The University of New South Wales

Architecture

1990 Faculty Handbook

Arms of

The University of New South Wales

Granted by the College of Heralds, London
3 March 1952

Heraldic Description of Arms

Argent on a Cross Gules a Lion passant guardant between four Mullets of eight points Or a Chief Sable charged with an open Book proper thereon the word SCIENTIA in letters also Sable.

The lion and the four stars of the Southern Cross on the Cross of St George have reference to the State of New South Wales which brought the University into being; the open book with SCIENTIA across its page reminds us of its original purpose. Beneath the shield is the motto 'Manu et Mente' ('with Hand and Mind'), which is the motto of the Sydney Technical College, from which the University has developed. The motto is not an integral part of the Grant of Arms and could be changed at will; but it was the opinion of the University Council that the relationship with the parent institution should in some way be recorded.

The University of New South Wales

Architecture

1990 Faculty Handbook

ISSN 0811-7594

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Published and produced by Publications Section, The University of New South Wales
Printed by Bridge Printery Pty Ltd, Rosebery, NSW 2018

Faculty editor: Brian Newell

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 9 October 1989, but may be amended without notice by the University Council.

Contents

Calendar of dates

	1990	1991
Session 1 (67 teaching days)		
	26 February to 12 April	4 March to 28 March
Recess	*13 April to to 22 April*	*29 March to 7 April*
	23 April to 7 June	8 April to 14 June
Study Recess	*8 June to 13 June*	*15 June to 20 June*
Examinations	14 June to 2 July	21 June to 9 July
Midyear Recess	*3 July to 22 July*	*10 July to 28 July*
Session 2 (67 teaching days)		
	23 July to 21 September	29 July to 27 September
Recess	*22 September to 1 October*	*28 September to 7 October*
	2 October to 31 October	8 October to 6 November
Study Recess	*1 November to 6 November*	*7 November to 12 November*
Examinations	7 November to 23 November	13 November to 29 November
Vacation weeks common to Australian universities	16 April to 22 April	1 April to 7 April
	2 July to 8 July	8 July to 14 July
	24 September to 30 September	30 September to 6 October

Important Dates for 1990

January

M	1	New Year's Day – Public Holiday
F	5	Last day for acceptance of applications by office of the Admissions Section for transfer to another undergraduate course within the University
W	10	Last day for applications for review of assessment
M	15	Term 1 begins – Medicine IV and V
F	26	Australia Day – Public Holiday

February

M	5	Enrolment period begins for new undergraduate students and undergraduate students repeating first year
F	9	Re-enrolment period begins for second and later year undergraduate and graduate students enrolled in formal courses
F	23	Last day for acceptance of enrolment by new and re-enrolling students
M	26	Session 1 begins – all courses except Medicine IV and V and the University College

March

M	5	Session 1 begins – University College, Australian Defence Force Academy
F	9	Last day applications are accepted from students to enrol in Session 1 or whole year subjects
F	30	Last day for students to discontinue Session 1 and whole year subjects so as not to incur HECS liability
S	31	HECS Census Date for Session 1

April

Th	12	Last day for students to discontinue without failure subjects which extend over Session 1 only
F	13	Good Friday – Public Holiday Mid-session Recess begins

April

S	14	Easter Saturday – Public Holiday
M	16	Easter Monday – Public Holiday
Su	22	Mid-session Recess ends
W	25	Anzac Day – Public Holiday

May

T	8	Publication of provisional timetable for June examinations
W	16	Last day for students to advise of examination clashes
T	29	Publication of timetable for June examinations

June

Th	7	Session 1 ends
F	8	Study Recess begins
M	11	Queen's Birthday – Public Holiday
W	13	Study Recess ends
Th	14	Examinations begin

July

M	2	Examinations end
Th	12	Assessment results mailed to students
F	13	Assessment results displayed on University noticeboards
Su	22	Mid-year Recess ends
M	23	Session 2 begins

August

Th	2	Last day for applications for review of Session 1 assessment results
F	3	Last day for students to discontinue without failure subjects which extend over the whole academic year. Last day applications are accepted from students to enrol in Session 2 subjects.
F	31	HECS Census Day for Session 2. Last day for students to discontinue Session 2 and whole year subjects so as not to incur HECS liability

September

F	7	Last day for students to discontinue without failure subjects which extend over Session 2 only
S	22	Mid-session Recess begins
F	28	Closing date for applications to the Universities and Colleges Admission Centre

October

M	1	Labour Day – Public Holiday Mid-session Recess ends
T	2	Publication of provisional timetable for November examinations
W	10	Last day for students to advise of examination clashes
T	23	Publication of timetable for November examinations
W	31	Session 2 ends

November

Th	1	Study Recess begins
T	6	Study Recess ends
W	7	Examinations begin
F	23	Examinations end

December

M	10	Assessment results mailed to students
T	11	Assessment results displayed on University noticeboards
T	25	Christmas Day – Public Holiday
W	26	Boxing Day – Public Holiday
M	31	Public Holiday

Staff

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

Dean
Professor A. R. Toakley

Chairman
Associate Professor R. E. Apperly

Senior Administrative Officer
Brian John Newell, BCom *N.S.W.*

Professional Officers
Roderick Craig McGregor, BSc *N.S.W.*
Richard Rosenberger, BE *Timisoara*, PhD *N.S.W.* MIEAust

School of Architecture

Professor of Architecture and Head of School
Paul Stanhope Reid, BArch *Auck.*, MArch *Mich.*, ARAIA

Professors of Architecture
Andrew Andersons, BArch *Syd.*
Philip Cox, BArch Dip TCP *Syd.*, AO, FRAIA,
Jon Lang, BArch *Witw.*, MRP, PhD *Cornell*

Visiting Professor
Laszlo Peter Kollar, MArch PhD *N.S.W.*, ASTC

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Peter Thomas Oppenheim, BArch *Cape T.*, MArch PhD *N.S.W.*
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Senior Lecturers
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Richard Patrick Parlour, BSc *Lond.*, PhD *N.S.W.*, DipEng *Lough.*
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DipEnvStud *Macq.*, MRAPI, ARAIA
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Department of Industrial Arts

Senior Lecturer and Acting Head of Department

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Senior Lecturer

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School of Building

Head of School

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Thomas Edward Uher, BBuild MScBuilding *N.S.W.*, MAIB

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

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School of Landscape Architecture

Professor of Landscape Architecture and Head of School

Vacant

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

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Professor of Town Planning and Head of School

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

Lecturers

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

Tamas Lukovich, MCEng MArch PhD *Budapest*

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Department of Industrial Design

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Building Research Centre

Director

Marton Marosszekey

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David Wang, BScBldg. Const *Shanghai*

Consultant

Perry Forsythe

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, industrial design, landscape architecture and town planning. It provides opportunities for graduate and professional development studies, and for research in an across the fields of the man-made and built environments.

Faculty Information

Some People Who Can Help You

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.

Professor William Hendrix, 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.

John Redmond, Department of Industrial Design, Room 212, Sir Robert Webster Building, Extension 4844.

It is University policy to promote equal opportunity in education (refer to EOE Policy Statement, University of New South Wales Calendar and the Guide for Students 1990).

Faculty of Architecture Enrolment Procedures

Architecture Degree Course

All students re-enrolling in Architecture courses in 1990 should obtain a copy of the free booklet *Architecture Enrolment Procedures 1990* 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 1990.

Students are required to complete 6 months of practical experience as part of their course. Building students who elect to take their industrial program 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.

Rules for Progression

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.

Library Facilities

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 located in the Library tower.

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 **Rhonda Langford**

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.

Faculty Laboratories

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:

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 two studios of 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 envrionmental and building science.

Student Clubs and Societies

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 Academic Registrar for approval by the University Council.

General Education Requirement

The University requires that all undergraduate students undertake a structured program in General Eduaction as an integral part of studies for their degree.

Among its objectives, the General Education program provides the opportunity for students to discuss some of the key questions they will face as Students and professionals.

The program requires students to undertake studies in three areas:

A.An introduction in non-specialist terms to an understanding of the environments in which humans function.

B.An introduction to, and critical reference upon, the cultural bases of knowledge, belief, lamguage , identity and purpose.

C.An introduction to the development, design and responsible managemnet of the systems over which human beings exercise some influence and control.

The exact form of category C is still being decided and should be clearly defined in 1990. This could involve, however, a slight subsequent change to the structure of the later years of degree programs.

There are differing requirements for students commencing before and after 1988:

1. Students who commenced their undergraduate program before 1988.

Students must complete a program of General Education in accordance with the requirements in effect when they commenced their degree program. Students yet to complete the General Education requirement may select subjects from any of the three categories of the new program.

2. Students who commenced their undergraduate program in 1988 and subsequent years.

Students must complete a program of subjects elected from each of the three categories of subject in accordance with the rules defined in the General Education Handbook and in sequences specified in the requirements for individual courses.

Further information may be obtained from the office of the Centre for Liberal and General Studies, Room G58, Morven Brown Building, and the General Education Handbook.

Undergraduate Study

The Faculty of Architecture consists of the School of Architecture including the Department of Industrial Design, 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 design, 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 the development of manufactured products. In addition to professional and vocational training the courses include general education subjects to provide graduates with a broad understanding of the humanities and the social sciences.

School of Architecture

Head of School
Professor Paul Reid

Architecture today is an art, a technology and a business. In the modern building industry the architect is the one person who considers the building as a whole end product: serving a purpose, built of materials using technology, to a cost, for a client, providing an environment of space, light and climate, changing its context by its location and form, conveying artistic meaning.

For small buildings the architect can lead and manage the whole process. As projects become larger and more complex the architect becomes a member of a team, sometimes captain of the team, often just one member but always from the beginning seeing the end product as a whole. From a comprehensive study of the requirements for a building the architect prepares a design concept which is continually adjusted and refined over the life of the project. The architect's role is one of continual creativity.

The BArch course provides graduates with an understanding of the forces that shape buildings and with the skills to guide those forces to a desired end product.

Architecture Degree Courses

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 Communication

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 session, or half-year duration. Admission to each Design Stage is subject to completion of a majority of the components of the preceding Design Stage and certain pre-requisite lecture 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 four sessions of the course the selection of electives 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 BArch 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 RAIA and the Board of Architects of New South Wales.

3265
Bachelor of Science (Architecture) Course

Bachelor of Science (Architecture)
B Sc(Arch)

This course provides architectural education for those whose interests and ambitions lie outside the field of professional 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 BArch 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 Education 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 theBSc(Arch) programme, and in accordance with current Faculty regulations. Honours are Class 1 or Class 2 Division 1 or Class 2 Division 2.

B.Arch. Course 3260: Schedule of Subjects

No.	Subject Name	Credit Points	Prerequisites
YEAR 1 (SESSIONS 1 & 2)			
11.6201	Architectural Computing 1 (S2)	2	Nil
11.6301	Theory of Architecture	2	Nil
11.6401	History of Architecture 1	4	Nil
11.6501	Architectural Construction 1	4	Nil
11.6601	Architectural Structures 1	2	Nil
11.6701	Environmental Control 1	4	Nil
Design Stage 1			
11.6101	Design Studio 1	8	Nil
11.6211	Communication Seminar 1	6	Nil
11.6311	Theory Seminar 1	4	Nil
11.6511	Construction Seminar 1	4	Nil
11.6611	Structures Seminar 1	2	Nil
11.6711	Environmental Control Seminar 1	2	Nil
		44	
YEAR 2 (SESSIONS 1 & 2)			
11.6302	Theory of Architecture 2	2	11.6301
11.6402	History of Architecture 2	4	11.6401
11.6502	Architectural Construction 2	4	11.6501
11.6602	Architectural Structures 2	2	11.6601
11.6702	Environmental Control 2	4	11.6701
	General Studies Electives	4	
Design Stage 2			
11.6102	Design Studio 2	10	11.6101, 11.6501,
11.6212	Communication Seminar 2	4	11.6601, 11.6701
11.6312	Theory Seminar 2	3	*four from*
11.6512	Construction Seminar 2	3	11.6211, 11.6311,
11.6612	Structures Seminar 2	2	11.6511, 11.6611,
11.6712	Environmental Control Seminar 2	2	11.6711.
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YEAR 3 (SESSIONS 1 & 2)			
11.6303	Theory of Architecture 3	2	11.6302
11.6403	History of Architecture 3	4	11:6402
11.6503	Architectural Construction 3	4	11.6502
11.6603	Architectural Structures 3	2	11.6603
11.6703	Environmental Control 3	4	11.6702
	General Studies Electives	4	
Design Stage 3			
11.6103	Design Studio 3	10	11.6102, 11.6502,
11.6213	Communication Seminar 3	4	11.6602, 11.6702,
11.6313	Theory Seminar 3	3	*four from*
11.6513	Construction Seminar 3	3	11.6212, 11.6312,
11.6613	Structures Seminar 3	2	11.6512, 11.6612,
11.6713	Environmental Control Seminar 3	2	11.6712.
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B.Arch. Course 3260: Schedule of Subjects

No.	Subject Name	Credit Points	Prerequisites
YEAR 4 (SESSION 1)			
Either			
11.6804	Architectural Practice 1	2	11.6103
	Elective Subjects*	8	
Design Stage 4			
11.6104	Design Studio 4	8	11.6103, 11.6503, 11.6603, 11.6703,
11.6114	Design Seminar 1	2	*four from*
11.6514	Technology Seminar 1	2	11.6213, 11.6313, 11.6513, 11.6613, 11.6713.
		22	
Or			
11.6904	Practical Experience		11.6103
YEAR 4 (SESSION 2)			
Option remaining from Session 1.			
YEAR 5 (SESSION 1)			
11.6205	Architectural Computing 2	2	11.6201
	Elective Subjects *	8	
Design Stage 5			
11.6105	Design Studio 5	8	
11.6115	Design Seminar 2	2	11.6104, 11.6114,
11.6515	Technology Seminar 2	2	11.6514, 11.6904.
		22	
YEAR 5 (SESSION 2)			
11.6806	Architectural Practice 2	2	11.6804
	Elective Subjects *	8	
Design Stage 6			
11.6106	Design Studio 6	8	
11.6116	Design Seminar 3	2	11.6105, 11.6115, 11.6515.
11.6516	Technology Seminar 3	2	
		22	
YEAR 6 (SESSION 1)			
11.6807	Architectural Practice 3	2	11.6806
	Elective Subjects *	8	
And			
Design Stage 7			
11.6107	Design Studio 7	8	
11.6117	Design Seminar 4	2	11.6106, 11.6116, 11.6516,11.6906
11.6517	Technology Seminar 4	2	
Or			
11.6127	Major Design Project	12	*By invitation.*
Or			
11.6907	Major Research Project	12	*By invitation.*
		22	

B.Arch. Course 3260: Schedule of Subjects

No.	Subject Name	Credit Points	Prerequisites

Elective Subjects

The listing for electives includes an allowance for Dissertation and the remaining General Studies elective. These subjects are mandatory but may be taken in any of the final four sessions with the exception of Dissertation which is a prerequisite for Design Stage 7. Students are advised to enrol in Dissertation only in the session they intend to submit for assessment and not before.

11.5220	Computer Graphics Programming 1	2	11.6103
11.5221	Computer Graphics Programming 2	4	11.5220
11.5222	Computer Applications 1	4	11.6103
11.5223	Computer Applications 2	2	11.6103
11.5227	Advanced Graphics	2	11.6103
11.5228	Drawing	2	11.6103
11.5229	Painting	2	11.6103
11.5230	Pottery & Ceramics	2	11.6103
11.5231	Rendering	2	11.6103
11.5320	Theory of Form	2	11.6103
11.5321	Criticism and Evaluation	2	11.6103
11.5322	Imagination	2	11.6103
11.5323	Spirit in Architecture	2	11.6103
11.5420	Building Conservation	2	11.6103
11.5421	Recent Australian Architecture	2	11.6103
11.5422	Great Architects	2	11.6103
11.5423	The City - Sydney	2	11.6103
11.5424	Urban Design	2	11.6103
11.5425	Landscape Design	2	11.6103
11.5520	Advanced Building Materials 1	2	11.6103
11.5521	Advanced Construction Systems	2	11.6103
11.5522	Construction,Planning & Management	2	11.6103
11.5523	Advanced Building Materials 2	2	11.6103
11.5524	Advanced Building Materials 3	2	11.6103
11.5620	Conceptual Structural Design	4	11.6103, 11.6503, 11.6603.
11.5621	Advanced Structural Design	4	11.5620
11.5622	Lightweight Structural Design	4	11.6503, 11.6603, 11.6104.
11.5720	Design for Energy Efficiency	2	11.6103
11.5721	Design of Lighting	2	11.6103
11.5722	Acoustics Studies	2	11.6103
11.5820	Building Economics & Development	2	11.6103
11.5821	Project Management	2	11.6103
11.5822	The Architect and the Law	2	11.6103
11.5920	Architectural Research 1	4	11.6103
11.5921	Architectural Research 2	4	11.6103
11.5922	Architectural Research 3	4	11.6103
11.6906	Dissertation	6	11.6103

BSc (Arch) Course 3265: Schedule of Subjects

No.	Subject Name	Credit Points	Prerequisites
YEAR 1 (SESSIONS 1 & 2)			
11.6021	Architectural Computing 1(S2) 2	2	Nil
11.6301	Theory of Architecture 1	2	Nil
11.6401	History of Architecture 1	4	Nil
11.6501	Architectural Construction 1	4	Nil
11.6601	Architectural Structures 1	2	Nil
11.6701	Environmental Control 1	4	Nil
Design Stage 1			
11.6101	Design Studio 1	8	Nil
11.6211	Communication Seminar 1	6	Nil
11.6311	Theory Seminar 1	4	Nil
11.6511	Construction Seminar 1	4	Nil
11.6611	Structures Seminar 1	2	Nil
11.6711	Environmental Control seminar 1	2	Nil
		44	
YEAR 2 - (SESSION 1)			
11.5914	Special Research Programme 1	5	Head of School's approval
	Choice of B.Arch. subjects	15	Head of School's approval
	General Education Elective	2	Nil
		22	
YEAR 2 - (SESSION 2)			
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 Education Elective	2	Nil
		22	
YEAR 3 - (SESSION 1)			
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	13	Head of School's approval
	General Education Elective	2	
		22	
YEAR 3 - (SESSION 2)			
11.5917	Research Project	8	11.5916, 11.5912
	Choice of B.Arch. subjects	12	Head of School's approval
	General Education Elective	2	Nil
		22	
YEAR 4 - (SESSION 1) (Optional Honours year)			
11.5918	Honours Project 1	22	131 credit points
		22	
YEAR 4 - (SESSION 2)			
11.5919	Honours Project 2	22	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.

Department of Industrial Arts

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.

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 handbook for details of this course.

School of Building

Head of School
Mr Graham Levido

Undergraduate Course Co-ordinator
Mr. Clyde Smythe

Building Degree Course

Bachelor of Building 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, 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). The course leads to the award of the degree of Bachelor of Building (BBuild).

The eight semesters of the course are structured as follows:

- semesters 1 to 6 consist of a fixed program of compulsory subjects,
- semesters 7 and 8 consist of electives and a compulsory Thesis.

In a normal semester program, this usually results in six subjects requiring 18 class hours plus a General Education subject.

Credit points are allocated to all subjects. Usually a subject having one hour of classes per week for one session is rated at one credit point.

To qualify for a Bachelor of Building degree a student must have completed all compulsory subjects (comprising 129 credit points) and a minimum of 20 credit points from the elective subjects. In addition, all students are required to satisfy the General Education requirement by taking two full General Education subjects (refer to the General Education Handbook for details).

Progress through the Course

Progression through the course is by subject, provided that:

- the necessary subject prerequisites are completed;
- failed subjects are repeated the next time they are offered.

In the event of failure in one or more subjects, the student may carry the failed subject(s) provided that:

- prerequisite subjects have been completed to the satisfaction of the Head of School
- the total number of subjects taken at any time does not exceed 7 including General Education; and
- the total contact hours do not exceed 20 per week.

Practical Experience

Prior to graduation, students are required to have gained a minimum of 6 months practical experience by appropriate employment in the building industry.

The proposal for employment must be submitted to the Head of the School of Building for approval prior to starting work and students will be required to produce documented evidence of their work experience. In order to formally complete the industry experience requirement, students must enrol in 35.410 Industry Program

Award of the Degree at Honours Level

The award of honours is based on performance throughout the whole course, without requiring an additional honours program. Honours are determined on the basis of a score which is calculated by weighting more heavily the subjects taken in the later years of the course.

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:

35.303	Quantity Surveying 3
35.313	Building Economics 3
35.005	Construction 5
35.006	Construction 6
35.274	Commercial Arbitration

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

35.301	Quantity Surveying 1
35.302	Quantity Surveying 2
35.303	Quantity Surveying 3

(4) The Society of Land Economists, subject to the completion of the following:

(a)

35.262	Management 3
35.273	Law for Builders 3
35.390	Property Valuation
35.391	Land Economics
35.393	Management of Buildings
35.392	Property Development
35.313	Building Economics 3

and

(b)submitted a thesis on a Land Economics subject.

The course is also recognised as an educational qualification for licencing by the Building Services Corporation.

Schedule of Subjects

Year 1 (All subjects compulsory)

Semester 1		Credit points	Prerequisites
35.001	Construction 1 (Domestic Buildings)	3	
35.010	Communications and Resource Usage	3	
35.091	Built Environment 1	2	
35.111	Building Science 1 (Materials)	4	
35.170	Mathematics for Builders	4	
35.261	Management 1 (Management Principles)	2	
Semester 2			
1.931	Physics for Builders	4	
35.002	Construction 2 (Low Rise Domestic)	4	35.001
35.051	Structures 1	3	
35.151	Building Services 1 (Hydraulics)	2	
35.271	Law for Builders 1	2	
35.311	Building Economics 1	3	

Years 2 (All subjects compulsory)

Semester 3			
14.001	Introduction to Accounting A	2	
29.411	Surveying for Architects and Builders	2	
35.003	Construction 3 (Framed Buildings)	4	35.002, 35.151
35.052	Structures 2	4	35.051
35.262	Management 2 (Planning)	3	35.261
35.281	Introduction to Computing	2	
Semester 4			
14.002	Introduction to Accounting B	2	
35.112	Building Science 2 (Concrete and Metals)	4	
35.152	Building Services 2 (Mechanical)	2	1.931, 35.151
35.263	Management 3 (Contracts)	3	35.262
35.301	Quantity Surveying 1	4	

Year 3 (All subjects compulsory)

Semester 5			
35.004	Construction 4 (High Rise Buildings)	4	35.003, 35.052
35.264	Management 4 (Personnel Management)	3	35.263
35.272	Law for Builders 2	2	35.271
35.282	Computer Applications in Building	2	35.281
35.302	Quantity Surveying 2	4	35.301
	General Education Elective (See General Education Handbook)		
Semester 6			
35.005	Construction 5 (Techniques)	4	35.004
35.050	Sail Mechanics for Building	2	
35.265	Management 5 (Project Management)	3	35.264
35.312	Building Economics 2	3	14.002
35.321	Estimating 1	35.301	
	General Education Elective		

Year 4 (Thesis preparation and Thesis are compulsory. Students must also enrol in 35.410 Industry program to present their industrial experience documentation. Students must take a total of 20 elective credit points.)

		Credit points	Prerequisites
Semester 7			
Compulsory Subject			
35.401	Thesis preparation	6	
Elective Subjects			
35.006	Construction 6 (Industrialization and Technological Change)	2	35.005
35.008	Construction Plant	2	
35.092	Built Environment 2	2	
35.113	Building Science 3 (Energy and Thermal)	3	
35.266	Management 6 (Corporate Strategy)	2	35.265
35.284	Building Information Systems	3	35.282
35.313	Building Economics 3	2	35.312
35.322	Estimating 2	2	35.321
35.392	Property Development	2	35.312
Semester 8			
Compulsory Subject			
35.402	Thesis	6	35.401
35.410	Industry Program		
Elective Subjects			
35.007	Construction 7 (Special Project)	2	35.005
35.114	Building Science 4 (Timber)	2	
35.267	Management 7 (Marketing)	3	35.265
35.273	Law for Builders 3	3	35.272
35.274	Commercial Arbitration	3	35.263
35.283	Systems Analysis and Modelling	3	35.263
35.303	Quantity Surveying 3	3	35.302
35.390	Property Valuation	3	
35.391	Land Economics	3	35.312
35.393	Management of Buildings	2	

Department of Industrial Design

Head of Department:
John Redmond

Industrial design involves the research and design of the whole range of consumer and capital products used by people. Products as diverse as telephones and cranes, gas fires and exhibition systems, toothbrushes and motor cars. Ideally, the industrial designer works as part of a team involving engineering, production and marketing. The industrial designer initially concentrates on establishing the concept as a marketable, produceable, usable and socially responsible product; and subsequently details the human factors (ergonomics), appearance (style) and mode of operation. Frequently the designer becomes involved in the corporate image of companies and their products as well as the graphics of the product's packaging and the associated retail support systems.

The course prepares students for professional and executive employment in areas involving the research, design and development of new manufactured products. Whilst it is anticipated that most graduates will be initially employed in an industrial design capacity either in manufacturing companies or consultancies, it is likely that some graduates may subsequently choose to specialise in aspects of marketing, engineering, product management or design management.

Industrial Design Degree Course
3385
Bachelor of Industrial Design
BIndDes

The course is offered predominantly on a semester basis. Students are required to complete a minimum of eight semesters (sessions) including at least three months of industrial experience, taken either during the academic recesses or upon the completion of the academic part of the course, but in units of not less than one month.

Industrial design and ergonomics subjects make up approximately half the subjects and are taken within the Department. The industrial design studio work emphasises the need to find a balance between the requirements of design, ergonomics, marketing, engineering and production. Social and environmental issues as well as the professional and ethical responsibilities of the designer are also emphasised.

Approximately 20 percent of subjects are taken within the Faculty of Commerce and 25 percent within the fields of science and engineering. The General Education Program comprises 7 percent of the course.

The industrial design subjects link their subject material to certain of the material covered in engineering and marketing subjects. In addition, a link subject (Product Studies Seminar), is given involving industrial design, engineering, production, and marketing disciplines in which product case studies are given and analysed.

Student progression may be subject to review by the Head of Department. If a student fails the industrial design studio subject of a particular stage, he/she would not normally be permitted to take any of the subjects in the next stage until that subject had been satisfactorily repeated.

Co-op education mode

The course is operated in a co-op mode. Selected industrial and commercial companies will have the opportunity to provide practical experience and recess employment to selected students or alternatively to offer scholarships, in which case students will work for the companies in certain of the recesses without additional remuneration. Companies will also be involved in providing briefings, consultations, and evaluations for studio project work.

Three months approved practical experience are a requirement of the course.

Honours

The Bachelor of Industrial Design degree may be awarded with Honours based upon the quality of performance in the course. Honours are Class 1 or Class 2 Division 1 or Class 2 Division 2.

Professional Recognition

The Department will be seeking recognition of the course by the Design Institute of Australia for the eligibility of students enrolled in the course to become student members of the Institute and Licentiates automatically upon graduation.

Schedule of Subjects

Credit points generally indicate the numbers of hours per week of student/staff contact for one session.

Students who have not taken physics or science at HSC level, are recommended to take the relevant Unisearch bridging courses, after consultation with the Head of Department.

It should be noted that there will be some variation of order of subjects, as some subjects may, from time to time, not be available in a particular session. The course averages 22 hours per week over the four years and when finalising timetables for any particular year every attempt will be made to keep close to the average number of hours per week, and to the program outlined in this schedule.

Prerequisite

Mathematics

either 2-unit Mathematics HSC score range 60-100,
or 3-unit Mathematics HSC score range 1-50,
or 4-unit Mathematics HSC score range 1-100

Note: The 2-unit Mathematics subject cannot be the Mathematics in Society subject.

3385 Industrial Design Bachelor of Industrial Design, BIndDes

Year 1
Session 1

		Hrs. pw
39.311	Basic Design	4
39.313	Visual Thinking & Drawing	4
39.316	History of Art, Architecture & Design	1
39.317	Principles of Ergonomics	2
10.021B	General Mathematics 1B	6
GEP	General Education Program	2
		19

Year 1
Session 2

39.312	Design Studio 1	4
39.314	Geometrical & Mechanical Drawing	4
10.021C	General Mathematics 1C	6
1.931	Physics	6
39.421	Engineering Design Mechanics	4
		24

Year 2
Session 1

		Hrs. pw
39.327	Design Methodology	1
39.323	Perspective & Rendering Techniques	4
39.321	Industrial Design Studio 2	5
39.315	Introduction to Computing	3
39.427	Introduction to Materials Science	1
39.423	Mechanics of Solids for Industrial Design	3
39.328	Product Studies Seminar	0.33
10.301	Statistics SA	2
14.501	Accounting & Financial Management 1A	4.5
		23.8

Year 2
Session 2

39.321	Industrial Design Studio 2	5
39.324	Computer Aided Design	4
39.328	Product Studies Seminar	0.33
14.511	Accounting & Financial Management 1B (or equivalent special subject)	4.5
10.301	Statistics SA	2
39.426	Materials & Manufacturing Processes for Industrial Design, A	3
39.329	Applied Ergonomics	3
GEP	General Education Program	2
		23.8

Year 3
Session 1

39.427	Materials & Manufacturing Processes for Industrial Design, B	3
39.424	Principles of Electrical Engineering for Industrial Design	2
39.331	Industrial Design Studio 3	5
39.333	Computer Graphic Applications	4
28.012	Marketing Systems	4
28.032	Consumer Behaviour A	4
39.328	Product Studies Seminar	0.3
		22.3

Year 3
Session 2

39.331	Industrial Design Studio 3	5
28.052	Marketing Research	4
28.042	Consumer Behaviour B	4
39.425	Electrical Engineering applications in Industrial Design	2
39.432	Production Design & Technology for Industrial Design	2
39.326	Form Theory	1
39.334	Photography	2
39.326	Product Studies Seminar	0.3
GEP	General Education Program	2
		22.3

Year 4
Session 1

39.341	Industrial Design Studio 4	5
39.342	Project Research	4
28.073	Strategic Marketing	4
39.328	Product Studies Seminar	0.3
39.322	Graphic Design for Industrial Designers	3
39.332	Environmental & Interior Design for Industrial Designers	2
39.329	History of Consumer Products	0.5
39.335	History of Industrial Design	0.5
GEP	General Education Program	4
		23.3

Year 4
Session 2

39.343	Project	12
28.083	Managerial Marketing	4
39.328	Product Studies Seminar	0.3
39.334	Professional Practice	1
39.336	Managing Product Innovation & Development	1
39.431	Product Management for Industrial Design	2
GEP	General Education Program	2
		22.3
39.344	Industrial Experience	

It should be noted that, subject to the approval of the Faculty of Architecture, certain subjects from other Schools of the University may be substituted for the subjects shown.

School of Landscape Architecture

Head of School
Professor William Hendrix

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 encompases 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 20 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, Town Planning, Civil Engineering and the Centre for Liberal and 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 landscape industry 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 logbook 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 37.5808 Landscape Design 6.

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
Year 1			
Session 1			
25.5222	Geology for Landscape		
37.0014	Introduction to Computer Applications	2	nil
	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
43.202	Botany for Landscape Architects	5	nil
	General Education Elective	2	
		23	
Session 2			
37.1112	Horticulture for Landscape Architects	2	43.202
37.1302	Landscape Analysis*	6	27.818, 37.3101 , 43.202, 25.5222
37.7203	Landscape Materials and Construction	3	nil
37.3202	Landscape Graphics 2	4	37.3101
37.5202	Design 2	3	37.5101, 37.3101
	General Education Elective	2	
		17	

* 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.

Year 2			
Session 1			
37.1413	History of Landscape Architecture	2	nil
37.1513	Environmental Sociology for Landscape Architects	2	
37.5313	Landscape Design 1	10	37.3203, 37.5202, 37.1302,
37.7204	Landscape Technology A	3	37.7203
	General Education Elective	2	
		19	
Session 2			
37.5014	Planting Design	2	37.1102, 37.5313
37.5414	Landscape Design 2	12	37.5313
37.7205	Landscape Technology B	3	37.7204
	General Education Elective	2	
		21	
Year 3			
Session 1			
36.411	Town Planning	2	nil
37.3005	Research Methods	1	nil
37.5505	Landscape Design 3	8	37.5414, 37.1513, 37.7205
37.7113	Professional Practice A	2	37.5414, 37.7205
37.7515	Landscape Engineering A	3	37.7205, 37.5414
37.9105	Landscape Planning 1	3	37.1513, 37.5414
	General Education Elective	2	
		21	
Session 2			
37.1616	Land Systems and Management	2	37.5505, 37.9105
37.5606	Landscape Design 4	8	37.5505
37.7114	Professional Practice B	2	37.7113, 37.5505
37.7616	Landscape Engineering B	3	37.7515, 37.5505
37.9206	Landscape Planning 2	3	37.9105
	General Education Elective	2	
		20	
Year 4			
Session 1			
37.3007	Landscape Thesis	10	37.3005, 37.5606
37.502	Landscape Design 5	3	37.5606, 37.9206
37.501	Urban Landscape Design	6	37.5606
		19	
Session 2			
37.3007	Landscape Thesis	4	See Session 1
37.503	Landscape Design 6	12	37.502, four months practical experience
		16	

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 coordinate 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 Head of the School 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: One or more major planning subjects are 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.

		Hours per week	Credit points for Honours
Year 1			
Session 1			
36.211	**Introduction to Planning**	12	14
29.901	Introduction to Mapping	1.5	2
36.134	Communication Techniques I	4	4
36.222	Computers and InformationSystems	2	3
		19.5	23
Session 2			
36.212	**Planning Studies I**	12	14
36.131	Communication Techniques II	3	4
36.232	Environmental Science 1	2	3
36.245	The Development Process	4	6
		21	27
Year 2			
Session 1			
36.213	**Local Planning 1**	12	14
36.4611	Engineering A	2	2
36.4612	Engineering B	1	1
36.233	Environmental Science 2	2	3
26.000	General Education Elective	4	4
		21	24
Session 2			
36.218	**Regional Planning 1**	12	14
36.234	Urban Design	3	4
36.452	History of Town Planning	2	3
26.000	General Education Elective	4	4
		21	25
Year 3			
Session 1			
36.215	**Planning Law and Administration 1**	12	14
36.228	Transportation Planning	3	4
36.235	Urban Society and Sociology	3	4
37.224	Landscape Architecture	2	3
		20	25
Session 1			
36.503	Practical Experience	3	-
Year 4			
Session 1			
36.503	Practical Experience	3	-
Session 2			
36.214	**Local Planning 2**	6	9
36.230	Politics, Power and Policy	3	4
36.216	Planning Law and Administration 2	3	4
36.421	**Integrated Planning Project 1**	8	8
		20	25

Year 5

Session 1

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
		21	24

Session 2

36.491	**Thesis**	15	20
36.210	Professional Practice	1	2
36.8300	Planning Elective	4	4
		20	26

* The following planning electives are offered subject to demand and availability.

36.8301	Residential Planning	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
36.8308	Social Planning	4	4
36.8309	Environmental Psychology	4	4
36.8312	Transport and Environmental Management	4	4
36.8313	Urban Design 2	4	4
36.8314	Computer Applications in Planning 2	4	4

Note: 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 maybe phased in progressively. Details will be provided prior to enrolment.

Undergraduate Study

Subject Descriptions

Identification of Subjects by Number

A subject is defined by the Academic 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 Academic 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 may not be re-used with a new subject title within ten years of the prior use.

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 Education subjects. For General Education subjects see the **General Studies Handbook** which is available free of charge.

HSC Exam Prerequisites

Subjects which require prerequisites for enrolment in terms ofthe 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
	*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 and Animal Science)	Applied Science
10	School of Mathematics	Science
11	**School of Architecture**	**Architecture**
12	School of Psychology*	Biological and Behavioural Sciences
13	School of Fibre Science and Technology (Textile Technology)	Applied Science
14	School of Accounting	Commerce & Economics
15	School of Economics	Commerce & Economics
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
19	School of Information Systems	Commerce & Economics
20	Centre for Petroleum Engineering Studies	Applied Science
21	**Department of Industrial Arts**	**Architecture**
25	School of Mines (Applied Geology)	Applied Science
26	Centre for Liberal and General Studies	Liberal and General Studies
27	School of Geography	Applied Science
28	School of Marketing	Commerce & Economics
29	School of Surveying	Engineering
30	School of Industrial Relations and Organizational Behaviour	Commerce & Economics
31	School of Optometry	Science
32	Centre for Biomedical Engineering	Engineering
34	Faculty of Arts	Arts
35	**School of Building**	**Architecture**
36	**School of Town Planning**	**Architecture**
37	**School of Landscape Architecture**	**Architecture**
38	School of Applied Bioscience (Food Science & Technology)	Applied Science
39	**Graduate School of the Built Environment**	**Architecture**
40	Academic Board	
41	School of Biochemistry	Biological and Behavioural Sciences
42	School of Applied Bioscience (Biotechnology)	Applied Science
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 Applied Bioscience	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
98	School of Banking and Finance	Commerce & Economics
99	Department of Legal Studies and Taxation	Commerce & Economics

Architecture

Architectural Design Studio

Architectural synthesis is the central function of the design studio, the locus of the application of knowledge gained in the lectures and seminars. The vehicles for study are projects and exercises of increasing depth and complexity covering a wide range of building types. Students are encouraged to seek design solutions which cater for the full range of human needs and aspirations. The studios provide continuing opportunities to consider environmental, social, historic, aesthetic, technical and professional factors affecting architecture and the architect's role in the community.

11.6101 Design Studio 1 **C8**

Prerequisite: Nil

Analysis of the natural and built environment to develop an awareness of physical environment and the forces determining built form. An understanding of man's functions, activities and aspirations and of the architects' essentially creative and conceptual role.

Introductory studio focusing on the application of design method through simple three dimensional design exercises culminating in the design of simple, small-scale buildings and an understanding of the parameters of design.

11.6102 Design Studio 2 **C10**

Prerequisites: 11.6101, 11.6501, 11.6601, 11.6701, four from 11.6211, 11.6311, 11.6511, 11.6611, 11.6711.

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

11.6103 Design Studio 3 **C10**

Prerequisites: 11.6102, 11.6502, 11.6602, 11.6702, four from 11.6212, 11.6312, 11.6512, 11.6612, 11.6712.

The design of non-residential projects of moderate complexity and scale with more demanding siting and contextual consideration and more complex and less familiar user needs including some adaptive re-use.

Further emphasis on design method. Development of structure, construction, services, environmental control, building regulations and landscape design. Some group work, but largely individual work.

11.6104 Design Studio 4 **C8**

Prerequisites: 11.6103, 11.6503, 11.6603, 11.6703, four from 11.6213, 11.6313, 11.6513, 11.6613, 11.6713.

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

11.6105 Design Studio 5 **C8**

Prerequisites: 11.6104, 11.6114, 11.6514, 11.6904.

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 the social role of the development. Group and individual work with an emphasis on urban design.

11.6106 Design Studio 6 **C8**

Prerequisites: 11.6105, 11.6115, 11.6515.

Exploration and resolution of relatively complex human activities not necessarily of a familiar pattern for non-residential buildings, with emphasis on integration of structure, construction, services and environmental controls at an advanced level and contemporary technology.

11.6107 Design Studio 7 **C8**

Prerequisites: 11.6106, 11.6116, 11.6516, 11.6906.

This subject represents the culmination of the B.Arch course for all students except those who take the Major Design Project or Research Project. It comprises a design project resolved in depth in all areas of architecture, including architectural design, urban design, interior design, construction, structure, services, acoustics, lighting and practice and management.

11.6127 Major Design Project **C12**

Prerequisite: By invitation.

Under supervision of an individual member of staff, with a supportive package of Electives (C8) which are closely related to and form part of the final submission.

The scope and size of this project will have been agreed between the student, his/her supervisor and the School Committee set up to oversee these projects at the start of Year 5 Session 1. Much of the preliminary information gathering, site information, and associated research will have been done in the seminars and architectural research project during Year 5 Session 2.

The end result of this Major Design Project would be a building or a group of buildings of extremely high standard - resolved in detail-structure, finishes, furnishings, environmental control, etc.

11.6114 Design Seminar 1 **C2**

Prerequisites: 11.6103, 11.6503, 11.6603, 11.6703, four from 11.6213, 11.6313, 11.6513, 11.6613, 11.6713.

Understanding of the relation between building cost and architectural design. Preparation of a cost plan for design project in Design Studio 4.

11.6115 Design Seminar 2 **C2**

Prerequisites: 11.6104, 11.6114, 11.6514, 11.6904.

An understanding of the town planning process as a community based contextual system of decision-making directing the physical, social and economic fabric of human settlements. A detailed account of the role and function of environmental studies, planning controls, performance standards, statutory mapping, the development application process, the design review committee and process, the

appeal process, the settlement of disputes. Lectures, seminars, case studies associated as appropriate with studio exercises covering community development and urban design issues.

11.6116 Design Seminar 3 **C2**

Prerequisites: 11.6105, 11.6115, 11.6515.

Understanding of the role of the architect when engaged by a developer. Preparation of a timetable, submissions and reports for a developer client for design project in Design Studio 6.

11.6117 Design Seminar 4 **C2**

Prerequisites: 11.6106, 11.6116, 11.6516, 11.6906.

Development and presentation of the theoretical basis of the students own design work in Design Studio 7.

Architectural Communication

Objectives: To develop skills in oral, written and graphic communication; to introduce students to experimentation with materials and techniques in the context of current architectural thinking, and to expose them to new or less well known techniques and media. To that end, the first year of the course is geared to the development of skills and the later years to more experimental work.

11.6201 Architectural Computing 1 **C2**

Prerequisite: Nil

An introduction to the technology of computing as it pertains to the practice of Architecture and Design. The computer is presented as a tool for storing and manipulating information by means of application programs which model the real-world needs and activities of architects. Typical applications explored include word processing, spreadsheet modelling and database management. Basic principles of technology and programming are explained. Students engage in hands-on computer exercises to consolidate the knowledge gained in the lectures.

11.6205 Architectural Computing 2 **C2**

Prerequisite: 11.6201.

Introduction to the techniques and processes of computer-aided drafting for the production of architectural drawings. Hands-on experience with PC-based CADD software: staged tutorial exercises and self-directed documentation tasks.

11.6211 Communication Seminar 1 **C6**

Prerequisite: Nil.

By the end of first year, students will be expected to present their final design project by means of the following: a set of presentation drawings, rendered in colour - orthographics, axonometric or isometric, perspective and simple construction drawings as required to explain the project fully. A model, written statement of intent and a verbal presentation to a jury will also be required.

To achieve this, they will receive information and practice in the following: drafting and drawing skills, with instruments and freehand, orthographic projection, axonometric, isometric, perspective, colour theory, rendering techniques, variety of media, model making, library use, study and research skills, scholarly writing, report and letter writing and oral presentation.

11.6212 Communication Seminar 2 **C4**

Prerequisites: 11.6101, 11.6501, 11.6601, 11.6701, four from 11.6211, 116311, 11.6511, 11.6611, 11.6711.

To experiment with a range of dry techniques for presentation. Elementary exercises in two and three dimensional composition in combination with advanced colour theory studies. Architectural model making using various techniques. Observational drawing exercises. Library use, study and research skills.

Use of the computer for simple three-dimensional modelling of building form: form analysis; massing; visualization and perspective. Hands-on tutorial exercises linked to Studio design work. (1 cp segment of whole.)

11.6213 Communication Seminar 3 **C4**

Prerequisites: 11.6102, 11.6502, 11.6602, 11.6702, four from 11.6212, 11.6312, 11.6512, 11.6612, 11.6712.

To experiment with a range of wet techniques for presentation. Advanced exercises in three dimensional composition and the display of this through two dimensional presentation techniques including overlays and collages. Introduction to architectural and model photography, dark room techniques, and lighting theory. Jury and sales techniques. Advanced exercises in scholarly writing, report and letter writing and oral presentation.

Theory of Architecture

Objective: To understand and to apply the principles directing design, in particular architectural design; the enhancement of life-events by spatial arrangements, the logic of the process of designation, the central idea of a composition, the formal characteristics of wholes and parts and the conditions of their fitting into the sensible and the intelligible environment.

11.6301 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 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 human body taken in the singular and in the plural, as the basis of sizes in architectural interiors and exteriors. Subtle connotations of varied spatial extensions.

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

11.6302 Theory of Architecture 2 **C2**

Prerequisite: 11.6301.

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 patterns of behaviour. Detailed consideration of 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.

11.6303 Theory of Architecture 3 **C2**

Prerequisite: 11.6302.

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. 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 - dependence, completeness - transformation. Subtle influences of regions localities and the cultural milieu. Introduction to the meaning of signs, symbols, styles and trends.

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 geometric symbols.

11.6311 Theory Seminar 1 **C4**

Prerequisite: Nil.

Exercises in the application of 11.6301 Theory of Architecture 1 related to projects in Design Studio 1.

11.6312 Theory Seminar 2 **C3**

Prerequisites: 11.6101, 11.6501, 11.6601, 11.6701, four from 11.6211, 11.6311, 11.6511, 11.6611, 11.6711.

Exercises in the application of 11.6302 Theory of Architecture 2 related to projects in Design Studio 2.

11.6313 Theory Seminar 3 **C3**

Prerequisites: 11.6102, 11.6502, 11.6602, 11.6702, four from 11.6212, 11.6312, 11.6512, 11.6612, 11.6712.

Exercises in the application of 11.6310 Architectural Theory 3 related to projects in Design Studio 3.

History of Architecture

Objective: To provide an overall view of the historical 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.

11.6401 History of Architecture 1 **C4**

Prerequisite: Nil.

Discussion of historical buildings and texts and the tools of the architectural historian, ie formal analyses of buildings, the use of manifestos and texts, and historiographical conventions.

General chronological exploration of selected buildings and architectural practices with emphasis on the range of influences on architecture, eg, cultural institutions and power structures; other arts such as music, painting, theatre; technology and material developments; models of urbanity; history of ideas in architecture.

Discussion and analysis of past definitions of history and architecture examining issues regarding taste, morality, style, continuity and an examination of many of the ideologies and attitudes arising from modernism.

11.6402 History of Architecture 2 **C4**

Prerequisite: 11.6401.

A selection of theme units which broach both the conceptual structures and theoretical borders of architecture. Themes for this subject will include Aspects of Classicism; Romantic Classicism and the Picturesque; Craft Traditions and the Vernacular; Rituals in Urban Settlement; Historiography.

11.6403 History of Architecture 3 **C4**

Prerequisite: 11.6402.

Extends the range of theme units initiated in History of Architecture 2, including the following: Modernity and Modernism; Australia and the Architecture of Western Imperialism; National and Regional Images in Australian Architecture; Power Structures and Popular Culture as Architectonic Forces in The City; Readings on Modern and Post-Modern Imagery.

Architectural Construction

Objective: To develop breadth and depth in the understanding of the basic rationale governing the construction of buildings. Emphasis is placed upon design decisions which lead firstly to the selection of appropriate constructional systems and then to careful detail design. The theoretical field is mapped in the lecture series with complimentary exercises in practical application pursued in seminars, generally linked to studio projects. Progression is made from the study of the more familiar and small scale building types to that of larger scale buildings of a more complex technological nature.

11.6501 Architectural Construction 1 **C4**

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. Introduction to construction drawing practice and use of resource materials.

11.6502 Architectural Construction 2 **C4**

Prerequisite: 11.6501.

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. Resource materials, dimensional co-ordination and construction drawing practice.

11.6503 Architectural Construction 3 **C4**

Prerequisite: 11.6502.

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, regulatory controls, fire safety and protection. Rationalised systems, prefabrication, modular co-ordination and construction documentation.

11.6511 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 design Studio 1 communication and design projects.

11.6512 Construction Seminar 2 **C3**

Prerequisites: 11.6101, 11.6501, 11.6601, 11.6701, four from 11.6211, 11.6311, 11.6511, 11.6611, 11.6711.

Exercises in the practical application of the principles of architectural construction to the design of small scale buildings. Emphasis on common constructional systems using timber, masonry, steel and concrete, resource and reference information, dimensional coordination and construction drawing practice related where possible to Design Studio 2 design projects.

11.6513 Construction Seminar 3 **C3**

Prerequisites: 11.6102, 11.6502, 11.6602, 11.6702, four from 11.6212, 11.6312, 11.6512, 11.6612, 11.6712.

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 Design Studio 3 design projects.

11.6514 Technology Seminar 1 **C2**

Prerequisite: 11.6103, 11.6503, 11.6603, 11.6703, four from 11.6213, 11.6313, 11.6513, 11.6613, 11.6713.

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

Aspects of climate, thermal, lighting or acoustics will be incorporated into the seminar program, appropriate to the current studio topics.

11.6515 Technology Seminar 2 **C2**

Prerequisite: 11.6104, 11.6114, 11.6514, 11.6904.

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

Aspects of climate, thermal, lighting or acoustics will be incorporated into the seminar program, appropriate to the current studio topics.

11.6516 Technology Seminar 3 **C2**

Prerequisite: 11.6105, 11.6115, 11.6515.

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

Aspects of climate, thermal, lighting or acoustics will be incorporated into the seminar program, appropriate to the current studio topics.

11.6517 Technology Seminar 4 **C2**

Prerequisites: 11.6106, 11.6116, 11.6516, 11.6906.

Studies in the selection and application of structural and constructional systems, building materials and processes appropriate to the Design Studio 7 design project.

Aspects of climate, thermal, lighting or acoustics will be incorporated into the seminar program, appropriate to the current studio topics.

Architectural Structures

Objective: To understand basic forces and the means of resisting them, to know the main structural systems used in buildings, to understand the relation of structure to architectural form as a basis for creative collaboration with structural consultants.

11.6601 Architectural Structures 1 **C2**

Prerequisite: Nil.

General introduction to structures, their development and their role; natural and man-made structures.

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

Basic structural elements and assemblies: cable and arch, strut and column, beam, truss, frame, grid, plate/slab, vault and dome, tent and pneumatic.

Elemental structural behaviour applied to the above: load application, loadpaths, connections, reactions at supports/connections, internal forces (stresses).

Graphical techniques and models as means for structural behaviour studies.

11.6602 Architectural Structures 2 **C2**

Prerequisite: 11.6601.

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

Selective study of structural behaviour and application of the structural design and analysis 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.

11.6603 Architectural Structures 3 **C2**

Prerequisite: 11.6602.

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

The morphology of structures, structural shape, structural systems; efficiency (the "lightweight" concept), structural systems for wide-spanning and high-rise structures, selective studies of structural behaviour.

11.6611 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 Design Studio 1 design projects.

11.6612 Structures Seminar 2 **C2**

Prerequisites: 11.6101, 11.6501, 11.6601, 11.6701, four from 11.6211, 11.6311, 11.6511, 11.6611, 11.6711.

Exercises in the behaviour, selection, analysis and design of simple structural assemblages, related where appropriate to Design Studio 2 design projects.

11.6613 Structures Seminar 3 **C2**

Prerequisites: 11.6102, 11.6502, 11.6602, 11.6702, four from 11.6212, 11.6312, 11.6512, 11.6612, 11.6712.

Exercises in the constructional aspects of structures, with particular emphasis on the characteristics of current and evolving structural systems, related where appropriate to Design Studio 3 design projects.

Environmental Control

Objective: To present to students the theory in thermal behaviour, daylight, electric lighting, acoustics and air quality of buildings and the services to buildings in the context of contemporary building design. To present the principles of energy conservation and environmental impact to enable students to develop appropriate design strategies.

11.6701 Environmental Control 1 **C4**

Prerequisite: Nil.

Human response to the environment, thermal, visual and acoustic comfort and air quality. Climate and the sunlighting and daylighting of buildings. Subjective and objective assessments of aural, visual and thermal environments and their integration. Laboratory work and field studies.

The building envelope: Thermal performance; principles of heat transfer, solar radiation effects, absorptivity, reflectivity, conduction, thermal gradients, condensation and thermal insulation. Acoustic performance; properties and behaviour of sound, sound transmission loss, external noise levels, selection of building envelope elements. Daylighting performance: traditional methods of daylighting buildings, application of prediction methods, patterns of innovation and change, advanced glazing technologies. Integration of heat, light and sound in building envelope design.

11.6702 Environmental Control 2 **C4**

Prerequisite: 11.6701.

Thermal evaluation design tools, correlation and simulation models, degree day concept, the control of sunlight. Quantitative and qualitative aspects of lighting design, electric light sources, light control and prediction methods. Design of rooms, basic shape and volume, acceptable ambient sound levels, structure borne and impact sound, reverberation times, selection of interior building materials and elements.

Thermal mass and its effects, air movement and ventilation, introduction to solar passive design and case studies. Integration of daylight with electric light, lighting for energy conservation, application and evaluation of light in interiors, case and field studies. Buildings for education, music and places of assembly. Integration of thermal, lighting and acoustic design implications.

11.6703 Environmental Control 3 **C4**

Prerequisite: 11.6702.

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

11.6711 Environmental Control Seminar 1 **C2**

Prerequisites: Nil.

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 Design Studio 1.

11.6712 Environmental Control Seminar 2 **C2**

Prerequisites: 11.6101, 11.6501, 11.6601, 11.6701, four from 11.6211, 11.6311, 11.6511, 11.6611, 11.6711.

Lighting, acoustics and thermal design linked where appropriate to design projects in Design Studio 2.

11.6713 Environmental Control Seminar 3 **C2**

Prerequisites: 11.6102, 11.6502, 11.6602, 11.6702, four from 11.6212, 11.6312, 11.6512, 11.6612, 11.6712.

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.

Architectural Practice

Objective: To introduce aspects of professional ethics, management and administration and to develop communication skills relevant to architectural practice.

11.6804 Architectural Practice 1 **C2**

Prerequisite: 11.6103.

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

11.6806 Architectural Practice 2 **C2**

Prerequisite: 11.6804.

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.

11.6807 Architectural Practice 3 **C2**

Prerequisite: 11.6806.

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.

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.

Other Required Studies

11.6904 Practical Experience **C0**

Prerequisite: 11.6103.

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.

11.6906 Dissertation **C6**

Prerequisite: 11.6103.

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. Introductory lectures will be given in the processes and methods of research, writing and referencing for publication of academic works.

Students may prepare material over more than one session but should enrol in the subject only in the session in which they intend to submit for assessment. This will avoid the risk of paying extra fees. Students should note that Dissertation is a prerequisite for Design Stage 7.

11.6907 Major Research Project **C12**

Prerequisite: By Invitation

Under supervision of an individual member of staff, with a supportive package of Electives (C8) which are closely related to and form part of the final submission. Students who are invited to take this subject may be exempt from Dissertation and permitted to make up credit points by taking appropriate electives.

The scope and format of this project will have been agreed between the student, his/her supervisor and the School Committee set up to oversee these projects at the start of Year 5 Session 1. Much of the preliminary information gathering will have been done in the seminars and achitectural research project during Year 5 Session 2.

The end result of this project will be a research project of extremely high quality in a discipline related to the study of Artchitecture and of particular interest to the student.

11.5912 Research Methods (For BSc(Arch) only) **C2**

Prerequisite: 11.5915

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

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 Schoool. 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 progams include studies in design, technology, architectural and materials sciences, conservation, history, communication and management.

11.5917 Research Project (For BSc(Arch) only) **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 (For BSc(Arch) only) **C22**

Prerequisite: 132 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 sessions 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 (For BSc(Arch) only) **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 sessions 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.

Electives

11.5220 Computer Graphics Programming 1 **C2**

Prerequisite: 11.6103.

Introduction to the fundamentals of interactive computer graphics programming; techniques of computer programming utilising a high-level language; use of standard graphics library functions; PC graphics; user interaction techniques. Controlled series of programming exercises.

11.5221 Computer Graphics Programming 2 **C4**

Prerequisite: 11.5220.

Advanced techniques of interactive computer graphics, programming; graphic techniques for user input; menu-based interfaces; colour manipulation; three-dimensional modelling. Design and development of an interactive computer graphics application program.

11.5222 Computer Applications 1 **C4**

Prerequisite: 11.6103.

A 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: 11.6103.

The application of three-dimensional computer graphics techniques to represent built form in Architecture; form description; colour shading techniques, use of multiple light sources; modelling surface textures. Design modelling exercises.

11.5227 Advanced Graphics **C2**

Prerequisite: 11.6103.

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

11.5228 Drawing C2

Prerequisite: 11.6103.

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

11.5229 Painting C2

Prerequisite: 11.6103.

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

11.5230 Pottery and Ceramics C2

Prerequisite: 11.6103.

Introduction to the geology of ceramic raw materials and their physical and chemical nature. The characteristics of earthenware, stoneware, and porcelain. Glazes, kilns and forming methods. Laboratory and studio; handbuilding, introductory throwing and design in pottery and ceramics.

11.5231 Rendering C2

Prerequisite: 11.6103.

Advanced architectural rendering.

11.5320 Theory of Form C2

Prerequisite: 11.6103.

The ontological basis and the antinomical qualities of form in the causal sense, reflected in nature, art and architecture. Practical investigation of the antinomical 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

Prerequisite: 11.6103.

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: 11.6103.

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: 11.6103.

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

11.5420 Building Conservation C2

Prerequisite: 11.6103.

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, adaption for re-use; and repair. Preparation of conservation proposals and plans.

11.5421 Recent Australian Architects C2

Prerequisite: 11.6103.

Detailed study of the theories and work of selected Australian architects.

11.5422 Great Architects C2

Prerequisite: 11.6103.

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 The City-Sydney C2

Prerequisite: 11.6103.

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. Sydney as a case study.

11.5424 Urban Design C2

Prerequisite: 11.6103.

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: 11.6103.

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.

11.5520 Advanced Building Materials 1 C2

Prerequisite: 11.6103.

Classification of materials. Ceramic materials; the nature of cements, concrete, glass bonded ceramics and glass. Building products and techniques using these materials and their implications including construction, maintenance and deterioration. Industrial visits and laboratory.

11.5521 Advanced Construction Systems **C2**

Prerequisite: 11.6103.

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: 11.6103.

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.

11.5523 Advanced Building Materials 2 **C2**

Prerequisite: 11.6103.

Organic materials; the nature of wood and synthetic polymers. Building products and techniques using these materials and their implications including construction, maintenance and deterioration. Industrial visits and laboratory.

11.5524 Advanced Building Materials 3 **C2**

Prerequisite: 11.6103.

Metals, ferrous and non-ferrous, their nature and use. Building products and techniques using these materials and their implications including construction, maintenance and deterioration. Industrial visits and laboratory.

11.5620 Conceptual Structural Design **C4**

Prerequisite: 11.6103, 11.6503, 11.6603.

Choice of systems and their behaviour; scale, structural shape as a visual element in architectural design; conceptual design methods and structural shape-finding and shape-determination methods using analytical, model and computer methods. Model and computer laboratory exercises and project.

11.5621 Advanced Structural Design **C4**

Prerequisite: 11.5620.

The behaviour and analysis of indeterminate structures. Computational techniques for indeterminate and other complex structural systems. Structural CAD applications. Architectural/Structural design issues: envelope - structure interaction, structural detailing and structural expression; dynamic loads; new materials and systems; assembly and erection techniques etc.

11.5622 Lightweight Structural Design **C4**

Prerequisite: 11.6503, 11.6603, 11.6104.

Integrated architectural/ structural/ constructional/ environmental design of cable, cable-net, membrane, tensegrity, shell and folded surface structures in lightweight materials (concrete, timber, metals and composites). Current issues related to on-going research and development. Structural ideologies. Seminar and project(s). Model and computer laboratory work and occasional construction workshop.

11.5720 Design for Energy Efficiency **C2**

Prerequisite: 11.6103.

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: 11.6103.

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: 11.6103.

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

11.5820 Building Economics & Development **C2**

Prerequisite: 11.6103.

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, optimisation, feasibility studies on small-, medium-, large-scale development and subdivisions. 5. Rationalised Building: dimensional control, component technology, building systems, cost planning. 6. Seminars.

11.5821 Project Management **C2**

Prerequisite: 11.6103.

1.Principles of scientific management and organisation, individual group behaviour, management functions, planning, organising, staffing, directing, coordinating, 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 organisation. 7. Seminars.

11.5822 The Architect and the Law **C2**

Prerequisite: 11.6103.

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

11.5920 Architectural Research 1 **C4**

Prerequisite: 11.6103.

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 2 **C4**

Prerequisite: 11.6103.

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 exisiting 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 3 **C4**

Prerequisite: 11.6103

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 Education Subjects

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

Building

Construction Stream

29.411 Surveying for Architects and Builders **S3 LT5**

Compulsory. Prerequisite: Nil.

Introduction. Chaining, methods of measurement, corrections, chain surveys. Level, differential levelling, booking. Contours, volumes of earthworks. Theodolite, methods of reading angles, applications in building. Traversing, setting out.

35.001 Construction 1 (Domestic Buildings) **S1 LT3**

Compulsory. Prerequisite: Nil.

Functional requirements and methods of building single family dwellings: residential slabs and footings for various site conditions; brick, brick veneer and timber walls; flooring, ceiling and roof framing for one and two storey houses; domestic joinery; staircase construction; finishes; plumbing, drainage and electrical services; methods of setting out and supervision.

35.002 Construction 2 (Low Rise Domestic) **S2 LT4**

Compulsory. Prerequisite: 35.001.

Small multi-storey buildings from the functional and construction operation viewpoints. Study of the major building trades and crafts including tools, plant and materials, and the on-site observation of trade practices: materials, techniques, terminology, quality control and supervision. Foundations and footings; types of wall and frame construction; basement, ground floor and upper floor slab construction; methods of roofing, waterproofing; joinery; internal finishes; minor construction plant, formwork. Construction drafting, on-site observation and report on home unit building.

35.003 Construction 3 (Framed Building) **S3 LT4**

Compulsory. Prerequisites: 35.002, 35.151.

Functional requirements and methods of constructing framed buildings: study of structural steel and concrete frames; large span factory roofing, precast concrete walling, tilt up construction, pneumatic formwork, slip form, lift slab, welding techniques, fire requirements, cladding methods, installation of cranes and machine footings, scaffolding, relevant builder's plant and equipment including site works, dewatering, shoring, piling on site observation and report on factory building.

35.004 Construction 4 (High-rise Buildings) **S5 LT4**

Compulsory. Prerequisites: 35.003, 35.052.

Functional requirements and building techniques 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, selection of plant and equipment cranes hoists concrete pumps etc.; 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 coordination of services. On site observation and report on high rise building.

35.005 Construction 5 (Techniques) **S6 LT4**

Compulsory. Prerequisite: 35.004.

Specialized 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. Construction methods with minimal impact on the environment. Integrated construction systems. Students undertake on-site studies. Emphasis on method of construction rather than the attributes of the finished product.

35.006 Construction 6 (Industrialization and Technological Change) **S7 L2**

Elective. Prerequisite: 35.005.

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 coordinating 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.

35.007 Construction 7 (Special Project) **S8 L2**

Elective. Prerequisite: 35.005.

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

35.008 Construction Plant **S7 L2**

Elective. Prerequisite: Nil.

On-site materials handling: hoists, cranes, concrete pumps. Earth moving plant: bulldozers, excavators, backhoes. Pile driving equipment; shoring and rock anchoring equipment. Economic optimization of plant.

35.010 Communications and Resource Usage **S1 LT3**

Compulsory. Prerequisite: Nil.

Sources of information: using the library and off-campus sources including data bases and designs of surveys. Accessing information: reading, summarizing and note taking. Written communication: organization of and participation in meetings, seminars and lectures. Graphic communication: sketching, photography, drafting and detailing.

35.050 Soil Mechanics for Building **S6 LT2**

Compulsory. Prerequisite: Nil.

The origins and formation of soils; clay mineralogy; classification of soils; soil as an engineering material; site investigation; boring, sampling and insitu 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.

35.051 Structures 1 **S2 LT3**

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.

35.052 Structures 2 **S3 LT4**

Compulsory. Prerequisites: 35.051.

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: bolting, nailing, welding. Design of reinforced and prestressed concrete beams, columns and slabs for strength and serviceability.

35.091 Built Environment 1 **S1 LT2**

Compulsory. Prerequisite: Nil.

The intention is to develop an understanding of the relevance of man's "culture" (that thing which his social, economic, political, religious and physical environment gives rise to) to the nature of buildings and settlements which he devises, and an appreciation of the architecture and building (in particular in terms of materials and construction) of those cultures which can be seen to be providing the line to modern "western" building from as far back as "the stone ages".

35.092 Built Environment 2 **S7 LT2**

Elective. Prerequisite: Nil.

Development of an understanding of the nature of the C20th "western" industrial city in general and C20th Sydney in particular: how the urban system functions and the forces and skills at work in its continuing growth. Lectures will sketch the essentials of western industrialisation in the 18th and 19th centuries, urban problems facing Third World countries, the particular problems of C20th Sydney in terms of socio-political environment, environmental pollution, environmental impact statements, transport, urban decay and renewal and expansion, the current planning and development framework, and possible futures for the built environment in Australia.

Building Science Stream

1.931 Physics **S2 LT4**

Compulsory. Prerequisite: Nil.

Energy transfer: conduction, convection, radiation, emittance, absorptance; Joules equivalent; thermometry; heat transfer through materials; thermal storage; thermal resistance; insulation; water vapour, condensation and vapour barriers. Refrigeration theory, properties and characteristics of refrigerants. Electrostatics and electromagnetism: DC circuits; Coulomb's law; electric field; electric potential; capacitance; conductors; resistivity; Atomic view of conduction; EMF; Kirchoff's laws; magnetic induction; torque on a coil in a magnetic field; moving coil meter; Wheatstone bridge; potentiometer; Faraday's law; transient circuits. AC power and circuit theory. Sound: longitudinal waves; overtones; intensity levels; decibels; quality of sound; assessment of noise annoyance; airborne sound transmission; sound attenuation; transmission loss; adsorption coefficients; partitions; recommended acoustic criteria; introduction to auditorium acoustics.

35.111 Building Science 1 (Materials) **S1 LT4**

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.

35.112 Building Science 2 (Concrete and Metals) **S4 LT4**

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. 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; strain hardening. Fire: behaviour of building materials and structures.

35.113 Building Science 3 (Energy and Thermal) **S7 LT3**

Elective. Prerequisite: Nil.

Building with climate: climate (global and local); thermal comfort factors; effective temperature; solar radiation; heat flow through building materials; thermal storage; thermal resistance; insulation. Principles of thermal design: thermal control, ventilation and air movement. Solar control: solar position diagrams; shading devices; shading by buildings and trees. Daylight: availability and intensity; design considerations. Artifical light: light sources; quality; spatial illumination; design considerations; maintenance.

35.114 Building Science 4 (Timber) **S8 LT2**

Elective. 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.

35.151 Building Services 1 (Hydraulics) **S2 LT2**

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.

35.152 Building Services 2 (Mechanical) **S4 LT2**

Compulsory. Prerequisites: 1.932, 35.151.

Ventilation theory; ventilation systems and equipment; refrigeration theory; air conditioning heat loads; air conditioning equipment; electrical equipment; telephones and security; lifts and escalators; recess; plumbing; fire protection; garbage and incinerators.

35.170 Mathematics for Builders **S1 LT4**

Compulsory. Prerequisite: Nil.

Calculus: limits and continuity of functions; differentiation and integration of polynomial, exponential and logarithmic functions; the definite integral; practical applications. Probability: discrete events, sample spaces and probabilities; complex events; probability trees; distribution of random variables; expected value and decision analysis. Statistics: mean, mode, median, standard deviation and variance of normal and binomial distributions; hypothesis testing; linear and multiple regression; non-parametric statistics; chi-square testing; descriptive presentation of data.

Management Stream

35.261 Management 1 (Management Principles) **S1 LT2**

Compulsory. Prerequisite: Nil.

Basic management principles, scientific management, management objectives. Structure of building industry. Building Acts and Regulations, codes, local government authority powers.

35.262 Management 2 (Planning) **S3 LT3**

Compulsory. Prerequisite: 35.261.

Introduction to Operation Research, OR techniques and their relevance to building, concept of planning and control, CPM, PERT, Line of Balance, Multi-activity Chart, computer applications of CPM. Principles and application of Work Study. Risk analysis, decision making process.

35.263 Management 3 (Contracts) **S4 LT3**

Compulsory. Prerequisite: 35.262.

Concept of contracting and subcontracting, different procurement methods. Contract law, building contracts and contract administration, standard forms of contracts, contract claims and disputes, contract negotiation. Principles of insurance, contract insurance, professional negligence. Purchasing.

35.264 Management 4 (Personnel Management) **S5 LT3**

Compulsory. Prerequisite: 35.2634.

Personnel management, human motivation, employment. industrial relations, employers and employer groups, unions and unionism. Conciliation and arbitration. Site organization (labour aspects), safety management. Quality assurance.

35.265 Management 5 (Project Management) **S6 LT3**

Compulsory. Prerequisite: 35.264.

Project management and site organization. Theory and concept of project management. Alternative organization of the building process. Application of project management in building. Management of pre-design, design and construction activities. Strategic planning, construction strategy. Site organization (physical), planning of materials handling. Project management control.

35.266 Management 6 (Corporate Strategy) **S7 L2**

Elective. Prerequisite: 35.265.

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 knowedge 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.

35.267 Management 7 (Marketing) **S8 LT3**

Elective. Prerequisite: 35.265.

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. Listing, selling and the auction process.

35.271 Law for Builders 1 **S2 LT2**

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; a general introduction to the law of bankruptcy. General principles of law of agency. Law of partnership.

35.272 Law for Builders 2 **S5 LT2**

Compulsory. Prerequisite: 35.271.

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

35.273 Law for Builders 3 **S8 LT3**

Elective. Prerequisite: 35.272.

Recognition of the significance of different land titles, tenures and interests in land; understand the construction and content of contracts, leases and other forms of agreement required for property dealings and use; develop a familiarity with public and private controls and restrictions on land use and development; appreciate the relationship between planning policies at all levels and the valuation process; a knowledge of the valuation review and determination processes of the Land and Environment Court and similar tribunals; appreciate the requirements for presentation of evidence as an expert witness; acquire a familiarity with major court cases, relevant to a valuer, which establish valuation principles; understand the major objectives of principal New South Wales Acts dealing with real estate or interests therein.

35.274 Commercial Arbitration **S8 LT3**

Elective. Prerequisite: 36.263.

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.

35.381 Introduction to Computing **S3 LT2**

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.

35.282 Computer Applications in Building **S5 LT2**

Compulsory. Prerequisite: 35.281.

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. Microcomputer wordprocessing and spreadsheet programs. Applications in quantity surveying, estimating and construction management.

35.283 Systems Analysis and Modelling **S8 LT3**

Elective. Prerequisite: 35.263.

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. Extensive use is made of microcomputer spreadsheet software for financial modelling, and other appropriate software packages for linear programming and simulation.

35.284 Building Information Systems **S7 LT3**

Elective. Prerequisite: 35.282.

The specification, development and use of computer based information systems in the management of building companies. Information system components, attributes and lifecycle; system and procedure representation tools. Data files structures and access modes; database systems. Information system response, distribution, size and controls; logical and physical design. Computer hardware; communications; local area networks. Case studies of computer systems in building construction and management companies. The subject involves extensive use of microcomputer based database and spreadsheet packages.

Building Economics Stream

14.001 Introduction to Accounting A **S3 LT2**

Compulsory. Prerequisite: Nil.

An introduction for non-commerce students to the nature, purpose and conceptual foundation of accounting. Information systems including accounting applications. Analysis and use of accounting reports.

14.002 Introduction to Accounting B **S4 LT2**

Compulsory. Prerequisite: 14.001.

An introduction for non-commerce students to managerial accounting. Long-range planning, budgeting and responsibility accounting: cost determination, cost control and relevant cost analyses.

35.301 Quantity Surveying 1 **S4 LT4**

Compulsory. Prerequisite: Nil.

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.

35.302 Quantity Surveying 2 **S5 LT4**

Compulsory. Prerequisite: 35.301.

Advanced quantity surveying for the trades, mechanical, air conditioning 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; specification writing.

35.303 Quantity Surveying 3 **S8 LT3**

Elective. Prerequisite: 35.302.

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

35.311 Building Economics 1 **S2 LT3**

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.

35.312 Building Economics 2 **S6 LT3**

Compulsory. Prerequisite: 14.002.

The business environment; business structures; taxation, depreciation; operating costs; economics of building plant and materials handling systems; financial control in the erection, management and demolition of buildings.

35.313 Building Economics 3 **S7 LT2**

Elective. Prerequisite: 35.312.

Capital investment analysis; advanced investment evaluation; feasibility studies; financial management and analysis; growth and development; the financial market.

35.321 Estimating 1 **S6 LT2**

Compulsory. Prerequisite: 35.301.

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.

35.322 Estimating 2 **S7 LT2**

Elective. Prerequisite: 35.321.

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

35.390 Property Valuation **S8 L3**

Elective. Prerequisite: Nil.

General principles of valuation, legal background to valuation of land and property. Judicial valuations, legal precedent, land titles and rights. Depreciation assessment. Building maintenance cycles. Time value of money and equivalence. Methods and philosophies of determining market value: comparable sales analysis, statutory values and applications. Building investment feasibility assessment. Case studies of property valuations. Detailed measured survey drawing and inspection of buildings.

35.391 Land Economics **S8 LT3**

Elective. Prerequisite: 35.312.

Ability to apply relevant valuation techniques to a broad range of common land use types; acquisition of knowledge of efficient property management techniques; identification of a range of unusual property types which require specialised valuation skills and knowledge and the means of developing such skills and knowledge; knowledge to develop novel valuuation techniques for application to specific property types; ability to determine the highest and best use for nominated property types; the application of inspection techniques for broad propety types; competency in the use of property valuation and inspection aids; familiarity with resource materials and information sources required to undertake specific types of valuation.

35.392 Property Development **S7 LT2**

Elective. Prerequisite: 35.312.

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, cost value analysis, value management, life cycle costing and services integration. 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.

35.393 Management of Buildings **S8 LT2**

Elective. Prerequisite: Nil.

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.

Other Subjects

35.401 Thesis Preparation **S7 LT2**

Compulsory. Prerequisite; Nil.

Thesis research requirements, format, writing style, mode of referencing, information sources, library facilities and thesis

topic selection. Students will be required to produce a summary of objectives, a plan for their subsequent thesis research and a preparatory table of contents.

35.402 Thesis **S8**

Compulsory. Prerequisite: 35.401.

Results of research on selected Thesis topic, written up in technical report format. The Thesis requires the student to survey the literature on the chosen topic, collect information and data, effectively process and document the research results and draw reasoned conclusions from them.

35.410 Industry Program **S1-8**

Compulsory. Prerequisite: Nil.

6 months of approved building industry experience at any time prior to graduation. Submission requirements are a daily diary, report and a letter from the employer.

35.420 Special Programme **S7 or 8 LT2**

Elective. Prerequisite: Nil.

This subject, to be presented by visiting lecturers, would allow presentation of subject material not covered elsewhere in the course. The subject is to be presented on an occasional basis; subject content dependent on lecturer.

Industrial Design

Design Studios

39.311 Basic Design **4 L1 T3**

Prerequisite: Nil

The basic elements of two and three dimensional design, and the development of the analytical and communication skills necessary for their understanding. Development of the creative processes concerned with the exploration and manipulation of the elements. Studies are undertaken within the context of art and design.

39.312 Design Studio 1 **4 L1 T3**

Corequisite: 39.311.

Theoretical and project work to introduce design methodologies and their application to three dimensional design problems.

39.321 Industrial Design Studio 2 **10 F L1 T4**

Prerequisite: 39.312.

The introduction of industrial design and research methodologies. Studies and projects are undertaken within the context of social, commercial and industrial requirements.

39.331 Industrial Design Studio 3 **10 F L1 T4**

Prerequisite: 39.321.

Continuation of the theoretical and project work of Industrial Design Studio 2. These two subjects cover examples from the range of major industrial design problems.

39.341 Industrial Design Studio 4 **5 L1 T4**

Prerequisite: 39.331.

Advanced theoretical and project work taking a particular project to an advanced state of development, preparatory to undertaking the Project.

39.342 Project Research **4 L1 T3**

Prerequisite: 39.331.

Product research methodologies and their application to an individual project chosen in conjunction with the School. This work provides the research basis for the Project.

39.343 Project **12 L1 T11**

Prerequisite: 39.331.

Co-requisite: 39.342.

A project within the practice areas of industrial design, chosen by the student in consultation with the School at the commencement of Project Research. The project is based upon the research base established in Project Research.

39.332 Environmental & Interior Design for Industrial Designers **2 L1 T2**

Prerequisite: 39.321.

Understanding the nature of environmental space and spatial ambiance, and the relationship of objects and products to the surrounding space. Environmental and interior design projects.

Design Skills

39.313 Visual Thinking & Drawing **4 L1 T3**

Prerequisite: Nil.

The development of the capacity to see and the hand/eye co-ordination skills to record what is seen using a variety of media and methods. The capacity to develop and express visual concepts. The relationship between visual thinking and creative processes.

39.314 Geometrical & Mechanical Drawing **4 L1 T3**

Prerequisite: Nil.

Introduction to orthographic drawing with particular reference to the Australian Engineering Drawing Standard. Mechanical projections other than perspective. Descriptive geometry and the analysis and synthesis of form and spatial relationships.

39.323 Perspective & Rendering Techniques **4 L1 T3**

Prerequisites: 39.313 and 39.314.

Review of the major mechanical perspective systems and rendering techniques with particular reference to their applications in product design. Project studies are undertaken within the range of systems and media.

39.315 Introduction to Computing **3 L1 T2**

Prerequisite: Nil.

Introduction to the computer with emphasis on its application in industrial design, engineering and information systems. Hardware and software. Experience in the use of equipment and development of basic programming skills.

39.324 Computer Aided Design **4 L2 T2**

Prerequisite: 39.315.

Computer aided design and drafting systems and their applications in product development. Mathematical optimization techniques.

39.333 Computer Graphic Applications **4 L2 T2**

Prerequisite: 39.324.

Development of Computer Aided Drafting with particular reference to perspective and rendering techniques using computing equipment, as well as the application of computing to other graphic problems.

39.334 Photography for Industrial Design **2 L1 T1**

Prerequisite: 39.321.

The theory and practice of colour and black and white photography with particular reference to product and design presentation applications. Projects develop studio and dark room skills.

39.322 Graphic Design for Industrial Designers **3 L1 T2**

Prerequisite: 39.312.

The major graphic production processes, and their application in graphic design. Type and typesetting systems. Graphic design projects.

Design Theory

39.326 Form Theory **1 L1**

Prerequisite: 39.311.

Study of form in nature, art and design. Theories of form. Form organisation, typology, and description.

39.327 Design Methodology **1L1**

Prerequisite: 39.312.

Design methodology and its applications in the industrial situation, analysis of problems, strategy planning, the application of research methods. The methods. The problem of problem solving.

39.334 Professional Practice **1 L1**

Prerequisite: 39.321.

Professional practice in industry and on consultancies. Organisation and management of design offices and projects. Professional and ethical responsibilities. Contracts, determination of fees, patents, design registrations, legal responsibilities and liabilities.

39.328 Product Studies Seminars **2 T2**

Prerequisite: 39.312.

Co-requisite: 39.321.

A series of case studies, in which products and their related systems are analysed for design, engineering, marketing and production factors and qualities. The Seminars are given by panels of staff experts and professional practitioners. The subject is taken during years 2, 3 and 4. Students undertake an assignment based on the Seminars and submit it during Year 4.

39.316 History of Art/Architecture/Design **1 L1**

Prerequisite: Nil.

General overview of the history of art, architecture and design from earliest times to the present, within the context of aesthetic and socio-cultural influences.

39.329 History of Consumer Products **0.5 L.5**

Prerequisite: 39.316.

Co-requisite: 39.335.

Products as an aspect of our culture/society and commerce/industry from 1750 to the present day. The development of consumer products is examined within the context of the changes taking place in industry and society.

39.335 History of Industrial Design **0.5 L.5**

Prerequisite: 39.316.

Co-requisite: 39.329.

This subject is normally taken in conjunction with 39.229 and is a chronological study of the emergency and development of industrial design from 1850 to the present day.

39.336 Managing Product Innovation and Development **1 L1**

Prerequisite: 39.327.

The problem of integrating innovative product design and development within the overall managerial and financial structure of industry. Australian and overseas case studies are given. Particular emphasis is placed on the development of appropriate design management structures and methods for the Australian situation.

Ergonomics

39.317 Principles of Ergonomics **2 L2**

Prerequisite: Nil.

Applied anatomy and kinesiology, anthropometrics and application in product and environmental design. Physiological and psychological aspects of ergonomics, work, environment effects, man-machine interface. Principles of ergonomics research methods.

39.325 Applied Ergonomics **3 L1.5 T1.5**

Prerequisite: 39.317.

Analysis of ergonomic requirements within the context of product development. Ergonomic methodology and experimental methods and their application in the product research and development process.

Industrial Experience

39.344 Industrial Experience **2**

Prerequisite: 39.321.

Students obtain 3 months of approved practical experience in a design office. The subject may be taken from the end of the second year but at least half of the requirement must be taken from the end of the third year. The subject cannot be taken in units of less than 1 month. The experience is to be recorded in a logbook to be signed by the employer.

39.425 Electrical Engineering for Industrial Design B **2 L1 T1**

Prerequisite: 39.424.

Feedback Systems. Thermo, active and passive control elements. Analog and digital systems. Microprocessor systems and instrumentation.

39.426 Materials and Manufacturing Processes for Industrial Designers A **2 L2 T1**

Prerequisite: 39.422.

Engineering materials including polymers and timbers and their application in manufacturing processes. The range of processes.

39.427 Materials and Manufacturing Process for Industrial Designers B **3 L2 T1**

Prerequisite: 39.422.

Economics of production processes, design constraints alternate design and manufacturing strategies. Test procedures.

Science and Engineering Subjects

10.021B General Mathematics 1B **6 L4 T2**

Prerequisite: HSC Exam Score Required +.

Functions (and their inverses), limits, asymptotes, continuity; differentiation and applications; integration, the definite integral and applications; inverse trigonometric functions; the logarithmic and exponential functions and applications; sequences and series; mathematical induction; the binomial theorem and applications; introduction to probability theory; introduction to 3-dimensional geometry; introduction to linear algebra.

+	*HSC Score Range Required*
2 unit Mathematics* or	60-100
3 unit Mathematics or	1-50
4 unit Mathematics	1-100

* This refers to the 2-Unit Mathematics subject which is related to the 3-Unit Mathematics subject. It does not refer to the subject 2-Unit Mathematics in Society.

10.021C General Mathematics 1C **6 L4 T2**

Prerequisite: 10.021B.

Techniques for integration, improper integrals, Taylor's theorem; first order differential equations and applications; introduction to multivariable calculus; conics; finite sets; probability; vectors, matrices and linear equations.

Students who have a meritorious performance in the HSC Mathematics may take either 10.001 Mathematics 1 or 10.011 Higher Mathematics 1 instead of 10.021B and 10.021C, subject to the approval of the Head of Department and the Head of the School of Mathematics.

10.301 Statistics SA **4 F L1.5 T0.5**

Prerequisite: 10.021C.

Probability, random variables, independence, binomial, Poisson and normal distributions, transformations to normality, estimation of mean and variance, confidence intervals, tests of hypotheses, contingency tables, two sample tests of location, simple and multiple linear regression, analysis of variance for simple models.

1.931 Physics **4 L4 T2**

Prerequisite: Nil.

Mechanics of solids; kinematics. Newton's Law of motion, work and energy. Atomistic description of mechanical properties of matter. Atomic structure of matter. Elasticity. Plasticity; dislocations, fracture, viscosity. Electrostatics, electromagnetism, and DC circuits: Coulomb's Law. Electric field. Electric potential. Capacitance. Electrical energy sources. Conductors. Resistivity. Atomic view of conduction. EMF. Kirchoff's Laws. Magnetic induction. Torque on a coil in magnetic field. Moving coil meter. Wheatstone's bridge. Potentiometer. Faraday's Law. Transient circuits.

Wave motion, heat light and sound; simple harmonic motion. Wave motion. Interference. Doppler effect. Energy transfer. Heat, heat capacity. Joule's equivalent. Thermometry. Convection. Conduction. Radiation. Black body. Emittance. Absorptance. Light. Electro-magnetic spectrum. Huygen's principle. Curved mirrors. Lenses. Dispersion. Interference. Polarization. Photometry. Colorimetry Sound. Longitudinal waves. Overtones. Intensity levels. Decibels. Quality of sound.

**Students lacking appropriate experience of physics are strongly advised to take the appropriate Unisearch bridging courses, after consultation with the Head of Department.

39.421 Engineering Design Mechanics **4 L2 T2**

Prerequisites: 10.021C and 1.931.

Equilibrium, Friction. Systems of multiforce members, co-planar. Mass centre; centroid. Fluid statics. Plane particle kinematis; rectilinear, motion. Plane particle kinetics;

equations motion; work, power, energy; impulse, momentum, impact.

39.422 Introduction to Materials Science **1 L1**

Prerequisite: 1.931.

Structure and properties of major engineering materials, including polymers and timbers. Including materials recognition and design potential.

39.423 Mechanics of Solids, for Industrial Design **3 L2 T1**

Prerequisite: 39.421.

Stress and strain. Bars under axial loading. Stresses and deformation due to bending. Strain energy. Flexibility and stiffness. Stress and deformation due to torsion. Helical springs.

39.424 Electrical Engineering for Industrial Design A **2 L1.5 T.5**

Prerequisite: 1.931.

Ohm's law, concepts of AC and DC voltage and current. The basics of transformers, motors and electromechanical product systems. Electromagnetic interference, shielding and earthing.

39.431 Production Management for Industrial Design **2 L1 .5 T.5**

Prerequisite: 39.426.

Methods engineering, motion and time study, financial incentives, applications to machine controlled processes, work sampling and data collection. Factory layout. Control of jobbing, repetitive batch and continuous production. Manufacturing organisations, functions, inter-relationships and information flow. Sampling techniques in quality control, control charts, quality assurance. Economic objectives of the firm. Economic measure of performance net present value, annual equivalent value and the DCF rate of return (including the incremental rate of return) and their application in the selection and replacement of processes and equipment.

39.432 Production Design and Technology for Industrial Design **2 L1.5 T.5**

Basic metrology and tolerancing, introduction to plasticity theory and its application to theories for machining and forming, economics of production processes; interaction of machines and tools; principles of process selection; review of major processes, interaction of design, production quantity, materials and processes; value analysis, design constraints. Quality assurance.

Commerce Subjects

28.052 Marketing Research **4 L2 T2**

Prerequisite: 10.301.

Sources and types of marketing information. Design, conduct, analysis and reporting of market surveys and experiments. Technique of statistical inference.

28.032 Consumer Behaviour A **4 L2 T2**

Prerequisite: Nil.

Major concepts, research and applications from the study of behavioural sciences as applied to human behaviour in the marketplace. The nature and scope of the behavioural sciences; purchase behaviour; the perception and learning of brands; personality theory and applications to advertising; cognition and memory; involvement and decision making by consumers; behavioural methodologies for consumer analysis.

28.042 Consumer Behaviour B **4 L2 T2**

Prerequisite: 28.032.

Attitudes and motivation; the structure of consumer aggregates; interpersonal and mass media communications; groups, the family, social class and institutions in society; human values and culture; organisational buying behaviour; consumerism. Students undertake a major field research project.

28.073 Strategic Marketing **4 L2 T2**

Prerequisites: 28.012 and 28.052.

Conceptual framework relevant to the practice of marketing management for the further development of an integrative understanding of the market function. Important extensions and limitations of customer orientation and the emergence of a broader concept of marketing; stages of development of a marketing operation, the central role of innovation in opportunity management and the concept of control, importance of product.

28.083 Managerial Marketing **4 L2 T2**

Prerequisite: 26.073.

Application of theoretical marketing concepts developed in Strategic Marketing and quantitative techniques developed in "Marketing Models". Based on the planning implementation and appraisal of a major field study.

14.501 Accounting & Financial Management 1A **4.5 L2 T2.5**

Prerequisite: Nil.

The basic concepts of financial model building and information systems, including the double-entry recording system, the accounting cycle, income measurement and financial reporting, and an introduction to basic elements of auditing.

14.511 Accounting & Financial Management 1B **4.5 L2 T2.5**

Development of basic concepts introduced in 14.501 Accounting and Financial Management 1A, including corporate reporting, business finance, system design, elementary computer applications.

28.012 Marketing Systems **4 L2 T2**

Prerequisite: Nil.

Conceptual introduction to marketing from the systems viewpoint. Evolution and characteristics of marketing

systems, buyer behaviour, marketing channel flows (equalizing supply and demand, communication, ownership, finance, physical distribution), marketing activities in the firm (planning and marketing program, co-ordination and control of marketing activities, problem solving, product planning, promotion and pricing, physical distribution management), resources allocation by competition, the expanding role of government, social performance or marketing and social efficiency of marketing.

General Education Program **12 L12**

12 credit points of General Education Program subject taken throughout the course.

Town Planning

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. Co-requisite: 36.421

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 36.218.

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. Co-requisite: 36.422.

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 Head of the School 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 L1 T1**

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 speakingin 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 and 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**

Computer use in the planning professions. Components of computers and their interrelationships; time sharing, batch and stand-alone processing. Exercises using integrated software including data bases, spreadsheets, graphics and word processing. Planning information systems: applications, 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 L1.5T1.5**

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 **F 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**

Co-requisite: 36.214.

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**

Co-requisite: 36.219.

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 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 Head of the School of Town Planning for approval.

Students are expected to attend a seminar to discuss their experience approximately half way through their year off campus and are required to submit a paper describing and assessing their experience when they enter Year 4, Session 2.

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 **S3**

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. Innovatory 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 value held and actual behaviour. The emergence of different viewpoints and resultant conflicts. The role of planning in understanding, anticipating and reconciling such conflicts.

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 Computer Applications 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: 11.6104, 11.6114, 11.6514, 11.6904.

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 wirtten paper for tutorial discussion.

Landscape Architecture

37.0001 Introduction to Landscape Architecture S1 L1

Prerequisite: Nil.

Introduction to the discipline of landscape architecture. Outline of the program and its major stands 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 overeseas and in Australia. Issues and opportunities for landscape architects.

37.0014 Introduction to Computer Applications S1 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: 27.818, 43.202, 25.5222, 37.3101.

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 and Management S2 L1T1

Prerequisite: 37.5505, 37.9105.

An investigation of resources and their management in relation to a range of land use types with an emphasis on an ecological approach. Management of both natural and cultural landscapes. 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 architercture. Development of the critical logical and stylistic skills involved in researching, writing and presenting essays, thesis, 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-dimensioanl 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, 37.5313.

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, 37.3101.

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, 37.1302, 37.3203.

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 bhetween design, use of appropriate materials and construction detailing.

37.5505 Landscape Design 3 **S1 L2T6**

Prerequisites: 37.5414, 37.1513, 37.7205.

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 L2 T6**

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.

37.502 Landscape Design 5 **S1 L1T2**

Prerequisites: 37.5606, 37.9206.

Investigation of the relationship between design and planning issues through a major Regional Study. Preparation of a masterplan for a selected site to be used in conjunction with Landscape Design 6. Discussions on contemporary environmental planning, design and management issues.

37.503 Landscape Design 6 **S2 L2T10**

Prerequisites: 37.502, 37.9206. Four months approved practical experience.

Students are called upon to employ all the knowledge, skill and understanding they have gained in previous years. The graduating design project follows from 37.502 Landscape Design 5 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.

37.501 Urban Landscape Design **S1 L1T5**

Prerequisites: 37.5605.

An exploration of the relationships within the fabric of the urban environment including concepts of city functions and the analysis of disparate parts of the city with physical design being the primary focus. Context and place, history and theory are considered as well as analytical techniques. Design studios, lectures and seminars.

37.7113 Professional Practice A **S1 L2**

Prerequisites: 37.5414, 37.7205.

The Landscape Architect's responsibilities in Law. A study of the development of Law in Australia. Project procedure, the stages of a capital development project. Cost planning and feasibility studies. Construction contracts, including tender documentation, subcontract conditions and subconsultative responsibilities. The specification, its function and styles. A comparative analysis of various standard contract forms.

37.7203 Landscape Materials and Construction **S2 L1T2**

Materials science: the relationship between the properties and structure of materials. The derivation, conversion or production of materials commonly used in landscape construction. Investigation of structures: elements and

systems, loads and structural requirements and basic structural form.

37.7114 Professional Practice B **S2 L2**

Prerequisite: 37.7113, 37.5505.

Preparation of contract documentation, including technical sections. 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, and final certification. The rights and duties of the principal and contractor, including the relationship with consultants. Post-contract activities, maintenance manuals, appraisal of design and construction, and retention of records.

37.7204 Landscape Technology A **S1 L1T2**

Prerequisite: 37.7203.

Site surveying and mapping techniques. Land surface manipulation including contour planning and basic earthworks. Field work exercises.

37.7205 Landscape Technology B **S2 L1T2**

Prerequisite: 37.7204.

Landscape construction methods, including documentation of grading, drainage, earthworks and structures. Application of materials in detailed design development.

37.7515 Landscape Engineering A **S1 L2T1**

Prerequisite: 37.7205, 37.5414.

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, 37.5505.

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: 37.1513, 37.5414.

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.

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 specifically refer to students of Architecture enrolled in courses 3260 or 3265.

37.100 Site Planning Elective **S2 L2**

2 credit points.

Not offered in 1990.

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.

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

37.400 Urban Landscape Elective **S1L2**

2 credit points.

Not offered in 1990.

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.

Not offered in 1990.

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.

Subjects 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.

Botany

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 sturcture and function.

Mines

25.5222 Geology for Landscape Architecture **S1 L1**

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.

Geography

27.818 Australian Environment and Human Response **S1 L2T2**

Prerequisite: Nil.

Excluded: 27.010, 27.030, 27.801, 27.295,27.111.

Themes selected from the mechanisms of the physical environment with particular reference to Australia and the Sydney region. *Landscape as an expression of dynamic response:* land capability and land use problems, humans as agents of landscape change. *Energy and Atmospheric Circulation over Australia:* local weather patterns and weather extremes, human responses to fire, flood, and drought hazards. *Development and Stability of Hillslopes:* soil, vegetation and drainage relationships, problems of soil erosion. *Coastal Ecosystems:* problems of demand, risk and management in the coastal zone. Lectures are supplemented with tutorials, workshops, and field tutorials. Students are required to provide some materials for workshop exercises and to contribute to the cost of field tutorials.

Graduate Study

Faculty of Architecture Graduate Enrolment Procedures

All students enrolling in graduate courses should obtain a copy of the free booklet *Enrolment Procedures 1990* 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.

Higher Degrees – Research

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 study leading to the award of the degree of Master of Architecture, Master of Building, Master of Landscape Architecture, Master of Town Planning, Master of the Built Environment. 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.

Summary of the Conditions for the Award of a Masters Degree

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, town planning or the built environment. 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 Academic 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.

Graduate Courses

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

1. Master of Science (Acoustics
2. Master of Project 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. Master of Construction Management
8. Master of Landscape Planning
9. Graduate Diploma in Landscape 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. Subjects in the Master of Project Management course are normally timetabled on two evenings and one afternoon per week.

Graduate School of the Built Environment

Graduate Studies in Acoustics, Building Conservation, Industrial Design and Urban Design

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 consdervation, 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 Academic 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 may be taken over two full-time or four part-time sessions, 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
Session 1 – Core		
1.927G	Acoustic Theory	2
39.651G	Mechanical Shock and Vibration	2
39.901G	Acoustic Measuring Systems and Electroacoustics	2
39.993G	The Ear, Hearing and Hearing Conservation	2
Session 2 – Elective		
39.995G	Community Noise	4
39.998G	Noise control in Buildings	4
Session 3 – Elective		
39.652G	Noise Control in Industry	4
39.902g	Advanced Physical Acoustics	4
39.997G	Auditorium Acoustics	3
Session 3 – Compulsory		
39.994G	Graduate Project A (Prerequisite 10 credit points)	5
Session 4 – Compulsory		
39.997G	Graduate Project B (Prerequisite 39.994G)	10

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)
MBEnv

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 timetabled commitments, students may occasionally be required to attend for site visits and building inspections.

The requirements for this course include a period of at 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
	504	36

Typical Pattern of Full-time Study

		Hrs	Credits
Session 1			
39.101G	Contextual Studies	14	1
39.102G	Architectural History	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
39.108G	Conservation Technology C	56	4
39.110G	Graduate Project	56	–
		252	14
Session 2			
39.103G	Conservation Management	42	3
39.107G	Conservation Technology B	70	5
39.109G	Copnservation Technology D	56	4
39.110G	Graduate Project	56	–
		Upon Completion	8
		252	22

Typical Pattern of Part-time Study

		Hrs	Credits
Session 1			
39.101G	Contextual Studies	14	1
39.102G	Architectural History	42	3
39.104G	Analysis Documentation A	56	4

39.106G	Conservation Technology A	28	2
		140	10
Session 2			
39.105G	Analysis and Documentation B	28	2
39.107G	Conservation Technology B	70	5
39.110G	Graduate Project	28	-
		126	7
Session 3			
39.108G	Conservation Technology C	56	4
39.110G	Graduate Project	56	-
		112	4
Session 4			
39.103G	Conservation Management	42	3
39.109G	Conservation Technology D	56	4
39.110G	Graduate Project	28	-
		Upon completion	8
		126	15

Department of Industrial Design

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 specializiation.

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 specialized 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 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
Common Core			
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	*
		10	
MID only			
39.502G	Graduate Project (MID)	14	S1 S2
39.512G	Design Theory	4	S1 S2
39.522G	Industrial Design Approved Electives**	4 6	S1
		28	
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	
		28	

* 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 student's 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 student's industrial deisgn knowledge and skill. At lest 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 S1	S2
Common Core			
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**	12**
39.512G	Design Theory	1	3
39.522G	Industrial Design Approved Electives	4 4	 2
Ten hours per week MID		17	20
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)		27	20

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

		Hours per week S1	S2
Common Core			
39.501G	Industrial Design Studies	1	1
39.511G	Ergonomics for Industrial Designers		2
39.531G	Manufacturing Technology	2	
39.541G	Industrial Experience *		
		S3	**S4**
39.512G	Business Studies for Industrial Designers	2	
39.541G	Industrial Experience*		
MID only		**S1**	**S2**
39.502G	Graduate Project (MID)		3**
39.512G	Design Theory		2
39.522G	Industrial Design Approved Electives	4 –	 2
Total hours per week MID		7	10
		S3	**S4**
39.502G	Graduate Project (MID)	3**	9**
39.512G	Design Theory	2	
	Approved Electives	3	1
Total hours per week MID		10	10
MSc(IndDes) only		**S1**	**S2**
39.503G	Design Media and Communication	2	
39.513G	Visual Thinking***	2	
39.523G	Industrial Design A		6
	Approved electives	1	1
Total hours per week MSc(IndDes)		8	10
MSc(IndDes) only		**S3**	**S4**
39.533G	Industrial Design B	6	
39.543G	Graduate Project MSc(IndDes)		8**
	Approved Electives	1	1
Total hours per week MSc(IndDes)		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 ofPhilosophy (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

		Credit points
Core Subjects		
11.901G	Architectural Synthesis 1	9
11.902G	Architectural Synthesis 2	11
Electives		
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

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.

School of Building

The School of Building has an active program of research and welcomes enquiries from students 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 midcareer 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.

8116
Master of Project Management Course

Master of Project Management
MProjMgt

Course Co-ordinator
Mr. Robert Zikmann

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)

8125
Master of Construction Management

Master of Construction Management
MConstMgt

Course Co-ordinator
Mr Thomas E. Uher

Construction Management comprises all the modern management methodologies directed at the control of time, cost and quality in the design and construction of buildings and other structures.

This two-session full-time full-fee course has been designed to provide opportunities for advanced study in construction technology, project management and building economics. The course aims at improving proficiency of qualified practitioners in the construction industry to meet present and future challenges.

Admission Requirements and Fees

1. Applicants must hold degrees acceptable to the University of New South Wales in either building, civil engineering, architecture, quantity surveying or equivalent and must have appropriate industrial experience.

2. Applicants may proceed directly into the course, or be required to complete prerequisite or co-requisite programs of reading or study, with assessed assignments.

3. Applicants from non-English speaking countries must supply a certified statement of results in the Test of English as a Foreign Language (TOEFL) or another equivalent recognised test.

4. The tuition fee for 1990 is $A11,000.

Course Structure

The Master of Construction Management course is a formal one year full-time full-fee degree course comprising two semesters of academic study, up to 7 weeks of industry training and the Project Report. A student must successfully complete all the subjects in the first semester before progressing to the second semester.

Course Program

Session One

35.151G Construction Methods and Techniques
35.152G Management of Construction Plant
35.153G Management of Construction
35.154G Economics in Construction
35.155G Computers in Construction Management
35.156G Advances in Building Materials

Session Two

35.251G International Construction Practice
35.252GBuilding Services
35.253G Construction Planning and Control
35.255G Contracts Management and Law
35.256G Cost Planning and Analysis
35.257G Quantitative Methods in Management

Other Subjects

35.150G Industry Training
35.250G Project Report

School of Landscape Architecture

The School of Landscape Architecture has an active program of research and advanced study and encourages enquiries from students who wish to pursue graduate education. The degrees Doctor of Philosophy (PhD) and Master of Landscape Architecture are available for those wishing to engage in research. The degrees Master of Landscape Planning (MLP) and Graduate Diploma in Landscape Planning (GradDipLP) are available as course programs. Prospective students should consult the Head of School to discuss their research interests and educational objectives prior to making a formal application.

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.

8135
Master of Landscape Planning

Master of Landscape Planning
MLP

The course offers advanced education and study opportunities for graduate landscape architects, town planners, surveyors, geographers, engineers, and architects in landscape planning.

The intent is to offer students the opportunity to develop an understanding of the complex relationships between natural environments and expanding human population and to acquire the skills needed for planning and management of emerging landscapes. Principles and concepts from the natural and social sciences along with techniques and methods of geographic information systems, remote sensing and other technologies are emphasized.

Admission Requirements

A four year degree of appropriate standing in landscape architecture, architecture, town planning, surveying, geography or other approved degree in a relevant area of land management or resource and environmental science or a Graduate Diploma in Landscape Planning is required. A qualifying or concurrent program may be required in some cases.

Course Structure

The course will be offered as a full-time program that can be completed in three sessions. To accommodate the practising practising professionals in the Sydney metropolitan area, the course can also be taken part time and would normally be completed in six sessions or less.

The course is built upon a core of six required subjects totalling 18 credit points. As far as possible, these core subjects are offered between the times of 2 pm and 9 pm on Monday through Friday to accommodate the working professional. Beyond these core requirements students may select from two options. In either case the course requires the completion of 36 credit points. Those students wishing to engage in research would select the Landscape Research Project for 18 credit points. Those not wishing to do research would enrol in 9 more credits of elective subjects and complete a Landscape Project to 9 credit points. Topics for Landscape Research Projects and Landscape Projects will be determined in consultation with academic staff of the school.

Course Program

Core Subjects		Credits
37.504G	Conservation Studies	3
90.341	Environmental Law	3
37.901G	Landscape Planning	3
37.902G	Landscape Planning Methods	3
37.161G	Land Systems and Management	3
37.904G	Visual Landscape Assessment	3
Electives		
27.644G	Computer Mapping and Data Display	3
39.106G	Conservation Technology A	3
39.101G	Contextual Studies	3
27.672	Geographic Information Systems	3
29.604	Land Information Systems	3
27.043G	Remote Sensing Applications	3
Project		
37.101G	Landscape Project	9
37.102G	Landscape Research Project	18

5215
Graduate Diploma in Landscape Planning

Graduate Diploma
GradDipLP

This course is designed for people who wish to obtain formal qualifications in Landscape Planning through a program in which the emphasis is on completion of subjects. There is no research or independent project requirement.

The intent is as described above for the Master of Landscape Planning course but the program is offered in a more structured setting.

Admission Requirements

A three year degree from an approved unversity and/or qualifications deemed appropriate by the Higher Degree Committee of the Faculty of Architecture is required.

Course Structure

The course is offered as a one year full time, or two year part time program.

Students are required to complete a program totalling at least 30 credit points. The required core subjects comprise 18 of these credit points and the remaining are from electives. One third of the elective credits may be from approved undergraduate subjects. After successful completion of the course the student may elect to transfer into the Master of Landscape Planning course. This would require the completion of two additional core courses and either a Landscape Planning Project or a Landscape Research Project.

Course Program

Core Subjects		Credits
90.341	Environmental Law	3
37.901G	Landscape Planning	3
37.902G	Landscape Planning Methods	3
37.903G	Landscape Planning Project	6
37/904G	Visual Landscape Assessment	3
Electives		
27.644G	Computer Mapping and Data Display	3
39.106G	Conservation Technology A	3
39.101G	Contextual Studies	3
27.672G	Geographic Information Systems	3
29.604G	Land Information Systems	3
37.161G	Land Systems and Management	3
27.043G	Remote Sensing Applications	3

School of Town Planning

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 Academic 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 Academic 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 may not be re-used with a new subject title within ten years of the prior use.

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 Education subjects. For General Education subjects see the **General Studies Handbook** which is available free of charge.

HSC Exam Prerequisites

Subjects which require prerequisites for enrolment in terms ofthe 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
	*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 and Animal Science)	Applied Science
10	School of Mathematics	Science
11	**School of Architecture**	**Architecture**
12	School of Psychology*	Biological and Behavioural Sciences
13	School of Fibre Science and Technology (Textile Technology)	Applied Science
14	School of Accounting	Commerce & Economics
15	School of Economics	Commerce & Economics
16	School of Health Services Management	Professional Studies
17	Faculty of Biological and Behavioural Sciences	Biological and Behavioural Sciences
18	School of Mechanical and Industrial Engineering (Industrial Engineering)	Engineering
19	School of Information Systems	Commerce & Economics
20	Centre for Petroleum Engineering Studies	Applied Science
21	**Department of Industrial Arts**	**Architecture**
22	Faculty of Professional Studies	Professional Studies
23	School of Primary and Computer Education	Professional Studies
22	Faculty of Professional Studies	Professional Studies
23	School of Primary and Computer Education	Professional Studies
25	School of Mines (Applied Geology)	Applied Science
26	Centre for Liberal and General Studies	Liberal and General Studies
27	School of Geography	Applied Science
28	School of Marketing	Commerce & Economics
29	School of Surveying	Engineering
30	School of Industrial Relations and Organizational Behaviour	Commerce & Economics
31	School of Optometry	Science
32	Centre for Biomedical Engineering	Engineering
33	School of Sports and Leisure Studies	Professional Studies
34	Faculty of Arts	Arts
35	**School of Building**	**Architecture**
36	**School of Town Planning**	**Architecture**
37	**School of Landscape Architecture**	**Architecture**

	School, Department etc	Faculty
	*Subjects also offered for courses in this handbook	
38	School of Applied Bioscience (Food Science and Technology)	Applied Science
39	**Graduate School of the Built Environment**	**Architecture**
40	Academic Board	
41	School of Biochemistry	Biological and Behavioural Sciences
42	School of Applied Bioscience (Biotechnology)	Applied Science
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 Applied Bioscience	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
69	School of Arts Education	Professional Studies
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
98	School of Banking and Finance	Commerce & Economics
99	Department of Legal Studies and Taxation	Commerce & Economics

Architecture

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 structural 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.

Building

Master of Project Management

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 L2T1**

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 supoort, hardware and software maintenance.

35.201G Managerial Economics **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 Techniquesques **S2 L2 T1**

Australian labour market, recruitment and remuneration and training. Interpersonnel 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; maintenace methods and costs. Land economies: 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 construction of building projects; legal and insurance aspects of alternative forms of contract; procedural and management aspects of alternative forms of contract; head contracts and subcontracts; 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 of 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.

Master of Construction Management

35.150G Industry Training

Students will be based on a project for a period and be required to attend inspections of other major construction projects, demonstrations of plant and equipment, and short courses on specific building materials and construction systems.

35.151G Construction Methods and Techniques **S1 L2 T1**

Appropriate selection aand use of current techniques and systems in all construction phases.

35.152G Management of Construction Plant **S1 L2 T1**

Selection, control and optimisation of equipment and plant operations.

35.153G Management of Construction **S1 L2 T1**

Organisation of projects from design to commissioning; time and value management; team building and motivation.

35.154G Economics in Construction **S1 L2 T1**

Economics of the construction industry; its inter-relationship with national and trans-national economics.

35.155G Computers in Contruction Management **S1 L2 T1**

Information systems, communication networks and modelling techniques in construction management from micro computer to main frame.

35.156G Advances in Building Materials **S1 L2 T1**

Recent advances in high performance materials; better application of traditional ones.

35.250G Research Report

A specialised individual research study, under staff supervision, into an approved aspect of construction management or a related topic.

35.251G International Construction Practice **S2 L2 T1**

A comparison of construction practices in various nations. The impact of local economic, labour and technical parameters on construction management.

35.252G Building Services **S2 L2 T1**

The design, installation and coordination of building services: hydraulic, electrical, air conditioning, communication and transportation.

35.253G Construction Planning and Control **S2 L2 T1**

Programming, scheduling and control systems, both manual and computerised.

35.255G Contracts Management and Law **S2 L2 T1**

Selection of contract form; preparation of documents; procedures, disputes and claims; arbitration; legal aspects; risk and insurance.

35.256G Cost Planning and Analysis **S2 L2 T1**

Feasibility studies, cost planning, value analysis and value engineering.

35.257G Quantitative Methods in Management **S2 L2 T1**

Statistical analysis and systems modelling methods in construction management.

Town Planning

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.

36.934G Introduction to Planning (G) **SS L3**

Structure of towns, cities and regions. Needs and activities of people. Land use, transport and service systems. Planning theories, 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.

36.945G 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-makiong 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.

Landscape Architecture

37.101G Landscape Project **F**

A project relating to the practice of landscape architecture selected by the student and approved by the academic staff of the school. The project should represent a synthesis of the knowledge and skills that have been acquired during the course of study and will be supervised by a member of the academic staff. Appropriate methodologies and techniques will be used for assessment, analysis, and evaluation pf project parameters.

37.102G Landscape Research Project **F**

A research project directed at furthering the body of knowledge relating to the art and science of landscape architecture selected by the student and approved by the academic staff of the school. The research project should be a synthesis of the knowledge and skills acquired during the course of study, and should further the student's knowledge or expertise in a specialized field of study. Emphasis will be placed on continued development of research skills in the areas of data collection, analysis, interpretation and presentation. The research project will be supervised by members of the academic staff of the University.

37.161G Land Systems and Management **S2 L1 T2**

An investigation of resources and their management in relation to a range of land use types with an emphasis on an ecological approach. subject material includes consideration of management of cultural as well as natural landscapes. Studies of specific examples relating to the effects of human impacts are included. Methods of conservation and rehabilitation are considered. Field excursions are included.

37.504G Conservation Studies

An investigation of the concepts of environmental heritage concerning aspects of landscape architecture and conservation issues. The application of environmental heritage in the fields of planning and design. Investigation of case studies of the natural and cultural environment. Projects to investigate problems of planning and managing heritage environments. Methods of conservation analysis with an emphasis on Australian environments and their history.

37.901G Landscape Planning **S1 L2 T1**

Introduction to the discipline of landscape planning. Explores a range of basic methods and techniques for the collection, analysis, and valuation of landscape resource data. Application of this knowledge in the development of simple landscape planning models. Participationin a planning exercise applying these skills and knowledge using simple computing techniques.

37.902G Landscape Planning Methods **S2 L2 T1**

Examination and comparison of a range of landscape planning methods using examples from Australia and overseas. Students conduct research relating to the physical parameters of models for land use evaluation and environmental impact assessment. Participation in planning exercises involving the application of these models using advanced computing techniques.

37.903G Landscape Planning Project **S1S2 L1T2**

Students will work in an interdisciplinary group setting to undertake a major landscape planning exercise. The project will place emphasis on the use of advanced computer modelling techniques. Individual research and seminar presentations will form a major part of the assessment.

37.904G Visual Landscape Assessment **S2 L2 T1**

Examination of visual analysis, assessment and evaluation techniques and their incorporation into landscape planning models. Research and study of recent Australian and overseas examples of visual resource management programs. Students will undertake visual planning exercises using relevant computer software.

Graduate School of the Built Environment

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 or equivalent.

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 or equivalent.

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 as 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 of 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 or equivalent.

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**

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 or equivalent.

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.

Graduate Study

Conditions for the Award of Higher Degrees

First 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 **Faculty (Undergraduate Study)** in the Calendar.

Higher Degrees

The following is the list of higher degrees and graduate diplomas of the University, together with Higher Degrees 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 **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 later in this section.

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**
Master of Archives Administration	MArchivAdmin	Professional Studies
Master of Arts	MA	Arts University College
Master of Biomedical Engineering	MBiomedE	Engineering
Master of Building	**MBuild**	**Architecture**
Master of the Built Environment	**MBEnv**	**Architecture**

Higher Degrees (continued)

Title	Abbreviation	Calendar/Handbook
Master of the Built Environment (Building Conservation)	**MBEnv**	**Architecture**
Master of Business Administration	MBA	AGSM
Master of Chemistry	MChem	Sciences*
Master of Cognitive Science	MCodSc	Arts
Master of Commerce (Honours)	MCom(Hons)	Commerce
Master of Commerce	MCom	Commerce
Master of Community Health	MCH	Medicine
Master of Construction Management	**MConstMgt**	**Architecture**
Master of Education	MEd	Professional Studies
Master of Educational Administration	MEdAdmin	Professional Studies
Master of Engineering	ME	Applied Science Engineering University College
Master of Engineering *without supervision*	ME	Applied Science Engineering
Master of Engineering Science	MEngSc	Engineering Applied Science University College
Master of Environmental Studies	MEnvStudies	Applied Science
Master of Health Administration	MHA	Professional Studies
Master of Health Personnel Education	MHPEd	Medicine
Master of Health Planning	MHP	Professional Studies
Master of Industrial Design	**MID**	**Architecture**
Master of Landscape Planning	**MLP**	**Architecture**
Master of Landscape Architecture	**MLArch**	**Architecture**
Master of Laws	LLM	Law
Master of Librarianship	MLib	Professional Studies
Master of Mathematics	MMath	Sciences*
Master of Management Economics	MMgtEc	University College
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 Project Management	**MPM**	**Architecture**
Master of Psychology (Clinical)	MPsychol	Science§
Master of Psychology (Applied)	MPsychol	Sciences §
Master of Safety Science	MSafetySc	Engineering
Master of Science	MSc	Applied Science **Architecture** Engineering Medicine Sciences*§ University College
Master of Science *without supervision*	MSc	Applied Science **Architecture** Engineering Medicine Sciences*§ University College

Title	Abbreviation	Calendar/Handbook
Master of Science (Acoustics)	MSc(Acoustics)	Architecture
Master of Science (Industrial Design)	MSc(IndDes)	Architecture
Master of Science and Society	MScSoc	Arts
Master of Social Work	MSW	Professional Studies
Master of Statistics	MStats	Sciences*
Master of Surgery	MS	Medicine
Master of Surveying	MSurv	Engineering
Master of Surveying *without supervision*	MSurv	Engineering
Master of Surveying Science	MSurvSc	Engineering
Master of Town Planning	**MTP**	**Architecture**
Master of Welfare Policy	MWP	Professional Studies
Graduate Diploma	GradDip	Applied Science **Architecture** Engineering Sciences*§
	DipPaed	Medicine
	DipEd	Professional Studies
	DipIM-ArchivAdmin	
	DipIM-Lib	
	DipFDA	Sciences*

Graduate Diplomas

*Faculty of Science.
§Faculty of Biological and Behavioural Sciences.

Higher Degrees

Doctor of Philosophy (PhD)
(under review)

Qualifications

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.

Enrolment and Progression

3. (1) An application to enrol as a candidate for the degree shall be made on the prescribed and form which shall be lodged with the Academic 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.

(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.

* Or department where a department is not within a school or schools or departments where the research is being undertaken in more than on e school or department.

(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 Academic 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 Academic 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

* Or department where a department is not within a school or schools or departments where the research is being undetaken in more than one school or department.

(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 futher 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) Where 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 Academic 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 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 or schools or departments where the research is being undertaken in more than one school or department.

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. — **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)**

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 Academic 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 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 Academic 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 in 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.

Fees

1. The degree of Master of Project 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 Project Management (MPM)

2. (1) A candidate for the degrees 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 Academic 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.

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.

Project Report

(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 given in writing to the Academic 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 Academic 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 csandidate 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.

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 Academic 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.

Project Report

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 Academic 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 Academic Board on the recommendation of the Committee. **Examination**

(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. **Fees**

Master of Engineering (ME) and Master of Science (MSc)I

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.

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. **Qualifications**

(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.

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 Academic Registrar at least one calendar month before the commencement of the session in which enrolment is to begin. **Enrolment and Progression**

(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

*Or department where a department is not within a school or schools or departments where the research is being undertaken in more than one school or department.

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 of 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.

Examination

5. (1) There shall be not fewer than two examiners of the thesis, appointed by the Academic 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.

Fees

6. A candidate shall pay such fees as may be determined from time to time by the Council.

Master of Engineering (ME), Master of Science (MSc) and Master of Surveying (MSurv) *without supervision*

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 apropriate 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. 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.

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 Academic 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 and Progression

4. (1) A candidate shall submit a thesis embodying the results of the investigation.

Thesis

(2) The candidate shall give in writing to the Academic 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.

(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 Academic 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) 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 examiners 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.

6. A candidates shall pay such fees as may be determined from time to time by the Council.

Fees

Master of Landscape Planning (MLP)

1. The degree of Master of Landscape Planning by formal course work may be awarded by the Council to a candidate who has satisfactorily completed a program of advanced study.

2. (1) A candidate for the degrees 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.

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 Academic 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 three academic sessions from the date of enrolment.

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 Academic 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.raduate Diploma may be awarded by the Council to a candidate who has satisfactorily completed a program of advanced study.

Examination

5. (1) There shall be not fewer than two examiners of the project report, appointed by the Academic 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 csandidate 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.

Graduate Diploma

Graduate Diploma (Grad Dip)

1. A Graduate Diploma may be awarded by the concil to a candidate who has satisfactorily completed a program of advanced study.

Qualifications

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 Academic 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.

Fees

4. A candidate shall pay such fees as may be determined from time to time by the Council.

Scholarship 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 scholarhips and prizes offered throughout the University.

Scholarships

Undergraduate Scholarships

Listed below is an outline only 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 Academic 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
General			
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.
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 or members of the family of such members.
Alumni Association	Up to $1500 pa	1 year with the possibility of renewal	Available to students enrolled in any year of a full-time course. Candidates must be the children of Alumni of the University of NSW and may be either permanent residents of Australia or overseas students.

*Apply to The Secretary, Bursary Endowment Board, PO Box 460, North Sydney 2060, immediately after sitting for HSC.
**Applications close 30 September each year.

Graduate Scholarships

Application forms and further information are available from the Student Centre, 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 organizations 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
General			
University Postgraduate Research Scholarships	Living allowance of $9000 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	$12,734 to $16,433		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 Academic Registrar by 31 October.
Commonwealth Postgraduate Course Awards	Living allowance of $10,415 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 Academic Registrar by 30 September.
Australian American Educational Foundation Fulbright Award	Travel expenses and $A2000 as establishment 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. Applications close 30 September with The Secretary, DEET, AAEF Travel Grants, PO Box 826, Woden ACT 2606.
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. Tenable in Commonwealth countries other than Australia. Applications close with Academic 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 with The Secretary, Ground Floor, Sydney School of Arts, 275c Pitt Street, Sydney NSW 2000.

Graduate Scholarships (continued)

Donor	Value	Year/s of Tenure	Conditions
General (continued)			
Frank Knox Memorial Fellowships tenable at Harvard University	Stipend of $US7000 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 Academic 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 with the Registrar, A.N.U., GPO Box 4, Canberra ACT 2601
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 on active service during the 1939-45 War. Applications close with the Academic Registrar by 31 October.
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 **1.** Either members of the Commonwealth or a State Public Service or semi-government Authority. **2.** Either staff or graduate students at an Australian university. **3.** 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 with the Academic Registrar. Forms available from Mr J Larkin, Bureau of Agriculture and Resource Economics, GPO Box 1563, Canberra ACT 2601.
The Packer, Shell and Barclays Scholarships to Cambridge University	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 with The Secretary, Cambridge Commonwealth Trust, PO Box 252, Cambridge CB2 ITZ, England.
The Rhodes Scholarship to Oxford University	Approximately £4200 stg pa	2 years, may be extended for a third year.	Unmarried Australian citizens aged between 19 and 25 who have an honours degree or equivalent. Applications close in August each year with The Secretary, University of Sydney, NSW 2006.
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 overseas or in Australia. Applications to the Academic Registrar by 31 October.

Graduate Scholarships (continued)

Donor	Value	Year/s of Tenure	Conditions
Architecture (continued)			
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 with the Academic Registrar.
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	Awarded to an Architecture student proceeding to graduate study. Applications close 30 September with the Academic Registrar.

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 or the Chancellery.

Donor/Name of Prize	Value $	Awarded for
General		
The Sydney Technical College Union Award	$400.00 and Bronze Medal	Leadership in student affairs combined with marked academic proficiency by a graduand.
The University of New South Wales Alumni Association Prize	Statuette	Achievement for community benefit by a student in the final or graduating year.
School of Architecture		
The Board of Architects of NSW Prize	$250.00	Outstanding graduand in the School of Architecture
The Eric Daniels Prize in Residential Design	$500.00	The best performance in design for Residential Accommodation by a student in the Bachelor of Architecture course.
The Frank Fox Memorial Prize	$150.00	The best performance in 11.4334 Historical Research C by a student in the Bachelor of Architecture course.
The Frank W. Peplow Prize	$100.00	The best performance in Church Architecture or Design by a student in the Bachelor of Architecture course.
The James Hardie & Coy. Pty Ltd Prize	$150.00	Outstanding performance in Year 1 of the Bachelor of Science (Design Studies)/ Bachelor of Architecture

Undergraduate University Prizes (continued)

Donor/Name of Prize	Value $	Awarded for
School of Architecture (continued)		
The John Connell Group Award for Excellence in Architectural Structures	$600.00 and silver medal	The best study on a structural topic in Architectural Research 1,2 or 3 by a student who is enrolled in, has completed, or has been given exemption from, at least one of: 11.5620 Conceptual Structural Design 11.5621 Advanced Structural Design 11.5622 Lightweight Structural Design
The Morton Herman Memorial Prize	$100.00	The best performance in 11.4336 Measured Studies of Historic Structures in the Bachelor of Architecture course.
The Royal Australian Institute of Architects Prize	$250.00	Outstanding performance in Architectural Design and related studies in the final two years of the Bachelor of Architecture course.
School of Building		
The Building Services Corporation Prize	$250.00	The best thesis in the final year of the Bachelor of Building course
The Institute of Wood Science (Australian Branch) Timber in Building Prize	Book and cheque to the value of $100	The best performance in 35.609 Building Science 9 (Timber) by a student in the Bachelor of Building course.
The James Hardie & Coy. Pty Ltd. Prize	$100.00	The best performance in Year 1 of the Bachelor of Building course.
The Master Builders' Association of NSW Prize	$350.00	Outstanding performance in the Bachelor of Building course.
The Multiplex Constructions Prize	$1500.00	The best performance in the major Building Construction subjects Construction 1 to 5 in the Bachelor of Building course.
The Reed Constructions Prize	$1000.00	The most outstanding performance by a student in the Bachelor of Building course.
School of Landscape Architecture		
The Lindsay Robertson Memorial Prize	$300	The best performance in 37.7134 Landscape Design 2 in the Bachelor of Landscape Architecture Course
School of Town Planning		
The John Shaw Memorial Prize	$400.00	The best thesis in the Bachelor of Town Planning course
The New South Wales Department of Environment and Planning Prize	$350.00	The best performance in Year 5 of the Bachelor of Town Planning course.
The New South Wales Local Government Association of Planners Prize	$150.00	The best thesis related to Local Government planning in the final year of the Bachelor of Town planning course.
The Royal Australian Planning Institute (N.S.W Division) Prize	$150.00	The best performance by a student in Year 3 of the Bachelor of Town Planning course.

Graduate University Prizes

The following table summarizes the graduate prizes awarded by the University.

Donor/name of Prize	Value $	Awarded for
School of Building		
The Alex Rigby Prize	$250.00	The best overall performance in the Master of Building Management Course.
The T.W. Crow Associates Prize	$300.00	The best performance by a student in Year 2 of the Master of Project Management course.
Master Builders' Association of NSW Prize	$1000	The best performance in the Master of Construction Management Course

Student's Timetable

Time	Monday		Tuesday		Wednesday		Thursday		Friday	
	Session 1	Session 2	Session 1	Session 2	Session 1	Session 2	Session 1	Session 2	Session 1	Session 2
9-10										
10-11										
11-12										
12-1										
1-2										
2-3										
3-4										
4-5										
5-6										
6-7										
7-8										
8-9										

The University of New South Wales Kensington Campus

Theatres

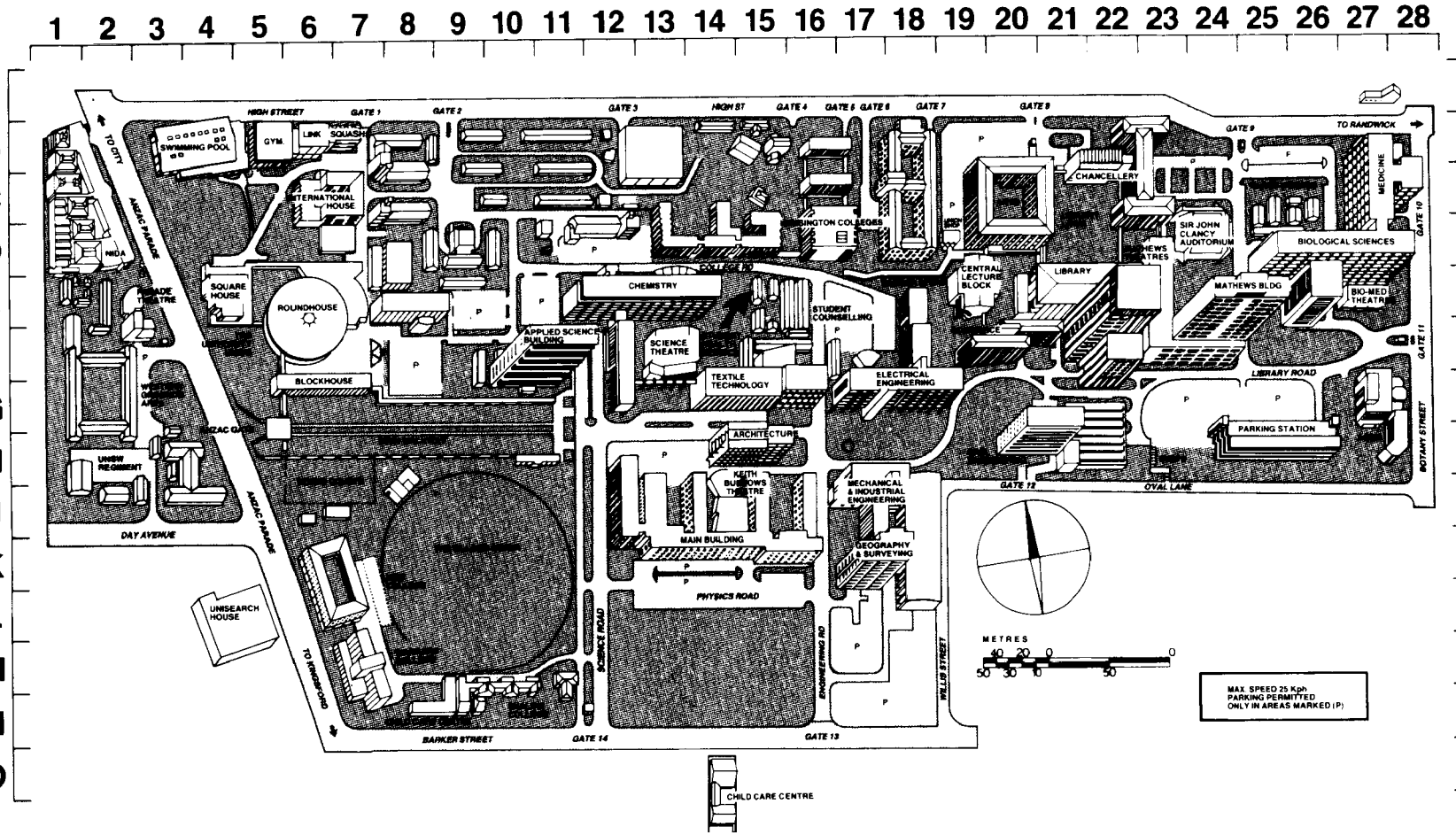
Biomedical Theatres **E27**
Central Lecture Block **E19**
Classroom Block (Western Grounds) **H3**
Rex Vowels Theatre **F17**
Keith Burrows Theatre **J14**
Main Building (Physics) Theatrette **K14**
Mathews Theatres **D23**
Parade Theatre **E3**
Science Theatre **F13**
Sir John Clancy Auditorium **C24**

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 and Economics (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**
Io Myers Studio **D9**
John Goodsell (Commerce and Economics) **F20**
Kanga's House **O14**
Kensington Colleges **C17** (Office)
Basser **C18**
Goldstein **D16**
Philip Baxter **D14**
Link **B6**
Maintenance Workshop **B13**
Materials Science and Engineering **E8**
Mathews **F23**
Mechanical and Industrial Engineering **J17**
Medicine (Administration) **B27**
Menzies Library **E21**
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**

General

Academic Staff Office **C22**
Accounting **F20**
Admissions **C22**
Adviser for Prospective Students **F15**
Anatomy **C27**
Applied Economic Research **G14**
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**
Banking and Finance **F20**
Biochemistry **D26**
Biological and Behavioural Sciences (Faculty Office) **D26**
Biomedical Engineering **A28**
Biomedical Library **F23**
Biotechnology **D26**
Bookshop **G17**
Building **H14**
Careers and Employment **F15**
Cashier's Office **C22**
Chaplains **E15**
Chemical Engineering and Industrial Chemistry **F10**
Chemistry **E12**
Child Care Centres **N8, O14**
Civil Engineering **H20**
Commerce and Economics (Faculty Office) **F20**
Community Medicine **D26**
Computing Services Department **F21, D26**
Continuing Education Support Unit **F23**
Counselling and Careers Service **F15**
Economics **F20**
Education **G2**
Education Testing Centre **E15**
Electrical Engineering and Computer Science **G17**
Energy Research, Development and Information Centre **F10**
Engineering (Faculty Office) **K17**
English **C20**
Ethics Committees Secretariat **B8**
Examinations **C22**
Fees Office **C22**
Food Science and Technology **F10**
French **C20**
General Staff Office **C22**
Geography **K17**
German Studies **C20**
Graduate Office and Alumni Centre **E4**
Graduate School of the Built Environment **H14**
Groundwater Management and Hydrogeology **F10**
Health Administration **C22**
History **C20**
Industrial Arts **H14**
Industrial Relations and Organizational Behaviour **F20**
Information Systems **F20**
Kanga's House **O14**
Kindergarten (House at Pooh Corner) **N8**
Landscape Architecture **K15**
Law (Faculty Office) **F21**
Law Library **F21**
Legal Studies and Taxation **F20**
Liberal and General Studies **C20**
Librarianship **F23**
Library **E21**
Lost Property **C22**
Marine Science **D26**
Marketing **F20**
Materials Science and Engineering **E8**
Mathematics **F23**
Mechanical and Industrial Engineering **J17**
Medical Education **C27**
Medicine (Faculty Office) **B27**
Microbiology **D26**
Mineral Processing and Extractive Metallurgy **E8**
Mining Engineering **K15**
Music **B11**
National Institute of Dramatic Art **D2**
Off-campus Housing **C22**
Optometry **J12**
Pathology **C27**
Patrol and Cleaning Services **C22**
Petroleum Engineering **D12**
Philosophy **C20**
Physics **K15**
Physiology and Pharmacology **C27**
Political Science **C20**
Printing Unit **C22**
Psychology **F23**
Public Affairs Unit **C22**
Publications Section **C22**
Remote Sensing **K17**
Russian Studies **C20**
Safety Science **J17**
Science and Mathematics Course Office **D26**
Science and Technology Studies **C20**
Social Work **G2**
Sociology **C20**
Spanish and Latin American Studies **C20**
Sport and Recreation Centre **B6**
Student Health **E15**
Student Records **C22**
Students' Union **E4** and **C21**
Surveying **K17**
Tertiary Education Research Centre **E15**
Textile Technology **G14**
Theatre Studies **B10**
Town Planning **K15**
Union Shop (Upper Campus) **D19**
University Archives **E21**
University Press **A28**
University Union (Blockhouse) **G6**
Waste Management **H20**
WHO Regional Training Centre **C27**
Wool and Animal Science **B8**


1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28
A B C D E F G H J K L M N O
HIGH STREET
GATE 1
GATE 2
GATE 3
HIGH ST
GATE 4
GATE 5
GATE 6
GATE 7
GATE 8
GATE 9
TO RANDWICK
TO CITY
ANZAC PARADE
SWIMMING POOL
GYM
LINK
SQUASH
INTERNATIONAL HOUSE
NIDA
SQUARE HOUSE
ROUNDHOUSE
BLOCKHOUSE
UNSW REGIMENT
DAY AVENUE
UNISEARCH HOUSE
TO KINGSFORD
BARKER STREET
GATE 14
GATE 13
SCIENCE ROAD
ENGINEERING RD
WILLIS STREET
CHILD CARE CENTRE
CHEMISTRY
APPLIED SCIENCE BUILDING
SCIENCE THEATRE
TEXTILE TECHNOLOGY
STUDENT COUNSELLING
ELECTRICAL ENGINEERING
ARCHITECTURE
KEITH BURROWS THEATRE
MAIN BUILDING
PHYSICS ROAD
MECHANICAL & INDUSTRIAL ENGINEERING
GEOGRAPHY & SURVEYING
CHANCELLERY
SIR JOHN CLANCY AUDITORIUM
CENTRAL LECTURE BLOCK
LIBRARY
BIOLOGICAL SCIENCES
MATHEWS BLDG
BIO-MED THEATRE
MEDICINE
GATE 10
GATE 11
LIBRARY ROAD
PARKING STATION
BOTANY STREET
GATE 12
OVAL LANE
METRES
40 20 0 0
30 30 0 50
MAX SPEED 25 Kph
PARKING PERMITTED
ONLY IN AREAS MARKED (P)

This Handbook has been specifically designed as a source of reference for you and will prove useful for consultation throughout the year.

For fuller details about the University – its organization, staff membership, description of disciplines, scholarships, prizes, and so on, you should consult the Calendar.

The Calendar and Handbooks also contain a summary list of higher degrees as well as the conditions for their award applicable to each volume.

For detailed information about courses, subjects and requirements of a particular faculty you should consult the relevant Faculty Handbook.

Separate Handbooks are published for the Faculties of Applied Science, Architecture, Arts, Commerce and Economics, Engineering, Law, Medicine, Professional Studies, Science (including Biological and Behavioural Sciences and the Board of Studies in Science and Mathematics), and the Australian Graduate School of Management (AGSM).

The Calendar and Handbooks, which vary in cost, are available from the Cashier's Office.