WOLLONGONG UNIVERSITY COLLEGE
HANDBOOK 1972

UNIVERSITY OF NEW SOUTH WALES

Wollongong University College
Northfields Avenue
Telephone: 2-7301
## CONTENTS

### THE COLLEGE

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introduction</td>
<td>5</td>
</tr>
<tr>
<td>Calendar of Dates</td>
<td>6</td>
</tr>
<tr>
<td>Sessional System</td>
<td>9</td>
</tr>
<tr>
<td>College Council</td>
<td>10</td>
</tr>
<tr>
<td>College Staff, Divisions and Departments</td>
<td>11</td>
</tr>
<tr>
<td>College Library</td>
<td>16</td>
</tr>
<tr>
<td>College Union</td>
<td>16</td>
</tr>
<tr>
<td>Students' Representative Council</td>
<td>16</td>
</tr>
<tr>
<td>Clubs and Societies</td>
<td>17</td>
</tr>
<tr>
<td>Sporting Facilities</td>
<td>17</td>
</tr>
<tr>
<td>Chaplaincy Service</td>
<td>17</td>
</tr>
<tr>
<td>Radio Courses</td>
<td>18</td>
</tr>
<tr>
<td>Unisearch Limited</td>
<td>19</td>
</tr>
<tr>
<td>Accommodation</td>
<td>19</td>
</tr>
<tr>
<td>Casual Employment</td>
<td>19</td>
</tr>
<tr>
<td>Travel Concessions</td>
<td>20</td>
</tr>
<tr>
<td>Student Identification Cards</td>
<td>20</td>
</tr>
<tr>
<td>Lost Property</td>
<td>20</td>
</tr>
</tbody>
</table>

### GENERAL INFORMATION AND REGULATIONS

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Conduct</td>
<td>21</td>
</tr>
<tr>
<td>Attendance at Classes</td>
<td>21</td>
</tr>
<tr>
<td>Indebtedness to the University</td>
<td>22</td>
</tr>
<tr>
<td>Course Transfers</td>
<td>22</td>
</tr>
<tr>
<td>Changes in Course Programmes and Withdrawal from Subjects</td>
<td>22</td>
</tr>
<tr>
<td>Resumption of Courses</td>
<td>23</td>
</tr>
<tr>
<td>Annual Examinations</td>
<td>23</td>
</tr>
<tr>
<td>Deferred Examinations</td>
<td>25</td>
</tr>
<tr>
<td>Terminating Passes</td>
<td>25</td>
</tr>
<tr>
<td>Application for Admission to a Degree</td>
<td>25</td>
</tr>
<tr>
<td>Restriction upon Students Re-Enrolling</td>
<td>25</td>
</tr>
<tr>
<td>Re-Admission after Exclusion</td>
<td>28</td>
</tr>
<tr>
<td>Rules of Progression</td>
<td>29</td>
</tr>
<tr>
<td>Progression in Full-Time Courses</td>
<td>29</td>
</tr>
<tr>
<td>Progression in the Faculty of Engineering</td>
<td>29</td>
</tr>
<tr>
<td>Admission with Advanced Standing</td>
<td>30</td>
</tr>
<tr>
<td>Change of Address</td>
<td>31</td>
</tr>
<tr>
<td>Ownership of Students' Work</td>
<td>31</td>
</tr>
<tr>
<td>Notices</td>
<td>31</td>
</tr>
<tr>
<td>Application of Rules</td>
<td>31</td>
</tr>
</tbody>
</table>

### UNDERGRADUATE ADMISSION AND ENROLMENT PROCEDURE, FEES, SCHOLARSHIPS AND PRIZES

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Requirements for Admission</td>
<td>33</td>
</tr>
<tr>
<td>Enrolment and Re-Enrolment Procedure</td>
<td>38</td>
</tr>
<tr>
<td>Confirmation of Enrolment</td>
<td>39</td>
</tr>
<tr>
<td>Fees</td>
<td>40</td>
</tr>
<tr>
<td>Scholarships</td>
<td>44</td>
</tr>
<tr>
<td>Prizes</td>
<td>49</td>
</tr>
</tbody>
</table>
The College
INTRODUCTION

Wollongong University College was established as a college of the University of New South Wales in 1961.

At present the university college provides undergraduate and postgraduate courses leading to degrees in Arts, Commerce, Science, Engineering, Metallurgy and a diploma course in Education.

There is an academic staff of more than ninety, which is expanding in line with developments at the College. Currently the College has sixteen departments organised in six divisions which correspond roughly to faculties. The College is expected to have upwards of 1,450 students in 1972, and 2,000 by 1975. On 1st January, 1975, the College will become an autonomous university.

The College occupies eighty-two acres between the mountains and the sea in the Mount Pleasant/Mount Ousley area of Wollongong. Existing buildings are shown on the plan at the end of the handbook. Further buildings will be added during the 1973-75 triennium in accordance with a master plan which envisages a future student population of 10,000.

The City of Greater Wollongong is 50 miles from central Sydney and less than an hour’s travelling time by car or train from the southern suburbs of Sydney. It is one of the most rapidly growing cities in the country; in terms of population it now ranks seventh. Wollongong’s cultural activities include art societies and repertory groups, as well as the Wollongong Chamber Music Society and the Australian Broadcasting Commission Subscription Concert Series. Plays are performed from time to time in Wollongong Town Hall’s new theatre under the auspices of the Elizabethan Theatre Trust. Lectures by distinguished scholars from Australia and overseas are regularly arranged by the College. In addition the proximity to Sydney makes that city’s cultural life readily available.

This handbook has been specially designed as a source of reference for students at Wollongong. However, it should be read in conjunction with the University calendar where further details may be found.
### CALENDAR OF DATES

#### Session 1
- **March 6 to May 13.**
- **May Recess:** May 14 to May 21.
- **Midyear Recess:** June 18 to July 23.

#### Session 2
- **July 24 to August 12.**
- **August Recess:** August 13 to August 27.
- August 28 to November 11.

#### January
- **Wednesday 19** Admissions Committee (Re-Enrolment) 2.15 p.m.
- **Thursday 20** Higher Degree Committee, 9.15 a.m.
- **Tuesday 25** Deferred examinations commence.
  Personnel Sub-Committee, 4.30 p.m.
- **Thursday 27** Admissions Committee, 2.15 p.m.
- **Monday 31** Australia Day — Public Holiday.

#### February
- **Tuesday 1** Buildings and Equipment Committee, 5.00 p.m.
- **Thursday 3** Students Affairs Committee, 4.30 p.m.
- **Friday 4** Finance Sub-Committee, 5.00 p.m.
- **Thursday 10** Deferred examinations end.
  Enrolment of new students.
- **Friday 11** Enrolment of new students.
- **Monday 14** Enrolment of new students.
- **Thursday 17** Higher Degree Committee, 9.15 a.m.
- **Friday 18** College Council Executive Committee, 4.30 p.m.
- **Thursday 24** Enrolment of new students.
- **Monday 28** Enrolment of re-enrolling students.
  Admissions Committee, 2.15 p.m.
- **Tuesday 29** Enrolment of re-enrolling students.
  Personnel Sub-Committee, 4.30 p.m.

#### March
- **Wednesday 1** Enrolment of re-enrolling students.
- **Friday 3** College Council, 2.00 p.m.
- **Monday 6** Session 1 lectures commence.
- **Thursday 9** Admissions Committee, 9.15 a.m.
- **Friday 10** Library Committee, 2.15 p.m.
- **Thursday 16** Higher Degree Committee, 9.15 a.m.
- **Friday 17** Finance Sub-Committee, 5.00 p.m.
- **Tuesday 21** Buildings and Equipment Committee, 5.00 p.m.
- **Thursday 23** Academic Development Committee, 9.15 a.m.
  Students Affairs Committee, 4.30 p.m.
- **Friday 24** Engineering and Metallurgy, 10.00 a.m.
  Physical Science, 2.15 p.m.
- **Monday 27** Literature and Language, 2.15 p.m.
- **Tuesday 28** Personnel Sub-Committee, 4.30 p.m.
- **Wednesday 29** Social Science, 2.15 p.m.
- **Friday 31** Easter Holidays commence.
April

Friday 7 ........................ Biological and Chemical Science, 10.00 a.m.
                              Commerce, 2.30 p.m.
Thursday 13 ................ Higher Degree Committee, 9.15 a.m.
                                   College Council Executive Committee, 4.30 p.m.
Friday 14 ........................ Graduation Ceremony, 2.30 p.m.
Tuesday 18 ................ Personnel Sub-Committee, 4.30 p.m.
Friday 21 ........................ Board of Studies Executive Committee, 9.15 a.m.
                                   College Council, 2.00 p.m.
Tuesday 25 ....................... Anzac Day — Public Holiday.
Friday 28 ........................ Board of Studies, 2.15 p.m.

May

Friday 5 ........................ Engineering and Metallurgy, 10.00 a.m.
                              Physical Science, 2.15 p.m.
Tuesday 9 ...................... Library Committee, 2.15 p.m.
Wednesday 10 ................ Social Science, 2.15 p.m.
Thursday 11 .................... Admissions Committee, 9.15 a.m.
                              Academic Development Committee, 2.15 p.m.
Friday 12 ........................ Biological and Chemical Science, 10.00 a.m.
                              Commerce, 2.30 p.m.
Sunday 14 ...................... May recess commences.
Thursday 18 ................ Higher Degree Committee, 9.15 a.m.
Sunday 21 ...................... May recess ends.
Monday 22 ........................ Literature and Language, 2.15 p.m.
Tuesday 23 ........................ Buildings and Equipment Committee, 5.00 p.m.
Tuesday 30 ........................ Personnel Sub-Committee, 4.30 p.m.

June

Thursday 1 ........................ Students Affairs Committee, 4.30 p.m.
Friday 2 ............................ Board of Studies Executive Committee, 9.15 a.m.
                              Finance Sub-Committee, 5.00 p.m.
Monday 12 ........................ Queens Birthday — Public Holiday.
Thursday 15 ................ College Council Executive Committee, 4.30 p.m.
Friday 16 ........................ Higher Degree Committee, 9.15 a.m.
                              Board of Studies, 2.15 p.m.
Sunday 18 ........................ Mid year recess begins.
Tuesday 20 ........................ Mid year examinations begin.
Friday 23 ........................ College Council, 2.00 p.m.
Tuesday 27 ........................ Personnel Sub-Committee, 4.30 p.m.

July

Tuesday 4 ........................ Mid year examinations end.
Thursday 13 ................ Higher Degree Committee, 9.15 a.m.
Friday 21 ........................ Finance Sub-Committee, 5.00 p.m.
Sunday 23 ........................ Mid year recess ends.
Monday 24 ........................ Session 2 lectures commence.
                              Library Committee, 9.15 a.m.
                              Literature and Language, 2.15 p.m.
Tuesday 25 ........................ Personnel Sub-Committee, 4.30 p.m.
Wednesday 26 ........................ Social Science, 2.15 p.m.
Thursday 27 ........................ Academic Development Committee, 9.15 a.m.
                              Student Affairs Committee, 4.30 p.m.
Friday 28 ........................ Biological and Chemical Science, 10.00 a.m.
                              Commerce, 2.30 p.m.
## August

<table>
<thead>
<tr>
<th>Date</th>
<th>Event</th>
</tr>
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<tbody>
<tr>
<td>Tuesday 1</td>
<td>Buildings and Equipment Committee, 5.00 p.m.</td>
</tr>
<tr>
<td>Thursday 3</td>
<td>Admissions Committee, 9.15 a.m.</td>
</tr>
<tr>
<td>Friday 4</td>
<td>Engineering and Metallurgy, 10.00 a.m.</td>
</tr>
<tr>
<td>Friday 11</td>
<td>Board of Studies Executive Committee, 9.15 a.m.</td>
</tr>
<tr>
<td>Sunday 13</td>
<td>College Council Executive Committee, 4.30 p.m.</td>
</tr>
<tr>
<td>Thursday 17</td>
<td>August recess begins.</td>
</tr>
<tr>
<td>Friday 18</td>
<td>College Council, 2.00 p.m.</td>
</tr>
<tr>
<td>Sunday 27</td>
<td>August recess ends.</td>
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<tr>
<td>Tuesday 29</td>
<td>Personnel Sub-Committee, 4.30 p.m.</td>
</tr>
</tbody>
</table>

## September

<table>
<thead>
<tr>
<th>Date</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>Friday 1</td>
<td>Board of Studies, 2.15 p.m.</td>
</tr>
<tr>
<td>Thursday 7</td>
<td>Admissions Committee, 9.15 a.m.</td>
</tr>
<tr>
<td>Thursday 14</td>
<td>Higher Degree Committee, 9.15 a.m.</td>
</tr>
<tr>
<td>Thursday 21</td>
<td>Library Committee, 2.15 p.m.</td>
</tr>
<tr>
<td>Tuesday 26</td>
<td>Personnel Sub-Committee, 4.30 p.m.</td>
</tr>
<tr>
<td>Thursday 28</td>
<td>Student Affairs Committee, 4.30 p.m.</td>
</tr>
</tbody>
</table>

## October

<table>
<thead>
<tr>
<th>Date</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monday 2</td>
<td>Eight Hour Day — Public Holiday.</td>
</tr>
<tr>
<td>Tuesday 3</td>
<td>Buildings and Equipment Committee, 5.00 p.m.</td>
</tr>
<tr>
<td>Thursday 5</td>
<td>Academic Development Committee, 9.15 a.m.</td>
</tr>
<tr>
<td>Friday 6</td>
<td>Physical Science, 2.15 p.m.</td>
</tr>
<tr>
<td>Wednesday 11</td>
<td>Finance Sub-Committee, 5.00 p.m.</td>
</tr>
<tr>
<td>Thursday 12</td>
<td>Social Science, 2.15 p.m.</td>
</tr>
<tr>
<td>Friday 13</td>
<td>Admissions Committee, 9.15 a.m.</td>
</tr>
<tr>
<td>Monday 16</td>
<td>Literature and Language, 2.15 p.m.</td>
</tr>
<tr>
<td>Thursday 19</td>
<td>Higher Degree Committee, 9.15 a.m.</td>
</tr>
<tr>
<td>Friday 20</td>
<td>Engineering and Metallurgy, 10.00 a.m.</td>
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<tr>
<td>Tuesday 31</td>
<td>Personnel Sub-Committee, 4.30 p.m.</td>
</tr>
</tbody>
</table>

## November

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<thead>
<tr>
<th>Date</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>Friday 3</td>
<td>Board of Studies Executive Committee, 9.15 a.m.</td>
</tr>
<tr>
<td>Thursday 9</td>
<td>College Council, 2.00 p.m.</td>
</tr>
<tr>
<td>Saturday 11</td>
<td>Admissions Committee, 9.15 a.m.</td>
</tr>
<tr>
<td>Tuesday 14</td>
<td>Session 2 ends.</td>
</tr>
<tr>
<td>Thursday 16</td>
<td>Annual examinations begin.</td>
</tr>
<tr>
<td>Friday 17</td>
<td>Buildings and Equipment Committee, 5.00 p.m.</td>
</tr>
<tr>
<td>Thursday 19</td>
<td>Higher Degree Committee, 9.15 a.m.</td>
</tr>
<tr>
<td>Friday 20</td>
<td>Students Affairs Committee, 4.30 p.m.</td>
</tr>
<tr>
<td>Tuesday 28</td>
<td>Board of Studies, 2.15 p.m.</td>
</tr>
<tr>
<td>Tuesday 28</td>
<td>Finance Sub-Committee, 5.00 p.m.</td>
</tr>
<tr>
<td>Tuesday 31</td>
<td>Personnel Sub-Committee, 4.30 p.m.</td>
</tr>
</tbody>
</table>

## December

<table>
<thead>
<tr>
<th>Date</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>Friday 1</td>
<td>College Council Executive Committee, 4.30 p.m.</td>
</tr>
<tr>
<td>Tuesday 5</td>
<td>Annual examinations end.</td>
</tr>
<tr>
<td>Thursday 7</td>
<td>Admissions Committee, 9.15 a.m.</td>
</tr>
<tr>
<td>Friday 8</td>
<td>College Council, 2.00 p.m.</td>
</tr>
<tr>
<td>Thursday 14</td>
<td>Higher Degree Committee, 9.15 a.m.</td>
</tr>
</tbody>
</table>
SESSIONAL SYSTEM

A two-session calendar will operate in the College in 1972. For dates see Calendar of Dates, page 6.

In 1972 all teaching and assessment of subjects shall be done on a sessional basis. A College subject is defined as a sub-department of a discipline comprising a series of no more than 14 weeks duration of lectures and/or seminars, tutorials, laboratory classes and/or the like. Subjects may be described as single session or first-session or second-session or double-session. This means that in a single-session subject examinations will be held at the end of the session in which the subject has been taught. In double-session subjects there may be assessments during both the sessions in which the double-session subject is taught; but there will be no subject result until after the end of year examinations. Subjects are identified as being single-session or double-session in the section—Description of Subjects—in this handbook. All students will receive official notification of their progress by the end of the mid-year recess and another notification at the end of the year which will incorporate sessional and final results in all subjects taken during the year.

Sessional results shall be shown as:

A: Acceptable — the student may continue with his program.

UA: The student must consult with the Head of the Department concerned on the significance of the results.

The annual result will be in the University’s standard form e.g. P: Pass, F: Failure, etc.
MEMBERS OF COLLEGE COUNCIL

Chairman: Mr. D. E. Parry,
Joint Managing Director,
Southern Engineering Services Pty. Ltd.

Mr. Edgar Beale,
Solicitor.

Mr. W. B. Burgess,
General Manager,
Australian Iron and Steel Pty. Ltd.

Mr. J. K. Doherty,
Technical Assistant to the
General Manager,
Kembla Coal and Coke Pty. Ltd.

Mr. B. J. Doyle,
Director of Artificial Stock Breeding.

Mr. T. K. Duncan,
General Manager
Associated Developments,
The Broken Hill Proprietary Co. Ltd.

Dr. J. S. Hagan,
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Department of History,
Wollongong University College.

Professor B. Halpern,
Professor of Chemistry and
Head of Division of Biological and Chemical Science,
Wollongong University College.

Mr. H. H. Hartley,
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Electrolytic Refining and Smelting Company of Australia Ltd.

Mr. M. P. McCarney,
Secretary,
New South Wales Branch of the Vehicle Builders Employees' Federation of Australia.

Miss K. McCredie,
Headmistress,
Abbotsleigh.

Mr. W. C. McGrath,
Principal,
Wollongong College of Advanced Education.

Mr. R. J. Pearson,
General Manager,
Port Kembla Works,
Metal Manufactures Ltd.

Mr. M. Ross,
President,
Wollongong University College Students' Representative Council.

Mr. I. C. Young,
Director,
South Coast Area,
Department of Education.

Ex Officio:

Professor C. A. M. Gray,
Warden,
Wollongong University College.

Professor P. K. Elkin,
Chairman,
Wollongong University College Board of Studies.

Professor A. H. Willis,
Pro-Vice-Chancellor,
The University of New South Wales.
THE COLLEGE

STAFF

WARDEN
Professor C. A. M. Gray, Hon. JMN, BSc ME (Syd.), CEng, FAIM, FI MechE, MICE, MIE Aust, Emeritus Professor, University of Malaya

BURSAR
B. J. Meek, BA DipEd (Syd.)

SECRETARY
R. F. Stewart, BCom DipEd (Melb.)

SENIOR ADMINISTRATIVE OFFICER
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ADMINISTRATIVE OFFICER
B. C. Moldrich, BA (Ceyl.)

ADMINISTRATIVE ASSISTANTS
H. V. Brandon, AASA
J. F. White, BA (N.E.)

COLLEGE ENGINEER
R. M. Kinnell, ASTC, MIE Aust

LIBRARY

COLLEGE LIBRARIAN (ACTING)
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SENIOR LIBRARIANS
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J. Lorenc, BSc (N.S.W.), ALAA

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ASSOCIATE PROFESSOR
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F. M. Hall, MSc PhD (N.S.W.), ASTC, ARACI
E. Kokot, BSc PhD (N.S.W.), ASTC, ARACI

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W. K. Hannan, MSc (Syd.),
G. M. Mockler, BSc PhD (N.S.W.), ARACI

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R. Rudzats, MSc (N.S.W.), ASTC, ARACI, ARIC
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PROFESSOR OF ACCOUNTING
Vacant

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R. K. Wilson, BCom (N.S.W.)

TUTOR
A. J. Anderson, BCom (N.S.W.)

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SENIOR LECTURER
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LECTURERS
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D. Gallagher, BAgEc (N.E.)

TUTORS
R. G. Castle, MEc (Syd.)
Mrs Juli Irving, BA (N.S.W.)

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PROFESSOR OF METALLURGY AND HEAD OF DIVISION
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PROFESSOR OF ELECTRICAL ENGINEERING
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Z. Herceg, DipEng (Zagreb), PhD (N.S.W.), MIEAust, MIREE
K. J. McLean, ME (N.Z.), BD (Melb. Div. Coll.), PhD (N.S.W.), MIEAust
O. J. Tassicker, MEE (Melb.), FIEAust, FIEE

LECTURER
G. W. Trott, BSc BE (Adel.), PhD (Alberta), MIEEE

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ASSOCIATE PROFESSORS
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A. W. Roberts, BE PhD (N.S.W.), ASTC, CEng, MIEAust, MIMechE

12
THE COLLEGE

SENIOR LECTURERS

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R. W. Upfold, ME PhD (N.S.W.), ASTC, CEng, MIEAust, MIMechE  
P. Van der Werf, ME PhD (N.S.W.), ASTC, MIEAust

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M. J. Lowrey, ME (N.S.W.), ASTC, MIEAust  
G. Singh, BSc (Eng.) (Alig.), MSc PhD (Birm.), AMInstHE, MASEE  
R. T. Wheway, BE PhD (N.S.W.), GradIEAust

PROFESSIONAL OFFICER

Vacant

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SENIOR LECTURERS

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N. Standish, MSc (N.S.W.), PhD (Otago), ASTC, AMAusIMM

LECTURERS

M. Atkinson, BSc (Eng.) (Lond.)  
T. W. Barnes, MSc (N.S.W.), ASTC, AIM  
D. P. Dunne, BSc PhD (N.S.W.), AIM  
N. Salasoo, BSc (N.S.W.), ASTC, AMAusIMM

DIVISION OF LITERATURE AND LANGUAGE

PROFESSOR OF ENGLISH AND HEAD OF DIVISION

P. K. Elkin, BA DipEd (Syd.), BLitt DPhil (Oxon.)

DEPARTMENT OF ENGLISH

SENIOR LECTURER

Doreen M. E. Gillam, MA (Lond.)

LECTURERS

Dorothy I. M. Jones, MA (N.Z. and Adel.), BLitt (Oxon.)  
C. J. Nightingale, MA BLitt (Oxon.)

SENIOR TUTOR

P. G. Abotomey, BA DipEd (W. Aust.)

TUTORS

Mrs Isabel S. Sharp, BA DipEd (Syd.)  
G. J. Hayes, BA DipEd (N’cle)

DEPARTMENT OF GENERAL STUDIES

LECTURER AND ACTING HEAD OF DEPARTMENT

D. J. Dillon-Smith, MA DipEd (Syd.)
DIVISION OF PHYSICAL SCIENCE

PROFESSOR OF MATHEMATICS AND HEAD OF DIVISION
A. Keane, MSc (Syd.), PhD (N.S.W.), FRAS

DEPARTMENT OF GEOLOGY

PROFESSOR OF GEOLOGY
Vacant

SENIOR LECTURER AND ACTING HEAD OF DEPARTMENT
A. C. Cook, PhD (Cantab.), AMAusIMM, FGS

SENIOR LECTURER
E. R. Phillips, PhD (Qld)

LECTURERS
R. A. Facer, PhD (Syd.)
A. J. Wright, PhD (Syd.)

DEPARTMENT OF MATHEMATICS

SENIOR LECTURERS
A. E. Chapman, MSc (Lond.)
D. J. Clarke, BSc (W. Aust.), MSc (Adel.), PhD (N.S.W.), MAGU
P. Suryanarayana, BSc (And.), MA (Madr.), PhD (Calif.)
K. P. Tognetti, BE MEngSc (N.S.W.), MACS, AMORSA

LECTURERS
M. W. Bunder, BSc (N.S.W.), MA (N.E.), PhD (Amst)
C. M. Gulati, MA (Delhi), MS (New Mexico State), PhD (Carnegie Mellon)
T. S. Horner, BSc DipEd (Syd.)

TUTORS
P. T. Castle, BSc (N.S.W.)
F. Hille, DiplPhys (Braunschneig), DIC (Lond.)

DEPARTMENT OF PHYSICS

PROFESSOR OF PHYSICS
Vacant

SENIOR LECTURER AND ACTING HEAD OF DEPARTMENT
K. J. Ausburn, BSc (Syd.), MSc (Lond.), PhD (N.S.W.), DIC, MInstP

SENIOR LECTURER
J. N. Stephens, MA (Cantab.), PhD (N.S.W.), AMInstF, MInstP, AAIP, IOMEPS, CEng, FRAS

LECTURERS
J. N. Mathur, MSc (Alig.), DrRerNat (Kiel), AAIP, IOMEPS, MDPG
A. I. Segal, BSc (Melb.), GradAIP

TUTORS
J. L. K. Lising, BSc (N.S.W.), GradAIP
N. L. Montgomery, BSc (N.S.W.)
G. K. G. Moore, BSc (N.S.W.), GradAIP
THE COLLEGE

DIVISION OF SOCIAL SCIENCE

PROFESSOR OF HISTORY AND HEAD OF DIVISION
R. Duncan, MA (Adel.)

DEPARTMENT OF EDUCATION

SENIOR LECTURER AND ACTING HEAD OF DEPARTMENT
P. R. de Lacey, MA (Auck.), BSc (N.S.W.), PhD (N.E.), MAPsS, MACE

SENIOR LECTURER
B. V. Hill, BA BEd (W. Aust.), MA (Syd.), MACE (on leave)

DEPARTMENT OF GEOGRAPHY

PROFESSOR OF GEOGRAPHY
Vacant

SENIOR LECTURER AND ACTING HEAD OF DEPARTMENT
F. Beavington, BA PhD (Lond.), MSc (Aberd.), CertEd (Cantab.), FRSA

SENIOR LECTURER
R. Robinson, BA (N.E.), MA DipEd (N.S.W.), PhD (Br.Col.)

LECTURERS
E. Dayal, MA PhD (Delhi)
R. W. Young, MA (Syd.)

TUTOR
Ann R. M. Johnson, BSc (Syd.)

DEPARTMENT OF HISTORY

SENIOR LECTURERS
J. S. Hagan, BA DipEd (Syd.), PhD (A.N.U.)
A. M. Healy, BA (Syd.), PhD (A.N.U.)
C. P. Kiernan, MA (Cantab. and Melb.), PhD (N.S.W.)

LECTURER
H. N. Ingle, MA (Jonns Hopkins)

TUTOR
Mrs Josephine A. Castle, BA (Syd.)

DEPARTMENT OF HISTORY AND PHILOSOPHY OF SCIENCE

LECTURER Vacant

DEPARTMENT OF PSYCHOLOGY

PROFESSOR OF PSYCHOLOGY
Vacant

SENIOR LECTURER
J. L. Morris, BA BCom DipEd DipPsych (Melb.), EdD (Calif.), MAPsS, MACE

LECTURERS
N. L. Adams, BSc (N.S.W.), MAPsS
D. D. Diespecker, BA PhD (N’cle, N.S.W.), MAPsS
L. J. Taylor, BEd MEd PhD (Calg.)

TUTORS
C. G. Cupit, BA (Syd.)
R. D. Christie, BA (A.N.U.)

THE UNION

SECRETARY MANAGER
I. L. Dunn, LLB (Lond.), psa, pfc
COLLEGE LIBRARY

All members of the College have a right to the use of the College library. There are certain formalities to be complied with before books may be taken away. Details of rules governing the loan of library material may be obtained in the library.

The library seeks to cater, with its stock of books, periodicals, microfilms, etc., for all courses in the College curriculum and to hold a balanced collection of material covering subjects in normal demand outside of these areas. Its stock of 60,000 books and 1,000 periodicals is rapidly increasing.

The recently completed first stage of the library complex accommodates 275 readers.

Hours of opening are clearly displayed in the library. It is planned to extend the present coverage of 67 hours a week over six days as soon as library staff numbers allow it.

Graduates of other universities are received as guest users of the library and certain other classes of users, in particular qualified professionals from local commerce and industry, are welcome to use the facilities provided.

COLLEGE UNION

The Union, which provides opportunities for the development of social and intellectual intercourse between members, is situated at the southern boundary of the campus. It was opened in 1965 and Stage II additions were completed in 1970. The premises now comprise four common rooms and refectory plus associated offices and kitchen. A coffee bar and hot meal service is provided and there is also a Union shop. The Union building also accommodates a branch of the University Co-operative Bookshop Limited and an agency of the Commercial Bank of Australia.

Membership is compulsory for all students; staff may elect to become members. The affairs of the Union are controlled by a Board of Management and, in day to day matters by its executive officer, the Secretary/Manager.

STUDENTS' REPRESENTATIVE COUNCIL

The Students' Representative Council is a body elected by and from the students to promote student welfare and interests. Payment of the SRC fee is compulsory for all students.

"TERTANGALA" — the Journal of the Wollongong University College Students' Representative Council is published monthly during the academic year.
CLUBS AND SOCIETIES

All students are encouraged to participate in the activities of at least one of the various student Clubs and Societies. These clubs aim to promote the physical, social and educational development of students through their leisure time activities. The following clubs are recognised at this College:

- Arts Faculty Association
- Commerce Society
- Cricket Club
- Drama Society
- Engineering Society
- Geological Society
- Liberal Club
- Literary Society
- Men's Hockey Club
- Metallurgical Society
- National Union of Australian University Students
- Outdoors Club
- Rugby Union Club
- Science Faculty Association
- Squash Club
- Film Group
- Students for the A.L.P.
- Table Tennis Club
- Tennis Club
- Trainee Teachers Association
- Women's Basketball Club
- Women's Hockey Club
- W.U.C. Christian Union
- W.U.C. Soccer Club

SPORTING FACILITIES

The College has constructed a sporting oval at the north-eastern end of its campus to provide first class facilities for the playing of various sports. Hockey fields and tennis courts are also available.

CHAPLAINCY SERVICE

A Chaplaincy Service is provided within the College for the benefit of students and staff by four Christian Churches.

The Service offers fellowship, personal counselling and guidance, and leadership in biblical and doctrinal studies and in worship. The Chaplains maintain close liaison with student religious societies. The Chaplains are located in the Office Block and are available there at various times. They may also be contacted at their private addresses.

Anglican: Rev. K. Giles,
St. Michael's Rectory,
Market Street,
Wollongong. 2500. Tel. 2-3132.

Methodist: Rev. J. Scott,
36 Fisher Street,
West Wollongong. 2500. Tel. 2-2119.
Presbyterian: Rev. Campbell Egan,
The Manse,
27 Pass Avenue,
Thirroul. 2515. Tel. 67-1444.

Roman Catholic: Rev. Father K. Sharkey,
The Presbytery,
Cabbage Tree Lane,
Fairy Meadow. 2518. Tel. 2-4133.

RADIO COURSES

The University's radio station, VL2UV, which broadcasts on a frequency of 1750Kc's, began operating in May, 1961, and now offers programmes five nights a week. The University also has its own post-graduate television network, VITU, but at present it is not possible for programmes from the University television station to be received at home. Students enrolling in radio courses receive printed notes which are essential for an understanding of the lectures. Seminars conducted in conjunction with the radio courses give students an opportunity to discuss with the lecturers any difficulties they may have had with the material.

Students in Wollongong may take advantage of this service by means of tape-recorded correspondence courses, which are offered to country students at extension centres or wherever a group of students exists. The programmes are recorded on twin track 5" reels of standard magnetic tape, and can be played on most tape recorders. Over forty courses are available, and in country areas groups of as few as three students may participate at fees comparable to those paid by students in metropolitan areas. Many enrolments have been accepted from students in other States and overseas.

The emphasis of radio courses is on postgraduate and refresher courses for professional people, and subjects covered range from specialities in Medicine and Dentistry to Operations Research and Computer Programming. School-University bridging courses, another service of Radio University, are meeting a pressing need. These courses are designed to assist students who are proceeding from secondary school to first year university studies, but they are also helpful to students taking the Higher School Certificate.

Further information on Radio University programmes may be obtained from the Division of Postgraduate Extension Studies, University of New South Wales, P.O. Box 1, Kensington, N.S.W., 2033.
UNISEARCH LIMITED

Unisearch Ltd. was established in April, 1959, by the Council of the University for the purpose of furthering one of the major objects of the University as set out in the Act of Incorporation, viz. “to aid by research and other suitable means the advancement, development and practical application of science to industry and commerce”.

Unisearch actively seeks to assist Australian industry in the solution of its research and developmental problems. It provides testing services in a wide variety of industrial fields, and is responsible for the exploitation of patents of inventions arising out of the work of the University. The Company has had considerable success in solving production problems brought to it by industrial organisations in all Australian States and in assisting in the establishment of new industrial processes.

All enquiries should be addressed to Unisearch Ltd. (Wollongong Branch), Wollongong University College, Wollongong, N.S.W. 2500. Telephone 2-7301.

ACCOMMODATION

International House is a residential College at Wollongong affiliated with the University of New South Wales. Accommodation is available for 156 students, both male and female, and for resident tutors. Facilities include a large common room, dining room, tutorial rooms, music, television, tutorial library and kiosk.

International House welcomes the participation of non-resident students in the sharing of college facilities. Intending students should write to:— The Warden, International House, Post Office Box 1799, Wollongong, 2500. (Telephone: 29-9015).

Students requiring other types of accommodation should apply to the Secretary.

CASUAL EMPLOYMENT

Information concerning vacancies is displayed on College notice boards.

The Commonwealth Employment Service gives assistance where possible to students seeking vacation employment.
STUDENTS' TRAVELLING CONCESSION PASSES

The various transport authorities provide fare concessions for certain classes of students.

Application forms for these concessions may be obtained from the Student Enquiries desk in the Office Block.

**Train:**
(a) Periodical tickets are available during term time to full-time students not in employment nor in receipt of any remuneration.
(b) Vacation travel concessions are available to students qualifying under (a) above.

**Aircraft:** Concession fares for travel overseas, inter-state and intra-state are available under the conditions ruling for the various operating companies.

STUDENT IDENTIFICATION CARDS

All students other than miscellaneous students are issued with a Student Identification Card. This card must be carried during attendance at the college and shown on request.

The number appearing on the front of the card in the space at the top right-hand corner is the student registration number used in the College’s records. This number should be quoted in all correspondence.

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

A student who loses his identification card must notify the College Secretary as soon as possible. Forms for this purpose are available from Student Enquiries desk in the Office Block.

New students will be issued with Student Identification Cards as soon as possible after fee payment. In the meantime, the fees receipt form should be carried during attendance at the college and shown on request. If the identification card is not received within three weeks of fee payment the College Secretary should be notified.

LOST PROPERTY

All enquiries concerning lost property should be made to the College Office.
General Information and Regulations
GENERAL CONDUCT

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

In addition, students are expected to conduct themselves at all times in a seemly fashion. Smoking is not permitted during lectures, in examination rooms or in the College Library. Gambling is also forbidden.

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

ATTENDANCE AT CLASSES

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

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

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

Application forms for exemption from lectures are available from the Student Enquiries desk in the Office Block and should be lodged there (with a medical certificate where applicable). If session examinations have been missed this fact should be noted in the application.

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

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

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

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

COURSE TRANSFERS

Students who are currently enrolled at the College and who wish to transfer to another first year course (including stages I and II of the part-time courses) at the College should apply through the Metropolitan Universities Admission Centre in the same manner as is required of new applicants.

Students wishing to transfer to later years (i.e. excluding the year/stage referred to above) of another course at the College, should complete the "Application to Transfer Course" form which is available from the Student Enquiries desk in the Office Block, or should make a written application to the College Secretary. Applications for course transfers should be lodged with the College Secretary by Friday, 21st January, 1972.

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

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

CHANGES IN COURSE PROGRAMMES AND WITHDRAWAL FROM SUBJECTS

Students seeking approval to substitute one subject for another, add one or more subjects to their programme, or discontinue part of their programme, must make application to the Secretary on a form available from the Student Enquiries desk in the Office Block.

Any addition or substitution of subjects after the 31st March will be accepted with the express approval of the Secretary on the recommendation of the appropriate Head of Department, and will be given in exceptional circumstances only.
In the case of students wishing to terminate their enrolment, the application must be lodged at the Examinations and Student Records Section in the Office Block. The Secretary will inform students of the decision.

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

It is emphasized that:

1. withdrawal from a subject, tuition in which extends over the academic year, at any time after the May recess;

2. withdrawal from a subject, tuition in which extends over only one session, at any time after one month from the commencement of the subject; or

3. failure to sit for the examinations in any subject in which the student has enrolled,

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

RESUMPTION OF COURSES

Students wishing to resume their studies after an absence of twelve months or more are required to apply to the Secretary for permission to re-enrol by 21st January, 1972. Students re-enrolling in this way will normally be required to satisfy conditions pertaining to the course at the time of re-enrolment. This condition applies also to students who have been re-admitted to a course after exclusion under the rules restricting students re-enrolling.

ANNUAL EXAMINATIONS

Annual examinations may take place at the end of the first or second session. Timetables showing time and place at which individual examinations will be held are posted on the central notice boards. Mis-reading of the timetable is not an acceptable excuse for failure to attend an examination. Examination results are posted to the session addresses of students. No results will be given by telephone.

Examination results may be reviewed for a fee of $9 a subject, which is refundable in the event of an error being discovered. Applications for review must be submitted on the appropriate form, together with the necessary fee by the date indicated on the notification of results.

In the assessment of a student’s progress in University courses, consideration is given to written work, work in laboratory and class exercises, and to any sessional or other tests given throughout the year, as well as to the annual examination results.
A student who through serious illness or other causes outside his control is unable to attend an examination is required to bring the circumstances (supported by a medical certificate or other evidence) to the notice of the Secretary not later than seven days after the date of the examination.

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

All medical certificates should be as specific as possible concerning the severity and duration of the complaint and its effect on the student's ability to take the examinations.

A student who attempts an examination, yet claims that his performance is prejudiced by sickness on the day of the examination, must notify the Secretary or Examination Supervisor before, during or immediately after the examination, and may be required to submit to medical examination.

A student suffering from a physical disability which puts him at a disadvantage in written examinations may apply to the Secretary for special provision when examinations are taken. The student may be required to support his request with medical evidence.

Rules and Procedure for the Conduct of Examinations

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

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

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

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

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

(f) No candidate shall be re-admitted to the examination room after he has left it unless during the full period of his absence he has been under approved supervision.
(g) A candidate shall not by any improper means, obtain, or endeavour to obtain, assistance in his work, give, or endeavour to give, assistance to any other candidate, or commit any breach of good order.

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

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

DEFERRED EXAMINATIONS

Most departments at the College do not offer deferred examinations except in medical and compassionate cases. Provision, however, exists for the award of deferred examinations in courses where progression is by subject.

TERMINATING PASSES

A grade of "Terminating Pass" has been introduced. The award of such a pass will prohibit a student progressing to the next subject in a sequence for which the subject in which the terminating pass is awarded is a prerequisite.

APPLICATION FOR ADMISSION TO A DEGREE

Application for admission to a degree of the University must be made on the appropriate form by 14th January. Applicants should ensure that they have completed all requirements for the degree, including industrial training where necessary.

RESTRICTION UPON STUDENTS RE-ENROLLING

The University Council has adopted the following rules governing re-enrolment with the object of requiring students with a record of failure to show cause why they should be allowed to re-enrol and retain valuable class places. These rules apply retrospectively from 1st January, 1971.

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

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

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

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

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

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<tr>
<th>Number of years in course</th>
<th>Total time allowed from first enrolment to completion (years)</th>
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<tr>
<td>3</td>
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<td>8</td>
<td>12</td>
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(3) No full-time student shall, without showing cause, be permitted to continue a course unless all subjects of the first year of his course are completed by the end of his second year of attendance. No student in the Faculty of Arts shall, without showing cause, be permitted to continue a course unless he completes four subjects by the end of his second year of attendance.

No part-time student shall, without showing cause, be permitted to continue a course unless all subjects of the first two stages of his course are completed by the end of his
fourth year of attendance and all subjects of the third and fourth stages of his course by the end of his seventh year of attendance.

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

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

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

(6) A student wishing "to show cause" under these provisions shall do so in writing to the Secretary. Any such application shall be considered by a committee, hereinafter referred to as the College Re-Enrolment Committee, authorised by the Professional Board, to determine whether the cause shown is adequate to justify his being permitted to continue his course or re-enrol as the case may be.

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

(8) A student who has failed, under the provisions of Clause (6) of these rules, to show cause acceptable to the College Re-Enrolment Committee why he should be permitted to continue in his course, and who has subsequently been permitted to re-enrol in that course or to transfer to another course, shall also be required to show cause, notwithstanding any other provisions in these rules, why he should be permitted to continue in that course if he is unsuccessful in the annual examinations immediately following the first year of resumption or transfer of enrolment as the case may be.
(9) Any student who is excluded from attendance in any course or subject under the provisions of these rules may appeal to an Appeal Committee constituted by Council for this purpose. The decision of the Appeal Committee shall be final.

(10) The notification to any student of a decision by the College Re-Enrolment Committee to exclude the student from attendance in any course or subject shall indicate that the student may appeal against the decision to an Appeal Committee. In lodging such appeal the student shall ensure that a complete statement is furnished of all grounds on which the appeal is based and shall indicate whether or not the student wishes to appear in person before the Appeal Committee.

In considering an appeal the Appeal Committee, on the basis of the student's academic record and the stated grounds of appeal, shall decide:

(i) whether there are grounds which justify the Committee seeing the student in person, or

(ii) whether there is sufficient information available to the Committee to allow decision without seeing the student in person

and so proceed to determine the application accordingly.

RE-ADMISSION AFTER EXCLUSION

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

It should be noted that a person under exclusion may not be enrolled in miscellaneous subjects unless he has received the approval of the College Re-Enrolment Committee.

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

Progression in Full-time Courses where Progression is by the Year

1. No full-time student (except those in the Science course, or in Arts, Commerce or Engineering) will be permitted to attend lectures or sit for examination in any subject in any year until he has passed in all subjects of the previous year, unless special permission has been granted by the faculty in which he is enrolled.

2. A student who fails to qualify to progress to the next year of the course where progression is by years may be granted by the Head of the Department conducting the course, exemption from further attendance and examination in any subject in which he has achieved a pass at a satisfactory standard. Such student may repeat those subjects required to complete the year by attendance at either day or evening classes.

3. Any student who elects to transfer to the related part-time course is not eligible to be considered for additional deferred examinations at the time of transfer and may not qualify for progression to the next year of the full-time course, merely by completing the part-time equivalents of the subjects in which he has failed.

4. In general, students who fail in full-time courses, and who transfer to part-time courses, shall not be re-admitted with standing to the full-time course until they have graduated from the part-time course.

Progression in the Faculty of Engineering

Progression in all undergraduate courses in the Faculty of Engineering is now permitted by subject. However:

(1) Course programmes will continue to be stated and timetabled by year or stage and it cannot be guaranteed that non-standard programmes can be completed in the minimum number of years.

(2) Students must satisfy the rules governing re-enrolment; in particular, these require all subjects of the first year to be completed by the end of two years’ study of each subject.

(3) Before enrolling in any subject a student must have satisfied the relevant prerequisite and co-requisite requirements. This will usually necessitate a student completing or attempting all subjects of a particular year or stage before proceeding to a subject in the next part of a course. Further details are available from the appropriate Department.

(4) Only in exceptional circumstances will a student be permitted to enrol in subjects extending over more than two years of
the course or for more than twenty-eight hours of course work per week if a full-time student or fourteen hours per week if a part-time student. Students repeating subjects are required to choose a programme which limits their hours of course work to twenty-two per week if a full-time student, and to eleven per week if a part-time student, unless they have the express permission of the Head of the Department to exceed these hours.

(5) Notwithstanding the above, before a student can enrol in any non-standard programme, such programme must meet with the approval of the Head of Department. A non-standard programme is one which involves enrolment in subjects from more than one year or stage, or comprises subjects which do not normally constitute a particular year’s course work.

Admission with Advanced Standing

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

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

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

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

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

(v) the standing granted by the Board in the case of any application based on the partial completion of the requirements for any degree or other award of the University may be such as to give full credit in the course to which the applicant seeks to transfer for work done in the course from which the student transfers.

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

CHANGE OF ADDRESS

Students are requested to notify the Secretary in writing of any change in their address as soon as possible. Failure to do this could lead to important correspondence or course information not reaching the student. The College cannot accept responsibility if official communications fail to reach a student who has not notified the Secretary of a change of address.

OWNERSHIP OF STUDENTS' WORK

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

NOTICES

Official University notices are displayed on the notice boards and students are expected to be acquainted with the contents of those announcements which concern them.

APPLICATION OF RULES

General

Any student who requires information on the application of these rules or any service which the College offers, may make enquiries from the Secretary.

Appeals

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

31
Undergraduate Admission and Enrolment Procedure, Fees, Scholarships and Prizes
REQUIREMENTS FOR ADMISSION

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

It should be noted that compliance with these conditions does not in itself entitle a candidate to enter upon a course. While it is the policy of the University to endeavour to admit all properly qualified applicants who have lodged applications by the appropriate closing date, it may be necessary at times to restrict the entry to one or more faculties because of lack of facilities.

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

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

All enquiries regarding admission and enrolment should be directed to the Secretary.

Section A

GENERAL MATRICULATION AND ADMISSION REQUIREMENTS

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

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

3. The following subjects, and such other subjects as may be approved by the Professorial Board from time to time, shall be recognised matriculation subjects:

   English
   Mathematics
   Science
   Agriculture
   Modern History
   Ancient History
   Geography
   Economics
   Greek
   Latin
   French
   German
   Italian
   Bahasa Indonesia
   Spanish
   Russian
   Chinese
   Japanese
   Hebrew
   Dutch
   Art
   Music
   Industrial Arts
4. A candidate who has qualified to matriculate in accordance with the provisions of Clauses 1, 2 and 3 may be admitted to a particular Faculty, course or subject provided that:

(a) his qualification includes a pass at the level indicated in the subject or subjects specified in Schedule A as Faculty, course or subject prerequisites.

or

(b) the requirements regarding these particular Faculty, course or subject prerequisites as specified in Schedule A, have been met at a separate Higher School Certificate or University of Sydney Matriculation Examination.

5. Notwithstanding any of the provisions of Clauses 1 to 4, the Professorial Board may grant matriculation status to any candidate at the Higher School Certificate or University of Sydney Matriculation Examination who has reached an acceptable standard and may admit him to any Faculty, course or subject.

NOTE

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

2. For the purposes of clause 2(b), Mathematics and Science TAKEN either singly or together at first level or second level full course shall each count of one and one half subjects.
<table>
<thead>
<tr>
<th>FACULTY OR COURSE</th>
<th>FACULTY OR COURSE PREREQUISITES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Applied Science</td>
<td>(a) Science at Level 2S or higher AND (b) either Mathematics at Level 2F or higher OR Mathematics at Level 2S, provided that the candidate's performance in this subject and his general level of attainment are at standards acceptable to the Professorial Board.</td>
</tr>
<tr>
<td>Biological Sciences</td>
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<tr>
<td>Engineering</td>
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<tr>
<td>Industrial Arts Course</td>
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<tr>
<td>Medicine</td>
<td></td>
</tr>
<tr>
<td>Military Studies</td>
<td>(a) Science at Level 2S or higher AND (b) either Mathematics at Level 2F or higher OR Mathematics at Level 2S, provided that the candidate's performance in this subject and his general level of attainment are at standards acceptable to the Professorial Board.</td>
</tr>
<tr>
<td>(Engineering course and Applied Science course)</td>
<td></td>
</tr>
<tr>
<td>Science</td>
<td>(a) Mathematics at Level 2S or higher AND (b) either Mathematics at Level 2F or higher OR Mathematics at Level 2S, provided that the candidate's performance in this subject and his general level of attainment are at standards acceptable to the Professorial Board.</td>
</tr>
<tr>
<td>Bachelor of Science (Education)</td>
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<tr>
<td>Architecture</td>
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<tr>
<td>Applied Geography and Wool and Pastoral Sciences courses (Faculty of Applied Science)</td>
<td>(a) Science at Level 2S or higher AND (b) either Mathematics at Level 2F or higher OR Mathematics at Level 2S, provided that the candidate's performance in this subject and his general level of attainment are at standards acceptable to the Professorial Board.</td>
</tr>
<tr>
<td>Arts</td>
<td>(a) Mathematics at Level 2S or higher AND (b) either Mathematics at Level 2F or higher OR Mathematics at Level 2S, provided that the candidate's performance in this subject and his general level of attainment are at standards acceptable to the Professorial Board.</td>
</tr>
<tr>
<td>Social Work Degree Course</td>
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</tr>
<tr>
<td>Commerce</td>
<td>(a) Mathematics at Level 2S or higher AND (b) either Mathematics at Level 2F or higher OR Mathematics at Level 2S, provided that the candidate's performance in this subject and his general level of attainment are at standards acceptable to the Professorial Board.</td>
</tr>
<tr>
<td>Law</td>
<td>Nil</td>
</tr>
<tr>
<td>Combined Arts/Law</td>
<td>As for Arts</td>
</tr>
<tr>
<td>Combined Commerce/Law</td>
<td>As for Commerce</td>
</tr>
<tr>
<td>Military Studies (Arts course)</td>
<td>(a) Science at Level 2S or higher; OR English at Level 3, provided that the candidate's performance in this subject and his general level of attainment are at standards acceptable to the Professorial Board, and provided that a candidate so qualified shall not enrol in a course in English literature.</td>
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</tbody>
</table>
### SCHEDULE A — PREREQUISITES (Cont.)

<table>
<thead>
<tr>
<th>SUBJECT</th>
<th>SUBJECT PREREQUISITES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Higher Physics I *</td>
<td>As for Faculty of Science</td>
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<tr>
<td>Physics I</td>
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<tr>
<td>Physics 1C *</td>
<td></td>
</tr>
<tr>
<td>Chemistry I</td>
<td>Science at Level 2S or higher</td>
</tr>
<tr>
<td>General and Human Biology</td>
<td></td>
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<tr>
<td>Geology I</td>
<td></td>
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<tr>
<td>Higher Mathematics I *</td>
<td>Mathematics at Level 2F or higher</td>
</tr>
<tr>
<td>Mathematics I</td>
<td>Either Mathematics at Level 2F or higher OR Mathematics at Level 2S, provided that the candidate's performance in the subject and his general level of attainment are at standards acceptable to the Professorial Board.</td>
</tr>
<tr>
<td>Mathematics IT *</td>
<td>Mathematics at Level 2S or higher</td>
</tr>
<tr>
<td>Economics I</td>
<td>Mathematics at Level 2S</td>
</tr>
<tr>
<td>Economics II</td>
<td>As for Faculty of Commerce</td>
</tr>
<tr>
<td>English I</td>
<td>English at Level 2 or higher</td>
</tr>
<tr>
<td>History I</td>
<td></td>
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<tr>
<td>French I*</td>
<td>French at Level 2 or higher</td>
</tr>
<tr>
<td>Russian I*</td>
<td>Russian at Level 2 or higher</td>
</tr>
<tr>
<td>German I*</td>
<td>German at Level 2 or higher</td>
</tr>
<tr>
<td>Spanish I*</td>
<td>Spanish at Level 2 or higher</td>
</tr>
<tr>
<td>Russian IZ*</td>
<td>A foreign language, other than that in which enrolment is sought, at Level 2 or higher</td>
</tr>
<tr>
<td>German IZ*</td>
<td></td>
</tr>
<tr>
<td>Spanish IZ*</td>
<td></td>
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</tbody>
</table>

* Not available at the College in 1972.
† This prerequisite will not apply in 1972, however, it is likely that it will apply in 1973.
Section B

SUPPLEMENTARY PROVISIONS FOR MATRICULATION

1. Notwithstanding the provisions of Section A above, candidates may be accepted as "matriculated students" of the University under the following conditions subject to the approval of the Professorial Board:—

(a) Any person who holds a diploma from the New South Wales Department of Technical Education, or any other Technical College which may from time to time be recognised by the University, may be admitted to the University as a "matriculated student" with such status as the Board may determine, provided that, in the opinion of the Board, the applicant's qualifications are sufficient for matriculation to the Faculty nominated.

(b) The Board may admit as a "matriculated student" in any Faculty with such status as the Board may determine in the circumstances:

(i) A graduate of any approved University.

(ii) An applicant who presents a certificate from a University showing that he has a satisfactory record and is qualified for entrance to that University, provided that in the opinion of the Board there is an acceptable correspondence between the qualifying conditions relied upon by the applicant and conditions laid down for matriculation to the nominated Faculty of the University of New South Wales.

(c) (i) Any person who has completed the first year of the course at the Royal Military College of Australia and submits a certificate from the Commandant to that effect may be admitted as a "matriculated student" of the University.

(ii) Any person who has completed a full course of at least three years' prescribed study at the Royal Military College of Australia and produces a certificate from the Commandant to that effect may be admitted as a "matriculated student" of the University with such status as the Board may determine.

(d) Any person who has completed satisfactorily the passing out examination of the Royal Australian Naval College and submits a certificate from the Commanding Officer may be admitted as a "matriculated student" of the University.

(e) (i) Any person who has completed the first year of the course at the Royal Australian Air Force College and submits a certificate from the Commandant to that effect, may be admitted as a "matriculated student" of the University.

(ii) Any person who has completed two years of the course at the Royal Australian Air Force College and submits a certificate from the Commandant to that effect, may be admitted as a "matriculated student" of the University with such status as the Board may determine.

(f) An applicant who presents a certificate from another University showing that he is qualified for entrance to that University and setting out the grounds of such qualification, provided that in the opinion of the Professorial Board, there is an acceptable correspondence between the qualifying conditions relied upon by the applicant and the conditions laid down for matriculation to the nominated Faculty of the University of New South Wales.
2. (a) The Professorial Board may in special cases, including cases concerning persons of other than Australian education, declare any person qualified to enter a Faculty as a "provisionally matriculated student" although he has not complied with the requirements set out above, and in so doing may prescribe the completion of certain requirements before confirming the person's standing as a "matriculated student". Students who satisfactorily complete these requirements will be permitted to count the courses so passed as qualifying for degree purposes.

(b) Persons over the age of twenty-five years may be admitted to provisional matriculation status provided that:

(i) they have satisfactorily completed an approved course of systematic study extending over at least three years after passing the School Certificate Examination, or

(ii) they satisfy the Professorial Board that they have reached a standard of education sufficient to enable them profitably to pursue the first year of the proposed course.

(c) Any applicant for provision status may be required to take such examination as the Professorial Board may prescribe before such status is granted.

3. The Professorial Board may at its discretion permit a person, who does not satisfy the requirements for admission, to attend lectures in a subject or subjects at the University, on payment of the prescribed fees provided that such student shall not necessarily have the privileges of "matriculated student" and shall not be eligible to proceed to a degree.

ENROLMENT AND RE-ENROLMENT PROCEDURE

The enrolment procedure in 1972 for the different classes of undergraduate students is as follows:

First Enrolments

(a) New South Wales residents already qualified for admission and persons who are applying for enrolment on the basis of qualifications gained or about to be gained outside New South Wales must lodge an application for enrolment with the Metropolitan Universities Admissions Centre, 13-15 Wentworth Avenue, Sydney (P.O. Box 7049 G.P.O., Sydney) by 29th October, 1971, for entry in 1972. It is expected that the same timing will apply for entry in 1973; however, intending applicants should check with the Metropolitan Universities Admission Centre.

(b) New South Wales residents qualifying for admission by the 1971 New South Wales Higher School Certificate Examination or the 1972 Sydney University Matriculation Examination and those who have attended a University in New South Wales in 1971 must apply for enrolment to the Metropolitan Universities Admission Centre, 13-15 Wentworth Avenue, Sydney (P.O. Box 7049 G.P.O., Sydney) by 21st January, 1972, for entry in 1972.

Students whose applications for enrolment are accepted will be required to complete their enrolment at a specified time before the start of Session 1. Fees must be paid on the day specified. However, in special circumstances and provided class places are still available students may be allowed to

* The Professorial Board has determined that normally confirmation of standing as a "matriculated student" will require the successful completion of not less than half the normal programme in the first year of enrolment.
complete their enrolment after the prescribed date subject to the payment of a late fee.

First Year Repeat Students — First year students who failed more than half their programme at the 1971 Annual Examinations and who were not granted any deferred examinations will NOT follow the above procedure. They are required to “show cause” why they should be allowed to continue in the course, and should await instructions in writing from the Secretary as to the procedure.

Re-Enrolments

All students enrolling other than for the first time and not included above should re-enrol by lodging a provisional re-enrolment form by 5th November, 1971, and attending the College to complete re-enrolment, including the payment of fees, according to the following schedule:

- Arts, Commerce — Monday, 28th February, 1972
- Engineering, Metallurgy, Science — Tuesday, 29th February, 1972

All courses (if unable to attend earlier) — Wednesday, 1st March, 1972.

Students who are unable to attend the College to complete re-enrolment on the days prescribed above should contact the Secretary for approval to re-enrol at a later date.

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

Enrolment must be completed during the prescribed enrolment period. For details of fee requirements, including late fee provisions, see under Fees.

Miscellaneous Subject Enrolments

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

Application forms can be obtained by written application to the College Secretary or by collecting them personally from the Student Enquiries desk in the Office Block. Application forms should be received by the College Secretary by Friday, 21st January, 1972.

Final Dates for Completion of Enrolment

No enrolments will be accepted from new students after the end of the second week of session 1 (17th March, 1972) except with the express approval of the Secretary and the Head of the Department concerned: no later year enrolments will be accepted after 31st March, 1972 without the express approval of the Secretary which will be given in exceptional circumstances only.

CONFIRMATION OF ENROLMENT

All students will receive an enrolment details form by 17th April for the first session and by 30th August for the second session. Forms must be returned to the Secretary by 30th May for the first session and by 15th September for the second session. Amendments notified after the closing dates will not be accepted unless exceptional circumstances exist and approval is obtained from the Secretary. Where a late amendment is accepted, a late fee of $7 will be payable.
FEES

Completion of Enrolment

All students are required to attend the appropriate enrolment centre during the prescribed enrolment period for the authorisation of course programme. Failure to do so will incur a late fee of $8.

Fees should be paid during the prescribed enrolment period but will be accepted during the first two weeks of Session 1. (For late fees see below.) No student is regarded as having completed an enrolment until fees have been paid. Fees will not be accepted (i.e., enrolment cannot be completed) from new students after the end of the second week of Session 1 (17th March, 1972), and after 31st March from students who are re-enrolling except with the express approval of the Secretary, which will be given in exceptional circumstances only.

Payment of Fees by Session

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

Non-receipt of an account from the University is not an acceptable reason for failure to pay fees within the prescribed time.

Assisted Students

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

Extension of Time

Any student who is unable to pay fees by the due date may apply in writing to the Secretary for an extension of time. Such application must give year or stage, whether full-time or part-time, and the course in which the applicant wishes to enrol, state clearly and fully the reasons why payment cannot be made and the extension sought, and must be lodged before the date on which a late fee becomes payable. Normally the maximum extension of time for the payment of fees is until 31st March for fees due in Session 1 and for one month from the date on which a late fee becomes payable in Session 2.

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

Failure to Pay Fees

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

No student is eligible to attend the annual examinations in any subject where any portion of his course fees for the year is outstanding after the end of the fourth week of Session 2 (18th August, 1972).

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

(Degree, Diploma and Conversion)

Where course fees are assessed on the basis of session hours of attendance the hours for each subject for purposes of fee assessment shall be those prescribed in the Calendar, irrespective of any variation from the prescribed hours which may be necessary in conducting the subject. The granting of an exemption from portion of any of the requirements of a subject in which a student is enrolled does not carry with it any exemption from the payment of fees.

(a) Courses in the Faculties of Applied Science, Biological Sciences, Engineering and Science and degree courses in Industrial Arts and Sheep and Wool Technology.

For the purpose of fee determination assessment is on a session basis. A full-time course will be charged for any session where more than 15 hours' per week instruction, etc., is involved.

(i) Full-time Course Fee (more than 15 hours' attendance per week)—$231.00 per session.
(ii) Part-time Course Fee—over 6 hours' and up to 15 hours' attendance per week—$115.50 per session.
(iii) Part-time Course Fee—6 hours' or less attendance per week—$57.50 per session.
(iv) Course Continuation Fee—A fee of $33 per annum (no session payment) is payable by:

Category (a) students who have once been enrolled for a thesis and have only that requirement outstanding, or

Category (b) students given special permission to take annual examinations without attendance at the University. (Students in this category are not required to pay the subscription to the College Union, the Students' Representative Council, the Sports Association and the Library fee.)

(b) Commerce Courses.

For the purpose of fee determination assessment is on a session basis. A full-time course fee will be charged for any session where more than 11 hours' per week instruction, etc., is involved.

(i) Full-time Course Fee (more than 11 hours' attendance per week)—$192.50 per session.
(ii) Part-time Course Fee—over 4 hours' and up to 11 hours' attendance per week—$115.50 per session.
(iii) Part-time Course Fee—4 hours' or less attendance per week—$57.50 per session.
(iv) Course Continuation Fee—A fee of $33 per annum (no session payment) is payable by:

*Fees quoted in this schedule are current at the time of publication and may be amended by the Council without notice.
UNDERGRADUATE ADMISSION AND ENROLMENT PROCEDURE, FEES, SCHOLARSHIPS AND PRIZES

Category(a) students who have once been enrolled for a thesis and have only that requirement outstanding. or

Category(b) students given special permission to take annual examinations without attendance at the University. (Students in this category are not required to pay the subscription to the College Union, the Students' Representative Council, the Sports Association and the Library fee.)

(c) Arts Courses*

(i) Pass—$115 per annum per subject or $57.50 per session per subject.

(ii) Honours—an additional $39 per annum per subject in which honours is taken in a student's second and third years and $154 per subject per annum in the fourth year.

(d) Miscellaneous Subjects.

(i) Undergraduate subjects taken as “miscellaneous subjects” (i.e. not for a degree or diploma) or to qualify for registration as a candidate for a higher degree are assessed where they appear only in an Arts course (except where approved as the humanities component in another course) according to paragraph (c) “Arts courses”, above. Where the honours section only of an Arts subject is taken the fee payable is $39 per annum per subject. Where a full subject at the honours level is taken, the fee payable is $154 per annum per subject. All other subjects taken as miscellaneous subjects are assessed according to paragraph (a) “Courses in the Faculties of Applied Science etc.” above.

In cases where a student takes a programme of miscellaneous subjects from more than one of the categories referred to above the fees are assessed in accordance with paragraph (a) “Courses in the Faculties of Applied Science etc.” above.

(ii) Students given approval to enrol in a miscellaneous subject or subjects in addition to being enrolled in a course are assessed according to the total hours of attendance as if the additional subject formed part of the course.

Other Fees

In addition to the course fees set out above all registered undergraduates will be required to pay—

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<thead>
<tr>
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<tbody>
<tr>
<td>College Union — Entrance Fee</td>
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<td></td>
<td></td>
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<tr>
<td>— Annual Fee</td>
<td>30</td>
</tr>
</tbody>
</table>

*Students transferring from the Arts course to a course other than Arts and claiming credit for subjects taken in the Arts course shall have their fees for these subjects re-assessed retrospectively to conform to those payable for the course to which they transfer.
Sports Association — Entrance Fee .................................................... $6
— Annual Fee .................................................. $6
Library Fee .................................................................................................. $16
Matriculation Fee (payable at commencement of course) ......................... $9
Student Activities Miscellaneous Fee ....................................................... $2
Students' Representative Council Fee .................................................... $6
Graduation Fee (payable at completion of course) .................................. $9

Depending on the course being taken, students may also be required to pay a Chemistry Kit Hiring Charge—$4 per kit. Additional charge for breakages and losses in excess of $1 may be required.

Special Examination Fees

Deferred examination—$7 for each subject.
Examinations conducted under special circumstances—$9 for each subject.
Review of examination result—$9 for each subject.

Late Fees

SESSION 1 — First Enrolments

Fees paid on the late enrolment session and before commencement of session 1 ..................................................... $8
Fee paid during the 1st and 2nd weeks of Session 1 ........................................ $16
Fees paid after the commencement of the 3rd week of Session 1 with the express approval of the Secretary and Head of the Department concerned ......................................................... $33

SESSION 1 — Re-Enrolments

Failure to attend enrolment centre during enrolment week ...................... $8
Fees paid after the commencement of the 3rd week of Session 1 to 31st March ................................................................. $16
Fees paid after 31st March where accepted with the express approval of the Secretary ............................................................... $33

SESSION 2 — All Enrolments

Fees paid in 3rd and 4th weeks of Session 2 ............................................. $16
Fees paid thereafter ................................................................. $33
Late lodgement corrected Enrolment Details Forms (late applications will be accepted for three weeks only after prescribed dates) ................................................................. $7

Withdrawal

Students withdrawing from a course are required to notify the Secretary in writing. Fees for the course accrue until a written notification is received.

Where notice of withdrawal from a course is received by the Secretary before the first day of the first session a refund of all fees paid other than registration fee will be made.

Where a student terminates for acceptable reasons a course of study before half a session has elapsed, one half of the session's fee may be refunded. Where a student terminates a course of study after half a session has elapsed, no refund may be made in respect of that session's fees.

The Library fee is an annual fee and is not refundable where notice of withdrawal is given after the commencement of the first session. The University
entrance fee is refundable only when notice of withdrawal is given before the commencement of the first session. On notice of withdrawal a partial refund of the student activities fees is made on the following basis:

- College Union—$7.50 in respect of each half session.
- Students’ Representative Council—where notice is given prior to the end of the fifth week of the first session $2, thereafter no refund.
- Sports Association—where notice is given prior to 30th April a full refund is made, thereafter no refund.
- Miscellaneous—where notice is given prior to 30th April $1, thereafter no refund.

**Cashier’s Hours**

The Cashier’s office is open for the payment of fees from 9.30 a.m. to 1 p.m., and from 2 p.m. to 4.30 p.m., Monday to Friday. The Cashier’s Office may be open for additional periods during the first two weeks of session. Details of these additional times may be obtained from notices posted at the College before the commencement of each session.

**SCHOLARSHIPS**

Various scholarships, bursaries and cadetships are tenable at The University of New South Wales and Wollongong University College.

Except where otherwise specified, applications on the forms obtainable from the Secretary must be lodged with him within seven days of the publication of the award of Commonwealth University Scholarships.

A separate application must be lodged for each category of scholarship listed below.

In addition to those scholarships made available by the University and other bodies as set out below, a number of industrial organizations and Government Departments sponsor students at the University. These students generally have their University fees paid by the employer and are employed at cadet rates of pay during their course.

Certain scholarships are tenable only at this College. In this category the Australian Iron and Steel Pty. Ltd. provides a number of scholarships.

Further particulars about these and other scholarships, cadetships and bursaries may be obtained from the Secretary, Wollongong University College, Wollongong.

*Commonwealth University Scholarships*

Students enrolling in first degree courses at the University are eligible. Benefits include payment of all tuition fees and other
compulsory fees, and living allowances (these latter being subject to a means test). The closing date for applications is 30th September in the year immediately preceding that for which the scholarship is desired. Full particulars and application forms may be obtained from the Officer-in-Charge, Sydney Office, Department of Education and Science, La Salle Building, 70 Castlereagh Street, Sydney, 2000 (Telephone 2-0323).

University Scholarships

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

Mining Scholarships

The Joint Coal Board is offering scholarships to male students who desire to enter the full-time degree courses in Mining Engineering and Applied Geology. The value of the scholarships ranges from $700 to $1200 per annum (including allowance for books and instruments). These scholarships will be awarded on the understanding that applicants will normally hold a Commonwealth University Scholarship which covers the cost of University fees. However, applicants without Commonwealth University Scholarships may be given consideration. While scholarship holders are not under bond it is expected that they will obtain employment in Coal Mining or a related industry on graduation. Applications on forms obtainable from headmasters or from the Secretary, Joint Coal Board, Box 3842, G.P.O. Sydney, must be lodged with the Board’s secretary not later than seven days after the publication of the award of Commonwealth University Scholarships.

C.S.R. Scholarship in Commerce

The Colonial Sugar Refining Co. Ltd., offers one scholarship
each year to students enrolling in courses leading to the degree of Bachelor of Commerce specialising in Economics, Accountancy, Statistics, Applied Psychology or Industrial Relations. The scholarship holder will study full-time at the University during the first and fourth years of tenure; during the second and third years the scholar will be employed by the Company and enrol as a part-time student, being allowed some time off from work to attend day classes. The value of the scholarship is $1200 per annum when studying full-time, and during the years of part-time employment with the Company the holder will be paid according to the Company's basic salary scale. This award may be held concurrently with a Commonwealth University Scholarship.

Manufacturers' Mutual Insurance Company Scholarship in Commerce

The Manufacturers' Mutual Insurance Company offers a scholarship each year to the value of $200 per annum. The scholarship is available to students who desire to enter or are enrolled in one of the full-time courses in the Faculty of Commerce leading to the Degree of Bachelor of Commerce and specialising in either Economics, Accountancy, Statistics, Applied Psychology or Industrial Relations. The scholarship will normally be tenable for three years but may be extended for a fourth year to allow the holder to proceed to a degree with honours. The scholarship may be held concurrently with another scholarship.

Scholarships in Electrical Engineering

The Tyree Electrical Company Pty. Ltd. provides two scholarships for students enrolling in the full-time courses in Electrical Engineering. The scholarships have a value ranging from $500 to $1,500 p.a. depending on the circumstances and progress of the successful applicants. They are normally tenable for four years but may be extended to a fifth year when the holder intends to qualify for the two degrees, Bachelor of Science and Bachelor of Engineering. It may be held concurrently with any other scholarship.

Regent Scholarship in Engineering for Women Undergraduates

This scholarship, which is given by Mrs. G. O'Riordan and Mrs. J. Kouvelis, has a value of $200 per annum, and will be available to a female student who wishes to enrol for the degree of Bachelor of Engineering. The scholarship will normally be tenable for four years but may be extended to five if the holder
wishes to qualify for the two degrees of Bachelor of Science and Bachelor of Engineering.

**Ceramic Engineering Scholarships**

The Brick Manufacturers' Association of New South Wales and the State Brickworks of the New South Wales Department of Public Works each offer one undergraduate scholarship in ceramic engineering. Students who have completed the first year of the course may also apply. The value of the scholarship is $800-$1000 per annum, and applicants are expected to apply for a Commonwealth University Scholarship to cover course and other fees.

Harbison A.C.I. Pty. Ltd. provides a scholarship to the value of $200 per annum to students who have completed at Wollongong University College an approved programme equivalent to the first two years of the Ceramic Engineering course, and who wish to enrol in the full-time course in Ceramic Engineering. The scholarship will normally be tenable for two years.

The Australasian Vitreous Enamellers' Institute also offer a scholarship, valued at $250 per annum, to students entering Year 1 of the Ceramic Engineering course or who have completed Year 1 of some other programme of equivalent academic standard. The scholarship will normally be tenable for four years.

**The Clement Blazey Memorial Scholarships—Metallurgy**

Metal Manufactures Ltd. of Port Kembla, provide the Clement Blazey Memorial Scholarships for students enrolling in the full-time course in Metallurgy leading to the Degree of Bachelor of Science. Each scholarship has a value between $200 to $800 per annum payable to students as a living allowance. The scholarships will normally be tenable for four years and may be held concurrently with a Commonwealth University Scholarship.

**Australian Iron and Steel Pty. Ltd. Scholarships in Metallurgy**

Australian Iron and Steel Pty. Ltd. has undertaken to provide two scholarships for students wishing to enrol in the full-time course for the Bachelor of Science degree in Metallurgy. The scholarships are valued at between $360 and $700 per annum, and applicants are expected to apply for a Commonwealth University Scholarship to cover course and other fees.

**C.I.G.-E.M.F. Scholarships in Metallurgy**

The Commonwealth Industrial Gases Limited of Sydney has undertaken to provide scholarships for students wishing to enrol
in the full-time course for the B.Sc. degree in Metallurgy. Each scholarship has a value of $500 per annum and may be tenable for a maximum of four years. Applicants are expected to apply for a Commonwealth University Scholarship to cover course and other university fees.

Conzinc Riotinto Scholarships in Metallurgy and Mining Engineering

Conzinc Riotinto provides each year two scholarships, one in Metallurgy and one in Mining Engineering. The scholarships are valued at $700 per annum, plus an extra $300 if the student is living away from home. Applicants may be students who have completed one year or more of an approved course.

Teachers' College Scholarships

A limited number of Teachers' College Scholarships are available to allow students to undertake studies for a University degree, to be followed by a year devoted exclusively to training as a teacher. Benefits include the payment of University fees and a scholarship allowance.

Scholarship holders are expected to attend the University appropriate to the home address of their parents or legal guardian. The area appropriate to students for Wollongong University College is bounded by a line drawn through and including Helensburgh, Braidwood and Moruya and whose training can be adequately undertaken at Wollongong University College.

Further information, application forms and the Teachers' College Scholarship Handbook may be obtained from the Officer in Charge, Teacher Training Division, Department of Education and Science, Blackfriars Street, Chippendale, N.S.W., 2006.

Bursaries Awarded by The Bursary Endowment Board

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

Application should be made to the Secretary, Bursary Endowment Board, P.O. Box R42 Royal Exchange, N.S.W. 2000.

Further information and application forms may be obtained from Student Enquiries desk, Office Block, at this College.
PRIZES

Prize awards, made possible by the generosity of sponsors, are available for competition by students at the College.

The Austin Keane Prize.
Awarded to the student who most excels in the subject Applied Mathematics III.

The S. A. Senior Prize.
Awarded to the student who most excels in the subject Pure Mathematics III.

The Australian Institute of Metals (Port Kembla Branch) Metallurgy Prize.
Awarded each year to the graduate who has shown the best general proficiency throughout the full course.

The Peter Beckmann Memorial Prize.
Awarded to the most deserving student in Chemistry III.
1970 A. P. Hope.

The Illawarra Branch of the N.S.W. Association of University Women Graduates' Prize for Women Students.
Awarded to the final year woman graduate with the best academic record.
1970 Miss J. W. Bevan
Miss J. L. Booker.

The G. W. Daniels Memorial Prize.
Awarded to the student who most excels in subject Chemistry II.
1970 J. P. O'Gorman
D. Salm.

The Illawarra Group of the Institution of Engineers, Australia, Prize.
Awarded to the final year student proceeding to an undergraduate degree in Engineering with the best academic record.
1970 G. R. Clark.

Darryl Condon Memorial Prize.
Awarded to the student proceeding to an undergraduate degree in Metallurgy who most excels in the subject Metallurgy I.

The Australia Institute of Mining and Metallurgy (Illawarra Branch) Geology Prize.
1970 E. P. Ambler.

The Metallurgical Society Award.
Awarded to the student who most excels in the subjects Metallurgy IIA or Metallurgy II.
1970 P. S. Betts
L. Pengelly
M. L. Rhodes.
Undergraduate Courses
## UNDERGRADUATE COURSES

### FULL-TIME COURSES

<table>
<thead>
<tr>
<th>Faculty</th>
<th>Course</th>
<th>Award</th>
<th>Duration-Years</th>
<th>Faculty offered in W'gong in 1972</th>
</tr>
</thead>
<tbody>
<tr>
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<td></td>
<td></td>
<td>Pass</td>
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<td>4</td>
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<td>Wool Technology</td>
<td>B.Sc.</td>
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<td>B.S.)</td>
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<td>Board of Vocational Studies</td>
<td>Industrial Arts</td>
<td>B.Sc.</td>
<td>4</td>
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<tr>
<td></td>
<td>Sheep and Wool Technology (Education Option)</td>
<td>B.Sc.</td>
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</tr>
</tbody>
</table>

* Not all three years of the pass course are offered in all disciplines.
† Honours courses are available in several of the Arts disciplines.
### UNDERGRADUATE COURSES

#### PART-TIME COURSES

<table>
<thead>
<tr>
<th>Faculty</th>
<th>Course</th>
<th>Award</th>
<th>Duration-Years</th>
<th>Stages available at W’gong in 1972</th>
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<tbody>
<tr>
<td>Applied Science</td>
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<td>Food Technology</td>
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<td>Board of Vocational Studies</td>
<td>Industrial Arts</td>
<td>B.Sc. (Tech.)</td>
<td>6</td>
<td>2</td>
</tr>
</tbody>
</table>

* Not all five stages of the pass course are offered in all of the Arts disciplines.
† Honours courses are available in several of the Arts disciplines.
‡ Only the pass course in Applied Psychology is offered at Wollongong University College.
Programmes for the Degree of Bachelor of Arts*

One of five different programmes may be followed by a student reading for the degree. The first is the programme for the Pass Degree which consists of nine qualifying courses studied in particular sequences over a period of three years. The second is the programme for the General Honours Degree which is designed to enable a Pass Degree student with special merit to proceed to a fourth year of study. The third is the programme in Special Studies, which is designed to enable a student to undertake, over a period of four years, specialized study in one subject, although a certain number of courses of subsidiary subjects must also be taken. The fourth is the programme in Combined Special Studies which is designed to enable a student to undertake, over a period of four years, specialized study in two subjects together with courses of one or two subsidiary subjects. The fifth is the programme for the Part-time Pass Degree which is designed to take five years.

A student who is accepted for the Special Studies or Combined Special Studies programme will be regarded as a candidate for an Honours Degree.

The Rules governing the award of the degree are set out in the following pages and consist of:

Section A — Rules 1 to 11, which are applicable to all candidates for the degree.

Section B — Rules 12 and 13, which apply specifically to the programme leading to the Pass Degree.

Section C — Rules 14 to 19, which apply specifically to the programme leading to the General Honours degree.

Section D — Rules 20 to 26, which apply specifically to the Special Studies programme.

Section E — Rules 27 to 34, which apply specifically to the Combined Special Studies programme.

Section F — Rules 35 to 37, which relate to the recognition of courses completed outside the Faculty of Arts.

Section G — Rules 38 and 39, which are Saving Clauses.

Schedule A — which sets out the subjects available for study, the qualifying courses of each subject, and other information.

Schedule B — which sets out approved sequences of courses in Mathematics and Theory of Statistics.

* Students should note that some of the courses listed in the following regulations may not be available at the College.
UNDERGRADUATE COURSES

Rules Governing the Award of the Degree of Bachelor of Arts

SECTION A—Rules Applicable to all Candidates and to all Programmes of Study

1. The degree of Bachelor of Arts may be conferred as a Pass Degree or as a General Honours Degree or as an Honours Degree in Special Studies or as an Honours Degree in Combined Special Studies. There shall be three classes of Honours, namely, Class I, Class II in two Divisions and Class III.

2. No person shall be permitted to enrol in any qualifying course for the Degree of Bachelor of Arts at the same time as he is enrolled for any other degree or diploma in this University or elsewhere.

3. A person on whom the Pass Degree of Bachelor of Arts has been conferred shall not be admitted to candidature for the Honours Degree of Bachelor of Arts.

4. Where, in the following Clauses, reference is made to the requirement that a candidate shall complete a course, the requirement shall be construed as meaning that the candidate shall

(a) attend such lectures, seminars and tutorials as may be prescribed in that course;

(b) perform satisfactorily in such exercises, laboratory work, essays and thesis (if any), as may be prescribed in that course and undertake any prescribed reading relating to that course; and

(c) pass the examination or examinations in that course.

5. A candidate for the degree of Bachelor of Arts shall complete qualifying courses of subjects to the number, and in the sequences, prescribed in the following Clauses. Unless otherwise indicated, the subjects available for study, and the qualifying courses of each subject are as set out in Schedule A to these rules.

6. (a) A candidate shall pursue his studies as a full-time day student and, during his first year of study, shall enrol in at least three of the courses listed in Schedule A.

(b) A candidate may not enrol in more than four courses in any one year.

(c) A candidate may not enrol in Course II of a subject until he has completed Course I of that subject.

(d) A candidate may not enrol in Course IIZ of a subject until he has completed Course IZ of that subject.

(e) A candidate may not enrol in Course IIIA of a subject until he has completed Course II or Course IIZ of that subject.

(f) A candidate may not enrol in Course IIIB of a subject until he has completed Course II or Course IIZ of that subject and has the approval of the Head of the School concerned.

* At Wollongong University College, the Head of the Department.

† Note: Faculty has determined that, for the time being, students at Wollongong University College, who are enrolled as part-time candidates for the degree need not meet the requirements of Clauses 6(a) and 12.
(g) A candidate may not enrol in Course IV of a subject until he has completed the appropriate Course IIIA or IIIB (or both) of that subject and has the approval of the Head of the School* concerned.

7. (a) **Prerequisite Courses**

A candidate may not enrol in any course listed in the left-hand column below unless he has completed the corresponding course listed as a prerequisite in the right-hand column:

<table>
<thead>
<tr>
<th>Course</th>
<th>Prerequisite Course</th>
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<tbody>
<tr>
<td>Applied Mathematics II (either level)</td>
<td>Higher Mathematics I or Mathematics I</td>
</tr>
<tr>
<td>Economic History III</td>
<td>Economics I</td>
</tr>
<tr>
<td>Physics II</td>
<td>Higher Mathematics I or Mathematics I</td>
</tr>
<tr>
<td>Pure Mathematics II (either level)</td>
<td>Higher Mathematics I or Mathematics I</td>
</tr>
<tr>
<td>Theory of Statistics II (either level)</td>
<td>Higher Mathematics I or Mathematics I or Mathematics IT with a pass at credit level or better.</td>
</tr>
</tbody>
</table>

(b) **Co-requisite Courses**

A candidate may not enrol in any course listed in the left-hand column below unless he enrols concurrently in (or has previously completed) the corresponding course listed as a co-requisite in the right-hand column:

<table>
<thead>
<tr>
<th>Course</th>
<th>Co-requisite Course</th>
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</thead>
<tbody>
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<td>Applied Mathematics II (either level)</td>
<td>Pure Mathematics II (either level)</td>
</tr>
<tr>
<td>Theory of Statistics III (either level)</td>
<td>Pure Mathematics III or Mathematics III (either level)</td>
</tr>
</tbody>
</table>

8. (a) Course I or Course 1Z of a subject, when completed shall count as one qualifying course towards the degree.

(b) Course I of a subject followed by Course II of that subject or Course 1Z of a subject followed by Course 1IZ of that subject, shall be two consecutive courses of that subject. When both courses have been completed, they shall count as two qualifying courses towards the degree and shall be an approved sequence of two courses.

* At Wollongong University College, the Head of the Department.
(c) Course I of a subject followed by Course II of that subject followed by Course IIIA or IIIIB of that subject, or Course IZ of a subject followed by Course IIIZ of that subject followed by Course IIIA or IIIIB of that subject, shall be three consecutive courses of that subject. When the three courses have been completed, they shall count as three qualifying courses towards the degree and shall be an approved sequence of three courses.

(d) Course I of a subject followed by Course II of that subject followed by Courses IIIA and IIIIB of that subject, or Course IZ of a subject followed by Course IIIZ of that subject, followed by Courses IIIA and IIIIB of that subject, shall be a special major sequence of four courses of that subject. When the four courses have been completed, they shall count as four qualifying courses towards the degree and shall be an approved special major sequence of four courses.

9. The following courses shall be regarded as consecutive courses of a subject and, when completed, shall count as two or three, as the case may be, qualifying courses towards the degree and shall be regarded as an approved sequence of two or three, as the case may be, courses:

<table>
<thead>
<tr>
<th>First course in sequence</th>
<th>Second course in sequence</th>
<th>Third course in sequence</th>
</tr>
</thead>
<tbody>
<tr>
<td>(a) Higher Mathematics I</td>
<td></td>
<td></td>
</tr>
<tr>
<td>or Mathematics I</td>
<td></td>
<td></td>
</tr>
<tr>
<td>or Mathematics IT with a pass at Credit level or better</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Theory of Statistics II</td>
<td></td>
</tr>
<tr>
<td>(b) Theory of Statistics II</td>
<td>Theory of Statistics III</td>
<td></td>
</tr>
<tr>
<td>(c) Higher Mathematics I</td>
<td></td>
<td></td>
</tr>
<tr>
<td>or Mathematics I</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Theory of Statistics II</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Theory of Statistics III</td>
<td></td>
</tr>
<tr>
<td>(d) Economics I</td>
<td></td>
<td></td>
</tr>
<tr>
<td>or Economic History I</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Industrial Relations I</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Industrial Relations II</td>
<td></td>
</tr>
<tr>
<td>(e) Economics I</td>
<td></td>
<td></td>
</tr>
<tr>
<td>or Economic History I</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Industrial Relations I</td>
<td></td>
</tr>
</tbody>
</table>

10. A course may not be counted more than once for the purpose of forming an approved sequence of courses.

1. A candidate who wishes to study Mathematics or Theory of Statistics beyond the Course I level shall follow one of the approved sequences set out in Schedule B or consult the School* of Mathematics concerning alternatives.

* At Wollongong University College, the Department of Mathematics should be consulted.
SECTION B—Rules Relating to the Programme for the Degree of Bachelor of Arts—Pass Degree

12. A candidate shall complete over a period of not fewer than three years nor more than five years* nine qualifying courses of subjects chosen from those listed in Schedule A.

13. The nine qualifying courses so chosen shall comply with the following conditions:

They shall consist of:

(a) an approved sequence of three courses of one subject and an approved sequence of two courses of each of three other subjects.

or

(b) an approved sequence of three courses of each of two subjects, an approved sequence of two courses of one other subject and Course I of one other subject;

or

(c) an approved sequence of three courses of each of two subjects and Course I of each of three other subjects;

or

(d) an approved special major sequence of four courses of one subject, an approved sequence of two courses of each of two other subjects and Course I of one other subject;

or

(e) an approved special major sequence of four courses of one subject, an approved sequence of three courses of one other subject and an approved sequence of two courses of one other subject;

or

(f) an approved special major sequence of four courses of one subject, an approved sequence of three courses of one other subject and Course I of each of two other subjects.

SECTION C—Rules Relating to the Programme for the Degree of Bachelor of Arts—General Honours Degree

14. A student seeking Honours shall complete eleven qualifying courses of subjects over a period of not fewer than four years nor more than five years. The eleven qualifying courses shall be chosen from Schedule A and shall be completed in accordance with Clauses 15 to 18.

15. (a) Nine of the eleven courses shall be completed in such a way as to fulfil the requirements for the Pass degree in accordance with Clauses 12 and 13. If the student has obtained a pass at Credit level or better in at least five of the nine courses by which he qualified for the Pass degree, he may apply to Faculty for formal recognition as a candidate for Honours.

(b) The remaining two of the eleven courses shall be completed in the Honours year and shall comprise Course IIIA or IIIB of each of two subjects of which only Courses I and II (or Courses IZ and IIZ) have so far been completed and each of these two courses shall be completed with a pass at Credit level or better.

* Different time limits apply to part-time students.
16. A candidate in his Honours year may be required to take both the Pass and Honours syllabuses in the Course IIIA or IIIB of either or both of the two Honours year subjects. Alternatively, he may be required to take additional studies in either or both of the two Honours year subjects.

17. A student seeking recognition as a candidate for Honours, who has fulfilled the requirements for the Pass degree in accordance with Clause 13(b), (c), (e) or (f) and who has obtained a pass at Credit level or better in at least five of the nine courses so completed, may, with Faculty approval, complete Course II (or Course IIIZ) of one or two (as the case may be) subjects of which only Course I (or Course IIIZ) has so far been completed. He may then apply to Faculty for formal recognition as a candidate for Honours and shall then proceed in accordance with the provisions of Clauses 15(b) and 16.

18. The award of Honours and grade of Honours shall be based upon a consideration of the full record of a candidate and, where Honours in any grade are awarded, they shall be listed as General Honours and not as Honours in a particular School or Schools.*

19. Where a candidate for Honours has failed to meet the necessary standards of competence in his Honours year, no further examination shall be granted but the student may proceed to graduation with a Pass Degree, the requirements for which shall already have been met.

SECTION D—Rules Relating to the Programme for the Degree of Bachelor of Arts in Special Studies—Honours Degree

20. The degree of Bachelor of Arts in Special Studies shall be awarded at Honours level only and a recognised candidate for Honours shall complete nine qualifying courses of subjects in four years of study. The nine qualifying courses, which shall include Course IV of the subject for Special Studies, shall be chosen from Schedule A and shall be completed in accordance with the provisions of Clauses 21 to 24. There shall be no re-examination in Course IV of the subject for Special Studies.

21. A student seeking recognition as a candidate for Honours shall choose one subject from Schedule A as his subject for Special Studies.

22. If a student obtains in his first year of study a pass at Credit level or better in Course I or Course IIIZ of the subject for Special Studies, he may apply to the appropriate Head of School† for formal recognition as a candidate for Honours.

23. A candidate for Honours shall complete the nine prescribed qualifying courses in accordance with the following:—

(a) Course I (or Course IIIZ) of the subject for Special Studies shall be completed in the first year of study; Course II (or Course IIIZ) shall be completed in the second year of study; Courses IIIA and IIIB shall be completed in the third year of study; and Course IV shall be completed in the fourth year of study. Candidates shall complete Courses II (or IIIZ), IIIA and IIIB in both Pass and Honours syllabuses.

(b) In addition, a candidate, by the end of his second year of study, shall be required to have completed four subsidiary courses which shall include an approved sequence of two courses.

* At Wollongong University College there are departments instead of schools.
† At Wollongong University College, the Head of the Department.
(c) Subject to these Rules, the Head of the School* of the subject for Special Studies may prescribe the subjects of which the four subsidiary courses shall be completed as required by sub-Clause (b) of this Clause.

24. A candidate must obtain a pass at Credit level or better in the examinations of all courses of his Special Studies subject.

25. In special circumstances a candidate for the Honours degree who does not fulfil the requirements of Clauses 20 to 24 or who seeks to withdraw from the Special Studies programme may be considered by Faculty for the award of the Pass Degree of Bachelor of Arts provided that he has completed at least eight courses in the Special Studies programme (including Courses IIIA and IIIB of the subject for Special Studies) and has obtained a pass at Credit level or better in at least two of them beyond the first year level.

26. A candidate who at any stage fails to meet the necessary standards of competence and who does not fall within the provisions of Clause 25 may be required by Faculty to transfer to the programme for the Pass Degree and shall then comply with Clauses 12 and 13 to be eligible for the award of the Pass Degree. Alternatively, Faculty may prescribe an additional course or courses the completion of which shall render the student eligible for the award of the Pass Degree.

SECTION E—Rules Relating to the Programme for the Degree of Bachelor of Arts in Combined Special Studies—Honours Degree

27. The degree of Bachelor of Arts in Combined Special Studies shall be awarded at the Honours level only and a recognised candidate for Honours shall complete nine qualifying courses of subjects in four years of study. The nine qualifying courses shall comprise eight of those listed in Schedule A plus a special Course IV which shall be concerned with study at an Honours level of two appropriate subjects and all nine courses, shall be completed in accordance with the provisions of Clauses 28 to 32. There shall be no re-examination in the special Course IV.

28. A student seeking recognition as a candidate for Honours shall choose as his subjects for Combined Special Studies two from Schedule A provided that the combination of subjects so chosen is approved by the Heads of the Schools* concerned.

29. If a student obtains in his first year of study a pass at Credit level or better in Course I or Course IZ of each of the subjects for Combined Special Studies, he may apply to the appropriate Heads of Schools* for formal recognition as a candidate for Honours.

30. A candidate for Honours shall complete the nine prescribed qualifying courses in accordance with the following:—

(a) Course I (or Course IZ) of each of the subjects for Combined Special Studies shall be completed in the first year of study; Course II (or Course IIZ) of each of these subjects shall be completed in the second year of study; Course IIIA (or in any special case, Course IIIB) of each of these subjects shall be completed in the

* At Wollongong University College, the Head of the Department.
third year of study; and a special Course IV relating to these two subjects and comprising studies jointly prescribed by the Heads of the Schools concerned shall be completed in the fourth year of study. Candidates shall complete Courses II (or IIZ) and IIIA (or IIIB) in both Pass and Honours syllabuses.

(b) In addition, a candidate, by the end of his second year of study, shall be required to have completed two subsidiary courses of subjects chosen from Schedule A.

(c) Subject to these Rules, the Heads of the Schools of the subjects for combined Special Studies may prescribe the courses specified in sub-Clause (b) of this Clause.

31. Where a Course IIIB of one of the subjects for Combined Special Studies involves a Pass as well as an Honours component, that Course may, with the approval of the Head of the School concerned, be substituted for a Course IIIA in satisfying the relevant requirement of sub-Clause (a) of Clause 30.

32. A candidate must obtain a pass at Credit level or better in the examinations of all courses of both his subjects of Combined Special Studies and in the Special Course IV.

33. In special circumstances a candidate for the Honours degree who does not fulfil the requirements of Clauses 27 to 32 or who seeks to withdraw from the Combined Special Studies programme may be considered by Faculty for the award of the Pass Degree of Bachelor of Arts provided that he has completed at least eight courses in the Combined Special Studies programme (including the Course III of each of the subjects for Combined Special Studies) and has obtained a pass at Credit level or better in at least two of them beyond the first year level.

34. A candidate who at any stage fails to meet the necessary standards of competence and who does not fall within the provisions of Clause 33 may be required by Faculty to transfer to the programme for the Pass Degree and shall then comply with Clauses 12 and 13 to be eligible for the award of the Pass Degree. Alternatively, Faculty may prescribe an additional course or courses the completion of which shall render the student eligible for the award of the Pass Degree.

SECTION F—Rules Relating to the Recognition of Courses Completed Outside the Faculty of Arts

35. Subject to the provisions of Clause 37.

(a) A graduate or undergraduate in another Faculty of this University may be granted advanced standing in a programme in the Faculty of Arts with credit for not more than four of the courses listed in Schedule A which have already been completed in the other Faculty. Where credit is granted, under these provisions, for courses

* At Wollongong University College, the Head of the Department.
forming a major sequence of three, the candidate shall be required to complete, *inter alia*, an approved sequence of three courses or an approved special major sequence of four courses in the Faculty before becoming eligible for the award of the degree.

(b) A candidate who, before enrolment in the Faculty, has completed a course or courses at another University may, at the discretion of Faculty, be granted credit towards the degree of Bachelor of Arts for not more than four such courses, provided that credit shall not be granted for Course III of a subject.

36. Subject to the provisions of Clause 37, a candidate in attendance at the University of New South Wales may, in special circumstances, be permitted by Faculty to complete concurrently at another University not more than three courses and to count such courses as partially fulfilling the requirements for the Degree, provided that permission shall not be granted to count courses which are taken externally at the other University or which are available in the University of New South Wales.

37. An applicant seeking to take advantage of any of the provisions of Clauses 35 or 36 shall first submit in writing to Faculty a statement setting out a list of courses for which he seeks credit or which he wishes to complete at the other University, and a list of the remaining courses that he proposes to complete within the Faculty in order to qualify for the degree. Faculty shall then determine the course or courses, if any, for which credit is to be granted or the course or courses which the applicant may complete at the other University and count towards the degree, and shall also determine the remainder of the applicant's programme within the Faculty.

SECTION G—Saving Clauses

38. Upon sufficient cause being shown, Faculty may, in a particular case or cases* vary the requirements of any of the preceding clauses for the award of the degree of Bachelor of Arts provided that any proposed variation to Clauses 22, 23, 24, 28, 29, 30 or 32, shall be initiated by a report to the Faculty from the Head or Heads of Schools† concerned recommending the proposed variation.

39. For any student who was enrolled as a candidate in the Faculty before 1st January, 1967, Faculty may, in exceptional circumstances, determine a programme in accordance with these Rules to be followed after 1st January, 1967, in order that the student may satisfy the requirements for the degree.

* Note: Faculty has determined that, for the time being, students at Wollongong University College who are enrolled as part-time candidates for the degree need not meet the requirements of Clause 6(a).
† At Wollongong University College, the Head of the Department.
### UNDERGRADUATE COURSES

**SCHEDULE A—COURSES AVAILABLE FOR BACHELOR OF ARTS**

Courses qualifying for the degree of Bachelor of Arts are listed below. Subject to their availability, and class timetables permitting, these courses may be taken on either a full-time or a part-time basis.

<table>
<thead>
<tr>
<th>Subject</th>
<th>Qualifying Course</th>
<th>Hours Per Week</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chemistry</td>
<td>Chemistry I</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>Chemistry II</td>
<td>6</td>
</tr>
<tr>
<td>Economics*</td>
<td>Economics I</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>Economics II</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>Economics II (Honours)</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>Economics IIIA</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>Economics IIIA (Honours)</td>
<td>9</td>
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<tr>
<td></td>
<td>Economics IIIIB</td>
<td>6</td>
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<tr>
<td></td>
<td>Economics IIIIB (Honours)</td>
<td>9</td>
</tr>
<tr>
<td></td>
<td>Economics IV (Honours)</td>
<td>6</td>
</tr>
<tr>
<td>English</td>
<td>English I</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>English II</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>English II (Honours)</td>
<td>9</td>
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<tr>
<td></td>
<td>English III</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>English III (Honours)</td>
<td>9</td>
</tr>
<tr>
<td></td>
<td>English IV (Honours)</td>
<td>9</td>
</tr>
<tr>
<td>General Biology</td>
<td>General and Human Biology</td>
<td>6</td>
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<tr>
<td>Geography</td>
<td>Geography I</td>
<td>5</td>
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<tr>
<td></td>
<td>Geography II</td>
<td>5</td>
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<tr>
<td></td>
<td>Geography IIIA</td>
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<td></td>
<td>Geography IIIIB</td>
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<td>Geography IIID</td>
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<td></td>
<td>Geography IIIA (Honours)</td>
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<td></td>
<td>Geography IIIB (Honours)</td>
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<td>Geology</td>
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<td>12</td>
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<td>History</td>
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<td></td>
<td>History II</td>
<td>3</td>
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<tr>
<td></td>
<td>History IIIA</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>History IIIB</td>
<td>3</td>
</tr>
<tr>
<td>History and</td>
<td>History and Philosophy</td>
<td>3</td>
</tr>
<tr>
<td>Philosophy of</td>
<td>of Science I</td>
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<tr>
<td>Science</td>
<td>History and Philosophy</td>
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<td></td>
<td>of Science II</td>
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<td>Mathematics</td>
<td>Mathematics I</td>
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<tr>
<td></td>
<td>Mathematics IIAt</td>
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<tr>
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<td>Mathematics IIBt</td>
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<td></td>
<td>Mathematics IIIAt</td>
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<tr>
<td></td>
<td>Applied Mathematics IIIAt</td>
<td>8</td>
</tr>
<tr>
<td>Physics</td>
<td>Physics I</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>Physics II</td>
<td>7</td>
</tr>
<tr>
<td>Psychology</td>
<td>Psychology I</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>Psychology II (Professional)</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>Psychology II (Terminating)</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Psychology III</td>
<td>6</td>
</tr>
</tbody>
</table>

**SCHEDULE B— COURSE SEQUENCES IN MATHEMATICS AND THEORY OF STATISTICS**

* For details of qualifying courses at Wollongong see page 63.
† These subjects to be formed from units offered to Science students subject only to the restriction of pre-and co-requisites.
‡ See the University Calendar.
OUTLINES OF COURSE REQUIREMENTS — ECONOMICS AND COMMERCE

Students planning to study Economics as their major subject may enrol in either the Bachelor of Arts or Bachelor of Commerce courses. If they wish to specialize in Accountancy, they should enrol for the Bachelor of Commerce degree. In addition students may study Applied Psychology which also leads to the award of Bachelor of Commerce. These degree courses require a minimum of three years full-time study for completion at Pass level or four years for the Honours degree.

The Bachelor of Commerce degree is designed for students who plan a career in industry or commerce, and is particularly suited to those students who wish to become accountants. Students in the Bachelor of Arts programme may study the same subjects in Economics, but they substitute Arts subjects for the Commerce Accounting options.

Full-time students take the full-year programme as listed below, while part-time students select a programme which permits the completion of the year in two stages spread over two years.

**BACHELOR OF ARTS — ECONOMICS**

**FIRST YEAR:**  Economics I  
Economics II  
Statistical Methods I  
Statistical Methods II

**SECOND YEAR:**  Microeconomics III  
Microeconomics IV  
Macroeconomics III  
Macroeconomics IV

**THIRD YEAR:**  International Economics  
Economic Policy  
Group I, Economics Option I*  
Group II, Economics Option II*  
Group II, Economics Option III*

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**BACHELOR OF COMMERCE — ECONOMICS**

**FIRST YEAR:**  Economics I and II  
Accounting I  
Statistical Methods I and II  
Options I* and II*

**SECOND YEAR:**  Microeconomics III and IV  
Macroeconomics III and IV  
Quantitative Methods III and IV  
Options III* and IV*

**THIRD YEAR:**  International Economics  
Economic Policy  
Two Group II Economics Subjects (which are not taken as options).  
Options V* and VI*

* See list of Optional Economics on following page.
Choice of Options

Options I to VI must include two subjects from those offered by the Divisions of Social Science and Literature and Language or two General Studies subjects and two Commerce subjects, unless the student elects instead to complete a second 6 subject sequence in a discipline in the Division of Social Science and Literature and Language. All options must be approved by the Head of the Division.

The Commerce subjects included in Options I to VI may be chosen from Groups I and II below.

Optional Economics Subjects

Group I*

All subjects offered by the Divisions of Social Science and Literature and Language.

Mathematics I, II and III
Accounting II and III
Commercial Law I and II
Data Processing and Information Systems
Taxation Law and Practice

Group II

(No subject may be taken as a Group II Option as well as an Economics subject).

Comparative Economic Systems
Economic Development
Industrial Economics
Mathematical Economics
Natural Resource Economics
Operations Research
Regional Economics
Transport Economics

HONOURS DEGREE IN ECONOMICS

Students may be admitted to the Honours degree course in either Commerce or Arts at the beginning of their third full-time session or after completing the first two subjects in Economics in a full-time or part-time course. Admission will depend on academic performance.

BACHELOR OF ARTS HONOURS DEGREE

Students enrolled for the B.A. Degree with Honours in Economics will be required to complete the sequence of subjects in Economics (including statistics and quantitative methods for Economics) which is mandatory for the B.Com. Honours degree, but for the Economics Options and the subjects in Accountancy which are compulsory for all B.Com. students, they will substitute Arts subjects.

FIRST YEAR: As for the Pass degree
SECOND YEAR: As for the Pass degree, plus special tutorials and assignments in all Economics subjects

*A double session subject counts as two Economics Options.
UNDERGRADUATE COURSES

THIRD YEAR: International Economics Honours
Economic Policy Honours
Three Group II Economics subjects
Thesis

FOURTH YEAR: Advanced Economic Analysis
Thesis

Note: In addition to this sequence of subjects in Economics, which B.A. Honours students have in common with B.Com. Honours students, candidates do Arts subjects instead of the Accounting and additional options required for the B.Com. Honours degree.

BACHELOR OF COMMERCE HONOURS DEGREE

FIRST YEAR: As for Pass Degree students
SECOND YEAR: Microeconomics III and IV
Macroeconomics III and IV
Quantitative Methods III and IV
Options III and IV

THIRD YEAR: International Economics
Comparative Economic Systems
or
Natural Resource Economics
or
Industrial Economics
Economic Policy
Economic Development
or
Regional Economics
or
Mathematical Economics
or
Transport Economics
Options V and VI
Thesis

FOURTH YEAR: Advanced Economic Analysis I, II, III, IV, V and VI

PREREQUISITES FOR SUBJECTS AND COURSES IN ECONOMICS

1. Prerequisites for all courses in Economics:
   H.S.C. Mathematics — Level 2S*
   H.S.C. English — Level 2.

2. Subject and progression prerequisites:
   (i) Economics I is a prerequisite of Economics II, and the latter is a prerequisite for further study in Economics.
   
   (ii) The sequences of subjects in (a) Microeconomics and (b) Macroeconomics and (c) Statistical Methods and Quantitative Methods, as set out in the Handbook, must be observed (i.e., at each level in each of these three sequences of subjects, students must satisfy examiners' requirements before proceeding to the next level).
   
   (iii) All Economics subjects prescribed for the first four sessions are to be completed before enrolment in fifth and sixth session subjects, but in special cases permission may be given for students to undertake Quantitative Methods III and IV cotermiously with fifth and sixth session subjects.

* Not to apply to Arts students wishing to enrol in Economics until 1973.
UNDERGRADUATE COURSES

BACHELOR OF COMMERCE—ACCOUNTANCY

The following subjects are required for the B.Com-Accountancy course:

YEAR 1: Accounting I
        Commercial Law I
        Economics I and II
        Statistical Methods I and II

YEAR 2: Accounting II
        Microeconomics III and IV
        Macroeconomics III and IV
        Accounting Option I
        Accounting Option II
        Humanities I (see Economics course for details)

YEAR 3: Accounting III
        International Economics
        Economic Policy
        Accounting Option III
        Accounting Option IV
        Humanities II (see Economics course for details)

The following options are available at Wollongong

GROUP A: Auditing and Internal Control
        Commercial Law II
        Data Processing and Information Systems
        Taxation Law and Practice

GROUP B: Mathematics I
        Psychology
        Any other APPROVED University subject, e.g.: Comparative Economic Systems
        Economic Development
        Industrial Economics
        Operations Research

Notes:
1. Students must complete four (4) options including at least two (2) subjects from Group A.
2. Additional Group A and B options are available at Kensington.

RULES FOR PROGRESSION

(i) Part I of any subject is a pre-requisite for Part II of that subject and Part II is a pre-requisite for Part III.
(ii) No student shall proceed to Data Processing until he has passed in OR is currently enrolled in Accounting II.
(iii) No student shall proceed to Auditing and Internal Control unless he has passed in OR is currently enrolled in Accounting III.

GENERAL

1. While an Honours degree in Accountancy is not available at Wollongong, students taking an Economics Honours degree can still complete a major in Accountancy through careful selection of Economics Options and provided they have the permission of the Head of the Economics Department.

2. The Accountancy courses offered by the University of New South Wales are accepted by the following professional organisations as fulfilling part or all of their entry requirements, viz:—
a) The Australian Society of Accountants  
b) The Institute of Chartered Accountants in Australia  
c) The Public Accountants' Registration Board of New South Wales  
d) The Chartered Institute of Secretaries  
for further details see the Head of Department.

BACHELOR OF COMMERCE—APPLIED PSYCHOLOGY

The commerce course offering specialization in applied psychology is designed to provide training in economics, together with a theoretical training, individual and group psychology and an introduction to the skills and techniques of psychological assessment and data collection and analysis. The first subject in psychology is aimed at giving the student a foundation of psychological theory and an appreciation of the application of scientific method to the social sciences. In later years of the course detailed study is made of personality development, psychological assessment and measurement techniques. Opportunity is given for special study of some selected areas of psychology such as social psychology, motivation, human factors in engineering, learning and psychometrics. Students are encouraged to undertake field work.

YEAR 1:  
Psychology I  
Accounting I  
Economics I and II  
Options I and II

YEAR 2:  
Psychology II  
Macroeconomics III and IV  
Microeconomics III and IV  
Options III and IV

YEAR 3:  
Psychology III  
International Economics  
Economic Policy  
Options V and VI

Note: The selection of Options, is subject to the same provisions as those set out above for the Economics major.

THESES FOR PASS AND HONOURS DEGREES

Each student enrolled for an honours degree in the Division of Commerce must present a thesis in his final year of study. Subject to the approval of the Head of Division, pass students majoring in Economics may present a thesis as an advanced Economics Option. Approval will depend on the student's record and his research plan.

The topic of the thesis is to be selected by the student and submitted to the Head of the Division for approval. The Head of Division, will nominate a member of staff as supervisor for each student writing a thesis.

The length of a thesis submitted for the pass degree should not exceed 6000 words, or 10,000 words for the honours degree.

In writing a thesis, students must pay special attention to matters of presentation. They are advised to consult Kate L. Turabian, A Manual for Writers of Term Papers, Theses and Dissertations, Phoenix Books, University of Chicago Press, 3rd ed., 1967.

The thesis must include a bibliography and an acknowledgement of all source material and be accompanied by an abstract of approximately 200 words. Two copies of the thesis, in double-spaced typescript on quarto paper, with a 1-inch left-hand margin, and suitably bound or stapled, must be submitted.

Note: Students who propose to write a thesis for submission in 1973 as a Group II option for a Pass degree in Economics must submit topics by the end of September, 1972.
OUTLINES OF COURSE REQUIREMENTS — ENGINEERING

The Engineering Departments offer full-time courses of 4 years duration and part-time courses of 6 years duration leading to the professional degrees of Bachelor of Engineering and Bachelor of Science (Engineering). These degrees are recognised by the Institution of Engineers, Australia, as giving complete exemption from the examinations required for admission to the grade of Member. Recognition by overseas engineering institutions varies in the different branches of engineering but in most cases substantial or complete recognition is accorded to these courses.

The first year of the full-time course is common to all courses and is equivalent to the first two stages of the part-time course, making it possible for students to transfer from one course to another at the end of their first year or second stage without loss of standing. Provision is made for direct transfer to or from corresponding courses at Kensington at the end of the first or second year.

A student completing the B.Sc. (Eng.) degree course and wishing to qualify for the corresponding B.E. degree may transfer, providing he does not take out the B.Sc. (Eng.) degree.

All course transfers are subject to the approval of the Head of the appropriate Department.

Courses leading to the B.Sc. (Eng.) award are basically part-time and require the prescribed industrial experience to be gained concurrently with the course of study (a minimum of three years of suitable engineering experience is required). Students transferring from full-time courses must, therefore, also satisfy these industrial experience requirements before being admitted to the degree of B.Sc. (Eng.).

DEPARTMENT OF ELECTRICAL ENGINEERING

The Department offers a full-time course of four years’ duration leading to the degree of Bachelor of Engineering, and a six-year part-time course for the degree of Bachelor of Science (Engineering). The courses may also be completed by a combination of part-time and full-time study. Graduate courses are described elsewhere.

The degrees of Bachelor of Engineering and Bachelor of Science (Engineering) are recognised by the Institution of Engineers, Australia, the Institution of Radio and Electronics Engineers, Australia, and the Institution of Electrical Engineers, London, as giving complete exemption from the examinations required for admission to Graduate or Corporate membership.

Electrical engineering, perhaps more than most other branches of engineering, is closely linked with the pure sciences, and requires a scientific outlook and approach for a proper understanding of the problems in electrical engineering.

In the early years of the electrical engineering courses, students concentrate on acquiring knowledge of the basic sciences, i.e. mathematics, physics, and chemistry, but with some introduction to engineering.

In the final year students will elect, with the approval of the Head of the Department, to study in the specialised fields of electrical engineering. At the same time they will take subjects common to all students in electrical engineering. A list of available electives (which may vary from year to year) is given in the course description. Students in doubt as to which programme patterns are desirable or permissible should consult the Head of the Department.
Each student in the full-time course is required to work on a project under the guidance of members of the lecturing staff. Generally, the project will involve the design and construction of experimental apparatus together with laboratory tests. Where possible the projects will be related to the research programme of the Department and chosen to develop the student’s initiative. Each student will be required to deliver a seminar paper and to prepare a thesis based on the results of the project work.

In the Bachelor of Engineering course the identical formal programme will be offered to both Pass students and to those aiming at Honours. Honours will be awarded for meritorious performance over the course: special attention is paid to a candidate’s performance in the final year thesis project. A student with a creditable performance in the Bachelor of Science (Engineering) course may be awarded a degree with Merit.

All students are strongly recommended to complete two periods of industrial training, one of forty five working days between Years 2 and 3, and the other forty five working days between Years 3 and 4. They are also advised to obtain practical experience during the long vacation between Years 1 and 2.

DOUBLE DEGREE OF B.Sc., B.E. IN ELECTRICAL ENGINEERING

Students in Electrical Engineering may qualify for this double degree in five years of full-time study. Having completed the first and second years of the Electrical Engineering course, students transfer to Science (this is subject to the recommendation of the Head of the Department of Electrical Engineering and the approvals of the Deans of the Faculties of Engineering and Science) and do the appropriate General Studies subjects, and four Level III units chosen from related disciplines and no less than four other units of either Level II or Level III, chosen in accordance with the Science Course regulations. In their fourth year the students revert to the Division of Engineering. Depending on the programme followed in their year in Science they will have already completed parts of the normal third year programme of the Electrical Engineering course, and they will be required to omit these from their programme and to include an equivalent amount of other courses chosen with the approval of the Head of Department. In their fifth year they will complete the fourth year of the Electrical Engineering course.

ELECTRICAL ENGINEERING—FULL-TIME COURSE

BACHELOR OF ENGINEERING

<table>
<thead>
<tr>
<th>Year</th>
<th>Course</th>
<th>Session 1</th>
<th>Session 2</th>
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<tbody>
<tr>
<td></td>
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<td>6</td>
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<tr>
<td></td>
<td>Materials I or Chemistry I</td>
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<tr>
<td></td>
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<td>24</td>
<td>24</td>
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<tr>
<td></td>
<td>Applied Mechanics I</td>
<td>2</td>
<td>2</td>
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<tr>
<td></td>
<td>Circuit Theory I</td>
<td>3</td>
<td>—</td>
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<tr>
<td></td>
<td>Electronics I</td>
<td>—</td>
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<tr>
<td></td>
<td>Energy Conversion I and 2</td>
<td>3</td>
<td>3</td>
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<tr>
<td></td>
<td>Engineering II or Physics II</td>
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<td>6</td>
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<td></td>
<td>Mathematics II</td>
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<tr>
<td></td>
<td>Strength and Properties of Materials</td>
<td>5</td>
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<tr>
<td></td>
<td>General Studies</td>
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<tr>
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<td>25½</td>
<td>23½</td>
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</tbody>
</table>
## UNDERGRADUATE COURSES

| YEAR 3: | Applied Mechanics II | 2 | 2 |
| YEAR 3: | Circuit Theory 2 and 3 | 5 | 5 |
| YEAR 3: | Control 1 | 5 | 5 |
| YEAR 3: | Electronics 2 and 3 | 5 | 5 |
| YEAR 3: | Machines and Transformers 1 and 2 | 5 | — |
| YEAR 3: | Power Systems | 3 | 3 |
| YEAR 3: | General Studies | 25 | 25 |

| YEAR 4: | Electives (four) | 12 | 12 |
| YEAR 4: | Engineering III | 7 | 3 |
| YEAR 4: | Thesis | 12 | 12 |
| YEAR 4: | General Studies | 1½ | 1½ |
| YEAR 4: | | 32½ | 28½ |

### Electives:
- Circuit Theory 4 and 5: 3, 3
- Control 2 and 3: 3, 3
- Computer Systems Engineering 1 and 2: 3, 3
- Electrical Properties of Materials 1 and 2: 3, 3
- Electronics 4 and 5: 3, 3
- Machines 3 and 4: 3, 3

Only 4 of the listed electives are taken by individual students in each session.

## ELECTRICAL ENGINEERING—PART-TIME COURSE

### BACHELOR OF SCIENCE (ENGINEERING)

| STAGE 1: Engineering I | 6 | 6 |
| STAGE 1: Mathematics 1 | 6 | 6 |
| STAGE 1: | | 12 | 12 |

| STAGE 2: Physics I | 6 | 6 |
| STAGE 2: Materials 1 or Chemistry 1 | 6 | 6 |
| STAGE 2: | | 12 | 12 |

| STAGE 3: Applied Mechanics I | 2 | 2 |
| STAGE 3: Circuit Theory 1 | 3 | — |
| STAGE 3: Electronics 1 | 3 | — |
| STAGE 3: Mathematics II | 6 | 4 |
| STAGE 3: General Studies | 1½ | 1½ |
| STAGE 3: | | 12½ | 10½ |
## UNDERGRADUATE COURSES

| STAGE 4: | Energy Conversion 1 and 2 | 3 | 3 |
|         | Engineering II            | 5 | 6 |
|         | Strength and Properties of Materials | 5 | 4 |
|         | **Total**                 | **13** | **13** |

| STAGE 5: | Circuit Theory 2 and 3 | 5 | 5 |
|         | Machines and Transformers 1 and 2 | 5 | 5 |
|         | General Studies          | 3 | 3 |
|         | **Total**                 | **13** | **13** |

| STAGE 6: | Applied Mechanics II | 2 | 2 |
|         | Control 1              | — | 5 |
|         | Electronics 2 and 3    | 5 | 5 |
|         | Power Systems          | 5 | — |
|         | **Total**               | **12** | **12** |

### DEPARTMENT OF CIVIL, MECHANICAL AND MINING ENGINEERING

The Department provides two full-time and three part-time undergraduate courses leading to the award of professional degrees.

The full-time B.E. courses are offered in Civil Engineering and in Mechanical Engineering. The part-time B.Sc. (Eng.) courses are offered in Civil Engineering, Mechanical Engineering and Mining Engineering. In addition the first two years of the full-time B.E. courses in Mining Engineering are offered, following which students must transfer to Kensington for completion of the course. The first two years of the Civil and Mechanical Engineering courses are acceptable for transfer to courses at Kensington in Aeronautical Engineering, Civil Engineering, Industrial Engineering, Mechanical Engineering and Naval Architecture.

The Department also offers a formal postgraduate course leading to the degree of Master of Engineering Science in Mechanical Engineering in addition to research degrees leading to Master of Engineering and Doctor of Philosophy. Details of these appear under Postgraduate Study in this Handbook.

The first two years of the full-time courses are identical in course content with the first four stages of the part-time courses. Either degree may be taken out by a continuation of full-time part-time study, subject to approval by the Head of Department.

Industrial experience is an integral part of the full-time course. Forty working days of industrial training must be completed by Civil Engineering students between years 2 and 4, and by Mechanical Engineering students between Years 3 and 4. All students are strongly recommended to gain as much industrial training as possible in other long vacations.

### TEXTBOOKS AND READING LISTS

A list of textbooks and recommended reference books and journals for the various subjects will be provided by the Department.
# UNDERGRADUATE COURSES

## CIVIL, MECHANICAL AND MINING ENGINEERING—FULL TIME COURSE

### BACHELOR OF ENGINEERING

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<thead>
<tr>
<th>Session</th>
<th>Hours per week</th>
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<tbody>
<tr>
<td><strong>YEAR 1:</strong> Engineering 1</td>
<td>6 6</td>
</tr>
<tr>
<td>Materials 1 or Chemistry 1*</td>
<td>6 6</td>
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<tr>
<td>Mathematics 1</td>
<td>6 6</td>
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<tr>
<td>Physics 1</td>
<td>6 6</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>24 24</td>
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* Chemistry 1 to be taken by Mining Engineering students only.

<table>
<thead>
<tr>
<th>Session</th>
<th>Hours per week</th>
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<tbody>
<tr>
<td><strong>YEAR 2:</strong> Design 1</td>
<td>3 3</td>
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<tr>
<td>Strength and Properties of Materials**</td>
<td>5 4</td>
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<tr>
<td>Applied Mechanics 1</td>
<td>2 2</td>
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<tr>
<td>Engineering II</td>
<td>5 6</td>
</tr>
<tr>
<td>Mathematics II</td>
<td>6 4</td>
</tr>
<tr>
<td>App. Elec. I/Part 1</td>
<td>3 3</td>
</tr>
<tr>
<td>General Studies Elective</td>
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<td><strong>Total</strong></td>
<td>25½ 23½</td>
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</table>

** Geology for Engineers may be substituted for Part B of this subject by Mining Engineers.

### MECHANICAL ENGINEERING

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<thead>
<tr>
<th>Session</th>
<th>Hours per week</th>
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<tbody>
<tr>
<td><strong>YEAR 3:</strong> Design II</td>
<td>3 3</td>
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<tr>
<td>Materials and Structures</td>
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<td>2 2</td>
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<tr>
<td>Control Systems</td>
<td>3 3</td>
</tr>
<tr>
<td>Engineering III</td>
<td>7 3</td>
</tr>
<tr>
<td>Fluid Mechanics II</td>
<td>3 3</td>
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<tr>
<td>General Studies Electives</td>
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<td>25 21</td>
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<table>
<thead>
<tr>
<th>Session</th>
<th>Hours per week</th>
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</thead>
<tbody>
<tr>
<td><strong>YEAR 4:</strong> Thesis</td>
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<tr>
<td>Systems Analysis</td>
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<tr>
<td>Engineering Management</td>
<td>2 2</td>
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<tr>
<td>General Studies Elective</td>
<td>1½ 1½</td>
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<tr>
<td><strong>Total</strong></td>
<td>11 11</td>
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</tbody>
</table>

Plus at least 10 hours per week for each session from the following electives*

- Surveying**
- Geotechnics
- Applied Dynamics
- Thermodynamics III
- Fluid Mechanics III
- App. Elec. I/Part 2

* Subject to the approval of Head of Department of Civil, Mechanical and Mining Engineering.

** Plus Survey Camp.
# UNDERGRADUATE COURSES

## CIVIL ENGINEERING

<table>
<thead>
<tr>
<th>YEAR 3:</th>
<th>Design II</th>
<th>3</th>
<th>3</th>
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<tr>
<td></td>
<td>Materials and Structures</td>
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<tr>
<td></td>
<td>Applied Mechanics II</td>
<td>2</td>
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<tr>
<td></td>
<td>Surveying*</td>
<td>3</td>
<td>3</td>
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<tr>
<td></td>
<td>Engineering III</td>
<td>7</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Fluid Mechanics II</td>
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<td>3</td>
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<tr>
<td></td>
<td>General Studies Electives</td>
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<td></td>
<td><strong>Total</strong></td>
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<td><strong>21</strong></td>
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</table>

* Plus Survey Camp.

<table>
<thead>
<tr>
<th>YEAR 4:</th>
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<td></td>
<td>Systems Analysis</td>
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<tr>
<td></td>
<td>Engineering Management</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>General Studies Elective</td>
<td>1½</td>
<td>1½</td>
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<tr>
<td></td>
<td><strong>Total</strong></td>
<td><strong>11</strong></td>
<td><strong>11</strong></td>
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</table>

Plus at least 10 hours per week average for two sessions from the following electives**

- Structures | 3 | 3 |
- Geotechnics | 5 | 5 |
- Public Health Engineering | 3½ | 3½ |
- Road Engineering | 2 | 2 |
- Fluid Mechanics III | 2½ | 2½ |

** Subject to the approval of the Head of Department of Civil, Mechanical and Mining Engineering.

## MINING ENGINEERING

The third and fourth years of this course must be completed at Kensington.

## CIVIL, MECHANICAL AND MINING ENGINEERING—PART TIME

### BACHELOR OF SCIENCE (ENGINEERING)

<table>
<thead>
<tr>
<th>STAGE 1:</th>
<th>Engineering I</th>
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<tr>
<td></td>
<td>Mathematics I</td>
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<td><strong>Total</strong></td>
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<td><strong>12</strong></td>
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<tr>
<td>STAGE 2:</td>
<td>Materials I or Chemistry I*</td>
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</tr>
<tr>
<td></td>
<td>Physics I</td>
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<td>6</td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td><strong>12</strong></td>
<td><strong>12</strong></td>
</tr>
<tr>
<td>STAGE 3:</td>
<td>Applied Mechanics I</td>
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<td>2</td>
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<tr>
<td></td>
<td>Mathematics II</td>
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<td>4</td>
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<tr>
<td></td>
<td>App. Elec. I/Part 1</td>
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<tr>
<td></td>
<td>General Studies Elective</td>
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<td>1½</td>
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<td><strong>Total</strong></td>
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* Chemistry I to be taken by Mining Engineering students only.
### UNDERGRADUATE COURSES

<table>
<thead>
<tr>
<th>STAGE 4: Design I</th>
<th>Hours per week</th>
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<tr>
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<td>Engineering II</td>
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** Geology for Engineers may be substituted for Part B of this subject by Mining Engineering students.

### MECHANICAL ENGINEERING

<table>
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<th>STAGE 5: Design II</th>
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<tbody>
<tr>
<td></td>
<td>Session 1</td>
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<td>Applied Mechanics II</td>
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<td>Control Systems</td>
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### CIVIL ENGINEERING

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<td>Engineering III</td>
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<td>Geotechnics</td>
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<td>Engineering Management</td>
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<tr>
<td>App. Elec. I Part II</td>
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<tr>
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</tbody>
</table>

** Subject to the approval of the Head of the Department of Civil, Mechanical and Mining Engineering.

* Plus Survey Camp.

### STAGE 6: Materials and Structures

<table>
<thead>
<tr>
<th>Electives</th>
<th>Hours per week</th>
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<tbody>
<tr>
<td></td>
<td>Session 1</td>
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<tr>
<td>Surveying*</td>
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<td>Engineering III</td>
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<tr>
<td>Geotechnics</td>
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<tr>
<td>Engineering Management</td>
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<tr>
<td>App. Elec. I Part II</td>
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<tr>
<td></td>
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</table>

** Subject to the approval of the Head of Department of Civil, Mechanical and Mining Engineering.

* Plus Survey Camp.

<table>
<thead>
<tr>
<th>Electives</th>
<th>Hours per week</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Session 1</td>
</tr>
<tr>
<td>Engineering III</td>
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</tr>
<tr>
<td>Geotechnics</td>
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<tr>
<td>Public Health Engineering</td>
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<td>Road Engineering</td>
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<td>Engineering Management</td>
<td>2</td>
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<td>5½</td>
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</tbody>
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** Subject to the approval of the Head of Department of Civil, Mechanical and Mining Engineering.
### UNDERGRADUATE COURSES

#### MINING ENGINEERING

<table>
<thead>
<tr>
<th>STAGE 5: Mining Engineering I, Parts 1 and 2</th>
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<tbody>
<tr>
<td><strong>Mining and mineral process engineering</strong> (Parts 1 and 2)*</td>
</tr>
<tr>
<td><strong>Engineering Surveying</strong>†</td>
</tr>
<tr>
<td><strong>Geology for mining engineers</strong>‡</td>
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<tr>
<td><strong>General Studies Elective</strong></td>
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<tr>
<td><strong>Total</strong></td>
</tr>
</tbody>
</table>

* Includes four visits each of three hours to mines or mineral processing plants, practical work at survey camp — an essential part of this.
† Plus 42 hours of practical work at Survey Camp — an essential part of this.
‡ Geology excursions will be conducted.

<table>
<thead>
<tr>
<th>STAGE 6: Mining Engineering II*</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Mineral Processing I</strong></td>
</tr>
<tr>
<td><strong>Mine Surveying and Control Engineering</strong></td>
</tr>
<tr>
<td><strong>Mineral Industry Elective Project</strong>‡</td>
</tr>
<tr>
<td><strong>General Studies Elective</strong></td>
</tr>
<tr>
<td><strong>Total</strong></td>
</tr>
</tbody>
</table>

* A mining excursion of five days will be conducted during the year.
‡ Project for an award with merit will be more advanced than that required for the award of the pass degree.
## Undergraduate Courses

### Outlines of Course Requirements—Metallurgy

**Bachelor of Science — Full Time Course**

<table>
<thead>
<tr>
<th>Year</th>
<th>Course</th>
<th>Lect.</th>
<th>Lab./Tut.</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Year 1:</strong></td>
<td>Engineering I</td>
<td>4</td>
<td>2</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>Mathematics I</td>
<td>4</td>
<td>2</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>Physics I</td>
<td>3</td>
<td>3</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>Chemistry I</td>
<td>3</td>
<td>3</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>Metallurgy Tutorial I</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td></td>
<td></td>
<td>25</td>
</tr>
</tbody>
</table>

| Year 2: | Chemistry II, III               | 3     | 3         | 6     |
|         | Mathematics II                  | 1     | 1         | 2     |
|         | Design M                        | 1     | 2         | 3     |
|         | Metallurgical Statistics        | 2     | 1         | 3     |
|         | General Studies                 | 1     | 1½        | 1½    |
|         | Metallurgy Subjects: Level 1    | *     | *         | 10    |
| **Total** |                                 |       |           | 25½   |

| Year 3: | Applied Electricity 1/1         | 2     | 1         | 3     |
|         | General Studies                 | 2     | 1         | 3     |
|         | Metallurgy Subjects: Level 2    | *     | *         | 20½   |
| **Total** |                                 |       |           | 26½   |

| Year 4: | Engineering Management          | 2     |           | 2     |
|         | General Studies                 | 1     | ½         | 1½    |
|         | Metallurgy Subjects: Level 3    | *     | *         | 11    |
|         | Metallurgy Project              |       | 8         | 8     |
|         | Applied Science/Engineering Option |     | 2    | 2     |
| **Total** |                                 |       |           | 24½   |

* See page 163 for details of subjects and textbooks.

### Bachelor of Science (Technology) — Part Time Course

**Stage 1:**

<table>
<thead>
<tr>
<th>Course</th>
<th>Lect.</th>
<th>Lab./Tut.</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Engineering I</td>
<td>4</td>
<td>2</td>
<td>6</td>
</tr>
<tr>
<td>Mathematics I</td>
<td>4</td>
<td>2</td>
<td>6</td>
</tr>
<tr>
<td>Metallurgy Tutorial I</td>
<td></td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
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<td>13</td>
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**Stage 2:**

<table>
<thead>
<tr>
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<th>Lect.</th>
<th>Lab./Tut.</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physics I</td>
<td>3</td>
<td>3</td>
<td>6</td>
</tr>
<tr>
<td>Chemistry I</td>
<td>3</td>
<td>3</td>
<td>6</td>
</tr>
<tr>
<td>Metallurgy Tutorial II</td>
<td></td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td></td>
<td>13</td>
</tr>
</tbody>
</table>
### UNDERGRADUATE COURSES

<table>
<thead>
<tr>
<th>Stage</th>
<th>Course</th>
<th>Lect.</th>
<th>Lab./Tut.</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stage 3:</td>
<td>Chemistry 11M</td>
<td>3</td>
<td>3</td>
<td>6</td>
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<tr>
<td></td>
<td>Mathematics 11</td>
<td>1</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Design M</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>General Studies</td>
<td>1</td>
<td>½</td>
<td>1½</td>
</tr>
<tr>
<td></td>
<td>Metallurgy Tutorial III</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td><strong>13½</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| Stage 4: | Metallurgy Subjects — Level 1 | * | * | 10 |
| Metallurgical Statistics | 2 | 1 | 3 |
| **Total** | **13** | | | |

| Stage 5: | Metallurgy Subjects — Level 2A | * | * | 10 |
| Applied Electricity 1/1 | 2 | 1 | 3 |
| General Studies | 1 | ½ | 1½ |
| **Total** | **14½** | | | |

| Stage 6: | Metallurgy Subjects — Level 2B | * | * | 11 |
| Engineering Management | 2 |           | 2 |
| General Studies | 1 | ½ | 1½ |
| **Total** | **14½** | | | |

*See page 163 for details of subjects and textbooks.*
GENERAL DESCRIPTION

The Regulations for this course are based on a unit structure. A unit occupies up to ninety hours of attendance at lectures and tutorials/laboratory classes. The requirements for a pass degree may be met by completing units chosen in accordance with the regulations in a minimum of three years of full-time or the equivalent period of part-time study. Subject to meeting conditions defined in the regulations, a student may be admitted to an honours course which will take an extra year of full-time study or two years of part-time study.

The unit structure allows flexibility in the choice of a course of study and the regulations have been framed so that a student may choose a pattern of units suitable for:

1. A general training in science.
2. A training for science teaching.
3. A professional level of training in a specific discipline.
4. A professional level of training in a combination of related disciplines.

Major sequences of units may be chosen from the following:

WOLLONGONG UNIVERSITY COLLEGE:

DIVISION OF BIOLOGICAL AND CHEMICAL SCIENCE
Chemistry,
DIVISION OF PHYSICAL SCIENCE
Geology, Mathematics, Physics.

UNIVERSITY OF N.S.W. — KENSINGTON:

FACULTY OF SCIENCE
FACULTY OF BIOLOGICAL SCIENCES
Biochemistry, Biological Technology, Botany, Microbiology, Psychology, and Zoology.

OTHER FACULTIES
Anatomy, Computer Science, Geology and Physiology.

Regulations Governing the Science Course

1. DEFINITIONS

The Science course is administered by the Dean of the Faculty of Science through his nominated representative.

The pass degree is based on a unit structure. A unit may be of fourteen or twenty-eight weeks duration, and units are grouped according to levels. Level I subjects are all double units; level II units normally follow after level I pre-requisites and level III units, in most cases, follow after level II pre-requisites. A major sequence normally includes four level III units chosen from those offered by a particular school, although a number of schools offer more than four such units.

* Not all units listed below are available at Wollongong University College. Information on those available may be obtained from the Secretary.
  At Wollongong University College there are departments instead of schools.
A pre-requisite unit is one which must be completed prior to enrolment in the unit for which it is prescribed. A co-requisite unit is one which must either be completed successfully before or be studied concurrently with the unit for which it is prescribed. An excluded unit is one which cannot be counted together with the unit which excludes it towards the degree qualification. In exceptional circumstances, on the recommendation of the head of the appropriate school, the Dean of the Faculty of Science may waive or vary a particular pre-requisite or co-requisite.

CARE SHOULD BE TAKEN IN THE CHOICE OF UNITS TO ENSURE THAT THE PATTERN COMPLIES WITH THE REGULATIONS SET OUT IN SECTION 3 (a). CERTAIN COMBINATIONS OF UNITS CANNOT BE COMPLETED IN THE MINIMUM TIME DUE TO THE RESTRICTIONS OF TIMETABLES, COPIES OF TYPICAL COURSE PATTERNS ARE AVAILABLE FROM THE FACULTY OFFICE.

2. REGULATIONS GOVERNING THE SCIENCE COURSE

(a) Requirements for a pass degree

In order to qualify for admission to the degree of Bachelor of Science under these regulations a candidate shall attend classes and satisfy the examiners in Science units and General Studies subjects chosen as follows:—

(i) At least twenty-three Science units shall be included from the list set out in section 3 (a) and three General Studies subjects from the list in section 3 (b).

(ii) The twenty-three Science units shall comply with the pre-requisites, co-requisites and exclusion conditions set out in section 3 (a) and also shall conform to the following restrictions:

   not less than eight units, nor more than ten units may be from level I;

   not less than four units may be from level III, and these four shall be chosen from related disciplines.

(iii) One of 10.001 Mathematics I, or
   10.011 Higher Mathematics I, or
   10.021 Mathematics IT

   shall be included.

(iv) in addition to the specific pre-requisites listed in Clause 3 (a), additional general pre-requisites are required by some schools as a preliminary to certain advanced level units. These units, which are scheduled below, should be taken in the first year of enrolment together with compulsory mathematics. Eight units are normally taken in first year.

* The Head of the Department at Wollongong University College.
† At Wollongong University College the Head of the Department will provide the necessary advice.
‡ Subject numbers apply to subjects offered by the University of New South Wales (Kensington) only.
UNDERGRADUATE COURSES

School of Chemistry
1.001, 1.011 or 1.041 Physics.*

School of Applied Geology
1.001, 1.011 or 1.041 Physics and 2.001 or 2.011 Chemistry.*

School of Biochemistry
1.001, 1.011 or 1.041 Physics and 2.001 or 2.011 Chemistry.

School of Microbiology
12.001 Psychology may be taken in lieu of Physics I in first year. In this case credit will not be given for level III units offered by these Schools until level I Physics or 12.013 Psychology III is completed.*

School of Zoology
1.001, 1.011 or 1.041 Physics and 2.001 Chemistry and 17.001 General and Human Biology except that, with the consent of the Head of the particular school and in special circumstances, 25.001 Geology or 12.001 Psychology may be taken in lieu of Physics I in first year. In this case credit will not be given for level III units offered by these Schools until level I Physics or 12.013 Psychology III is completed.*

School of Botany
1.001, 1.011 or 1.041 Physics and 2.001 Chemistry and 17.001 General and Human Biology except that, with the consent of the Head of School and in special circumstances, Physics may be deferred to second year and 25.001 Geology or 12.001 Psychology taken in lieu in first year. In this case, credit will not be given for level III units offered by this School until level I Physics is completed.*

School of Anatomy
17.001 General and Human Biology.

School of Physiology
2.001 Chemistry and 17.001 General and Human Biology.

Dept. of Applied Physics
1.001 or 1.011 Physics and 2.001 Chemistry and 5.001 Engineering.*

(v) Only one from each of the following subjects/units may be included:

a. 12.001 Psychology or 26.121 Psychology.

b. 52.111 Philosophy or 26.521 Philosophy.*

c. Any unit listed in Section 3 (a) or the equivalent unit offered at Wollongong University College which contains similar syllabus material.

(vi) A full time student is required to complete the appropriate level of Mathematics and six other approved level I units in the first two years of attendance or else show cause to the satisfaction of the Professorial Board why he should be allowed to re-enrol. The remaining units of the course may be completed in any order consistent with the requirements concerning pre-requisite and co-requisite units as set out in Clause 3 (a).

(vii) The proposed course must be approved by the Dean of the Faculty of Science or his representative at enrolment. In special circumstances, the Dean may grant a student permission to defer enrolment in certain level I units until the second year of the course. Where any alteration in the course approved at enrolment is desired, the student must obtain the approval of the Dean or his representative for the new course.

(b) Requirements for an honours degree

(i) In order to qualify for admission to the honours degree of Bachelor of Science a candidate shall:

* Subject numbers apply to subjects offered by the University of New South Wales (Kensington) only.
† The department at Wollongong University College.
‡ At Wollongong University College the Head of the Division.
UNDERGRADUATE COURSES

1. Satisfy the requirements for a pass degree but without proceeding to graduation.

2. Undertake an extra year of full-time or two extra years of part-time study.

(ii) Admission to an honours course is granted by the Head of School*. Students wishing to proceed to an honours degree must apply to the Head of the appropriate school on completion of pass degree requirements.

(iii) A suitably qualified candidate may be admitted to an honours course in one of the following:

<table>
<thead>
<tr>
<th>Anatomy</th>
<th>Geology</th>
</tr>
</thead>
<tbody>
<tr>
<td>Applied Mathematics</td>
<td>Microbiology</td>
</tr>
<tr>
<td>Applied Physics</td>
<td>Physics</td>
</tr>
<tr>
<td>Biochemistry</td>
<td>Psychology</td>
</tr>
<tr>
<td>Biological Technology</td>
<td>Physiology</td>
</tr>
<tr>
<td>Botany</td>
<td>Pure Mathematics</td>
</tr>
<tr>
<td>Chemistry</td>
<td>Theory of Statistics</td>
</tr>
<tr>
<td>Computer Science</td>
<td>Zoology</td>
</tr>
<tr>
<td>Entomology</td>
<td></td>
</tr>
</tbody>
</table>

(iv) To qualify for admission to an honours course a student must have completed successfully eight level III units in the pass degree course†, except that in special cases the Head of the appropriate school* may approve entry without such a qualification.

(v) Further to requirements listed in paragraph 2 (b) (iv), to qualify for entry into an honours year a student must have completed any special units at required grades as determined by the Head of the School*, prior to admission to the Honours year. In order to ascertain any such special conditions, a student contemplating honours is advised to consult the Head of School* at the end of the first year of study.

(vi) Upon admission to the honours course a student must attend lectures, read and engage in laboratory work as required by the Head of School.*

3. SCHEDULE OF UNITS

(a) Science units

These are listed under the Schools‡ which provide the instruction and are divided into levels. Students must observe the prerequisites and co-requisites. Some Schools offer higher units to which special prerequisites apply and which are designed to lead to honours. Students contemplating honours studies must ensure that they have selected appropriate units. Some units are terminating so that students taking these may not qualify to continue studies in that School.‡ When selecting terminating units students must ensure that a choice of a major sequence is still available. Note that many units are of half year duration so that it is necessary to choose units which give a balanced programme of study over the year.

* At Wollongong University College the Head of the Department.
† For the honours course in Applied Physics the corresponding normal requirement is both (a) at least six Level III units to be completed and (b) at least eight units at Levels II and III to be completed at Credit grade or better or in the respective Higher version.
‡ Departments at Wollongong University College. Details of units available at Kensington are listed in the University Calendar and the Faculty of Science Handbook.
<table>
<thead>
<tr>
<th>NAME</th>
<th>LEVEL</th>
<th>UNITS VALUE</th>
<th>WHEN OFFERED</th>
<th>HOURS P.W.</th>
<th>PREREQUISITES</th>
<th>CO-REQUISITES</th>
<th>EXCLUDED</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEMISTRY LEVEL I Part IA: Introductory Physical and General Chemistry</td>
<td>I</td>
<td>1</td>
<td>1st Session</td>
<td>6</td>
<td>Sc. Faculty entrance</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Part IB: Introductory Organic and Physical Chemistry</td>
<td>I</td>
<td>1</td>
<td>2nd Session</td>
<td>6</td>
<td>Sc. Faculty entrance</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CHEMISTRY LEVEL II</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Physical Chemistry IIA</td>
<td>II</td>
<td>1</td>
<td>1st Session</td>
<td>6</td>
<td>Chemistry level I</td>
<td>Mathematics level I</td>
<td></td>
</tr>
<tr>
<td>Organic Chemistry II</td>
<td>II</td>
<td>1</td>
<td>2nd Session</td>
<td>6</td>
<td>Chemistry level I</td>
<td>Mathematics level I</td>
<td></td>
</tr>
<tr>
<td>Inorganic Chemistry II</td>
<td>II</td>
<td>1</td>
<td>2nd Session</td>
<td>6</td>
<td>Chemistry level I</td>
<td>Mathematics level I</td>
<td></td>
</tr>
<tr>
<td>Physical Chemistry IIB</td>
<td>II</td>
<td>1</td>
<td>1st Session</td>
<td>6</td>
<td>Chemistry level I</td>
<td>Mathematics level I</td>
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<tr>
<td>CHEMISTRY LEVEL III</td>
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<td>Physical Chemistry II</td>
<td>Organic Chemistry II Inorganic Chemistry II</td>
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</tr>
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<td>Organic Chemistry IIIA</td>
<td>III</td>
<td>1</td>
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<td>Organic Chemistry II</td>
<td>Physical Chemistry II Inorganic Chemistry II</td>
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</tbody>
</table>

* May be offered in 1st or 2nd session.
<table>
<thead>
<tr>
<th>NAME</th>
<th>LEVEL</th>
<th>UNITS VALUE</th>
<th>WHEN OFFERED</th>
<th>HOURS P.W.</th>
<th>PREREQUISITES</th>
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<tbody>
<tr>
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<td>Inorganic Chemistry II</td>
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<td>Organic Chemistry II</td>
<td>Physical Chemistry II</td>
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<tr>
<td>Physical Chemistry IIIB</td>
<td>III</td>
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<td>*</td>
<td>6</td>
<td>Physical Chemistry II</td>
<td>Physical Chemistry IIIB and Inorganic Chemistry III A or Chemical Analysis IIIA</td>
<td></td>
</tr>
<tr>
<td>Organic Chemistry IIIB</td>
<td>III</td>
<td>1</td>
<td>*</td>
<td>6</td>
<td>Organic Chemistry II</td>
<td>Physical Chemistry IIIIB and Inorganic Chemistry III A or Chemical Analysis IIIA</td>
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</tr>
<tr>
<td>Techniques in Chemistry IIIB</td>
<td>III</td>
<td>1</td>
<td>*</td>
<td>6</td>
<td>Physical Chemistry II</td>
<td>Applied Analytical Chemistry II and Chemical Analysis III A, and any two of the following four: Physical Chemistry IIIA and IIIB, Organic Chemistry III A and IIIB</td>
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</tr>
</tbody>
</table>

* May be offered in 1st or 2nd session.
<table>
<thead>
<tr>
<th>NAME</th>
<th>LEVEL</th>
<th>UNITS VALUE</th>
<th>WHEN OFFERED</th>
<th>HOURS P.W.</th>
<th>PREREQUISITES</th>
<th>CO-REQUISITES</th>
<th>EXCLUDED</th>
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</thead>
<tbody>
<tr>
<td>Physical Chemistry IIIC</td>
<td>III</td>
<td>1</td>
<td>*</td>
<td>6</td>
<td>As for Techniques in Chemistry</td>
<td>Physical Chemistry IIIA or IIIB and any two of the following four Organic Chemistry IIIA and IIIB Inorganic Chemistry IIIA and Chemical Analysis IIIA</td>
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</tr>
<tr>
<td>CHEMISTRY HONOURS</td>
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</tr>
<tr>
<td>Honours Part I</td>
<td>IV</td>
<td>–</td>
<td>1st Session</td>
<td>4</td>
<td>Chemistry, Level III</td>
<td></td>
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</tr>
<tr>
<td>Honours Part II</td>
<td>IV</td>
<td>–</td>
<td>2nd Session</td>
<td>4</td>
<td>Chemistry, Level III</td>
<td></td>
<td></td>
</tr>
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<td>Honours Thesis</td>
<td>IV</td>
<td>–</td>
<td>Double session</td>
<td>20</td>
<td></td>
<td>Honours parts I and II</td>
<td></td>
</tr>
</tbody>
</table>

* May be offered in 1st or 2nd session.
<table>
<thead>
<tr>
<th>Name</th>
<th>Level</th>
<th>Units</th>
<th>When Offered</th>
<th>Hours P.W.</th>
<th>Prerequisites</th>
<th>Co-requisites</th>
<th>Excluded</th>
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</thead>
<tbody>
<tr>
<td>GEOLOGY IW</td>
<td>I</td>
<td>2</td>
<td>Double session</td>
<td>6*</td>
<td>Sc. Faculty Entrance</td>
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<td></td>
</tr>
<tr>
<td>Unit A — Introductory Geology, Crystallography, Mineralogy and Petrology</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Unit B — Physical Geology Palaeontology and Stratigraphy</td>
<td></td>
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<tr>
<td>GEOLOGY IIW</td>
<td>II</td>
<td>4</td>
<td>Double session</td>
<td>12*</td>
<td>Geology I</td>
<td></td>
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</tr>
<tr>
<td>Unit A — Crystallography, Crystal Chemistry and Mineralogy</td>
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<td></td>
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<tr>
<td>Unit B — Petrology</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Unit C — Palaeontology, Stratigraphy and Sedimentation</td>
<td></td>
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<tr>
<td>Unit D — Elements of Geological Mapping</td>
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</tr>
<tr>
<td>NAME</td>
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Progression to Geology IIIW without passes in all prerequisites may be possible with the approval of the Head of the Department.
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* Plus Field Work

It should be noted that not all Geology IIIW units may be offered in any one year.
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Students intending to proceed to Honours should consult the Head of Department.

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**Note:** As a general rule, units at any level should be attempted only after completion of all units at the preceding level. In case of doubt the Head of the Department should be consulted.

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3. (b) General Studies

Students shall select six of the following subjects:

- Architecture for Today
- Art in the Twentieth Century
- Aspects of Industrial Society
- Aspects of Modern Psychology, Part I
- Aspects of Modern Psychology, Part II
- Contemporary History
- Developments in Present Day Music
- Our Living Language and the Modern Writer
- Population Geography

For honours students an advanced elective is offered:
- Asia in the Twentieth Century

4. PATTERN OF STUDIES

In general, a student should select a course which is adequately distributed over the six half years of study. Typical course patterns are available from the Faculty Office.*

A suggested pattern of study is:

**First year:** The appropriate two units of level I Mathematics and six other level I units including those essential to the intended major sequence of units.

**Second year:** One general studies elective and eight units from level II or six units from level II and two from level I.

**Third year:** Two general studies electives and at least four level III units. The other units could be level II or III.

**Fourth year:** For an honours degree, an advanced general studies elective and such requirements as specified by the Head of the appropriate School.*

5. PART-TIME STUDY

A student must select the units and general studies electives in accordance with these regulations save that Clause 2a(vi) is modified so that he must complete level I Mathematics and six other level I units in the first four years of enrolment or else show cause to the satisfaction of the Professorial Board why he should be allowed to re-enrol.

Rules Governing Admission to the Science Degree Course with Advanced Standing

1. Graduates of the University of New South Wales may be admitted to the Science degree course with exemption in all General Studies subjects completed by them and in no more than twelve Science course units completed by them.

2. Undergraduates of the University of New South Wales who transfer from another course to the Science degree course, may be admitted to the Science degree course with exemption in all General Studies subjects completed by them and in all Science course units completed by them. Further, where an undergraduate has completed a subject which contains the syllabus material of a Science course unit (or units) the Dean, with the agreement of the Head of the School offering the Science course unit (or units) may allow the unit (or units) so covered to be counted to a Bachelor of Science degree. An undergraduate transferring to the Science course must take Mathematics 10.021 or 10.001 or 10.01† during his first year of enrolment in the course unless one of them has previously been completed.

* At Wollongong University College, the Head of the Department.
† Numbers apply to subjects offered by the University of New South Wales (Kensington only).
3. Graduates or undergraduates of other universities or of other approved tertiary institutions may be admitted to the Science degree course with advanced standing.

4. Students admitted under Rule 3 who have satisfied the examiners in units of the same title or subject matter as Science course units in this University may, subject to the approval of the appropriate Heads of School, be granted exemption in no more than eleven Science course units but not including level III Science course units.

5. Notwithstanding the provisions of Rules 1, 2, 3 and 4 Faculty may determine a special programme to be completed by a student who wishes to be granted advanced standing for an honours degree of Bachelor of Science in this University.

**Rules Governing Admission to the Science Degree Course with Advanced Standing for the Purpose of Obtaining a Double Degree**

1. Undergraduates† of the University of New South Wales who have satisfied the examiners in at least the first two years of a degree course extending over four or more years and approved by the Faculty of Science for the purpose of double degrees, may be admitted to the Science degree course with advanced standing. Such undergraduates’ performance shall have been of a high standard and their admission shall be subject to the approval of the Dean of the Faculty of Science.

2. Students so admitted who have satisfied the examiners in General Studies subjects and/or Science course units shall be given advanced standing in such General Studies subjects and no more than fourteen such Science course units.

3. Students so admitted may be granted exemption from two other level II Science units on the basis of other subjects completed by them.

4. In order to qualify for the award of the degree of B.Sc., students so admitted with advanced standing shall be required to complete the appropriate General Studies subjects and no less than four units of either level II or level III and four other level III units in accordance with the Science course regulations. The units submitted for the Bachelor's degree under these regulations must include at least four level III units chosen from related disciplines in accordance with the Science course regulations. One of Mathematics 10.021 or 10.001 or 10.01† must be included in the course.

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*At Wollongong University College, the Head of the Department.
†The word "undergraduate" includes graduands, i.e. a person may be admitted under these rules if he has met all requirements for a first degree which has not yet been conferred on him and his admission under these rules shall be no bar to the subsequent award of the first degree.
‡Subject numbers apply to subjects offered by the University of New South Wales (Kensington) only.
Description of Subjects
DEPARTMENT OF ACCOUNTANCY

ACCOUNTING I
(Double session subject)

TEXTBOOKS

ACCOUNTING II
(Double session subject)
An examination of the relationship between accounting and the functions of management, with particular reference to business objectives and organization, decision-making, planning, control and communication. Management information systems and computer applications in business, including cost accounting systems, internal reporting and control, cost concepts and decision analysis, budgetary control and profit planning, standard costs, responsibility accounting and performance measurement. System design and documentation. Capital budgeting and long-range planning. Application of statistics and operations research to management accounting.

TEXTBOOKS
DESCRIPTION OF SUBJECTS


Accounting II Tutorial Exercises. The University of New South Wales Students' Union.

ACCOUNTING III
(Double session subject)
Income measurement and asset valuation in accounting with emphasis on their application to the financial management and accountability of corporate enterprises. A comparative study of past, present and proposed solutions to problems of measurement and valuation, including price-level changes, valuation of shares, goodwill, fixed assets and inventory, leases, inter-corporate relationships and divisional and group organization. Corporate objectives, company formation, capital structure, fund-raising and growth strategies. Financial reporting, audit, and taxation aspects of corporate enterprises. Liquidation and receivership. An examination of current reporting practices, professional standards and recommendations.

TEXTBOOKS


Accounting III Tutorial Exercises. The University of New South Wales Students' Union.


Recommendations on Accounting Principles. The Institute of Chartered Accountants in Australia, 1970.

AUDITING AND INTERNAL CONTROL
(Double session subject)
Integrated with accounting, where practicable, and will cover basic auditing concepts, auditing principles and procedures and methods of investigation. The nature, scope and significance of internal control, internal check and internal audit; vouching, checking, verification of balance sheet items, the development of audit programmes, investigations, reports. Trends and developments in the profession, modern techniques as applied to machine and electronically
processed accounting data, testing and sampling, the evolution of auditing standards, professional ethics, social responsibilities of auditors, Statutory requirements and case law decisions affecting auditors.

TEXTBOOKS


COMMERCIAL LAW I
(Double session subject)
The nature of law; elementary jurisprudence; the sources of law in Australia; the doctrine of precedent; the legal system, the courts and the administration of justice; an introduction to law in society.
The law of contract as the basis for the ordering of commercial relationships; formation, operation, interpretation, validity, enforcement and discharge of contract, Sale of goods and consumer protection, Trade practices, Banker/customer relationship and negotiable instruments.
The law of business organizations with particular reference to partnership and company law; the legal nature of partnerships and companies; formation, liabilities, management obligations, operation and termination of business organizations.

TEXTBOOKS

Statutes:
Partnership Act (N.S.W.) 1892. N.S.W. Government Printer.
Companies Act (N.S.W.) 1961 (as amended to date). N.S.W. Government Printer.
Consumer Protection Act (N.S.W.) 1969. N.S.W Government Printer

COMMERCIAL LAW II
(Double session subject)
Company law including the functions of directors and their relationship with the company, the liability of the company, remedies for oppression of shareholders, use of trusts in connection with companies, takeovers, the history of companies and the role of corporate structure in an industrialized society.
Elements of industrial law, including consideration of types of industrial system; the concept of arbitration with particular reference to Australian conditions and a federal system; the "total wage" concept; the law of employment; workers' compensation; the statutory regulation of industrial conditions in places of work.

Other areas of law relevant to commerce, including banker and customer, hire purchase and insurance.

**TEXTBOOKS**


**Statutes:**

*Companies Act, 1961* (as amended to date). N.S.W. Government Printer.

**DATA PROCESSING AND INFORMATION SYSTEMS**

(Double session subject)

Problems and methods of data collection and processing, including analysis, design and application of information systems for management control. Electronic data processing including programming, flow charting and coding.

**TEXTBOOKS**


**TAXATION LAW AND PRACTICE**

(Double session subject)

The Income Tax Assessment Act, the determination of income, the assessment of specific forms of income, allowable deductions both in a general and specific sense, the assessment of different classes of taxpayer and the machinery provisions of income tax collection. Sales tax assessment and collection.

**TEXTBOOKS**


DESCRIPTION OF SUBJECTS

DEPARTMENT OF CHEMISTRY

GENERAL AND HUMAN BIOLOGY
(Double session subject)
This is an introductory course for students intending to proceed in medicine or in the biological sciences.

Syllabus:

TEXTBOOKS:

Requirements for Practical Work:
Students will be notified of equipment required for practical work. This must be purchased before the first practical class.

CHEMISTRY LEVEL I
Part 1A. Introductory Physical and General Chemistry.
First session subject (28 hrs. lectures, 14 hrs. tutorials and 42 hrs. practical).
Atomic theory and structure, chemical bonding, shapes of molecules. Particle theory of matter, gases and liquids, thermodynamics and thermoch­emistry.

Part 1B. Introductory Organic and Physical Chemistry.
Second session subject (28 hrs. lectures, 14 hrs. tutorials and 42 hrs. practical).

TEXTBOOKS
OR for students intending to continue in Chemistry.

* Not required for Part 1A.

REFERENCE BOOK

PHYSICAL CHEMISTRY IIA
First session subject (28 hrs. lectures, 14 hrs. tutorials and 42 hrs. practical).
Introductory Quantum Chemistry: Applications of quantum theory to the extra-nuclear structure of atoms. Applications to other chemical and physical systems. Molecular energies from both quantum mechanical and classical viewpoints.
Kinetic Theory: The study of rate processes. Collision theory and transition state theory. Applications to chemical systems.
TEXTBOOKS

PHYSICAL CHEMISTRY IIB
Second session subject (28 hrs. lectures, 14 hrs. tutorials and 42 hrs. practical)

TEXTBOOK

PHYSICAL CHEMISTRY 111A
Single session subject (28 hrs. lectures, 14 hrs. tutorials and 42 hrs. practical).

TEXTBOOKS

REFERENCE BOOKS

PHYSICAL CHEMISTRY 111B
Single session subject (28 hrs. lectures, 14 hrs. tutorials and 42 hrs. practical).
Quantum Chemistry: Applications of quantum mechanics to chemical systems and problems to demonstrate the methods used in the description and elucidation of atomic and molecular systems. Treatment of systems such as H atom, H₂⁺ ion, H₂ with extension to polyatomic molecules. Computational and other approximate methods for conjugated and related systems.


TEXTBOOKS

REFERENCE BOOKS
DESCRIPTION OF SUBJECTS


PHYSICAL CHEMISTRY 111C

Single session subject (28 hrs. lectures, 14 hrs. tutorials and 42 hrs. practical).


REFERENCE BOOKS


INORGANIC CHEMISTRY II

Second session subject (28 hrs. lectures, 14 hrs. tutorials and 42 hrs. practical)


TEXTBOOK


REFERENCE BOOKS


Graddon, D. P. An Introduction to Coordination Chemistry. 2nd ed. Pergamon, 1968.


INORGANIC CHEMISTRY IIIA

Single session subject (28 hrs. lectures, 14 hrs. tutorials and 42 hrs. practical).

DESCRIPTION OF SUBJECTS

TEXTBOOKS

REFERENCE BOOKS

SECOND LEVEL CHEMISTRY FOR METALLURGISTS
Comprises Physical Chemistry IIA and Applied Chemistry II.

PHYSICAL CHEMISTRY IIA
Second session subject (28 hrs. lectures, 14 hrs. tutorials and 42 hrs. practical).
Introduction Quantum Chemistry: Applications of quantum theory to the extra-nuclear structure of atoms. Applications to other chemical and physical systems. Molecular energies from both quantum mechanical and classical viewpoints.
Kinetic Theory: The study of rate processes. Collision theory and transition state theory. Applications to chemical systems.

TEXTBOOKS

APPLIED CHEMISTRY II
Second session subject (28 hrs. lectures, 14 hrs. tutorials and 42 hrs. practical).
Analytical Procedures: Sampling, solutions, separation methods, analysis techniques, statistical treatment of data.
Methods of Analysis: Gravimetric, volumetric — acid-base, redox, complexometry — spectroscopy, electrochemistry, extraction techniques.

TEXTBOOK

REFERENCE BOOK

CHEMICAL ANALYSIS IIIA
Single session subject (28 hrs. lectures, 14 hrs. tutorials and 42 hrs. practical).
Techniques of Analytical Chemistry — precipitation, organic reagents, solvent extraction, electroanalysis, potentiometry, ion exchange, complex formation.
Sampling and methods of solution — role of the solvent. General Principles in the quantitative analysis of (a) elements and alloys; (b) functional groups; (c) organic materials.

TEXTBOOKS
DESCRIPTION OF SUBJECTS


REFERENCE BOOKS

ORGANIC CHEMISTRY II
First session subject (28 hrs. lectures, 14 hrs. tutorials and 42 hrs. practical).

TEXTBOOKS

REFERENCE BOOKS

ORGANIC CHEMISTRY IIIA
Single session subject (28 hrs. lectures, 14 hrs. tutorials and 42 hrs. practical).

TEXTBOOKS

OR
REFERENCE BOOKS


ORGANIC CHEMISTRY IIIB

Single session subject (28 hrs. lectures, 14 hrs. tutorials and 42 hrs. practical).

Chemistry and biosynthesis of natural products: (Carbohydrates, amino acids, acetogenins, terpenes, steroids, alkaloids). Theories of biosynthesis. Precursor experiments. Detailed discussion of elucidation of structure, synthesis and biosynthesis of selected natural products.

TECHNIQUES IN CHEMISTRY IIIB

Single session subject (28 hrs. lectures, 14 hrs. tutorials and 42 hrs. practical).

X-ray diffraction and X-ray fluorescence; mass spectrometry, radio-chemistry; spectroscopic techniques such as Mossbauer, emission, atomic absorption and auto-analysis.

REFERENCE BOOKS


DEPARTMENT OF CIVIL, MECHANICAL AND MINING
ENGINEERING

Year I

ENGINEERING I
(Double session subject)

(a) Principles of Engineering Drawing and Design (64 hrs. lectures and drawing office). Limits and fits; elementary rivetted, bolted and welded connections; couplings and bearings; brakes, clutches, power screws and springs.

(b) Engineering Mechanics (66 hrs. lectures and tutorials). Two dimensional force systems; laws of equilibrium; concurrent and non-concurrent forces; funicular polygon; statics applied to rigid bars; statics of pin-jointed frames, analytical and graphical treatment; concepts of shear force, axial force and bending moment; simple states of stress; three-dimensional statics; composition and resolution of forces; general laws of equilibrium; dynamics of a particle; graphical and analytical analysis of velocities, accelerations; relative motion and energy conservation. Introduction to rigid body dynamics.

(c) Introduction to Engineering (38 hrs. lectures and tutorials).

(i) Engineering Technology (18 hrs.).

Materials: Classification of materials in common use, occurrence of raw materials, processing of raw materials, refinements and properties of materials. Manufacture: description and appraisal of the processes classified as forming from liquid or solid, material removal, materials joining. Machines: analysis of the primary functions of the machine tools and an appraisal of their limitations; principles of operations of common machine tools and illustration of their use.

(ii) Introduction to Computers and Systems (20 hrs. lectures).

Computers: Information — concepts, representation storage and manipulation in automatic systems; algorithms — transformation of information by algorithms, expression in flow charts and languages, iterative and recursive algorithms; computer organisation — user languages and hardware organisation, number and data representation, instruction sets, basic organisation, computer components, present and future uses of computers.

Systems: General introduction to systems involving consideration of the basic concepts of systems, system components and quantities involved. These concepts to be related to the phenomena within the experience of the students and to be illustrated by case histories and engineering examples.

MATERIALS I
(Double session subject (168 hrs. lectures, tutorials and laboratory).

Atomic theory, stoichiometry and structure; states of matter; energy concepts theory of matter, gases and liquids, thermodynamics and thermochemistry. Chemical equilibrium and equilibrium constants, acids and basis, nomenclature, preparation and reactions of carbon compounds stereochmistry.

Atomic theory, stoichiometry and structure; states of matter; energy concepts including bond and lattice energies.

Crystalline nature of metals and its significance; solidification of metals; phase equilibria in metallic alloys; heat treatment of some ferrous and non-ferrous alloys; plastic deformation of crystalline materials; introduction to the study of the mechanical properties of metals and non-metals.
DESCRIPTION OF SUBJECTS

Year II

DESIGN I

Double session subject (28 hrs. lectures and 56 hrs. drawing office).
Permissible stresses; influence lines; probability of failure and safety factors. Machine elements including shafts, clutches, brakes, springs, power screws and bearings. Bolted, riveted and welded connections; simple and built up beams, trusses and columns. Reinforced concrete elements, including slabs, beams, columns and foundations.

STRENGTH AND PROPERTIES OF MATERIALS

Double session subject (126 hrs. lectures, laboratory and tutorials).
(a) Strength of Materials (42 hrs): Components of stress and strain; two-dimensional stress systems; torsion of circular shafts; springs; flexure and deflexion of beams; structures: slope deflexion equation; strain energy: frame structures.
(b) Materials (56 hrs): Further work on mechanical behaviour of metals and non-metals; behaviour of materials in electromagnetic fields; metallic and ceramic phases and their properties; equilibrium diagrams.
(c) Materials in Engineering Design (28 hrs): Standard specification and acceptance tests; measurement of fatigue and impact strengths and hardness; notch sensitivity; application of criterions of failure.

APPLIED MECHANICS I

Double session subject (56 hrs. lectures and tutorials).

ENGINEERING II

(Double session subject).
(a) Thermodynamics I (42 hrs. lectures and tutorials).
(b) Theory of Machines (28 hrs. lectures and tutorials).
Kinematics of Simple Machines. Gear trains. Mechanical Vibrations. Isolation
(c) Fluid Mechanics I (28 hrs. lectures and tutorials).
(d) Experimental Engineering I (56 hrs. lectures, tutorials and experimental work).

Year III

DESIGN II

Double session subject (84 hrs. lectures and drawing office practice).
(1) Experimental Methods. The application of models and analog methods in design for both static and dynamic loadings. To include photoelastic, Moire and strain gauge techniques.
(2) **Optimization and computers:** The application of computers to design; computer simulation and optimizing techniques.

and EITHER

**Design A (Process and industrial machinery)**
Topics covered are selected from the following areas:
Rolling mills, pumping equipment, power generating equipment, blowers, and compressors.

OR

**Design B**
(i) Steel structures: Design of portal frames and mill buildings. Introduction to plastic design. Selected topics will be considered from the following areas: suspension and continuous girder bridges; transmission towers and guyed structures.

(ii) Concrete structures: Further design of concrete columns and continuous slabs. Design of pre and post stressed concrete structures.

In both Design A and Design B, the design and preparation of working drawings for a selected topic will be required.

**MATERIALS AND STRUCTURES**
Double session subject (112 hrs. lectures and tutorials).

(a) Structures (56 hrs)
Analysis of statically indeterminate structures; shells; plastic analysis of steel structures; introduction to two-dimensional elasticity; approximate methods.

(b) Materials (56 hrs)
Mechanical behaviour of materials; non-destructive test procedures; concrete technology.

**APPLIED MECHANICS II**
Double session subject (56 hrs. lectures and tutorials).
Numerical methods; integral transforms; matrices; state variables and linear systems analysis; function space analysis; statistics.

**SURVEYING**
Double session subject (84 hrs. lectures, tutorials and field work plus survey camp).
Measurements of distances, directly and indirectly; electronic methods; levelling; measurement of angles; traverse surveys and computations; photogrammetry.

**CONTROL SYSTEMS**
Double session subject (84 hrs. lectures and tutorials).
Principles and techniques applicable to the analysis and design of feedback control systems with particular application to industrial processes; time domain, frequency domain and state space methods of analysis of linear continuous and discrete systems; introduction to non-linear systems and techniques of analysis; system stability; introduction to optimal control theory; identification of process parameters using both on-line and off-line methods.

**ENGINEERING III**
(Double session subject)

(a) **Thermodynamics II** (42 hrs.)
Vapour and gas power cycles; mixtures: psychrometry; heat pumps and refrigerators; rotodynamic machines; gas turbines; mixed cycles.

(b) **Heat Transfer** (42 hrs.)
One and two-dimensional steady state conduction; free and forced convection; radiation; combined heat transfer mechanics and applications.

(c) **Experimental Engineering II** (56 hrs.)
Testing of reciprocating and rotodynamic machines; refrigeration plant nozzles; heat exchangers; testing of materials.
DESCRIPTION OF SUBJECTS

FLUID MECHANICS II
Double session subject (84 hrs. lectures and tutorials).

and EITHER

One-dimensional compressible fluid flow. Stagnation conditions; isentropic variable area flow; nozzles and diffusers. Normal and oblique shocks. Effects of friction and heat transfer.

OR

Introduction to hydrology; hydrologic cycle: weather and hydrology; precipitation: stream flow analysis; evaporation and transpiration; characteristics of the hydrograph; runoff relations; hydrographs of runoff; applications in engineering design.

Year IV

STRUCTURES
Double session subject (84 hrs. lectures, laboratory and tutorials).
Topics will include the following:— Stiffness and flexibility methods of analysis of interminate structures; Structural vibrations; Experimental structural analysis; Shells; Finite element analysis; Limit analysis of steel structures.

GEOTECHNICS
Double session subject (140 hrs. lectures and tutorials).
(a) Soil Mechanics (98 hrs.)
Properties of soil and soil testing; stability of slopes; retaining walls and sheet piling; bearing capacity.
(b) Geology (42 hrs.)
Rock forming minerals, clay minerals; rock classification and properties; structural geology; groundwater; application of geology and geophysics in engineering practice.

PUBLIC HEALTH ENGINEERING
Double session subject (56 hrs. lectures and tutorials).
Process of decomposition or decay: chemical and biochemical measurements, basic principles of the treatment of polluted waters. Water supply schemes: principles and practice of water treatment; sewage systems, sewage treatment and disposal: refuse disposal.

ROAD ENGINEERING
Double session subject (56 hrs. lectures and tutorials).
Road location and surveys, road design standards, types and functions of pavements, construction methods, earthworks and earth moving machinery. Construction planning and scheduling. Road drainage requirements. Economic analysis and costing. Transport systems and communication networks.

APPLIED DYNAMICS
Double session subject (84 hrs. lectures and tutorials).
Kinematics and dynamics of particles and rigid bodies in three-dimensional motion; fixed and moving reference frames; Newtonian dynamics; inertia tensor; Euler’s equations of motion; general motion of rigid bodies; dynamic analysis of mechanisms relativistic dynamics; Lagrangian dynamics and Hamilton’s principle; application to particles and rigid bodies; analysis of multi-degree of freedom dynamic systems.
DESCRIPTION OF SUBJECTS

SYSTEMS ANALYSIS
Double session subject (70 hrs. lectures and tutorials).
Signal analysis; stochastic processes; linear and non-linear systems; approximations representations and pertubations; system optimization; calculus of variations; linear programming and hill climbing techniques; models and simulation; introduction to dynamic programming.

ENGINEERING MANAGEMENT
Double session subject (56 hrs. lectures and tutorials).
Theory and practice of organization and industry; introduction to cost accounting; general principles of law of contract; industrial relations.

THERMODYNAMICS III
Double session subject (56 hrs. lectures and tutorials).

FLUID MECHANICS III
Double session subject (70 hrs. lectures and tutorials).
Compressible fluids; Navier-Stokes and energy equations; boundary layer theory. Radial and axial flow machinery, design considerations, cavitation.

The following is for the Metallurgy Course only:

DESIGN M
Double session subject (84 hrs. lectures and drawing office practice).
Moving loads: influence lines for beams; permissible stresses; design of welded plate web girder; project.

The following are for the Mining Engineering Course only:

GEOLGY FOR ENGINEERS
Double session subject (56 hrs. lectures, tutorials and laboratory work).
DESCRIPTION OF SUBJECTS

facilities, hydrogeological investigations. Laboratory: The identification of common rock-forming minerals and rock types. The examination of rocks in the hand specimen to establish their relative strength, resistance to abrasion and chemical stability. The preparation and interpretation of geological maps and sections.

MINING ENGINEERING I

Double session subject (112 hrs. lectures and tutorials).


MINING AND MINERAL PROCESS ENGINEERING

Double session subject (56 hrs. lectures and tutorials).


ENGINEERING SURVEYING

Double session subject (42 hrs. lectures, tutorials and field work, plus survey camp).


Part B: Levelling (other methods). Linear measurement (electronic). Applications of survey techniques: control surveys, provision of information for design, setting out engineering works, etc. Outline of photogrammetry.

GEOLOGY FOR MINING ENGINEERS

Double session subject (84 hrs. lectures, tutorials and laboratory).

Occurrence and structures of igneous rocks, consolidation of magmas, igneous rock classification. Thermal and regional metamorphism. Composition and

MINING ENGINEERING II

Double session subject (140 hrs. lectures and tutorials).

Mining atmosphere, gas, dust, spontaneous combustion, explosions, fires, mine rescue and recovery organization. Mine ventilation properties of mine air fans, air flow, shock losses, thermodynamics. Transport of materials, flow of bulk solids, chute and storage design, conveyors, tracked and trackless transport, head frames, shaft conveyances, wire ropes, oil and slurry pipe lines. State of stress in earth's crust, subsidence, strata control, rock bursts, physical properties of rocks.


MINERAL PROCESSING I

Double session subject (84 hrs. lectures and tutorials).


MINE SURVEYING AND CONTROL ENGINEERING

Double session subject (28 hrs. lectures and tutorials).

Surveying techniques in the development and exploitation of mineral resources and the assessment of mineral properties. Tunnel surveys; transfer of azimuth; bore hole surveying; stope and ore reserves surveys; special mine surveys; mine survey office organization. Stereographic projection. Organization and programming of mining methods or techniques. Method of production control and grade control. Mathematical models of mining methods.

MINERAL INDUSTRY ELECTIVE PROJECT

Double session subject (56 hrs. lectures and tutorials).

Elective may include mineral process engineering; statistics; sampling and valuation; rock mechanics; mine and treatment plant design; minerals and petroleum production engineering; selected courses from other Schools.
DEPARTMENT OF ECONOMICS

All subjects require three class hours per week.

ECONOMICS I
(First session subject)

A general introduction to the study of Economics. Emphasis will be placed on:
1. Differences between economic systems.
2. The structure of the Australian economy.
3. Economic analysis and its application in the study of the micro-unit in an exchange system.

REFERENCE BOOKS

ECONOMICS II
(Second session subject)

This subject continues the general introduction to the discipline, extending it to the analysis of the macro-unit, economic growth and international economics, and leads to the study of some central problems of Australian economic policy.

REFERENCE BOOKS
As for Economics I, plus:

MICROECONOMICS III
(First session subject)

Theory of consumer demand — utility, indifference curve, analysis, elasticity: theory of production — production functions, stages of production, law of diminishing marginal returns, returns to scale; theory of costs — isoquants and isocosts, optimum factor combinations, nature and type of costs; prices and output in perfect competition — resource allocation and economic efficiency, short run and long run equilibrium; price and output in imperfect competition — monopoly, price discrimination, monopolistic competition; theory of factor pricing — demand for factors, supply of factors, economic rent, equilibrium in factor markets; economic interdependence — general and partial equilibrium, input-output analysis.

REFERENCE BOOKS

SUPPLEMENTARY REFERENCES
A.E.A. Readings in Price Theory. Irwin.
MICROECONOMICS III HONOURS
(First session subject)
This subject covers the same ground as the pass course, but in more depth. Extra reading and assignments will be required.

MICROECONOMICS IV
(Second session subject)
Prices in oligopoly — kinked demand curve, price leadership, limit pricing and barriers to entry, marginal cost pricing, full cost pricing: goals of oligopolists — profit maximization, sales maximization, growth maximization, alternatives to maximization: implications of market structure, concentration, size of firms, non-price competition, restrictive trade practices, countervailing power, research and development, uncertainty and interdependence: growth of firms — diversification, mergers, zones of stability: economic progress — dynamic v. static performance, sources of growth, innovation, planning, and technological change.

REFERENCE BOOKS

SUPPLEMENTARY REFERENCES
A.E.A. Readings in Price Theory. Irwin.
Bain, J. Barriers to New Competition. Harvard, U.P.
Mason, E. Corporation and Modern Society. Atheneum.

MICROECONOMICS IV HONOURS
(Second session subject)
This subject covers the same ground as the pass course but in more depth. Extra reading and assignments will be required.

MACROECONOMICS III
A basic study of theoretical macroeconomics concerned with: interactions between markets for money, products and labour; theories of investment and interest rates; the multiplier and its empirical applications; internal and external balance; theories of inflation; and theories of business cycles and economic growth.

REFERENCE BOOKS
SUPPLEMENTARY REFERENCES
Davidson, P. and Smolensky, E. Aggregate Supply and Demand Analysis.
Evans, M. K. Macroeconomic Activity.

MACROECONOMICS III HONOURS
(First session subject)
This includes Macroeconomics III plus additional reading and assignments.

MACROECONOMICS IV
(Second session subject)
A study in the application of basic macroeconomic theories, principally concerned with the Australian economy. It includes the analysis of the Australian national accounts, input-output relations, and the flow-of-funds accounts; intertemporal and international comparisons of real income; the national debt and debt management; monetary theory; and money, banking and the capital market of Australia.

REFERENCE BOOKS
Works by Peterson, Williams, Nevile and Haveman as prescribed for Macroeconomics III, plus:

MACROECONOMICS IV HONOURS
(Second session subject)
This includes Macroeconomics IV plus additional reading and assignments.

STATISTICAL METHODS I
(First session subject)
Basic concepts — tabular and graphical methods of presenting data; frequency distributions — their formation and types; measures of central tendency, dispersion and skewness; Probability — discrete and continuous; laws of probability; probability distributions, expectations, random variables: Testing hypotheses, formation of hypotheses, measures of reliability and significance; standard error, confidence limits, Type I and Type II errors, goodness of fit.

REFERENCE BOOK

SUPPLEMENTARY REFERENCES

STATISTICAL METHODS II
(Second session subject)
Simple regression analysis, scatter diagrams, analysis of variance, correlation coefficients; Index numbers — concept, types, index number construction, index numbers in practice; Time series analysis-components of time series, trend line, moving average; Sampling — population and samples, size of sample, stratified sampling, practical problems.
REFERENCE BOOK

SUPPLEMENTARY REFERENCES

QUANTITATIVE METHODS III
(First session subject)
Introduction to research methods and procedures: Multiple regression analysis — theory, economic applications, problems in empirical regression analysis: Introduction to decision theory — inventory problems, replacement problems.

REFERENCE BOOKS

QUANTITATIVE METHODS IV
(Second session subject)
Input-output analysis — theory, economic applications: Linear programming — theory, economic applications, relation to various types of allocation problems.

REFERENCE BOOK

SUPPLEMENTARY REFERENCES

INTERNATIONAL ECONOMICS
(First session subject)
Structure and pattern of international trade and income levels: Analysis of resource allocation — comparative advantage, Heckscher-Ohlin model, rent-for-surplus theory; Gains from trade — welfare arguments: Growth in factors of production — Rybczynski theorem; Technical progress: Transfer of capital, technology and labour: Tariff policy — optimum tariff, tariff structure and rates, tariff v. subsidy: Balance of Payments policy — elasticity and absorption ap-
DESCRIPTION OF SUBJECTS

proach, exchange rates, quantitative controls: Internal and external balance: Trends in trade, investment, and finance — institutions, trade and investment policies, economic integration, international monetary developments. Australian international economic relations will be studied.

REFERENCE BOOKS

SUPPLEMENTARY REFERENCES

COMPARATIVE ECONOMIC SYSTEMS
(First session subject)
Classification of economic systems. A priori arguments about the relative efficiency and non-economic implications of centralised and decentralised economic systems. The structure, conduct and performance of the Soviet, Yugoslav, Japanese and French economies.

REFERENCE BOOKS

SUPPLEMENTARY REFERENCES

NATURAL RESOURCE ECONOMICS
(First session subject)
A study of the role of natural resources in the economic process and of the problems associated with the use and development of natural resources. Reference will be made to current problems in resource use. Topics to be studied include — definition and classification of natural resources, their social significance: How natural resources become involved in the economic process, the theory of property rights, the role of property: the use of natural resources by individuals and by society: Natural resources in relation to economic growth and development, classical doctrine of natural resource scarcity, impact of technological change.
REFERENCE BOOK

SUPPLEMENTARY REFERENCES.

INDUSTRIAL ECONOMICS
(First session subject)
A study of factors affecting production and productivity, with particular regard to industrial development in Australia. The emphasis will be on the industry, the economic sector, and the regional and national organisation of industry, as they affect the decisions relating to employment, investment, innovation, output, and income distribution.

REFERENCE BOOKS

SUPPLEMENTARY REFERENCES

ECONOMIC POLICY
(Second session subject)
This is a study of the objectives of macroeconomic policies, the relations between objectives, and the use of monetary, fiscal and other instruments of policy. Particular attention is given to policies concerned with prices, em-
ployment and incomes in Australia and the main instruments available for their implementation.

REFERENCE BOOKS

SUPPLEMENTARY REFERENCES

ECONOMIC POLICY HONOURS
(Second session subject)
This includes Economic Policy plus additional reading and assignments.

ECONOMIC DEVELOPMENT
(Second session subject)
A study of conditions and policies affecting economic development with particular regard for differences between experiences in selected low income countries: Analysis of differences and rates of change in income levels, socio-economic structures and values, and population growth; National policies and plans for different levels of development - infra-structure requirements, technological and manpower requirements, developments in agriculture and industry, internal and external market developments, monetary and fiscal structures, population policy; Project evaluation and implementation; National, inter-regional and inter-sectoral balance and imbalance; International aspects of development - inter-government operations, bilateral and multi-lateral agencies, effective and for development. Students will be required to make a detailed study of any low income country.

REFERENCE BOOKS

SUPPLEMENTARY REFERENCES
DESCRIPTIO.


REGIONAL ECONOMICS
(Second session subject)

The nature of the regional problem in Australia and overseas:

1. Inter-regional disparities in unemployment, income and growth. The effect of such disparities on achievement of national macroeconomic goals.


Some applications of macroeconomic theory at the regional level: Regional accounts, regional input-output analysis, regional growth models, regional multipliers, inter-regional trade theory, regional equilibrium analysis.

Australian and European policies for control of spatial distribution of economic activity. Effectiveness of such policies.

REFERENCE BOOKS


SUPPLEMENTARY REFERENCES


MATHEMATICAL ECONOMICS
(Second session subject)


REFERENCE BOOK


SUPPLEMENTARY REFERENCES


OPERATIONS RESEARCH
(First session subject)

Linear, non-linear and dynamic programming. Theory of games.
TEXTBOOK

TRANSPORT ECONOMICS
(Second session subject)
This subject will be a study of the economics of transportation based on the geographical analysis of transport systems, including the following aspects:
1. Distance, movement and location theory.
2. Network location, structure and measurement: terminal location, morphology.
3. Rating, spatial patterns and intermodal competition.
4. Movement, gravity and interaction models.
5. Intra-urban transport, traffic and land use.
6. Transport and economic development.

REFERENCE BOOKS

SUPPLEMENTARY REFERENCES

ADVANCED ECONOMIC ANALYSIS
(Double session subject)
This subject, together with the completion of the thesis, occupies the final year of the full-time Honours degree course. It consists of six parts, each of which normally requires 21 class hours. The whole amounts to a survey of advanced economic theory; it normally includes advanced macro- and micro-economics, cyclical fluctuations, economic growth, monetary theory, international economics, welfare, and history of economic thought.

120
DEPARTMENT OF ELECTRICAL ENGINEERING

1. Subjects are listed in alphabetical order, i.e.
   - Circuit Theory 1, 2, 3, 4, 5
   - Computer Systems Engineering 1, 2
   - Control 1, 2, 3
   - Electrical Properties of Materials 1, 2
   - Electronics 1, 2, 3, 4, 5
   - Electronics and Circuit Theory 1, 2
   - Energy Conversion 1, 2
   - Machines (and Transformers) 1, 2, 3, 4
   - Power Systems

2. Prerequisites: Engineering 2 subjects are prerequisites for Engineering 3 subjects, and Engineering 3 subjects are prerequisites for Engineering 4 subjects.

3. Assessment: Composite (based on exams, tests, assignments and laboratory reports) for a single subject or a group of subjects in a particular year or stage.

CIRCUIT THEORY 1
(First session subject)
Electromagnetic fields and circuit concepts, Kirchhoff's laws and elementary circuit analysis. Responses of elementary circuits, introduction to sinusoidal steady state.

TEXTBOOK

CIRCUIT THEORY 2
(First session subject)
Basic network topology, mesh, nodal and cut set analysis, Laplace transform methods and generalised analysis, sinusoidal steady state.

TEXTBOOK
As for Circuit Theory 1.

CIRCUIT THEORY 3
(Second session subject)
State space analysis, two port networks, network theorems, signal flow graphs, transmission lines, Fourier series and integral.

TEXTBOOK
As for Circuit Theory 1.

CIRCUIT THEORY 4
(First session subject)

TEXTBOOK

CIRCUIT THEORY 5
(Second session subject)
Two-port network analysis, filters, methods of network analysis, lattice networks.

TEXTBOOK
As for Circuit Theory 4.
DESCRIPTION OF SUBJECTS

COMPUTER SYSTEMS ENGINEERING 1
(First session subject)
Switching algebra, combinational and sequential logic. Number systems and codes. Computer structure.

TEXTBOOK

COMPUTER SYSTEMS ENGINEERING 2
(Second session subject)
Digital circuit implementation, logic systems, analogue to digital and digital to analogue converters, analogue and hybrid computation.

TEXTBOOK
No set text.

CONTROL 1
(Second session subject)
Analysis of linear systems, frequency response, stability, design procedure. Control system components, transducers, measurements. Computing and simulating systems.

TEXTBOOK

CONTROL 2
(First session subject)
Controllability and observability, stability of linear servo mechanisms, sensitivity and error analysis, synthesis of linear servo mechanisms.

TEXTBOOK

CONTROL 3
(Second session subject)
Computers in control, non-linear control systems, signal modulated systems, optimal control.

TEXTBOOK
As for Control 2.

ELECTRICAL PROPERTIES OF MATERIALS 1
(First session subject)
Ionisation and decay processes; electric breakdown in solid, liquid and gaseous dielectrics, in uniform and non-uniform fields.

TEXTBOOK

ELECTRICAL PROPERTIES OF MATERIALS 2
(Second session subject)
Generation and measurement of high voltages for testing purposes. Non-destructive insulation test techniques. High-voltage and high-frequency dielectric loss measurements, discharge measurements.

TEXTBOOK
As for Electrical Properties of Materials 1.

ELECTRONICS 1
(Second session subject)
TEXTBOOK

ELECTRONICS 2
(First session subject)

TEXTBOOK

ELECTRONICS 3
(Second session subject)
Charge-control models for switching operation of transistors. Switching circuits. Basic digital circuits, discrete and integrated, and their applications.

TEXTBOOK

ELECTRONICS 4
(First session subject)

TEXTBOOK

ELECTRONICS 5
(First session subject)
Guided electromagnetic waves, waveguides and transmission lines. Elements of microwave networks, cavity resonators, directional couplers, isolators, circulators and switches. Radiation and antennas. Antenna arrays, gain, directivity and bandwidth.

TEXTBOOK

APPLIED ELECTRICITY I
(Second session subject)
A course for metallurgists and engineers not intending to follow electrical engineering as a profession, presenting selected topics from circuit theory, electronic devices and their applications in linear and digital circuits, electromagnetic devices, and instrumentation systems.

TEXTBOOK
ENERGY CONVERSION 1  
(Double session subject)  
Energy in electric and magnetic fields. Electromechanical energy conversion, reactors, measuring transducers.  

TEXTBOOK 
No set text.  

ENERGY CONVERSION 2  
(First session subject)  
Mutually coupled circuits, transformers, singly and multiply excited circuits. Introductory d.c. and a.c. machines.  

TEXTBOOK 
No set text.  

MACHINES AND TRANSFORMERS 1  
(Second session subject)  
Principles of steady state and transient performance of d.c. and cross field machines and transformers.  

TEXTBOOK  

MACHINES AND TRANSFORMERS 2  
(First session subject)  
Steady state performance of polyphase synchronous and induction machines. Static convertors.  

TEXTBOOK  

MACHINES 3  
(Second session subject)  
Performance of commutator and single phase induction machines. Introduction to matrix methods and transformation techniques in machine analysis.  

TEXTBOOK  

MACHINES 4  
(First session subject)  
Electrical transient and dynamic performance of machines and applications of solid state devices to machine control.  

TEXTBOOK  
As for Machines 3 and Machines and Transformers 1.  

POWER SYSTEMS  
(Second session subject)  
Properties of multi-conductor transmission systems: symmetrical component analysis; system stability, surges, protection, economic optimisation.  

TEXTBOOK  
DEPARTMENT OF ENGLISH

In 1972 the Department of English will offer subjects in English I, II and III Pass and English II, III and IV Honours in the B.A. degree course, and also in the first year of the M.A. Pass degree course.

Each subject comprises at least 28 hours (2 hours per week per session) of lectures, seminars and tutorials. Some subjects are optional. In principle, students may choose those subjects that interest them most. Not all subjects, however, will be offered at both day and evening times. Furthermore, the Head of the Department of English reserves the right to place a limit on numbers of particular subjects, and to advise students on the subjects best suited to their qualifications and purposes. As many of the subjects described in the following pages will be offered as can be with staff available.

Pass students are required to take FOUR, and Honours students SIX subjects in each year. Honours students, and Pass students following a three-year sequence in English, are required to take at least one of the following subjects: Shakespeare's History Plays; and/or Shakespeare's Tragedies. In addition to those subjects designated as compulsory, Honours students must take at least one of the following: Old English; Chaucer's Canterbury Tales; Medieval English Literature; Medieval Dream Poetry.

In all subjects, students will be required to hand in written assignments and sit for examinations during or at the end of each session. English IV Honours students are also required to write a thesis of 12,000-15,000 words on a topic approved by the Head of the Department.

ENGLISH I — FIRST SESSION

Early Forms of Narrative (compulsory)

TEXTBOOKS

Modern English
An introduction to present day English, its sound system, vocabulary and structure.

TEXTBOOKS

Twentieth-Century Fiction
Selected short stories and novels by Conrad, Joyce, Cary, Faulkner and White.

TEXTBOOKS
Joyce. Dubliners; A Portrait of the Artist as a Young Man. Penguin.
Cary. Mister Johnson; The Horse's Mouth. Penguin.
White. The Burnt Ones; Riders in the Chariot. Penguin.

ENGLISH I — SECOND SESSION

Introduction to Chaucer’s Language (compulsory)

TEXTBOOK
DESCRIPTION OF SUBJECTS

Twentieth-Century Drama
Selected plays by playwrights from O’Neill to Orton.

TEXTBOOKS
Beckett. Endgame; Waiting for Godot. Faber.
Pinter. The Caretaker; The Dumb Waiter. Methuen.
Orton. Loot. Faber.

Twentieth-Century Poetry
Selected poems by English, American and Australian poets from Yeats to Hope.

TEXTBOOKS
Modern Poetry, ed. Mack, Dean and Frost. 2nd ed. Prentice-Hall.

ENGLISH II — FIRST SESSION

Victorian Fiction (compulsory)
The novels of Dickens, Thackeray and George Eliot.

BASIC READING
Dickens. Pickwick Papers; Hard Times; Our Mutual Friend.
Thackeray. Vanity Fair; Henry Esmond.
George Eliot. The Mill on the Floss; Middlemarch.
Students may use any unabridged edition.

Victorian Poetry
Selected poems by Tennyson, Browning, Arnold, Swinburne and Hardy.

RECOMMENDED TEXTS:

Australian Fiction to 1920

BASIC READING
Clarke. For the Term of his Natural Life. Pacific.
Lawson. Best Stories, ed. Mann, C. Angus and Robertson.
Furphy. Such is Life. Angus and Robertson.

Old English
An introduction to the language, literature and culture of the Anglo Saxons.

TEXTBOOKS
Chauncer's Canterbury Tales
TEXTBOOK

ENGLISH II — SECOND SESSION
The Poetry of Wordsworth, Byron and Keats (compulsory)
RECOMMENDED TEXTS:

Shakespeare's History Plays
Richard III; King John; Richard II; Henry IV (both parts); and Henry V.
Students are advised to use the separate volumes of the New Shakespeare (C.U.P.), or the New Penguin Shakespeare.

Nineteenth-Century American Literature
Selected novels by authors from Cooper to James.
BASIC READING
Cooper. The Last of the Mohicans. Signet.
Poe. The Fall of the House of Usher. Signet.
Twain. Huckleberry Finn; Life on the Mississippi. Signet.

Australian Fiction after 1920
BASIC READING
Prichard. Coonardoo. Angus and Robertson.
Herbert. Capricornia. Angus and Robertson.
Stead. Seven Poor Men of Sydney. Pacific.
White. The Aunt's Story; The Tree of Man; The Vivisector. Penguin.

Old English Prose and Verse
Old English is a prerequisite for this subject.
TEXTBOOKS

Medieval English Literature
The romance, lyric and drama.
TEXTBOOK
DESCRIPTION OF SUBJECTS

ENGLISH III — FIRST SESSION

The Novel in the Eighteenth Century (compulsory)

BASIC READING
Defoe. Robinson Crusoe; Moll Flanders.
Richardson. Pamela; Clarissa.
Sterne. Tristram Shandy.
No text books are prescribed.

Eighteenth Century Prose

Selected writings by Swift, Johnson and Boswell.

Students are advised to use the following editions: for Swift, Gulliver’s Travels and Other Writings, ed. Quintana (Modern Library College Edition); for Johnson, Rasselas, Poems and Selected Prose, ed. Bronson (Holt, Rinehart and Winston); and for Boswell, Life of Johnson, 2 vols. (Everyman).

Satire

The study of a literary mode.

BASIC READING
Sutherland, J. English Satire. C.U.P.
Hodgart, M. Satire. World University Library.

The Metaphysical Poets

Donne, Herbert, Crashaw, Vaughan and Marvell.

TEXTBOOK

American Poetry

Selected poems by Whitman, Dickinson, Robinson, Frost, Williams, Pound, Cummings, Lowell and Ginsberg.

TEXTBOOKS

ENGLISH III — SECOND SESSION

The Poetry of Milton, Dryden and Pope (compulsory)

TEXTBOOKS
Sutherland, J. A Preface to Eighteenth Century Poetry. O.U.P.
DESCRIPTION OF SUBJECTS


The Comedy of Manners
BASIC READING

Medieval Dream Poetry
Poems by Chaucer and the Scottish Chaucerians.

TEXTBOOK

Shakespeare's Tragedies
Macbeth; Hamlet; Othello; King Lear; Timon of Athens; Anthony and Cleopatra; Coriolanus.

Students are advised to use the separate volumes of the New Arden Shakespeare (Methuen), the New Shakespeare (C.U.P.), the Signet Classics or The New Penguin Shakespeare.

Elizabethan Drama
Selected plays by Lyly, Peele, Kyd, Marlowe, and Greene; Shakespeare's early plays, comedies and "Problem Plays."
For Honours students only.

TEXTBOOKS
Minor Elizabethan Drama. 2 vols. Everyman.
Alexander's (Collins) or Sisson's (Odhams) edition of Shakespeare's plays, or the separate volumes of the series listed under Shakespeare's Tragedies above.

ENGLISH IV (HONOURS) — FIRST SESSION

Critical Practice and Theory
A. Selected critical essays on a number of major literary texts. The essays will be chosen to illustrate a variety of critical approaches. The list of texts will include Shakespeare's Hamlet, Othello and King Lear, Donne's Songs and Sonnets, Swift's A Tale of a Tub and Sterne's Tristram Shandy.

Special Period 1660-1700
A study of selected works by Hobbes, Butler, Bunyan, Dryden, Locke, Pepys, Aphra Behn, Rochester and Otway.

Jacobean Drama
Selected plays by Jonson, Chapman, Marston, Tourneur, Webster, Middleton, Beaumont and Fletcher, Massinger.

Literary Scholarship
A study of research methods, with special reference to textual problems in Shakespeare.
DESCRIPTION OF SUBJECTS

Fourteenth-Century Literature
A study of selected works by Chaucer and his contemporaries.

BASIC READING

ENGLISH IV (HONOURS) — SECOND SESSION
Critical Practice and Theory
A. Selected essays on a number of major texts. The list of texts will include Coleridge's The Ancient Mariner, Shelley's lyric poems, Melville's Moby Dick, Dickens' Little Dorrit, Eliot's The Waste Land and Faulkner's The Bear.
B. Selected essays on critical theory by Matthew Arnold, Henry James, T. S. Eliot, I. A. Richards, F. R. Leavis, Empson, Wellek, Frye and Lionel Trilling.

Students are advised to purchase Criticism: The Major Texts, ed. W. J. Bate (Harcourt Brace), Five Approaches to Literary Criticism, ed. Wilbur Scott (Collier), Theory of Literature by Warren and Wellek (Penguin), Principles of Literary Criticism and Practical Criticism by I. A. Richards (Routledge), Revaluation by F. R. Leavis (Penguin), Seven Types of Ambiguity by Empson (Peregrine), Beyond Culture by Lionel Trilling (Penguin), and Crews' Pooh Perplex (University of California paperback).

Special Period, 1700-1744
A study of selected works by Steele, Swift, Addison, Young, Gay, Pope and Hume.

Fourteenth-Century Literature
A study of selected works by contemporaries of Chaucer.

BASIC READING
Pearl, Sir Gawain and the Green Knight, ed. A. C. Cawley. Everyman.

Renaissance Poetry
This subject is designed to build upon the one in sixteenth-century poetry which students will have studied in English III. Although the works of individual poets are prescribed, the subject of study will be not authors, but the principal modes, themes and conventions of sixteenth and seventeenth-century English poetry.

TEXTBOOKS
Donne, J. Poetical Works. O.U.P.
DEPARTMENT OF GENERAL STUDIES

It is a requirement of all undergraduate courses* that the programme of study includes certain subjects of a general nature in addition to those vocational courses in which the student must specialise.

The normal general studies requirements for full-time courses of at least four years are four components of 42 hours' duration, and for part-time courses and for three-year full-time courses, three components of 42 hours' duration.

The General Studies programme at Wollongong University College consists of fourteen-week units, each of which in turn consists of fourteen lectures and eight tutorials. In a part-time course or a three-year full-time course the number of such units to be taken is six.

The programme is designed to cover various aspects of the modern world, its thought and artistic expression. The units to be offered in 1971 are:

- Our Living Language and the Modern Writer
- Aspects of Modern Psychology, Part I
- Aspects of Modern Psychology, Part II
- Contemporary History
- Architecture for Today
- Aspects of Industrial Society
- Population Geography
- Art in the Twentieth Century
- Developments in Present Day Music

For honours students an advanced elective is offered:
- Asia in the Twentieth Century.

OUR LIVING LANGUAGE AND THE MODERN WRITER
(First session subject)

The course is made up of both language and literature. It first takes a brief look at language and communication in the present-day world and the nature and development of Modern English; then considers the differing languages of science and literature and the problem of “the two cultures” by way of introduction to a study of some significant works by modern writers.

TEXTBOOKS

Camus, A. *The Outsider*. Pelican.
Golding, W. *Lord of the Flies*. Faber.
Potter, S. *Our Language*. Pelican.
Snow, C. P. *The Two Cultures and a Second Look*. Mentor.

ASPECTS OF MODERN PSYCHOLOGY

This course introduces students to psychology through some of its major areas. The course aims not only to impart information about these areas of modern psychology but also to be sufficiently stimulating as to encourage further study.

PART I (First Session)

1. Individual Differences
   The nature of psychological measurement, the structure of intelligence, heredity and environment.

2. Motivation and Emotion
   The concepts of drive, motivation and activation. Environmental influences, conflict and frustration. Cross cultural comparisons and laboratory studies.

* Except those for the Bachelor of Arts Degree.
PART II (Second Session)

3. Learning

Principles of conditioning, classical (respondent) conditioning and instrumental (operant) conditioning. Learning by trial-and-error vs. learning by 'insight'. Problem solving and thinking.

4. Perception

Sensory processes and the psychophysical methods. Phenomena of perception, e.g. constancy, illusions, after-effects. Environmental influences, e.g. space perception. Social influences. Sensory perceptual deprivation.

TEXTBOOK


REFERENCE BOOKS


CONTEMPORARY HISTORY

(First session subject)

Contemporary History takes problems that are actual in the world today, and examines them from the time they first take recognisable shape. It deals with the world scene after World War II, the emergence of Asia, the changing face of Communism, the problems of colour, the thermonuclear stalemate, and the development of supra-national and international organisations.

TEXTBOOKS


REFERENCE BOOKS

Crozier, B. Turmoil in South East Asia, Penguin.
Rees, D. The Age of Containment, Macmillan.

ARCHITECTURE FOR TODAY

(First session subject)

This course is designed to demonstrate that modern architecture is a mirror of our times, just as the architecture of any earlier age is a mirror of that age. The course will be focused on "the walls around us" now, but it will necessarily include reference to the architectural styles of earlier ages.

TEXTBOOKS

Pevsner, N. An Outline of European Architecture. Pelican
REFERENCE BOOKS
Cichy, B. Architecture of the Ancient Civilisations in Colour. Thames and Hudson.

POPULATION GEOGRAPHY
(Second session subject)
This course is intended to present a world picture of population, with emphasis on spatial differences of selected characteristics of population. It examines population growth and patterns of density; the age and sex composition; cultural and economic determinants of population numbers and distribution; socio-economic evolution of mankind and urbanization; the balance of people and resources; the future pattern of population.

TEXTBOOKS
Wilson, A. Population Geography. N.A.P.
Zelinsky, W. A Prologue to Population Geography. Prentice-Hall.

REFERENCE BOOKS

ART IN THE TWENTIETH CENTURY
(Second session subject)
The course will begin a survey of the traditions obtaining in art in the nineteenth century, and then pursue such subsequent developments as the following: Cubism, Fauvism, Expressionism, Dada, Surrealism, Abstract Art, Abstract Expressionism, Post-Painterly Abstraction, Op Art, Pop Art, Minimum Art and Kinetic Art.

RECOMMENDED READING
Copplestone, E. Modern Movements In Art. Hamlyn.
Dorival, B. The School of Paris. Thames and Hudson.
Elgar, R. Picasso. Thames and Hudson.
Lucie-Smith, E. Art Movements Since 1945. Thames and Hudson.
Read, H. A Concise History of Modern Painting. Thames and Hudson.
Levey, M. A Concise History of Art. Thames and Hudson.

DEVELOPMENTS IN PRESENT DAY MUSIC
(Second session subject)
The course will seek to give an understanding and appreciation of twentieth century music by means of discussion and illustration. The main points to be dealt with are: recent developments in music; changing elements in music's vocabulary; the development of jazz; electronic music; the music of Asia and its influence on modern European music; and the making of music in Australia at the present time.

RECOMMENDED READING
DESCRIPTION OF SUBJECTS


ASPECTS OF INDUSTRIAL SOCIETY
(Second session subject)
A one-session subject which considers some of the social and economic aspects of industrial society. Topics to be discussed include the impact of industrial society on the individual, its effects on the quality of life, the complexity of social and economic institutions and organisations, automation and changing industrial technology, the problems of poverty in an affluent society and the causes and consequences of rapid social change.
There will be 1½ hours per week of lectures and seminars; a 1½ hours examination paper will be held at the end of the session.

TEXTBOOKS
Ben, J. Harmony and Conflict in Modern Society. McGraw-Hill.
As well as studying the above text books each student will be required to write a critical analysis of ONE of the books listed below. This analysis will then be presented and discussed at one of the seminars.
Ford, G. W. Automation: Threat or Promise. Law Book Company.
Harrington, M. The Other America.
Heilbroner, R. The Future as History. Grove.
Marcuse, H. One Dimensional Man. Sphere.
Reisman, D. The Lonely Crowd. Reisman.
Wright Mills, C. White Collar. Galaxy.

ASIA IN THE 20th CENTURY
(Double session subject)
Advanced elective for honours students only.
The course which runs for 28 weeks (42 hours) is a survey of the main problems in Asian history today commencing with a brief survey of Asia at the beginning of the 20th Century, the decline of the old imperialism after 1918, and the rise of Japan.
The course of World War II in the Pacific and its consequences are evaluated; economic, political, and social and foreign policy problems since 1945 are considered in relation to Japan, China, India, Pakistan and the nations of S.E. Asia. Particular reference is made to the new nationalism and its inter-action with communism, democracy and authoritarianism. The wars in Indo China and Korea are examined as type cases of new theories of warfare. Finally, Australia as an extension of Asia will be discussed.

TEXTBOOKS
Crozier, B. South East Asia in Turmoil. Penguin.
Wallbank, T. W. A Short History of India and Pakistan. Mentor.
DEPARTMENT OF GEOGRAPHY

Subjects for study in 1972.

In 1972 the Department of Geography will offer subjects in Geography I and II Pass, and Geography II Honours, and, Geography IIIA, IIIB, IIIC and IIIID Pass, and Geography IIIA and IIIB Honours and IV Honours in the B.A. degree course, and also Geography I and II in the B.Sc degree course.

All subjects for Geography I and II are compulsory. They comprise physical and human geography, in Geography I, and urban location and structure, quantitative methods, biogeography and regional geography, in Geography II. Geography II Honours consists of the Geography II Pass course plus additional and more advanced work in each subject, and one extra lecture/seminar per week.

In Geography III there are four subjects from which students choose two. In principle, students take the subjects that interest them most, and provision is also made for all four subjects to be studied. Thus the following combinations are offered at pass level:

- Geography IIIA (soils studies and geomorphology)
- Geography IIIB (agricultural geography and geography of transport systems)
- Geography IIIC (agricultural geography and geomorphology)
- Geography IIID (soil studies and geography of transport systems).

Geography IIIA and IIIB are for those students who wish to take all four subjects and Geography IIIC and IIID are for those who wish to combine a particular subject in economic geography. At least two separate days field tutorials in Geography I, three days field tutorials in Geography II and four days field tutorials in Geography III.

Not all lectures will be offered at both day and evening times. Also, the Head of the Department reserves the right to place a limit on the numbers of students in Geography I and II and in the subjects in Geography III, and to advise students on the subjects best suited to their qualifications and purposes. As many of the courses described in the following pages will be given as can be with the staff available. In all subjects students will be required to hand in written assignments and sit for examinations during or at the end of each session, Between 20 and 30 per cent of the final marks in each of the three years will be allocated to formal essays and written practical work. However, credit cannot be obtained for any subject or part, independently of the whole year's work.

GEOGRAPHY I — FIRST SESSION

Physical Geography

This subject is introductory to the main physical and biogeographical areas of geography, including studies on interdependencies in the context of Australian case studies. Practical work related to the lecture programme will be conducted throughout the session.

TEXTBOOKS
It is also necessary that students purchase one of these atlases:

REFERENCE BOOKS
DESCRIPTION OF SUBJECTS


GEOGRAPHY 1 — SECOND SESSION

*Human Geography*

The way in which people perceive and organise space differs in different places because of peculiar or unique factors. But there are general principles of human spatial behaviour which create regularities of organisation and structure. This introductory subject in human geography focusses on the relationships between spatial structure and process in order to emphasize patterns in space — industrial and urban patterns, population distribution patterns, transport network patterns, agricultural patterns and so on.

Laboratory sessions will introduce the student to techniques of analysis and the representation and interpretation of data.

TEXTBOOKS


REFERENCE BOOKS


**GEOGRAPHY II — SESSION I**

*Urban Location and Structure*

Urban centres vary from vast, sprawling agglomerations to compact, orderly country towns. This subject attempts to introduce the student to the hypotheses, theories and techniques of urban analysis which shed light on the organisation, structure and function of urban centres. There are four major discussion areas in the subject — intra urban spatial structure, urban mobility, people in the urban system and systems of cities.

**TEXTBOOK**


**REFERENCE BOOKS**


**Quantitative Methodology**

This subject attempts to introduce the student to some of the basic quantitative techniques which appear in the contemporary literature of locational analysis. Individual measures, techniques, etc. are oriented to particular examples drawn from current theory and/or practice. Emphasis is on the practical application of the techniques and on providing an adequate understanding of the techniques as they are employed in contemporary literature.
REFERENCE BOOKS

GEOGRAPHY II — SECOND SESSION

Biogeography
This subject adopts the ecological approach to the study of vegetation communities and considers the inter-relationship between climate, soil, vegetation and fauna. Systematic studies are made of plant requirements and processes in plant growth, and of the role of energy flow and biogeochemical cycling in the functioning of ecosystems; case studies are chosen from Australia and elsewhere, of vegetation communities in relation to climate, landforms and soil. The foregoing studies are further applied to a consideration of the principles of conservation.

TEXTBOOKS

REFERENCE BOOKS
Nye, R. H. and Greenland, D. J. The Soil Under Shifting Cultivation.

Regional Geography
This subject considers the regional concept and method in geography, and will deal with characteristics and attributes of regions, regional construction, economic regions, and detailed treatment of some specific regions of Southeast Asia and South Asia.

TEXTBOOKS
DESCRIPTION OF SUBJECTS


REFERENCE BOOKS

GEOGRAPHY II HONOURS — FIRST SESSION

*Urban Location and Structure*
This subject consists of Urban Location and Structure as prescribed for the pass course plus additional and more advanced work.

TEXTBOOKS AND REFERENCE BOOKS
As for the pass course in Urban Location and Structure.

*Quantitative Methods*
This subject consists of Quantitative Methods as prescribed for the pass course plus additional and more advanced work.

REFERENCE BOOKS
As for the pass course in Quantitative Methods.

GEOGRAPHY II HONOURS — SECOND SESSION

*Biogeography*
This subject consists of Biogeography as prescribed for the pass course plus additional and more advanced work.

TEXTBOOKS AND REFERENCE BOOKS
As for the pass course in Biogeography.

*Regional Geography*
This subject consists of Regional Geography as prescribed for the pass course plus additional and more advanced work.

TEXTBOOKS AND REFERENCE BOOKS
As for the pass course in Regional Geography.

For all Geography II Honours subjects the extra reading depends mainly on published papers.

GEOGRAPHY IIIA PASS — FIRST SESSION

*Soil Studies*
This subject consists of three parts:

1. Scientific background to soil studies to provide an introduction to (2) and (3) below.
DESCRIPTION OF SUBJECTS

2. Pedological studies with special reference to Australian great soil groups.
3. Applied studies in soil conservation, productivity, and land capability.

Practical work will be an integral part of this subject. It comprises a series of laboratory experiments in (1) above, and field tutorials and soil cartography in (2) and (3).

TEXTBOOKS


GEOGRAPHY IIA PASS — SECOND SESSION

Geomorphology

This subject consists of: processes in the evolution of hillslopes, stream channels and valley forms, shorelines, and arid features; lithological structural and temporal controls in landscape development; application of these principles to morphogenetic landscape studies with special reference to Australian examples.

TEXTBOOKS


REFERENCE BOOKS

DESCRIPTION OF SUBJECTS


GEOGRAPHY IIIB PASS — FIRST SESSION

Agricultural Geography

This subject deals with origin, dispersals, and basis of agriculture; models of location of agricultural activity; agricultural structure and typology; measurements of various agricultural attributes (intensity, productivity, concentration and diversification); sampling and representative farms in agricultural geography; regional comparisons in farm structure; studies in agricultural change; agriculture in selected countries; and diffusion of innovation in agriculture.

TEXTBOOK


REFERENCE BOOKS


DESCRIPTION OF SUBJECTS

GEOGRAPHY IIIB PASS — SECOND SESSION

Geography of Transport Systems

This subject will consider the significance of transport systems in structuring spatial patterns. Discussion will be focussed on a number of aspects including some of the following:

(i) Distance, movement and location theory.
(ii) Network location, structure and measurement; terminal location morphology.
(iii) Rating, spatial patterns and intermodal competition.
(iv) Movement, gravity and interaction models.
(v) Intra-urban transport, traffic and land use.
(vi) Transport and economic development.

TEXTBOOK

REFERENCE BOOKS

GEOGRAPHY IIIA HONOURS — FIRST SESSION

Soil Studies

This subject consists of Soil Studies as prescribed for the pass course plus additional and more advanced work in pedological and applied studies.

TEXTBOOKS
As for the pass course in Soil Studies plus:
REFERENCE BOOKS
As for the pass course in Soil Studies.
Additional reading for honours will depend mainly on published papers.

GEOGRAPHY IIIA HONOURS — SECOND SESSION

Geomorphology
This subject consists of Geomorphology as prescribed for the pass course plus additional and more advanced work in classical and contemporary geomorphic research.

TEXTBOOKS
As for the pass course in Geomorphology plus:

REFERENCE BOOKS
As for the pass course in Geomorphology.
Additional reading for honours will depend mainly on published papers.

GEOGRAPHY IIIB HONOURS — FIRST SESSION

Agricultural Geography
This subject consists of Agricultural Geography as prescribed for the pass course plus additional and more advanced work on current trends in agricultural geography.

TEXTBOOKS
As for the pass course in Agricultural Geography plus:

REFERENCE BOOKS
As for the pass course in Agricultural Geography.
Additional reading for honours will depend mainly on published papers.

GEOGRAPHY IIIB HONOURS — SECOND SESSION

Geography of Transport Systems
This subject consists of Geography of Transport Systems as prescribed for the pass course plus additional and more advanced work in urban transport and traffic, and in marine transport and port systems.

TEXTBOOKS
As for the pass course in Geography of Transport Systems plus:

REFERENCE BOOKS
As for the pass course in Geography of Transport Systems.
Additional reading for honours will depend mainly on published papers.
DESCRIPTION OF SUBJECTS

GEOGRAPHY IV HONOURS

(Double session subject)

It is proposed that Geography IV Honours shall consist of three major parts: the thesis, a general course for all students, and a special area course. Geography IV Honours will include an average of two lecture periods a week. Special seminars and field study will be arranged as required.

1. The thesis topic and title must be approved by the Head of the Department, and the length of the thesis shall not exceed 20,000 words.

2. A general course for all Honours IV students consisting of:
   (i) methods and sources in research.
   (ii) geographical thought and its development.

REFERENCE BOOKS

The reading for this course will largely involve published papers, but basic texts will be:

- Woolridge, S. W. and East, G. Spirit and Purpose of Geography. 1951.

3. Each student takes a course in the wider field within which his thesis topic is selected. A course will consist of one or more of the following topics (in a special case, a course may be given in another area, subject to facilities and staff being available).

Physical Geography

Principles and methods of soil survey; use of air photos in the prediction of soil type and soil properties; problems of soil definition and classification; developments in experimental pedology with reference to specific soil types and/or process; practical application of a system or systems of land capability classification (this would normally involve the consideration of a small, diverse area); influence of climate and soil on plant growth; nutrient cycles of specific ecosystems and attempts at their quantification; a geographical approach to the study of landforms, which is concerned primarily with the meaning of distribution of phenomena; historical analysis in landform studies; relationships between timeless and timebound concepts; systems theory in geomorphology; empiric and rational methods of investigation. Particular reference will be given to papers by Mackin: concepts of indeterminacy.

Economic Geography

Choice of farming systems and decision making models; spatial measurements in agricultural productivity; spatial equilibrium models; regional programming of agriculture; agricultural marketing systems; patterns of technological change in agriculture; intra-urban transport; intra-urban residential mobility; land value and residential locations; intra-urban retail and commercial structure; port morphology (in particular the application of factor analytic and/or Markov chain models to the structure of ports); port capacity (queuing models and the definition of optimal port capacities, simulation models); port hinterland systems.

REFERENCES

All topics references would be almost exclusively from journals and similar publications.
DEPARTMENT OF GEOLOGY

UNIVERSITY OF NEW SOUTH WALES

UNIT A. Introductory Geology, Crystallography, Mineralogy, Petrology.
First session subject (3 hrs. lectures and 3 hrs. practical per week).

Geology as a science, geological time, the earth in space, shape of the earth, astrogeology. Earthquakes and earth structure, orogenesis and epeirogenesis, and volcanoes. The geological cycle.

Crystallography: Crystal symmetry, crystal forms, crystal systems, stereographic projection, twinning.

Mineralogy: Occurrence, form and physical properties of minerals. Mineral classification of silicates. Descriptive mineralogy of the rock-forming minerals (essentially the silicates).

Economic Geology: Descriptive mineralogy of minerals of economic importance. Occurrence of ore deposits, coal and petroleum geology.

Petrology: Field occurrence, lithological characters, classification and structural relationships of igneous, sedimentary and metamorphic rocks.

Practical Work: Study of crystal models in clinographic and stereographic projection. Identification and description of common minerals and rocks in hand-specimens. At least one field tutorial.

UNIT B. Physical Geology, Palaeontology and Stratigraphy.
Second session subject (3 hrs. lectures and 3 hrs. practical per week).


Stratigraphy and Palaeontology: Basic principles of stratigraphy. Introductory palaeontology, especially the morphology of the main invertebrate animal and plant phyla. The geological history of the Australian continent and more specifically that of the Sydney Basin and New South Wales.

Practical Work: Recognition and description of examples of important fossil groups and their use in stratigraphy. Interpretation and preparation of geological maps and cross-sections. Map reading and the use of simple geological instruments. At least one field tutorial.

TEXTBOOKS
For Unit A and Unit B.
OR

Wollongong Sheet Geological Map. 1:250,000, Mines Dept., N.S.W.

REFERENCE BOOKS
Mason, B. and Berry, L. G. *Elements of Mineralogy. Freeman, 1968.
DESCRIPTION OF SUBJECTS


* The purchase of these books is suggested for students who intend to proceed to later units in Geology.

GEOLaGY IIW

UNIT A. Crystallography, Crystal Chemistry and Mineralogy.
First session subject (2 hrs. lectures and 4 hrs. practical per week).
Practical: A laboratory study of the optical properties of minerals using the petrological microscope.
Economic Minerals: The application of the principles of crystal chemistry to the following mineral classes: native elements, sulphides, oxides, halides, carbonates, sulphates and phosphates.
Practical: A study of economic minerals in hand-specimen.
Silicate Minerals: The application of the principles of crystal chemistry to, and a study of, the physical and chemical properties of the silicate minerals.
Practical: A study of silicates in hand-specimen and thin-section.

TEXTBOOKS
Mason, B. and Berry, L. Elements of Mineralogy. 1st ed. Freeman, 1968.

REFERENCE BOOKS

UNIT B. Petrology.
Second session subject (2 hrs. lectures and 4 hrs. practical per week).
Igneous: Classification of rocks — characteristics and classification of igneous rocks. Petrochemical calculations. Variations in associated igneous rocks. The consolidation of magma and a study of some synthetic silicate systems. Reaction series in igneous rocks. Some igneous rock associations.
Practical: Metamorphic rocks in hand-specimen and thin-section.
Sedimentary: Composition of sediments. Textures of clastic rocks. Textures of
carbonate rocks. Classification of sedimentary rocks. Description of main groups of sedimentary rocks. Diagenesis.

**Practical:** Study of sediments in hand-specimen and thin-section.

**TEXTBOOK**

**REFERENCE BOOKS**

**UNIT C. Palaeontology, Stratigraphy and Sedimentation.**

First session subject (3 hrs. lectures and 3 hrs. practical per week).

**Palaeontology:** Taxonomy, evolution, species concepts. Systematic treatment of the more important invertebrate and plant groups — morphology, classification, phylogeny, ecology, geological distribution. Study of demonstrations to illustrate the lecture course.

**Stratigraphy and Sedimentation:** Minerals of sedimentary rocks, Particle size, frequency and cumulative diagrams, measures of central tendency, sorting skewness, kurtosis. Particle shape and surface texture. Mass and vectorial properties of sediments, grain fabric. Sedimentary processes, Diagenesis. Pourbaix diagrams. The stratigraphy of selected areas in Australia.

**TEXTBOOKS**
(Only recommended for students not proceeding to further geology courses).

**REFERENCE BOOKS**

**UNIT D. Elements of Geological Mapping.**

Second session subject (1 hr. lectures, 1½ hrs. practical per week and up to a total of 10 days field work).

**Course Description:** Introductory lecture and practical course-work. Field mapping tutorial, held during a vacation. Students will map in detail the geology of a selected area. Map compilation and progress reports on each day's work with final interpretation of results in the laboratory tutorials after completion of the field tutorial.

**REFERENCE BOOKS**
DESCRIPTION OF SUBJECTS

GEOL OGY IIIW
It should be noted that not all units will be offered in any one year. A list of units on offer can be obtained from the Head of the Department.

UNIT A. Crystallography, Mineralogy, Igneous and Metamorphic Petrology. First session subject (2 hrs. lectures and 4 hrs. practical per week).

Optical Crystallography: Oil immersion techniques and mineral determination dispersion in refractive index liquids. The universal stage, feldspar determination, location of vibration axes, optic axes and 2V measurement, determination of extinction angles.

X-ray Mineralogy: Theory and practice of X-ray instrument techniques, powder photographs, cell dimensions.


Practical: Determination of unknown mineral grains by immersion techniques. Exercises involving use of the universal stage. Determination of crystal class and cell dimensions from powder photographs. The study of igneous and metamorphic rocks and rock suites in hand-specimen and thin-section.

TEXTBOOKS

REFERENCE BOOKS

UNIT B. Geophysics and Statistical Methods in Geology. First session subject (4 hrs. lectures and 2 hrs. tutorials or practical per week).

Geophysics: Geodesy — study of the shape of the earth, and its gravitational field. Seismology — study of natural (and artificial) earthquake phenomena, and their relation to the structure of the earth and its properties. The earth's near atmosphere. Geomagnetism and palaeomagnetism. The earth's magnetic field, its characteristics and variations: the history of this geomagnetic field, especially as recorded in rocks and similar material. Solar-planetary
DESCRIPTION OF SUBJECTS


TEXTBOOKS

REFERENCE BOOKS


Practical: Preparation of simple computer programmes. Use of library programmes to solve geological problems.

TEXTBOOKS
OR

REFERENCE BOOK


Second session subject (3 hrs. lectures and 3 hrs. practical per week).

Sedimentary Rocks: Further studies of sediments, classificatory schemes for sedimentary rocks and post-consolidation changes in sediments. Accessory minerals in sediments. The use of heavy minerals and other features in the study of provenance, including methods of separation of heavy minerals. Clays.

Practical: Study of sedimentary rocks in hand specimen and thin section. Heavy mineral and provenance studies.

TEXTBOOKS

Stratigraphy and Stratigraphic Palaeontology: Rock, time and time-rock unit concepts. Correlation methods and problems in the Pre-Cambrian and the Phanerozoic. A systematic treatment of the geological columns discussing the
DESCRIPTION OF SUBJECTS

type successions together with other important overseas successions and those of representative Australian regions. The history of the Tasman, Caledonian and Alpine and other geosynclines.

Practical: Demonstrations of suites of rocks and fossils from important successions.

Vertebrate Palaeontology: The main features of the major groups in the evolution of the vertebrates.

Practical: Study of morphology of some important groups.

TEXTBOOKS


REFERENCE BOOKS


UNIT D. Structural Geology and Geotectonics, Economic Geology.

Second session subject (2 hrs. lectures and 4 hrs. practical per week).

Structural Geology and Geotectonics: Non-diastrophic and diastrophic deformation of rocks. Structures, internal and external, associated with igneous rocks. Introduction to structural analysis. Large-scale deformations such as alpine tectonics, and the structure and structural evolution of the European Alps and the Himalayas. Other examples of mountain-building, and geosynclines. Mid oceanic ridges and associated features.

Practical: Study of deformed rocks in hand-specimen and thin section. The stereographic projection in structural geology.

TEXTBOOKS


REFERENCE BOOKS


Economic Geology: Outline of the scope of economic geology and of the processes of concentration of economically important minerals. Introduction to some classifications of ore deposits. Description, with examples, of the major types of ore deposits — those contained in igneous rocks, those associated with igneous rocks. Sedimentary ore deposits. Effects of metamorphism in forming new ore deposits, and modifying existing ore deposits. Metallogenic analysis—the distribution of ores in space and time. Appraisal techniques. Australian ore deposits.

Practical: An introductory course in ore microscopy. The mineragraphy of some important Australian orebodies.
TEXTBOOKS

REFERENCE BOOKS

UNIT E. Crystallography, Mineralogy and Petrology and Geochemistry.

Second session subject (2 hrs. lectures and 4 hrs. practical per week).


Theoretical Petrology: The phase rule, systems of one, two and three components, Eutectics and solid solutions. Complex binary systems. Ternary systems. The application of work on synthetic systems to petrology using for example, systems such as nepheline-kalsilite-silica, quartz-albite-orthoclase-anorthite-water, diopside-Forsterite-silica. Experimental work on the melting of natural rocks. Experimental and theoretical petrology as applied to metamorphic rocks. The mineralogical phase rule. Direct determination of equilibrium curves, reactions of synthesis. Use of thermodynamic data. Experimental appraisal of critical metamorphic reactions, reactions in pelitic assemblages, reactions in siliceous dolomitic limestones, experimental data relating to magnesian schists.

Textures of rocks: Structures and textures. The sequence of crystallization in granites, the development of K-feldspar megacrysts and quartz-feldspar intergrowths. Exsolution textures. Textures of basic igneous rocks. Textures of metamorphic rocks.

Practical: Simple experiments using modern instruments especially in regard to silicate melts. Study of suites of rocks in hand-specimen and thin-section. Thin section studies of rock textures.

Geochemistry: Elements of structural chemistry and some principles of thermodynamics. Structure of the atom, isotopes, radioactivity, ionic size, aggregates of ions, the crystalline state, imperfections in crystals, diffusion in crystals, order-disorder.


Practical: Calculation of problems in geochemistry.

TEXTBOOKS

OR

OR
REFERENCE BOOKS

UNIT F. Exploration Geophysics, Petroleum and Nuclear Fuels.
Second session subject (2 hrs. lectures and 4 hrs. tutorials and practicals per week).
Practical: Calculations of real and imaginary problems based on the theory and interpretation outlined in lectures for various techniques. Study of Australian case histories, in particular, will be made. Field work will be undertaken, depending on the availability of instrumentation.

TEXTBOOKS

REFERENCE BOOK

Petroleum and Nuclear Fuels: Petroleum: History of the use of, and search for, petroleum. The distribution of petroleum in time and space. The generation, migration and accumulation of petroleum, including reservoir rock properties and trap characteristics. Methods of search for and exploitation of, including evaluation of, petroleum deposits. Gas, oil and petroleum solids. Australian occurrences will be described.
Nuclear Fuels: Description of the mineralogy and geology of important nuclear fuel deposits, and related mineral deposits. The methods of searching for such deposits.
Practical: Study of data on Australian petroleum deposits. Description of rotary drill cutting samples.

TEXTBOOKS AND REFERENCE BOOKS
OR
OR
(The reference book for Nuclear Fuels is yet to be selected).

UNIT G. Basin Analysis, Sedimentation and Oceanography.
First session subject (2 hrs. lectures, 4 hrs. tutorials and practicals per week).
of palaeo-environments from sediment properties. The stratigraphy of a number of important Australian and overseas sedimentary basins. Water movements, waves and currents. Physical and chemical properties of sea water. Sediments of the ocean basins. The nature and structure of the ocean floor.

**Practical:** Examination of textures, fabrics and structures of sedimentary rocks in the laboratory. Demonstrations of specimens and maps from some basins covered in lectures. Field examination of sediments (recent and Permian) in the Illawarra District. Experiments with erosion, transport and deposition of sands by water.

**TEXTBOOKS**


**REFERENCE BOOKS**


**UNIT H. Structural Geology, Geomorphology and Photo-interpretation, Geology of Coal.**

First session subject (2 hrs. lectures and 4 hrs. practical per week).

**Structural Geology:** Structural analysis, and further study of folding, including superposed folding. Geometrical, kinematic and dynamic analysis of folded rocks. Stress and strain and its analysis, including determination of the strain ellipsoid. Cleavage and fracture. joint and fault development.

**Practical:** Problems using the stereographic projection and maps. Stress and strain analysis. Experimental deformation.

**TEXTBOOKS AND REFERENCE BOOKS**

In addition to those noted for Structural Geology (in Unit D of Geology IIIW):


**Geomorphology, Photo-interpretation:** The study of landforms and some other aspects of geomorphology, and the interpretation of aerial photographs. The use of aerial photographs and satellite photographs in geological studies.

**Practical:** Study of different landforms in stereoscopic pairs of photographs.

**TEXTBOOKS**


**REFERENCE BOOK**


Other references will be given.
DESCRIPTION OF SUBJECTS


Practical: Examination of macerals in transmitted and reflected light. Use of immersion to adjust contrast, maceral analyses in reflected light. Measurement of reflectance and of refractive indices using polished sections.

TEXTBOOK

REFERENCE BOOKS
Supplement 1971.


First session subject (1 hr. lecture and 1½ hrs. practical per week and up to a total of 10 days field work).

Field work will normally be conducted at the end of the vacation before first session. Students intending to enrol in Advanced Geological Mapping should consult the Head of the Department during the previous session.

Course Description: Lecture and laboratory tutorial course work will include the use of aerial photographs (including stereoscopic exercises) in compiling geological maps, and more advanced stereographic projection methods. The emphasis will be on the use of these techniques in geological map compilation. The field tutorial will be similar to that outlined for Elements of Geological Mapping, but the area selected for field mapping will be more geologically complex.

Final compilation and interpretation will be completed in laboratory tutorials.

REFERENCE BOOKS

GEOLOGY IV HONOURS

(Double session subject)

The formal parts of the proposed course will consist of a section on the history of geological thought together with at least two specialist sections chosen from the fields of mineral paragenesis, rock magnetism, biostratigraphy, mathematical geology, coal and petroleum geology. The other parts of the course will be field and laboratory projects, seminars, and study of selected references.

TEXTBOOKS
The Head of the Department should be consulted.
DESCRIPTION OF SUBJECTS

DEPARTMENT OF HISTORY

HISTORY I

(Double session subject)

It is expected that a new History I course will be approved for 1972. Students should seek information of its contents from the enrolling officer.

HISTORY II

Russia and the West (Double session subject).

The History II programme for the two sessions of 1972 is as follows:

a. Kievan Russia to the reign of Nicholas I. Selected topics on the history of Russian government, society, economics, culture and thought are studied in relation to Western influence.

b. The reign of Alexander II to the present. The emphasis remains as in session I.

REFERENCE BOOKS


HISTORY IIIA

Australian Social History (Double session subject).

The History IIIA programme for the two sessions of 1972 is as follows:

a. Australian social history from 1800 to 1890. The principal themes for study are the relations between social classes, demographic change, and social welfare. Study will be based chiefly on the examination of primary records.

b. Australian social history from 1890 to 1950. The emphasis remains as in session I.

Credit for completion of the first session will be given only after successful completion of the second session.
REFERENCE BOOKS

Barcan, A. A Short History of Education in N.S.W., Martindale, Sydney, 1965.

HISTORY IIIB

Southeast Asian History (Double session subject).

The History IIIB programme for the two sessions of 1972 is as follows:

a. This course will deal briefly with the history of the region in the pre-European period. Throughout, chronology will be secondary, and the basic approach will be sociological: the aim will be an understanding of the ecological, social, religious and other factors underlying Southeast Asian politics to about 1800.

b. This course will study three Southeast Asian territories — Indonesia, Malaya and Vietnam — since about 1800. Attention will be concentrated on reactions between the ideas and methods of the colonial powers and indigenous concepts and systems. This will lead on to discussions of the emergence and nature of nationalism in the region, and the attendant internal and international problems. German, British and Australian administration in Papua-New Guinea will be similarly considered. The growth of Australian attitudes towards Southeast Asia will also be briefly analysed.

REFERENCE BOOKS


Students may take and count towards their degree History IIIA and IIIB.
DEPARTMENT OF HISTORY AND PHILOSOPHY OF SCIENCE

HISTORY AND PHILOSOPHY OF SCIENCE I*

An account of the development of astronomy and especially of planetary theory, to the early nineteenth century. Special emphasis will be given to the philosophically significant features of the history to be presented.

TEXTBOOKS

HISTORY AND PHILOSOPHY OF SCIENCE II
(Double session subject)

The Darwinian Revolution:

Students undertaking this course must be prepared to undertake both sessions. Credit for satisfactory performance in the first session will be withheld pending results of the second session assessment.

An account of the historical and philosophical development of the idea of biological evolution. The course traces the origins of the idea and follows it through to Darwin and Wallace. Attention will be paid to the geological contribution made: particularly of the fossil record. Some aspects of post Darwinian thought will be analysed. These mainly take the form of the general impact of Darwin's theory on late 19th and early 20th century social and intellectual history; in particular the impact in politics, economics and psychology.

Practical involvement is a requirement for the course. It will consist of examinations of rock samples and a local geological excursion and, later in the course, biology and other demonstrations.

The first session will cover the development of the Darwinian Revolution up to the formulation of the theory by Darwin: during the second session there will be a more detailed examination of his works, together with an account of their reception and implications.

TEXTBOOKS

REFERENCE BOOKS
Bell, P. R. Darwin's Biological Work. Cambridge, 1959.

* This subject will not be offered in 1972.
DEPARTMENT OF MATHEMATICS

MATHEMATICS I
Double session subject (6 hrs. per week).
Session 1: Calculus, introduction to abstract algebra, introduction to computing.
Session 2: Calculus, abstract algebra, linear algebra.

TEXTBOOKS

STATISTICS
First session subject (4 hrs. per week).
Session 1: Introduction to statistics, FORTRAN programming.

TEXTBOOKS

ANALYSIS I
Double session subject (2 hrs. per week).
Session 1: Partial differentiation, multiple integrals, differential equations of the first order and second order with constant coefficients.
Session 2: Fourier series, complex variable, second order differential equations.

TEXTBOOK

REFERENCE BOOKS

ALGEBRA I
Double session subject (2 hrs. per week).
Session 1: Vector algebra, vector calculus, general integral theorems, matrix algebra, eigen-values and eigen-vectors.

REFERENCE BOOKS
Ayres, F. Matrices. Schaum.
Davis, H. F. Vector Analysis. Allyn and Bacon.
Lipschutz, S. Linear Algebra. Schaum.

THEORY OF FUNCTIONS I
Double session subject (2 hrs. per week).
Session 1: Fundamental point-set topology and set theory, uniform convergence.
Session 2: Differentiable functions. Riemann integration, Euclidian vector spaces.
DESCRIPTION OF SUBJECTS

TEXTBOOK

REFERENCE BOOK

DYNAMICS
Double session subject (2 hrs. per week).
Session 1: Elementary dynamics of a particle and a rigid body.
Session 2: Vibrations of particles, normal modes, vibrations of continuous systems.

TEXTBOOK

PROBABILITY
Double session subject (2 hrs. per week).
Session 1: Probability, discrete and continuous distributions, expectations.
Session 2: Sampling distributions, estimation, tests of hypotheses.

TEXTBOOK
Freund, J. E. Mathematical Statistics. Prentice-Hall.

REFERENCE BOOK

NUMERICAL ANALYSIS I
Double session subject (2 hrs. per week).
Session 1: Numerical processes applied to functions, equations, differential equations, integration, matrices.
Session 2: Further numerical work on integration and matrices; direct methods and least squares.

TEXTBOOK

REFERENCE BOOKS
Froberg, C. E. Introduction to Numerical Analysis. Addison Wesley.

GEOMETRY 1
Double session subject (2 hrs. per week).
Session 1: Elementary algebraic projective geometry.
Session 2: Elementary differential geometry of curves and surfaces.

TEXTBOOK

ORDINARY DIFFERENTIAL EQUATIONS
Double session subject (2 hrs. per week).
Session 1: Existence and uniqueness, solutions in series, Sturm-Liouville Theory, Green's functions.
Session 2: Non linear equations, stability, Liapunov functions and methods.
DESCRIPTION OF SUBJECTS

TEXTBOOK

ANALYSIS II
Double session subject (2 hrs. per week).
Session 1: Laplace and Fourier Transforms, Error, Gamma, Zero and Hypergeometric functions.
Session 2: Two-sided Laplace, Mellin and Hankel transforms, Bessel and Legendre functions. Orthogonal polynomials.

TEXTBOOKS

REFERENCE BOOKS
Rainville, E. D. *Special Functions*. Macmillan.

GENERAL TOPOLOGY
Double session subject (2 hrs. per week).
Session 1: Topological spaces, separation axioms, filters, compactness, local compactness and connectedness, continuous functions.
Session 2: Metric spaces and function spaces.

REFERENCE BOOKS
Bourbaki, N. *Topologie Generale*.
Fairchild, W. W. and Ionescu Tulcea, C. *Topology*.
Kasriel, R. H. *Undergraduate Topology*.
Kelley, J. L. *General Topology*.

ALGEBRA II
Double session subject (2 hrs. per week).
Session 1: Groups, rings and ideals.
Session 2: Fields, algebraic numbers and Galois theory.

TEXTBOOKS

REFERENCE BOOKS
Herstein, I. N. *Topics in Algebra*. Ginn Blaisdell.
Lang, S. *Algebra*. Addison-Wesley.

THEORY OF FUNCTIONS II
Double session subject (2 hrs. per week).
Session 1: Metric spaces, function spaces, analytic functions and continuation, multiple valued functions.
Session 2: Lebesgue Integration.
TEXTBOOKS

REFERENCE BOOKS

DYNAMICS OF CONTINUOUS MEDIA
Double session subject (2 hrs. per week).
Session 1: Introduction to non-viscous fluid flow in two and three dimensions, compressible flow, water waves including surface and long waves.
Session 2: Capillary and finite amplitude waves, dispersion, perturbation theory, interaction of waves, spectral analysis, infinitesimal stress and strain theory.

TEXTBOOKS

REFERENCE BOOKS
Bullen, K. E. Introduction to Seismology. C.U.P.

STOCHASTIC PROCESSES
Second session subject (4 hrs. per week).
Session 2: Probability measures, random variables, branching processes, renewal processes, Markov chains, test of significance, sequential analysis.

TEXTBOOK

MATHEMATICAL METHODS
Double session subject (2 hrs. per week).
Session 1: Cartesian tensors, calculus of variations.
Session 2: Laplace’s and Poisson’s equation, optimisation of numerical process in solving differential equations, harmonic and data analysis.

TEXTBOOK

REFERENCE BOOKS
Hildebrand, F. B. Methods of Applied Mathematics. Prentice-Hall.
Jeffreys, H. and Jeffreys, B. Methods of Mathematical Physics. C.U.P.

OPERATIONS RESEARCH
First session subject (4 hrs. per week).
Session 1: Linear, non-linear and dynamic programming, queueing theory, theory of games. Simulation.
DESCRIPTION OF SUBJECTS

TEXTBOOK

OCEAN DYNAMICS
Double session subject (4 hrs. per week).
Session 1: Edge Waves.
Session 2: Tidal dynamics, estuary and coastline dynamics, introduction to ocean currents.

REFERENCE BOOKS
Ippen, A. T. *Estuary and coastline hydrodynamics.*
Neumann, G. *Ocean Currents.*

NUMERICAL ANALYSIS II
Double session subject (2 hrs. per week).
Session 1: Advanced work on function evaluation, solution of algebraic equations, solution of differential equations, and integration. Linear algebra: solutions of equations, calculations of eigen-values and eigen-vectors.

TEXTBOOK
Froberg, C. *Introduction to Numerical Analysis.* Addison-Wesley.

REFERENCE BOOKS
Varga, R. S. *Matrix Iterative Analysis.* Prentice-Hall.

PARTIAL DIFFERENTIAL EQUATIONS
Double session subject (2 hrs. per week).
Session 1: Cauchy-Kowaleski theorem, first order equations, linear second order equations.
Session 2: Elliptic, parabolic and hyperbolic equations.

TEXTBOOKS

LOGIC AND NUMBER THEORY
Double session subject (2 hrs. per week).
Session 1: Nonaxiomatic and axiomatic treatments of positional and predicate calculus, formal number theory based on logic.
Session 2: Primality, linear and quadratic, residue theory.

REFERENCE BOOKS
Griffin, H. *Elementary Number Theory.*
Mendelson, E. *Introduction to Mathematical Logic.*
Niven, I. and Zuckerman, S. *An Introduction to Number Theory.*
Uspensky, J. V. and Heaslet, M. A. *Elementary Number Theory.*
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<thead>
<tr>
<th>Level 1 Subjects</th>
<th>Hours per Week</th>
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<tr>
<td>Physical Properties of Crystals I and II</td>
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<td>Phase Equilibria</td>
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<td>Optical Metallography</td>
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<td>Structure of Alloys I</td>
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<td>Introduction to Mechanical Metallurgy</td>
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<tr>
<td>Shaping Process and Testing</td>
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<tr>
<td>Fluid Flow I and II</td>
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<td>Thermodynamics I</td>
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<td>Extraction Processes I, II and III</td>
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<tr>
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<td>Kinetics</td>
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<td>Elasticity</td>
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<td>Thermodynamics II and III</td>
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<td>Mechanisms of Phase Transformations</td>
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<td>Structure and Mechanical Properties II</td>
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<td>Metal Joining</td>
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<td>Fracture</td>
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<td>Heat Transfer I and II</td>
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<td>Mass Transfer I and II</td>
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<td>Extraction Processes IV</td>
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<td>Metallurgy Laboratory II B</td>
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**Level 2 Subjects**: Essentially Level 2A and level 2B Subjects combined but excluding Extraction Processes IV.

<table>
<thead>
<tr>
<th>Level 3 Core Subjects</th>
<th>Hours per Week</th>
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<tr>
<td>Interfaces</td>
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<td>Structure of Alloys IV</td>
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<tr>
<td>Structure and Mechanical Properties III</td>
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<td>-</td>
<td></td>
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<tr>
<td>Plasticity and Metal Shaping</td>
<td>-</td>
<td>1</td>
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<tr>
<td>Reaction Engineering</td>
<td>1</td>
<td>-</td>
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<tr>
<td>Refining</td>
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<td>-</td>
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<tr>
<td>Extraction Process V and VI</td>
<td>-</td>
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<tr>
<td>Metallurgy Tutorial VI</td>
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</tr>
<tr>
<td>Metallurgy Laboratory III</td>
<td>3</td>
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</tr>
</tbody>
</table>

**Level 3 Option Units (4 to be taken)**

| Non-Destructive Testing | 1 | - | |
| Crystallography of Phase Transformations | - | 1 | |
| Advanced Mechanical Metallurgy | 1 | - | |
| Process Control | - | 1 | |

Note: further option units will be offered as facilities permit.
METALLURGY LEVEL I
TEXTBOOKS
Guy, A. C. *Elements of Physical Metallurgy.* Addison-Wesley.

METALLURGY LEVEL II
TEXTBOOKS
As for Level I, together with:
Burke, I. *The Kinetics of Phase Transformations in Metals.* Pergamon.
Hull, D. *Introduction to Dislocations.* Pergamon.
Tegart, W. J. McG. *Elements of Mechanical Metallurgy.* Macmillan.

METALLURGY LEVEL III
TEXTBOOKS
As for Levels I and II, together with:
Levenspiel, O. *Chemical Reaction Engineering.* Wiley.
DESCRIPTION OF SUBJECTS

DEPARTMENT OF PHYSICS

First Level Physics

MECHANICS, ELECTRICITY AND MAGNETISM

First Session

(42 hrs. lectures, 14 hrs. tutorials and 28 hrs. practical)

Physics and measurement: vectors, statics, kinematics; laws of motion, relativistic effects; momentum, gravitation and fields; work and energy, elasticity; oscillatory motion, waves; systems of particles, ideal gases; electrostatic field. Gauss’ Law; potential, circuit elements: D.C. circuits, dielectrics, magnetic fields.

Second Session

(42 hrs. lectures, 14 hrs. tutorials and 28 hrs. practical)

Sources of magnetic fields; magnetic induction effects; A. C. circuits, electromagnetic interactions and fields; rotational kinematics, rotational dynamics; rotational momentum and energy; reflection and refraction, interference of waves; diffraction, optical instruments; fluid motion, quantum phenomena; introduction to atoms and spectra; atoms and molecules nuclei of atoms.

TEXTBOOK


Second Level Physics

ELECTROMAGNETISM AND OPTICS

First Session

Electromagnetism (21 hrs. lectures and 21 hrs. practical).

1. Vector analysis appropriate to the course.
2. Fundamentals of electromagnetism leading up to Maxwell’s Equations.
3. Wave equations.
4. Radiation from an oscillating dipole.

Second Session

Optics (21 hrs. lectures and 21 hrs. practical).

1. Propagation of light.
2. Vectorial nature of light.
3. Coherence and interference.
4. Diffraction.
5. Thermal radiation and light.
DESCRIPTION OF SUBJECTS

TEXTBOOKS

ELECTRONICS, ATOMIC PHYSICS, NUCLEAR PHYSICS AND WAVE MECHANICS
First session (21 hrs. lectures and 21 hrs. practical).
Electronics
Simple network theory; transistors and other semi-conductor devices; vacuum tubes; transistors and valves as amplifiers; rectifiers and detectors; oscillators and switching circuits.

Atomic Physics
Black body radiation; the photoelectric effect; the Compton effect; light quanta and interference phenomena, coherence; atomic spectroscopy; Stern — Gerlach experiment: X-ray and electron diffraction.

Second session (21 hrs. lectures and 21 hrs. practical).
Wave Mechanics
Matter waves; Schrodinger wave equation; free particle; correspondence principle; square potentials.

Nuclear Physics
General Properties of the Nucleus: Quantum states, binding energy; stable and unstable nuclei; fission; size of nuclei; coulomb barrier, angular momentum, spin, electric and magnetic moments; statistics of nuclear constituents; nuclear stability and saturation of nuclear forces.

TEXTBOOKS

MECHANICS, THERMODYNAMICS AND STATISTICAL PHYSICS
First session (21 hrs. lectures and 21 hrs. practical).
Mechanics
Introductory topics: coordinate transformations, properties of rotation matrices, transformation matrices.
Oscillatory motion: The simple harmonic oscillator, damped harmonic motion, forces oscillations, the Laplace Transform Method, oscillations in a potential well.

Thermodynamics and Statistical Physics
Characteristic features of microscopic systems: irreversibility and the approach of equilibrium; heat and temperature.
Basic probability concepts: statistical ensembles, mean values for a spin system, distribution of molecules in an ideal gas.
Statistical description of systems of particles: statistical ensembles and postulates, equilibrium and reversibility, interactions between systems — thermal and adiabatic, general interactions — first law of thermodynamics.
Thermal interactions: distribution of energy between macroscopic systems, entropy as a measure of accessible states, contact with heat reservoir — Boltzmann factor, canonical distribution applied to paramagnetism.

**Second session (21 hrs. lectures and 21 hrs. practical).**

**Mechanics**

The special theory of relativity: Galilean invariance, the Lorentz transformation, momentum and energy in relativity.

Calculus of variations: Euler’s equations, functions with several dependent variables, Euler equations with auxiliary conditions.

Hamilton’s principle — Lagrangian and Hamiltonian dynamics: Hamilton’s principle, Lagrange’s Equations of Motion, Euler’s Theorem applied to kinetic energy, conservation theorems, canonical equations of motion — Hamiltonian dynamics, the Virial Theorem. The Lagrangian Function in special relativity.

**Thermodynamics and Statistical Physics**

Microscopic theory and macroscopic measurements: work, internal energy and heat, heat capacity and entropy changes.

Canonical distribution in the classical approximation: Maxwell velocity distribution, the equipartition theorem, specific heat of a monatomic ideal gas.

General thermodynamic interactions: the thermodynamic identity, entropy — adiabatic compression, the laws of thermodynamics, the Gibbs free energy and equilibrium, equilibrium between phases.

**TEXTBOOKS**


**ASTRONOMY**

**First session (30 hrs. lectures and 12 hrs. practical).**

Aspects of the sky; the earth in motion: timekeeping, light and the telescope; the moon; eclipses of the moon and sun; the solar system; planets and their satellites; the sun.

**Second session (24 hrs. lectures and 18 hrs. practical).**

The stars: stellar atmosphere and interiors; intrinsic variable stars; binary stars; star clusters: interstellar gas and dust; the galaxy; the exterior galaxies.

**TEXTBOOK**


Supplemented by notes and references to be given by lecturers.

**Third Level Physics**

**CLASSICAL MECHANICS AND QUANTUM MECHANICS**

**First session (28 hrs. lectures and 14 hrs. seminars).**

**Classical Mechanics**

Non-linear oscillations; phase diagrams for non-linear systems; non-linear oscillations in an asymmetric potential; central-force motion; kinematics of
two-particle collisions; elastic collisions; cross sections: the Rutherford scattering formula; motion in a noninertial reference frame.

**Quantum Mechanics**

Introduction: postulates of quantum mechanics, operators of quantum mechanics, state function space — vector space, eigenvalue equations — basic vectors, expectation values, Orthonormal sets — sharing of eigenfunction sets.

The Hamiltonian Operator and Schrodinger's Equation: Hamiltonian eigenfunctions as basis wave functions; time variation of expectation values.

Uncertainty principle.

Momentum representation: Fourier transforms general applications.

The harmonic oscillator — Schrodinger treatment.

The matrix formulations of quantum mechanics: matrix treatment of harmonic oscillator, promotion demotion operators.

**Second session (28 hrs. lectures and 14 hrs. seminars).**

**Classical Mechanics**

Dynamics of rigid bodies: the inertia tensor, moments of inertia for different body coordinate systems, Euler's equations for a rigid body, motion of a symmetrical top with one point fixed, the stability of rigid body solutions.

Coupled oscillations.

Waves in strings.

**Quantum Mechanics**


Collision Theory: time-dependent perturbation theory.

**Multiparticle systems.**

**TEXTBOOKS**


**PHYSICS OF MEASUREMENT**

**First session (10 hrs. lectures and 32 hrs. practical).**

Design of experiments: electrical measurements; mechanical design; radiometry and photometry; electronics.

**Second session (10 hrs. lectures and 32 hrs. practical).**

Temperature measurement; acoustics; and such other topics as may from time to time be included.

**TEXTBOOK**

No prescribed text. Notes will be issued by the Department.

**SOLID STATE PHYSICS AND NUCLEAR PHYSICS**

**Solid State Physics**

First and second session (15 hrs. lectures).

Crystalline state: the classification of crystals; crystal lattices; diffraction of
DESCRIPTION OF SUBJECTS

x-rays, electrons and neutrons; reciprocal lattices; structure determination. Crystal binding: covalent, ionic, metallic.


TEXTBOOK

Nuclear Physics
First and second session (15 hrs. lectures).
Forces between nucleons: n-p and p-p, deuteron ground state, nuclear stability.
Nuclear spectroscopy: systematics of stable nuclei, models of the nucleus.
Nuclear reactions: description, cross sections, compound nucleus, resonance theory.
High energy interactions and elementary particles.

TEXTBOOK

STATISTICAL MECHANICS AND KINETIC THEORY

Statistical Mechanics
First session (20 hrs. lectures and tutorials).
The canonical distribution; connection of statistics with thermodynamics: the Fermi and Bose oscillators; statistics of simple systems; the ideal insulating crystal; black body radiation; systems of identical particles: the Ideal Gas; the grand canonical distribution; non-interacting identical particles; Bose-Einstein and Fermi-Dirac distributions; the ideal monatomic gas at a definite chemical potential; Bose-Einstein degeneration; conduction of electrons in metals.

Kinetic Theory
Second session (25 hrs. lectures and tutorials).
Collisions; Boltzmann Transport Equation; equilibrium properties of a gas; hydrodynamic equations; interaction between gases in equilibrium; expansion of the distribution function; transport properties of a simple gas; transport properties of a gas mixture: some approximate forms for the collision term in the Boltzmann Transport Equation; neutron diffusion — integral equation for transport of mono-energetic neutrons.

TEXTBOOKS

LABORATORY PROJECT AND THESIS
(90 hrs).

TEXTBOOK
DESCRIPTION OF SUBJECTS

DEPARTMENT OF PSYCHOLOGY

FIRST YEAR

1. All students enrolling for the first year of Psychology are required to take Psychobiology, Psychological Measurement I, Laboratory Method and Motivation and Adjustment.

SECOND YEAR

2. Students enrolling in Psychology II have two options, a professional (P) and a terminating (T) sequence. The latter sequence is designed for students who do not intend to go beyond second year in this subject. The professional strand is designed for students who desire to complete ultimately a programme of training which will permit them to practice or gain professional employment as psychologists.

3. Terminal Sequence —
   (a) All first year subjects.
   (b) Together with second year subjects.
      Personality Theory
      Learning Theory
      Psychological Testing
      Developmental Psychology

4. Professional Sequence —
   (a) All Terminal Sequence subjects with a strong pass in each subject.
   (b) Research Design
      Laboratory Method — Personality
      Laboratory Method — Learning

THIRD YEAR:

5. This is the final year in major sequence for Bachelors' Degrees. It is also the first year of a two year programme of training for entry to professional work. During their second year, students should review the range of electives and ensure that they have strong passes in subjects prerequisite for particular electives.

6. In the third year programme all students are required to take Psychological Theory and TWO only of the electives offered.

7. Unless students can attend nine hours per week in programmed classes they should not contemplate enrolling in the third year sequence. Generally, the course is designed for full time students or for those part time students whose employers are prepared to allow time off for study purposes. At least one half day per week is essential.
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<th>Class Hours Per Week</th>
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<td>Occupational and Personnel Psychology</td>
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<td>Social Psychology</td>
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<tr>
<td>Experimental Psychology</td>
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DESCRIPTION OF SUBJECTS

Psychology I

PSYCHOBIOLOGY
(First session subject)

Aims of the Course:

1. This is an introductory course in psychology and physiological aspects of behaviour. It is a course in which students will be required to read widely. The principal aim is to stimulate interest in the behavioural sciences.

2. The course deals with areas of psychology which traditionally have had a long history and an established body of empirical data. Thus, students will be introduced to experimental method and typical data at an early stage in his course work.

Syllabus:

1. An introduction to psychology. Conceptions of the roles and areas of responsibility of psychologists will be considered. Some of the history of psychology as well as findings from various areas in modern applied psychology will be discussed.


Although detailed study will be required (specific sections of book and text chapters will be recommended in lectures) it will generally be sufficient to have read the relevant sections of the syllabus in any modern introductory text.

TEXTBOOKS


or


or


or

SUPPLEMENTARY TEXTS


PSYCHOLOGICAL MEASUREMENT I

(First session subject)

Aims of the Course:

1. To equip students with a knowledge and understanding of the basic statistical concepts and techniques most appropriate to psychological measurement.
2. To enable students to apply these techniques to research data.

Syllabus:

1. Presentation of Data — Tabulation; graphical representation.
2. Measures of central tendency, with emphasis on the mean, using ungrouped and grouped data.
3. Measures of dispersion, with emphasis on the standard deviation, using ungrouped and grouped data.
5. Z and t tests of significance.
6. Tests of hypotheses. Type I and type II errors; one tailed and two tailed tests.
7. Chi square tests.
8. Spearman Rank order correlation.

TEXTBOOKS


LABORATORY METHOD

(Second session subject)

Aims of the Course:

1. To provide an introduction to laboratory method in psychology.
2. To illustrate the application of psychological measurement and statistics to experimental situations.
3. To acquaint students with a variety of experimental apparatus.
DESCRIPTION OF SUBJECTS

Syllabus:

Laboratory Method is entirely a practical course and will include experiments in each of the following areas:

1. Attitudes and values (survey method).
2. Psychophysics.
3. Effect of social factors on attitudes.
5. Effect of personality differences on reactions to conflict.

TEXTBOOKS

No textbook is set for this course. Students will be advised of reference material in connection with each experiment.

MOTIVATION AND ADJUSTMENT

(Second session subject)

Aims of the Course:

1. To provide an introduction to the concept of behaviour as the outcome of personality, environmental forces, and interpersonal relationships.
2. To provide a basis for second year courses on personality theory and dynamics of behaviour.

Syllabus:

Primary and secondary motivation and emotions; frustration and conflict; defense mechanisms; relation between motivation and the self; conscious and unconscious motivations; attitudes; values, beliefs, interests and social influences on these; the socialization process.

TEXTBOOKS


Psychology II

LEARNING THEORY AND LABORATORY METHOD

(Second session subject)

Aim of the Course:

1. To treat in detail material related to learning which was introduced in first year.
2. To teach laboratory methods specifically related to learning and operant conditioning.

Syllabus:

A. Theory
   1. Definitions and historical perspective
   2. Theories of learning
   3. Classical and operant conditioning
   4. Reinforcement and the Law of Effect
   5. The Drive Reduction Hypothesis
DESCRIPTION OF SUBJECTS

6. Brain stimulation effects
7. Discrimination learning
8. Extinction
9. Vibrotactile and multi-sensory learning
10. Learning of skills

B. Laboratory

TEXTBOOKS

or


PSYCHOLOGICAL MEASUREMENT II
(Second session subject)

Aims of the Course:
1. To equip students with a more advanced knowledge of techniques and concepts treated in Psychological Measurement I.
2. To illustrate the use of these techniques in the design and analysis of experiments.

Syllabus:
1. Probability theory.
2. Random Sampling.
3. Normal and Binomial distributions.
5. Correlation and regression.
6. Factor analysis.

TEXTBOOKS


RESEARCH DESIGN
(First session subject)

Aims of the Course:
1. To teach principles of research design and methodology.
2. To illustrate the practical application of statistical techniques covered in courses Psychological Measurement I and Psychological Measurement II.

Syllabus
1. The context of discovery.
   Formulation of hypotheses
   Form of hypotheses
   Specification of meaning of terms
   Explication
   Definitions
   Substruction (Facet analyses)
   Measurement of variables
   Scaling
   Validity
   Reliability
DESCRIPTION OF SUBJECTS

2. The context of evaluation.
   Experimental design
   Antecedent probability
   Control groups
   Variables
   Choosing statistical methods
   The risk function and decision theory

3. Analysis and interpretation of outcomes.
   Casualty.
   Application of results (truth and knowledge)

4. Theories and models.
   Elements of a formal theory
   Formal theories and behavioural science.

TEXTBOOKS

PERSONALITY THEORY AND LABORATORY METHOD
(First session subject)
Aims of the Course:
1. To examine critically the major theoretical approaches to personality structure, dynamics and development.
2. To equip students with sufficient understanding of the various personality theories to enable them to develop critical and diagnostic skills.
3. To provide a specialist background in personality development and functioning against which third year elective subjects may be viewed.

Syllabus:
A. THEORY —
   Theories exemplifying: Psychoanalytic, neo-Freudian, interpersonal self-theory, behaviouristic, rational/motivational, field trait and factor analytic theories of personality. Two of the above will be dealt with in depth, the remainder at a level only sufficiently deep to meet the aims above.

B. LABORATORY —
   Concurrent with the theory lectures, students will complete three research exercises related to personality. One will take the form of a survey, in which students will examine the relationship between certain attitudes in parents and personality factors in their children. Another will be an experiment, in which the variable of anxiety will be related to performance.

TEXTBOOKS

PSYCHOLOGICAL TESTING
(First session subject)
Aims of the Course:
1. To provide an overview of the variety of tests available for use in educational-vocational settings.
2. To examine in detail the construction and use of some tests in each of the major areas of psychological testing.
3. To each background theory necessary for efficient reporting of test results.
DESCRIPTION OF SUBJECTS

Syllabus:

1. History and development of the testing movement.

2. Individual Testing.
   - The Terman Revision of the Stanford Binet.
   - The Wechsler Adult Intelligence Scale.
   - The Wechsler Intelligence Scale for Children.

   - Intelligence Tests.
   - Achievement Tests.
   - Multi-factor Tests.
   - Aptitude Tests.
   - Interests and Attitude Tests.
   - Personality Tests (including Projective Tests).

4. Test Theory.
   - Scales, Scores and Norms.
   - Reliability.
   - Validity.
   - Item Analysis.

TEXTBOOK

DEVELOPMENTAL PSYCHOLOGY

(Second session subject)

Aims of the Course:

1. To give students a knowledge of the normal developmental stages and processes, and the interaction between the individual and his social environment during development.

2. To provide students with further background against which third year elective subjects such as counselling psychology, educational psychology, occupational psychology and social psychology may be viewed.

3. To apply in a more practical way the understanding of personality function and structure acquired in the course Personality Theory and Laboratory Method.

Syllabus:

The following major strands will be incorporated in this course:

(a) A descriptive outline of normal maturation and development, and the physiological and environmental influences on these. This section will be considered from a very general rather than a particular theoretical viewpoint.

(b) A study of the development of personality in terms of several of the major theoretical approaches: Erikson, Fromm, Horney and Sullivan.

TEXTBOOK
DESCRIPTION OF SUBJECTS

Psychology III

PSYCHOLOGICAL THEORY

(Double session subject)

Aims of the Course:

1. To provide a philosophical basis for work in the elective subjects in the third year which are "applied" in orientation.
2. To extend on the student's knowledge of scientific theory construction and to provide background material, mainly of historical interest but necessary to a thorough understanding of contemporary science.

Syllabus:

1. The general nature of theory construction and levels of explanation.
2. The role of models.
3. Personality and Psychodynamics.
4. Complex Processes
   - Verbal Learning
   - Thinking
5. Sensory and Perceptual Functions.

TEXTBOOK

COUNSELLING PSYCHOLOGY

(Double session subject)

Aims of the Course:

1. To introduce students to the theory and practice of giving guidance and counselling.
2. To give students the opportunity to gain some experience in interviewing and counselling techniques.

Syllabus:

1. The nature of counselling:
   - educational
   - vocational
   - psychotherapy
2. Techniques of Counselling.
3. Relationship techniques.
4. Use of tests in counselling.
5. Decision approaches to counselling.
6. Counselling theory:
   - Non-directive
   - Desensitization
   - Interpersonal
   - Psychoanalytic
   - Rational/emotive

TEXTBOOK
DESCRIPTION OF SUBJECTS

OCCUPATIONAL AND PERSONNEL PSYCHOLOGY
(Double session subject)

Aims of the Course:

1. To provide an overview of the field of theory and instrumentation used in educational-vocational guidance and personnel selection.
2. To examine in detail the research needs of the field and to design and implement individual research projects.

Syllabus:

1. Work Definitions and constructs Occupational Classifications
2. Determinants of occupational choice Childhood experience Psychoanalytic conceptions of work Need reduction Decision making Social determinants
3. Major programmes of research.

TEXTBOOK

SOCIAL PSYCHOLOGY
(Double session subject)

Aims of the Course:

1. To consider in detail the interaction between the personality and the social environment.
2. To present the major theories in social psychology.
3. To familiarize students with research methods appropriate to the field.

Syllabus:

1. Social psychological theories
   (a) Field theoretical
   (b) Psychoanalytic
   (c) Reinforcement
   (d) Cognitive
2. Attitude and opinion change including conformity
3. Socialization and child rearing practices
4. Group Dynamics norms, conformity, deviance
5. Inter societal variation in socialization
6. Socialization of specific personality and behavioural variables and their relation to role playing and attitude formation.
7. Collective behaviour, crowds and social movements.

The tendency will be to emphasize field theoretical and psychoanalytic orientations.

TEXTBOOK
DESCRIPTION OF SUBJECTS


or


EDUCATIONAL PSYCHOLOGY

(Double session subject)

Aims of the Course:

1. To apply psychological principles to the process of instruction.
2. To give experience in the conduct of research in this field.
3. To explore in depth selected areas of specialization in education.

Syllabus:

1. A review of major areas of psychology with particular emphasis on their relation to education including:
   - learning theory
   - personality theory
   - psychological testing
   - individual differences

2. Concept formation.
3. Group dynamics in the classroom
4. Psychological principles applied to educational administration

TEXTBOOKS


EXPERIMENTAL PSYCHOLOGY

(Double session subject)

Aims of the Course:

1. To develop skill in conducting psychological research with apparatus and animals.

Syllabus:

Emphasis will be placed on experimentation in:
(a) Perception
(b) Skill acquisition
(c) Vibrotactile and multi-sensory learning
(d) Instrumental conditioning.
(e) Human factors/engineering psychology

TEXTBOOK


Postgraduate Study
INTRODUCTION

Facilities are available for post-graduate studies at the College leading to degrees of M.A. (Hons.), M.A. (Pass) in English and History, M.Com., M.E., M.Eng.Sc., M.Sc., M.Sc. (O.R.), etc., and Ph.D. In addition, a postgraduate diploma course in education is offered. The research interests of the staff cover a wide range of topics and persons interested in pursuing postgraduate studies should contact the appropriate Head of Department.

Some current fields of interest are:

ACCOUNTANCY

Business finance and capital budgeting.
Cost classification for decision making and cost control.
Investigation of the statutory and financial information as contained in company reports.

CHEMISTRY

Chemistry of natural products—alkaloids and hallucinogenic fungi.
Correlation of chemical structure with physiological activity.
Synthetic organic chemistry.
Physical-organic chemistry—kinetic studies of hydrolysis and measurement of thermodynamic acidity constants.
Catalytic deuterium exchange reactions.
Magneto-chemical and spectral studies of transition metal complexes.
Chemistry of organic sulphur compounds.
Gas chromatography and mass spectrometry of diastereoisomers and metabolites.

CIVIL AND MECHANICAL ENGINEERING

Propagation of waves in air in small bore tubes.
Losses across valves of reciprocating air compressors.
Flow of granular materials.
Applied mechanics and photo elasticity.
Experimental stress analysis.
Model analyses of structures.
Development of composites.
Significance of tyre-pavement interaction on safety.
Investigation of the potentialities of blast furnace slag.
Highways and traffic.
Boiling heat transfer.
Hydraulic model studies.
Industrial waste disposal.
System identification studies.
Interaction between reinforcing and parent materials.

**ECONOMICS**

Industrial economics.
Regional studies.
Economic development.
Labour economics.
Natural resource economics.

**EDUCATION**

The teaching of social studies.
Moral education.
Classificatory ability in Australian children.
Enrichment programmes for disadvantaged preschoolers.
Schooling and social class.

**ELECTRICAL ENGINEERING**

Automatic control.
Plant identification.
Electrostatic precipitation.
Static converters.
Electrical machines.

**ENGLISH**

Sixteenth to twentieth century literature.
Satire.
Old and Middle English language and literature.
Aspects of eighteenth century usage.
Nineteenth to twentieth century Australian fiction.
Some investigation of migrant English in the Illawarra region.

**GEOGRAPHY**

Pedological and soil/plant relationships.
Urban and transport studies.
Agricultural geography.
Geomorphology.

**GEOLOGY**

The geology of the regional coal measures.
Rock magnetism and related geophysical phenomena.
Textures of igneous and metamorphic rocks.
Invertebrates of the Lower and Middle Palaeozoic of Australasia.

HISTORY

European history during the period 1660-1800.
Eighteenth, nineteenth and twentieth century British history.
Any area of Australian history.
Any aspect of modern colonial history, especially the history of Africa, the Pacific and South East Asia.

MATHEMATICS

Functional analysis.
Logic and set theory.
Numerical analysis.
Nuclear reactor theory.
Oceanography.
Operations research.

METALLURGY

Deformation and fracture at elevated temperatures.
Solidification of metals.
Studies of structure changes in alloys using optical, electron-optical and x-ray methods.
Studies of flow phenomena in packed beds.
Mechanical behaviour of metals with particular reference to sheet forming operations.

PHYSICS

Astronomy—visible and infra-red—near infra-red detectors.
Mossbauer spectroscopy.

PSYCHOLOGY

Achievement motivation.
Decision and risk taking.
Prediction of academic success.
Personnel selection and placement.
Student guidance and counselling services.
Bi-sensory learning including vibro-tactile learning.
POSTGRADUATE STUDY

POSTGRADUATE ENROLMENT PROCEDURE

COURSES REQUIRING ATTENDANCE AT FORMAL LECTURES

Students wishing to enrol in any of the postgraduate courses requiring attendance at formal lectures should make application on the appropriate form in accordance with the conditions governing the particular course.

Later year enrolments must be made during enrolment period in accordance with the special arrangements made by individual Departments.

No enrolments will be accepted after 31st March without the express approval of the Secretary which will be given in exceptional circumstances only.

Enrolment forms will be sent to re-enrolling students in early January each year.

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

RESEARCH DEGREES

Details of the procedure to be followed in order to enrol for a research degree are given in the statement of the conditions of award of the various higher degrees as set out later in this section of the Handbook.

FEES

Postgraduate Courses*

Master of Arts (Pass), Master of Commerce, Master of Engineering Science, and Graduate Diploma Courses

COMPLETION OF ENROLMENT

Students enrolling in post-graduate courses which include formal instruction are required to attend the College during the prescribed enrolment period† for authorisation of course programme.

Fees should be paid during the prescribed enrolment period but will be accepted without incurring a late fee during the first two weeks of Session 1. (For late fees see below.) No student is regarded as having completed an enrolment until fees have been paid. Fees will not be accepted (i.e. enrolment cannot be completed) after 31st March except with the express approval of the Secretary, which will be given in exceptional circumstances only.

PAYMENT OF FEES BY SESSION

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

ASSISTED STUDENTS

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

EXTENSION OF TIME

Any student who is unable to pay fees by the date due may apply in writing to the Secretary for an extension of time. Such application must give year of study, whether full-time or part-time and the course in which the applicant wishes to enrol, state clearly and fully the reasons why payment cannot be made and the extension sought, and must be lodged before the

* Fees quoted in this schedule are current at time of publication and may be amended by the Council without notice.
† The enrolment periods for new students are advertised in the local press during the first week of February.

184
date on which a late fee becomes payable. Normally the maximum extension of time for the payment of fees is until 31st March for fees due in Session 1 and for one month from the date on which a late fee becomes payable in Session 2.

**FAILURE TO PAY FEES**

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

No student is eligible to attend the annual examinations in any subject where any portion of his course fees for the year is outstanding after the end of the fourth week of Session 2 (18th August, 1972).

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

**BASIS OF FEE ASSESSMENT**

Where course fees are assessed on the basis of session hours of attendance the hours for each subject for the purpose of fee assessment shall be those prescribed in the Calendar. The granting of an exemption from portion of the requirements of a subject in which a student is enrolled does not carry with it any exemption from the payment of fees.

**Courses for the degrees of Master of Arts (Pass), Master of Engineering Science.**

- (i) Registration Fee ......................................................................... $ 7
- (ii) Graduation Fee .......................................................................... $ 9
- (iii) Course Fee—calculated on the basis of a session's attendance at the rate of $12.50 per hour per week. Thus the fee for a programme requiring an attendance of 24 hours per week for the session is 24 x $12.50 = $300 per session.
- (iv) Thesis or Project Fee—$49 (an additional fee of $33* is payable by students who have completed their final examinations for the degree but have not completed the thesis or project for which they have been previously enrolled.)
- (v) Thesis or Project Resubmission Fee* ........................................... $33

**Course for the Master of Commerce**

The following fees apply when formal course work is undertaken over two years full-time or three years part-time, and a report submitted on a project.

- (i) Registration Fee ......................................................................... $ 7
- (ii) Course Fee—per subject ................................................................. $49
- (iii) Project Fee—at the time of first enrolment in the project .............. $33
- (iv) Project Fee—(for each* subsequent enrolment in the project) ........ $33
- (v) Graduation Fee ............................................................................. $ 9
- (vi) Project Resubmission Fee* ......................................................... $33

**Diploma in Education**

- (i) Registration Fee ......................................................................... $ 7
- (ii) Award of Diploma Fee ................................................................. $ 9
- (iii) Full-time Course Fee—$462 per annum or $231 per session
- (iv) Part-time Course Fee—$231 per annum or $115.50 per session.
- (v) Fees for repeat subjects—calculated on the basis of a session's attendance at the rate of $12.50 per hour per week. Thus the fee for a programme requiring an attendance of 3 hours per week for the session is 3 x 12.50 = $37.50 per session.

* Students paying this fee who are not in attendance at the University are not required to pay the Student Activities Fees or the Library Fee.
Miscellaneous Subjects

Post-graduate subjects taken as “Miscellaneous Subjects” (i.e., not for a degree or diploma) or to qualify for registration as a candidate for a higher degree are assessed on the basis of a session’s attendance at the rate of $12.50 per hour per week. Thus the fee for a subject requiring an attendance of 2 hours per week for the sessions is 2 x $12.50 = $25 per session.

Research Degrees

(a) MASTER OF ARTS, COMMERCE, ENGINEERING,* SCIENCE*

Fees are payable from the commencement date of a candidate’s registration and remain payable until the candidate’s thesis is presented to the Examinations Branch.

(i) Qualifying Examinations .......................................................... $16
(ii) Registration Fee ................................................................. $ 7
(iii) Internal full-time student annual fee ..................................... $98
     Internal full-time student session fee .............................. $49
(iv) Internal part-time student annual fee ................................. $49
     Internal part-time student session fee ............................. $24.50
(v) External student annual fee† ................................................. $33
(vi) Final Examination .............................................................. $49
(vii) Thesis Resubmission Fee† .................................................. $49

(b) DOCTOR OF PHILOSOPHY

(i) Qualifying Examination ........................................................ $16
(ii) Registration Fee ................................................................. $ 7
(iii) Annual Fee ........................................................................ $98
(iv) Final Examination .............................................................. $66.50
(v) Thesis Resubmission Fee† ...................................................... $66.50

(c) RESEARCH DEGREE CONTINUATION FEE† $33

A candidate who at the end of a year has completed all work for the degree other than the writing up of the thesis and who anticipates submitting the thesis to the Secretary for examination before the end of the next session, may pay, in lieu of the normal fees, a Continuation Fee of $33. The payment must be accompanied by a statement from the candidate’s Head of Department certifying that his work for the degree has reached this stage. If the thesis has not been submitted by the end of the session for which the concession was given, registration will revert to part-time candidature as from the beginning of the year with consequential adjustment of fees.

(d) MISCELLANEOUS SUBJECTS

Postgraduate subjects taken as “Miscellaneous Subjects” (i.e., not for a degree or diploma) or to qualify for registration as a candidate for a higher degree are assessed on the basis of a session’s attendance at the rate of $12.50 per hour of 2 hours per week for the session is 2 x $12.50 = $25 per session.

* Candidates registered under the conditions governing the award of this degree without supervision will pay the following fees:
    Registration fee ................................................................. $ 7
    Examination of Thesis ......................................................... $98

† Students paying this fee who are not in attendance at the University are not required to pay the Student Activities Fees or the Library Fee.
POSTGRADUATE STUDY

(e) RESEARCH

(i) One day per week—$33 per annum.
(ii) Two or three days per week—$64 per annum.
(iii) Four or five days per week—$98 per annum.

Other Fees

In addition to the fees set out above all registered students will be required to pay the following library and student activities fees—

 Library Fee—annual fee—$16.
 College Union*—entrance fee—$20; annual fee—$30.
 Sports Association*—entrance fee—$6; annual subscription—$6.
 Students' Representative Council annual subscription—$6.
 Miscellaneous—annual fee—$2.

LATE FEES

INITIAL REGISTRATION

Fees paid from commencement of sixth week after date of offer of registration to end of eighth week $16

RENEWAL AT COMMENCEMENT OF EACH ACADEMIC YEAR

Fees paid from commencement of third week of Session 1 to 31st March $16

Fees paid after 31st March where accepted with the express approval of the Secretary $33

WITHDRAWAL

Students withdrawing from a course are required to notify the Secretary in writing. Fees for the course accrue until a written notification is received.

Where notice of withdrawal from a course is received by the Secretary before the first day of the first session a refund of all fees paid other than registration fee will be made.

Where a student terminates for acceptable reasons a course of study before half a session has elapsed, one half of the session's fee may be refunded. Where a student terminates a course of study after half a session has elapsed, no refund may be made in respect of that session's fees.

The Library fee is an annual fee and is not refundable where notice of withdrawal is given after the commencement of the first session. The University entrance fee is refundable only when notice of withdrawal is given before the commencement of the first session. On notice of withdrawal a partial refund of the Student activities fees is made on the following basis:

 College Union—$7.50 in respect of each half session.
 Students' Representative Council—where notice is given prior to the end of the fifth week of the first session $2, thereafter no refund.
 Sports Association—where notice is given prior to 30th April a full refund is made, thereafter no refund.
 Miscellaneous—where notice is given prior to 30th April $1, thereafter no refund.

* Life members of these bodies are exempt from the appropriate fee or fees.
POSTGRADUATE SCHOLARSHIPS

UNIVERSITY POSTGRADUATE SCHOLARSHIPS

The University provides each year a number of scholarships for postgraduate study and research in any approved field.

These awards are normally for graduates of Australian Universities who are domiciled in Australia. They are tenable for one year and, subject to satisfactory progress, may be renewed annually to provide a maximum tenure of two years in the case of a scholar registered for the degree of Master. In the case of a scholar registered for the degree of Doctor of Philosophy the award is tenable for up to a maximum of three years, but an extension for one year may be granted if special circumstances apply.

Applications should be lodged with the Secretary by 31st October each year.

COMMONWEALTH POSTGRADUATE RESEARCH AWARDS

A number of Commonwealth Postgraduate Research Awards are available to students undertaking full-time postgraduate research at the College, leading to the degree of Master and/or Ph.D.

Awards are available to Australian citizens and to overseas students who have permanent resident status in Australia and intend to remain in Australia on completion of studies. Applicants should hold, or expect to obtain, at least an upper division second class honours degree or its equivalent.

The closing date for applications is 31st October each year.

COMMONWEALTH POSTGRADUATE COURSE AWARDS

A number of awards for full-time postgraduate study leading to the degree of Master by formal course-work are also made available by the Commonwealth Government.

These awards are available to Australian citizens and to overseas students who have permanent resident status in Australia and intend to remain in Australia on completion of studies. Applicants are expected to have an undergraduate record at better than pass level.

Applications close on 30th September.

OTHER AWARDS

A number of awards and scholarships are offered by industry and by government departments. (The University of N.S.W. Calendar includes particulars of a number of such scholarships.) In most cases these are for postgraduate study in a specified field of research.

Enquiries may be directed to the College Secretary.
CONDITIONS OF AWARD

CONDITIONS FOR THE AWARD OF DEGREE OF DOCTOR OF PHILOSOPHY (Ph.D.)

1. The degree of Doctor of Philosophy may be granted by the Council on the recommendation of the Professorial Board to a candidate who has made an original and significant contribution to knowledge and who has satisfied the following requirements—

Qualifications

2. A candidate for registration for the degree of Doctor of Philosophy shall—
   (i) hold an honours degree from the University of New South Wales; or
   (ii) hold an honours degree of equivalent standing from another approved university; or
   (iii) if he holds a degree without honours from the University of New South Wales or other approved university, have achieved by subsequent work and study a standard recognised by the appropriate Faculty or Board of Studies as equivalent to honours; or
   (iv) in exceptional cases, submit such other evidence of general and professional qualifications as may be approved by the Professorial Board on the recommendation of the Faculty or Board of Studies.

3. When the Faculty or Board of Studies is not satisfied with the qualifications submitted by a candidate, the Faculty or Board of Studies may require him, before he is permitted to register, to undergo such examination or carry out such work as the Faculty or Board of Studies may prescribe.

Registration

4. A candidate for registration for a course of study leading to the degree of Doctor of Philosophy shall—
   (i) apply to the Registrar* on the prescribed form at least one calendar month before the commencement of the session in which he desires to register; and
   (ii) submit with his application a certificate from the head of the University school† in which he proposes to study stating that the candidate is a fit person to undertake a course of study and research leading to the degree of Doctor of Philosophy and that the school is willing to undertake the responsibility of supervising the work of the candidate and of reporting to the Faculty or Board of Studies at the end of the course on the merits of the candidate’s performance in the prescribed course.

5. Subsequent to registration the candidate shall pursue a programme of advanced study and research for at least six academic sessions, save that—
   (i) a candidate fully engaged in advanced study and research for his degree, who before registration was engaged upon research to the satisfaction of the Faculty or Board of Studies, may be exempted from not more than two academic sessions;
   (ii) in special circumstances the Faculty or Board of Studies may grant permission for the candidate to spend not more than one calendar year of his programme in advanced study and research at another institution provided that his work can be supervised in a manner satisfactory to the Faculty or Board of Studies.
   (iii) in exceptional cases, the Professorial Board on the recommendation of the Faculty or Board of Studies may grant permission for a candidate to be exempted from not more than two academic sessions.

6. A candidate who is fully engaged in research for the degree shall present himself for examination not later than ten academic sessions from the date of his

* At Wollongong University College, the Secretary.
† At Wollongong University College, the Head of the Department.
registration. A candidate not fully engaged in research shall present himself for examination not later than twelve academic sessions from the date of his registration. In special cases an extension of these times may be granted by the Faculty or Board of Studies.

7. The candidate shall be required to devote his whole time to advanced study and research, save that—
   (i) the Faculty or Board of Studies may permit a candidate on application to undertake a limited amount of University teaching or outside work which in its judgment will not interfere with the continuous pursuit of the proposed course of advanced study and research;
   (ii) a member of the full-time staff of the University may be accepted as a part-time candidate for the degree, in which case the Faculty or Board of Studies shall prescribe a minimum period for the duration of the programme;
   (iii) in special circumstances the Faculty or Board of Studies may, with the concurrence of the Professorial Board, accept as a part-time candidate for the degree a person who is not a member of the full-time staff of the University and is engaged in an occupation which, in its opinion, leaves the candidate substantially free to pursue his programme in a school* of the University. In such a case the Faculty or Board of Studies shall prescribe for the duration of his programme a minimum period which, in its opinion, having regard to the proportion of his time which he is able to devote to the programme in the appropriate University school* is equivalent to the six sessions ordinarily required.

8. Every candidate shall pursue his programme under the direction of a supervisor appointed by the Faculty or Board of Studies from the full-time members of the University staff. The work, other than field work, shall be carried out in a school* of the University save that in special cases the Faculty or Board of Studies may permit candidates to conduct their work at other places where special facilities not possessed by the University may be available. Such permission will be granted only if the direction of the work remains wholly under the control of the supervisor.

9. Not later than two academic sessions after registration the candidate shall submit the topic of his research for approval by the Faculty or Board of Studies. After the topic has been approved it may not be changed except with the permission of the Faculty or Board of Studies.

10. A candidate may be required by the Faculty or Board of Studies to attend a formal course of study appropriate to his work.

Thesis

11. On completing his course of study every candidate must submit a thesis which complies with the following requirements—
   (i) the greater proportion of the work described must have been completed subsequent to registration for the Ph.D. degree;
   (ii) it must be an original and significant contribution to the knowledge of the subject;
   (iii) it must be written in English except that a candidate in the Faculty of Arts may be required by the Faculty on the recommendation of the supervisor to write the thesis in an appropriate foreign language;
   (iv) it must reach a satisfactory standard of expression and presentation.

12. The thesis must present the candidate's own account of his research. In special cases work done conjointly with other persons may be accepted, provided the Faculty or Board of Studies is satisfied on the candidate's part in the joint research.

* Department at Wollongong University College.
13. Every candidate shall be required to submit with his thesis a short abstract of the thesis comprising not more than 300 words.

14. A candidate may not submit as the main content of his thesis any work or material which he has previously submitted for a University degree or other similar award.

Entry for Examination

15. The candidate shall give in writing two months’ notice of his intention to submit his thesis and such notice shall be accompanied by the appropriate fee.

16. Four copies of the thesis shall be submitted together with a certificate from the supervisor that the candidate has completed the course of study prescribed in his case. The 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 higher degree theses. The candidate may also submit any work he has published whether or not such work is related to the thesis.

17. 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.

18. There shall normally be three examiners of the thesis, appointed by the Professorial Board on the recommendation of the Faculty or Board of Studies, at least one of whom shall be an external examiner.

19. After examining the thesis the examiners may—

(i) decide that the thesis reaches a satisfactory standard; or

(ii) recommended that the candidate be required to re-submit his thesis in revised form after a further period of study and/or research; or

(iii) recommend without further test that the candidate be not awarded the degree of Doctor of Philosophy.

20. If the thesis reaches the required standard, the examiners shall arrange for the candidate to be examined orally, and, at their discretion, by written papers and/or practical examinations on the subject of the thesis and/or subjects relevant thereto, save that on the recommendation of the examiners the Faculty or Board of Studies may dispense with the oral examination.

21. If the thesis is of satisfactory standard but the candidate fails to satisfy the examiners at the oral or other examinations, the examiners may recommend the University to permit the candidate to represent the same thesis and submit to a further oral, practical or written examination within a period specified by them but not exceeding eighteen months.

22. At the conclusion of the examination, the examiners will submit to the Faculty or Board of Studies a concise report on the merits of the thesis and on the examination results, and the Faculty or Board of Studies shall recommend whether or not the candidate may be admitted to the degree.

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

* See later.
CONDITIONS FOR THE AWARD OF DEGREE OF MASTER OF ARTS (M.A.)

1. An application to register as a candidate for the degree of Master of Arts shall be made on the prescribed form which shall be lodged with the Registrar at least one full calendar month before the commencement of the session in which the candidate desires to register.

2. A candidate for the degree shall be registered in one of the following Schools* of the Faculty of Arts: Drama, Economics, English, French, Geography, German, History, History and Philosophy of Science, Mathematics,† Philosophy, Political Science, Psychology, Russian, Sociology, Spanish.

3. The degree shall be awarded in two grades, namely the Pass degree and the degree with Honours. There shall be two classes of Honours, namely Class I and Class II.

4. A candidate for the Honours degree may not be awarded the Pass degree.

5. Honours Degree
   (i) Except as provided in sub-section 5 (ii) an applicant for registration for the Honours degree of Master of Arts shall have been admitted to the degree of Bachelor of Arts at a standard not below second class honours in the University of New South Wales, or other approved University, in an appropriate School or Department.
   (ii) Applicants for registration for the Honours degree who are graduates in Arts of this, or other approved University, with a degree at a standard below second class honours shall be required to take a qualifying examination as approved by the Faculty of Arts (hereinafter referred to as “the Faculty”), and if successful may then apply for registration as a candidate for the Honours degree.
   (iii) Notwithstanding any other provisions of these conditions the Faculty may, on the recommendation of the Head of the School,‡ require an applicant to demonstrate fitness for registration as a candidate for the Honours degree by carrying out such work and passing such examinations as the Faculty may determine. The Faculty may on the recommendation of the Head of the School concerned require a candidate for the Honours degree to undergo a suitable test in a relevant language, the form of such test to be recommended by the Head of the School concerned.
   (iv) Every candidate for the Honours degree shall be required to submit three copies of a thesis embodying the results of an original investigation, to take such examinations and to perform such other work as may be prescribed by the Faculty on the recommendation of the Head of the School concerned. A candidate for the Honours degree may not submit as the main content of his thesis any work or material which he has previously submitted for a University degree or other similar award. The Honours thesis shall be presented in a form which complies with the requirements of the University for the preparation and submission of higher degree theses.§
   (v) It shall be understood that the University retains three copies of the Honours thesis submitted for examination and may allow the thesis to be consulted or borrowed. Subject to the provisions of the Copyright Act, 1968 the University may issue the Honours thesis in whole or in part in photostat or microfilm or other copying medium.

* The Secretary at Wollongong University College.
† Departments at Wollongong University College.
‡ The School of Mathematics includes a Department of Statistics.
§ At Wollongong University College, the Head of the Department.
§ See later.
(vi) The investigation and other work as provided in paragraph 5 (iv) shall be carried out under the direction of a supervisor appointed by the Faculty or under such conditions as the Faculty may determine.

(vii) For each candidate for the Honours degree there shall be at least two examiners appointed by the Professorial Board on the recommendation of the Faculty, one of whom shall, if possible, be an external examiner.

(viii) Every candidate for the Honours degree shall in the first instance submit his proposed course of study and the subject of his thesis for the approval of the Head of the School concerned.

(ix) No candidate shall be considered for the award of the Honours degree until the lapse of three complete sessions from the date from which registration becomes effective, save that in the case of a candidate who has demonstrated exceptional merit this period may, with the approval of the Faculty, be reduced by one session.

6. Pass Degree

(i) Unless the Faculty shall otherwise determine, an applicant for registration as a candidate for the Pass degree of Master of Arts shall have been admitted to the degree of Bachelor of Arts in the University of New South Wales or other approved university and shall have taken a major sequence, and passed all necessary examinations, in the subject or subjects, or in a discipline related to the subject or subjects, in which he wishes to work for the Pass degree.

(ii) Notwithstanding the provisions of clause 6 (i) the Faculty may, on the recommendation of the Head of the School, require an applicant to demonstrate his eligibility for registration by carrying out such work and passing such examinations as the Faculty may determine.

(iii) A candidate for the Pass degree shall attend such classes and seminars as may be prescribed, shall pass the required examinations, and shall complete satisfactorily such written and other work as the Head of School may determine.

(iv) No part-time candidate shall be considered for the award of the Pass degree until the lapse of four complete sessions from the date from which registration becomes effective. No full-time candidate shall be considered for the award of the degree until the lapse of two sessions from the date from which registration becomes effective.

7. (i) A graduate in the Faculty other than Arts of this or other approved university may be admitted to registration for the Honours or Pass degree of Master of Arts, with the approval of the Faculty.

(ii) In special circumstances a person may be permitted to register as a candidate for the Honours or Pass degree of Master of Arts if he submits evidence of such academic and professional attainments as may be approved by the Faculty on the recommendation of its Higher Degree Committee.

8. In every case, before permitting an applicant to register as a candidate the Faculty shall be satisfied that adequate supervision and facilities are available.

9. No candidate shall, without the approval of the Head of the School concerned, be enrolled as a candidate for the degree of Master of Arts at the same time as he is enrolled for any other degree or diploma in this University or elsewhere.

10. An approved applicant shall pay such fees as may be determined from time to time by the Council.

* At Wollongong University College, the Head of the Department.
CONDITIONS FOR THE AWARD OF DEGREE OF MASTER OF COMMERCE (M.Com.)

1. An application to register as a candidate for the degree of Master of Commerce shall be made on the prescribed form which shall be lodged with the Registrar* at least two full calendar months before the commencement of the session in which the candidate desires to register.

2. (i) An applicant for registration for the degree shall have been admitted to the degree of Bachelor of Commerce in the University of New South Wales or to an appropriate degree of any other approved University.

(ii) In special circumstances a person may be permitted to register as a candidate for the degree if he submits evidence of such academic and professional attainments as may be approved by the Faculty of Commerce (hereinafter referred to as “the Faculty” on the recommendation of the Higher Degree Committee.

3. Notwithstanding any other provisions of these conditions the Faculty may require an applicant to demonstrate fitness for registration by carrying out such work and sitting for such examinations as the Faculty may determine.

4. In every case, before permitting an applicant to register as a candidate the Faculty shall be satisfied that adequate supervision and facilities are available.

5. An approved applicant shall register in one of the following categories:
   (i) student in full-time attendance at the University;
   (ii) student in part-time attendance at the University;
   (iii) student working externally to the University;
and shall pay such fees as may be determined from time to time by the Council. Registration as a student working externally will be permitted only in cases where adequate arrangements can be made for external supervision. Course work can not be taken externally.

6. The requirements for the degree of Master of Commerce may be satisfied in either of two ways. Candidates who have a distinguished first degree and who provide evidence of research ability may be permitted to present themselves for examination by thesis only. Other candidates shall be required to follow a programme which places less emphasis on research and more on formal instruction.

7. A candidate presenting himself for examination by thesis only shall, upon application for registration, submit the title and outline of the proposed field of research. The research and investigation shall be carried out under the direction of a supervisor appointed by the Faculty and the results thereof shall be embodied in a thesis. No candidate shall be considered for the award of the degree until the lapse of four complete sessions from the date on which the registration becomes effective, save that in the case of a candidate who has obtained the degree of Bachelor with honours or who has had previous research experience, this period may, with the approval of the Faculty, be reduced by up to two sessions.

8. A candidate following a formal course of study leading to the degree shall:
   (i) undertake a course of formal study prescribed by Faculty as set out in the “Course Requirements for the Master of Commerce Degree”,
   save that a candidate who has obtained an appropriate degree at

* The Secretary at Wollongong University College.
honours level may be given credit for honours course work. The course of formal study will extend over two full-time or three part-time years;

(ii) except in exceptional circumstances pass at the first attempt all examinations prescribed by the Faculty;

(iii) submit a report on a topic approved by Faculty. The report will normally be submitted at the end of the second full-time or third part-time year.

(iv) obtain an average of credit or better in the subjects listed below in respect of the school or department in which he is pursuing his studies as a condition for proceeding to completion of the degree, providing that a candidate who has passed at a standard below the required average may be permitted to present again such subject or subjects as the head of school or department approves. The subjects referred to above are:

SCHOOL OF ACCOUNTANCY:
*14.163/1 Financial Accounting Theory
and
*14.901G Corporate Organisation and Accounting or
*14.163/2 Managerial Accounting Theory
and

SCHOOL OF ECONOMICS:
Economics Graduate Course—
*15.143G Economic Theory A
*15.144G Economic Theory B
Econometrics Graduate Course—
*15.434 Econometrics
*15.443 Mathematical Economics

DEPARTMENT OF MARKETING:
*28.203 Seminar in Marketing Theory I.

9. (i) Every candidate shall submit three copies of the thesis or report. All copies shall be presented in a form which complies with the requirements of the University for the preparation and submission of higher degree theses. A candidate may submit also for examination any work he has published whether or not such work is related to the thesis.

(ii) It shall be understood that the University retains three copies of the thesis or report submitted for examination and is free to allow the thesis or report to be consulted or borrowed. Subject to the provisions of the Copyright Act 1912 (as amended) the University may issue the thesis or report in whole or in part, in photostat or microfilm or other copying medium.

10. For each candidate's thesis or report there shall be two examiners appointed by the Professorial Board on the recommendation of the Faculty, one of whom shall in the case of a thesis, be an external examiner.

* Subject numbers apply to subjects offered by the University of New South Wales (Kensington) only.
† See later.
CONDITIONS FOR THE AWARD OF DEGREE OF MASTER OF ENGINEERING (M.E.)

1. The degree of Master of Engineering may be granted by the Council on the recommendation of the Professorial Board to a candidate who has demonstrated ability to carry out research by the submission of a thesis embodying the results of an original investigation.

2. An application to register as a candidate for the degree of Master of Engineering shall be made on the prescribed form which shall be lodged with the Registrar at least one full calendar month before the commencement of the session in which the candidate desires to register.

3. (i) An applicant for registration for the degree shall have been admitted to the degree of Bachelor in the University of New South Wales, or other approved University, in an appropriate school.

(ii) In exceptional cases a person may be permitted to register as a candidate for the degree if he submits evidence of such academic and professional attainment as may be approved by the Professorial Board on the recommendation of the appropriate Faculty (hereinafter referred to as "the Faculty").

4. Notwithstanding any other provisions of these conditions, the Faculty may require an applicant to demonstrate fitness for registration by carrying out such work and sitting for such examinations as the Faculty may determine.

5. In every case, before permitting an applicant to register as a candidate, the Faculty shall be satisfied that adequate supervision and facilities are available.

6. An approved applicant shall register in one of the following categories:
   (i) student in full-time attendance at the University;
   (ii) student in part-time attendance at the University;
   (iii) student working externally to the University;
and shall pay such fees as may be determined from time to time by the Council.

7. Every candidate for the degree shall be required to carry out a programme of advanced study, to take such examinations and perform such other work as may be prescribed by the Faculty. The programme shall include the preparation and submission of a thesis embodying the results of an original investigation, three copies of which shall be presented in a form which complies with the requirements of the University for the preparation and submission of higher degree thesis. The candidate may submit any work he has published whether or not such work is related to the thesis.

8. 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.

9. The investigation and other work as provided in paragraph 7 shall be carried out under the direction of a supervisor appointed by the Faculty or under such conditions as the Faculty may determine.

10. No candidate shall be considered for the award of the degree until the lapse of four complete sessions from the date from which registration becomes effective save that, in the case of a candidate who obtained the degree of Bachelor with Honours or who has had previous research experience, this period may, with the approval of Faculty, be reduced by up to two sessions.
11. For each candidate there shall be at least two examiners appointed by the Professorial Board on the recommendation of the Faculty, one of whom shall, if possible, be an external examiner.

CONDITIONS FOR THE AWARD OF DEGREE OF MASTER OF ENGINEERING SCIENCE (M.Eng.Sc.) and MASTER OF SURVEYING SCIENCE (M.Surv.Sc.)

1. The degrees of Master of Engineering Science and Master of Surveying Science in the Faculty of Engineering may be granted by the Council on the recommendation of the Professorial Board to a candidate who has satisfactorily completed a programme of advanced study comprising formal course work and who has submitted a satisfactory project report based upon a critical review, a design or research.

2. An application to register as a candidate for the degree shall be made on the prescribed form which shall be lodged with the Registrar* at least one full calendar month before the commencement of the course.

3. (i) An applicant for registration for the degree shall have been admitted to the degree of Bachelor with Honours in the University of New South Wales or other approved University in an appropriate school or department. A graduate with a pass degree of good standing from an appropriate degree course in engineering in the case of the Master of Engineering Science or in Surveying in the case of the Master of Surveying Science may be admitted on the recommendation of the Head of School† and the confirmation of Faculty.

(ii) In special cases a person may be permitted to register as a candidate for the degree if he submits evidence of such academic and professional attainment as may be approved by the Faculty on the recommendation of its Higher Degree Committee.

4. Notwithstanding any other provisions of these conditions the Faculty may require an applicant to demonstrate fitness for registration by carrying out such work and sitting for such examinations as the Faculty may determine.

5. An approved applicant shall pay such fees as may be determined from time to time by the Council.

6. A candidate for the degree shall be required to undertake the prescribed course of study, to pass any prescribed examinations and to submit a report on a project approved by the Faculty. The format of the report shall comply with the requirements of the Faculty for the preparation and submissions of Master of Engineering Science and Master of Surveying Science project reports (see below).

7. A candidate shall submit the project report not later than one year after completing formal course work requirements.

8. The project report shall be examined by two examiners appointed by the Professorial Board on the recommendation of the Faculty.

9. The examiners will submit to the Faculty a concise report on the merits of the project report, and the Faculty shall recommend whether or not the candidate may be admitted to the degree.

Faculty of Engineering Requirements for Preparation of M. Eng. Sc. and M. Surv. Sc. Reports

(i) Two copies of the written part of the report should be submitted, typed double spaced on one side of good quality foolscap or quarto-sized paper.

(ii) The margins on each sheet shall be not less than 1½ inches on the left-hand side, ½ inch on the right-hand side, 1 inch at the top and ½ inch at the bottom.

* The Secretary at Wollongong University College.
† The Head of the Department at Wollongong University College.
POSTGRADUATE STUDY

(iii) There should be a title sheet showing project report, title, author's name, degree and date of submission.

(iv) Sheets shall be numbered consecutively.

(v) Unless otherwise specifically instructed by the supervisor, diagrams, charts, etc., should be included, where possible, with the text, facing the page on which reference to them is made otherwise they may be clearly referred to in the text, numbered and folded for insertion in a pocket on the back cover of the project report. Folding diagrams or charts included in the text should be arranged to open out to the top and to the right.

(vi) All drawings which are separately bound shall be of double elephant size (27 inches by 40 inches) and shall have a margin at least 1 inch wide on the left-hand side to permit binding.

(vii) The drawings shall be bound together by a row of clips on the left-hand side and shall have a clear sheet of drawing paper on top and underneath. On the top sheet shall be printed the words "The University of New South Wales — Master of Engineering Science Degree", or where appropriate "Master of Surveying Science Degree" and a description of the project, e.g., "Highway Design Project" and underneath that the date submitted. On the bottom right-hand corner should be printed the name of the candidate.

(viii) Drawings may be originals on cartridge paper or black and white prints. They should be suitably coloured where appropriate and it will be permissible to add extra work in ink to original drawings.

(ix) Two copies of all drawings will be required normally. Exceptions to this direction shall be granted only on the recommendation of the Faculty Graduate Studies Committee.

CONDITIONS FOR THE AWARD OF DEGREE OF MASTER OF SCIENCE (M. Sc.)

1. The degree of Master of Science may be granted by the Council on the recommendation of the Professorial Board to a candidate who has demonstrated ability to undertake research by the submission of a thesis embodying the results of an original investigation.

2. An application to register as a candidate for the degree of Master of Science shall be made on the prescribed form which shall be lodged with the Registrar* at least one full calendar month before the commencement of the session in which the candidate desires to register.

3. (i) An applicant for registration for the degree shall have been admitted to the degree of Bachelor of Science in the University of New South Wales, or other approved University, in an appropriate School or Department.

(ii) In exceptional cases a person may be permitted to register as a candidate for the degree if he submits evidence of such academic and professional attainments as may be approved by the Professorial Board on the recommendation of the appropriate Faculty or Board of Studies.

4. Notwithstanding any other provisions of these conditions the Faculty or Board of Studies may require an applicant to demonstrate fitness for registration by carrying out such work and sitting for such examinations as the Faculty or Board of Studies may determine.

5. In every case before permitting an applicant to register as a candidate the Faculty or Board of Studies shall be satisfied that adequate supervision and facilities are available.

* The Secretary at Wollongong University College.

198
6. An approved applicant shall register in one of the following categories:
   (i) student in full-time attendance at the University;
   (ii) student in part-time attendance at the University;
   (iii) student working externally to the University;
and shall pay such fees as may be determined from time to time by the Council.

7. Every candidate for the degree shall be required to submit three copies of a thesis embodying the results of an original investigation or design, to take such examinations and to perform such other work as may be prescribed by the Faculty or Board of Studies. 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*. The candidate may submit also for examination any work he has published whether or not such work is related to the thesis.

8. 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.

9. The investigation, design and other work as provided in paragraph 7 shall be carried out under the direction of a supervisor appointed by the Faculty or Board of Studies or under such conditions as the Faculty or Board of Studies may determine.

10. No candidate shall be considered for the award of the degree until the lapse of four complete sessions from the date from which registration becomes effective, save that in the case of a candidate who obtained the degree of Bachelor with Honours or who has had previous research experience this period may, with the approval of the Faculty or Board of Studies be reduced by up to two sessions.

11. For each candidate there shall be at least two examiners appointed by the Professorial Board, on the recommendation of the Faculty or Board of Studies, one of whom shall, if possible, be an external examiner.

CONDITIONS FOR THE DEGREE OF MASTER OF SCIENCE,
MASTER OF ENGINEERING OR MASTER OF SURVEYING
WITHOUT SUPERVISION

Where it is not possible for candidates to register under the existing conditions for the degree of Master of Science, Master of Engineering or Master of Surveying by reason of their location at centres which are distant from University Schools† or where effective supervision is not practicable registration may be granted in these categories under the following conditions:

1. An application to register as an external candidate for the degree of Master of Science, Master of Engineering or Master of Surveying without supervision shall be lodged with the Registrar‡ for recommendation by the Head of School§ and consideration by the Faculty, 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 own interest at an early stage, seek the advice of the appropriate School‡ with regard to the adequacy of the subject matter for the degree. A synopsis of the work should be enclosed.

2. An applicant for registration shall have been admitted to a degree of Bachelor in the University of New South Wales.

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* See later.
† Departments at Wollongong University College.
‡ The Secretary at Wollongong University College.
§ At Wollongong University College, the Head of Department.
3. An approved applicant shall pay such fees as may be determined from time to time by the Council.

4. (i) Every candidate for the degree shall be required to submit three copies of a thesis embodying the results of an original investigation or design. 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*. A candidate may submit also for examination any work he has published, whether or not such work is related to the thesis.

(ii) Every candidate shall submit with the thesis a statutory declaration that the material contained therein is his own work, except where otherwise stated in the thesis.

5. 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.

6. A candidate shall not be considered for the award of the degree until the lapse of six sessions in the case of honours graduates and eight sessions in the case of pass graduates from the date of graduation.

7. For each candidate there shall be at least two examiners appointed by the Professorial Board on the recommendation of the appropriate Faculty, one of whom shall be an internal examiner.

8. If the thesis reaches the required standard the candidate shall be required to attend for an oral examination at a time and place nominated by the University. The examiners may also arrange at their discretion for the examination of the candidate by written and/or practical examinations on the conduct of the thesis and/or subjects related thereto.

**CONDITIONS OF AWARD — GRADUATE DIPLOMAS**

1. An application for admission to a graduate diploma course shall be made on the prescribed form which shall be lodged with the Registrar at least two full calendar months before the commencement of the course.

2. An applicant for admission to a graduate diploma course shall be—
   (a) a graduate of the University of New South Wales or other approved university.
   (b) a person with other qualifications as may be approved by Faculty.

3. Notwithstanding clause (2) above, Faculty may require an applicant to take such other prerequisite or concurrent studies and/or examinations as it may prescribe.

4. Every candidate for a graduate diploma shall be required to undertake the appropriate course of study, to pass any prescribed examinations, and if so laid down in the course, to complete a project or assignment specified by the Head of the School. The format of the report on such project or assignment shall accord with the instructions laid down by the Head of the School.

5. An approved applicant shall be required to pay the fee for the course in which he desires to register. Fees shall be paid in advance.

* See later.
† The Secretary at Wollongong University College.
‡ At Wollongong University College, the Head of the Department.
PREPARATION AND SUBMISSION OF THESES FOR HIGHER DEGREES

1. Every candidate for the degree of Master shall submit to the Registrar three copies of the thesis and supporting work. All copies of the thesis shall include a summary of approximately 200 words and a certificate signed by the candidate to the effect that the work has not been submitted for a higher degree to any other University or institution.

2. Every candidate for the degree of Doctor of Philosophy shall submit to the Registrar four copies of the thesis and supporting work. All copies of the thesis shall contain a short abstract of the thesis comprising not more than 300 words.

3. Every candidate for the degree of Doctor of Medicine shall submit to the Registrar four copies of the thesis and supporting work. All copies of the thesis shall contain a short abstract of the thesis comprising not more than 400 words which inter alia shall indicate wherein the thesis has made an original contribution.

4. The specifications currently approved for higher degree theses are as follows:

(a) All copies of the thesis shall be in double spaced typescript.
(b) The size of the paper shall be quarto (approximately 10 in. X 8 in.) except for drawings and maps on which no restriction is placed.
(c) The margins on each sheet shall be not less than 1\(\frac{1}{2}\) in. on the left-hand side, \(\frac{3}{4}\) in. on the right-hand side, 1 in. at the top and \(\frac{3}{4}\) in. at the bottom.
(d) There shall be a title sheet showing thesis title, author's name, degree and date of submission.
(e) Pages shall be numbered consecutively.
(f) Diagrams, charts, etc., must not be submitted on the back of typed sheets.

Unless otherwise specifically instructed by the supervisor, diagrams, charts, etc., should be included where possible, with the text, facing the page on which reference to them is made, otherwise they may be clearly referred to in the text, numbered and folded for insertion in a pocket on the back inside cover of the thesis binding. Folded diagrams or charts included in the text should be arranged so as to open out to the top and right.

5. The original copy of the thesis for deposit in the Library shall be bound in accordance with the following specifications: The thesis shall be bound in boards, covered with blue or green bookcloth or backray, or other binding fabric. The bound volume shall be lettered on the spine as follows:

(a) At the bottom and across—UNSW or if the volume is too thin for this—U NSW

* The Secretary at Wollongong University College.
(b) 2½ in. from the bottom and across, with the degree and year of the thesis, for example—

MSc
1960

(c) Evenly spaced between the statement of the degree and the year and the top of the spine the name of the author, first initials and then the surname, reading upwards in one line.

No further lettering or any decoration is required on the spine or anywhere else on the binding. In the binding of theses which include mounted photographs, folded graphs, and so on, leaves at the spine shall be packed to ensure even thickness of the volume. The Library copy of the thesis shall be bound by one of a panel of approved bookbinders, each of whom is aware of the University’s requirements. Names of approved bookbinders may be secured from the Examinations Branch.

The other copies of the thesis shall be bound in such a manner as allows their transmission to the examiners without possibility of their disarrangement.

6. The thesis and other relevant work may be submitted to the Registrar* at any time during the year provided the candidate has completed the minimum period of registration. In order that a successful candidate may have a reasonable chance of having the degree conferred at one of the formal degree conferring ceremonies, the candidate should arrange for the thesis and other relevant work to be in the hands of the Registrar* at least fourteen weeks prior to the date of such ceremony.
DETAILS OF COURSEWORK

MASTER OF ARTS (PASS) — ENGLISH

Students must complete four subjects (two in each of the two years). Each subject will involve at least 30 hours of seminars, together with such supplementary study of criticism, research-materials and methods as may be prescribed from time to time. Students will be expected to undertake wide reading in preparation for each seminar and must, as required, write papers to be presented at the seminars. Assessment will be based on these papers as well as on examinations at the end of each session, and a long essay (approximately 10,000 words) to be handed in at the end of the second session.

Two subjects will be offered in 1972 provided that the necessary staff is available; and new subjects will be added from time to time in such fields as Modern American Literature, Nineteenth-Century Australian Literature, Linguistic History and Theory, and European Fiction and Drama in English Translation.

The Head of the Department reserves the right to place a limit on numbers in particular subjects, and to advise candidates on the subjects best suited to their qualifications and purposes.

FIRST SESSION

Modern Poetry from Hardy to Auden: A study of the poems of such writers as Hardy, Yeats, Frost, Stevens, Pound, T. S. Eliot, E. E. Cummings and Auden.

SECOND SESSION

Modern Poetry from Louis MacNeice to Sylvia Plath: A study of the poems of such writers as MacNeice, A. D. Hope, Dylan Thomas, Robert Lowell, Philip Larkin, Allen Ginsberg, Peter Porter and Sylvia Plath.

MASTER OF ARTS (PASS) — HISTORY

Candidates enrolled for the Pass M.A. degree in History will participate in a minimum of two seminar discussion hours each week for two academic years. They will be required to write such essays as may be set.

The following topics will be discussed during the four sessions of the course:

- Historical Methodology
- Late eighteenth-century British intellectual history
- Winston Churchill; some aspects of his career
- Some aspects of Southeast Asian history (yet to be decided).

The last two of these four topics will be offered in 1972.
MASTER OF ENGINEERING SCIENCE

The Department of Civil, Mechanical and Mining Engineering offers a course leading to the degree of Master of Engineering Science in Mechanical Engineering.

This course provides advanced study and research in selected areas, and is made up of a programme of formal work selected from the subjects listed below together with research work.

Credit Hrs.

<table>
<thead>
<tr>
<th>Subject</th>
<th>Hrs.</th>
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</thead>
<tbody>
<tr>
<td>Optimum Design for Mechanical Engineers</td>
<td>3</td>
</tr>
<tr>
<td>Advanced Dynamics</td>
<td>6</td>
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<tr>
<td>Advanced Mechanics of Solids I</td>
<td>6</td>
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<tr>
<td>Advanced Mechanics of Solids II</td>
<td>6</td>
</tr>
<tr>
<td>Theory of Elasticity</td>
<td>6</td>
</tr>
<tr>
<td>Computational Methods in Mechanical Engineering I</td>
<td>3</td>
</tr>
<tr>
<td>Computational Methods in Mechanical Engineering II</td>
<td>3</td>
</tr>
<tr>
<td>Gas Dynamics and Compressible Fluid Flow</td>
<td>9</td>
</tr>
<tr>
<td>Advanced Heat Transfer I</td>
<td>6</td>
</tr>
<tr>
<td>Advanced Heat Transfer II</td>
<td>6</td>
</tr>
<tr>
<td>Statistical Thermodynamics</td>
<td>6</td>
</tr>
<tr>
<td>Systems Analysis Methods</td>
<td>9</td>
</tr>
</tbody>
</table>

The normal length of the course is one full-time year (two sessions) or two part-time years, amounting in each case to approximately forty-two credit hours (one credit hour being normally equal to one hour per week for one session). Of this, not less than eighteen and not more than thirty-six credit hours shall be devoted to formal course work. Students for whom additional prerequisite or co-requisite courses have been prescribed must expect their course to exceed the minimum period. The maximum period allowed for completion of the course is two years for full-time students and four years for part-time students.

It is expected that no less than two-thirds of the formal credit hours will be earned within a single field of engineering science, which will be regarded as the student's major field of study.

Areas from which research topics may be selected are to some extent indicated by the foregoing list of subjects. The topic will be determined after discussion between the student and his proposed Supervisor (who is nominated after the student has indicated his area of interest).

Students should recognise that they must be prepared to spend a number of hours regularly each week on their research, a matter of some difficulty for part-time students, unless they are willing and able to devote at least some daytime hours to the purpose. This will be considered essential in the case of experimental research.

DESCRIPTION OF SUBJECTS

OPTIMUM DESIGN FOR MECHANICAL ENGINEERS

(3 credit hrs.)

Introduction, discussion of methods of optimization; mathematical functions in engineering; principles of optimum design; normal, redundant and incompatible specifications; problems with more than one primary design equation; optimum design of axially loaded members (with static and variable load); optimum design of torsion shaft for minimum weight, minimum cost, maximum energy absorption, maximum torque felt by machine frame, maximum power transmission; optimum design of shaft with combined loading; optimum design of gears for maximum torque transmission capability, for maximum power transmission capability for minimum size; some typical examples of optimum design; optimization by linear programming—simplex method.
ADVANCED DYNAMICS
(6 credit hrs.)

Kinematics and dynamics of particles and rigid bodies in three-dimensional motion: Fixed and moving reference frames; Newtonian dynamics; inertia tensor; Eulers equations of motion; general motion of gyroscopes and rigid bodies in space.
Calculus of variations; Functions and functionals; stationary values of integrals; Euler-Lagrange equation; constraints and Lagrange multipliers; fixed and variable end points; problems of Lagrange Mayer and Bolza.
Variational dynamics: Performance optimisation; generalised co-ordinates; Lagrange equation; Hamilton's principle; impulsive motion; oscillatory motion.

ADVANCED MECHANICS OF SOLIDS I
(6 credit hrs.)

Stresses in normally loaded flat plates and shells: Bending and deflection of long rectangular plates; bending and deflection of circular plates; bending stresses in thin-walled vessels; thermal stresses in thin-walled vessels.
Buckling: Lateral buckling of prismatic bars; energy method of calculating critical compressive loads; buckling of bars of variable cross section; effect of shearing force on the critical loads; inelastic buckling of straight columns; buckling of circular rings and tubes under external pressure; buckling of beams without lateral supports; buckling of shafts by torsion; twistbend buckling; twist buckling of columns; buckling of rectangular plates.
Stresses and deformation of rotating discs: Uniform and varying thickness; uniform stress; sum and difference method; temperature gradients.
Effect of small inelastic strains on load-carrying capacity: Notched bar in tension; residual stress: beam of rectangular cross-section; torsion of prismatical bars; ultimate load analysis—simple cases; thick cylinders.

ADVANCED MECHANICS OF SOLIDS II
(6 credit hrs.)

Plasticity and metal forming: Theories of plasticity; plane strain problems in cartesian and polar co-ordinates; axially-symmetrical problems in cylindrical and spherical co-ordinates; effect of temperature strain rate and external friction on plastic deformation; applications to certain metal forming problems.
Elastic bodies in contact: Point and line contact; contact stresses; deflection of bodies in contact; effect of friction on contact stresses.
Fluctuating stresses: Endurance test; fatigue; effect of stress concentration on fatigue; mean stress, variable stress; fatigue under combined loading; theories of fatigue failure; factor of safety; corrosion fatigue.
Mechanical properties of materials at high temperature: Introduction to the mechanics of creep; deformation by creep; steady creep under general state of stress; creep under alternating stress; effect at temperature variations; stress relaxation due to creep; creep recovery.
Mechanical properties of materials at low temperature: Brittle fracture; propagation of brittle cracks; ductile-brittle transition; fracture toughness; notch ductility.

THEORY OF ELASTICITY
(6 credit hrs.)

Basic concepts: Notation; components of stress and strain; plane stress and plane strain; equations of equilibrium and compatibility; Airy's stress function; applications to the solution of two-dimensional problems in rectangular co-ordinates; polar co-ordinates; stress distributions symmetrical about an axis; application to the solution of various problems.
Torsion: Prismatical bars, St. Venant's theory; membrane and other analogies; torsion of rectangular bars, angles, channels, etc.; hollow shafts and thin tubes.
Stress concentration: Mathematical and experimental methods; stress concentration in tension and compression members; stress concentration in torsion; circular shafts of variable diameter; stress concentration in bending; investigation of stress concentration with models; photoelastic method of stress measurements.

Thermal stresses: One-dimensional temperature distributions; rectangular plate, turbine blade; two-dimensional temperature distributions; circular disc, turbine disc; allowable stresses at elevated temperatures; creep, fatigue, thermal shock.

Stress waves: Longitudinal waves in prismatic bars; longitudinal impact of bars.

COMPUTATIONAL METHODS IN MECHANICAL ENGINEERING I
(3 credit hrs.)
Programming languages, including Fortran and automatic differential equation solvers; solution of single non-linear equations; iteration; extension to simultaneous equations; systems of linear equations; direct, matrix and iterative methods; relaxation; empirical analysis; least squares, differential correction; introduction to linear programming; ordinary differential equations; series and stepwise methods; partial differential equations; solution by finite differences; iterative methods in boundary value and initial value problems.

COMPUTATIONAL METHODS IN MECHANICAL ENGINEERING II
(3 credit hrs.)
Deals with the solution of engineering problems employing the methods of systems analysis. Both lumped parameter and distributed systems are discussed. The following topics are treated:— Problem formulation, classical time domain methods, frequency domain analysis, Fourier, Laplace and Z transforms, matrix methods and introduction to state-space analysis, phase-plane analysis applied to non-linear systems, analogue computation.

GAS DYNAMICS AND COMPRESSIBLE FLUID FLOW
(9 credit hrs.)
Thermodynamics, conservation equations, kinematics, vorticity; acoustic waves; mach number; isentropic and isenergetic flow; nozzle; wind tunnel; diffusers. Method of characteristics; influence of friction and heat transfer; combustion in a duct; rocket motor; general one-dimensional flows; potential flow small perturbation theory; linearised theory of steady plane flow for wings and bodies; shock waves; shock polar; conical shocks; moving shocks; Prandtl-Meyer flow; Busemann series expansion method.

ADVANCED HEAT TRANSFER I
(6 credit hrs.)
Fluid Dynamics: Mass continuity equations; Navier-Stokes equations, their general properties and exact solutions; boundary layer theory; laminar, transition and turbulent flow; equations of motion; exact solutions of boundary layer parameters for laminar flow; turbulence; Reynolds stresses; eddy diffusivity theory; mixing length theories; Prandtl's momentum transfer theory; Taylor's vorticity transfer theory; Von Karman's similarity hypothesis; boundary layer parameters for turbulent flow; velocity defect law; universal velocity distribution; application to turbulent flow in circular pipes; velocity distributions and resistance formulae for hydraulically smooth and rough pipes; integral method for approximate boundary layer analysis; Von Karman's momentum equation; application to laminar and turbulent boundary layers; boundary layers with pressure gradient; separate and vortex formation; boundary layer control; drag and pressure distribution relationships for bluff bodies.

Heat Transfer by Convection
A. General: Introduction; heat, mass and momentum transport; methods of evaluation of the convective heat transfer coefficient; dimensional analysis;
physical interpretation of parameters; correlation of experimental data; theory of similarity in heat transfer; energy equation; thermal boundary layers in laminar flow; general properties; exact solutions of temperature distributions; integral method as an approximate analyses of thermal boundary layers in laminar flow; heat and momentum transfer in turbulent flow; the Reynolds analogy; the Taylor-Prandtl analogy; the Von Karman analogy; the turbulent Prandtl number, the Stanton number.

B. Free Convection: Similarity parameters; velocity and temperature fields; correlation of data for vertical, horizontal and sloping surfaces; evaluations of heat flow for geometric shapes of practical interest; laminar and turbulent flow cases; convection caused by centrifugal forces; convection from rotating bodies.

C. Forced Convection: Velocity and temperature fields in closed conduits; effect of similarity parameters on heat transfer; heat transfer coefficients for laminar and turbulent flow; semi-empirical equations and working formulae; flow over exterior surfaces; separated flow; application to flow over a bank of tubes; heat exchanger design and selection; flow arrangements and effectiveness; fouling factors; heat transfer in high-speed flow, in rarefied gases and in free molecule flow.

D. Heat Transfer with change of Phase: Condensation; Nusselt's liquid-film theory; turbulent film condensation; super-heated vapours; multicomponent vapours; non-condensible gases; drop-wise condensation; experimental results and working formulae; condensation in tubes; evaporation; surface evaporation; nucleate boiling of a sub-cooled liquid; nucleate pool boiling; film boiling; burnout; experimental results and working formulae; boiling in tubes.

ADVANCED HEAT TRANSFER II
(6 credit hrs.)

Conduction: Unidimensional heat flow; analysis of extended surfaces; two and three-dimensional conduction; unsteady conduction in one or more dimensions; analytical, numerical and analogical methods of solution; transient systems; initial value and boundary value problems; nonhomogeneous bodies; anisotropic bodies; variable material properties.

Radiation: Thermal radiation properties of materials, black bodies—characteristics of real solids, liquid and gases; radiation exchange between infinite surfaces and between finite surfaces shape factor for various configurations; radiation shields; re-radiating surfaces and electrical analogies; radiation behaviour of gases and vapours; pyrometry; solar radiation.

STATISTICAL THERMODYNAMICS
(6 credit hrs.)

History and review of classical thermodynamics; kinetic theory of an ideal monatomic gas; equations of state; statistical mechanics for systems of independent particles; concept of entropy; Maxwell, Boltzmann, Bose-Einstein and Fermi-Dirac statistics; partition function; velocity and energy distributions; classical-statistical comparisons; quantum mechanics; Schrodinger wave equation and applications; electronic states; the photon gas; the Einstein solid; diatomic and polyatomic gases; low temperature effects; statistical mechanics for systems of dependent particles; behaviour of real gases and liquids; irreversible processes; thermoelectric and thermochemical phenomena.

SYSTEMS ANALYSIS METHODS
(9 credit hrs.)


MASTER OF SCIENCE IN OPERATIONS RESEARCH

The Department of Mathematics offers a postgraduate course leading to the award of the degree of Master of Science in Operations Research. The course is designed to provide professional training at an advanced level for a techniques oriented specialist who will be using a large scale computer system to produce realistic industrial and management models.

Additionally to the formal course work the student will be required to carry out work on a substantial project either on mathematical methodology or computer modelling. There will be considerable emphasis throughout the course on the development and efficient utilization of Operations Research Software on large scale computers.

The course consists of lectures, seminars, computer laboratory work, case studies and a research thesis. The minimum period of registration before the award of the degree shall be one calendar year in the case of full-time students and two years for students taking the course on a part-time basis. Students for whom additional prerequisite or co-requisite courses have been prescribed must expect their course to exceed the minimum period. The maximum period allowed for completion of the course is two years for full-time students and four years for part-time students.

To qualify for the degree, students must satisfy the examiners in respect of their academic attainments and their skill and competence in relevant aspects of practical professional work.

COURSEWORK FOR MASTER OF SCIENCE IN OPERATIONS RESEARCH

Each subject is presented as a one session unit.

<table>
<thead>
<tr>
<th>Subject</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>Operations Research 1 (General)</td>
<td>6</td>
</tr>
<tr>
<td>Operations Research 2 (Advanced Deterministics)</td>
<td>6</td>
</tr>
<tr>
<td>Operations Research 3 (Advanced Probabilistic)</td>
<td>6</td>
</tr>
<tr>
<td>Operations Research 4 (Case Studies)</td>
<td>6</td>
</tr>
<tr>
<td>Computational Techniques 1</td>
<td>4</td>
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<tr>
<td>Computational Techniques 2</td>
<td>4</td>
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DESCRIPTION OF SUBJECTS

OPERATIONS RESEARCH 1 (GENERAL)

A general course in which Operations Research will be structured and classified in terms of basic mathematical techniques (linear programming, graph theory, Markov chains, etc.) as well as in terms of the management decisions (inventory control, allocation, competition, queueing, etc.).

OPERATIONS RESEARCH 2 (ADVANCED DETERMINISTICS)

This course together with Operations Research 3 will treat the basic mathematical techniques in considerable depth.

POSTGRADUATE STUDY

OPERATIONS RESEARCH 3 (ADVANCED PROBABLISTIC)


OPERATIONS RESEARCH 4 (CASE STUDIES)

Case histories with particular emphasis on local industries.

COMPUTATIONAL TECHNIQUES 1

High level programming languages such as SIMSCRIPT II. List processing. Information storage and retrieval. Comparison of Mathematical Programming packages for very large problems. Design of files and data banks for Commercial information systems.

COMPUTATIONAL TECHNIQUES 2


DIPLOMA IN EDUCATION

The Diploma in Education is a professional course in education for graduates of this or another approved university for those who seek teacher qualifications. It also serves as an introduction to the research disciplines of education for those who will later pursue higher studies in the field. At present the course is for one year full-time, but it is anticipated that in the near future it will be available on a part-time basis over two years. The various subjects involve lectures, seminars, tutorials, individual assignments and group exercises. Demonstrations of teaching methods and practice teaching are provided in co-operation with the Wollongong Teachers' College and local schools.

COURSE OUTLINE

Except where shown, all subjects are single session subjects. Hours per week are indicated in brackets. The decision as to whether subjects are offered in first or second session is taken at enrolment time in the light of staff availability.

Education

Australian Education (2)
Educational Practice (2)
Educational Psychology (2)
Sociology of Education (2)
Philosophy and Theory of Education (2)
Seminars in both sessions (2)

Methods of Teaching

All method subjects are double subjects. Students must study two methods, occupying 6-8 hours weekly including demonstration lessons.

Selected Topics

Physical Education (double subject) (1)
Communication Skills (2)
Health and Health Education (2)
Electives (4)
Supervised Teaching Practice

Eight weeks in term time. Two weeks of unsupervised teaching practice is also required. This is usually undertaken before the first session lectures begin, and students not on teachers' scholarship are advised to contact the Head of Department before February to make arrangements.

AUSTRALIAN EDUCATION

This subject seeks to lift student awareness of problems in Australian education above the level of opinion and limited personal experience, by presenting them in their historical and comparative setting. Various developments in secondary and tertiary education are discussed, with a view to understanding the interplay of social, economic, political and ideological factors, and the need to subject them to more rigorous research.

TEXTBOOKS


REFERENCE BOOKS

Bean, C. E. W. Here, My Son. Angus and Robertson, 1950.

SELECTED JOURNALS

The Australian Journal of Education. A.C.E.R.
The Australian University. Australian Vice-Chancellors' Committee.
The Forum of Education. Sydney Teachers' College.
EDUCATIONAL PRACTICE

An appreciation of guiding principles common to the teaching of secondary school children will be gained through study of preparation at course, topic and lesson levels and the utilisation of school and community resources; aspects of classroom control and discipline; individual and group techniques of teaching; and evaluation procedures including the construction and administration of tests and examinations.

REFERENCE BOOKS


EDUCATIONAL PSYCHOLOGY

A study of psychology as it bears on the educational process, through a treatment of learning, motivation and the development of adult modes of thinking. Although attention is paid to cognitive development throughout the school years, the cognition of the adolescent is especially considered.

TEXTBOOKS


REFERENCE BOOKS


SELECTED JOURNALS

British Journal of Educational Psychology.
Education Research.
Harvard Education Review.
SOCIOLOGY OF EDUCATION
The sociological aspects of education are studied with special reference to the school. The school is seen both as a unit in the social structure and as a social system in itself. Topics include the relation of personality and culture, home and school, teacher and community, and the problems of migrant assimilation.

TEXTBOOKS

REFERENCE BOOKS
Havighurst, R. J. and Neugarten, B. L. Society and Education, Allyn and Bacon, 1962.

SELECTED JOURNALS

PHILOSOPHY AND THEORY OF EDUCATION
A study of the nature and scope of educational theory. By tracing the development of educational ideas in western culture, it is seen how the various disciplines of educational theory have emerged to cope with problems of value, knowledge and public education.

REFERENCE BOOKS
POSTGRADUATE STUDY

Price, K. *Education and Philosophic Thought.* Allyn and Bacon, 1962.

SELECTED JOURNALS

*Educational Theory.* University of Illinois.
*Educational Philosophy and Theory.* Univ. of N.S.W.

COMMERCIAL METHOD

The aim is to develop competent and critical teachers of economics and commerce. These subjects are discussed in relation to a general theory of education, problems of programming, lesson preparation and presentation. The course includes specific aspects of classroom practice in bookkeeping.

REFERENCE BOOKS

Musselman and Hanna, J. *Teaching Bookkeeping and Accounting.*

SELECTED JOURNALS

*Economica.* London School of Economics.

ENGLISH METHOD

This course deals with the aspects of language, expression and literature that concern the teacher in the secondary school. Language work examines contemporary theories and practice and the changing nature of linguistic studies. Expression themes include the fostering of responsive writing and aims and methods in oral practice. In the examination of literature the need is stressed to foster enjoyment and understanding at various levels. Some attention is given to testing, the programming of work and the interpretation of curricula.

REFERENCE BOOKS


SELECTED JOURNALS

*English in Australia.* Australian Association for the Teaching of English, Melbourne.
*The Teaching of English.* English Teachers’ Association of N.S.W.
POSTGRADUATE STUDY

GEOGRAPHY METHOD
A survey of the principles and problems underlying the selection, organisation and presentation of geographical knowledge. Topics include: the place of geography in the secondary school, the nature and organisation of programmes, the inter-relationship of systematic and regional geography, and specific aspects of classroom practice and field studies.

REFERENCE BOOKS

SELECTED JOURNALS
Australian Geographer. Geographical Society of N.S.W.

HISTORY METHOD
Students are introduced to the theory and practice of the teaching of history at the secondary school level through a study of the principles and problems underlying the selection, organisation and presentation of historical information. Topics include the nature of history; the purposes behind its teaching; programming; practical aspects of classroom work.

REFERENCE BOOK

SELECTED JOURNALS
English-History Bulletin. N.S.W. Department of Education.
Teaching History. Journal of the N.S.W. History Teachers’ Association.
Teaching Method Bulletin. N.S.W. History Teachers’ Association.

MATHEMATICS METHODS
Mathematics First Method seeks to develop in students an awareness of various methods possible in secondary school. Emphasis is placed on the
development of concepts, use of discovery and grading of material. Aims for different age and ability groups are related to these. Students doing another subject method as well will take this course.

Mathematics Second Method deals with a selection of these topics from an advanced standpoint, and is for students taking mathematics as a double method.

REFERENCE BOOKS

SELECTED JOURNALS
Australian Mathematics Teacher.
N.S.W. Department of Education Mathematics Bulletin.

SCIENCE METHOD
Science First Method seeks to prepare graduates to teach at all high school levels, especially in the areas of physics, chemistry, biology and geology. Topics include: science in the school curriculum; aims, procedures and programme planning; teaching aids; pupils' records and assessment; safety precautions. Where previous studies have covered some areas inadequately, students may be required to gain additional content knowledge. Students doing another subject method as well will take this course.

Science Second Method deals with the above topics and others from an advanced standpoint, and is for students taking science as a double method.

REFERENCE BOOKS
A Biology Course for Teachers. Correspondence course prepared in the School of Biological Sciences, University of Sydney, n.d.
McDonald, Massey and Tebbutt. Enquiring into the Earth.
Notes on Biology—Forms V and VI. Dept. Education, N.S.W. In-service Training Branch, n.d.
SELECTED TOPICS

The selected topics are of two kinds: professional skills and academic electives.

(a) Lectures and exercises in certain professional skills given generally at the Wollongong Teachers’ College include:

(i) Physical Education. The aim is to encourage personal physical fitness in the Diploma student, as well as to prepare him for the duties in this area that fall to the general teacher.

(ii) Health and Health Education. Students are given guidance concerning physical and mental health, and informed of resources available in the schools.

(iii) Communication Skills. Students are made more aware of problems of communication in the classroom, and their own personal competence is improved.

(b) Electives. Lectures and tutorials are offered in a variety of electives designed to provide opportunity for students to pursue some studies at greater depth. While the composition of the student group from year to year will partly determine which electives are offered, it is intended to provide a range representative of the main disciplines of education. Students are expected to choose electives that enable them to draw in some way on their previous studies.

SUPERVISED TEACHING PRACTICE

Students engage in the equivalent of eight weeks’ full-time teaching practice in schools. They are expected to plan learning units, observe and take individual lessons, develop classroom routines and controls, test and evaluate pupil learnings, and become acquainted with the general school duties of a teacher. As the practice situation is meant to be the application in the field of principles studied and informal subjects already described, a detailed reference list is not appropriate, but a specific orientation to Teaching Practice is provided by the following books.

REFERENCE BOOKS


