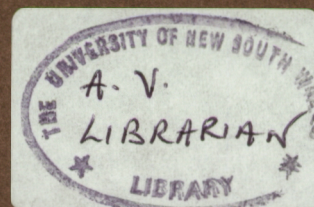


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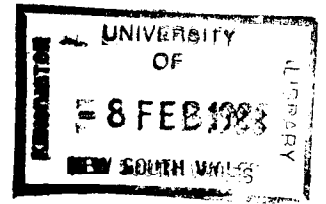
The University of New South Wales



# Architecture

1988  
Faculty Handbook





**The University of New South Wales**

PO Box 1 Kensington NSW Australia 2033 Phone 697 2222

# Architecture

**1988  
Faculty Handbook**

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The address of the University of  
New South Wales is:

PO Box 1, Kensington  
New South Wales, Australia 2033

Telephone: (02) 697 2222

Telegraph: UNITECH, SYDNEY

Telex AA26054





**Subjects, courses and any arrangements for courses including staff allocated, as stated in the Calendar or any Handbook or any other publication, announcement or advice of the University, are an expression of intent only and are not to be taken as a firm offer or undertaking. The University reserves the right to discontinue or vary such subjects, courses, arrangements or staff allocations at any time without notice.**

**Information in this Handbook has been brought up to date as at 8 September 1987, but may be amended without notice by the University Council.**

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## Session Dates

**1988**
**1989**

### Session 1

Session Begins	Monday	7 March	Monday	27 February
Mid-Session Recess				
Last Day of Class	Friday	13 May	Thursday	23 March
Classes Resume	Monday	23 May	Monday	3 April
Last Day of Session	Friday	17 June	Thursday	8 June
Examinations Begin	Monday	27 June	Thursday	15 June
Examinations End	Wednesday	13 July	Friday	30 June

### Session 2

Session Begins	Monday	1 August	Monday	24 July
Mid-Session Recess				
Last Day of Classes	Friday	26 August	Friday	22 September
Classes Resume	Monday	5 September	Tuesday	3 October
Last Day of Session	Friday	11 November	Wednesday	1 November
Examinations Begin	Monday	21 November	Wednesday	8 November
Examinations End	Friday	9 December	Friday	24 November

Vacation Weeks	16-22 May	27 March — 2 April
Common to Australian	11-17 July	3-9 July
Universities	29 Aug — 4 September	25 September — 1 October

### 1988

22 April	Last day for students to discontinue without failure subjects which extend over Session 1 only
12 August	Last day for students to discontinue without failure subjects which extend over the whole academic year
23 September	Last day for students to discontinue without failure subjects which extend over Session 2 only

# Staff

*Comprises School of Architecture, including Department of Industrial Arts; Schools of Building, Landscape Architecture, Town Planning; and Graduate School of the Built Environment.*

## Dean

Professor A. R. Toakley

## Chairman

Professor H. L. Westerman

## Senior Administrative Officer

Brian John Newell, BCom N.S.W.

## Professional Officers

Roderick Craig McGregor, BSc N.S.W.  
Richard Rosenberger, BE Timisoara, MIEAust

## Associate Professors

Richard Eric Apperly, BArch Syd., MArch N.S.W., ARAIA  
John Albyn Ballinger, BArch Adel., FRAIA  
Russell Callam Jack, MArch N.S.W., ASTC, FRAIA  
Peter Thomas Oppenheim, BArch Cape T., March PhD N.S.W.  
Nancy Claire Ruck, BArch N.Z., MBdgSc Syd., PhD N.S.W., FIES, FRAIA, ANZIA  
Kenneth James Wyatt, BE Qld., MBdgSc Syd., MIEAust

## Senior Lecturers

Victor Martin Berk, BArch DipAdmin N.S.W.  
John Richard Cooke, BArch Syd., LLB MSc(Building) N.S.W., FRAIA  
Paul-Alan Johnson, BArch Syd., DipCD PhD N.S.W., FRAIA  
Bruce Herbert Judd, BArch PhD Syd., ARAIA  
Geoffrey Kenneth Le Sueur, BArch GradDip N.S.W., ARAIA  
Nicholas Marinov, DipArch Prague, MArch N.S.W.  
Alan Ogg, BE N.S.W., MArch Penn.  
Richard Patrick Parlour, BSc Lond., PhD N.S.W., DipEng Lough.  
Peter Reginald Proudfoot, BArch Syd., MArch Penn., PhD N.S.W., Rome Scholar, ARAIA  
Vinzenc Franz-Josef Sedlak, DiplIngArch T.U. Graz, MPhil Sur.  
Barry Vivian Wollaston, BArch Syd., MArch N.S.W., FRAIA

## Lecturers

Chris LeRoy Bell BA(Arch) Calif.  
Robert John Bryant, BArch, N.S.W., MTCP Syd., ASTC,  
DipEnvStud Macq., MRAPI, ARAIA  
Geoffrey Lindsay Dwyer, FRAIA  
Richard Grantley Fitzhardinge, DipArch Kingston on Thames Poly.,  
MArch Calif., ARIBA, ARAIA  
John Barrie Fraser, DipArt(Ed)  
Elizabeth Ann Howard, BArch Syd., BA Macq.  
Desley Olwyn Luscombe, BSc(Arch) BArch N.S.W.  
Peter Murray, BArch N.S.W., MTCP Syd., DipEnvStud Macq., ARAIA  
James David Plume, MArch Syd.  
Harry Anthony Stephens, BArch DipLD N.S.W., FRAIA  
Kwong Hon Tang, BArch H.K., MArch Melb.

---

## School of Architecture

---

## Professor of Architecture and Head of School

Paul Stanhope Reid, BArch Auck., MArch Mich., ARAIA

## Visiting Professor

Laszlo Peter Kollar, MArch PhD N.S.W., ASTC

### Tutor

Stephen Peter, BArch, DipArchComp Syd.

### Administrative Assistant

Harold Percy Chambers, BA *S.Pac.*

---

## Department of Industrial Arts

### Senior Lecturer and Acting Head of Department

William Richard Lawson, BSc PhD *N.S.W.*, MAPsS, MAIHR

### Senior Lecturer

Donald McArthur Godden, MSc *N.S.W.*

---

## School of Building

### Associate Professor and Head of School

Roger Mark Anthony Miller, BBuild *N.S.W.*, SM CE *M.I.T.*, FAIB, MACS

### Professor of Building

Arthur Raymond Toakley, BCE BA MEngSc *Melb.*, PhD *Manc.*, CEng, FIEAust, FAIB

### Senior Lecturers

David Nevil Hassall, BE, MBdgSc *Syd.*, MIEAust

Graham Edward Levido, BBuild, MSc(Building) *N.S.W.*, MAIB

Marton Marosszekey, BE *N'cle(N.S.W.)*, MEngSc *N.S.W.*, MIEAust, MAIB

Thomas Edward Uher, BBuild, MSc(Building) *N.S.W.*, MAIB

### Lecturers

Ojars Indulis Greste, BE, ME *N.S.W.*, DEng *Calif.*

Karl Goran Runeson, BA *N.S.W.*, MAIB

Clyde Donald Smythe, MBuild *N.S.W.*, ASTC, MAIB

### Visiting Fellow

John Malcolm Hutcheson, MB BE *Syd.*, BCom *Qld.*, MBA, PhD *N.S.W.*, FCIS, FIEAust, AAPI, FID, FIARbA, AAUQ, LGE, FAIB, FAIM, FSLE, FCDA, FASA, CPA

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## School of Landscape Architecture

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### Associate Professor and Head of School

Finn Christopher Thorvaldson, BArch *N.S.W.*, MLA *Mich.*, ARAIA, AAILA

### Senior Lecturer

Helen Beatrice Armstrong, BSc *Syd.*, MLArch GradDip *N.S.W.*, AAILA

### Lecturers

Craig Anthony Burton, BArch GradDip *N.S.W.*, MA *Syd.*,

DipEnvStud *Macq.*, ARAIA, AAILA

Linda Fitz Corkery, BS *Iowa*, MRP *C'nell*

Douglas Crawford, BArch *Melb.*, GradDip *N.S.W.*, MRAIPR

Donald Guy Sigsby, MLA *Mich.*, AAILA

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## School of Town Planning

---

### Professor of Town Planning and Head of School

Hans Leo Westerman, ME *Delft.*, FRAPI, MIEAust

### Associate Professor

Elias David Duek-Cohen, BArch *Liv.*, MA *Oxf.*, DipTP *Lond.*, FRAPI, MRTPI, ARIBA

### Senior Lecturers

Stephen Harris, BTP *N.S.W.*, FRAPI

Robert Bolles Zehner, BA *Amh.*, MA PhD *Mich.*, MASA

### Lecturers

Peter Ashton Murphy, BA *Syd.*, PhD *Macq.*

Sophie Hester Watson, BA CertEd *Sus.*, PhD *Open.*

Danny Barry Wiggins, BTP PhD *N.S.W.*, MRAPI

### Visiting Fellow

Richard Earl Lloyd, BSc *Calif. Poly. State*, PhD *Calif.*

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## Graduate School of the Built Environment

---

### Professor of Architecture and Head of School

John Christopher Haskell, DipTP *Lond.*, MArch *Natal*, Rome Scholar  
FRSA

### Associate Professor

Anita Barbara Lawrence, MArch *N.S.W.*, FRAIA, MAAS

### Senior Lecturers

John Kyle Redmond, BA DipID(Eng) *C.S.A.D.*, MA *R.C.A.*, FRSA,  
FDIA

Peter Leggett Reynolds, BArch PhD *N.S.W.*

### Honorary Visiting Fellows

Sydney Allison Baggs, MArch DipLD PhD *N.S.W.*, ASTC, FRAIA,  
AAILA, ARIBA

Robert Charles Lewis Irving, MArch *N.S.W.*, ARMTC, FRAIA



## Foreword

From the earliest times people have toiled to modify their environment to satisfy the physical and spiritual aspirations of their lives. In each great culture there is evidence of these aspirations being fulfilled in buildings of greater wonder, cities and towns that reflect social, political and technological circumstances, and landscapes that are of lasting significance.

Today all of those concerned with the quality of our environment are faced with issues of growing complexity. These complexities arise from increased communication facilities, technological developments and social and political aspirations and needs.

The professions working in the fields of the man-made and built environments will be required to evolve in the context of a rapidly developing technology solutions to the problems of an increasing population and the demands of people for an improvement in their quality of life.

The Faculty's purpose is to provide an academic climate that is conducive to the pursuit of knowledge, the search for truth, and the advancement of the quality of the man-made and built environments.

The Faculty offers courses that are designed to provide an education and qualification to practise the professions of architecture, building, landscape architecture, and town planning. It provides opportunities for graduate and professional development studies, and for research in, and across, the fields of the man-made and built environments.

## Faculty Information

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### Some People Who Can Help You

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*If you require advice about enrolment, degree requirements, progression within courses, or any other general faculty matters, contact:*

Mr Brian Newell, Senior Administrative Officer, Faculty of Architecture  
Room 510, Architecture Building, Extension 4794.

*For information and advice about subject content and requirements contact the appropriate person below:*

Professor Paul Reid, School of Architecture  
Room 100, Architecture Building, Extension 4780.

Associate Professor Finn Thorvaldson, School of Landscape Architecture  
Room 208, Old Main Building, Extension 4844.

Mr Clyde Smythe, School of Building  
Room 409, Architecture Building, Extension 4821.

Professor Hans Westerman, School of Town Planning  
Room 205, Old Main Building, Extension 4837.

Professor John Haskell, Graduate School of the Built Environment  
Room 212, Sir Robert Webster Building, Extension 4848.

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### Faculty of Architecture Enrolment Procedures

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#### Architecture Degree Course

All students re-enrolling in Architecture courses in 1988 should obtain a copy of the free booklet *Architecture Enrolment Procedures 1988* available from the School Office. This booklet provides detailed information on enrolment procedures and enrolment timetable.

#### Town Planning Degree Course

Before proceeding on practical experience, Town Planning students are required to obtain instruction relating to enrolment procedure from the School of Town Planning office. This particularly applies to students in Years 3 and 4.

#### Bachelor of Building Degree Course

The Building course is offered on a credit point semester system basis and students are required to enrol for the full year (two semesters) on the dates and at the times shown in the booklet *Building Enrolment Procedures 1988*.

Building students who elect to take their industrial semester in Session 1 in any year are required to enrol at the beginning of that year.

Enrolment for Session 2 subjects is a preliminary enrolment and accepted subject to the student having obtained the appropriate prerequisites before commencement of that session.

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## Rules for Progression

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Progression in courses offered in the Faculty of Architecture is generally dependent on the successful completion of prerequisites and/or co-requisites for subjects as listed in the schedules of subjects for each course.

Where the academic record of students is not of a satisfactory standard, the Head of School may recommend a restricted program. This applies to all undergraduate courses offered by the Faculty.

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## Library Facilities

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Although any of the university libraries may meet specific needs, the staff and students of the Faculty of Architecture are served mainly by the Physical Sciences Library and the Studio Collection housed in the Faculty of Architecture. There is also some material still contained in the undergraduate collection.

### The Physical Sciences Library

This library, which is situated on Levels 6 and 7 of the Library tower, caters for the information needs of staff, graduate and undergraduate students in the areas of pure and applied science, engineering and architecture. The library's collection of books, serials and microfilms bears the prefix 'P' and details of each item are included in the microfiche monograph and serials catalogues. In addition, there is a map collection on Level 6. Journals with the prefix 'PJ' may not be borrowed.

Trained staff are available at all times to assist readers with their enquiries.

The Studio Collection contains a small collection of reference, course-related and general interest material. This material is not for loan but in the majority of cases loan copies are held in the Physical Sciences Library or in the undergraduate collection. The Studio Collection is open from 8:30am to 6:00pm during session and from 9:00am to 5:00pm during vacation, and a librarian is available to provide reference services and assist with readers' enquiries for several hours each day.

Students may also wish to use the undergraduate collection for associated reading.

Physical Sciences Librarian      Marian Bate

## Undergraduate Services

- **The undergraduate collection** caters for the needs of students in Years 1 and 2 and other groups where large numbers require mass teaching. Levels 3 and 4.
- **The Open Reserve Section**, houses books and other material which are required reading. Level 2.

- **The Audio-Visual Section**, contains cassette tapes, mainly of lectures and other spoken word material. The Audio-Visual Section has wired study carrels and cassette players for student use. Level 3.

- **The Reader Education program** provides orientation tours and introductory library research method lectures to students.

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## Faculty Laboratories

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### Research Laboratories

The Faculty controls research laboratories situated on campus at Kensington and at the University of New South Wales Research Station, King Street, Randwick. The laboratories have sections equipped for work on environment and climate, materials, model testing, services, lighting and acoustics. Extensive testing and research equipment and workshop facilities are available, including a wind-rain machine, an artificial sky and sun, a structural modelling facility and a structural testing bay. The equipment and facilities of the laboratories are continually being expanded.

Research work and testing programs carried out in the laboratories 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.
- Transfer of heat and moisture through wall elements.
- Vibration characteristics of large prestressed concrete structures.
- Penetration of moisture into and through concrete.
- Development of methods of extending the use of solar energy in domestic architecture.
- Development of form-finding techniques and fabrication methods for folded-surface structures.
- Study of noise transmission in buildings.
- Investigation of traffic noise measurement, analysis and prediction.
- The effectiveness of artificial luminous environments.

### Computing Facilities Laboratory

Established within the Faculty is the University Computer Graphics Facility, a laboratory for the teaching and research of computing methods with a particular emphasis on the use of computer graphics. The laboratory has the following major equipment: VAX 11/750 computer with 2 Mbytes of memory, 124 Mbytes of disk storage; Tektronix storage tube graphics terminals with hard copy and digitizing capability; a refresh-based computer graphics terminal with light pen; electrostatic printer/plotter; multi-pen small flatbed plotter; multi-pen high resolution drafting plotter and several interactive terminals.

The computer is network connected to the University's central computing system, a major Cyber 171 and three VAX 11/780 computers. The laboratory equipment is optionally connected to any of these computers by an automatic switching system.

Active research is under way in the following areas:

The use of computing techniques and graphics in architectural design.

Rational computer-based documentation methods in building. The development of management information systems for building organizations.

Analysis and development of rational approaches to landscape design and planning.

Various projects in the general areas of environmental and building science.

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## **Student Clubs and Societies**

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Students have the opportunity of joining a wide range of clubs and societies. Many of these are affiliated with the Students' Union. There are numerous religious, social and cultural clubs and also many sporting clubs which are 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.



# Undergraduate Study

The Faculty of Architecture consists of the School of Architecture including the Department of Industrial Arts, the School of Building, the School of Landscape Architecture, the School of Town Planning and the Graduate School of the Built Environment. These schools and this department conduct undergraduate courses in the fields of architecture, industrial arts, building, landscape architecture and town planning. The courses provide education and training in the arts and sciences involved in the design and construction of buildings, in the development of cities, in landscape and in industrial arts. In addition to professional and vocational training the courses include general studies subjects to provide graduates with a broad understanding of the humanities and the social sciences.

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## School of Architecture

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**Head of School**  
Professor Paul Reid

Architecture is concerned with the design and construction of buildings which will not only satisfy the physical needs of their users but also enrich the lives of all who experience them. An architect in today's society needs to have specialized skills in order to deal with complex technological problems and opportunities, but he or she also needs an understanding of the environmental, cultural, social and legal context in which architecture is brought into being. Furthermore, present day architects must respond to an increasing public awareness of the need to conserve finite resources, not the least of which is the stock of older buildings which can still perform useful functions and add richness to the built environment. The architect's primary contribution is as a designer who recognizes and attempts to resolve all of the diverse forces which are brought to bear on the creation of a building. To perform this function, he or she must understand the roles of all people involved in the procure-

ment of buildings and, when necessary, co-ordinate the work of specialist consultants.

The courses described in this section of the handbook replace Bachelor of Architecture course (3275/3280) and Bachelor of Science (Design Studies) course (3275/3295). For information on those courses students should consult the 1987 Architecture Faculty Handbook.

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## Architecture Degree Courses

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### 3260 Bachelor of Architecture Course

**Bachelor of Architecture**  
**BArch**

This course provides the academic education and practical experience leading to professional qualifications in architecture. It aims to equip students with the theoretical and practical knowledge, skills and techniques needed in the design and construction of buildings.

#### General Description of the Course

The course requires full time attendance for five years with an additional six months practical experience taken after the end of third year. Theoretical knowledge is covered by lectures in the following seven areas:

1. Architectural Communications.
2. Theory of Architecture.
3. History of Architecture.
4. Architectural Construction.
5. Architectural Structures.
6. Environment Control.
7. Architectural Practice.

Progression through the course is by Design Stages comprising Studio and Seminar components. The first three Design Stages are of one year duration and the final four Design Stages are of one semester, or half-year, duration. Admission to each Design Stage is subject to completion of a majority of the components preceding Design Stage and certain pre-requisite Theory subjects.

In the Studios a graded sequence of exercises in the form of projects provides experience in architectural design. Each Studio is accompanied by Seminars which draw on the theoretical material and demonstrate its practical application. The architectural projects designed in the Studios thus provide the means for integrating all aspects of architecture.

In the final three sessions of the course the selection of an elective package gives students the opportunity to concentrate their study on particular aspects of architecture. Elective subjects are offered according to demand and the availability of staff and resources.

### Practical Experience

Students are required to obtain six months' practical experience in an architect's office. The arrangements for this experience are to be approved by the School, and students are required to provide evidence of the scope and nature of the practical experience obtained. Students may not normally enrol in other subjects while obtaining approved practical experience.

### Honours

The Bachelor of Architecture degree may be awarded with Honours based upon the quality of performance in the course and in accordance with current Faculty regulations. Honours are Class 1 or Class 2 Division 1 or Class 2 Division 2.

## 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. In addition, to become registered the candidate must satisfy the following requirements:

1. Produce evidence of two years' approved practical experience, at least one of which has been subsequent to completion of the course; and
2. Pass a special examination in Architectural Practice.

Graduates with two years' approved practical experience, at least one of which is subsequent to completion of the course, are eligible for Associate Membership of the Royal Australian Institute of Architects.

Students enrolled in the BSc(Arch) program (3265) or the BAArch program (3260) are eligible to become student Members of the Royal Australian Institute of Architects.

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

## 3265

## Bachelor of Science (Architecture) Course

### Bachelor of Science (Architecture) BSc (Arch)

This course provides an architectural education for those who interests and ambitions lie outside the field of professional architectural practice. It offers an opportunity to select subjects on the basis of a student's individual interests.

### General Description of the Course

The course may be completed in three years of full time study. The first year is taken in common with B.Arch students. In each of the following three sessions an approved special research programme is undertaken followed by a research project in the final session. A selection of subjects is taken from those offered by the School of Architecture with the option of subjects totalling up to fifteen credit points from outside the School.

General Studies subjects totalling eight credit points must be taken during the course.

### Honours

The Bachelor of Science (Architecture) degree may be awarded with honours after the successful completion of a two-semester honours programme following the completion of the BSc(Arch) programme, and in accordance with current Faculty regulations. Honours are Class 1 or Class 2 Division 1 or Class 2 Division 2.

## Courses 3260: Schedule of Subjects B.Arch.

Students must pass the Design Stages, comprising Studio and Seminars in the sequence within their own areas but are only tied to Design Stages by the pattern of pre-requisites indicated. One seminar subject may be carried into the following Design Stage. No more than 8 elective credit points may be taken in any one Session. Electives are normally taken in packages as indicated, but students may submit their own special programme of elective study to the Head of School for approval. General Studies electives totalling 12 credit points must be taken during the course.

Practical Experience may be taken either between Design Stages 3 and 4 or between Design Stages 4 and 5.

Credit Points generally indicate: (i) for one semester subjects, the number of staff/student contact hours per week, or (ii) for whole year subjects, twice the number of staff/student contact hours per week.

No.	Subject Name	Credit Points	Prerequisites
-----	--------------	---------------	---------------

### Year 1

11.5201	Architectural Communication 1	3	Nil
11.5301	Theory of Architecture 1	2	Nil
11.5401	Introduction to Architecture	1	Nil
11.5402	History of Architecture	2	Nil
11.5501	Architectural Construction 1	3	Nil
11.5601	Architectural Structures 1	2	Nil
11.5701	Environmental Control 1	3	Nil

### Design Stage 1

11.5101	Studio 1	9	Nil
11.5203	Communication Seminar 1	6	Nil
11.5304	Theory Seminar 1	6	Nil
11.5504	Construction Seminar 1	4	Nil
11.5604	Structures Seminar 1	2	Nil
		43	

### Year 2

11.5202	Architectural Communication 2	2	11.5201
11.5302	Theory of Architecture 2	2	11.5301
11.5403	History of Architecture 2	2	11.5402
11.5502	Architectural Construction 2	4	11.5501
11.5602	Architectural Structures 2	2	11.5601
11.5702	Environmental Control 2	4	11.5701

### Design Stage 2

11.5102	Studio 2	10	11.5101, 11.5501, 11.5601, 11.5701, three from 11.5203, 11.5304, 11.5504, 11.5604 Nil
11.5204	Communication Seminar 2	4	
11.5305	Theory Seminar 2	4	
11.5505	Construction Seminar 2	3	
11.5605	Structures Seminar 2	2	
11.5704	Environmental Control Seminar 1	1	
	General Studies Elective	4	
		44	

## Courses 326: Schedule of Subjects

No.	Subject Name	Credit Points	Prerequisites
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### Year 3

11.5303	Theory of Architecture 3	2	11.5302
11.5404	History of Architecture 3	2	11.5403
11.5503	Architectural Construction 3	2	11.5502
11.5603	Architectural Structures 3	2	11.5602
11.5703	Environmental Control 3	4	11.5702
36.411	Town Planning	2	11.5102

### Design Stage 3

11.5103	Studio 3	10	11.5102, 11.5502, 11.5602, 11.5702 four from 11.5204, 11.5305 11.5505, 11.5605 11.5704 Nil
11.5205	Communication Seminar 3	2	
11.5306	Theory Seminar 3	4	
11.5506	Construction Seminar 3	3	
11.5606	Structures Seminar 3	2	
11.5705	Environmental Control Seminar 2	2	
	General Studies Elective	8	
		45	

### Year 4 - Session 1

11.5810	Architectural Practice 1	2	11.5103
11.5912	Research Methods	2	11.5103
11.5913	Dissertation	6	11.5912

### Design Stage 4

11.5110	Studio 4	8	11.5103, 11.5503, 11.5603, 11.5703 four from 11.5205, 11.5306, 11.5506, 11.5705, 11.5606
11.5210	Communication Seminar 4	1/2	
11.5310	Theory Seminar 4	1	
11.5510	Construction Seminar 4	2	
11.5710	Environmental Control Seminar 3	1	
		22 1/2	

or

11.5910	Practical Experience		11.5103
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### Year 4 - Session 2

Option remaining from Session 1

### Year 5 - Session 1

11.5811	Architectural Practice 2	2	11.5810
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## Courses 326: Schedule of Subjects

No.	Subject Name	Credit Points	Prerequisites
<b>Design Stage 5</b>			
11.5111	Studio 5	8	11.5110, 11.5210, 11.5310, 11.5510, 11.5710, 11.5910
11.5211	Communication Seminar 5	1/2	
11.5311	Theory Seminar 5	1	
11.5511	Construction Seminar 5	2	
11.5711	Environmental Control Seminar 4	1	
	Seminar Elective Package*	8	
		<u>22 1/2</u>	

either

### Technology Elective Package

11.5220	Computer Graphics Programming 1	2	11.5910, 11.5912
11.5520	Advanced Building Materials	2	
11.5620	Conceptual Structural Design	4	
11.5720	Design for Energy Efficiency	2	
11.5820	Building Economics & Development	2	
11.5920	Architectural Research 1	4	
	Other	2	
	Eight credit points from above	<u>8</u>	

or

### Design Elective Package 1\*

11.5222	Computer Applications 1	4	11.5910, 11.5912
11.5225	Drawing	4	
11.5320	Theory of Form	2	
11.5321	Criticism and Evaluation	2	
11.5420	Building Conservation	2	
11.5423	Urban Systems	2	
11.5920	Architectural Research 1	4	
	Other	2	
	Eight credit points from above	<u>8</u>	

### Year 5 - Session 2

11.5812	Architectural Practice 3	1	11.5811
11.5813	Architectural Practice 4	1	11.5811

### Design Stage 6

11.5112	Studio 6	8	11.5111, 11.5211, 11.5311, 11.5511, 11.5611, 11.5711
11.5212	Communication Seminar 6	1/2	
11.5512	Construction Seminar 6	2	
11.5712	Environmental Control Seminar 5	1	
	Seminar Elective Package*	8	
		<u>21 1/2</u>	

## Courses 3260: Schedule of Subjects

No.	Subject Name	Credit Points	Prerequisites
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either

### Technology Elective Package 2\*

11.5221	Computer Graphics Programming 2	4	Technology Elective Package 1, 11.5220 for 11.5221, 11.5620 for 11.5621
11.5521	Advanced Construction Systems	2	
11.5621	Advanced Structural Design	4	
11.5721	Design of Lighting	2	
11.5821	Project Management	2	
11.5921	Architectural Research 2	4	
	Other	2	
	Eight credit points from above	8	

or

### Design Elective Package 2\*

11.5223	Computer Applications 2	2	Design Elective Package 1
11.5226	Painting	4	
11.5322	Imagination	2	
11.5421	Recent Australian Architecture	2	
11.5424	Urban Design	2	
11.5921	Architectural Research 2	4	
	Other	2	
	Four from above	8	

### Year 6 - Session 1

### Design Stage 7

11.5113	Graduation Projects	10	11.5913, 198 credit points
11.5213	Communication Seminar 7	1/2	
11.5513	Construction Seminar 7	2	
11.5713	Environmental Control Seminar 6	1	
	Seminar Elective Package*	8	
		21 1/2	

either

### Technology Elective Package 3\*

11.5522	Construction Planning and Management	2	Technology Elective Package 2, 11.5621 for 11.5622
11.5622	Lightweight Structural Design	4	
11.5722	Acoustics Studies	2	
11.5822	The Architect and the Law	2	
11.5922	Architectural Research 3	4	
	Other	2	
	Eight credit points from above	8	

or

### Design Elective Package 3\*

11.5224	Advanced Graphics	4	Design Elective Package 2
11.5323	Spirit in Architecture	2	
11.5422	Great Architects	2	
11.5422	Landscape Design	2	
11.5925	Architectural Research 3	4	
	Other	2	
	Eight credit points from above	8	

Note: **Other** denotes one subject from the alternate package

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**Courses 3265: Schedule of Subjects**


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No	Subject Name	Credit Points	Prerequisites
<b>Year 1</b>			
11.5201	Architectural Communication 1	3	Nil
11.5301	Theory of Architecture 1	2	Nil
11.5401	Introduction to Architecture	1	Nil
11.5402	History of Architecture 1	2	Nil
11.5501	Architectural Construction 1	3	Nil
11.5601	Architectural Structures 1	2	Nil
11.5701	Environmental Control 1	3	Nil
<b>Design Stage I</b>			
11.5101	Studio 1	9	Nil
11.5203	Communication Seminar 1	6	Nil
11.5304	Theory Seminar 1	6	Nil
11.5504	Construction Seminar 1	4	Nil
11.5604	Structures Seminar 1	2	Nil
		<u>43</u>	
<b>Year 2 - Session 1</b>			
11.5914	Special Research Programme 1	5	Head of School's approval
	Choice of B.Arch. subjects--	15	Head of School's approval
	General Studies	2	Nil
		<u>22</u>	
<b>Year 2 - Session 2</b>			
11.5915	Special Research Programme 2	5	11.5914, Head of School's approval
	Choice of B.Arch. subjects	15	Head of School's approval
	General Studies	2	Nil
		<u>22</u>	
<b>Year 3 - Session 1</b>			
11.5916	Special Research Programme 3	5	11.5915, Head of School's approval
11.5912	Research Methods	2	11.5915
	Choice of B.Arch. subjects	12	Head of School's approval
	General Studies	2	Nil
		<u>22</u>	
<b>Year 3 - Session 2</b>			
11.5917	Research Project	8	11.5916, 11.5912
	Choice of B.Arch. subjects	12	Head of School's approval
	General Studies	2	Nil
		<u>22</u>	
<b>Year 4 (Optional Honours year) - Session 1</b>			
11.5918	Honours Project 1	<u>22</u>	131 credit points
		22	
<b>Year 4 - Session 2</b>			
11.5919	Honours Project 2	<u>22</u>	11.5918
		22	

The Special Research Programmes and Research Project may only be credited to the BSc(Arch) degree programme. The Honours Projects may only be credited to the BSc(Arch) degree programme at Honours level.

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## Department of Industrial Arts

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**Acting Head of Department**  
Dr W. R. Lawson

The Department of Industrial Arts offered a BSc(IndArts) DipEd course (3320) which was available through full-time study in the general field of Industrial Arts. This course was discontinued from 1982 and no new students may be enrolled. Students already enrolled may continue with their studies until completion of the degree.

Students who wish to pursue their studies in Industrial Arts at graduate level may apply to enrol in the Master of Science and Doctor of Philosophy degree courses (by research) offered by the School of Architecture

### **3310 Industrial Arts Course — Full-time**

**Bachelor of Science  
BSc**

This course was discontinued from 1977 and no new students may be enrolled. Students already enrolled in the course may continue with their studies until completion of the degree.

### **3320 Industrial Arts Course — Full-time**

**Bachelor of Science (Industrial Arts)/  
Diploma in Education  
BSc(IndArts) DipEd**

This course was discontinued from 1982 and no new students may be enrolled. Students already enrolled may continue with their studies until completion of the degree. Students should consult pages 37 and 38 of the 1984 Architecture Faculty hand-book for details of this course.

### **Industrial Arts Course - Part-time**

**Bachelor of Science (Technology)  
BSc**

This course is being progressively discontinued. Students should consult pages B319-B320 in the 1972 Calendar for the course outline.

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## School of Building

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**Head of School**  
Associate Professor R. M. A. Miller

**Undergraduate Course Co-ordinator**  
Mr. Clyde Smythe

### **Building Degree Course BBuild**

This course prepares students for professional and executive employment within one of Australia's largest industries, the building industry. Careers in a wide variety of areas, in both private enterprise and in the public sector are available to building graduates. More specifically, these include positions as project manager, construction manager, master builder, construction consultant, building surveyor, building estimator, quantity surveyor, building economist, property manager and building scientist.

### **General Description of the Course**

The course is offered on a semester basis. Students are required to complete a minimum of eight semesters (sessions) including one semester of appropriate industry experience. The course leads to the award of the degree of Bachelor of Building(BBuild).

### **Credit Points**

To qualify for a Bachelor of Building degree a student must have obtained a minimum of 196 credit points (including 158 credit points from compulsory subjects offered by the School of Building and 10 credit points of General Studies subjects). Credit points are allocated to all compulsory and elective subjects.

Provided that they can satisfy the prerequisite requirements for subjects to be attempted, students may choose that pattern and order of subjects which best suits individual requirements. Credit points generally correspond to work load in subjects. A maximum of 12 elective points may be obtained by passing approved subjects offered by other schools in the University.

Attention is drawn to the fact that Physics and Mathematics are included among the compulsory subjects. It is highly desirable that intending students have successfully completed these subjects at HSC level.

### **Practical Experience**

Students are required to be in employment related to their course during at least six months of their program. In this period they must be formally enrolled in 35.910 Industry Semester. The proposal for employment must be submitted to the Professor of Building for approval. See **Undergraduate Study: Subject Descriptions** for details.

## Award of the Degree at Honours Level

Honours are awarded on the basis of the quality of student performance in the subjects of the course and in the thesis.

## Professional Recognition

The award of the degree, Bachelor of Building, is recognized for admission to membership by:

(1) The Australian Institute of Building:

(2) The Australian Institute of Quantity Surveyors, subject to completion of the following electives:

35.813	Quantity Surveying 3
35.833	Building Economics 3
35.506	Construction 6
35.507	Construction 7
35.580	Building Design Analysis
35.720	Quantity Surveying 3

(3) The Institution of Surveyors Malaysia, subject to completion of the following:

35.801	Quantity Surveying 1
35.802	Quantity Surveying 2
35.813	Quantity Surveying 3

## 3330 Building Course

### Bachelor of Building BBuild

**Note:** The timetabling of subjects depends on the number of enrolments and on the number of students wishing to specialize in particular areas. While the intention is to offer each subject in every alternate semester, students should realize that the full range may not be offered in any one year.

## Schedule of Subjects

### Construction Studies Stream

#### Compulsory Subjects

		Credit points	Prerequisites
29.411	Surveying for Architects and Builders	2	nil
35.202	Soil Mechanics for Building	2	nil
35.500	Building Graphics	6	nil
35.501	Construction 1 (Domestic Buildings)	5	nil
35.502	Construction 2 (Building Practice)	5	35.501

35.5033	Construction 3 (Low-rise Buildings)	5	35.502
35.504	Construction 4 (Factory Buildings)	5	35.503
35.505	Construction 5 (High-rise Buildings)	5	35.504
35.551	Structures 1	5	nil
35.552	Structures 2	5	35.551
35.553	Structures 3	5	35.552
35.591	Built Environment 1	2	nil

#### Elective Subjects

35.506	Construction 6 (Techniques)	4	35.505, 35.703
35.517	Construction 7 (Industrialization and Technological Change)	4	35.505, 35.703
35.518	Construction 8 (Special Project)	4	35.505, 35.704
35.580	Building Design Analysis	3	35.505, 35.704
35.592	Built Environment 2	2	nil

### Building Science Stream

#### Compulsory Subjects

1.931	Physics 1 (Building)	4	nil
35.601	Building Science (Materials)	4	nil
35.602	Building Science 2 (Energy)	5	1.931
35.605	Building Science 5 (Concrete)	3	nil
35.606	Building Science 6 (Metals)	3	nil
35.651	Services 1 (Hydraulics)	3	nil
35.652	Services 2 (Mechanical)	3	35.602
35.670	Mathematics for Builders	4	nil

#### Elective Subjects

35.604	Building Science 4 (Plastics)	3	nil
35.607	Building Science 7 (Thermal)	3	35.602
35.609	Building Science 9 (Timber)	3	nil
35.653	Services 3 (Integration)	4	35.651, 35.652

### Management Studies Stream

#### Compulsory Subjects

		Credit points	Prerequisites
35.701	Management 1 (Management Principles)	4	nil
35.702	Management 2 (Professional Practice)	4	35.701
35.703	Management 3 (Planning)	4	35.502, 35.751, 35.702
35.704	Management 4 (Contracts, Site Administration)	4	35.703
35.705	Management 5 (Project Management)	4	35.704

		Credit points	Prerequisites
35.707	Management 7 (Corporate Strategy)	4	35.704, 35.832
35.721	Law for Builders 1	2	nil
35.722	Law for Builders 2	2	35.721
35.751	Introduction to Computing	2	nil
35.752	Computer Applications in Building	3	35.751

### Elective Subjects

35.706	Management 6 (Personal Management)	4	35.704
35.708	Management 8 (Marketing)	4	35.704, 35.832
35.720	Commercial Arbitration	4	35.704
35.753	Systems Analysis and Modelling	4	35.703
35.754	Building Information Systems	4	14.001, 35.752

## Building Economics stream

### Compulsory Subjects

14.001	Introduction to Accounting A	2	nil
14.002	Introduction to Accounting B	2	14.001
35.801	Quantity Surveying 1	4	35.503
35.802	Quantity Surveying 2	4	35.504, 35.871
35.831	Building Economics 1	4(3)*	nil
35.832	Building Economics 2	4(3)*	35.831, 14.002
35.867	Estimating 1	4(3)*	35.503
35.871	Building Specifications	3(2)*	35.503
35.880	Development Project	4	35.504, 35.832

\*Credit points shown in brackets are the old values which will be credited to those students first enrolled prior to 1984 and who require 192 points to qualify for their degree.

### Elective Subjects

		Credit points	Prerequisites
35.813	Quantity Surveying 3	4	35.802
35.833	Building Economics 3	5	35.832 or 35.868
35.868	Estimating 2	3	35.752, or 35.867
35.890	Property Valuation	2	35.503, 35.831

## Others

### Compulsory Subjects

35.900	Thesis	10	100 credit points
35.910	Industry Semester*	3	35.503, 35.702
	General Studies	10	nil

\*This subject must not be taken in final semester. It must be taken at a stage which will enable students to subsequently complete a minimum of 12 credit points, apart from any credit points obtained for 35.900 Thesis.

General Studies subjects totalling 10 credit points are compulsory. Two credit points are awarded for Half Electives (28 hours) and four credit points are awarded for Full Electives (56 hours). The subjects are to be selected from the list of General Studies electives available in the General Studies handbook.

## School of Landscape Architecture

Head of School

Associate Professor Finn Thorvaldson

### Landscape Architecture Degree Course

#### BLArch

Landscape Architecture is a professional discipline which is based on an understanding of the natural sciences. Graduates will be able to share in mankind's responsibility towards the environment.

Landscape in its broadest sense encompasses all external spaces comprising natural topography and vegetation as well as modified environments constructed for society's enjoyment or comfort. Opportunities for graduates to contribute professional advice vary in scale through the design of domestic gardens, urban plazas and thoroughfares, regional parks and new cities to national considerations of land use and environmental policies. Creative design ability, based on an appreciation of natural systems and society's requirements can bring about management plans for natural areas or the planned modification of areas to provide external spaces which are both practical and enjoyable.

The course is designed to introduce students to landscape architecture through an understanding of the components and processes at work in primitive environments, and of the philosophies and techniques which have been developed by people in continuous efforts to improve this environment. In the later years of the course emphasis is given to creative design work of a kind appropriate to Australian conditions. Programs are related to the subject matter of concurrent lectures, and culminate in an examination of landscape problems of regional and national significance.

## General Description of the Course

The course requires full-time attendance of approximately 21 hours per week over at least four years.

The majority of subjects are specific; however, contact with the students of other schools within the Faculty and of other faculties within the University is assured by the inclusion of subjects from the Schools of Botany, Geography and Town Planning, and the Department of General Studies.

## Practical Experience

Students of the undergraduate course must obtain a total of four months' practical experience prior to graduation, of which a minimum of two months must be in a design office and a minimum of two months must be in outdoor work. This normally takes the form of employment during long vacations under a landscape architect, landscape contractor or nurseryman. Each student entering upon practical experience must obtain prior approval of the Professor of Landscape Architecture or his nominee. Each student must obtain from the employer a statement of experience gained, maintain an accurate record in log-book form and submit a written report describing the work undertaken during the various practical experience components. This practical experience must be obtained prior to enrolling in 37.7418 Professional Practice 4.

## Honours

The Bachelor of Landscape Architecture degree may be awarded with Honours based upon the quality of performance in the

course and in accordance with current Faculty regulations. Honours are Class 1 or Class 2 Division 1 or Class 2 Division 2.

## Professional Recognition

The course is recognized by the Australian Institute of Landscape Architects and graduates holding the BLArch degree will qualify for corporate membership after a specified period of graduate experience and formal examination.

## 3380 Landscape Architecture Course

### Bachelor of Landscape Architecture BLArch

The course structure shown below represents the normal pattern of progression which students entering course **3380** are expected to follow. In exceptional circumstances the Head of School may allow variation of the normal pattern, and in such cases progression in individual subjects will be governed by the prerequisites as indicated.

A student may 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 or to modifications of the course which are initiated by the School.

Students are required to participate in field exercises and practical construction programs outside the metropolitan area.

## Schedule of Subjects

No.	Subject Name	Hours Per Week	Prerequisites
<b>Year 1</b>			
<i>Session 1</i>			
25.5222	Geology for Landscape Architecture	1	nil
27.818	Australian Environment and Human Response*	4	nil
37.0001	Introduction to Landscape Architecture	1	nil
37.3101	Landscape Graphics 1	4	nil
37.5101	Design 1	3	nil
37.7101	Landscape Technology 1*	2	nil
43.202	Botany for Landscape Architects	5	nil
	General Studies Elective	2	
		22	
<i>Session 2</i>			
37.1102	Horticulture for Landscape Architects	2	43.202
37.1302	Landscape Analysis*	6	27.801, 43.202
37.3203	Landscape Graphics 2	4	37.3101
37.5202	Design 2	3	37.5101
37.7202	Landscape Technology 2	3	37.7101
	General Studies Elective	2	
		22	

\*These subjects include a number of lectures and field trips for the purpose of practical observation. Students are expected to make their own transport arrangements for these trips.

## Schedule of Subjects (continued)

No.	Subject Name	Hours Per Week	Prerequisites
<b>Year 2</b>			
<i>Session 1</i>			
37.1413	History of Landscape Architecture	2	nil
37.1513	Environmental Sociology for Landscape Architects	2	25.5222
37.5313	Landscape Design 1	10	37.5202
37.7303	Landscape Technology 3	4	37.7202
	General Studies Elective	2	
		<u>20</u>	
<i>Session 2</i>			
37.0014	Introduction to Computer Applications	2	nil
37.5004	Planting Design	2	37.1112
37.5014	Landscape Design 2	12	37.5313
37.7404	Landscape Technology 4	3	37.7303
	General Studies Elective	2	
		<u>21</u>	
<b>Year 3</b>			
<i>Session 1</i>			
36.411	Town Planning	2	nil
37.3005	Research Methods	1	nil
37.5505	Landscape Design 3	8	37.5014, 37.7404
37.7115	Professional Practice 1	1½	37.5014, 37.7404
37.7515	Landscape Engineering A	3	37.7404
37.9105	Landscape Planning 1	4	37.1513
	General Studies Elective	2	
		<u>21½</u>	
<i>Session 2</i>			
37.1616	Land Systems and Management	2	37.5505
37.5606	Landscape Design 4	8	37.5505
37.7216	Professional Practice 2	1½	37.7115
37.9206	Landscape Planning 2	4	37.9105
	General Studies Elective	2	
		<u>20½</u>	
<b>Year 4</b>			
<i>Session 1</i>			
37.3007	Landscape Thesis	8	37.3005, 37.5606
37.5707	Landscape Design 5	8	37.5606
37.7317	Professional Practice 3	1½	37.7216
37.9307	Landscape Planning 3	4	37.9206
		<u>21½</u>	
<i>Session 2</i>			
37.3007	Landscape Thesis	4	See Session 1
37.5808	Landscape Design 6	12	37.4307
37.7418	Professional Practice 4	1½	37.7317, four months practical experience
37.9408	Landscape Planning 4	4	37.9307
		<u>21½</u>	



## School of Town Planning

### Head of School

Professor H. L. Westerman

### Town Planning Degree Course BTP

Town planning is concerned with the existing and future environment, ranging from small local precincts, neighbourhoods, centres, districts and towns to metropolitan areas and regions. The town planner's task in this regard is to integrate and co-ordinate the aims and actions of a large number of government and private organizations and individuals. This involves collecting and analysing information, identifying needs, making forecasts, preparing policies, plans and programs for consultation, decision and implementation, exercising development control, and evaluating development proposals.

The objective of the course is to create an awareness of the context in which planning operates, impart knowledge of how planning can influence the physical environment, equip students with the competence of applying this knowledge at different levels in a wide range of situations, create an understanding of the contribution other disciplines can make to planning and vice versa, and develop skills in policy formulation, land use allocation and control, design and communication.

### General Description of the Course

The course is of five years' duration and requires full-time attendance throughout Years 1, 2 and 5. Students are required to attend the University on a full-time basis for the first session of Year 3 and for the second session of Year 4, the intervening period being devoted to practical experience.

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

### Practical Experience

For the period covered by Session 2 of Year 3 and Session 1 of Year 4 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 course on the basis of quality of performance throughout the whole course and in accordance with current Faculty regulations.

For the purpose of calculating Honours at graduation, the Honours value of each subject is indicated by the credit points associated with that subject. Credit points generally reflect the workload required of students in subjects in which grades are awarded.

### 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.

### 3360 Town Planning Course

### Bachelor of Town Planning BTP

### Schedule of Subjects

**Note:** A major planning subject is shown in each session in bolder type. Each of these subjects must be passed before a student may progress to the next year's major planning subjects.

<b>Year 1</b>		<b>Hours per week</b>	<b>Credit points for Honours</b>
<i>Session 1</i>			
36.211	Introduction to Planning	12	14
29.901	Introduction to Mapping	1½	2
36.134	Communication Techniques I	4	4
36.222	Computers and Information Systems	2	3
36.245	The Development Process	2	3
		<u>21½</u>	<u>26</u>
<i>Session 2</i>			
36.212	Planning Studies I	12	14
36.131	Communication Techniques II	3	3
36.232	Environmental Science 1	2	4
36.245	The Development Process	2	3
		<u>19</u>	<u>24</u>
<b>Year 2</b>			
<i>Session 1</i>			
36.213	Local Planning 1	12	14
36.4611	Engineering A	2	2
36.234	Engineering B	1	1
36.233	Environmental Science 2	2	3
26.000	General Studies Elective	4	4
		<u>21</u>	<u>24</u>
<i>Session 2</i>			
36.218	Regional Planning 1	12	14
36.234	Urban Design	3	4
36.452	History of Town Planning	2	3
26.000	General Studies Elective	4	5
		<u>21</u>	<u>26</u>

		Hours per week	Credit points for Honours		Hours per week	Credit points for Honours	
<b>Year 3</b>							
<i>Session 1</i>				36.8308	Social Planning	4	4
36.215	Planning Law and Administration 1	12	14	36.8309	Environmental Psychology	4	4
36.230	Politics, Power and Policy	3	4	36.8311	Impact Assessment and Evaluation	4	4
36.235	Urban Society and Sociology	3	4	36.8312	Transport and Environmental Management	4	4
37.224	Landscape Architecture	2	3	36.8313	Urban Design 2	4	4
		<u>20</u>	<u>25</u>	36.8314	Computer Applications in Planning 2	4	4
<i>Session 1</i>				<b>Note:</b> Due to the revision of the course, there is a transition period during which some subjects may be taught in different sessions than those indicated above, while other subjects may be phased in progressively. Details will be provided prior to enrolment.			
36.503	Practical Experience	3	—				
<b>Year 4</b>							
<i>Session 1</i>							
36.503	Practical Experience	3	—				
<i>Session 2</i>							
36.214	Local Planning 2	6	9				
36.228	Transportation Planning	3	4				
36.216	Planning Law and Administration 2	3	4				
36.421	Integrated Planning Project 1	8	8				
		<u>20</u>	<u>25</u>				
<b>Year 5</b>							
<i>Session 1</i>							
36.219	Regional Planning 2	6	9				
36.223	Computer Applications in Planning 1	2	3				
36.491	Thesis	1	—				
36.422	Integrated Planning Project 2	12	12				
		<u>21</u>	<u>24</u>				
<i>Session 2</i>							
36.491	Thesis	15	20				
36.210	Professional Practice	1	2				
36.8300	Planning Elective*	4	4				
		<u>20</u>	<u>26</u>				
*The following planning electives are offered subject to demand and availability.							
36.8301	Residential Planning	4	4				
36.8302	Local Planning 3	4	4				
36.8303	Regional Planning 3	4	4				
36.8304	Rural Planning	4	4				
36.8305	Urban Conservation	4	4				
36.8306	Planning Law and Administration 3	4	4				
36.8307	Urban Studies	4	4				

## Undergraduate Study

# Subject Descriptions

## Identification of Subjects by Number

A subject is defined by the Professorial Board as 'a unit of instruction approved by the University as being a discrete part of the requirements for a course offered by the University'.

Each approved subject of the University is identifiable both by number and by name as this is a check against nomination of subject other than the one intended.

Subject numbers are allocated by the Registrar and the system of allocation is based on the following guidelines:

1. The authority offering the subject, normally a School of the University, is indicated by the number before the decimal point.
2. Each subject number is unique and is not used for more than one subject title.
3. Subject numbers which have previously been used are not used for new subject titles.
4. Graduate subjects are indicated by a suffix 'G' to a number with three digits after the decimal point. In other subjects three or four digits are used after the decimal point.

Subjects taught are listed in full in the handbook of the faculty or board of studies responsible for the particular course within which the subjects are taken. Subject descriptions are contained in the appropriate section in the handbooks.

The **identifying numerical prefixes** for each subject authority are set out on the following page.

**Servicing Subjects** are those taught by a school or department outside its own faculty. Their subject descriptions are published in the handbook of the faculty which originates the subject and are also published in the handbook of the Faculty in which the subject is taught.

### HSC Exam Prerequisites

Subjects which require prerequisites for enrolment in terms of the HSC Examination percentile range, refer to the **1978 and subsequent Examinations**.

Candidates for enrolment who obtained the HSC in previous years or hold other high school matriculation should check with the appropriate school on what matriculation status is required for admission to a subject.

### Information Key

The following is the key to the information which may be supplied about each subject:

**S1** Session 1, **S2** Session 2

**F** Session 1 *plus* Session 2, ie full year

**S1** or **S2** Session 1 *or* Session 2, ie choice of either session

**SS** single session, but which session taught is not known at time of publication

**CCH** class contact hours

**L** Lecture, followed by hours per week

**T** Laboratory/Tutorial, followed by hours per week

**hpw** hours per week

**C** Credit point value

**CR** Credit

**DN** Distinction

**HD** High Distinction

School, Department etc	Faculty
1 School of Physics	Science
2 School of Chemistry	Science
3 School of Chemical Engineering and Industrial Chemistry (New Course)	Applied Science
4 School of Materials Science and Engineering	Applied Science
5 School of Mechanical and Industrial Engineering	Engineering
6 School of Electrical Engineering and Computer Science	Engineering
7 School of Mines (Mineral Processing and Extractive Metallurgy and Mining Engineering)	Applied Science
8 School of Civil Engineering	Engineering
9 School of Fibre Science and Technology (Wool Science)	Applied Science
10 School of Mathematics	Science
<b>11 School Architecture</b>	<b>Architecture</b>
12 School of Psychology	Biological and Behavioural Sciences
13 School of Fibre Science and Technology (Textile Technology)	Applied Science
14 School of Accountancy*	Commerce
15 School of Economics	Commerce
16 School of Health Administration	Professional Studies
17 Faculty of Biological and Behavioural Sciences	Biological and Behavioural Sciences
18 School of Mechanical and Industrial Engineering (Industrial Engineering)	Engineering
<b>21 Department of Industrial Arts</b>	<b>Architecture</b>
25 School of Mines (Applied Geology)	Applied Science
26 Department of General Studies	Board of Studies in General Education
27 School of Geography*	Applied Science
28 School of Marketing	Commerce
29 School of Surveying*	Engineering
30 Organizational Behaviour Unit	Commerce
31 School of Optometry	Science
32 Centre for Biomedical Engineering	Engineering
34 Faculty of Arts	Arts
<b>35 School of Building</b>	<b>Architecture</b>
<b>36 School of Town Planning</b>	<b>Architecture</b>
<b>37 School of Landscape Architecture</b>	<b>Architecture</b>
38 School of Biological Technologies (Food Science)	Applied Science
<b>39 Graduate School of the Built Environment</b>	<b>Architecture</b>
40 Professorial Board	
41 School of Biochemistry	Biological and Behavioural Sciences

School, Department etc	Faculty
42 School of Biological Technologies (Biotechnology)	Applied Sciences
44 School of Microbiology	Biological and Behavioural Sciences
45 School of Biological Science	Biological and Behavioural Sciences
46 Faculty of Applied Science	Applied Science
47 Centre for Safety Science	Engineering
48 School of Chemical Engineering and Industrial Chemistry (Old Course)	Applied Science
49 School of Biological Technologies	Applied Science
50 School of English	Arts
51 School of History	Arts
52 School of Philosophy	Arts
53 School of Sociology	Arts
54 School of Political Science	Arts
55 School of Librarianship	Professional Studies
56 School of French	Arts
57 School of Theatre Studies	Arts
58 School of Education	Professional Studies
59 Department of Russian Studies	Arts
60 Faculty of Arts	Arts
61 Department of Music	Arts
62 School of Science and Technology Studies	Arts
63 School of Social Work	Professional Studies
64 School of German Studies	Arts
65 School of Spanish and Latin American Studies	Arts
66 Subjects Available from Other Universities	
67 Faculty of Science	Science
68 Board of Studies in Science and Mathematics	Board of Studies in Science and Mathematics
70 School of Anatomy	Medicine
71 School of Medicine	Medicine
72 School of Pathology	Medicine
73 School of Physiology and Pharmacology	Medicine
74 School of Surgery	Medicine
75 School of Obstetrics and Gynaecology	Medicine
76 School of Paediatrics	Medicine
77 School of Psychiatry	Medicine
78 School of Medical Education	Medicine
79 School of Community Medicine	Medicine
80 Faculty of Medicine	Medicine
81 Medicine/Science/Biological Sciences	Medicine
85 Australian Graduate School of Management	AGSM
90 Faculty of Law	Law
97 Faculty of Engineering	Engineering

## Architecture

### Architectural Design Studio

From the beginning architectural synthesis will be the central function of the design studio, the locus of the application of knowledge gained in the lectures and seminars. Projects and exercises of increasing depth and complexity covering a wide range of building types will be the vehicles for studies in massing, spatial manipulation, functional planning and constructional engineering. The studios will progressively consider social and aesthetic factors affecting architecture which will advance design beyond utilitarian concerns demonstrating architecture as an art form.

Great places and buildings exercise a pervasive influence on the fabric of society and condense sentiments and meanings within their structures and spaces which symbolise and enshrine human needs and aspirations. They have not only a physical existence but are also capable of having an important spiritual and cultural existence.

The studios in advanced architectural design will, therefore, focus with intensity on the constituent factors and continuities arising from the history of our culture which deeply influence architecture seeking an integration of these with material and technological rationality. Thus, they will seek to make clear connections between underlying principles, historical explanation and analysis, order, unity, reason, location, place and the dimension of human experience.

#### 11.5101 Studio 1

C9

*Prerequisite:* Nil

Analysis of the built environment to develop an awareness of man's need for shelter and an understanding of his functions, activities and aspirations and of the architects' essentially creative and conceptual role. Introductory studio focussing on the application of design theory/methodology through simple three dimensional design and communication exercises exploring a variety of media and materials and culminating in the design of simple, small-scale buildings.

#### 11.5102 Studio 2

C10

*Prerequisites:* 11.5101, 11.5501, 11.5601, 11.5701, **three** from 11.5203, 11.5304, 11.5504, 11.5604

The design of simple residential and non-residential buildings with few spaces, relatively simple functional relationships for clearly defined and familiar user groups on straight-forward but interesting sites requiring some contextual understanding. Integration of basic structural, constructional, servicing and environmental control concepts.

#### 11.5103 Studio 3

C10

*Prerequisites:* 11.5102, 11.5502, 11.5602, 11.5702, **four** from 11.5204, 11.5305, 11.5505, 11.5605, 11.5704

The design of non-residential projects of moderate complexity and scale with more demanding siting and contextual considerations and more complex and less familiar user needs. Considered analysis of structure, construction, services, environmental control and building regulations and landscape design. Some group work, but largely individual work.

#### 11.5110 Studio 4

C8

*Prerequisites:* 11.5103, 11.5503, 11.5603, 11.5703, **four** from 11.5205, 11.5306, 11.5506, 11.5705, 11.5606

The design of a small-scale building in considerable depth including detailed design of all internal and external spaces including material and colour choices, fixtures and fittings, construction detailing, services and environmental control.

#### 11.5111 Studio 5

C8

*Prerequisites:* 11.5110, 11.5210, 11.5310, 11.5510, 11.5710, 11.5910

The design of a relatively complex and large scale development, incorporating residential, involving a range of user groups. Resolution of conflicting issues such as site constraints, planning controls and building regulations, environmental context and social role of the development. Integration of structure, construction, services and environmental controls at an advanced level. Group and Individual work.

#### 11.5112 Studio 6

C8

*Prerequisites:* 11.5111 **two** from 11.5211, 11.5511, 11.5611 **three** from 11.5211, 11.5311, 11.5511, 11.5711

Exploration and resolution of relatively complex lifestyles not necessarily of a known pattern for non-residential buildings, with emphasis on urban design and contemporary technology.

#### 11.5113 Graduation Project

C10

*Prerequisites:* 11.5913, 198 Credit points

This subject represents the culmination of the B.Arch course and comprises a design project resolved in depth in approved areas of architecture, including architectural design, urban design, interior design, construction, structure, services, acoustics, lighting or practice and management. Students are offered a project by the School, or may be offered the opportunity to choose their own project to be submitted to the Head of School for approval two weeks before the commencement of the session in which the student intends to enrol.

There may be an opportunity for students to combine Dissertation with the Architecture Graduation Project by selecting a Dissertation topic which provides the detailed brief or technological or management aspects applicable to the Architecture Graduation Project.

## Architectural Communication

### 11.5201 Architectural Communication 1 C3

*Prerequisite:* Nil

Introduction to communication theory and practice in relation to Architecture. Spatial communication: plane and solid geometry; manual drafting skills; parallel and conic projections; skiagraphy. Lettering. Graphic design: colour theory; rendering techniques; drawing from outdoor and studio subjects. Written and oral communication: study and research skills; introduction to scholarly writing; oral presentation skills. Introduction to the computer as a problem-solving tool in architecture; description of computing technology.

### 11.5202 Architectural Communication 2 C2

*Prerequisite:* 11.5201

Theory and language of communication. Development of spatial, graphic, written and oral communication skills. Advanced perspective and graphic techniques. Geometric studies. Model making and photography.

### 11.5203 Communication Seminar 1 C6

*Prerequisite:* Nil

Development of techniques and skills in architectural drawing and rendering. Parallel projections; descriptive, plane and solid geometry; measured drawings; lettering; perspective theory and application; shadow projection and curvilinear construction in perspective; colour theory and practice using transparent and opaque media; principles of composition in architectural drawing. Introduction to the computer and its application to architecture. Studio projects.

### 11.5204 Communication Seminar 2 C4

*Prerequisites:* 11.5101, 11.5501, 11.5601, 11.5701, **three** from 11.5203, 11.5304, 11.5504, 11.5604

Perspective and rendering techniques, graphic presentation of natural and man-made environment, model making for design study and presentation. Introduction to the computer and its application to architecture. Further applications of the computer. Exercises related, when appropriate to design projects in Studio 2.

### 11.5205 Communication Seminar 3 C2

*Prerequisites:* 11.5102, 11.5502, 11.5602, 11.5702, **four** from 11.5204, 11.5305, 11.5505, 11.5605, 11.5704

Introduction to the techniques and processes of computer aided drafting for the production of architectural drawings; hands-on experience.

### 11.5210 Communication Seminar 4 C1/2

*Prerequisites:* 11.5103, 11.5503, 11.5603, 11.5703, **four** from 11.5205, 11.5306, 11.5506, 11.5705, 11.5606

Communication theory debates and discussions. Exercises in advanced graphic analysis and presentation, rendering and model making. Use of the computer in architectural design and documentation. Exercises related, when appropriate, to design projects in Studio 4.

### 11.5211 Communication Seminar 5 C1/2

*Prerequisites:* 11.5110, 11.5210, 11.5310, 11.5510, 11.5710, 11.5910

Communication theory debates and discussions. Exercises in advanced graphic analysis and presentation, rendering and model making. Use of the computer in architectural design and documentation. Exercises related, when appropriate, to design projects in Studio 5.

### 11.5212 Communication Seminar 6 C1/2

*Prerequisites:* 11.5111, 11.5211, 11.5311, 11.5511, 11.5611, 11.5711

Communication theory debates and discussions. Exercises in advanced graphic analysis and presentation, rendering and model making. Use of the computer in architectural design and documentation. Exercises related, when appropriate, to design projects in Studio 6.

### 11.5213 Communication Seminar 7 C1/2

*Prerequisite:* 11.5913, 198 credit points

Communication theory debates and discussions. Exercises in advanced graphic analysis and presentation, rendering and model making. Use of the computer in architectural design and documentation. Exercises related, when appropriate, to design projects in Studio 7.

### 11.5220 Computer Graphics Programming 1 C2

*Prerequisites:* 11.5910, 11.5912

Introduction to the fundamentals of interactive computer graphics programming: techniques of computer programming using a high-level language; use of standard graphics libraries; user interaction. Controlled series of programming exercises.

### 11.5221 Computer Graphics Programming 2 C4

*Prerequisite:* 11.5220

Further aspects of interactive computer graphics programming: user interface techniques; colour manipulation; three-dimensional modelling. Development of an interactive computer graphics application program.

**11.5222 Computer Applications 1****C4***Prerequisites: 11.5910, 11.5912*

Extended study of computer graphics applications in Architecture: advanced use of computer-aided drafting systems: introduction to computer modelling and three-dimensional graphics. Staged drafting and design exercises.

**11.5223 Computer Applications 2****C2***Prerequisite: Design Elective Package 1*

Advanced use of three-dimensional computer graphics for the representation of built form in Architecture: model description, colour shading techniques: multiple light sources: surface texture. Design representation exercises.

**11.5224 Advanced Graphics****C4***Prerequisite: Design Elective Package 2*

A theoretical and practical study of the relationship between the visual and plastic arts. Media and material studies. Development of a professional level of performance in adapting graphic theory and techniques to contemporary needs.

**11.5225 Drawing****C4***Prerequisites: 11.5910, 11.5912*

Direct drawing from life and man-made environment, media studies, to develop technical and perception skills, Gallery visits and drawing theory.

**11.5226 Painting****C4***Prerequisite: Design Elective Package 1*

The theory and practice of painting. Figure and ground interaction, colour, media studies. Gallery visits and studies. Individual style and thematic development encouraged.

**Theory of Architecture****11.5301 Theory of Architecture 1****C2***Prerequisite: Nil*

The meaning of design as designation for a purpose: aim, possibilities, acts, fulfilment, the four cornerstones of design around the central idea. The nature of corporeal, mental and spiritual influences flowing from man and the cosmos affecting the architectural endeavour. The task of composition, the whole and its parts generally. Introduction to form and its principal characteristics; the notion of fit.

Specific studies of measure, extension and size related to architecture. The body of man taken in the singular and in the plural, as the basis of sizes in architectural interiors and exteriors. Subtle connotations of varied spatial extensions.

Specific studies in compositions in plane and volume. Ordered and systematic relations between whole and part. Unity - multiplicity, continuity - alternation; rhythm, proportion.

**11.5302 Theory of Architecture 2****C2***Prerequisite: 11.5301*

Methodical study of the design process. Analysis as means of understanding the fabric of life to be served by architecture. Detailed analysis of explicit and implicit human aims and spatial possibilities. The architectural idea as the unifying principle of creative synthesis and as contribution to the fabric of life. Further studies of the world order: the meaning of place, light, orientation, direction and sequence. The natural divisions of space and time, the regular solids, the geometrical order. Methodical studies of context and architectural fit by character, size, order, proportion and material selection.

Specific studies of mental expectations and patterns of behaviour. Detailed consideration of mental effects rooted in instinct, emotion, perception, memory, reason, imagination and intention. The nature of behaviour - environment relationship, notions of personal space, territory, privacy and crowding. Cultural and personal variables. The meaning of built environments.

**11.5303 Theory of Architecture 3****C2***Prerequisite: 11.5302*

Systematic and detailed analysis of a complex life-event to be served by architecture. Correct and incorrect divisions and separation of parts. Recognition of different human roles and experiences. The notion of a living whole translated in to a built whole. Systematic studies of architectural ideas generating appropriate spatial arrangements. Detailed quantification of space requirements and material configurations dealing with control of climate, light and sound and with structural and constructional necessities. Further studies of form as principle: authority - dependance, completeness - transformation. Subtle influences of regions localities and the cultural milieu. Introduction to the meaning of signs, symbols, styles and trends. Introduction to goodness, truth, honesty and beauty in architecture as implicit spiritual aspirations.

Specific studies in the history of architectural theory from antiquity to the present day. Relationship between the theoretical percept, the cultural milieu and architecture as art. Careful consideration of the architectural ideas and of their translation into the built fabric by ordered geometrical relations. Studies in geometry and design. Introduction to the meaning of basic geometrical symbols.

**11.5304 Theory Seminar 1****C6***Prerequisite: Nil.*

Exercises in the application of 11.5301 Architectural Theory 1 related to projects in Studio 1.

### 11.5305 Theory Seminar 2

C4

*Prerequisites:* 11.5101, 11.5501, 11.5601, 11.5701, **three** from 11.5203, 11.5304, 11.5504, 11.5604

Exercises in the application of 11.5302 Architectural Theory 2 related to projects in Studio 2.

### 11.5306 Theory Seminar 3

C4

*Prerequisites:* 11.5102, 11.5502, 11.5602, 11.5702, **four** from 11.5204, 11.5305, 11.5505, 11.5605, 11.5704

Exercises in the application of 11.5303 Architectural Theory 3 related to projects in Studio 3.

### 11.5310 Theory Seminar 4

C1

*Prerequisites:* 11.5103, 11.5503, 11.5603, 11.5703, **four** from 11.5205, 11.5306, 11.5506, 11.5705, 11.5606

The components of interiors: light, sound, colour, texture, shape. Perception. Anthropometrics and ergonomics. The nature of 'inside'. History of interior design. Perception of space; physical mental and spiritual. The meaning of colour and shape. Colour psychology. Investigation of current interior design practice. Design studies applying current practice to a range of interior design situations.

### 11.5311 Theory Seminar 5

C1

*Prerequisites:* 11.5110, 11.5210, 11.5310, 11.5510, 11.5710, 11.5910

Critical discussions and debates on the theoretical percepts of senior design projects arranged as a forum or as a teaching jury.

### 11.5320 Theory of Form

C2

*Prerequisites:* 11.5910, 11.5912

The ontological basis and the antinomial qualities of form in the causal sense, reflected in nature, art and architecture. Practical investigation of the antinomial qualities of form with special emphasis on the brief and on the built fabric of contemporary architecture, and practical attempts to identify shortcomings and develop corrective measures.

### 11.5321 Criticism and Evaluation

C2

*Prerequisites:* 11.5910, 11.5912

The nature, function and value of criticism. Subjective and objective criticism. A short history of architectural criticism, architectural critics, past and present. Discrimination and values in a changing society; fashion, the influence of mass opinion, communication media, advertising, propaganda. Collection of data; establishment and application of critical criteria; effective communication of conclusions; recommendations and feedback. The use of criticism and evaluation during and after the design process. Practical evaluation of examples of architectural criticism, past and present. Criticism of contemporary buildings and projects. Criticism of current work by self and others.

### 11.5322 Imagination

C2

*Prerequisite:* Design Elective Package 1

Architecture built in the image of the cosmic order and of the ideas directing that order. The nature of imagination, analogy and proportion. The meaning of number, of the elements of space and time and of the geometrical order, and this image in architecture. Seminars and practical projects focus on selected case studies.

### 11.5323 Spirit in Architecture

C2

*Prerequisite:* Design Elective Package 2

Spatial symbolism and intellectual intuition, principles and methods of sacred architecture. Spiritual doctrine reflected in the layout of Judaeo-Christian architecture with reference to the architecture of sacred traditions. Seminars and practical projects focus on selected case studies.

## History of Architecture

The aim of the history programme is to provide an overall view of the development of architecture, and its achievements within different cultural traditions, with reference, where appropriate, to Australian architecture, with a view to giving the student a fuller awareness of design, and the objectives and influences that shape it.

### 11.5401 Introduction to Architecture

C1

*Prerequisite:* Nil

The environment and human influence upon it. Human needs, resources of energy and materials and their utilization in architectural design. The design professions and the building industry.

### 11.5402 History of Architecture 1

C2

*Prerequisite:* Nil

General exploration of the historical development of architecture. Definitions of architecture, and influences on architecture, geographical, climatic, cultural, social, religious, material. Selected site visits and projects.

Discussion and analysis of some major themes in architecture such as rationalism and romanticism, structural integrity, tradition and innovation, taste, style and decoration.

### 11.5403 History of Architecture 2

C2

*Prerequisite:* 11.5402

A generally chronological account of the cultural development of architecture and its role in society up to the Industrial Revolution, within the western world and in other important cultural traditions,



- (a) from archaic historical times to the end of the 14th century, and
- (b) from the 15th century up to the early 19th century and the Industrial Revolution.

### 11.5404 History of Architecture 3

C2

*Prerequisite:* 11.5403

Antecedents of modern architecture. Industrialism in the 19th and 20th centuries. The interrelationship between architecture and the fine arts, and the development of various art movements.

The origins of and influences upon 20th century architecture. Functionalism v. traditionalism, international style, high-tech, post modernism, and current developments in international and Australian architecture.

### 11.5420 Building Conservation

C2

*Prerequisites:* 11.5910, 11.5912

Attitudes towards building conservation and introduction to guidelines and techniques for the treatment of old buildings, both heritage and common building stock, with regard to their preservation, restoration, reconstruction, adaptation for re-use, and repair. Preparation of conservation proposals and plans.

### 11.5421 Recent Australian Architecture

C2

*Prerequisite:* Design Elective Package 1

History of Australian architecture: historical, human and environmental context of Australian architecture.

### 11.5422 Great Architects

C2

*Prerequisite:* Design Elective Package 2

Detailed study of the theories and work of selected architects throughout history. Normally four architects will be studied, two from the 20th century and two prior to the 20th century.

### 11.5423 Urban Systems

C2

*Prerequisites:* 1.5910, 11.5912

Studies of the social and technological systems that determine the form of contemporary cities. Government systems and controls, land and development economics, land use, transport, services.

### 11.5424 Urban Design

C2

*Prerequisite:* Design Elective Package 1

Design Studies in the integration of buildings and groups of buildings in their urban context, and of spaces between buildings, accommodation of pedestrian and vehicular movement, micro-climate.

### 11.5425 Landscape Design

C2

*Prerequisite:* Design Elective Package 2

Aesthetic appreciation of chosen environments both urban and natural. The treatment of spaces between and upon buildings. 'Hard' and 'soft' landscape treatments. Functional uses of open space within the built environment and the design of street furniture.

## Architectural Construction

### 11.5501 Architectural Construction 1

C3

*Prerequisite:* Nil

Introduction to the principles of architectural construction and their application to the design of simple, small-scale buildings. Architectural construction as a design activity and its relationship to building materials, structure, services, process and regulation. Basic building materials, systems and processes and their historic development. Introduction to materials science. Basic structure, properties, manufacturing techniques, use and performance of materials in building and artefact design. Construction design methodology, use of resource materials, basic dimensional co-ordination and construction drawing practice.

### 11.5502 Architectural Construction 2

C4

*Prerequisite:* 11.5501

The principles of architectural construction applied to the design of buildings of moderate scale and complexity through a detailed analysis of common constructional systems, their elements, components, assembly methods, detailing, construction processes and regulatory controls. Suitability, application and performance of principal construction materials including timber, masonry, steel and concrete. Durability, movement and moisture control, fire safety and protection. Resource materials, dimensional co-ordination and construction drawing practice.

### 11.5503 Architectural Construction 3

C2

*Prerequisite:* 11.5502

The principles of architectural construction applied to the design of complex and large scale buildings. Appropriate construction systems, materials and organisation of the building process. Detailed analysis of junctions and connections between elements, components, materials and finishes. Construction durability, weathering and failure. Rationalised systems, prefabrication, modular co-ordination and construction documentation.

### 11.5504 Construction Seminar 1

C4

*Prerequisite:* Nil

Exercises in the practical application of materials science and the principles of architectural construction. Emphasis on the

exploration of basic building materials, systems and processes, dimensional coordination and construction drawing related where possible to Studio 1 communication and design projects.

### **11.5505 Construction Seminar 2** **C3**

*Prerequisites:* 11.5101, 11.5501, 11.5601, 11.5701 **three** from 11.5203, 11.5304, 11.5504, 11.5604

Exercises in the practical application of the principles of architectural construction to the design of small scale residential and non-residential buildings. Emphasis on common constructional systems using timber, masonry, steel and concrete, resource materials, dimensional co-ordination and construction drawing practice related where possible to Studio 2 design projects.

### **11.5506 Construction Seminar 3** **C3**

*Prerequisites:* 11.5102, 11.5502, 11.5602, 11.5702 **four** from 11.5204, 11.5305, 11.5505, 11.5605, 11.5704

Exercises in the practical application of the principles of architectural construction to the design of buildings of moderate scale and complexity. Emphasis on construction detailing as well as the general resolution of constructional systems related where possible to Studio 3 design projects.

### **11.5510 Construction Seminar 4** **C2**

*Prerequisites:* 11.5103, 11.5503, 11.5603, 11.5703, **four** from 11.5205, 11.5306, 11.5506, 11.5705, 11.5606

Studio consultancy in the selection and application of structural and constructional systems, building materials and processes appropriate to Studio 4 design projects.

### **11.5511 Construction Seminar 5** **C2**

*Prerequisites:* 11.5110, 11.5210, 11.5310, 11.5510, 11.5710, 11.5910

Studio consultancy in the selection and application of structural and constructional systems, building materials and processes appropriate to Studio 5 design projects.

### **11.5512 Construction Seminar 6** **C2**

*Prerequisites:* **Three** from 11.5111, 11.5211, 11.5311, 11.5511, 11.5611, 11.5711

Studio consultancy in the selection and application of structural and constructional systems, building materials and processes appropriate to Studio 6 design projects.

### **11.5513 Construction Seminar 7** **C2**

*Prerequisites:* 11.5913, 198 credit points

Studio consultancy in the selection and application of structural and constructional systems, building materials and processes appropriate to Graduation Project.

## **11.5520 Advanced Building Materials** **C2**

*Prerequisite:* 11.5910, 11.5912

Analysis of the structure, classification, properties, manufacturing techniques, use and performance of construction materials at an advanced level. New materials, their testing and development. Criteria for material selection, detailing and specification. Durability and deterioration of materials and their design implications. Case studies, site and plant visits, seminars.

## **11.5521 Advanced Construction Systems** **C2**

*Prerequisite:* Technology Elective Package 1

A review of recent developments, current trends and possible future directions in building design, construction systems, detailing and documentation. Case studies, projects, seminars.

## **11.5522 Construction Planning and Management** **C2**

*Prerequisite:* Technology Elective Package 2

The role of the architect in construction planning and management. Pre-planning and building technology design for improved performance and management of the building process. Recent developments in constructional and structural engineering. Erection methods and equipment. Construction management and co-ordination of the building process. Building economics and cost planning, case studies, reports, seminars.

## **Architectural Structures**

### **11.5601 Architectural Structures 1** **C2**

*Prerequisite:* Nil.

Basic structural concepts: load, force, loadpath; resolution of forces, equilibrium; moment (overturning); stability (element, assembly) strength and stiffness; supports and connections; stress, strain, modulus of elasticity, tension, compression, shear, bending, torsion.

Basic structural elements and their behaviour: cable and arch, strut and column, beam, truss, frame, grid, plate/slab, vault and dome, tent and pneumatic; load application, loadpath, connections, reactions at supports/ connections, internal forces.

### **11.5602 Architectural Structures 2** **C2**

*Prerequisite:* 11.5601

The structural design process: definition of the structural task in relation to an architectural concept, system options and choice, establishment and estimation of loads, stability concept of structural safety, satisfying equilibrium requirements, establishment of external and internal forces; sizing of elements.

Selective study of structural behaviour and application of the structural design process to simple structural assemblies (post/beam, frame, cable-stayed systems, truss, grid, plate/slab etc.) Graphic techniques and models as means for structural behaviour studies.

**11.5603 Architectural Structures 3****C2***Prerequisite: 11.5602*

Constructional aspects of structures: structural design related to materials (timber, steel, masonry, concrete and composites), foundations, connections and joints.

The morphology of structures, structural form, structural systems, the "lightweight" concept, structural systems for wide-spanning and highrise structures, selective studies of structural behaviour.

**11.5604 Structures Seminar 1****C2***Prerequisite: Nil*

Exercises aimed at developing an understanding of basic structural concepts and the fundamental behaviour of structural elements, related where appropriate to Studio 1 design projects.

**11.5605 Structures Seminar II****C2**

*Prerequisites: 11.5101, 11.5501, 11.5601, 11.5701, three from 11.5203, 11.5304, 11.5504, 11.5604*

Exercises in the behaviour, selection, analysis and design of simple structural assemblages, related where appropriate to Studio II design projects.

**11.5606 Structures Seminar III****C2**

*Prerequisites: 11.5102, 11.5502, 11.5602, 11.5702, four from 11.5204, 11.5305, 11.5505, 11.5605, 11.5704*

Exercises in the constructional aspects of structures, with particular emphasis on the characteristics of current and evolving structural systems, related where appropriate to Studio III design projects.

**11.5620 Conceptual Structural Design****C4***Prerequisites: 11.5910, 11.5912*

Choice of systems, scale, structure as a visual element in architectural design, design methods using graphic, model and computer methods. Structural form-finding and form-determination. Model and computer laboratory exercises.

**11.5621 Advances Structural Design****C4***Prerequisite: 11.5620*

Architectural/structural design issues: skin/frame options, roof/wall interface, envelope design, emphasis on structural detailing; design for wind and earthquake; constructional design issues, new materials and systems, manufacturing processes, assembly and erection. Structural CAD applications. Case studies, site and plant visits, project.

**11.5622 Lightweight Structural Design****C4***Prerequisite: 11.5621*

Architectural/structural/constructional design of cable, cable-net, membrane, tensegrity, gridshell, shell and folded structures.

Seminar and project(s). Occasional construction workshop.

**Environmental Control**

The aim of the environmental control course is to present students the theory in daylight, artificial light, acoustics, thermal behaviour and the services to buildings in the context of modern building design.

**11.5701 Environmental Control I****C3***Prerequisite: Nil*

Human response to the Environment: climate and its effects, environmental design methods for total human comfort, introduction to thermal, lighting and acoustic comfort and basic concepts, subjective and objective assessment of aural, visual and thermal environments laboratory work and field studies.

Thermal environment; evaluation of thermal conditions, comfort indices, air quality and movement, solar heat gain; visual environment; psychological and physiological effects of light, performance of the visual system, visual discomfort, glare indices; Acoustic environment; human hearing, human response to vibration, psychological and physiological effects of noise.

**11.5702 Environmental Control II****C4***Prerequisite: 11.5701*

The role of the building envelope; thermal performance; principles of heat transfer, insulation, condensation and vapour barriers, strategies for modifying envelope properties; Daylight performance; natural light sources, traditional methods of daylighting buildings, window design and energy consumption, sun control, patterns of innovation and change; Acoustic performance; external noise levels, selection of building envelope elements, methods of noise control; integrated envelope design, computing.

Design of the interior environment; thermal design; heating and cooling of buildings, thermal storage effects, passive methods of design; visual design; electric light sources, integration of daylight with electric light, quantitative and qualitative requirements, visual appraisals; Acoustic design; acoustic design criteria - ambient sound levels and reverberation time, selection of interior building materials; integrated interior design, laboratory work and computing.

**11.5703 Environmental Control III****C4***Prerequisite: 11.5702*

Building services; Sources and distribution of water, wastes and energy supplies, application of electric power, hydraulics, ver-

tical transport, fire protection in buildings, equipment selection and space allocation.

Air conditioning, heating and ventilating of buildings, design of systems, selection of equipment and allocation of space.

#### **11.5704 Environmental Control Seminar I C1**

*Prerequisites:* 11.5101, 11.5501, 11.5601, 11.5701, **three** from 11.5203, 11.5304, 11.5504, 11.5604

Emphasis on the implications of sun and climate in the design of comfort conditions in buildings, the relation between climate, occupants and envelope design, and envelope design and energy consumption; and the application of strategies to modify envelope properties; experimentation with innovative methods to introduce daylight into buildings for human well-being by model studies in design projects in Studio II. Analysis calculation and design using computer software.

#### **11.5705 Environmental Control Seminar II C2**

*Prerequisites:* 11.5102, 11.5502, 11.5602, 11.5702, **four** from 11.5204, 11.5305, 11.5505, 11.5605, 11.5704

Emphasis on mechanical engineering systems in buildings. Analysis, calculation and design, selection of equipment and allocation of space. Application of thermal, lighting and acoustics principles to promote human comfort in buildings.

#### **11.5710 Environmental Control Seminar III C1**

*Prerequisites:* 11.5103, 11.5503, 11.5603, 11.5703, **four** from 11.5205, 11.5306, 11.5506, 11.5705, 11.5606

Lighting, acoustics and thermal design linked where appropriate to design projects in Studio IV. Design of selected HVAC systems and components.

#### **11.5711 Environment Control Seminar IV C1**

*Prerequisites:* 11.5110, 11.5210, 11.5310, 11.5510, 11.5710, 11.5910

Analysis, calculation and design of selected systems and components of mechanical engineering systems, worked examples of lighting and acoustics, related when appropriate to design projects in Studio V.

#### **11.5712 Environmental Control Seminar V C1**

*Prerequisites:* 11.5111, 11.5211, 11.5311, 11.5511, 11.5611, 11.5711

Analysis, calculation and design of selected systems and components of mechanical engineering systems, worked examples of lighting and acoustics, related when appropriate to design projects in Studio VI.

#### **11.5713 Environmental Control Seminar VI C1**

*Prerequisites:* 11.5913, 198 Credit points

Analysis, calculation and design of selected systems and components of mechanical engineering systems, worked examples of lighting and acoustics, related when appropriate to design of Graduation Project.

#### **11.5720 Design for Energy Efficiency C2**

*Prerequisites:* 11.5910, 11.5912

The development of the design of buildings and building types incorporating technological means of energy conservation and generation, use of energy-efficient materials, maintaining ecological balance and developing suitable structural techniques.

#### **11.5721 Design of Lighting C2**

*Prerequisite:* Technology Elective Package I

Major factors influencing design and application in buildings. Evaluation of impact of current technologies on lighting using computer simulations, appraisals and model studies. Design project.

#### **11.5722 Acoustics Studies C2**

*Prerequisite:* Technology Elective Package II

Experimental investigation and research in a selected aspects of acoustics. Laboratory and field work, methodology of results, development of techniques of application. Laboratory work.

### **Architectural Practice**

#### **11.5810 Architectural Practice I C2**

*Prerequisite:* 11.5103

Contract documentation and specification writing techniques. Estimating, cost planning and bills of quantities.

#### **11.5811 Architectural Practice II C2**

*Prerequisite:* 11.5810

Introduction to the legal system; aspects of the law of contract, torts, property, copyright. Legal consequences of architectural practice. Liability of architects. Professional indemnity insurance. Authorities controlling building. Types of building contract. Tendering and negotiating. The architect/client agreement. Budgets and estimates. Engagement of consultants. Contract administration procedures. Professional ethics.

#### **11.5812 Architectural Practice III C1**

*Prerequisite:* 11.5811

Alternative methods of building procurement. Detailed comparison of standard contracts in current use. Advanced contract administration procedures. Partial architectural services and liability. Professional defensive measures and crisis management.

## 11.5813 Architectural Practice IV

C1

*Prerequisite:* 11.5811

Introduction to management theory. The structure and organisation of an architectural office; aspects of company and partnership law and insurance. Business principles and management procedures relevant to an architectural office.

## 11.5820 Building Economics and Development

C2

*Prerequisites:* 11.5910, 11.5912

**1.** The Economy: structure of the economy. History and development of modern economics. **2.** Investment: investigation in buildings, property (public and private), large scale, small scale. **3.** Valuation: statutory valuations, market value, unimproved and improved land depreciation and obsolescence, valuation of improvements, valuation law, land laws. **4.** Feasibility: economic models, optimization, feasibility studies on small-, medium-, large-scale development and subdivisions. **5.** Rationalized Building: dimensional control, component technology, building systems, cost planning. **6.** Seminars.

## 11.5821 Project Management

C2

*Prerequisite:* Technology Elective Package I

**1.** Principles of scientific management and organization, individual group behaviour, management functions, planning, organizing, staffing, directing, co-ordinating, monitoring, appraisals and evaluation. **2.** Operations research techniques; network analysis, multi-activity charting. **3.** Decision theory and procedures. **4.** Contract and contract documents. **5.** Industrial relations, employment. **6.** Industrial organization. **7.** Seminars.

## 11.5822 The Architect and the Law

C2

*Prerequisite:* Technology Elective Package II

**1.** Arbitration and litigation. **2.** Appeals to the Land and Environment Court. **3.** Environment law. **4.** Industrial law. **5.** Case studies.

## Other Required Studies

### 11.5910 Practical Experience

C0

*Prerequisite:* 11.5103

Each student is required to obtain, **before enrolling in Year 5**, practical experience under a registered architect for a period of six months. The experience is to be recorded in a log book to be signed by the registered architect.

No other subject may be taken concurrently with Practical Experience.

## 11.5912 Research Methods

C2

*Prerequisites:* 11.5103 for BArch; 11.5916 for BSc(Arch)

The processes and methods of research, writing and referencing for publication of academic works.

## 11.5913 Dissertation

C6

*Prerequisite:* 11.5912

An individual study, on an approved topic, taken under staff supervision, with the purpose of allowing the student either to gain knowledge in some aspect of architecture which is not covered in the course, or to increase knowledge in some aspect which has been covered. It requires the gathering of data, analysing that material and reaching a conclusion. The work is typewritten, in concise and clear English, properly ordered and referenced and presented in A4 format. The work is normally about 10,000 words, illustrated as necessary. To be completed before enrolment in Graduation Project.

## 11.5914 Special Research Programme I (For BSc Arch. only)

C5

*Prerequisite:* Head of School's approval

Programme selected by the student in accordance with his or her particular interest and approved by the Head of School. Such programs include studies in design, technology, architectural and materials sciences, conservation, history, communication and management.

## 11.5915 Special Research Programme II (For BSc Arch. only)

C5

*Prerequisites:* 11.5914, Head of School's approval

Programme selected by the student in accordance with his or her particular interest and approved by the Head of School. Such programs include studies in design, technology, architectural and materials sciences, conservation, history, communication and management.

## 11.5916 Special Research Programme III (For BSc Arch. only)

C5

*Prerequisites:* 11.5915, Head of School's approval

Programme selected by the student in accordance with his or her particular interest and approved by the Head of School. Such programs include studies in design, technology, architectural and materials sciences, conservation, history, communication and management.

## 11.5917 Research Project

C8

*Prerequisites:* 11.5916, 11.5912

This project is available to those students intending to obtain the degree of BSc(Arch) and is intended as the culminating study

of that area of architectural endeavour in which the student wishes to major. The area selected would be investigated to a degree of depth not normally required by practising architects, and thus would serve as an introduction to professional or consulting expertise in one aspect of architecture. The research project, communicated graphically or in writing, is to integrate the student's knowledge and skill in the selected area of study and the topic is to be submitted for approval by the Head of School. The Research Project can be credited only towards the BSc(Arch) degree.

### **11.5918 Honours Project I**

**C22**

*Prerequisite: 131 Credit points*

This subject is required for students who may enrol in the BSc(Arch) degree course at Honours level and represents the architectural endeavour in which the student wishes to major. The project should demonstrate a depth of knowledge of the chosen aspect of architecture that extends beyond that normally required of a practising architect. It may be a graphic and/or written presentation. It normally extends over two semesters and the proposed program is to be submitted for approval to the Head of School five weeks before the beginning of the session in which the student intends to enrol in the Honours Project.

### **11.5919 Honours Project II**

**C22**

*Prerequisite: 11.5918*

This subject is required for students who may enrol in the BSc(Arch) degree course at Honours level and represents the architectural endeavour in which the student wishes to major. The project should demonstrate a depth of knowledge of the chosen aspect of architecture that extends beyond that normally required of a practising architect. It may be a graphic and/or written presentation. It normally extends over two semesters and the proposed program is to be submitted for approval to the Head of School five weeks before the beginning of the session in which the student intends to enrol in the Honours Project.

## **Other Elective Studies**

### **11.5920 Architectural Research I**

**C4**

*Prerequisite: 11.5910, 11.5912*

An elective designed for students wishing to pursue an independent course of study in a field of architecture not falling specifically within the domain of any existing elective. Students are required to present a detailed program of study for approval by the Head of School by the end of the semester preceding that in which it is intended to enrol in this elective. For special conditions consult Head of School.

### **11.5921 Architectural Research II**

**C4**

*Prerequisite: Technology Elective Package I or Design Elective Package I*

An elective designed for students wishing to pursue an independent course of study in a field of architecture not falling specifically

within the domain of any existing elective. Students are required to present a detailed program of study for approval by the Head of School by the end of the semester preceding that in which it is intended to enrol in this elective. For special conditions consult Head of School.

### **11.5922 Architectural Research III**

**C4**

*Prerequisite: Technology Elective Package II or Design Elective Package II*

An elective designed for students wishing to pursue an independent course of study in a field of architecture not falling specifically within the domain of any existing elective. Students are required to present a detailed program of study for approval by the Head of School by the end of the semester preceding that in which it is intended to enrol in this elective. For special conditions consult Head of School.

## **General Studies Subjects**

The student is to refer to the General Studies Handbook for details of subjects available in this area.

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## **Industrial Design**

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In any academic year, one or more of the following undergraduate subjects may be offered to students undertaking qualifying programmes leading to admission to the Master of Science (Industrial Design) course or the Master of Science (Industrial Design) course in the Graduate School of the Built Environment. Students in the Bachelor of Architecture and Bachelor of Science (Architecture) courses may not enrol in any of these subjects without the permission of the Head of the School of Architecture.

The Industrial Design subjects are made up of lectures, demonstrations, group discussions and criticism, with design projects as the main study.

Theory of the historic, social, psychological, and economic aspects of industrial design; the methodology and techniques of industrial design.

The design projects are set in many differing industrial and social frameworks, and give the student an opportunity to solve problems across the whole spectrum of Industrial Design. The understanding of the problem-solving process and the individual student's own experience of it is considered to be of as much importance as the final solution. The brief for each project details the production and marketing situation, the criteria for design, the academic aims of the project, background information, a time schedule and the requirements for presentation of the subject's analysis and final solution.

<b>11.4740 Industrial Design 1</b>	<b>C6</b>	<b>11.4747 Industrial Design Special Project</b>	<b>C10</b>
<i>Prerequisite: 40 credit points</i>		<i>Prerequisites: 140 credit points. Selection on merit.</i>	
The emergence and development of the industrial design profession from 1850 to the present day. Introduction to the principles of ergonomics, two- and three-dimensional design communication, and industrial design problem solving. Studio: Design project work applying industrial design criteria and methods to the solving of design problems; the solutions to be evaluated by means of prototypes, drawings and reports.		An elective subject intended for students wishing to pursue an independent course of study within an area of industrial design not falling within the domain of any existing elective. Students are required to present a detailed program of study for approval to the Head of School during the semester preceding that in which it is intended to enrol in this elective.	
<b>11.4741 Industrial Design Methods A</b>	<b>C2</b>	<hr/> <b>Building</b> <hr/>	
<i>Prerequisite: Nil</i>		<hr/> <b>Construction Studies Stream</b> <hr/>	
The need for design methodology and its application in the industrial situation; strategy planning, the methods with examples of their application; the problems of problem solving.		The construction studies stream embraces both the functional requirements and methods of constructing buildings. An understanding of structural elements and materials is fundamental. The ability to compare design alternatives and to see buildings as part of an overall environment is developed as the student progresses.	
<b>11.4742 Industrial Design Methods B</b>	<b>C5</b>	<b>35.202 Soil Mechanics for Building</b>	<b>S1 L1T1 C2</b>
<i>Prerequisites: 11.4740, 11.4741</i>		<i>Compulsory. Prerequisite: Nil.</i>	
The systematic application of industrial design research, practice, techniques and methodologies to the analysis, briefing and solving of a complex problem involving product systems.		The origins and formation of soils; clay mineralogy; classification of soils; soil as an engineering material; site investigation; boring, sampling and <i>insitu</i> testing; shear strength of soils; stress distribution in earth masses; consolidation and settlement; earth pressure calculations; bearing capacity; improvement of soil properties by compaction and stabilization; introduction to foundation design; laboratory testing of soils.	
<b>11.4743 Industrial Design Case Histories</b>	<b>C2</b>	<b>35.500 Building Graphics</b>	<b>S1 L2T2 C6</b>
<i>Prerequisites: 11.4740, 11.4741</i>		<i>Compulsory. Prerequisite: Nil.</i>	
A series of case histories covering a selected range of industrial design and practice areas. The cases are given by practitioners in industrial design from the University, design consultancies, and the design studios of manufacturing companies. The methodologies used in the cases and the resultant products are studied and comparisons are made with theoretical methodologies. Studies are made to determine possible differences in the final product that could have resulted from the application of different methodologies.		The development of visual awareness and the practical skills basic to the observation, analysis and recording of appearance. An introductory survey of the visual environment of man; buildings, precincts, squares, architectural and construction aspects. Descriptive geometry. <i>Practical exercises</i> in two and three dimensional composition in various media.	
<b>11.4744 Industrial Design 2</b>	<b>C7</b>	<b>35.501 Construction 1 (Domestic Buildings)</b>	<b>S1 L2T1 C5</b>
<i>Prerequisites: 11.4740</i>		<i>Compulsory. Prerequisite: Nil.</i>	
Studies of the design applications of selected materials, project work involving design problems intrinsically concerned with particular materials.		Functional requirements and methods of building single family dwellings: footings for various site conditions; brick, brick veneer and timber walls; flooring, ceiling and roof framing; domestic joinery; finishes; domestic plumbing, drainage and electrical services; methods of setting out and supervision.	
<b>11.4745 Industrial Design 3A</b>	<b>C10</b>		
<i>Prerequisites: 11.4742, 11.4743, 11.4744</i>			
The application of industrial design research and practice methodologies to the study and solving of selected design problems.			
<b>11.4746 Industrial Design 3B</b>	<b>C10</b>		
<i>Prerequisites: 11.4742, 11.4743, 11.4744</i>			
The application of industrial design research and practice methodologies to the study and solving of selected design problems.			

### **35.502 Construction 2 (Building Practice)**

**S2 T4 C5**

*Compulsory. Prerequisite: 35.501.*

The major building trades and crafts including the use of tools and materials, and the on-site observation of trade practices: materials, techniques, tools, terminology, problem areas, quality control and supervision. The construction of a dwelling through its various stages including elementary time and motion studies. Construction draughting and measured survey.

### **35.503 Construction 3 (Low-rise Buildings)**

**S1 L2T2 C5**

*Compulsory. Prerequisite: 35.502.*

Small multi-storey buildings from the functional and construction operation viewpoints. Concepts from Construction 1 are further developed and new concepts are introduced: 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; minor construction plant, formwork.

### **35.504 Construction 4 (Factory Buildings)**

**S2 L2T2 C5**

*Compulsory. Prerequisite: 35.503.*

Functional requirements and methods of constructing light industrial buildings: further development of structural steel, large span factory roofing, welding techniques, fire requirements, cladding methods, installation of cranes and machine footings, scaffolding, relevant builder's plant and equipment.

### **35.505 Construction 5 (High-rise Buildings)**

**S1 L2T2 C5**

*Compulsory. Prerequisite: 35.504.*

Functional requirements of high-rise buildings and major building projects; structural systems, enclosure systems and environmental control systems and their inter-relation from a building standpoint; various methods and materials commonly used to solve functional demands; comparison of systems of construction; building loads and load factors; stability of structures and structural components; creep, settlement and other movement; principles of fire protection in high-rise projects; cladding in concrete, metal and glass; ceiling and partition systems; integration and co-ordination of services.

### **35.506 Construction 6 (Techniques)**

**S2 L2T3 C4**

*Prerequisites: 35.505, 35.703.*

Building techniques employed on major projects including the use of plant, equipment and various construction systems: excavation equipment, shoring, ground anchorage, pile drivers, formwork, slip form, craneage, concrete handling. Integrated construction systems. Students undertake on-site studies. Emphasis on method of construction rather than the attributes of the finished product.

### **35.517 Construction 7 (Industrialization and Technological Change)**

**S1 and S2 L2T2 C4**

*Prerequisites: 35.505, 35.703.*

Factors influencing change in building techniques: technological change in building; implication of level of demand; new products, materials and processes; the regulatory system; the effect of government policy. The implications of changing techniques, the changing structure of work, skills loss, methodologies for co-ordinating building components; the evaluation of performance, social consequences of industrialization. Teaching centres around case studies of Australian and overseas building techniques, building systems, construction systems, portable buildings and mobile homes.

### **35.518 Construction 8 (Special Project)**

**C4**

*Prerequisites: 35.505, 35.704.*

The study of special advanced topics in building construction on either a group or individual basis.

### **35.551 Structures 1**

**S2 L2T2 C5**

*Compulsory. Prerequisite: Nil.*

Loads on structures; external and internal forces; conditions of force and moment equilibrium. Analysis of statically determinate beams; bending moment and shear force diagrams; bending and shear stresses; deflections. Qualitative structural behaviour of arch, cable, membrane, plate and shell structures; the function of bracing.

### **35.552 Structures 2**

**S1 L2T2 C5**

*Compulsory. Prerequisite: 35.551.*

Analysis of statically determinate frames; principles of structural design. Design of beams and columns in timber and steel for strength, deflection and stability criteria; combination of axial and bending stresses. Joints in timber and steel structures: glueing, bolting, nailing, riveting, welding.

### **35.553 Structures 3**

**S1 L2T2 C5**

*Compulsory. Prerequisite: 35.552.*

Load-paths in structures from external loads to supports. Principles of ultimate strength design in reinforced concrete; design of reinforced concrete beams, slabs, columns, and footings for strength and serviceability criteria; detailing of reinforcement. Introduction to prestressed concrete. Strength and stability of temporary structures; principles of formwork and falsework design.

### **35.580 Building Design Analysis**

**S1 L2T1 C3**

*Prerequisites: 35.505, 35.704.*

A critical analysis and evaluation of current building designs within the study areas of communication and documentation,



information flow, appropriate construction methods, constructibility and work flow, construction economics and cost-value analysis.

### 35.591 Built Environment 1

S1 L2 C2

*Compulsory. Prerequisite: Nil.*

Background to building; the ancient world, recent history: Europe, Asia, the Americas, Australia. Development of structures, construction, building science and building economics. Rationalization and industrialization. Innovations, building research. Development of the structure of the industry and professions; laws and regulations, industrial relations, the contract document.

### 35.592 Built Environment 2

S2 L2 C2

*Prerequisite: Nil.*

The distribution of urban and regional centres in Australia. Factors which have shaped and will continue to shape the growth and quality of the built environment. Elements forming the urban environment viewed as the components of a complex system. Patterns of land-use formed by the physical structures in which people live, work and play. The interaction between land-use and transport and the effect of energy costs on land-use patterns. Population growth and structure in an urban and regional context. The effect of population change, household formation rates and other factors on the demand for housing in urban and regional areas. Possible futures for the built environment and the demand for commercial and industrial building. The Australian building stock. Quantitative methods used in evaluating and planning the built environment. The quality of an urban environment. Socio-economic and other indicators of amenity. Possible conflicts between the man-made and natural environments. Environmental impact statements. Efficient utilization of resources in the building process. Characteristics of the built environment in the Sydney region and its development over the last 50 years.

## Building Science Stream

The underlying purpose of the building science stream is to impart to students an understanding of: the physical principles governing the behaviour of matter and the performance of building materials; the nature of the macro-environment and the parameters that control it and the principles involved in creating a suitable human environment; the mathematical tools and computer techniques necessary for the efficient design, construction, and operation of modern buildings.

### 35.601 Building Science 1 (Materials)

S1 L2T2 C4

*Compulsory. Prerequisite: Nil.*

Properties of materials; plasticity, elasticity, density, porosity, hardness. Optical, electrical, thermal and acoustic properties. Deterioration. Properties and manufacture of building materials: wood, wood products, cements, limes, concrete, bricks, metals, asbestos cement, ceramics, plastics, sealants and mastics, stones.

### 35.602 Building Science 2 (Energy)

S2 L2T2 C5

*Compulsory. Prerequisite: 1.931.*

The thermal environment: heat and comfort, heat transfer, thermal storage, thermal resistance, insulation, water vapour, condensation, vapour barriers, ventilation, environmental parameters, comfort indices, heat flow through glass, solar radiation, shading coefficient. Acoustics: the nature of sound: velocity, wavelength, frequency, intensity, sound pressure, sound power; sound analysis and subjective loudness; dBA level; assessment of noise annoyance: airborne sound transmission; sound radiation, sound attenuation, transmission loss, absorption coefficients, transmission class, composite partitions; recommended acoustic criteria, introduction to auditorium acoustics. Solar control: solar position diagrams, spherical projection, shadow angles, effect of latitude, longitude, magnetic north and equation of time, shading devices, sky factor, sunlight in streets, shading by tall buildings. Daylighting: daylight factors, reflected daylight, availability of daylight, design. Artificial light: light sources, colour, luminaries, luminance design, glare, lighting quality, spatial illumination, maintenance. Fire: fire behaviour of building materials, fire behaviour of structures, systems for fire safety.

### 35.604 Building Science 4 (Plastics)

S1 L2T1 C3

*Prerequisite: Nil.*

Not offered in 1987.

Polymers in building: history and development of polymers, chemical structure, properties and applications of thermoplastics and thermosets, forming and design, reinforced plastics, fabrication techniques, building adhesives, elastomers, modified concrete.

### 35.605 Building Science 5 (Concrete)

S2 L2T1 C3

*Compulsory. Prerequisite: Nil.*

Concrete technology: cement aggregates, water and admixtures, properties of fresh concrete, strength considerations, durability, shrinkage and creep, special concretes, non-destructive testing, mix design.

### 35.606 Building Science 6 (Metals)

S1 L1T2 C3

*Compulsory. Prerequisite: Nil.*

Metals in building; structural ferrous alloys, structural and architectural non-ferrous alloys; corrosion and protection; welding; types of failure; brittle fracture, fatigue, creep; impact resistance, tensile properties, hardness, stain hardening.

### 35.607 Building Science 7 (Thermal)

S2 L2T1 C3

*Prerequisite: 35.602.*

Building with climate: climate (global and local), thermal comfort factors and indices, effective temperature, principles of thermal design, thermal control, ventilation and air movement, light, daylighting, sound, noise control, shelter for various climate types, design aids.

**35.609 Building Science 9 (Timber) S2 L1½T1½ C3**

*Prerequisite:* Nil.

The production and marketing of timber; test methods and properties; stress grading of timber, codes of practice, chemical, physical and biological attack and weathering of timber, protection and preservation; thermal, acoustic and aesthetic properties: factory techniques, plywood, particle board, hardboard, softboard, prefabricated building components, laminated beams.

**35.651 Services 1 (Hydraulics) S1 L2 C3**

*Compulsory. Prerequisite:* Nil.

Hydraulic services pertaining to small and medium size projects; hot and cold water reticulation; sewer and storm water drainage; sanitary plumbing, introduction to fire fighting equipment and services; regulatory authorities and requirements.

**35.652 Services 2 (Mechanical) S2 L2T1 C3**

*Compulsory. Prerequisite:* 35.602.

Air-conditioning, heating and ventilating of buildings. Design of systems. Selection of equipment and allocation of space. Projects and seminars.

**35.653 Services 3 (Integration) S2 L1T3 C4**

*Prerequisites:* 35.651, 35.652.

Not offered in 1987.

The incorporation of plant and accessories in the building fabric. Economic routing; noise, identification; incompatibility; outlets. Project.

**35.670 Mathematics for Builders S1 L4T2 C4**

*Compulsory. Prerequisite:* Nil.

*Calculus:* elementary functions, and their inverses; limits and continuity; differentiation and integration; practical applications. *Statistics and probability:* descriptions of sample data; probability and sets; probability distributions; use of probability in decision analysis; introduction to Monte Carlo simulation. *Algebra:* systems of linear equations and inequalities; introduction to linear programming; introduction to the mathematics of finance. Application of mathematics to building industry problems.

**Management Studies Stream**

Building management includes management in theory and management in practice. It equips the student with well founded principles which he can apply to operational situations in the building process.

**35.701 Management 1 (Management Principles)****S1 L2 C4**

*Compulsory. Prerequisite:* Nil.

Scientific management principles, administration and supervision; principles of organization, individual and group behaviour; technical report writing; introduction to scientific methods of construction planning and control; the building and development industry, building Acts and Regulations, codes, local government authority powers, fees and approvals.

**35.702 Management 2 (Professional Practice)****S2 L2 C4**

*Compulsory. Prerequisite:* 35.701.

Business practice procedures in relation to: statutory requirements, employment, purchasing, safety and accident prevention, risks and insurance and the conduct of meetings and formal company procedures.

**35.703 Management 3 (Planning)****S1 L2T1 C4**

*Compulsory. Prerequisites:* 35.502, 35.751, 35.702.

Systems concepts and their relevance to building, planning and construction problems; construction planning techniques and site applications. Operational research techniques with particular reference to the use of networks for planning and scheduling. Selected aspects of work study appropriate to the building industry. Planning and control techniques and their application. Computer applications of CPM.

**35.704 Management 4 (Contracts, Site Administration)****S2 L2 C4**

*Compulsory. Prerequisite:* 35.703.

Contract law. Local aspects of site management. Building contracts and contract administration. Site organisation, plant and equipment. Building methods and materials handling.

**35.705 Management 5 (Project Management)****S1 L2 C4**

*Compulsory. Prerequisite:* 35.704.

Project management and site organization. Theory and concept of project management. The systems approach to construction planning. Alternative organization of the building process. Application of project management in building. Management of pre-design, design and construction activities. Strategic planning, construction strategy. Planning of materials handling, repetitive work and services. Project management control. Management games.

**35.706 Management 6 (Personnel Management)****S1 L2 C4**

*Prerequisite:* 35.704.

People management. Human motivation, personnel management. Occupational health and safety in building. Industrial relations.

Employers and employees; employers and employer groups. Unions and unionism. Industrial law, conciliation and arbitration. Industrial disputes.

**35.707 Management 7 (Corporate Strategy) S2 L3 C4**

*Compulsory. Prerequisites: 35.704, 35.832.*

Corporate strategy and the overall general management of an enterprise in the building and development industry, derivation of policy by top management together with planning of policy implementation; tax planning. There is an integration and application of knowledge acquired in previous and concurrent courses. By using case studies students appraise the present position and future prospects of enterprises in the building industry; assess potential risks and opportunities; plan the human and physical resources and activities of the enterprises required to achieve corporate objectives.

**35.708 Management 8 (Marketing) S2 L3 C4**

*Prerequisites: 35.704, 35.832.*

Marketing for builders and developers in the Australian and Pacific environment with particular emphasis on the marketing mix, the relationship between a marketing system and its environment, development of marketing, tactics and strategy, market segmentation and the buyer decision process.

**35.720 Commercial Arbitration S1 L2T1 C4**

*Prerequisite: 35.704.*

The nature and function of arbitration in relation to building contract disputes, the parties to arbitration, the arbitrator, his duties and powers. Case studies; moot arbitration.

**35.721 Law for Builders 1 S1 L2 C2**

*Compulsory. Prerequisite: Nil.*

Law, including brief outline of sources of law in New South Wales and the system of judicial precedent. General principles of law of contracts. Contractual rights and obligation. Court structures; sale of goods and a general introduction to the law of bankruptcy. General principles of law of agency. Law of partnership.

**35.722 Law for Builders 2 S2 L2 C2**

*Compulsory. Prerequisite: 35.721.*

General principles of insurance law. Law related to non-commercial succession to property. Real property and local government law, company and administrative law.

**35.751 Introduction to Computing S2 L1T2 C2**

*Compulsory. Prerequisite: Nil.*

Introduction to computer programming and applications. Description of computer hardware and peripheral equipment; use

of time-sharing computing facilities; development of basic programming skills.

**35.752 Computer Applications in Building S2 L1T2 C3**

*Compulsory. Prerequisite: 35.751.*

Extensions of flowchart and program development via time-sharing processing with emphasis on structured programming and internal program documentation. Introduction to data file structures and access modes. Applications in quantity surveying, estimating and construction management.

**35.753 Systems Analysis and Modelling S1 L2T2 C4**

*Prerequisite: 35.703.*

Systems analysis methods. The systems approach of considering the interaction of processes forming part of a larger whole is introduced as a general concept applicable to a wide variety of planning and management problems. In particular, the systems analysis techniques of network analysis, mathematical programming, simulation and financial modelling are studied in relation to the planning, design and construction management of building projects.

**35.754 Building Information Systems S2 L2T2 C4**

*Prerequisites: 14.001, 35.752.*

The specification, development and use of computer based information systems in the management of building companies.

**Building Economics Stream**

The subjects contained in the Building Economics stream aim to provide a study of the economic aspects of building and real estate. This study is intended to develop an awareness of cost structure and characteristics from concept to demolition and necessarily embraces a variety of operations and professions. Particular attention is given to the acquisition of skills in the various techniques used to control cost in a building program.

**35.801 Quantity Surveying 1 (Measurement) S2 L3T1 C4**

*Compulsory. Prerequisite: 35.503.*

Quantity surveying; historical background; functions of the quantity surveyor; the origin and development of the Australian Standard Method of Measurement of Building Works, its importance and application; methods of recording dimensions, checking and correlating plans and specifications; principles of measurement; measuring techniques for single storey construction; billing fundamentals of item descriptions; taking off quantities from plans and specifications.

**35.802 Quantity Surveying 2 (Billing) S1 L3T1 C4**

*Compulsory. Prerequisites: 35.504, 35.871.*

Advanced quantity surveying for the trades and hydraulic services; measuring techniques for multi-storey construction; detailed study of the Australian Standard Method of Measurement of Building Works, billing procedures for single items and complete trades; contract administration.

### **35.813 Quantity Surveying 3 (Cost Planning) S2 L2 C4**

*Prerequisite:* 35.802.

Functions of the cost planner; liaison with consultants; cost planning techniques including practical exercises; cost control and design economics; professional practice.

### **35.831 Building Economics 1 S2 L2T1 C4**

*Compulsory. Prerequisite:* Nil.

Introduction to building economics, the interrelationship between the national economy and the building industry; quantitative techniques and the interpretation of economic data, economic principles applied to aspects of the building industry; introductory investment analysis and decision theory.

### **35.832 Building Economics 2 S1 L2 C4**

*Compulsory. Prerequisites:* 35.831, 14.002.

Entrepreneurship in the construction industry; depreciation; taxation; operating costs; economics of building plant; materials handling and ergonomics; capital investment appraisals; case studies and field research.

### **35.833 Building Economics 3 S1 L3 C5**

*Prerequisites:* 35.832, 35.868.

Economic advantages and disadvantages of conventional on-site construction and industrialized building components and system building. Financial controls used in the erection, management, maintenance and demolition of buildings. Case studies; advanced investment analysis; together with 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 stability and failure.

### **35.867 Estimating 1 S2 L2T1 C4**

*Compulsory. Prerequisite:* 35.503.

Introduction to techniques used by building estimators. Topics include the analysis of costs of material, plant and labour, and the estimation of unit rates; labour and plant scheduling, preliminary items, general and site overheads, the preliminary estimate.

### **35.868 Estimating 2 S1 L1T1 C3**

*Prerequisites:* 35.752, 35.867.

Advanced estimating techniques, competitive tendering, contract cost adjustments; computer techniques applied to estimating.

### **35.871 Building Specifications S2 L2 C3**

*Compulsory. Prerequisite:* 35.503.

Principles and methods involved in the compilation of a specification for building works; objectives and purposes of a speci-

cation; the specification as a contract document; legal, tender and working aspects; relationship to bill of quantities and drawings; schedules, sources of information, references, outright and performance specifications, prime cost and provisional sums; specification sections, clauses and language, 'master' specifications; preparation, format, binding and printing; explanation of documents and general conditions.

### **35.880 Development Project S2 L3 C4**

*Compulsory. Prerequisites:* 35.504, 35.832.

A total approach to the building process through the four stages of pre-design, design, construction and post-construction. Market research, establishing client's needs, site selection and analysis, feasibility studies and financing methods. Selection and monitoring the work of the design team, preliminary designs, preparation of development applications. Preplanning the building process, utilization of construction and management consultants. Development control during construction and in completion, tenant fit-outs and handing over to clients of the completed project.

### **35.890 Property Valuation S1 L2 C2**

*Prerequisites:* 35.503, 35.831.

Legal background to valuation of land and property inspection. Depreciation assessment. Building maintenance cycles. Time value of money and equivalence. Market value, comparable sales analysis. Statutory values and applications. Building investment feasibility assessment. Case studies of property valuations.

## **Special Requirements**

### **35.900 Thesis (Building) S1 or S2 C10**

*Compulsory. Prerequisite:* a total of 100 credit points.

A specialized individual study taken under staff supervision with the object of allowing the student either to gain knowledge in some aspect of building 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 to be supplied by the student for the approval of the Head of School. A student may not commence the thesis until 100 credit points have been accrued and it must be submitted for examination before the close of the last semester attended by the student. Students are permitted to extend this subject over two consecutive sessions (if desired) and may commence in Session 1 or Session 2. **Note:** thesis performance affects the award of the degree at Honours level. See **Award of Honours** under the School entry earlier in this Handbook.

## 35.910 Industry Semester

**S1 or S2 C3**

*Compulsory. Prerequisites: 35.503, 35.702.*

It is desirable for students to be exposed, at the appropriate time during their course, to industrial conditions and experiences and this can best be achieved by continuous experience on a building site (or other approved situation). Students will be required to arrange approved continuous employment for a period of six months (one semester plus vacation periods). The industry semester is most beneficial if taken at about midway through the course, and must be taken at a stage which will enable students to subsequently complete a minimum of 12 credit points, apart from credit points obtained for **35.900 Thesis**. During the industry semester, students are under the supervision of a staff member and are required to submit a report on an approved topic.

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## Town Planning

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### Core Subjects

#### 36.211 Introduction to Planning

**S1 L5T7**

A broad range of aspects of planning, including: the aims of planning and its role in shaping our environment; the development and characteristics of urban settlements throughout history, as well as today; categories of land-use and their functions; forms of transport; planning at regional and local levels; neighbourhood theory and practice; planning legislation and administration; appearance and design of urban areas.

Lectures, seminars and films are used to present the material, in conjunction with project exercises. These include studies of past planning publications and current issues under discussion in the press, as well as an in-depth survey and analysis of specific localities. A three-day excursion, visiting planning offices and developments outside Sydney, is part of the subject. Skills are developed in observing, recording, analysing and presenting information. The use of imagination and an enquiring frame of mind are encouraged.

#### 36.212 Planning Studies

**S2 L6T6**

Lectures, seminars and projects concerning the principles of research related to the assessment of the urban environment. **1. Role of Planning Studies:** the purpose and scope of planning studies in the planning process, relationship to planning objectives and decision making. **2. Research Methodology:** social science research methods. Study design, sampling techniques, questionnaire design, data collection, data analysis using packaged computer programs. Introduction to statistics. Introduction to demographic concepts and methods. **3. Social Science Research and Planning Issues:** a series of student-led

seminars that focus on topics of importance to planning (e.g., measuring environmental quality, social indicators, social mix, community design and crime) which have been studied from a variety of viewpoints using various research techniques.

#### 36.213 Local Planning 1

**S1 L3T9**

*Prerequisites: 36.211 and 36.212.*

A lecture, seminar and practical exercise program dealing with the principles and practice of planning, the places where people live, from the small scale of housing to the larger scale of urban districts. All the factors which influence the shape of urban areas, and which affect the quality of life within them: physical factors — noise, sunlight and shade, microclimate and wind, soils and other site engineering factors, traffic and accessibility, and design and aesthetics; with socio-economic factors — demography, ethnicity, and politics; and with the processes of urban change. Students undertake reading and exercises in integrated planning related to their skills and abilities, and by the end of the subject are brought to the level at which they will be able to prepare simple local environmental studies, and to assess development applications with a full awareness of the issues to be considered and the implications of their decisions.

#### 36.214 Local Planning 2

**S2 L3T3**

*Prerequisites: 36.213 and 36.215.*

Lectures and seminars focusing on areas similar to those treated in Local Planning 1, but permitting the students to explore issues in more depth. Emphasis is placed on the reasons for urban areas being as they are — the factors which influence the existing form of an urban area from the small residential scale to that of the integrated district; the reasons for growth and change occurring in the way that they do and the ways in which planners can affect these; the implications of the planner's actions at the local scale for the physical and social environment; and the ways in which urban areas can be planned, altered and designed to make the best use of the environment while conserving its desirable qualities and aiming for beauty and equity. The subject is undertaken by a series of lectures, directed reading, seminars and case studies.

#### 36.215 Planning Law and Administration

**S1 L6T6**

*Prerequisites: 36.213 and 36.214.*

Theory and the practice of techniques and the administrative procedures needed to transform the policies and details of planning proposals into documents which have legal effect.

The subject comprises three parts, Planning Law, Planning Administration and Land Valuation. **1. Planning Law:** conceptual/theoretical nature of the law, the relationship between the environmental context, the Crown, the parliament and the judiciary, the ways in which the laws are made and promulgated, the relationship between laws and regulations, the legal concept of property in land, the definition of various legal concepts of interests in land, the Australian Constitution and the legal relationship between the Commonwealth and the States, particularly in regard to matters affecting land, the place of administrative law. An historical introduction to planning law in

Australia. A detailed account of the principles and practice of strategic and statutory planning in Australia. State environmental planning policies, regional environmental plans, local environmental plans, the role and function of environmental studies, statutory mapping, the development application process, the appeal process, the settlement of disputes. **2. Planning Administration:** administrative context within which planning operates as a function of government, especially the role and function of statutory bodies in the planning and environment area, the administration of the planning function at national, state and local levels, the art of management, administrative theory, personnel administration, the role and responsibility of the professional planner in the public and private sector. **3. Land Valuation:** the principles and practice of land valuation in Australia. Definitions of value, methods of valuation, the role of the valuer, compensation and betterment.

### **36.218 Regional Planning 1 S2 L6T6**

*Prerequisites:* 36.211 and 36.212.

Introduction to major land-use and infrastructure patterns, economic and social processes, in large urbanised and less urbanised regions; examples of the latter include, respectively, metropolitan Sydney and the far north coast of NSW. The biophysical, social, and economic dimensions of regional systems, and the typical public management issues to which their operation gives rise, are analysed. Regional management is presented as a means of meeting social and economic objectives of the community, both in itself and by providing a policy framework within which local government planning operates. Lecture and tutorial format.

### **36.219 Regional Planning 2 S1 L2T4**

*Prerequisite:* 36.215 and 36.218.

Treats, at a higher level, selected issues raised in Regional Planning 1. Current issues in regional spatial and economic development planning, both in Australia and in other parts of the world, are examined. Detailed treatment is given to strategies for the management of complex regional systems. Teaching is mostly in seminar format.

### **36.491 Thesis**

A specialized individual study taken under staff supervision with the object of allowing students either to gain knowledge in some aspect of town planning which is not covered in the course or to increase their 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 Year 4 of the course and the completed thesis is submitted for examination towards the end of Year 5.

Students participate in seminars on report and thesis writing during Year 5 and present progress reports on their theses at the seminars. The subject is not complete until a bound copy has been submitted.

## **Related Subjects**

### **36.134 Communication Techniques 1 S2 L1T3**

Graphics as an effective communication medium for town planners. Technical information and studio experience in essential skills for creative graphics as a functional tool for communicating factual information to peers and clients. Exercises in basic drawing, drafting and lettering.

### **36.131 Communication Techniques 2 S2 L1½ T1½**

A "hands-on" introduction to and exploration of various non-graphic techniques used by planners to communicate information. The students are taught about and undertake exercises in: reports and letter writing — language, structure and style; audio-visual presentations — video, slide tape, etc; public speaking in a variety of situations from large meetings to telephone; models — the techniques and uses of physical models.

### **36.210 Professional Practice S2 L1**

Planning as a profession, professional standards, ethics, preparing studies and plans, preparing and giving evidence, briefing and consulting, management, corporate planning, continuing education.

### **36.216 Planning Law and Administration 2 S2 L1T2**

The objective of this subject is to provide practical guidance on the operation of the Land & Environment Court, the significance of court judgments and the role of planners. While emphasis is placed on taking steps in plan making and development control to avoid planning appeals the major concern is with preparing for an appeal — legal research, preparation of evidence, appearing as a professional witness and small-group psychology.

### **36.222 Computers and Information Systems S2 L1T1**

The use and potential use of computers by planners. Basic knowledge to make use of opportunities including time sharing, batch processing and the use of graphic output. Components of the computer and their interrelationships, data processing, file management, use of library programs, interpretation of results, basic programming. Planning information system types, application; establishment; maintenance.

### **36.223 Computer Applications in Planning 1 S1 L1T1**

Computer applications in planning and related fields. An exploration and documentation of available software of use to the planning profession which has not been covered earlier in the course. Students also may develop and document their own planning-related software.

### **36.228 Transportation Planning S2 L1½T1½**

The relationship between the planning and management of transport and the planning and management of land-use and

the environment. Transport demand and supply at strategic, tactical and operational levels; networks; policies for the integrated management of precincts, corridors and centres; transport assessment of development applications; environmental assessment of transport proposals. At least one computer application is tested, and there are one further assignment and a number of small exercises to develop a basic skill in analysis.

### **36.230 Politics, Power and Policy S1 L1T2**

The aim of the subject is to create an understanding of the complex forces and processes (political, ideological, economic etc) which operate in the management of urban areas. Issues covered will include: relationships between urban government, politics, planning, the community and various interest groups. Urban theory. The relationship between public policy and planning. The social context of planning. The different social needs within Australian society. The formulation and implementation of policy.

### **36.232 Environmental Science 1 S2 L1T1**

Elements of the bio-physical environment which may have direct significance for man in his occupation of the earth. These elements are considered both as controls on man's activities and as targets for man's impacts, in ways relevant to the work of urban and regional planners. Physical processes directly related to planning problems; human occupation of areas subject to natural hazards; impact of urbanization on the environment; environmental issues in general; skills in map interpretation.

### **36.233 Environmental Science 2 S1 L1T1**

Introduction to methods used to incorporate consideration of physical environmental variables into the planning process.

### **36.234 Urban Design S2 L2T1**

The aim is to develop a greater awareness of the character and quality of our physical surroundings and to provide some knowledge as to how improvements can be made. Slide lectures and site visits are used to illustrate good or interesting developments in Australia and overseas. Townscape elements are studied and performance standards and other controls affecting the appearance are discussed. Small design exercises and, where feasible, at least one bigger project dealing with a real situation are undertaken.

### **36.235 Urban Society and Sociology S1 L1T2**

A series of lectures and seminars on the relationship between planning and the social structure of urban areas with reference to both social theorists and empirical studies. The origins and concerns of the discipline of sociology and of urban sociology. Urban effects on living patterns. The relationships between different groups, including town planners, in the urban context. The evaluation of planning objectives and outcomes. Sociological views of the planner's role in contemporary urban society.

### **36.244 Economic Issues in Planning S2 L1T1**

The market mechanism and market failure. Macroeconomic policy, investment patterns and economic change in cities and regions. Financing urban services and the impact of growth on local government. Economic impacts of development proposals.

### **36.245 The Development Process S1 or S2 L1T1**

Introduction to land development process in N.S.W. Basics of investment analysis, elemental costing and marketing. Society, the market place, land development and the role of town planning.

### **36.452 History of Town Planning S2 L2**

Brief review of planning theories and practices before the Industrial Revolution. Planning theories and practices in the late 19th and early 20th century. The birth and development of the town planning profession in Australia and overseas. The development of Australian towns and suburbs to the present day. Recent planning theories and practices. The material is covered through lectures, essay projects and discussion seminars.

### **36.4611 Engineering A S1 L2**

Transport engineering: road hierarchy, road geometry, arterial roads, access streets, intersections, cross sections, road layouts in residential areas, public transport. Traffic and environment: accidents and safety, noise, air pollution. Traffic engineering: characteristics of road vehicle, driver, and road system, levels of performance, traffic management.

### **36.4612 Engineering B S1 L1**

The provision of public utilities: town water supplies, sewerage, drainage, flood management, electricity and gas supply, telecommunications, waste disposal.

### **36.421 Integrated Planning Project 1 S2 L2T6**

Each year a project is designed which requires knowledge and skills from the several sub-disciplines of planning. The aim of the project is to further develop skills in the complementarity of knowledge and perspectives typically required to deal with complex problems in the real world. Depending on the topic under investigation, students may be required to attend an off-campus survey camp of up to one week's duration. The project will involve research, analysis, planning and design, and implementation.

### **36.422 Integrated Planning Project 2 S1 L3T9**

Each year a project is designed which requires knowledge and skills from the several sub-disciplines of planning. The aim of the project is to further develop skills in the complementarity of knowledge and perspectives typically required to deal with complex problems in the real world. Depending on the topic under investigation, students may be required to attend an off-campus survey camp of up to one week's duration. The project will involve research, analysis, environmental planning and implementation.

### **36.503 Practical Experience**

For the purpose covered by Session 2 of Year 3 and Session 1 of Year 4 the students may be engaged in approved employ-

ment 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.

## Planning Electives

Students are required to select an elective from the topics listed (subject to availability) for the session where such an elective is part of the course program. Students are permitted to select electives offered by other schools subject to approval of the lecturer concerned and the Head of the School of Town Planning.

### 38.8300 Planning Elective

For initial enrolment only.

#### 36.8301 Residential Planning 4CCH

Procedures and legal controls over land subdivision in NSW, land studies in terms of climate, terrain, vegetation, slopes, soils, drainage, etc; land development in relation to earthworks, roads, drainage and other utilities; detailed consideration of road and drainage design; subdivision design, land values and land economics. Innovative designs.

#### 36.8302 Local Planning 3 4CCH

Research and design into a topic at the town scale of current concern in planning.

#### 36.8303 Regional Planning 3 4CCH

Planning methodology in metropolitan areas; a critical overview and a detailed examination of planning processes, policies and programs for selected areas/functions/institutions.

#### 36.8304 Rural Planning 4CCH

Original research into a topic of current concern in rural planning.

#### 36.8305 Urban Conservation 4CCH

Definitions and philosophy of urban conservation; setting objectives and formulating policy, criteria for selecting and assessing conservation areas; planning consideration to protect and enhance the urban fabric; legislation and mechanisms for urban conservation existing in NSW and elsewhere; potential; some effects of urban conservation (physical, social, economic); attitudes to urban conservation; case study of selecting and planning a conservation area.

#### 36.8306 Planning Law and Administration 3 4CCH

Aimed at increasing the student's knowledge and awareness of issues in the general areas of Planning Law, Planning Administration and Statutory Planning.

### 36.8307 Urban Studies

4CCH S2 L1T3

An evaluation of the effects of one or more aspects of the urban environment on individuals and/or communities. Emphasis on individual research which expands the student's experience in methodological and substantive areas beyond what is encountered elsewhere in the course.

### 36.8308 Social Planning 4CCH

Planning responsibilities in equalizing resources distribution. Discussion of consensual goal definition and achievement versus social engineering. Popular participation in planning: why, where and how. Methodology and aids to social planning. Policy formulation and case studies. The program is presented by and with practitioners in the field and includes role playing games and problem solving essay. If possible an involvement in an area project may be substituted for some of the program.

### 36.8309 Environmental Psychology 4CCH

The environment considered subjectively and objectively. Man as a social and psychological rather than a strictly economic being. The significance for decision-making, of individual and group values held on the environment (nature and man-made), from individual decision on where to live through to government decisions on policy. Forces influencing the formation of these values. The distinction between values held and actual behaviour. The emergence of different viewpoints and resultant conflicts. The role of planning in understanding, anticipating and reconciling such conflicts.

### 36.8310 Third World Planning

Impact of planning and development proposals. Environmental planning legislation. Environmental, social economics, institutional and political impact. Evaluation of impact assessments.

#### 36.8312 Transport and Environmental Management 4CCH

Related to the integration of transport and environmental management at the local level.

#### 36.8313 Urban Design 2 4CCH

Research into and design of an area, from an urban design perspective.

#### 36.8314 Personal Computers in Planning 2 S2 L1T3

Exploration in depth of an application of personal computers in planning.

#### 36.4402 Planning (Special Subject) 2CCH

#### 36.4404 Planning (Special Subject) 4CCH

Students have the opportunity to pursue a subject of special interest related to planning, depending on staffing resources.



## Subjects Offered to Other Schools

### 36.411 Town Planning

S1 L2T1

*Architecture prerequisite: 11.4308 and 100 credit points.*

Introduction to the purpose, scope and application of planning. The urban planning process. Objectives and means of planning cities. Levels of planning and types of plans: state environmental policies, regional environmental plans, local environmental plans. Problems in planning: equitable distribution of resources. Environment and environmental impact statements. Planning law and administration. Future of cities.

### 36.4012 Environmental Planning

S2 L2

### 36.4014 Environmental Planning

S2 L2T2

The aim of this subject is to provide the student with an understanding of the objectives of environmental planning and how the system operates with particular reference to New South Wales. The nature of planning philosophy, environmental law and administrative structures are the core aspects of the course. Within this framework specific areas of concern are introduced and discussed — the central business district of cities, housing and equity, land-use and transport interaction, urban design, location theory, and urban and rural conservation.

As planning is a temporal concept, historical, contemporary, and future themes are built into the subject. At the completion of the program the student should understand the environmental planning process and the individual's rights under it.

This full subject is also offered as a half elective consisting of the lecture sessions only. Assessment is by written assignment, tutorial paper, and class participation. The assignment is based on the lecture material, and students are also required to prepare a written paper for tutorial discussion.

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## Mines

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### 25.5222 Geology for Landscape Architecture

S1L1

*Prerequisite: Nil.*

Minerals and rocks. Igneous, sedimentary and metamorphic rocks; their origin and their relationship with the landscape. Geological structures and their graphic representation. Interpretation of geological maps and sections.

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## Landscape Architecture

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### 37.0001 Introduction to Landscape Architecture

S1 L1

*Prerequisite: Nil.*

Introduction to the discipline of landscape architecture. Outline of the program and its major strands of planning; design and

implementation; natural and social sciences: skills (graphic, verbal, and written communication) Brief exposure to examples of landscape planning, design and implementation throughout history, both overseas and in Australia. Issues and opportunities for landscape architects.

### 37.0014 Introduction to Computer Applications

S2 L1T1

*Prerequisite: Nil.*

The use of computers by landscape architects. Necessary knowledge to make full use of opportunities that the computer can provide including time sharing, batch processing and the use of graphic output. Components of the computer and their interrelationships, data processing, file management, use of library programs, interpretation of results, basic programming.

### 37.1112 Horticulture for Landscape Architects

S2 L1T1

*Prerequisite: 43.202.*

General horticultural study of propagation techniques, current nursery practice, impact of weeds, plant diseases, planting techniques and forestry practice. Plant collecting and identification.

### 37.1302 Landscape Analysis

S2 L2T4

*Prerequisites: 27.801, 43.202.*

Observation and interpretation of both physical and biological environment and their interrelationships. Landscape character through sensory inputs and prehistory. Fundamental characteristics of biological systems, with emphasis on relationships with the physical environment, particularly geology, soils. Survey of Australian plant communities and associated fauna with particular emphasis on the Sydney Region. Recording and presentation techniques associated with landscape surveys. Field excursions.

### 37.1413 History of Landscape Architecture

S1 L2

*Prerequisite: Nil.*

Chronological development of cultural landscapes described by the investigation of philosophical, aesthetic and social aspects of Eastern and Western cultures with an emphasis on the Australian context. Changing attitudes to nature as reflected in land uses. The development of garden design and landscape architecture.

### 37.1513 Environmental Sociology for Landscape Architects

S1 L1T1

*Prerequisite: Nil.*

Perception of human requirements through behavioural studies, including territoriality and personal space identity. The effect of environmental changes on people. Sociological techniques for understanding user requirements. Post design evaluation. Application of simple statistical methods.

**37.1616 Land Systems****S2 L1T1***Prerequisite:* 37.5505.

An investigation of resources and their management in relation to a range of land use types with a emphasis on an ecological approach. Management of both natural and cultural landscapes within the context of marine, coastal, estuarine and terrestrial environments. Studies of specific examples and the effects of human impacts. Methods of conservation and rehabilitation considered. Field excursions.

**37.3005 Research Methods****S1 L1***Prerequisite:* Nil.

Investigation of various research methods with application to study in landscape architecture. Development of the critical, logical and stylistic skills involved in researching, writing and presenting essays, theses, articles, papers and reports. Selection of topic for study in the subject 37.3007 *Landscape Thesis*.

**37.3007 Landscape Thesis****F***Prerequisites:* 37.3005, 37.5606.

A specialized individual study under staff supervision enabling the student to gain knowledge in some aspect of landscape architecture which has not been covered, or to extend the student's knowledge and/or understanding in one which has. 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 must be submitted for approval of the Professor of Landscape Architecture at the close of Year 3. The completed thesis must be submitted for examination at the close of Year 4.

**37.3101 Landscape Graphics 1****S1 L2T2***Prerequisite:* Nil.

Basic techniques of creative drawing with emphasis upon two dimensional graphics, use of pencil techniques. Assorted point media. Basic technical drawing with emphasis on two-dimensional graphics. Pencil techniques, drafting conventions, layouts, lettering, instruments and scale presentation. The principles and application of orthographic, axonometric and isometric projection. Development of plan and section drawing techniques.

**37.3202 Landscape Graphics 2****S2 L2T2***Prerequisite:* 37.3101.

Advanced techniques of creative drawing with emphasis on various media. Advanced technical drawing techniques including the use of various media, with emphasis on three-dimensional graphic concepts. Investigation of the basic principles of perspective theory. Application of perspective drawing to landscape architectural works, including landforms and other elements.

**37.5014 Planting Design****S2 L1T1***Prerequisite:* 37.1112.

Plants as design elements; management of plant designs. Plant designs for specific sites; water plants, indoor plants, roof gardens, industrial and reclaimed sites. Observation of existing landscape schemes. Documentation of plant design.

**37.5101 Design 1****S1 L1T2***Prerequisite:* Nil.

Basic design theory to initiate a language of design elements. Investigation into materials and methods of expression used in art and design. Practical exercises in communication of ideas. Sketching in the field; studio work.

**37.5202 Design 2****S2 L1T2***Prerequisite:* 37.5101.

Design theory and processes including introduction of notions of spatial design and composition with reference to historical examples. Development of personal expression in art and design through exercises in selected media. Concepts of naturalism and abstraction. Sketching in the field; studio work. Site appreciation.

**37.5313 Landscape Design 1****S1 L2T8***Prerequisite:* 37.5202.

*Basic Design.* The interpretation of aesthetic values of sites and environments used in design exercises. Freehand drawing in the field. *Applied Design.* Logical design process applied to simple landscape design exercises with emphasis on site survey, site analysis and functional analysis. Applied graphic presentation techniques for site survey and analytical drawings.

**37.5414 Landscape Design 2****S2 L2T8***Prerequisite:* 37.5313.

*Basic Design.* Aesthetic appreciation of chosen environments both urban and natural. Graphic communication using selected media. Seminars on design philosophy. *Applied Design.* An understanding of materials and construction as applied to a range of medium scaled projects with an emphasis on practical relationships between design, use of appropriate materials and construction detailing.

**37.5505 Landscape Design 3****S1 L2T6***Prerequisites:* 37.3404, 37.5404, 37.7404.

More advanced design exercises within the context of both natural and urban environments. Emphasis is on gaining a knowledge of site planning with specific reference to sites located within the geological areas of the Sydney Region. Projects are of a large scale and further emphasis is directed towards consideration of appropriate environmental management and realisation of required maintenance ends in relation to design solutions.

### 37.5606 Landscape Design 4

**S2 L2T6**

*Prerequisite:* 37.5505.

Experience of dealing with medium to large scale projects of specific land uses such as schools and residential sub-divisions, in which research is encouraged to assess environmental impacts, both physical and social. Emphasis on practical solutions and the preparation of contract documents including preliminary costing of design proposals.

### 37.5707 Landscape Design 5

**S1 L2T6**

*Prerequisite:* 37.5606.

Projects are of a smaller detailed scale and with at least one project carried out involving the whole design process from brief preparation through to sketch design and detail design development. Emphasis on achieving solutions of a professional standard. Projects can be related to the natural, urban or rural environment.

### 37.5808 Landscape Design 6

**S2 L2T10**

*Prerequisites:* 37.5707, 37.9307.

Students are called upon to employ all the knowledge, skill and understanding they have gained in previous years. The graduating design project follows from Landscape Planning 3 and involves sketch design, detail design development and construction documentation. Emphasis on professional standard. Graduating project is related to the natural, urban or rural environment.

### 37.7101 Landscape Technology 1

**S1 L1T1**

*Prerequisite:* Nil.

Basic techniques used in design, development and construction. General site appraisal, map reading, elementary surveying and terrain assessment, and application of mathematics.

### 37.7115 Professional Practice 1

**S1 L1½**

*Prerequisites:* 37.5404, 37.7404.

The landscape architect's responsibilities in law; a study of the development of law in Australia, including torts, contracts, equity and environmental legislation. Project procedure, the stages of a capital development project. Construction contracts, including tender documentation, subcontract conditions and sub-consultative responsibilities.

### 37.7202 Landscape Technology 2

**S2 L1T2**

*Prerequisite:* 37.7101.

Techniques for recording and assessment of physical site characteristics: surficial geology, microclimate and other factors. Land surface manipulation including contour planning and earthwork

calculations, and more detailed surveying techniques. Fieldwork exercises.

### 37.7216 Professional Practice 2

**S2 L1½**

*Prerequisite:* 37.7115.

The specification, its function and forms. A comparative analysis of various standard contract forms including SAA documents and other performance codes. Preparation of contract documentation, including elemental and trade technical sections. Cost planning and feasibility studies.

### 37.7303 Landscape Technology 3

**S1 L2T2**

*Prerequisite:* 37.7202.

Materials science: the relationship between the properties and structure of materials. The derivation, conversion and production of materials commonly used in landscape and construction. Structures: the history and morphology, loads and structural requirements, structural elements and systems, and basic structural form.

### 37.7317 Professional Practice 3

**S1 L1½**

*Prerequisite:* 37.7216.

Contract administration and project supervision, the role of the consultant. Tender evaluation, award of contracts, site inspections, variation procedure, claims and certificate issue and general site administration. Practical completion, rectification and final certification. The rights and duties of the proprietor and contractor, including the relationship with the consultants. Post-contract activities, maintenance manuals, appraisal of design and construction and retention of records. The Statute of Limitations.

### 37.7404 Landscape Technology 4

**S2 L1T2**

*Prerequisite:* 37.7303.

Application of materials in structural situations, including elementary building techniques and mechanical analysis. Landscape construction methods, including design and documentation of grading, earthworks and retaining structures.

### 37.7418 Professional Practice 4

**S2 L1½**

*Prerequisite:* Four months approved practical experience, 37.7317.

Landscape architecture as a profession; obligations, liabilities and responsibilities. Professional association and registration, including a study of the Australian Institute of Landscape Architects. Office management and practice; record keeping, correspondence, insurance and taxation. Copyright and document control. Preparation of reports on practical experience gained during enrolment in the course.

### 37.7515 Landscape Engineering A

**S1 L2T1**

*Prerequisite:* 37.7404

Design and construction techniques related to basic civil works, including earthworks, hydraulics, municipal services, urban and

rural drainage. Interpretation of engineering design and development documents. Projects incorporating detail resolution of civil works.

**37.7616 Landscape Engineering B S2 L1T2**

*Prerequisite:* 37.7515.

Design and construction techniques related to transport planning and route alignment. Overview of the principles of transportation systems including railway permanent ways, airports, ports and harbours.

**37.9105 Landscape Planning 1 S1 L2T2**

*Prerequisite:* 37.1504.

Basic methods and techniques of resource data collection, analysis and valuation. History of landscape planning in Australia and overseas with reference to pioneering case studies. Projects include the use of maps, air photos and simple computer programs.

**37.9206 Landscape Planning 2 S2 L2T2**

*Prerequisite:* 37.9105.

Classification of planning methods. Study of complex methods and techniques used in recent landscape planning models. Development of land use suitability models for recreation, residential, industry, commercial, grazing, agriculture, forestry and conservation. Projects include the use of remote sensing techniques and advanced computer programs.

**37.9307 Landscape Planning 3 S1 L2T2**

*Prerequisite:* 37.9206.

Major planning project in conjunction with final landscape design project. Discussions on contemporary environmental planning issues. Australian case studies.

**37.9408 Landscape Planning 4 S2 L2T2**

*Prerequisite:* 37.9307.

Visual analysis, assessment and evaluation techniques detailed in order to incorporate this important aspect into planning models. Visual resource management. Recent Australian and overseas case studies. Projects incorporate relevant visual analysis computer programs.

## **Landscape Electives for Students of Architecture and Related Disciplines**

The following landscape electives require attendance of two hours per week over a period of 14 weeks. They are offered subject to demand and availability of resources, consequently students are advised to contact the School before finalizing their program. Credit point values and prerequisites specifically refer to students of Architecture enrolled in courses 3275, 3280 or 3295.

**37.100 Site Planning Elective S2 L2**

*2 credit points. Prerequisite:* 52 credit points.

Not offered in 1988.

Recognition of natural processes and factors in site analysis. Opportunities and constraints with respect to potential development. Development of a logical approach to site planning.

**37.300 Planting Design Elective S2 L2**

*2 credit points. Prerequisite:* 104 credit points.

The selection and use of plant materials within the built environment with particular reference to visual and ecological considerations.

**37.400 Urban Landscape Elective S1 L2**

*2 credit points. Prerequisite:* 104 credit points.

Not offered in 1988.

The treatment of spaces between and upon buildings. 'Hard' and 'soft' landscape treatments. Functional uses of open space within the built environment and the design of street furniture.

**37.500 Recreation Planning Elective S1 L2**

*2 credit points. Prerequisite:* 156 credit points.

Not offered in 1988.

Various recommended provisions for open space allocation for recreation are examined and classified in terms of contemporary needs. Specific requirements of a range of recreation facilities are studied in detail and successful Australian and overseas examples evaluated.

## **Subject Offered to Other Schools**

**37.224 Landscape Architecture S2 L2**

Landscape and planting within the built environment with particular reference to functional, ecological and aesthetic considerations; the treatment of spaces between buildings and in road reservations; hard and soft landscape treatments; establishment and maintenance cost.

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## **Botany**

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**43.202 Botany for Landscape Architects S1 L2T3**

*Prerequisite:* Nil.

How green plants function. What is known about how plants grow. Specific topics include: what happens in a plant meristem, hormone interactions and growth, transport systems in plants, water uptake and use, mineral nutrition, the role of light and leaves in photosynthesis, control of flowering process, germination and senescence. Emphasis is on the interaction between plant structure and function.

# Graduate Study

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## Faculty of Architecture Graduate Enrolment Procedures

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All students enrolling in graduate courses should obtain a copy of the free booklet *Enrolment Procedures 1988* available from School Offices and the Admissions Office. This booklet provides detailed information on enrolment procedures and fees, enrolment timetables by faculty and course, enrolment in miscellaneous subjects, locations and hours of cashiers and late enrolment.

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## Higher Degrees — Research

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Following the award of a first degree in Architecture, Building, Landscape Architecture or Town Planning of the University of New South Wales or other approved university, graduates may apply to register for the study leading to the award of the degree of Master of Architecture, Master of Building, Master of Landscape Architecture or Master of Town Planning. Facilities are also available in each school for research towards the degree of Doctor of Philosophy. For details concerning this degree see **Conditions for the Award of Higher Degrees** later in this handbook or write to the Dean.

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## Summary of the Conditions for the Award of a Masters Degree

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1. Every candidate for the degree shall be required to carry out a program of advanced study, to take such examinations, and

to perform such other work as may be prescribed by the Faculty. The program shall include the preparation and submission of a thesis embodying the results of an original investigation or design relative to architecture, building, industrial design, 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 at Honours level 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 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 microfilm or other copying medium.

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## Graduate Courses

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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 Building Management
3. Master of Science (Industrial Design)

4. Master of the Built Environment (Building Conservation)
5. Master of Architectural Design
6. Master of Industrial Design
7. Graduate Diploma in Housing and Neighbourhood Planning

## 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 program may be offered subject to demand. Subjects in the Master of Building Management course are normally timetabled on two evenings and one afternoon per week.

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## Graduate School of the Built Environment

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### Head of School

Professor J.C. Haskell

The aim of the Graduate School is to provide, within the Faculty of Architecture, a centre to promote the inter-disciplinary study of the built environment through research, teaching, publications and expert advice to appropriate authorities, organizations and professions in Australia and Southeast Asia, at a high level of academic excellence, critical objectivity and perceptive innovation.

The School undertakes a range of activities within the area of: acoustics, architectural history, building conservation, health facilities design, industrial design, urban design and continuing education.

## Research

The School currently has active research units working under its control in most of the areas listed above. For more detailed information concerning current research and facilities, contact the Head of School.

## Research Degrees

The School makes available to research students a resource facility covering a wide spectrum of relevant disciplines in which students can follow a largely self-determined program of study, research and practice.

The School tailors individual programs to student needs at both Masters and Doctoral levels. In doing so it is able to call on its own research units and on many resources from within every faculty of the University.

Research may be undertaken towards the award of Doctor of Philosophy (PhD), Master of Architecture (MArch) and Master of the Built Environment (MBEnv).

## Eligibility for Enrolment

The School welcomes professional level graduates in any discipline whose further studies are to be in the area of the built environment and does not restrict its intake to graduates in architecture, building, town planning, landscape architecture or industrial design.

### 1120

## Doctor of Philosophy

### Doctor of Philosophy PhD

This is a research degree requiring an original and significant contribution to knowledge in an approved subject.

### 1121

## Doctor of Philosophy

### Doctor of Philosophy PhD

This degree provides for research work of a specialized and restricted nature. Students individually follow a self-determined program of study and research.

In addition to the general conditions governing the award of the degree of Doctor of Philosophy, the School offers an alternative study program to students already holding the degree of Master in an appropriate discipline.

## Course Structure

The program is normally taken over four full-time sessions (two academic years). In special circumstances where the research project can be properly served and with the concurrence of the Professorial Board, some of this time may be fulfilled on an equivalent part-time basis, but in no case will students spend less than two consecutive sessions full-time in the course.

The program consists of:

### 1. A compulsory core containing:

- |             |  |                 |
|-------------|--|-----------------|
| (1) 39.301G | New Development Studies                                  | 2 credit points |
| (2) 39.302G | Research Studies   | 2 credit points |
| (3) 39.303G | Directed Studies   | 3 credit points |
| (4)         | Preparation and structuring of a doctoral research topic |                 |

This part must normally be completed by the end of the first session of studies.

### 2. Electives selected from a wide range of relevant subjects offered by faculties throughout the University (12 credit points).

Elective studies commence at the beginning of the first session of studies and must normally be completed by the end of the second session of studies.

### 3. Supervised research of a doctoral research topic approved by the Higher Degree Committee of the Faculty of Architecture and the preparation of a thesis. This work can be undertaken only on satisfactory completion of Part 1.

Student progression is evaluated at the end of first session (preliminary evaluation) and at the end of second session (confirmation evaluation). The thesis examination and its procedures conform to the normal University examination practice with regard to doctoral theses.

## 2201 Master of Architecture

### Master of Architecture MArch

Graduates holding the degree of Bachelor of Architecture of the University of New South Wales or other approved university may apply to register for the degree of Master of Architecture by research. General conditions governing registration as a candidate for this degree are given later in this handbook.

## 2240 Master of the Built Environment

### Master of the Built Environment MBEnv

This degree provides for research work of an interdisciplinary nature relevant to the built environment. Graduates holding a minimum four year degree of Bachelor of the University of New South Wales or other approved university in any appropriate discipline may apply to register for the degree of Master of the Built Environment by research. General conditions governing registration for this degree are given later in this handbook.

## 8100 Master of Science (Acoustics) Course

### Master of Science (Acoustics) MSc(Acoustics)

This course provides for graduate study and research in several important aspects of acoustics, such as community noise control, noise control in industry and in buildings, auditorium design and physical acoustics. It is designed primarily for graduates in engineering, architecture, science or building who wish to specialize in acoustics and it is suitable for those who wish to find employment with noise control authorities, or in industry, to practise as consultants, to undertake research or to become part of a multi-disciplinary team in an architectural or engineering practice.

### Admission Requirements

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

An applicant for registration for the degree course of Master of Science (Acoustics) shall have been admitted to the degree of Bachelor of Science (Architecture) or Bachelor of Science (Design Studies) at Honours level, Bachelor of Architecture, Bachelor of Building, Bachelor of Science at Honours level, or Bachelor of Engineering at the University of New South Wales, or an equivalent degree from another university or tertiary institution. In exceptional cases applicants may be registered as candidates for the degree if they submit evidence of such academic and professional attainment as may be approved by the Higher Degree Committee of the Faculty of Architecture.

Notwithstanding any other provisions of these conditions the Higher Degree Committee of the Faculty of Architecture may

require an applicant to demonstrate fitness for registration by carrying out such work and sitting for such examinations as the Higher Degree Committee of the Faculty of Architecture may determine. Candidates with BSc(Arch) or BSc(DesStud) at Honours level, BArch or BBuild degrees are strongly advised to take refresher courses in mathematics and physics before entry to the course. Candidates with BSc at Honours level or BE degrees who wish to specialize in noise control in buildings and auditorium acoustics are also strongly advised to study an introductory construction subject.

### Course Structure

The course is normally taken over four part-time sessions (two academic years) and a student must obtain 34 credit points to graduate. 15 credit points must be obtained by satisfactorily completing a graduate project in an approved topic. 8 credit points must be obtained by completing four compulsory core subjects and the remaining 11 credit points are obtained by the satisfactory completion of formal subjects, which may be chosen to emphasize a particular field of acoustics. The subjects offered in any session will depend on student numbers and interests.

### Course Subjects

		Credit Points	Core/Elective	Usual Session Offered
1.927G	Acoustic Theory	2	Core	S1
39.651G	Mechanical Shock and Vibration	2	Core	S1
39.652G	Noise Control in Industry	4	Elective	S3
39.901G	Acoustic Measuring Systems and Electroacoustics	2	Core	S1
39.902G	Advanced Physical Acoustics	4	Elective	S3
39.993G	The Ear, Hearing and Hearing Conservation	2	Core	S1
39.995G	Community Noise	4	Elective	S2
39.994G	Graduate Project A (pre-requisite 10 credit points)	5	Compulsory	S3
39.996G	Graduate Project-B (pre-requisite 39.994G)	10	Compulsory	S4
39.997G	Auditorium Acoustics	3	Elective	S3
39.998G	Noise Control in Buildings	4	Elective	S2

In addition to these subjects, a total of up to 8 credit points may be obtained by completing other subjects offered by the University of New South Wales subject to the approval of the Head of Graduate School of the Built Environment.

**8130**

## Master of the Built Environment (Building Conservation) Course

**Master of the Built Environment (Building Conservation)**  
**MBEEnv**

This course consists of graduate work in the major areas of building conservation. It is designed for graduates who wish to specialize in the conservation of the built environment by working actively in the preservation, restoration, reconstruction, adaptation or related treatments of existing structures.

### Admission Requirements

The conditions governing registration as a candidate for this course are given later in this handbook. In summary, admission is open to applicants who have completed at least a four-year full-time university course in an appropriate area of an approved discipline.

In certain cases it may be necessary for applicants to complete a program of preparatory subjects set out by the Higher Degree Committee of the Faculty of Architecture, whose decision is influenced by the education and experience of each applicant.

### Course Structure

The minimum duration of the course is two sessions of full-time study or four sessions of part-time study. The availability of the full-time and part-time programs of study will depend upon student demand and the University's resources at that time.

The course comprises 36 credit points, each credit point representing class contact of approximately 14 hours.

Full-time study normally requires an attendance of 18 hours per week while part-time study normally requires attendance of an average of 9 hours per week for the duration of the course.

Most of the work is done in the School, but approved practical experience forms an important component of the course. The program is so arranged that eminent visitors as well as guest lecturers may participate.

Normally, subjects are timetabled on one afternoon and evening, and one other evening each week. In addition to time-tabled commitments, students may occasionally be required to attend for site visits and building inspections.

The requirements for this course include a period of least eight weeks of approved practical experience.

### Course Subject Areas

	Total Contact Hours	Credit Points
Contextual Studies	14	1
Architectural History	42	3
Conservation Management	42	3
Analysis and Documentation	84	6
Conservation Technology	210	15
Graduate Project	112	8
	<u>504</u>	<u>36</u>

### Typical Pattern of Full-time Study

	S1		S2	
	Hrs	Credits	Hrs	Credits
39.101G Contextual Studies	14	1		
39.102G Architectural History	42	3		
39.103G Conservation Management			42	3
39.104G Analysis and Documentation A	56	4		
39.105G Analysis and Documentation B	28	2		
39.106G Conservation Technology A	28	2		
39.107G Conservation Technology B			70	5
39.108G Conservation Technology C	56	4		
39.109G Conservation Technology D			56	4
39.110G Graduate Project	56	—	56	—
			Upon Completion	8
	<u>252</u>	<u>14</u>	<u>252</u>	<u>22</u>



## Typical Pattern of Part-time Study

		S1		S2		S3		S4	
		Hrs	Credits	Hrs	Credits	Hrs	Credits	Hrs	Credits
39.101G	Contextual Studies	14	1						
39.102G	Architectural History	42	3						
39.103G	Conservation Management							42	3
39.104G	Analysis and Documentation A	56	4						
39.105G	Analysis and Documentation B			28	2				
39.106G	Conservation Technology A	28	2						
39.107G	Conservation Technology B			70	5				
39.108G	Conservation Technology C					56	4		
39.109G	Conservation Technology D							56	4
39.110G	Graduate Project			28	—	56	—	28	—
								Upon Completion	8
		<u>140</u>	<u>10</u>	<u>126</u>	<u>7</u>	<u>112</u>	<u>4</u>	<u>126</u>	<u>15</u>

## 8145 Master of Industrial Design Course

**Master of Industrial Design**  
**MID**

## 8146 Master of Science (Industrial Design) Course

**Master of Science (Industrial Design)**  
**MSc(IndDes)**

These courses of graduate study have a common core of subjects in the major areas of industrial design. They are designed for graduates in industrial and environmental design, architecture, engineering, and marketing and business studies who wish to make careers in industrial design or to be involved in industrial design as a part of their career activity, eg, mechanical engineering with industrial design.

The MID degree course is intended for holders of four year industrial design degrees who wish to specialize and develop expertise in particular areas of industrial design. In addition to the common core of subjects, MID degree students are also required to submit a major graduate project, a design theory report and have a greater choice of electives related to their field of specialization.

The MSc(IndDes) degree course is intended for graduates from design fields related to industrial design, such as architecture or engineering, or for graduates from non-design areas, such as marketing, who have satisfactorily completed preparatory studies. The course is designed to adapt and apply the students' existing design knowledge and experience to the methodology and practice of industrial design. The project work is less spec-

ialized and covers a broad range of industrial design problems. The students are required to submit a minor graduate project. There are additional compulsory subjects in this course, with a more restricted range of electives closely related to industrial design.

## Admission Requirements

The conditions governing registration as a candidate for the MSc(IndDes) degree course are given later in this handbook: see below under **Conditions for the Award of Higher Degrees**. In summary, admission is open to applicants who have been admitted to an appropriate degree of at least four years' full-time duration, or its equivalent. For the MID degree course, admission is restricted to applicants who have been admitted to a degree with a 'major' in industrial design of at least four years' full-time duration, or its equivalent. Candidates who have completed part or all of the requirements for the award of the degree of the MSc(IndDes) course may elect to apply for admission to the MID degree course, subject to the recommendation of the School and the approval of the Higher Degree Committee of the Faculty of Architecture.

In certain cases, particularly for applicants from non-design undergraduate courses, it is necessary to complete a qualifying program of preparatory units in industrial design, as prescribed by the Higher Degree Committee of the Faculty. These units are selected from appropriate undergraduate courses. The Committee's decision is influenced by the academic and professional experience of each applicant.

## Course Structure

The minimum duration of both courses is two sessions of full-time study or four sessions of part-time study. The availability of the full-time and part-time programs of study depends upon student demand and the University's resources at that time.

The MID degree course comprises 38 credit points. The MSc(IndDes) degree course comprises 36-38 credit points. One

credit point is normally equivalent to one hour per week for one session. Full-time study normally requires an attendance of approximately 18 hours per week, while part-time study normally requires approximately 9 hours per week for the duration of the course.

The project work for both degree courses, part and full-time, is run simultaneously and is staffed according to the requirements of each project.

Most of the work is undertaken within the School, but industrial visits and experience forms an important component of the course.

The program is so arranged that eminent visitors as well as guest lecturers and designers may participate.

To avoid duplication of classes for full-time and part-time students, subjects are timetabled wherever possible on afternoons and evenings. In addition to timetabled commitments, the studios and laboratories are available during normal University hours for industrial design project work. Occasionally students are required to attend professional and industrial visits and lectures at other institutions.

The requirements for the course include an equivalent period of at least four weeks of approved professional or industrial experience. Part-time students with approved employment are exempt from this requirement.

## Course Subjects

	Credit Points	Usual Session Offered
<b>Common Core</b>		
39.501G Industrial Design Studies	2	S1 S2
39.511G Ergonomics for Industrial Designers	2	S2
39.521G Business Studies for Industrial Designers	2	S1
39.531G Manufacturing Technology	2	S1
39.541G Industrial Experience*	2	*
	<u>10</u>	

### MID only

39.502G Graduate Project (MID)	14	S1 S2
39.512G Design Theory	4	S1 S2
39.522G Industrial Design	4	S1
Approved Electives**	6	
	<u>28</u>	

### MSc(IndDes) only

39.503G Design Media and Communication	2	S1
39.513G Visual Thinking***	2	S1
39.523G Industrial Design A	6	S1
39.533G Industrial Design B	6	S1 S2
39.543G Graduate Project (MSc(IndDes))	8	S2
Approved Electives**	4	
	<u>28</u>	

\*4 week block during recesses. Part-time students in approved employment are exempt.

\*\*Approved electives may be taken from subjects offered in other schools of the University of New South Wales, subject to the approval of the Heads of the Graduate School of the Built Environment and the school offering the subject.

MID electives may be chosen to increase specialist knowledge relevant to the students' theory studies, project report or planned career activities. At least six credits must be taken of which up to four credits may be taken in undergraduate units at half their point value.

MSc(IndDes) electives are taken in approved subjects directly related to the development of the students' industrial design knowledge and skill. At least four credits must be taken of which up to two credits may be taken in undergraduate units at half their point value.

\*\*\*Graduates of visually oriented courses, eg architecture, are normally exempt.

Depending upon course requirements, the availability of University staff and Faculty resources, it may be possible to substitute some existing graduate or undergraduate courses in other faculties for certain subjects of the course. This development would be subject to the approval of the Higher Degree Committee of the Faculty of Architecture and the Heads of the schools offering the courses. Where the credit point of subjects is increased by substitution of subjects from other schools, the requirement for the stated number of credits in elective subjects is correspondingly reduced.

## Typical Full-time Study Patterns for MID and MSc(IndDes)

		Hours per week	
<b>Common Core</b>		<b>S1</b>	<b>S2</b>
39.501G	Industrial Design Studies	1	1
39.511G	Ergonomics for Industrial Designers		2
39.521G	Business Studies for Industrial Designers	2	
39.531G	Manufacturing Technology	2	
39.541G	Industrial Experience*		
		<u>7</u>	<u>2</u>
<b>MID only</b>			
39.502G	Graduate Project (MID)	3**	12**
39.512G	Design Theory	1	3
39.522G	Industrial Design	4	
	Approved Electives	4	2
		<u>12</u>	<u>17</u>
Ten hours per week MID			<u>20</u>

**Common Core**

Hours per week	
S1	S2

**MSc(IndDes) only**

39.503G	Design Media and Communication	2	
39.513G	Visual Thinking***	2	
39.523G	Industrial Design A	6	
39.533G	Industrial Design B	2	4
39.543G	Graduate Project (MSc(IndDes))		8**
	Approved Electives		4
Total Hours per week MSc(IndDes)		17	20

\*A four week period during the recess. Part-time students in approved employment are normally exempt.

\*\*Nominal hours.

\*\*\*Graduates of visually oriented courses, eg architecture, are normally exempt.

**Typical Part-time Study Patterns for MID and MSc(IndDes)****Common Core**

	S1	Hours per week			S4
		S2	S3		
39.501G	Industrial Design Studies	1	1		
39.511G	Ergonomics for Industrial Designers		2		
39.521G	Business Studies for Industrial Designers			2	
39.531G	Manufacturing Technology	2			
39.541G	Industrial Experience*				

**MID only**

39.502G	Graduate Project (MID)		3**	3**	9**
39.512G	Design Theory		2	2	
39.522G	Industrial Design	4			
	Approved Electives				
Total hours per week MID		7	10	10	10

**MSc(IndDes) only**

39.503G	Design Media and Communication	2			
39.513G	Visual Thinking***	2			
39.523G	Industrial Design A		6		
39.533G	Industrial Design B			6	
39.543G	Graduate Project (MSc(IndDes))				8**
	Approved Electives	1	1	1	1
Total hours per week MSc(IndDes)		8	10	9	9

\*A four week period during the recess. Part-time students in approved employment are normally exempt.

\*\*Nominal hours.

\*\*\*Graduates of visually oriented courses, eg architecture, are normally exempt.

**School of Architecture**

The School of Architecture offers facilities for research and welcomes enquiries from students who wish to pursue programs for the degrees of Master of Architecture (MArch) or Doctor of Philosophy (PhD). Prospective students should consult the Head of School to discuss their research interests prior to making a formal application.

The School also offers a course leading to the award of Master of Architectural Design (MArchDes). Details of the entrance requirements and course content are given later in this handbook.

**1130****Doctor of Philosophy****Doctor of Philosophy  
PhD**

This is a research degree requiring an original and significant contribution to knowledge in an approved subject.

## 2200 Master of Architecture

### Master of Architecture MArch

This degree is available to part-time and external candidates in addition to full-time candidates. It requires the submission of a thesis embodying the results of an original investigation or design.

## 8140 Master of Architectural Design Course

### Master of Architectural Design MArchDes

The course is centred on the essential architectural activity, the conceptual design-synthesis of buildings to masterly accomplishment.

It aims at an embracing and thorough synthesis of all relevant influences arising from the inanimate (physical) and animate (human) context into which the building is to be placed. These subjects establish the nature of the course as a whole: they involve theory, research and studio practice crystallized into a *project* which is assessed at the conclusion of each semester.

The central project is supported by elective subjects.

## Admission Requirements

The general conditions governing registration as a candidate for the degree of Master of Architectural Design are given later in this handbook but the attention of intending applicants is directed to the following specific requirements:

1. The standard of admission is the BArch degree at Honours level of the University of New South Wales or any other approved university followed by at least one year of professional practice.
2. Graduates with a BArch degree at Pass level may be admitted only on the recommendation of the Head of School and the confirmation of the Faculty.
3. In special circumstances a person may be permitted to register as a candidate for the degree if evidence is submitted of such academic and professional attainments as may be approved by the Faculty on the recommendation of its Higher Degree Committee.
4. Admission is selective for the places available based on the academic record of applicants and the quality and extent of their professional practice.

## Course Structure

The course is structured on a two-semester credit-point system. It is offered in two full-time semesters — (each one of a duration of 14 weeks), to be taken either in a single academic year or in two consecutive academic years — the first semester's work in the first session of Year 1, the second semester's work in the second session of Year 2.

Full-time study is the normal pattern for this type of course; however, in particular circumstances the first full-time semester

may be replaced by two part-time semesters with the approval of the Head of School.

Each semester's work is equivalent to a minimum of 15 credit points totalling to a minimum of 30 credits for the award of the degree. Each credit point is approximately equivalent to 1 hour/week/semester attendance of the course.

Each student's program is to consist of the compulsory core subject equivalent to 67 per cent of the total credit points in the course, and of a selection of elective subjects equivalent to the other 33 per cent.

## Course Program

	Credit points	
	S1	S2
Architectural Synthesis 1 and 2 (core)	9	11
Electives	6	4
	15	15
Course Award		30

### Core Subjects

	Credit points
11.901G Architectural Synthesis 1	9
11.902G Architectural Synthesis 2	11

### Electives

	Credit points
11.930G Architectural Theory	2
11.931G Ideologies of Modern Architecture	2
11.932G Architectural Impact Studies	2
11.933G Cultural Influences in Civic Design	2
11.934G Structural and Architectural Space	2
11.935G Design for Industrialized Buildings	2
11.936G Resources for Buildings	2
35.296G Construction Techniques	3
35.297G Developments in Building Materials	2
35.426G Building Services	3
35.390G Co-ordination of Structures and Services	2
35.360G Computer Techniques and Applications	3
35.361G Computer Techniques and Applications 2	2
35.355G Computer Graphics	2
35.381G Building Physics	2
35.382G Building Psychophysics	2
35.330G Cost Planning and Analysis	2
35.460G Applied Building Economics	2
35.470G Analysis and Valuation Property	2
36.924G Urban Sociology	2
39.997G Auditorium Acoustics	3

**Subject to approval of the appropriate Head of School and the Head of School Architecture, students may enrol in other graduate subjects offered by the Faculty:** subject to the same conditions, students may also enrol in undergraduate subjects offered in the University but only to the maximum contributing total of 4 credit units calculated at half their value as an undergraduate subject.

## **2206 Master of Science (by Research)**

### **Master of Science MSc**

The conditions governing the award of the degree of Master of Science by research are set out in the next section.

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## **School of Building**

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The School of Building has an active program of research and welcomes enquiries from student who wish to pursue programs for the degrees of Master of Building (MBuild) or Doctor of Philosophy (PhD). Graduates enrolled in these courses need not necessarily be building graduates. Prospective students should consult the Head of School to discuss their research interests prior to making a formal application.

The School also offers each year a series of short non-credit mid-career courses\* which are designed to provide practical on-going education for experienced members of the building industry.

\*For further information, contact Dr. J. Hutcheson, Continuing Education Co-ordinator in the School of Building.

## **1140 Doctor of Philosophy**

### **Doctor of Philosophy PhD**

This is a research degree requiring an original and significant contribution to knowledge in an approved subject.

## **2210 Master of Building**

### **Master of Building MBuild**

This degree is available to part-time and external candidates in addition to full-time students. It requires the submission of a thesis embodying the results of an original investigation or design relative to building.

## **8115 Master of Project Management Course**

### **Master of Project Management MProjMgt**

Course Co-ordinator  
Mr. Graham Levido

This four-session course has been designed to provide opportunities for advanced study in project management and building economics. It allows for study in two interrelated areas:

1. Planning and management aspects of a design or construction organization, including programming, evaluation, costing, performance feedback, feasibility and management of properties.
2. Operations and control aspects of a design or construction organization, concentrating on estimating and cost analysis, contract or design administration and building economics.

The course aims at attracting the qualified practitioner who wishes to widen his/her knowledge and understanding of construction planning, operation and economics related to project management.

## **Admission Requirements**

The general conditions governing registration as a candidate for the degree Master of Project Management are given later in this handbook but the attention of intending applicants is directed to the following specific requirements:

1. Applicants will have been admitted to the degree of Bachelor of Architecture or Bachelor of Building in the University of New South Wales or an equivalent degree in another approved university and have appropriate industrial experience.
2. Graduates with a Bachelor of Architecture or Engineering or other four year degree, who have appropriate experience in building may be admitted to the course depending on the individual case.
3. Eligible applicants may be required to complete a program of preparatory or concurrent study set out by the Head of the School of Building whose decision will be influenced by the education and experience of each applicant.

Graduate experience and involvement in the building industry is considered an advantage in the selection of candidates.

## **Course Structure**

The Master of Project Management is a formal four session part-time degree course comprising 12 subjects. The subject program comprises studies in management, computations, building economics, operations planning, contract law and documentation. A student must successfully complete all the subjects in one session before progressing to the next session. Students with a grade average of Credit or better in their course may choose to write a Project Report to qualify for the degree with honours.

## **Course Program**

Subjects are offered on a four-session cycle. Subjects are normally timetabled on two evenings and one afternoon per week. Except in exceptional circumstances, a student is required to be concurrently enrolled in all subjects in a given session to allow for syllabus integration between subjects.

### **Session One**

- 35.101G Economics and Finance
- 35.102G Management Framework
- 35.103G Computers Management

## **Session Two**

- 35.201G Managerial Economics
- 35.203G Project Planning and Control
- 35.204G Personnel Management Techniques

## **Session Three**

- 35.301G Project Feasibility
- 35.302G Building Contracts
- 35.303G Management of the Design and Construction Process

## **Session Four**

- 35.401G Management of Buildings
- 35.402G Project Applications
- 35.403G Process Applications

## **Session Five and Six**

- 35.100G Project Report (full-time or part-time)

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## **School of Landscape Architecture**

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**1160**

### **Doctor of Philosophy**

**Doctor of Philosophy  
PhD**

This is a research degree requiring an original and significant contribution to knowledge in an approved subject.

**2220**

### **Master of Landscape Architecture**

**Master of Landscape Architecture  
MLArch**

This degree is available to part-time and external candidates in addition to full-time candidates. It requires the submission of a thesis embodying the results of an original investigation or design.

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## **School of Town Planning**

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**1150**

### **Doctor of Philosophy**

**Doctor of Philosophy  
PhD**

This is a research degree requiring an original and significant contribution to knowledge in an approved subject.

**2230**

### **Master of Town Planning (by Research)**

**Master of Town Planning  
MTP**

The Master of Town Planning degree is a research degree awarded on the basis of a thesis embodying the results of an original investigation. The research is to be undertaken over four sessions, but the period may be reduced in certain circumstances. The conditions governing the award of the degree are set out later in this Handbook.

## **Professional Recognition**

The degree 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.

## **Course Work**

Candidates with a primary degree in a subject other than that of town planning may be required to complete an additional program of study. The actual program is determined by the Higher Degree Committee of the Faculty of Architecture on the recommendations of the Head of the School of Town Planning. Candidates should contact the Head of the School about the guidelines used in formulating such a program.

## Graduate Study

# Subject Descriptions

## Identification of Subjects by Number

A subject is defined by the Professional Board as 'a unit of instruction approved by the University as being a discrete part of the requirements for a course offered by the University'.

Each approved subject of the University is identifiable both by number and by name as this is a check against nomination of subject other than the one intended.

Subject numbers are allocated by the Registrar and the system of allocation is based on the following guidelines:

1. The authority offering the subject, normally a School of the University, is indicated by the number before the decimal point.
2. Each subject number is unique and is not used for more than one subject title.
3. Subject numbers which have previously been used are not used for new subject titles.
4. Graduate subjects are indicated by a suffix 'G' to a number with three digits after the decimal point. In other subjects three or four digits are used after the decimal point.

Subjects taught are listed in full in the handbook of the faculty or board of studies responsible for the particular course within which the subjects are taken. Subject descriptions are contained in the appropriate section in the handbooks.

The **identifying numerical prefixes** for each subject authority are set out on the following page.

**Servicing Subjects** are those taught by a school or department outside its own faculty. Their subject descriptions are published in the handbook of the faculty which originates the subject and are also published in the handbook of the Faculty in which the subject is taught.

The following pages contain descriptions for most of the subjects offered for the courses described in this book, the exception being the General Studies subjects. For General Studies subjects see the **General Studies Handbook** which is available free of charge.

### HSC Exam Prerequisites

Subjects which require prerequisites for enrolment in terms of the HSC Examination percentile range, refer to the **1978 and subsequent Examinations**.

Candidates for enrolment who obtained the HSC in previous years or hold other high school matriculation should check with the appropriate school on what matriculation status is required for admission to a subject.

### Information Key

The following is the key to the information which may be supplied about each subject:

**S1** (Session 1); **S2** (Session 2)

**F** (Session 1 *plus* Session 2, ie full year)

**S1** or **S2** (Session 1 *or* Session 2, ie choice of either session)

**SS** (single session, but which session taught is not known at time of publication)

**CCH** class contact hours

**L** (Lecture, followed by hours per week)

**T** (Laboratory/Tutorial, followed by hours per week)

**hpw** (hours per week)

**C** (Credit *or* Credit units)

**CR** (Credit Level)

**DN** (Distinction)

School, Department etc	Faculty	Page
*Subjects also offered for courses in this handbook		
1 School of Physics*	Science	
2 School of Chemistry	Science	
3 School of Chemical Engineering and Industrial Chemistry (New Course)	Applied Science	
4 School of Materials Science and Engineering	Applied Science	
5 School of Mechanical and Industrial Engineering	Engineering	
6 School of Electrical Engineering and Computer Science	Engineering	
7 School of Mines (Mineral Processing and Extractive Metallurgy and Mining Engineering)	Applied Science	
8 School of Civil Engineering	Engineering	
9 School of Fibre Science and Technology (Wool Science)	Applied Science	
10 School of Mathematics	Science	
<b>11 School of Architecture</b>	<b>Architecture</b>	
12 School of Psychology	Biological and Behavioural Sciences	
13 School of Fibre Science and Technology (Textile Technology)	Applied Science	
14 School of Accountancy	Commerce	
15 School of Economics	Commerce	
16 School of Health Administration	Professional Studies	
17 Faculty of Biological and Behavioural Sciences	Biological and Behavioural Sciences	
18 School of Mechanical and Industrial Engineering (Industrial Engineering)	Engineering	
<b>21 Department of Industrial Arts</b>	<b>Architecture</b>	
25 School of Mines (Applied Geology)	Applied Science	
26 Department of General Studies	Board of Studies in General Education	
27 School of Geography	Applied Science	
28 School of Marketing	Commerce	
29 School of Surveying	Engineering	
30 Organizational Behaviour Unit	Commerce	
31 School of Optometry	Science	
32 Centre for Biomedical Engineering	Engineering	
34 Faculty of Arts	Arts	
<b>35 School of Building</b>	<b>Architecture</b>	
<b>36 School of Town Planning</b>	<b>Architecture</b>	
<b>37 School of Landscape Architecture</b>	<b>Architecture</b>	
38 School of Biological Technologies (Food Science)	Applied Science	
<b>39 Graduate School of the Built Environment</b>	<b>Architecture</b>	
40 Professorial Board		
41 School of Biochemistry	Biological and Behavioural Sciences	

School, Department etc	Faculty	Page
*Subjects also offered for courses in this handbook		
42 School of Biological Technologies (Biotechnology)	Applied Sciences	
44 School of Microbiology	Biological and Behavioural Sciences	
45 School of Biological Science	Biological and Behavioural Sciences	
46 Faculty of Applied Science	Applied Science	
47 Centre for Safety Science	Engineering	
48 School of Chemical Engineering and Industrial Chemistry (Old Course)	Applied Science	
49 School of Biological Technologies	Applied Science	
50 School of English	Arts	
51 School of History	Arts	
52 School of Philosophy	Arts	
53 School of Sociology	Arts	
54 School of Political Science	Arts	
55 School of Librarianship	Professional Studies	
56 School of French	Arts	
57 School of Theatre Studies	Arts	
58 School of Education	Professional Studies	
59 Department of Russian Studies	Arts	
60 Faculty of Arts	Arts	
61 Department of Music	Arts	
62 School of Science and Technology Studies	Arts	
63 School of Social Work	Professional Studies	
64 School of German Studies	Arts	
65 School of Spanish and Latin American Studies	Arts	
66 Subjects Available from Other Universities		
67 Faculty of Science	Science	
68 Board of Studies in Science and Mathematics	Board of Studies in Science and Mathematics	
70 School of Anatomy	Medicine	
71 School of Medicine	Medicine	
72 School of Pathology	Medicine	
73 School of Physiology and Pharmacology	Medicine	
74 School of Surgery	Medicine	
75 School of Obstetrics and Gynaecology	Medicine	
76 School of Paediatrics	Medicine	
77 School of Psychiatry	Medicine	
78 School of Medical Education	Medicine	
79 School of Community Medicine	Medicine	
80 Faculty of Medicine	Medicine	
81 Medicine/Science/Biological Sciences	Medicine	
85 Australian Graduate School of Management	AGSM	
90 Faculty of Law	Law	
97 Faculty of Engineering	Engineering	



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## Architecture

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### 11.901G Architectural Synthesis 1 C9

### 11.902G Architectural Synthesis 2 C11

Theory, research and studio practice, in the form of graduate projects, applied to general architectural themes of high priority in the contemporary context. After thorough theoretical foundation and research analysis the theme is adapted to a specific and concrete situation to achieve an architectural synthesis of all relevant influences arising from the physical and human context.

### 11.930G Architectural Theory C2

A general and theoretical approach to synthesis in art and architecture considering sensible and intelligible influences in the context of history and of the present age.

### 11.931G Ideologies of Modern Architecture C2

A critical and analytical review of the ideologies affecting the developments of and finding expression in the various phases of modern architecture from its beginnings to our present day.

### 11.932G Architectural Impact Studies C2

Examination of a number of selected buildings in the historical and in the contemporary milieu regarding their impact upon the animate and inanimate context of which they become an organic part. *Cultural context*: purpose and meaning of the building, its mode of expression, and effect upon the cultural existing pattern. *Communication context*: the effect of the building upon communication and exchange of experience and goods. *Urban context*: character, style, shape, proportion, material, colour of the building and its effect upon the urban scene. *Microclimatic context*: the effect of the building upon sunshade patterns, wind, heat, noise, air, etc. *Resource context*: the effect of the building upon the material, manpower, energy resources of the community and its overall economic effect.

### 11.933G Cultural Influences in Civic Design C2

An integrated examination of spiritual, mental (psychological, social, political, legislative, administrative) technological, economic, geographic and climatic influences affecting the character, grouping and relationships of buildings on a civic scale. Case studies in the historical and in the contemporary context.

### 11.934G Structure and Architectural Space C2

The qualitative role of structural systems in the determination of architectural mass and space. The structure affecting architectural unity, rhythm, variation, etc. The influence of loading patterns and material properties on structural shapes. Structural exhibitionism. Morphological studies of structural systems in nature. The geometrical order of structures. Studies of struc-

tural systems in historical and contemporary context with a special emphasis on their effect on architectural space. The design of structural systems for spatial articulation.

### 11.935G Design for Industrialized Building C2

Methods of industrialization in the field of building, considered from the general and simple to the specific and complex. Equipment and capital investment needed for equipment, problems of economical return. Standardization and flexibility. Component design in homogeneous and heterogeneous materials for simple and complex applications. Design principles for industrialization. Psychological aspects of acceptance: repetition, monotony and rigidity compared to variation, rhythm and flexibility.

### 11.936G Resources for Buildings C2

Sources of information on material, technological manpower and energy resources for building on a regional, national and global scale. Assessment of resources of a given regional and national economy. Infrastructure. Pattern of change and future forecasts. The energy-equivalents of processed building materials, of placed building components, of servicing methods. The energy equivalence and prime cost. Recycling of building components. Energy and resource conservation on a short and long-term basis. The problems of energy and conservation and resource-recovery in a given system.

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## Building

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### 35.100G Project Report

Students with a grade average of Credit or better in their course work may choose to write a Project Report to qualify for the degree with honours. This will require a specialized individual study taken under staff supervision, with the objective of allowing the student to expand knowledge in some aspect of building management.

The Project Report may be taken full-time over one session or part-time over two sessions following the satisfactory completion of all course work subjects. As part of the examination of the Project Report, students will be required to make an oral presentation and defence of the subject matter covered in their report.

### 35.101G Economics and Finance S1 L2 T1

Economic modelling; a model of the Australian economy; economic targets and instruments; fiscal and monetary policies; the structure of the building industry; productivity and competition; land use theory; the structure of the financial market; sources of finance; costs of finance. Systems for effective management: types of systems and their characteristics. Communication and information systems. The changing environment and practice of management.

### **35.102G The Management Framework S1 L2 T1**

Definition of management, its functions, authority and responsibility; the manager as administrator, managerial and social scientist, entrepreneur and psychologist. The manager and ethics. Scientific management: theory of organisation and management; the human relations approach. Organisational effectiveness: objectives, strategies, policies and measures of performance. The functions of management: planning, organising and control. The decision making process—decision theory, decision trees.

### **35.103G Computers in Management S1 L2 T1**

The Nature of Information: qualitative v quantitative; numbers v text v graphics; precise v indicative. Useful application packages: spreadsheet programs; data base systems; word processing; construction scheduling; finance control. Computer graphics: operating systems; languages, such as basic; data communications and networks. Computer system acquisition: hardware, maintenance, environment, software, ongoing support, hardware and software maintenance.

### **35.201G Financial Analysis S2 L4**

Topics included are: discounted cash flow technique; time series and forecasting distributions and probabilities; portfolio management theories.

### **35.203G Project Planning and Control Techniques S2 L2 T1**

Operations analysis—operation research techniques; concept of a model; optimization. Critical path method—arrow and precedence diagrams; critical paths and floats; project control time-cost trade offs; basic overlapping networks; resource allocation and levelling. Review of other planning techniques—linear programming; work study; line of balance; multi-activity charting; PERT. Survey of computerised planning systems. Value engineering and its applications.

### **35.204G Personnel Management Techniques S2 L2 T1**

Australian labour market, recruitment and remuneration and training. Interpersonal relationships in the work place, motivation and negotiation, group behaviour and individual behaviour. Industrial relations in Australia with particular emphasis on the building industry. Statutory responsibilities of employing labour (safety, welfare, superannuation, awards, equal opportunity, etc.).

### **35.301G Project Feasibility S1 L2 T1**

Design Feasibility: feasibility studies; cost planning practice; economics of services in building; maintenance methods and costs. Land Economics: land resources; market and location of urban land uses; spatial and urban growth; property and investment markets; economics of development; investment appraisal; environmental impact studies.

### **35.302G Building Contracts S1 L2 T1**

Acts, regulations, codes and ordinances; selection and preparation of contract documents for management, design and con-

struction of building projects; legal and insurance aspects of alternative forms of contract; procedural and management aspects of alternative forms of contract; head contracts and sub-contracts; contract claims and disputes; international contracting.

### **35.303G Management of the Design and Construction Process S1 L2 T1**

Organisation of projects; facility procurement options; management of the design process; briefs—clients and consultants; Cost management fundamentals; project team building and motivation; application of value management; management of the design and construction overlap; Legal aspects of project management; project control systems.

### **35.401G Management of Buildings S2 L2 T1**

Maintenance and obsolescence; economics of refurbishment; marketing; tenancy management; building control and security systems; management of commercial, retail, industrial and large scale residential complexes; legal aspects of tenancy management; energy conservation; taxation law and implications.

### **35.402G Project Applications S2 L2 T1**

Introduction to case studies; the structure, purpose and value of case studies. Detailed analysis of each phase of the project case study: economic planning and feasibility; design, design management buildability; construction, program, process, cost, personnel management. Staff presentation of case studies. Tutorial sessions. Presentation of student case studies.

This subject relies on the involvement of major construction organisations who are prepared to permit the detailed analysis of past projects. A significant potential benefit for participating organisations in providing a thorough, structured review of their project.

It is proposed that company involvement should extend to senior staff being involved in the critique and assessment process.

### **35.403G Process Applications S2 L2 T1**

Topics vary from year to year to cover main industry-wide issues. They could include: industrial relations (a specific issue); superannuation; labour training, apprenticeship; safety; the use of prefabricates; formwork sophistication; project communication; contractual trends; structure of the materials supply sector.

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## **Town Planning**

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### **36.934G Introduction to Planning (G) SS L3**

Structure of towns, cities and regions. Needs and activities of people. Land use, transport and service systems. Planning the-

ories, aims and objectives. Planning at different scales and in different time frames. Planning as a process. Planning studies, information systems, statistics, research methodology, computer applications.

### 36.935G Local Planning 1 (G)

L3

Theories at the local level: neighbourhood and precinct concepts, local community structure, survey and analysis. Subdivision and housing layout, basic transportation planning and management, street design, landscaping, utilities. Practice of planning new neighbourhoods and proposals for conservation and redevelopment.

### 36.936G Local Planning 2 (G)

SS L3

Theories at district/new town level. Structure, survey and analysis. Environmental and social analysis. Elements, industrial and commercial areas, transport systems, community services, open space, institutional land use. Integrated planning: alternatives, impacts, evaluation. Costing and programming. Implementation and development management.

### 36.937G Regional Planning 1 (G)

SS L3

Theories at the metropolitan level. Accessibility, equity, economics, politics. Structure and organization, land use and transportation relationships. Forecasting, alternative futures. Incremental decision making. Integrating local and metropolitan planning.

### 36.938G Regional Planning 2 (G)

SS L3

Theories at the regional level. Location theory, strategies of regional policy. Trends in tourist, rural and extractive industries. Ecological land use planning, recreation and conservation. Environmental impact and assessment.

### 36.939G Law and Administration Planning (G)

SS L3

Theory and practice of statutory planning. The legal framework. The administrative framework. Environmental planning and related legislation. Techniques and procedures in transforming policies and proposals into statutory instruments. Development control. Planning appeals and the operation of the Land and Environmental Courts.

### 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.

### 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.

### 36.924G Urban Sociology

A sociological approach to the study of urban phenomena. Lectures deal with both methodological and theoretical issues relating to the study of urban social structures. Seminars provide students with the opportunity to examine critically a number of community studies. A research project is undertaken by each student.

### 36.925G Housing Law and Administration

Housing acts and regulations at Commonwealth, State and local levels. Related town planning acts ordinances. Commonwealth-State Housing Agreements. The organization and administration of public housing authorities. Significant overseas housing policies.

### 36.945G The Organization of Town Planning

Aims, means and consequences of town planning in Australia. *Aims of planning*: organization of the environment in respect of space and time, interrelationship of functions, equity of resource distribution, human satisfaction, the nature of the planning approach. *Means of planning*: overview of the planning process, laws related to planning, planning assessment procedures, environmental management at different levels, decision-making processes — financiers', firms' and private decisions, changes in public values, public participation, political and economic constraints. *Consequences of planning*: illustrative case studies, evaluation of planning methodology and procedures.

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## Graduate School of the Built Environment

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Not all graduate course subjects are necessarily offered in any one year.

### 39.101G Contextual Studies

S1

The scope and international context of conservation. History, concepts and philosophies of the discipline. Definition of conservation processes, including preservation, restoration, rehabilitation, reconstruction, alteration, repair, adaptation and reuse, infill, urban conservation. Conservation as a heritage consideration, including the criteria for selecting, listing and classifying structures; as a non-heritage consideration, including aspects of economics and construction; and as a planning, landscape and townscape consideration. The current legal framework. Government, semi-government and community conservation organizations and their roles.

### 39.102G Architectural History

S1

The rationale, investigation and interpretation of architectural history. The cause-and-effect relationships, particularly social, underlying architecture. Influences upon Australia from other countries. Detailed studies of selected aspects of architectural and building history, mainly Australian. Traditional technology. Development of technology and the manifestation of style. Histories of selected building types, methods, materials and finishes.

### 39.103G Conservation Management

S2

Environmental psychology and conservation. Individual, group and community processes and responsibilities. Public policy and public opinion. The organization of conservation treatments and processes, projects, and procedures. Professional, contractual and legal roles and responsibilities. Evaluation of historic and non-historic old buildings and their sites. Feasibility and economic considerations. Revolving funds. Acts and ordinances. Labour and materials resources. Model management plans. Case studies.

### 39.104G Analysis and Documentation A

S1

Interpretation of extant structures. Introduction to historical, industrial and structural archaeology. Research methodology. Comparative analysis, typologies and surveys. Case studies.

### 39.105G Analysis and Documentation B

S2

Preparation of documentary studies: measurement, photography, reportage. Photogrammetry and its applications.

### 39.106G Conservation Technology A

S1

The integrity of old buildings and their environments, including planning, landscape and architectural considerations. Effects of acts and ordinances.

### 39.107G Conservation Technology B

S2

Identification, understanding and diagnosis of deterioration in traditional structure, construction, decoration and building environments. Development of general techniques for preservation, restoration, reconstruction and adaptation. Comfort criteria and other functional considerations.

### 39.108G Conservation Technology C

S1

*Prerequisite:* 39.107G.

Policies and techniques appropriate to preservation, restoration, reconstruction and adaptation of heritage structures. Integration of new services and functions. Case studies.

### 39.109G Conservation Technology D

S2

*Prerequisite:* 39.107G.

Policies and techniques appropriate to adaptive reuse and other treatments of non-heritage structures. Integration of new services and functions. Case studies.

### 39.110G Graduate Project

F

An appropriate conservation topic from any apposite area, including such fields and historical archaeology, documentation, legislation, economics, technology, or a specific building restoration project. Conditions governing submission of the Project Report appear in the Calendar.

### 39.301G New Development Studies

S1 T2

Seminar group study in new ideas, activities and resources which affect the future development of research, education and practice in the man-made environment.

### 39.302G Research Studies

S1 T2

Research viewed within a framework of priorities, policies, and interdependencies including case studies, resources, methodology and the preparation of research proposals.

### 39.303G Directed Studies

S1 T2

The conduct and report of findings of a short research project in the area of the student's concentration designed to meet the individual's needs and interests and supportive to the major research topic.

### 39.501G Industrial Design Studies

F

*Prerequisite:* Nil.

**1.** The objectives and methods of graduate study in industrial design: contemporary industrial design trends, the relationship between academic and practice objectives, the relationship of industrial design methodology and research techniques to those of other disciplines at the University. **2.** A diverse range of current professional and theoretical interests, design and design related activities in Australia and overseas, current ideologies and historical assessments. Seminars are given by students, theorists, and practitioners in design and design related areas.

### 39.502G Graduate Project (MID)

F

*Co-requisite:* 39.522G.

A project within the practice areas of industrial design, selected by the student subject to the approval to the School; conducted within an approved methodology. Documentation of the methodology, research strategy and techniques, monitoring of the design process, resultant design, and evaluation of the methodology, research and final design. Students should give consideration to the School's specialist areas.

### 39.503G Design Media Communication

S1

*Prerequisite:* Nil.

The major two and three dimensional media and computer techniques are analysed and demonstrated within the context of industrial design problem solving: orthographic techniques, the Australian Engineering Drawing Standard, graphic art processes, photography, current rendering and illustration techniques, modelling in automotive clay, plastic sheet and rigid

foams, timbers and metals. The current state of computer aided design as well as its potential in design and the restructuring of engineering decision-making and drafting. Particular emphasis given to each method's role in problem analysis and communication at the concept, detail and final design stages. The social and physiological aspects of communicating design in industry are also examined.

### 39.511G Ergonomics for Industrial Designers

*Prerequisite:* Nil.

Objectives, methodology and research techniques of ergonomics. Man/machine, interaction, human perception and performance, anthropometrics, product evaluation, the establishment of ergonomic parameters in product design and the application of ergonomics in design, the interrelationship of ergonomics and industrial design in the product development process. Students carry out laboratory experiments related to project work and also contribute to the development of a data bank.

### 39.512G Design Theory

**F**

*Prerequisite:* 39.501G

Research into a theory aspect of industrial design, selected by the student subject to the approval of the School, in the general area of design and design related studies. Students should give consideration to the School's specialist areas. The study may be taken in product design but should not be directly linked to studio project work being undertaken by the student.

### 39.513G Visual Thinking

**S1**

*Prerequisite:* Nil.

Visual language, media, problems and problem solving methods. The relationship between visual thinking and creative processes. Studies are undertaken in two and three dimensions and are developed within the context of art and design.

### 39.521G Business Studies for Industrial Designers

*Prerequisite:* Nil.

The theory and practice of business and industrial management, and marketing. Its application in the product development process and the relation of the process to other business and industrial objectives. Special reference to the Australian industrial context and potential developments resulting from technological and socio-economic change. Professional practice and the management of design organizations in the general context of business and industrial management.

### 39.522G Industrial Design

**S1**

*Co-requisite:* 39.501G.

Industrial design project work intended to integrate the student's previous experience and the course units in preparatory work for the Graduate Project. A part of the course may be undertaken on a group basis.

### 39.523G Industrial Design A

**S2**

*Co-requisite:* 39.501G.

Project work designed to introduce industrial design research and studio methodologies. Studies undertaken within a broad range of product areas and related to the concurrent course work.

### 39.531G Manufacturing Technology

**S1**

*Prerequisite:* Nil.

Industrial processes and materials, production costing and changing production economics. Objectives and structures of the engineering professions and their integration with industrial design in the product development process. Students assist in the development of a data bank.

### 39.533G Industrial Design B

**S2**

*Co-requisite:* 39.523G.

Advanced project work combining the research and practice methodologies of industrial design in product research, development and design, preparatory to undertaking the Graduate Project.

### 39.541G Industrial Experience

*Prerequisite:* Enrolment in one of the degrees.

A four week period of approved industrial experience undertaken by full-time students in the mid-year recess and by part-time students in either the mid-year or summer recess. The period is intended to give students first hand interaction with industrial and commercial operations. Normally students are expected to be involved in design activities, however involvement in production, engineering, management and marketing is also considered. Part-time students in approved employment are exempt.

### 39.543G Graduate Project (MSc(IndDes))

**F**

*Co-requisite:* 39.533G

A project within the practice areas of industrial design, proposed by the student in consultation with the School and conducted within an approved methodology; documentation of the methodology, research strategy and techniques, monitoring of the design process, resultant design, and evaluation of the methodology, research and design.

### 39.651G Mechanical Shock and Vibration

**S1 L1T1 C2**

*Prerequisite:* Nil.

Vibrating systems, strings, rods, beams, plates, shells; radiation characteristics of noise sources; random vibration; structures; fatigue; filters, isolators, attenuators, dampers; impedance.

### 39.652G Noise Control in Industry

**S1 L2T2 C4**

*Prerequisite:* Nil.

Hearing conservation and community noise; standards and regulations; industrial noise sources; mechanical noise, electrical

machinery, aerodynamic noise, jets, ventilation system noise, combustion noise, vibration; noise-reduction techniques: transmission and insertion loss; absorbers; impedance mismatch, vibration isolation; enclosures, barriers; room acoustics; practical measurement of sound power, sound pressure and directivity.

### 39.901G Acoustic Measuring Systems and Electroacoustics S1 L2 C2

*Prerequisite:* Nil.

Transducers; microphones; amplifiers; loudspeakers; filters, recorders, pick-ups; noise generators; acoustic measuring instruments. Sound reinforcement systems; ambiophony; assisted resonance. Special requirements for translation, language laboratories.

### 39.902G Advanced Physical Acoustics S1 L3T1 C4

*Prerequisite:* Nil.

Vibrating systems: coupled oscillators, beams, membranes, plates, resonators, acoustic filters, analogs, analogue 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, sonic and ultrasonic measurement techniques, relation to properties of materials.

### 39.908G Community Noise Control S1 L1T1 C2

Introduction; sound and sound propagation, sound power, sound pressure, decibels; sound perception, psychoacoustics loudness, annoyance, phons and dB(A); hearing conservation; acoustic measuring and analysing instruments — sound level meters, filters, analysers, recorders; sound sources; community noise assessment; the NSW Noise Control Act; practical exercises in sound recording, analysis and assessment; noise control — source noise reduction, use of barriers, enclosures, distance, sound absorbing materials; sound transmission through building elements; noise components of environmental impact statements.

### 39.993G The Ear, Hearing and Hearing Conservation S1 L1T1 C2

*Prerequisite:* Nil.

Physiological and psychoacoustic factors in sound perception; discrimination, masking; loudness and annoyance; subjective scales and units; hearing threshold shift; damage risk criteria, hearing conservation programs and audiometry; standards and regulations.

### 39.994G Graduate Project A S1 C5

*Prerequisite:* 10 credit points.

An individual research project on an approved topic in acoustics; preliminary report.

### 39.995G Community Noise S2 L2T2 C4

*Prerequisite:* Nil.

Sources of community noise; sound propagation out of doors; barrier theory; road, rail and air transportation noise; land-use zoning; measurement and assessment of community noise annoyance; standards, acts and regulations.

### 39.996G Graduate Project B S2 C10

*Prerequisite:* 39.994G.

An individual research project on an approved topic in acoustics; final report.

### 39.997G Auditorium Acoustics S1 L2T1 C3

*Prerequisite:* Nil.

Subjective and objective criteria for speech and music; speech intelligibility; characteristics of musical sources; reverberation theory, diffusion; steady-state and transient room response; design methods including graphic and model analysis; sound reflectors; sound absorbents.

### 39.998G Noise Control in Buildings S2 L2T2 C4

*Prerequisite:* Nil.

Airborne and impact sound transmission theory and measurement; vibration isolation; single, multiple-leaf and composite partitions; ventilation, plumbing and services noise control; criteria; regulations and standards.

## Servicing Subject

Servicing subjects are those taught within courses offered by other faculties.

For further information regarding the following subject see the Applied Science Handbook.

**Graduate Study**

# Conditions for the Award of Higher Degrees

Rules, regulations and conditions for the award of first degrees are set out in the appropriate **Faculty Handbooks**.

For the list of undergraduate courses and degrees offered see **Disciplines of the University: Faculty (Undergraduate Study)** in the Calendar.

The following is the list of higher degrees and graduate diplomas of the University, together with the publication in which the conditions for the award appear.

For the list of graduate degrees by research and course work, arranged in faculty order, see **Disciplines of the University: Table of Courses (by faculty): Graduate Study** in the Calendar.

For the statements **Preparation and Submission of Project Reports** and **Theses for Higher Degrees and Policy with respect to the Use of Higher Degree Theses** see the Calendar.

## First Degrees

## Higher Degrees

Title	Abbreviation	Calendar/Handbook
Doctor of Science	DSc	Calendar
Doctor of Letters	DLitt	Calendar
Doctor of Laws	LLD	Calendar
Doctor of Medicine	MD	Calendar Medicine
Doctor of Philosophy	PhD	Calendar and all handbooks
Master of Applied Science	MAppSc	Applied Science
Master of Architectural Design	MArchDes	Architecture
Master of Architecture	MArch	Architecture

## Higher Degrees

**Higher Degrees  
(continued)**

Title	Abbreviation	Calendar/Handbook
Master of Archives Administration	MArchivAdmin	Professional Studies
Master of Arts	MA	Arts Military Studies
Master of Biomedical Engineering	MBiomedE	Engineering
<b>Master of Building</b>	<b>MBuild</b>	<b>Architecture</b>
<b>Master of Building Management</b>	<b>MBM</b>	<b>Architecture</b>
<b>Master of the Built Environment</b>	<b>MBEnv</b>	<b>Architecture</b>
<b>Master of the Built Environment (Building Conservation)</b>		
Master of Business Administration	MBA	AGSM
Master of Chemistry	MChem	Sciences*
Master of Commerce (Honours)	MCom(Hons)	Commerce
Master of Education	MEd	Professional Studies
Master of Educational Administration	MEdAdmin	Professional Studies
Master of Engineering	ME	Applied Science Engineering Military Studies
Master of Engineering <i>without supervision</i>		
Master of Engineering Science	MEngSc	Engineering Military Studies
Master of Environmental Studies	MEnvStudies	Applied Science
Master of General Studies	MGenStud	General Studies
Master of Health Administration	MHA	Professional Studies
Master of Health Personnel Education	MHPed	Medicine
Master of Health Planning	MHP	Professional Studies
<b>Master of Industrial Design</b>	<b>MID</b>	<b>Architecture</b>
<b>Master of Landscape Architecture</b>	<b>MLArch</b>	<b>Architecture</b>
Master of Laws	LLM	Law
Master of Librarianship	MLib	Professional Studies
Master of Mathematics	MMath	Sciences*
Master of Music	MMus	Arts
Master of Nursing Administration	MNA	Professional Studies
Master of Optometry	MOptom	Sciences*
Master of Paediatrics	MPaed	Medicine
Master of Physics	MPhysics	Sciences*
Master of Psychology	MPsychol	Sciences§
Master of Safety Science	MSafetySc	Engineering
<b>Master of Science</b>	<b>MSc</b>	Applied Science
Master of Science <i>without supervision</i>		<b>Architecture</b> Engineering Medicine Military Studies Sciences*§
<b>Master of Science (Acoustics)</b>	<b>MSc(Acoustics)</b>	<b>Architecture</b>
Master of Science (Biotechnology)	MSc(Biotech)	Sciences§
Master of Science (Industrial Design)	MSc(IndDes)	Architecture
Master of Science (Psychology)	MSc(Psychol)	Sciences§
Master of Science and Society	MScSoc	Sciences*
Master of Social Work	MSW	Professional Studies
Master of Statistics	MStats	Sciences*



Title	Abbreviation	Calendar/Handbook
Master of Surgery	MS	Medicine
Master of Surveying	MSurv	Engineering
Master of Surveying <i>without supervision</i>		
Master of Surveying Science	MSurvSc	Engineering
<b>Master of Town Planning</b>	<b>MTP</b>	<b>Architecture</b>
Master of Welfare Policy	MWP	Professional Studies

Graduate Diploma	GradDip	Applied Science <b>Architecture</b> Engineering Sciences* §
	DipPaed	Medicine
	DipEd	Professional Studies
	DiplM-ArchivAdmin	
	DiplM-Lib	
	DipFDA	Sciences*

\*Faculty of Science.

§Faculty of Biological Sciences.

## Graduate Diplomas

## Higher Degrees

### Doctor of Philosophy (PhD)

### Qualifications

### Enrolment and Progression

1. The degree of Doctor of Philosophy may be awarded by the Council on the recommendation of the Higher Degree Committee of the appropriate faculty or board (hereinafter referred to as the Committee) to a candidate who has made an original and significant contribution to knowledge.

2. (1) A candidate for the degree shall have been awarded an appropriate degree of Bachelor with Honours from the University of New South Wales or a qualification considered equivalent from another university or tertiary institution at a level acceptable to the Committee.

(2) In exceptional cases an applicant who submits evidence of such other academic and professional qualifications as may be approved by the Committee may be permitted to enrol for the degree.

(3) If the Committee is not satisfied with the qualifications submitted by an applicant the Committee may require the applicant to undergo such assessment or carry out such work as the Committee may prescribe, before permitting enrolment as a candidate for the degree.

3. (1) An application to enrol as a candidate for the degree shall be made on the prescribed form which shall be lodged with the Registrar at least one calendar month before the commencement of the session in which enrolment is to begin.

(2) In every case, before permitting a candidate to enrol, the head of the school\* in which the candidate intends to enrol shall be satisfied that adequate supervision and facilities are available.

(3) An approved candidate shall be enrolled in one of the following categories:

- (a) full-time attendance at the University;
- (b) part-time attendance at the University.

(4) A full-time candidate shall be fully engaged in advanced study and research except that the candidate may undertake not more than five hours per week or a total of 240 hours per year on work which is not related to the advanced study and research.

(5) Before permitting a part-time candidate to enrol, the Committee shall be satisfied that the candidate can devote at least 20 hours each week to advanced study and research for the degree which (subject to (8)) shall include regular attendance at the school\* on an average of at least one day per week for 48 weeks each year.

\*Or department where a department is not within a school.

- (6) A candidate shall be required to undertake an original investigation on an approved topic. The candidate may also be required to undergo such assessment and perform such other work as may be prescribed by the Committee.
- (7) The work shall be carried out under the direction of a supervisor appointed from the full-time academic members of the University staff.
- (8) The work, other than field work, shall be carried out in a school\* of the University except that the Committee.
- (a) may permit a candidate to spend not more than one calendar year of the program in advanced study and research at another institution provided the work can be supervised in a manner satisfactory to the Committee;
- (b) may permit a candidate to conduct the work at other places where special facilities not possessed by the University may be available provided the direction of the work remains wholly under the control of the supervisor;
- (c) may permit a full-time candidate, who has been enrolled as a full-time candidate for at least six academic sessions, who has completed the research work and who is writing the thesis, to transfer to part-time candidature provided the candidate devotes at least 20 hours each week to work for the degree and maintains adequate contact with the supervisor.
- (9) The progress of a candidate shall be reviewed annually by the Committee following a report by the candidate, the supervisor and the head of the school\* in which the candidate is enrolled and as a result of such review the Committee may cancel enrolment or take such other action as it considers appropriate.
- (10) No candidate shall be awarded the degree until the lapse of six academic sessions from the date of enrolment in the case of a full-time candidate or eight academic sessions in the case of a part-time candidate. In the case of a candidate who has had previous research experience the committee may approve remission of up to two sessions for a full-time candidate and four sessions for a part-time candidate.
- (11) A full-time candidate for the degree shall present for examination not later than ten academic sessions from the date of enrolment. A part-time candidate for the degree shall present for examination not later than twelve academic sessions from the date of enrolment. In special cases an extension of these times may be granted by the Committee.

#### **Thesis**

- 4.** (1) On completing the program of study a candidate shall submit a thesis embodying the results of the investigation.
- (2) The candidate shall give in writing to the Registrar two months notice of intention to submit the thesis.
- (3) The thesis shall comply with the following requirements.:
- (a) it must be an original and significant contribution to knowledge of the subject;
- (b) the greater proportion of the work described must have been completed subsequent to enrolment for the degree;
- (c) it must be written in English except that a candidate in the Faculty of Arts may be required by the Committee to write a thesis in an appropriate foreign language;
- (d) it must reach a satisfactory standard of expression and presentation;
- (e) it must consist of an account of the candidate's own research but in special cases work done conjointly with other persons may be accepted provided the Committee is satisfied about the extent of the candidate's part in the joint research.
- (4) The candidate may not submit as the main content of the thesis any work or material which has previously been submitted for a university degree or other similar award but may submit any work previously published whether or not such work is related to the thesis.
- (5) Four copies of the thesis shall be presented in a form which complies with the requirements of the University for the preparation and submission of theses for higher degrees.
- (6) It shall be understood that the University retains the four copies of the thesis submitted for examination 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 microfilm or other copying medium.

#### **Examination**

- 5.** (1) There shall be not fewer than three examiners of the thesis, appointed by the Professional Board on the recommendation of the Committee, at least two of whom shall be external to the University.

(2) At the conclusion of the examination each examiner shall submit to the Committee a concise report on the thesis and shall recommend to the Committee that:

- (a) the candidate be awarded the degree without further examination; or
- (b) the candidate be awarded the degree without further examination subject to minor corrections as listed being made to the satisfaction of the head of the school\*; or
- (c) the candidate be awarded the degree subject to a further examination on questions posed in the report, performance in this further examination being to the satisfaction of the Committee; or
- (d) the candidate be not awarded the degree but be permitted to resubmit the thesis in a revised form after a further period of study and/or research; or
- (e) the candidate be not awarded the degree and be not permitted to resubmit the thesis.

(3) If the performance at the further examination recommended under (2)(c) above is not to the satisfaction of the Committee, the Committee may permit the candidate to re-present the same thesis and submit to further examination as determined by the Committee within a period specified by it but not exceeding eighteen months.

(4) The Committee shall, after consideration of the examiners' reports and the results of any further examination, recommend whether or not the candidate may be awarded the degree. If it is decided that the candidate be not awarded the degree the Committee shall determine whether or not the candidate be permitted to resubmit the thesis after a further period of study and/or research.

6. A candidate shall pay such fees as may be determined from time to time by the Council.

**Fees**

1. The degree of Master of Architectural Design by formal course work may be awarded by the Council to a candidate who has satisfactorily completed a program of advanced study.

## **Master of Architectural Design (MArchDes)**

2. (1) A candidate for the degree shall:

### **Qualifications**

(a) have been awarded the degree of Bachelor of Architecture with Honours from the University of New South Wales or a qualification considered equivalent from another university or tertiary institution at a level acceptable to the Higher Degree Committee of the Faculty of Architecture (hereinafter referred to as the Committee), and

(b) have had at least one year's professional practice subsequent to graduation of a kind acceptable to the Committee.

(2) In exceptional cases an applicant who submits evidence of such academic and/or professional qualifications as may be approved by the Committee may be permitted to enrol for the degree.

(3) If the Committee is not satisfied with the qualifications submitted by an applicant the Committee may require the applicant to undergo such assessment or carry out such work as the Committee may prescribe, before permitting enrolment.

3. (1) An application to enrol as a candidate for the degree shall be made on the prescribed form which shall be lodged with the Registrar at least two calendar months before the commencement of the session in which enrolment is to begin.

### **Enrolment and Progression**

(2) A candidate for the degree shall be required to undertake such formal subjects and pass such assessment as prescribed.

(3) The progress of a candidate shall be reviewed at least once annually by the Committee and as a result of its review the Committee may cancel enrolment or take such other action as it considers appropriate.

(4) No candidate shall be awarded the degree until the lapse of two academic sessions from the date of enrolment in the case of a full-time candidate or three sessions in the case of a part-time candidate. The maximum period of candidature shall be four academic sessions from the date of enrolment for a full-time candidate and six sessions for a part-time candidate. In special cases an extension of these times may be granted by the Committee.

4. A candidate shall pay such fees as may be determined from time to time by the Council.

**Fees**

\*Or department where a department is not within a school.

**Master of Architecture (MArch), Master of Building (MBuilding), Master of the Built Environment (MBEnv), Master of Landscape Architecture (MLArch) and Master of Town Planning (MTP)**

1. The degree of Master of Architecture or Master of Building or Master of the Built Environment or Master of Landscape Architecture or Master of Town Planning by research may be awarded by the Council on the recommendation of the Higher Degree Committee of the Faculty of Architecture (hereinafter referred to as the Committee) to a candidate who has demonstrated ability to undertake research by the submission of a thesis embodying the results of an original investigation or design.

**Qualifications**

2. (1) A candidate for the degree shall have been awarded an appropriate degree of Bachelor of four full-time years duration (or the part-time equivalent) from the University of New South Wales or a qualification considered equivalent from another university or tertiary institution at a level acceptable to the Committee.

(2) In exceptional cases an applicant who submits evidence of such academic and/or professional qualifications as may be approved by the Committee may be permitted to enrol for the degree.

(3) When the Committee is not satisfied with the qualifications submitted by an applicant the Committee may require the applicant, before being permitted to enrol, to undergo such examination or carry out such work as the Committee may prescribe.

**Enrolment and Progression**

3. (1) An application to enrol as a candidate for the degree shall be made on the prescribed form which shall be lodged with the Registrar at least one calendar month before the commencement of the session in which enrolment is to begin.

(2) In every case, before permitting a candidate to enrol, the head of the school in which the candidate intends to enrol shall be satisfied that adequate supervision and facilities are available.

(3) An approved candidate shall be enrolled in one of the following categories:

(a) full-time attendance at the University;

(b) part-time attendance at the University;

(c) external — not in regular attendance at the University and using research facilities external to the University.

(4) A candidate shall be required to undertake an original investigation or design on an approved topic. The candidate may also be required to undergo such examination and perform such other work as may be prescribed by the Committee.

(5) The work shall be carried out under the direction of a supervisor appointed from the full-time members of the University staff.

(6) The progress of a candidate shall be reviewed annually by the Committee following a report by the candidate, the supervisor and the head of the school in which the candidate is enrolled and as a result of such review the Committee may cancel enrolment or take such other action as it considers appropriate.

(7) No candidate shall be granted the degree until the lapse of three academic sessions in the case of a full-time candidate or four academic sessions in the case of a part-time or external candidate from the date of enrolment. In the case of a candidate who has been awarded the degree of Bachelor with Honours or who has had previous research experience the Committee may approve remission of up to one session for a full-time candidate and two sessions for a part-time or external candidate.

(8) A full-time candidate for the degree shall present for examination not later than six academic sessions from the date of enrolment. A part-time or external candidate for the degree shall present for examination not later than ten academic sessions from the date of enrolment. In special cases an extension of these times may be granted by the Committee.

**Thesis**

4. (1) On completing the program of study a candidate shall submit a thesis embodying the results of the original investigation or design.

(2) The candidate shall give in writing two months notice of intention to submit the thesis.

(3) The thesis shall present an account of the candidate's own research. In special cases work done conjointly with other persons may be accepted, provided the Committee is satisfied about the extent of the candidate's part in the joint research.

(4) The candidate may also submit any work previously published whether or not such work is related to the thesis.

(5) Three copies of the thesis shall be presented in a form which complies with the requirements of the University for the preparation and submission of higher degree thesis.

(6) It shall be understood that the University retains the three copies of the thesis submitted for examination 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 microfilm or other copying medium.

**5.** (1) There shall be not fewer than two examiners of the thesis, appointed by the Professorial Board on the recommendation of the Committee, at least one of whom shall be external to the University unless the Committee is satisfied that this is not practicable.

**Examination**

(2) At the conclusion of the examination each examiner shall submit to the Committee a concise report on the merits of the thesis and shall recommend to the Committee that:

(a) the candidate be awarded the degree without further examination; or

(b) the candidate be awarded the degree without further examination subject to minor corrections as listed being made to the satisfaction of the head of the school; or

(c) the candidate be awarded the degree subject to a further examination on questions posed in the report, performance in this further examination being to the satisfaction of the Committee; or

(d) the candidate be not awarded the degree but be permitted to resubmit the thesis in a revised form after a further period of study and/or research; or

(e) the candidate be not awarded the degree and be not permitted to resubmit the thesis.

(3) If the performance at the further examination recommended under (2)(c) above is not to the satisfaction of the Committee, the Committee may permit the candidate to re-present the same thesis and submit to a further oral, practical or written examination within a period specified by it but not exceeding eighteen months.

(4) The Committee shall, after consideration of the examiners' reports and the reports of any oral or written or practical examination, recommend whether or not the candidate may be awarded the degree. If it is decided that the candidate be not awarded the degree the Committee shall determine whether or not the candidate may resubmit the thesis after a further period of study and/or research.

**6.** A candidate shall pay such fees as may be determined from time to time by the Council.

**Fees**

**1.** The degree of Master of Building Management by formal course work may be awarded by the Council to a candidate who has satisfactorily completed a program of advanced study. The degree shall be awarded at Pass or Honours level.

**Master of Building Management (MBM)**

**2.** (1) A candidate for the degree shall have been awarded an appropriate degree of Bachelor from the University of New South Wales or a qualification considered equivalent from another university or tertiary institution at a level acceptable to the Higher Degree Committee of the Faculty of Architecture (hereinafter referred to as the Committee).

**Qualifications**

(2) In exceptional cases of an applicant who submits evidence of such other academic and professional qualifications as may be approved by the Committee may be permitted to enrol for the degree.

(3) If the Committee is not satisfied with the qualifications submitted by an applicant the Committee may require the applicant to undergo such assessment or carry out such work as it may prescribe, before permitting enrolment.

**3.** (1) An application to enrol as a candidate for the degree shall be made on the prescribed form which shall be lodged with the Registrar at least two calendar months before the commencement of the session in which enrolment is to begin.

**Enrolment and Progression**

(2) A candidate for the degree shall be required to undertake such formal subjects and pass such assessment as prescribed.

(3) The progress of a candidate shall be reviewed at least once annually by the Committee and as a result of its review the committee may cancel enrolment or take such other action as it considers appropriate.

(4) No candidate shall be awarded the degree at Pass level until the lapse of four academic sessions from the date of enrolment for a candidate undertaking the program at Pass level and eight sessions for a candidate undertaking the program at Honours level. In special cases an extension of these times may be granted by the Committee.

**Project Report**

**4.** (1) A candidate who obtains a grade average of Credit or better in the formal subjects in 3.(2) may undertake a project on an approved topic.

(2) The work shall be carried out under the direction of a supervisor appointed from the full-time academic members of the University staff.

(3) The candidate shall give in writing to the Registrar two months notice of intention to submit a report on the project.

(4) Three copies of the project report shall be presented in a form which complies with the requirements of the University for the preparation and submission of project reports for higher degrees.

(5) It shall be understood that the University retains the three copies of the project report submitted for examination and is free to allow the project report to be consulted or borrowed. Subject to the provisions of the Copyright Act, 1968, the University may issue the project report in whole or in part, in microfilm or other copying medium.

**Examination**

**5.** (1) There shall be not fewer than two examiners of the project report, appointed by the Professorial Board on the recommendation of the Committee.

(2) Arrangements shall be made for oral presentation and defence of the project report as part of the examination.

(3) At the conclusion of the examination each examiner shall submit to the Committee a concise report on the project report and shall recommend to the Committee that:

(a) the project report be noted as satisfactory; or

(b) the project report be noted as satisfactory subject to minor corrections being made to the satisfaction of the head of the school; or

(c) the project report be noted as unsatisfactory but that the candidate be permitted to resubmit it in a revised form after a further period of study and/or research; or

(d) the project report be noted as unsatisfactory and that the candidate be not permitted to resubmit it.

(4) The Committee shall, after considering the examiners' reports and the candidate's results of assessment in the prescribed formal subjects, recommend that the candidate be awarded the degree at Pass or Honours level. If it is decided that the project report is unsatisfactory the Committee shall determine whether or not the candidate may resubmit it after a further period of study and/or research.

**Fees**

**6.** A candidate shall pay such fees as may be determined from time to time by the Council.

**Master of the Built Environment (Building Conservation) (MBEnv), Master of Industrial Design (MID), Master of Science (Acoustics) (MSc(Acoustics)), and Master of Science (Industrial Design) (MSc(IndDes))**

**1.** The degree of Master of the Built Environment (Building Conservation) or Master of Industrial Design or Master of Science (Acoustics) or Master of Science (Building) or Master of Science (Industrial Design) may be awarded by the Council to a candidate who has completed a program of advanced study.

## Qualifications

2. (1) A candidate for the degree shall have been awarded an appropriate degree of Bachelor of four full time years duration (or the part-time equivalent) from the University of New South Wales or a qualification considered equivalent from another university or tertiary institution at a level acceptable to the Higher Degree Committee of the Faculty of Architecture (hereinafter referred to as the Committee).

(2) In exceptional cases an applicant who submits evidence of such academic and/or professional qualifications as may be approved by the Committee may be permitted to enrol for the degree.

(3) If the Committee is not satisfied with the qualifications submitted by an applicant the Committee may require the applicant to undergo such assessment or carry out such work as the Committee may prescribe, before permitting enrolment.

3. (1) An application to enrol as a candidate for the degree shall be made on the prescribed form which shall be lodged with the Registrar at least two calendar months before the commencement of the session in which enrolment is to begin.

(2) A candidate for the degree shall be required to undertake such formal subjects and pass such assessment as prescribed.

(3) The progress of a candidate shall be reviewed at least once annually by the Committee and as a result of its review the Committee may cancel enrolment or take such other action as it considers appropriate.

(4) No candidate shall be awarded the degree until the lapse of two academic sessions from the date of enrolment in the case of a full-time candidate or four sessions in the case of a part-time candidate. The maximum period of candidature shall be four academic sessions from the date of enrolment for a full-time candidate and eight sessions for a part-time candidate. In special cases an extension of these times may be granted by the Committee.

4. (1) A candidate shall also be required to undertake a project on an approved topic.

(2) The work shall be carried out under the direction of a supervisor appointed from the full-time academic members of the University staff.

(3) The candidate shall give in writing to the Registrar two months notice of intention to submit a report on the project.

(4) Three copies of the project report shall be presented in a form which complies with the requirements of the University for the preparation and submission of project reports for higher degrees.

(5) It shall be understood that the University retains the three copies of the project report submitted for examination and is free to allow the project report to be consulted or borrowed. Subject to the provisions of the Copyright Act, 1968, the University may issue the project report in whole or in part, in microfilm or other copying medium.

5. (1) There shall be not fewer than two examiners of the project report, appointed by the Professorial Board on the recommendation of the Committee.

(2) At the conclusion of the examination each examiner shall submit to the Committee a concise report on the project report and shall recommend to the Committee that:

(a) the project report be noted as satisfactory; or

(b) the project report be noted as satisfactory subject to minor corrections being made to the satisfaction of the head of the school; or

(c) the project report be noted as unsatisfactory but that the candidate be permitted to resubmit it in a revised form after a further period of study and/or research; or

(d) the project report be noted as unsatisfactory and that the candidate be not permitted to resubmit it.

(3) The Committee shall, after considering the examiners' reports and the candidate's results of assessment in the prescribed formal subjects, recommend whether or not the candidate may be awarded the degree. If it is decided that the project report is unsatisfactory the Committee shall determine whether or not the candidate may resubmit it after a further period of study and/or research.

6. A candidate shall pay such fees as may be determined from time to time by the Council.

## Enrolment and Progression

## Project Report

## Examination

## Fees

## Master of Engineering (ME) and Master of Science (MSc)

1. The degree of Master of Engineering or Master of Science by research may be awarded by the Council on the recommendation of the Higher Degree Committee of the appropriate faculty (hereinafter referred to as the Committee) to a candidate who has demonstrated ability to

undertake research by the submission of a thesis embodying the results of an original investigation.

#### **Qualifications**

**2.** (1) A candidate for the degree shall have been awarded an appropriate degree of Bachelor from the University of New South Wales or a qualification considered equivalent from another university or tertiary institution at a level acceptable to the Committee.

(2) An applicant who submits evidence of such other academic or professional attainments as may be approved by the Committee may be permitted to enrol for the degree.

(3) When the Committee is not satisfied with the qualifications submitted by an applicant the Committee may require the applicant, before being permitted to enrol, to undergo such examination or carry out such work as the Committee may prescribe.

#### **Enrolment and Progression**

**3.** (1) An application to enrol as a candidate for the degree shall be made on the prescribed form which shall be lodged with the Registrar at least one calendar month before the commencement of the session in which enrolment is to begin.

(2) In every case, before permitting a candidate to enrol, the head of the school\* in which the candidate intends to enrol shall be satisfied that adequate supervision and facilities are available.

(3) An approved candidate shall be enrolled in one of the following categories:

(a) full-time attendance at the University;

(b) part-time attendance at the University;

(c) external — not in regular attendance at the University and using research facilities external to the University.

(4) A candidate shall be required to undertake an original investigation on an approved topic. The candidate may also be required to undergo such examination and perform such other work as may be prescribed by the Committee.

(5) The work shall be carried out under the direction of a supervisor appointed from the full-time members of the University staff.

(6) The progress of a candidate shall be reviewed annually by the Committee following a report by the candidate, the supervisor and the head of the school\* in which the candidate is enrolled and as a result of such review the Committee may cancel enrolment or take such other action as it considers appropriate.

(7) No candidate shall be granted the degree until the lapse of three academic sessions in the case of a full-time candidate or four academic sessions in the case of a part-time or external candidate from the date of enrolment. In the case of a candidate who has been awarded the degree of Bachelor with Honours or who has had previous research experience the Committee may approve remission of up to one session for a full-time candidate and two sessions for a part-time or external candidate.

(8) A full-time candidate for the degree shall present for examination not later than six academic sessions from the date of enrolment. A part-time or external candidate for the degree shall present for examination not later than ten academic sessions from the date of enrolment. In special cases an extension of these times may be granted by the Committee.

#### **Thesis**

**4.** (1) On completing the program of study a candidate shall submit a thesis embodying the results of the original investigation.

(2) The candidate shall give in writing two months notice of intention to submit the thesis.

(3) The thesis shall present an account of the candidate's own research. In special cases work done conjointly with other persons may be accepted, provided the Committee is satisfied about the extent of the candidate's part in the joint research.

(4) The candidate may also submit any work previously published whether or not such work is related to the thesis.

(5) Three copies of the thesis shall be presented in a form which complies with the requirements of the University for the preparation and submission of higher degree theses.

(6) It shall be understood that the University retains the three copies of the thesis submitted for examination 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 microfilm or other copying medium.

\*Or department where a department is not within a school.



5. (1) There shall be not fewer than two examiners of the thesis, appointed by the Professorial Board on the recommendation of the Committee, at least one of whom shall be external to the University unless the Committee is satisfied that this is not practicable.

(2) At the conclusion of the examination each examiner shall submit to the Committee a concise report on the merits of the thesis and shall recommend to the Committee that:

(a) the candidate be awarded the degree without further examination; or

(b) the candidate be awarded the degree without further examination subject to minor corrections as listed being made to the satisfaction of the head of the school\*; or

(c) the candidate be awarded the degree subject to a further examination on questions posed in the report, performance in this further examination being to the satisfaction of the Committee; or

(d) the candidate be not awarded the degree but be permitted to resubmit the thesis in a revised form after a further period of study and/or research; or

(e) the candidate be not awarded the degree and be not permitted to resubmit the thesis.

(3) If the performance at the further examination recommended under (2)(c) above is not to the satisfaction of the Committee, the Committee may permit the candidate to re-present the same thesis and submit to a further oral, practical or written examination within a period specified by it but not exceeding eighteen months.

(4) The Committee shall, after consideration of the examiners' reports and the reports of any oral or written or practical examination, recommend whether or not the candidate may be awarded the degree. If it is decided that the candidate be not awarded the degree the Committee shall determine whether or not the candidate may resubmit the thesis after a further period of study and/or research.

6. A candidate shall pay such fees as may be determined from time to time by the Council.

## Examination

## Fees

1. The degree of Master of Engineering or Master of Science or Master of Surveying without supervision may be awarded by the Council on the recommendation of the Higher Degree Committee of the appropriate faculty (hereinafter referred to as the Committee) to a candidate who has demonstrated ability to undertake research by the submission of a thesis embodying the results of an original investigation.

## Master of Engineering (ME), Master of Science (MSc) and Master of Surveying (MSurv) without supervision

2. A candidate for the degree shall have been awarded an appropriate degree of Bachelor from the University of New South Wales with at least three years relevant standing in the case of Honours graduates and four years relevant standing in the case of Pass graduates, and at a level acceptable to the Committee.

## Qualifications

3. An application to enrol as a candidate for the degree without supervision shall be made on the prescribed form which shall be lodged with the Registrar not less than six months before the intended date of submission of the thesis. A graduate who intends to apply in this way should, in his or her own interest, seek at an early stage the advice of the appropriate head of school\* with regard to the adequacy of the subject matter and its presentation for the degree. A synopsis of the work should be available.

## Enrolment

4. (1) A candidate shall submit a thesis embodying the results of the investigation.

## Thesis

(2) The candidate shall give in writing to the Registrar two months notice of intention to submit the thesis.

(3) The thesis shall present an account of the candidate's own research. In special cases work done conjointly with other persons may be accepted, provided the Committee is satisfied about the extent of the candidate's part in the joint research.

(4) The candidate may also submit any work previously published whether or not such work is related to the thesis.

(5) Three copies of the thesis shall be presented in a form which complies with the requirements of the University for the preparation and submission of theses for higher degrees.

\*Or department where a department is not within a school.

(6) It shall be understood that the University retains the three copies of the thesis submitted for examination 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 microfilm or other copying medium.

#### Examination

**5.** (1) There shall be not fewer than two examiners of the thesis, appointed by the Professorial Board on the recommendation of the Committee, at least one of whom shall be external to the University unless the Committee is satisfied that this is not practicable.

(2) Before the thesis is submitted to the examiners the head of the school\* in which the candidate is enrolled shall certify that it is *prima facie* worthy of examination.

(3) At the conclusion of the examination each examiner shall submit to the Committee a concise report on the thesis and shall recommend to the Committee that:

(a) the candidate be awarded the degree without further examination; or

(b) the candidate be awarded the degree without further examination subject to minor corrections as listed being made to the satisfaction of the head of the school\*; or

(c) the candidate be awarded the degree subject to a further examination on questions posed in the report, performance in this further examination being to the satisfaction of the Committee; or

(d) the candidate be not awarded the degree but be permitted to resubmit the thesis in a revised form after a further period of study and/or research; or

(e) the candidate be not awarded the degree and be not permitted to resubmit the thesis.

(4) If the performance at the further examination recommended under (3)(c) above is not to the satisfaction of the Committee, the Committee may permit the candidate to re-present the same thesis and submit to further examination as determined by the Committee within a period specified by it but not exceeding eighteen months.

(5) The Committee shall, after consideration of the examiners' reports and the results of any further examination, recommend whether or not the candidate may be awarded the degree. If it is decided that the candidate be not awarded the degree the Committee shall determine whether or not the candidate may resubmit the thesis after a further period of study and/or research.

#### Fees

**6.** A candidate shall pay such fees as may be determined from time to time by the Council.

## Graduate Diploma

### Graduate Diploma (GradDip)

#### Qualifications

**1.** A Graduate Diploma may be awarded by the Council to a candidate who has satisfactorily completed a program of advanced study.

**2.** (1) A candidate for the diploma shall have been awarded an appropriate degree of Bachelor from the University of New South Wales or a qualification considered equivalent from another university or tertiary institution at a level acceptable to the Higher Degree Committee of the appropriate faculty (hereinafter referred to as the Committee).

(2) An applicant who submits evidence of such other academic or professional attainments as may be approved by the Committee may be permitted to enrol for the diploma.

(3) If the Committee is not satisfied with the qualifications submitted by an applicant the Committee may require the applicant to undergo such assessment or carry out such work as the Committee may prescribe, before permitting enrolment.

#### Enrolment and Progression

**3.** (1) An application to enrol as a candidate for the diploma shall be made on the prescribed form which shall be lodged with the Registrar at least two calendar months before the commencement of the session in which enrolment is to begin.

(2) A candidate for the diploma shall be required to undertake such formal subjects and pass such assessment as prescribed.

(3) The progress of a candidate shall be reviewed at least once annually by the Committee and as a result of its review the Committee may cancel enrolment or take such other action as it considers appropriate.

(4) No candidate shall be awarded the diploma until the lapse of two academic sessions from the date of enrolment in the case of a full-time candidate or four sessions in the case of a part-time candidate. The maximum period of candidature shall be four academic sessions from the date of enrolment for a full-time candidate and six sessions for a part-time candidate. In special cases an extension of these times may be granted by the Committee.

4. A candidate shall pay such fees as may be determined from time to time by the Council.

**Fees**

# Scholarships and Prizes

The scholarships and prizes listed below are available to students whose courses are listed in this handbook. Each faculty handbook contains in its **Scholarships and Prizes** section the scholarships and prizes available with that faculty. The **General Information** section of the Calendar contains a comprehensive list of scholarships and prizes offered throughout the University.

## Scholarships

### Undergraduate Scholarships

Listed below is an outline of a number of scholarships available to students. Full information may be obtained from Room G20, located on the Ground Floor of the Chancellery.

Unless otherwise indicated in footnotes, applications for the following scholarships should be made to the Registrar by 14 January each year. Please note that not all of these awards are available every year.

Donor	Value	Year/s of Tenure	Conditions
<b>General</b>			
Bursary Endowment Board*	\$200 pa	Minimum period of approved degree/combined degree course	Merit in HSC and total family income not exceeding \$6000
Sam Cracknell Memorial	Up to \$3000 pa payable in fortnightly instalments	1 year	Prior completion of at least 2 years of a degree or diploma course and enrolment in a full-time course during the year of application; academic merit; participation in sport both directly and administratively; and financial need
Girls Realm Guild	Up to \$1500 pa	1 Year renewable for the duration of the course subject to satisfactory progress and continued demonstration of need	Available only to female students under 35 years of age who are permanent residents of Australia enrolling in any year of a full-time undergraduate course on the basis of academic merit and financial need

\* Apply to The Secretary, Bursary Endowment Board, PO Box 460, North Sydney 2060, immediately after sitting for HSC.

## Undergraduate Scholarships (continued)

Donor	Value	Year/s of Tenure	Conditions
<b>General (Continued)</b>			
W.S. and L. B. Robinson**	Up to \$4200 pa	1 year renewable for the duration of the course subject to satisfactory progress	Available only to students who have completed their schooling in Broken Hill or whose parents reside in Broken Hill; for a course related to the mining industry. Includes courses in mining engineering, geology, electrical and mechanical engineering, metallurgical process engineering, chemical engineering and science.
Universities Credit Union	\$500 pa	1 year with the possibility of renewal	Prior completion of at least 1 year of any undergraduate degree course. Eligibility limited to members of the Universities Credit Union Ltd of more than one year's standing of members of the family of such members.

\*\*Applications close 30 September each year.

## Graduate Scholarships

Application forms and further information are available from the Student Enquiry Counter, located on the Ground Floor of the Chancellery unless an alternative contact address is provided. Information is also available on additional scholarships which may become available from time to time, mainly from funds provided by organizing sponsoring research projects.

The following publications may also be of assistance: 1. *Awards for Postgraduate Study in Australia and Awards for Postgraduate Study Overseas*, published by the Graduate Careers Council of Australia. PO Box 28, Parkville, Victoria 3052; \* 2. *Study Abroad*, published by UNESCO; \* 3. *Scholarships Guide for Commonwealth Postgraduate Students*, published by the Association of Commonwealth Universities. \*

Details of overseas awards and exchanges administered by the Department of Employment Education and Training can be obtained from: Awards and Exchanges Section, Department of Employment Education and Training, PO Box 826, Woden, ACT 2606.

Where possible, the scholarships are listed in order of faculty.

\*Available for reference in the University Library.

Donor	Value	Year/s of Tenure	Conditions
<b>General</b>			
University of New South Wales Postgraduate Scholarships	Living allowance of \$7000 pa. Other allowances may also be paid.	1-2 years for a Masters and 3-4 years for a PhD degree	Applicants must be honours graduates (or equivalent). Applications to Dean of relevant Faculty.
Commonwealth Postgraduate Research Awards			Applicants must be honours graduates (or equivalent) or scholars who will graduate with honours in current academic year, and who are domiciled in Australia. Applications to Registrar by 31 October.

## Graduate Scholarships (continued)

Donor	Value	Year/s of Tenure	Conditions
<b>General (continued)</b>			
Commonwealth Postgraduate Course Awards	Living allowance of \$8882 pa. Other allowances may also be paid.	1-2 years; minimum duration of course	Applicants must be graduates or scholars who will graduate in current academic year, and who have not previously held a Commonwealth Post-graduate Award. Applicants must be domiciled in Australia. Preference is given to applicants with employment experience. Applications to Registrar by 30 September.
Australian American Educational Fulbright Award*	Travel expenses and \$A2000 as established allowance.	1 year, renewable	Applicants must be graduates who are domiciled in Australia and wish to undertake research or study for a higher degree in America.
Australian Federation of University Women	Amount varies depending on award	Up to 1 year	Applicants must be female graduates who are members of the Australian Federation of University women.
Commonwealth Scholarship and Fellowship Plan	Varies for each country. Generally covers travel, living, tuition fees, books and equipment, approved medical expenses. Marriage allowance may be payable.	Usually 2 years, sometimes 3	Applicants must be graduates who are Australian citizens and who are not older than 35 years of age. Applications close with Registrar in September or October each year.
The English-Speaking Union (NSW Branch)	\$5000	1 year	Applicants must be residents of NSW or ACT. Awarded to young graduates to further their studies outside Australia. Applications close mid-April.
Frank Knox Memorial Fellowships tenable at Harvard University	Stipend of US\$7000 pa plus tuition fees	1, sometimes 2 years	Applicants must be British subjects and Australian citizens, who are graduates or near graduates of an Australian university. Applications close with the Registrar mid-October.
Robert Gordon Menzies Scholarship* to Harvard	Up to \$US 15,000	1 year	Tenable at Harvard University. Applicants must be Australian citizens and graduates of an Australian tertiary institution. Applications close 31 December.
Gowrie Scholarship Trust Fund	\$4000 pa. Under special circumstances this may be increased.	2 years	Applicants must be members of the Forces or children of members of the Forces who were an active service during the 1939-45 War. Applications close with Registrar by 31 October.

\*Application forms are available from The Secretary, Department of Employment Education and Training, AAEF Travel Grants, PO Box 826, Woden, ACT 2606.

## Graduate Scholarships (continued)

Donor/Name of Prize	Value \$	Awarded for	
<b>General (continued)</b>			
Harkness Fellowships of the Commonwealth Fund of New York**	Living and travel allowances, tuition and research expenses, health insurance, book and equipment and other allowances for travel and study in the USA	12 to 21 months	Candidates must be Australian citizens and <b>1.</b> Either members of the Commonwealth or a State Public Service or semi-government Authority. <b>2.</b> Either staff or graduate students at an Australian university. <b>3.</b> Individuals recommended for nomination by the Local Correspondents. The candidate will usually have an honours degree or equivalent, or an outstanding record of achievement, and be not more than 36 years of age. Applications close 29 August.
The Packer, Shell and Barclays Scholarships to Cambridge***	Living and travel allowances, tuition expenses.	1-3 years	Applicants must be Australian citizens who are honours graduates or equivalent, and under 26 years of age. Applications close 15 October.
The Rhodes Scholarship§	Approximately L3600 stg pa	2 years, may be extended for a third year	Unmarried male and female Australian citizens aged between 19 and 25 who have been domiciled in Australia at least 5 years and have completed at least 2 years of an approved university course. Applications close in mid-September each year.
Rothmans Fellowships Award††	\$25000 pa plus up to \$3500 for equipment and fees	1 year, renewable up to 3 years	Tenable at any Australian university. Applicants must have at least 3 years graduate experience in research and be under 28 years of age. Applications close in July.

## Architecture

The Associated Hardware Manufacturers Scholarship	\$1500 pa or such other amount as the Dean may determine	1 year. Where a recipient is enrolled in a higher degree program and is making satisfactory progress the scholarship may be extended subject to the availability of funds.	Applicants shall have qualified for the degree of Bachelor of Architecture with honours or Bachelor of Building with honours at the University of New South Wales and such graduates shall be of not more than five (5) years standing at the time of taking up the scholarship. Tenable at any approved institution. Applications to Registrar by 31 October.
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\*Applications to the Registrar, Board of Architects of New South Wales, 33a McLaren Street, North Sydney 2060, not later than 31 March each year.

\*\*Application forms must be obtained from the Australian representative of the Fund, Mr J. T. Larkin, Department of Trade, Edmund Barton Building, Kings Avenue, Barton, ACT 2600. These must be submitted to the Registrar by 15 August.

\*\*\*Application forms are available from The Secretary, Cambridge Commonwealth Trust, PO Box 252, Cambridge CB2 1TZ U.K.

§Applications to The Honorary Secretary of the NSW Committee, University of Sydney, NSW 2006.

††Applications to the Secretary, Rothmans University Endowment Fund, University of Sydney, NSW 2006.

## Graduate Scholarships (continued)

Donor	Value	Year/s of Tenure	Conditions
<b>Architecture (continued)</b>			
Byera Hadley Travelling Scholarships*	\$5000 pa	1 year	Awarded to outstanding graduates of a school of architecture in New South Wales for a course of study or research, or other activity contributing to the advancement of architecture. Graduates must be Australian citizens and awards are eligible up to 8 years from graduation.
The Lindsay Robertson Memorial Travel Award	A maximum of \$1500	1 year	Candidates should be Landscape Architecture graduates of the University of New South Wales. The award is to undertake full-time graduate study or research in Landscape Architecture at an approved institution overseas or in Australia. Applications close 30 May.
The Master Builders' Association of NSW	\$500	1 year	Applicants must be graduates who have enrolled in the Master of Science (Building) degree course.
Wightman/University Scholarship	\$2000 pa	1 year	Best final year student in BArch degree course proceeding to graduate study. Applications close 30 September.

## Prizes

### Undergraduate University Prizes

The following table summarizes the undergraduate prizes awarded by the University. Prizes which are not specific to any School are listed under General. All other prizes are listed under the Faculty or Schools in which they are awarded.

Information regarding the establishment of new prizes may be obtained from the Examinations Section located on the Ground Floor of the Chancellery.

Donor/Name of Prize	Value \$	Awarded for
<b>General</b>		
Sydney Technical College Union Award	300.00 and medal	Leadership in the development of student affairs, and academic proficiency throughout the course.
University of New South Wales Alumni Association	Statuette	Achievement for community benefit — students in their final or graduating year.
<b>School of Architecture</b>		
Board of Architects of New South Wales	250.00	An outstanding graduand in the School of Architecture.
Eric Daniels in Residential Design	500.00	Best performance in design for Residential Accommodation by a student in the Bachelor of Architecture degree course.
Frank Fox Memorial	150.00	11.4334 Historical Research C.



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## Undergraduate University Prizes (continued)

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Donor/Name of Prize	Value\$	Awarded for
<b>School of Architecture (continued)</b>		
Frank W. Peplow	100.00	Church Architecture or Design
James Hardie & Co Pty Ltd	150.00	General proficiency throughout the Bachelor of Architecture degree course.
Morton Herman Memorial	100.00	Best performance in 11.4336 Measured Studies of Historic Structures in the Bachelor of Architecture degree course
Royal Australian Institute of Architects	250.00	Outstanding performance by a student in Architectural Design and related subjects in the final two years of the course.

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## School of Building

Builders Licencing Board	250.00	Best thesis in the final year of the Bachelor of Building degree course
Institute of Wood Science (Australian Branch) — Timber in Building	Book and cheque to the value of 100.00	35.609 Building Science 9 (Timber)
James Hardie & Co Pty Ltd	100.00	Bachelor of Building degree course, Year 1
Master Builders' Association of New South Wales	350.00	Merit performance in the Bachelor of Building degree course.
Multiplex Constructions	1000.00	Best performance in Construction 1 to 5.

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## School of Landscape Architecture

Lindsay Robertson Memorial	300.00	37.7134 Landscape Design 2
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## School of Town Planning

John Shaw Memorial	400.00	Best result in Thesis in the Bachelor of Town Planning degree course
The NSW Department of Environment and Planning	350.00	Bachelor of Town Planning degree course, Year 5
NSW Local Government Association of Planners	150.00	Best thesis produced by a final year student on a topic related to local government planning.
Royal Aust Planning Institute, NSW Division	150.00	Bachelor of Town Planning degree course, Year 3

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## Graduate University Prizes

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The following table summarizes the graduate prizes awarded by the University.

Donor/Name of Prize	Value \$	Awarded for
<b>School of Building</b>		
Alex Rigby	250.00	Best overall performance in the Master of Building Management course.
T.W. Crow	300.00	Best performance in Year 2 of Building Management





# The University of New South Wales Kensington Campus

## Theatres

Biomedical Theatres E27  
Central Lecture Block E19  
Classroom Block (Western Grounds) H3  
Rex Vowels Theatre F17  
Keith Burrows Theatre J14  
Main Building Theatre K14  
Mathews Theatres D23  
Parade Theatre E3  
Science Theatre F13  
Sir John Clancy Auditorium C24

## Buildings

Affiliated Residential Colleges  
*New (Anglican)* L6  
*Shalom (Jewish)* N9  
*Warrane* M7  
Applied Science F10  
Architecture H14  
Arts (Morven Brown) C20  
Banks F22  
Barker Street Gatehouse N11  
Basser College C18  
Biological Sciences D26  
Central Store B13  
Chancellery C22  
Chemistry  
*Dalton* F12  
*Robert Heffron* E12  
Civil Engineering H20  
Commerce (John Goodsell) F20  
Dalton (Chemistry) F12  
Electrical Engineering G17  
Geography and Surveying K17  
Goldstein College D16  
Golf House A27  
Gymnasium B5  
House at Pooh Corner N8  
International House C6  
Jo Myers Studio D9  
John Goodsell (Commerce) F20  
Kanga's House O14  
Kensington Colleges C17 (Office)  
*Basser* C18  
*Goldstein* D16  
*Philip Baxter* D14  
Main Building K15  
Maintenance Workshop B13  
Mathews F23

Mechanical and Industrial Engineering J17  
Medicine (Administration) B27  
Menzie's Library E21  
Metallurgy E8  
Morven Brown (Arts) C20  
New College (Anglican) L6  
Newton J12  
NIDA D2  
Parking Station H25  
Philip Baxter College D14  
Robert Heffron (Chemistry) E12  
Sam Cracknell Pavilion H8  
Shalom College (Jewish) N9  
Sir Robert Webster (Textile Technology) G14  
Squash Courts B7  
Swimming Pool B4  
Unisearch House L5  
University Regiment J2  
University Union (Roundhouse) – Stage I E6  
University Union (Blockhouse) – Stage II G6  
University Union (Squarehouse) – Stage III E4  
Wallace Wurth School of Medicine C27  
Warrane College M7  
Wool Science B8

## General

Academic Staff Office C22  
Accountancy F20  
Admissions C22  
Adviser for Prospective Students F15  
Graduate and Alumni E4  
Anatomy C27  
Applied Geology F10  
Applied Science (Faculty Office) F10  
Architecture (including Faculty Office) H14  
Arts (Faculty Office) C20  
Audio Visual Unit F20  
Australian Graduate School of Management G27  
Biochemistry D26  
Biological Sciences (Faculty Office) D26  
Biomedical Library F23  
Biotechnology D26  
Bookshop G17

Botany D26  
Building H14  
Careers and Employment F15  
Cashier's Office C22  
Centre for Biomedical Engineering A28  
Centre for Medical Education Research and Development C27  
Centre for Remote Sensing K17  
Chaplains E15a  
Chemical Engineering and Industrial Chemistry F10  
Chemistry E12  
Child Care Centres N8, O14  
Civil Engineering H20  
Commerce (Faculty Office) F20  
Committee in Postgraduate Medical Education B27  
Community Medicine D26  
Computing Services Department F21, D26  
Continuing Education Support Unit F23  
Economics F20  
Education G2  
Education Testing Centre E15d  
Electrical Engineering and Computer Science G17  
Energy Research, Development and Information Centre F10  
Engineering (Faculty Office) K17  
English C20  
Examinations C22  
Fees Office C22  
Food Science and Technology F10  
French C20  
General Staff Office C22  
General Studies C20  
Geography K17  
German Studies C20  
Graduate School of the Built Environment H14  
Health Administration C22  
History C20  
History and Philosophy of Science C20  
Industrial Arts H14  
Industrial Engineering J17  
Institute of Rural Technology B8b  
Japanese Economic Management Studies Centre G14  
Kanga's House O14  
Kindergarten (House at Pooh Corner) N8  
Landscape Architecture K15  
Law (Faculty Office) F21

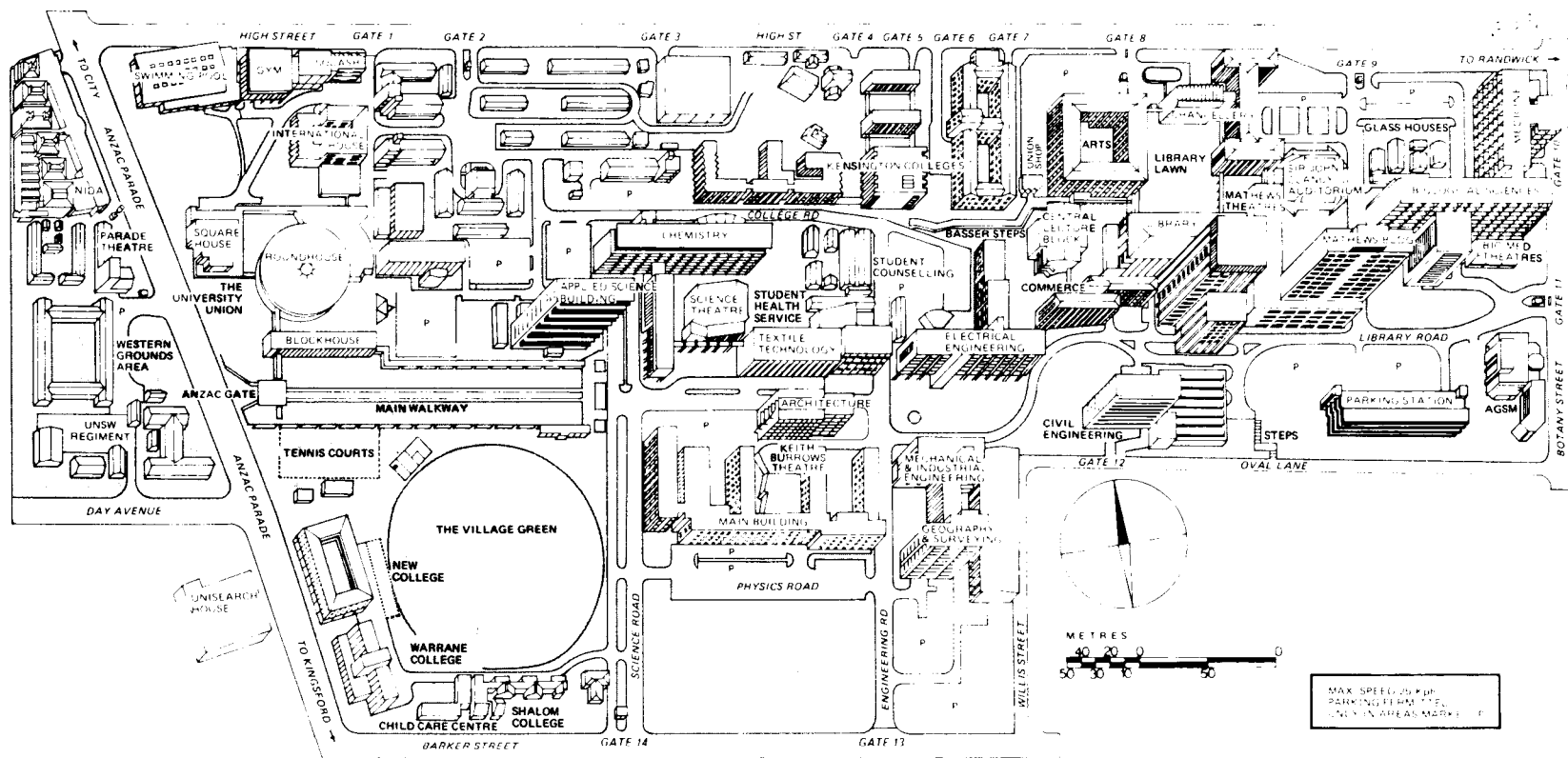
Law Library F21  
Librarianship F23  
Library E21  
Lost Property C22  
Marketing F20  
Mathematics F23  
Mechanical Engineering J17  
Medicine (Faculty Office) B27  
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Off-campus Housing C22  
Optometry J12  
Organizational Behaviour F20  
Pathology C27  
Patrol and Cleaning Services C22  
Petroleum Engineering D11  
Philosophy C20  
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Political Science C20  
Printing Unit B22  
Psychology F23  
Public Affairs Unit C22  
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Regional Teacher Training Centre C27  
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Science and Mathematics Course Office F23  
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Sociology C20  
Spanish and Latin American Studies C20  
Sport and Recreation Centre B6  
Student Counselling and Research F15  
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Student Records C22  
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Tertiary Education Research Centre E15d  
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Town Planning K15  
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University Union (Blockhouse) G6  
Wool Science B8a  
Zoology D26



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This Calendar has been specifically designed as a summary volume of the University's academic and administrative procedures.

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