey, R. G. *An Introduction to Positive Economics.* 3rd ed. Weidenfeld & Nicholson, New York, 1971.
Mansfield, E. *Microeconomics.* Norton.
Misham, E. J. *Cost Benefit Analysis.* Allen & Unwin.
Murray, J. F. N. *Principles and Practice of Valuation.* 3rd ed. C.I.V., Sydney, 1954.
Reynolds, D. J. *Economics, Town Planning and Traffic.* Institute of Economic Affairs.
Roth, G. J. *Paying for Roads.* Penguin.
Samuelson, P. A., Hancock, K. and Wallace, R. *Economics.* Aust. ed. McGraw-Hill.

36.491 Thesis

A specialized individual study taken under staff supervision with the object of allowing the student either to gain knowledge in some aspect of town planning which is not covered in the course or to increase his knowledge of some aspect which has been covered. As such the thesis is essentially evidence of this individual study. The study does not require original experimental research for the purpose of discovering new facts or the testing of an hypothesis; neither is it an essay permitting the student's unsupported opinion. The thesis topic is submitted by the student for the approval of the Professor of Town Planning at the end of the fourth year of the course and the completed thesis submitted for examination towards the end of the fifth year.

Students will participate in seminars on report and thesis writing during fifth year and will present progress reports on their theses at the seminars.

REFERENCE BOOKS

Albaugh, R. M. *Thesis Writing.* Littlefield, Adams.
Cooper, B. M. *Writing Technical Reports.* Penguin.
Denniss, V. R. *The Essentials of Report Writing.* Australasian.
Turabian, K. L. *A Manual for Writers of Term Papers, Theses and Dissertations.* 3rd ed. rev. Univ. of Chicago Press, London, 1967.

SCHOOL OF POLITICAL SCIENCE

54.113 Political Science IIIA (Option 3)

Urban Government and the Politics of Cities. Urban government systems in a number of metropolitan cities are compared, and local governments are studied as participants in these systems and as political entities offering special opportunities for comparative studies. Some general political issues related to urban affairs are examined, especially in Australia. One major aim to acquaint students with recent developments in the study of government, politics and urban affairs and to show how some of these approaches could be used in the Australian context.

TEXTBOOKS
Boaden, N. *Urban Policy Making*. C.U.P.
Cities. (A Scientific American book). Pelican.
Rose, A. J. *Patterns of Cities*. Nelson.
Stretton, H. *Ideas for Australian Cities*. Griffin Press.
Wilson, J. Q. *City Politics and Public Policy*. John Wiley.

REFERENCE BOOKS
Ballens, J. C. and Schmandt, H. J. *The Metropolis, Its People, Politics and Economic Life*. 2nd ed. Harper & Rowe, N.Y., 1970.
Brennan, F. *Decentralisation in Australia*. Brennan.
Chard and York. *Urban America, Crisis and Opportunity*. Dickenson.
Feldman, L. D. and Goldmik, M. D. *Politics and Government of Urban Canada: Readings*.
Flinn, T. A. *Local Government and Politics*. Scott Foreman.
Goodman, J. S. *Perspectives on Urban Politics*. Allyn & Bain.
Hampton, W. *Democracy and Community*. O.U.P.
Miles, S. *Metropolitan Problems*. Methuen.
Robson, W. A. ed. *Great Cities of the World*. George Allen & Unwin.
Savie, W. and Kaufman, H. *Governing New York City*. Russell Sage Foundation.
Smallwood, F. *Greater London, the Politics of Metropolitan Reform*. Bobbs Merrill.
Spann, R. N. ed. *Public Administration in Australia*. N.S.W. Govt. Printer.
Walsh, A. H. *The Urban Challenge to Government*. Praeger.
Wilkes, J. ed. *Australian Cities: Chaos or Planned Growth*. A. & R.

GRADUATE SUBJECTS

1.281G Vibration and Wave Theory I

Simple oscillator, damped oscillator, ordinary differential equations, complex numbers, forced vibrations and resonance, coupled oscillators. Plane waves, interference and diffraction.

1.282G Acoustic Theory

Sources of acoustic radiation; simple, dipole, quadrupole, plane, impulsive source, random source, aerodynamic sources. Free field propagation in fluids, interference and diffraction, absorption, shock waves. Boundary effects; reflection and transmission at fluid/fluid and fluid/solid interfaces, fluid waveguides, solid waveguides. Reception and analysis; transducers, Fourier analysis, statistical methods, impulse measurement.

1.283G Acoustic Measuring Systems

Transducers; microphones, amplifiers, loudspeakers, filters, recorders, pick-ups, noise generators. Acoustic measuring instruments.

1.284G Electroacoustics

Sound reinforcement systems; ambiophony; assisted resonance. Special requirements for translation; language laboratories.

1.285G Acoustical Systems and Structures (Elective)

Vibrating systems; coupled oscillators, beams, membranes, plates, resonators, acoustic filters; analogs, analog computer simulation of vibrating systems; transfer of energy from one system to another. Reflection and transmission at walls; rigid walls, flexible walls, multiple walls, impulsive excitation. Sound absorbers; porous absorbers, perforated panel absorbers, relation of properties to basic physical characteristics; measurement procedures.

1.286G Acoustic Laboratory

Practical experiments related to the subject matter of 1.282G Acoustic Theory.

1.287G Vibration and Wave Theory II

Fourier analysis, guided waves, electrical analogs, analysis of networks. Statistical distributions, probability, noise, correlation, sampling and digital procedures.

5.651G Mechanical Noise Sources

Basic noise sources; relative efficiencies. Purely mechanical sources; radiation of sound from surfaces, general industrial noise, gear noise, reciprocating engine and compressor noise, electrical machinery noise. Aerodynamic noise; jet flows, fan noise (centrifugal and axial), combustion noise.

5.652G Noise Suppression Techniques (Elective)

Noise reduction requirements; noise codes (industrial and community). Noise measurement methods and instruments; random noise, spectral analysis, microphone sensitivity, directivity, etc. Power determination. Ventilation system noise; excitation, propagation (cut-off, rotating modes, acoustic modes), silencing techniques; (splitters, absorbers); transmission and insertion loss; measurement; radiation into rooms. Jet flow noise.

11.910G History of Landscape Design

Early cultures and their impact upon the primitive landscape through farming, transport and settlement patterns. Religious and social influences as reflected in the design of parks and gardens throughout history. Architectural expression and aesthetic beliefs. The Industrial Revolution and its effect upon the humanized landscape.

11.912G Landscape Engineering

(a) Classification of soils, shear, compaction, consolidation and permeability. Stability of walls, embankments, cuttings and earth dams. Common causes of failure and remedial measures.

(b) Elementary hydrostatics and hydraulics. Bernoulli's Theorem, flow through orifices, over notches, in channels and pipes. Pumps and reticulating equipment.

11.913G Theory and Practice of Landscape

Aesthetic philosophies of landscape design; scale, texture and colour. Design, construction and maintenance in urban and rural environments, including highways, residential areas, parks and gardens. Erosion control and shore protection. Landscape surveys and analyses, specifications, contracts and office procedure.

11.914G Forestry and Horticulture

Principal commercial trees—identification—planting techniques, care and maintenance, including fire and insect pests, and felling techniques. Forest nursery practice and forest economics.

Characteristics, identification and specific requirements of selected plants and shrubs. Soil requirements and cultivation. Grasses, lawn and playing field construction. Use of herbicides and selective weed killers—control of insect pests.

11.915G Landscape Design

A series of design assignments involving the application of lecture material. It is anticipated that extra-mural work will be necessary in addition to the studio periods provided for this subject.

11.990G Construction, Contracts and Documentation I
11.991G Construction, Contracts and Documentation II

Construction of single and multi-storey buildings; building services; materials; forms of building contract and sub-contract; tendering; contract documentation; specifications; supervision.

11.992G Acoustics of Speech and Music

Acoustic characteristics of speech; speech analysis and recognition; music and musical instruments; room acoustic effects on speech and music.

11.993G The Ear and Hearing

Physiological and psychological factors in sound perception; subjective scales and units; masking, discrimination; speech intelligibility; noise annoyance; calculation of loudness.

11.994G Hearing Conservation

Threshold shift; impulsive and continuous noise: hearing damage risk criteria; hearing conservation programmes and audiometry.

11.995G Community Noise

Sources of community noise; sound propagation out-of-doors; land-use zoning, including siting of airports and highways; measurement and assessment of community noise annoyance; barriers.

11.996G Graduate Project

An individual topic to be selected from one of the following fields: physical theory; machinery, duct and vibration noise; noise control in buildings; community noise; room acoustics; or electro-acoustics.

11.997G Auditorium Acoustics (Elective)

Subjective and objective criteria for speech and music; reverberation theory; diffusion; steady state and transient room response; geometrical, physical and model analysis of auditoria; sound reflectors and sound absorbents; methods of measurement of sound absorption coefficients.

11.998G Airborne and Impact Noise Control in Buildings (Elective)

Single multiple-leaf and sandwich partitions and floors; airborne and impact noise reduction; flanking transmission; vibration isolation; performance standards and specifications; speech privacy; methods of measuring sound transmission loss and noise reduction in the field and laboratory. Plumbing and services noise control.

11.999G Advanced Acoustics of Speech and Music (Elective)

Speech communication; vocoders; development of new musical instruments, including electronic music.

35.210G Building Contracts and Documentation

Analysis of present forms of building contract with legal aspects underlined. Relevant aspects of contract law. Forms of contract: serial tendering, negotiated contracts. The sub-contract; nominated sub-contractor; co-contract. Standard methods of communication between parties to the contract.

Legal foundations of documentation. Rational methods for contract documentation: specifications, bills of quantities. Standard clauses, terminological standards. Automatic data processing. Preparation of trade literature.

35.220G Building Economics and Property Valuation

Structure of the economy; building as an investment. Feasibility, large-scale development, legal aspects. Economic models, optimization. Principles of rational building; dimensional control; system building; component technology.

Statutory valuations, market value, unimproved land, valuation of improvements, depreciation and obsolescence, investment properties. Valuation law. Land laws. Feasibility studies on subdivisions.

35.230G Operations Planning I

Introduction to Operations Research Techniques. Linear programming, games theory. Critical path techniques. Queueing and congestion. Mathematical models, simulation. Monte Carlo methods. Decision and information theory.

35.240G Graduate Project

Session 2: Survey of the project area, preliminary submission containing an outline of the project.

Sessions 3 and 4: Consultations, group discussions and seminars on the project topics; preparation of a graduate project.

35.250G Office and Personnel Management

Office structure and organization; statutory and legal obligations of employment; divisions and delegation of responsibility and authority; office funds, accounting, taxation and insurance; staff evaluation, promotion, incentives, training, counselling; communications, information flow, storage and retrieval; assessment of work systems and patterns; case studies.

35.260G Architectural Programming

The planning and supervision of an architectural project; the building process; the compilation and dissemination of the brief; personnel potential; information collection; communications and contacts; research and feasibility studies; the economic use of resources; operations and time-tabling; budgeting; forms of documentation and documentation aids; supervision of contract letting; post-contract documents; personnel confrontations and decisions; commissioning procedures; post-completion supervision and documents; public relations.

35.270G Estate Management

The building manager. Building performance: feed-back; the "follow-on" phase. Case studies in building maintenance. Obsolescence, repair and replacement. Insurance, security, cleaning. Principles of property development.

35.280G History of Building

Development of materials, structures, building methods. The impact of social and political conditions on building. Surveys of present techniques and review of future possibilities in development: industrialization, use of new materials, new philosophy of design.

35.290G Advanced Construction I
35.300G Advanced Construction II

Construction methods: plant, formwork, transport, assembly and erection. Building elements; foundations, floors and walls, lift slab and flat plate; industrial buildings and frame design; prestressed concrete design and construction.

Construction problems of high-rise buildings. Slip forms, climbing forms. Prefabrication. Multi-storey load-bearing buildings.

Materials of construction; timber engineering; aluminium and plastics; lightweight aggregate concrete; sandwich panels.

35.310G Advanced Equipment and Services

Fabrication and installation of services for large building projects: lifts, air-conditioning, fire services. Refrigeration facilities. Cool houses. Large industrial service installations.

35.320G Operations Planning II

Construction analysis; methods of estimating; use of statistical data and dissection for control functions. Cost analysis and cost control analysis of elements and activities.

35.330G Cost Planning and Analysis

Cost planning history and background; definitions; coding; analysis; elements; costing a design; designing to a cost. Comparative cost planning, elemental cost planning; cost control. Case study for the pre-tender stage of a building programme.

35.340G Computer Applications I

More advanced programming in Fortran IV. Application to topics of Operational Planning. Computer graphics; perspectives, shadows, computer-produced plans and elevations. Computer simulation of spatial movement. Use of problem-oriented languages, ICES, CSMP, etc. A number of programming assignments will be included.

35.350G Computer Applications II

Introduction to PL/1, and comparison with Fortran. Character variables, character manipulation, and use in information retrieval. Use of magnetic discs and tapes. Advanced programming assignments.

35.360G Computer Techniques

Nature and uses of digital computers. Basic programming in Fortran IV. Application to numerical methods, sorting and classifying of data, data retrieval, statistical analysis, operation of pseudo-random fractions. Production and running of programmes on the University's computer.

35.370G Experimental Techniques

Principles of instrumentation, metering; recording and analysing experiments. Method of dimensions, principle of similarity, testing of scale models. Experimental methods in psychology and sociology; design of subjective experiments and questionnaires.

36.920G Theory of Neighbourhood Planning

The neighbourhood concept: its historical evolution and development. The contributions of Ebenezer Howard, Unwin and Parker, Clarence Perry, Stein and Wright, Frank Lloyd Wright, Le Corbusier, Walter Burley Griffin, Frederick

Gibberd, Steen Eiler Rasmussen, and others. Neighbourhood structure, elements and form. Relationship to town and metropolitan planning.

TEXTBOOK

Carver, H. *Cities in the Suburbs.* University of Toronto Press, Toronto, 1962.

REFERENCE BOOKS

Creese, W. L. *The Search for Environment.* Yale U.P.

Creese, W. L. ed. *The Legacy of Raymond Unwin: a Human Pattern for Planning.* M.I.T. Press.

Gallion, A. B. and Eisner, S. *The Urban Pattern.* 2nd ed. D. Van Nostrand, Princeton, 1963.

Howard, E. *Garden Cities of Tomorrow.* Faber & Faber.

Keller, S. *The Urban Neighbourhood: a Sociological Perspective.* Random House.

Stein, C. S. *Toward New Towns for America.* 2nd ed. Liverpool U.P., Liverpool, 1958.

Unwin, R. *Town Planning in Practice.* T. Fisher Unwin.

36.921G Practice of Neighbourhood Planning

Dwelling types. Residential densities. The design and layout of groups of dwellings, open spaces, streets and pathways in high, medium and low density housing estates. Mixed development. Subdivision patterns and standards. Community facilities including shopping and civic centres. Urban renewal in living areas. Organization of neighbourhood development.

REFERENCE BOOKS

Bruckmann, H. and Lewis, D. L. *New Housing in Great Britain.* Universe Books.

Burns, W. *New Towns for Old: the Technique of Urban Renewal.* Leonard Hill.

Hoffman, H. *Row Houses and Cluster Houses: an International Survey.* Praeger.

Jensen, R. *High Density Living.* Leonard Hill.

Katz, R. D. *Design of the Housing Site: a Critique of American Practice.* Univ. of Illinois Press.

King, R. ed. *Directory: Research in Housing—Australia and New Zealand 1969-1970.* University of Sydney.—Ian Buchan Fell Research-Project, Sydney. 1970.

Schmitt, K. W. *Multi-Storey Housing.* Architectural Press.

South Australia—Town Planning Committee. *Report on the Metropolitan Area of Adelaide.* S.A. Govt. Printer.

Tetlow, J. and Goss, A. *Homes, Towns and Traffic.* Faber & Faber.

Urban Land Institute. *The Community Builders Handbook.* exec. ed. U.L.I., Washington, D.C., 1960.

36.922G Communications and Public Utilities

Interaction of land use and transportation. Vehicular and pedestrian circulation patterns. Traffic function and capacity of district and neighbourhood roads. Principles and practice of local road construction, water supply, sewage treatment and disposal, and drainage. Local supply of electricity, gas, telephone, and other services.

REFERENCE BOOKS

Blunden, W. R. *The Land Use Transport System.* Pergamon.

Institute of Traffic Engineers. *Traffic Planning and Other Considerations for Pedestrian Malls.* I.T.E., Washington, 1966.

Lynch, K. *Site Planning.* M.I.T. Press.
Randerson, H. Y. *Australian Sanitary Engineering Practice.* 8th ed. A. & R., Sydney, 1964.
Ritter, P. *Planning for Man and Motor.* Pergamon.
Smigielski, W. K. *Leicester Traffic Plan: Report on Traffic and Urban Policy.* Leicester City Corporation.
Steel, E. W. *Water Supply and Sewerage.* 4th ed. McGraw-Hill, New York.

36.923G Land and Housing Economics

Outline of principles and practice of land valuation with special emphasis on valuation of residential land and buildings. Rating and taxing systems. Effect of zoning and redevelopment on land values. National income and its distribution. Goals of a modern economy. Demand and supply analysis. Economics of road transport and public utilities in urban development. The costs of urban growth. Cost-benefit analysis.

TEXTBOOK

Kolsen, H. M. *The Price Mechanism and Resource Allocation.* Cheshire.

36.924G Urban Sociology

A sociological approach to the study of urban phenomena. Lectures will deal with both methodological and theoretical issues relating to the study of urban social structures. Seminars will provide students with the opportunity to examine critically a number of community studies. A research project will be undertaken by each student.

TEXTBOOK

Reissman, L. *The Urban Process.* Free Press.

REFERENCE BOOKS

Encel, S. *Australian Society.* Cheshire.
Friedmann, G. *Industrial Society.* Free Press.
Gans, H. J. *The Urban Villagers.* Free Press.
Hatt, P. K. and Reiss, A. J. *Cities and Society.* Free Press.
Hauser, P. M. and Schnore, L. F. *The Study of Urbanization.* Wiley.
Jacobs, J. *The Death and Life of Great American Cities.* Jonathan Cape.
Oeser, O. A. and Emery, F. *Social Structure and Personality in a Rural Town.* Routledge.
Oeser, O. A. and Hammond, S. B. *Social Structure and Personality in a City.* Routledge.
Pahl, R. E. ed. *Readings in Urban Sociology.* Nelson.
Wilkes, J. ed. *Australian Cities: Chaos or Planned Growth?* A. & R.
Willmott, P. and Young, M. *Family and Class in a London Suburb.* Routledge.

36.925G Housing Law and Administration

Housing acts and regulations at Commonwealth, State and local levels. Related town planning acts and ordinances. Commonwealth-State Housing Agreements. The organization and administration of public housing authorities. Significant overseas housing policies.

REFERENCE BOOKS

Australia—Parliament—Statutes. *Housing Agreement Acts.* Govt. Printer, Canberra.

Every-Burns, J. W. *Local Government Law Affecting Property.* Butterworths.

N.S.W. Parliament—Statutes. *Local Government Act, 1919* (as amended). N.S.W. Govt. Printer.

N.S.W. Parliament—Statutes. *State Planning Authority Act, 1963.* N.S.W. Govt. Printer.

N.S.W. Parliament—Statutes. *Height of Buildings Act, 1912-1967.* N.S.W. Govt. Printer.

N.S.W. Parliament—Statutes. *Housing Act, 1941-1965.* N.S.W. Govt. Printer.

Starke, J. G. *Town and Country Planning in N.S.W.* Butterworths.

Wilcox, M. R. *The Law of Land Development in N.S.W.* Law Book Co.

42.211G Botany and Ecology

Plant anatomy and cytology—growth and reproduction—photosynthesis, transpiration and water relations. Principles of plant classification and the use of a flora. Principal soil types, chemical and physical properties, soil profiles. Composition of selected plant communities in relation to their environment. Plant succession and climax communities with special reference to Australian conditions.

HELP IMPROVE YOUR HANDBOOK

It is important to the University and to yourself that you understand its conventions and regulations. The University Calendar and faculty handbooks are means by which the University attempts to convey, amongst other things, information regarding the facilities it has to offer, and the rules and regulations which govern the conduct and progress of students.

You can help us assess the efficacy of the handbooks by completing this questionnaire, and thereby help yourself and your fellow students in the years to come. If you would like to discuss any aspect of the Calendar or handbooks personally, please contact Mr Douglas Howie, Room 307, the Chancellery, or phone extension 3340.

1. Name of faculty..... Course..... Yr./Stage .....

A. CONTENTS

2. What information in your handbook did you find most useful?.....

.....

.....

3. (a) What information did you find least useful?.....

.....

.....

(b) Why was the information of so little use to you?.....

.....

.....

4. How would you rate the following information areas for inclusion in the handbook?

	(Tick appropriate square)		
	ESSENTIAL	INTERESTED TO HAVE THEM	UNNECESSARY
Calendar of dates	☐	☐	☐
List of academic staff	☐	☐	☐
Course outlines or rules governing course	☐	☐	☐
Descriptions of subjects	☐	☐	☐
Textbook lists	☐	☐	☐
Reference book lists	☐	☐	☐
Requirements for admission	☐	☐	☐
Admission and enrolment procedures ...	☐	☐	☐
Course fees	☐	☐	☐
Rules relating to students	☐	☐	☐
Student services	☐	☐	☐
Scholarships	☐	☐	☐
Student activities	☐	☐	☐
Examination procedures	☐	☐	☐
Timetables	☐	☐	☐

5. Please comment on any aspect of the information areas listed in Question 4 and particularly, if you think necessary, on the form of presentation i.e., its content, layout, position .....

.....

.....

PLEASE TEAR HERE

6. If there is any section which you feel might be expanded, please list and state why you feel it should be expanded .....

.....

7. Would you like any of the following included in the handbook?

	YES	NO
Photographs of senior academic and administrative personnel	☐	☐
Prices of textbooks	☐	☐
Names of lecturers listed alongside subject descriptions ...	☐	☐
Timetables	☐	☐
Map of the Campus	☐	☐
Any other items	☐	☐

8. Do you use the textbook lists in your handbook when buying your books? ... ... ☐ ☐

   If 'NO', please state where you obtained a list of the required textbooks .....

9. Do you use your handbook when selecting reference books?... ☐ ☐

   If 'NO', please state where you obtained your list of reference books .....

10. The handbooks are generally available at the latest by mid-December. Is this date early enough for your purposes? ... ☐ ☐

    If 'NO', please nominate a month when you feel they should be on sale .....

11. Have you ever sought information from the University Calendar because it was not available in the handbook? ... ☐ ☐

    If 'YES', please indicate which information .....

    .....

12. If you had any difficulty in obtaining a copy of your handbook, please outline problem .....

    .....

B. FORMAT

13. Is the handbook a convenient size? ... ... ☐ ☐

14. Would you prefer some of the information to be presented differently, e.g., in tabular form, or expressed in a less complex manner or perhaps communicated in some other way? ... ☐ ☐

    If 'YES', please give examples of what you would like changed, and how you would change it .....

    .....

15. Have you any comments which you would like to make on either the contents or format? .....

    .....

When you have completed this form, please either return it personally to Mr. Douglas Howie, Publications Officer, Room 307, The Chancellery, or post it via the internal mail system. Thank you for your co-operation.