THE UNIVERSITY OF WOLLONGONG

CALENDAR 1979
ARMS OF THE UNIVERSITY

The principal elements incorporated in the arms of the University are the blue of the sea, the gold of the sand and the red of the Illawarra flame tree. The open book often used for educational institutions has also been included.

No motto has yet been chosen.

The blazon is: "Azure an open book proper bound gold on a chief wavy or three cinquefoils gules."

CALENDAR 1979

RECOMMENDED PRICE $1
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INFORMATION IN THIS CALENDAR IS CURRENT AT THE TIME OF PRINTING, BUT MAY BE AMENDED WITHOUT NOTICE BY THE UNIVERSITY COUNCIL

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MAP OF CAMPUS ........................................... Inside back cover
The University of Wollongong was incorporated by an Act of the New South Wales Parliament on 30th November, 1972. Eleven years earlier, in 1961, it had begun operation on its present site as Wollongong University College, a College of the University of New South Wales. Parts 1 and 2 of the Act came into effect in 1972. Part 3 was realized when the University was established on 1st January, 1975.

The first years of the new University have seen the completion of Stage II of the Library, the Social Science Building, the Pentagon Lecture Theatre complex, Stage III of the Union, an extension of the Science Building and a Sports Pavilion.

Courses offered at present lead to undergraduate degrees in Arts, Commerce, Engineering, Mathematics, Metallurgy and Science and to higher degrees in Arts, Commerce, Education, Engineering, Metallurgy and Science. Postgraduate diplomas in Accountancy, Computing Science, Education, Intercultural (Migrant) Education, Mathematics, Metallurgy and Philosophy are also offered.

Details of the University's courses, degree requirements and admission and enrolment procedures are provided in this Calendar. Students and intending students are advised to contact the Student Enquiries Office of the University for any further information they may require.
## CALENDAR OF DATES

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**January**
- Monday 1
- Monday 29

**February**
- Thursday 8, Friday 9
- Monday 19 - Thursday 22
- Tuesday 20
- Wednesday 21
- Thursday 22
- Monday 26

**April**
- Friday 13
- Monday 16
- Wednesday 25

**May**
- Monday 14
- Sunday 20

**June**
- Sunday 10
- Monday 11
- Sunday 17
- Monday 18
- Monday 18

**July**
- Monday 2
- Sunday 15
- Monday 16

**August**
- Monday 27

**September**
- Sunday 9

**October**
- Monday 1

**November**
- Sunday 4
- Monday 5
- Sunday 11
- Monday 12

**December**
- Sunday 2
- Tuesday 25
- Wednesday 26

**Notices**
- New Year's Day holiday
- Australia Day holiday
- Easter holidays commence
- Easter holidays end
- Anzac Day
- May recess commences
- May recess ends
- Session 1 ends
- Study recess commences
- Study recess ends
- Queen's Birthday holiday
- Examinations commence*
- Mid-year recess commences
- Mid-year recess ends
- Session 2 lectures commence
- August recess commences
- August recess ends
- Labour Day
- Session 2 ends
- Study recess commences
- Study recess ends
- Examinations commence
- Examinations end
- Christmas Day
- Boxing Day

* *A minor change in first session examination dates is likely because of the Queen's Birthday holiday.*
THE UNIVERSITY OF WOLLONGONG ACT 1972

An Act to provide for the establishment and incorporation of a University at Wollongong; to constitute a Council of the University and define its powers, authorities, duties and functions; to vest certain property in the University; to dissolve the Wollongong University College; to amend the Superannuation Act, 1916, the Local Government Act, 1919, and certain other Acts in certain respects; and for purposes connected therewith. (Assented to, 30th November, 1972.)

BE it enacted by the Queen's Most Excellent Majesty, by and with the advice and consent of the Legislative Council and Legislative Assembly of New South Wales in Parliament assembled, and by the authority of the same, as follows:

PART I.

PRELIMINARY.

1. (1) This Act may be cited as the "University of Wollongong Act, 1972".

(2) This Act is divided as follows:

PART I. -- PRELIMINARY -- ss. 1-3.
PART II. -- VICE-CHANCELLOR DESIGNATE -- ss. 4-7.
PART III. -- THE UNIVERSITY OF WOLLONGONG -- ss. 8-41.

SCHEDULE.

2. (1) This section and sections 1 and 3 commence on the date of assent to this Act.

(2) Part II shall commence upon such day as may be appointed by the Governor in respect thereof and as may be notified by proclamation published in the Gazette.

(3) Part III shall commence upon such day as may be appointed by the Governor in respect thereof and as may be notified by proclamation published in the Gazette being a day that is later than the day appointed pursuant to subsection (2).

3. In this Act, unless the context or subject-matter otherwise indicates or requires --

"by-laws" means by-laws made under this Act;
"Chancellor" means Chancellor of the University;
"College" means Wollongong University College established and maintained by The University of New South Wales under the provisions of the University of New South Wales Act, 1968;
"College Council" means Council of the College;
"Committee" means Selection Committee constituted under Part II;
"Council" means Council of the University;
"Deputy Chancellor" means Deputy Chancellor of the University;
"University" means The University of Wollongong;
"Vice-Chancellor" means Vice-Chancellor of the University.

PART II.

VICE-CHANCELLOR DESIGNATE.

4. (1) The Minister shall constitute a committee consisting of eight members to hold office until the commencement of Part III of whom --

(a) one shall, by reason of his being the holder of, or a person who was the holder of, the office of Vice-Chancellor of any University in Australia, be appointed by the Minister as Chairman of the Committee;

(b) one shall be appointed by reason of his being the Chairman of the New South Wales Universities Board or a member of that Board nominated by that Chairman to be appointed to the Committee;

(c) two shall be appointed by the Minister; and

(d) four shall be elected members.
Powers, duties and functions of Committee.

(2) The elected members of the Committee shall be qualified as is prescribed by this subsection and shall comprise--

(a) a person who is a professor, and a person who is not a professor, both elected by and from the professors, associate professors, senior lecturers and lecturers of the full-time staff of the College, the Librarian, the Bursar, the Registrar and the Secretary of the College; and

(b) two persons elected by and from the members of the College Council, both being persons who are ineligible for election to the Committee pursuant to paragraph (a).

(3) A casual vacancy occurs in the Committee where --

(a) in the case of the member referred to in subsection (1) (b), that member ceases to be the Chairman of the New South Wales Universities Board, or where the member referred to in subsection (1) (b) is a member of the Board nominated by that Chairman, that member ceases to be a member of the Board;

(b) in the case of an elected member, that member ceases to hold the qualification by reason of which he was eligible for election to the Committee;

(c) a member dies;

(d) a member becomes a temporary patient or a continued treatment patient, a protected person or an incapable person within the meaning of the Mental Health Act, 1958, or a person under detention under Part VII of that Act;

(e) a member resigns his membership in writing under his hand addressed to the Minister; or

(f) for any reason the Minister deems fit, a member is removed by the Minister from office as a member of the Committee.

(4) A casual vacancy shall --

(a) in the case of an elected member, be filled by a person qualified and elected in accordance with subsection (2); and

(b) in any other case, be filled by a person qualified in accordance with subsection (1) (a), (b) or (a) to fill the vacancy concerned.

(5) Meetings of the Committee shall be convened by the Chairman of the Committee.

(6) At any meeting of the Committee --

(a) six members shall form a quorum;

(b) a decision of the majority of the members present at the meeting shall be the decision of the Committee; and

(c) the Chairman, in the event of there being an equality of votes, may give a casting vote.

(7) Any act or proceeding of the Committee is, notwithstanding that at any time when the act or proceeding was done, taken or commenced there was --

(a) a vacancy in the office of the membership of the Committee; or

(b) any defect in the appointment, or any disqualification, of a member of the Committee,

as valid as if the vacancy, defect or disqualification did not exist and the Committee were fully and properly constituted.

(8) Any election for the purpose of electing the elected members of the Committee shall be conducted by the Registrar of The University of New South Wales at such time or times and in such manner as the Registrar deems fit.

5. The Committee shall be charged with the power to select a person to be the Vice-Chancellor designate of the University and for that purpose shall --

(a) at a meeting convened as soon as practicable whenever the Minister notifies the Chairman that there is a vacancy in the office of Vice-Chancellor designate of the University, arrange to call for applications for that office to be made on or before a stated day;

(b) meet as soon as practicable after that stated day with a view to selecting a person to be the holder of that office;
(c) determine in consultation with the Council of The University of New South Wales and the College Council or, where either Council has appointed persons to be its representatives for the purpose, those persons, the terms upon which and conditions subject to which a person may, pursuant to section 6, continue or be appointed as a member of the full-time staff of the College and take office under section 20(1) as Vice-Chancellor; and

(d) where a person is selected for appointment to that office, recommend the appointment to the Council of The University of New South Wales.

6. (1) Subject to subsection (2) the Council of The University of New South Wales shall, upon such terms and conditions as are determined pursuant to section 5 (c), appoint the person recommended by the Committee pursuant to section 5 (d) as the Vice-Chancellor designate of the University who shall be a member of the full-time staff of the College.

(2) Notwithstanding the terms and conditions determined pursuant to section 5 (a), where the person appointed under subsection (1) is, at the time of his appointment, a member of the full-time staff of The University of New South Wales, he shall not be appointed to the office of Vice-Chancellor designate of the University upon terms and conditions less favourable than those upon which he was employed immediately before that appointment.

7. (1) Where the Committee is unable to determine any matter the Chairman shall refer the matter to the Minister for resolution.

(2) Any decision of the Minister in respect of any matter referred to him under this section shall be as final and binding as if the decision were made by the Committee.

PART III.

THE UNIVERSITY OF WOLLONGONG

8. A University, consisting of --

(a) a Council;

(b) Convocation;

(c) the professors and such other classes of persons giving instruction within the University as may be prescribed by the by-laws and such superior officers within the University as may be so prescribed; and

(d) the graduates and students of the University,

is hereby established at Wollongong in the State of New South Wales.

9. (1) The University is a body corporate under the name of "The University of Wollongong".

(2) The common seal of the University shall be kept in such custody as the Council may direct and shall not be used except by resolution of the Council.

10. The functions of the University shall, within the limits of its resources and subject to this Act and the by-laws, include --

(a) the provision at Wollongong or elsewhere of educational facilities at university standard for any persons enrolled therein;

(b) the dissemination and increase of knowledge and the promotion of scholarship; and

(c) the conferring and awarding of degrees and diplomas.

11. The University may, for the purpose of discharging its functions, provide from time to time such facilities for its students as it deems desirable.

12. (1) There shall be a Council of the University which, subject to subsection (3), shall have and may exercise and discharge the powers, authorities, duties and functions conferred and imposed upon the Council by or under this Act.
The Act 5

Committees.

13. (1) The Council may be resolution appoint such committees as it thinks fit to assist and advise it in the carrying out of its functions and the exercise of its powers under this Act.

(2) A committee appointed under subsection (1) shall have, and may exercise and discharge, such powers, authorities, duties and functions as the Council may determine.

Constitution of first Council.

14. (1) The first Council shall consist of --

(a) the persons who immediately before the commencement of this Part held office as members of the College Council other than such members of that Council as, at that commencement, are members of the full-time staff of The University of New South Wales; and

(b) the person who, immediately before that commencement, held office, pursuant to section 6, as Vice-Chancellor designate of the University, unless he becomes a member of the Council pursuant to paragraph (a).

(2) The members of the first Council shall, subject to this Act, hold office until the Council duly constituted under section 15 assumes office.

(3) Where a casual vacancy occurs in the office of any member of the first Council the Governor may appoint a person to the vacant office and the person so appointed shall hold office for the residue of his predecessor’s term of office.

(4) The first meeting of the first Council shall be convened by the Vice-Chancellor who shall preside until a Chairman is elected pursuant to subsection (6).

(5) At any meeting of the first Council one-half (or where one-half is not a whole number the whole number next higher than one-half) of the total number of members for the time being of that Council, shall form a quorum.

(6) The members of the first Council shall, at their first meeting, elect from among their number a Chairman and Vice-Chairman.

(7) Subject to subsection (4), at every meeting of the first Council the Chairman or, if he is not present, the Vice-Chairman shall preside, but if both the Chairman and Vice-Chairman are not present, the members present shall elect a person from among their number to preside as Chairman.

(8) The first Council shall take all steps necessary to ensure so far as possible that a Council is duly constituted under section 15 so as to take office within six months after the commencement of this Part or within such extended time as the Governor may, by proclamation published in the Gazette at any time during that period of six months, specify.

Constitution of Council other than first Council.

15. (1) The Council, other than the first Council --

(a) shall be constituted in accordance with this section; and

(b) shall assume office upon such day as the Governor may appoint in that behalf and notify by proclamation published in the Gazette.

(2) The Council shall consist of --

(a) parliamentary members;

(b) official members;

(c) nominated members; and

(d) elected student and non-student members.

(3) The parliamentary members of the Council shall be --

(a) a member of the Legislative Council elected by that Council --

(i) as soon as practicable after the commencement of this Part and thereafter as soon as practicable after the commencement of the term of service of the members of that Council elected as required by section 17F (5) of the Constitution Act, 1902; or

(ii) where there is a casual vacancy in the office of a parliamentary member of the Council held pursuant to subparagraph (i), as soon as practicable after that office becomes vacant; and
(b) a member of the Legislative Assembly elected by that Assembly --

(i) as soon as practicable after the commencement of this Part and thereafter as soon as practicable after each general election of members of the Legislative Assembly; or

(ii) where there is a casual vacancy in an office of a parliamentary member of the Council held pursuant to subparagraph (i), as soon as practicable after that office becomes vacant.

(4) The official members of the Council shall be --

(a) the person for the time being holding the office of Chancellor, where he is not otherwise a member of the Council; and

(b) the person for the time being holding the office of Vice-Chancellor.

(5) The nominated members shall comprise four persons appointed by the Governor on the nomination of the Minister.

(6) The elected student members of the Council shall comprise two persons who are qualified and elected in each case as may be prescribed by the by-laws by and from persons who are enrolled as candidates proceeding to a degree or diploma in the University (other than persons so enrolled who are members of the full-time staff of the University).

(7) The elected non-student members of the Council shall be qualified and elected in each case or for each class as may be prescribed by this subsection and the by-laws and shall comprise --

(a) three persons, none of whom shall be a member of the full-time staff of the University, so elected by such of the members of Convocation as are included in a list prepared for the purposes of this subsection in accordance with the by-laws;

(b) four persons, of whom one shall not be, and each of the others shall be, a professor within the University, so elected by and from the professors and such other persons, being persons giving instruction within the University and superior officers within the University, as may be prescribed by the by-laws;

(a) one person, being a member of the staff of the University ineligible for election pursuant to paragraph (b), so elected by and from such members of the staff of the University as may be prescribed by the by-laws; and

(d) three persons so elected by the members of the Council for the time being referred to in subsections (3), (4), (5), (6) and paragraphs (a), (b) and (c).

(8) Where a person (not being a person who is a member of the Council) is appointed at any time by the Council to act in the place of the Vice-Chancellor, that person shall, while so acting, be deemed to be an official member of the Council.

(9) Subject to this Act, a member of the Council shall hold office --

(a) in the case of a parliamentary member, until a member of the House of Parliament that elected him is elected by that House to replace him;

(b) in the case of an official member, while he holds the office by virtue of which he is such a member;

(a) in the case of a nominated member, for such term not exceeding three years as may be prescribed by the by-laws; and

(d) in the case of an elected member, for such term not exceeding three years as may be prescribed by the by-laws.

(10) A retiring member of the Council shall not, by reason of that membership, be disqualified from again becoming a member of the Council.

(11) A casual vacancy shall --

(a) in the case of a nominated member, be filled by such person as the Governor may appoint; and

(b) in the case of an elected member, be filled by a person qualified in accordance with subsection (6) or (7) to be elected to the vacancy concerned in such manner as may be prescribed by the by-laws, and any member filling a casual vacancy under this subsection shall hold office for the residue of his predecessor's term of office.
Vacation of office.

A member of the Council shall be deemed to have vacated his office if he --

(a) dies;
(b) in the case of a nominated or elected member, transfers his place of permanent residence to a place that is not within the State or the Australian Capital Territory;
(c) declines to act;
(d) resigns his office by writing under his hand addressed --
   (i) in the case of the parliamentary member who is a member of the Legislative Council, to the President of the Legislative Council;
   (ii) in the case of the parliamentary member who is a member of the Legislative Assembly, to the Speaker of the Legislative Assembly;
   (iii) in the case of a nominated member, to the Minister; or
   (iv) in the case of an elected member, to the Vice-Chancellor;
(e) is a nominated or elected member who becomes bankrupt, applies to take the benefit of any law for the relief of bankrupt or insolvent debtors, compounds with his creditors or makes any assignment of his estate for their benefit;
(f) is a nominated or elected member who becomes a temporary patient or a continued treatment patient, a protected person or an incapable person within the meaning of the Mental Health Act, 1958, or a person under detention under Part VII of that Act;
(g) is a nominated member or elected member and absents himself from four consecutive meetings of the Council without leave of the Council;
(h) ceases, in the case of the parliamentary member elected by the Legislative Council, to be a member of the Legislative Council;
(i) ceases, in the case of the parliamentary member elected by the Legislative Assembly --
   (i) to be a member of that Assembly otherwise than by reason of its dissolution or its expiration by effluxion of time; or
   (ii) to be a member of that Assembly by reason of its dissolution or its expiration by effluxion of time and is not re-elected as a member of that Assembly at the next general election of members of that Assembly; or
(j) being an elected member referred to in section 15 (7) (b) or (c), ceases to be an employee of the University.

Election of Chancellor.

The Council shall, at its first meeting and whenever a vacancy in the office of Chancellor occurs, elect a person (whether a member of the Council or not) to be Chancellor of the University.

Deputy Chancellor.

The Council shall, at its first meeting and whenever a vacancy in the office of Deputy Chancellor occurs, elect one of its members to be Deputy Chancellor of the University.

(1) The Deputy Chancellor shall, unless he sooner ceases to be a
member of the Council, hold office for one year from the date of his election and on such conditions as may be prescribed by the by-laws.

(3) In the absence of the Chancellor or during a vacancy in the office of Chancellor or during the inability of the Chancellor to act, the Deputy Chancellor shall have and may exercise and discharge all the powers, authorities, duties and functions of the Chancellor.

Chairman.

19. (1) The Chancellor shall preside at all meetings of the Council and all committees constituted by the Council at which he is present.

(2) At any meeting of the Council or of a committee constituted by the Council at which the Chancellor is not present, the Deputy Chancellor shall preside, and in the absence of both the Chancellor and the Deputy Chancellor, a member elected by the members present from among their number, shall preside.

Appointment of Vice-Chancellor.

20. (1) The first Vice-Chancellor of the University shall be the person who, immediately before the commencement of this Part, was the member of the full-time staff of the College holding office as Vice-Chancellor designate pursuant to section 6 (1) and he shall, subject to this section, continue in office under the terms and conditions determined under section 5 (a) in relation to his tenure of the office of Vice-Chancellor.

(2) Whenever a vacancy occurs in the office of Vice-Chancellor, the Council shall appoint a person, whether a member of the Council or not, to be Vice-Chancellor.

(3) The Vice-Chancellor (other than the first Vice-Chancellor) shall hold office for such period and on such terms and conditions as the Council determines.

(4) The Vice-Chancellor shall be the chief executive officer of the University and shall have and may exercise and discharge such powers, authorities, duties and functions as may be prescribed by the by-laws and, subject to the by-laws, as the Council determines.

Quorum.

21. At any meeting of the Council one-half (or where one-half is not a whole number the whole number next higher than one-half) of the total number of members for the time being of the Council, shall form a quorum.

Re-appointment or re-election.

22. Nothing contained in this Act shall prevent any person from being immediately, or at any time, re-appointed or re-elected to any office or place under this Act if he is eligible and otherwise qualified, for the time being, to hold that office or place.

Validity of acts and proceedings.

23. (1) No act or proceeding of the Council or any committee of the Council, or of the Vice-Chancellor or any other person acting pursuant to any direction of the Council, shall be invalidated or prejudiced by reason only of the fact that at the time when such act or proceeding was done, taken or commenced there was a vacancy or a number of vacancies in the office or offices of any member or members of the Council.

(2) All acts and proceedings of the Council or any committee of the Council, or of the Vice-Chancellor or any other person acting pursuant to any direction of the Council, shall notwithstanding the subsequent discovery of any defect in the appointment or election of any member of the Council or that any such member was disqualified from acting as or incapable of being a member of the Council, be as valid as if that member had been duly appointed or elected and was qualified to act as or capable of being a member and had acted as a member of the Council and as if the Council had been properly and fully constituted.

Public Service Act not to apply.

24. The provisions of the Public Service Act, 1902, do not apply to and in respect of the appointment of any member of the Council, and a member shall not, as such a member, be subject to the provisions of that Act.

Powers of Council.

25. (1) Subject to this Act and the by-laws, the Council --

(a) may provide such courses as it deems fit and in conferring and awarding degrees and diplomas issue such certificates in the nature of degrees, diplomas or otherwise as it thinks fit;

(b) may appoint and terminate the appointment of academic and other staff of the University;

(c) shall have the control and management of the affairs and concerns of the University and may act in all matters concerning the University in such manner as appears to it best calculated to promote the objects and interests of the University;
(d) may acquire by gift, bequest or devise any property for the purposes of this Act and may agree to carry out the conditions of any such gift, bequest or devise;

(e) may borrow money for the purpose of carrying out and performing any of its powers, authorities, duties and functions, for the renewal of loans or the discharge or partial discharge of any indebtedness to the Treasurer or to any bank within such limits, to such extent and upon such conditions as to security or otherwise as the Governor upon the recommendation of the Treasurer may approve;

(f) may invest any funds belonging to or vested in the University in any manner for the time being authorised for the investment of trust funds or in any manner approved by the Governor, generally or in any particular case or class of cases, upon the recommendation of the Treasurer; and

(g) shall have the control and management of all real and personal property at any time vested in or acquired by the University, and may, subject to subsection (d), dispose of real or personal property in the name and on behalf of the University.

(2) Except as provided in subsection (3) the Council shall not, except with the approval of the Governor, alienate, mortgage, charge or demise any lands of the University.

(3) The Council may, without the approval of the Governor, lease any lands of the University where --

(a) the term of the lease does not exceed twenty-one years; and

(b) subject to subsection (4) (b), there is reserved for the whole of the term, the highest rent that can reasonably be obtained without fine.

(4) In the case of a lease of any lands of the University or any renewal thereof to a residential college affiliated with the University, the lease shall --

(a) be for a term not exceeding ninety-nine years;

(b) be at a nominal rent; and

(c) contain such other conditions as the University deems fit including a condition that the lease shall not be assigned.

(5) The rule of law against remoteness of vesting does not apply to and in respect of any condition of a gift, bequest or devise to which the University has agreed.

Delegation By Council.

26. (1) The Council may, in relation to any matter or class of matters, or in relation to any activity or function of the University, by resolution, delegate all or any of its powers, authorities, duties and functions under this Act (except this power of delegation) to any member or to any committee of its members, or to any officer or officers of the University.

(2) Every delegation under this section shall be revocable by resolution of the Council, and no delegation shall prevent the exercise of any power, authority, duty or function by the Council.

By-Laws.

27. (1) The Council may make by-laws, not inconsistent with this Act, with respect to all matters pertaining to the University.

(2) Without prejudice to the generality of subsection (1) the Council may make by-laws for or with respect to --

(a) the management, good government, and discipline of the University;

(b) the method of election of members of the Council (other than the parliamentary members who are to be elected);

(c) the manner and time of convening, holding and adjourning the meetings of the Council and the manner of voting at such meetings, including postal voting or voting by proxy; the powers and duties of the Chairman thereof; the conduct and record of the business; the appointment of committees of the Council, and the quorum, powers and duties of such committees;

(d) the number, stipend, manner of appointment and dismissal of deans, professors, lecturers, examiners and other officers and employees of the University;

(e) the entrance standards for students;
the fees and charges to be paid including fees and charges for entrance, tuition, lectures, residence and conferring of degrees and diplomas, and the exemption from, or deferment of, payment of fees and charges;

the course of lectures or studies for, the examinations for, and the granting of, degrees, diplomas, certificates and honours and the attendance of candidates therefor;

the examinations for, and the granting of, fellowships, scholarships, exhibitions, bursaries and prizes;

the admission of students of other universities and institutions of higher education to any status within the University or the granting to graduates of such universities or institutions, or other persons, of a degree or diploma without examination;

the establishment of residential colleges and halls of residence within the University and their conduct or the affiliation of residential colleges;

the affiliation with the University of any educational or research establishment;

the provision of a scheme of superannuation for the professors of the University; and

the form and use of academic costume.

Every by-law made by the Council shall be sealed with the common seal of the University and shall be submitted for the approval of the Governor.

Every by-law made by the Council shall be sealed with the common seal of the University and shall be submitted for the approval of the Governor.

The by-laws may provide for empowering any authority (including the Council) or officer of the University to make regulations, rules or orders (not inconsistent with this Act or with any by-law) for regulating, or providing for the regulation of, any specified matter (being a matter with respect to which by-laws may be made) or for carrying out or giving effect to the by-laws.

Any regulation, rule or order referred to in subsection (1) shall have the same force and effect as a by-law;

may, from time to time as the occasion requires, be amended or repealed by any authority (including the Council) or officer of the University empowered by subsection (1) to make such a regulation, rule or order; and

shall be deemed not to be within the meaning of the term "regulation" as defined in section 41 of the Interpretation Act, 1897.

Convocation shall consist of --

all members and past members of the Council;

all graduates of the University;

all members of the full-time academic staff of the University and such other members or classes of members of the staff of the University as the by-laws may prescribe;

such graduates of other universities, or other persons, as are, in accordance with the by-laws, admitted as members of Convocation; and

without prejudice to the generality of paragraph (d), graduates of The University of New South Wales who spent at least three years as properly enrolled students of the College.

The first meeting of Convocation shall be convened by the Vice-Chancellor.

Meetings of Convocation shall be convened and the business at such meetings shall, subject to the by-laws, be as determined by Convocation.

A quorum at any meeting of Convocation shall be such number of members as may be prescribed by the by-laws.

Convocation shall have and may exercise and discharge such powers, authorities, duties and functions as may be prescribed by the by-laws.

The Council may establish a Standing Committee and such other committees of Convocation as it considers necessary.
30. (1) There shall be paid to the University in respect of the year commencing upon the first day of January of the year of commencement of this Part and in respect of each succeeding year, such sum as the Treasurer may, upon taking into consideration the University's estimated expenditure requirements and income from all sources which is capable of being applied towards meeting such expenditure requirements, determine.

(2) To enable the Treasurer to exercise and perform the powers and functions conferred upon him by subsection (1) the University shall, in respect of the year commencing upon the first day of January that next precedes the commencement of this Part, as soon as practicable after that commencement, and in respect of each succeeding year either before or as soon as practicable after its commencement, submit to the Treasurer estimates of the expenditure and income of the University for that year and such other information as the Treasurer may deem necessary.

(3) Any moneys payable by the Treasurer under this section shall be paid out of moneys provided by Parliament.

31. The Treasurer may for the temporary accommodation of the University advance such moneys to the Council as the Governor may approve upon such terms and conditions as to repayment and interest as may be agreed upon.

32. The Council shall cause to be kept proper books of account in relation to the funds of the University and shall, as soon as practicable after the thirty-first day of December in each year, prepare and transmit to the Minister for presentation to Parliament a statement of accounts in a form approved by the Auditor-General exhibiting a true and correct view of the financial position and transactions of the University for the year.

33. (1) The accounts of the University shall be audited by the Auditor-General who shall, in respect thereof, have all the powers conferred on the Auditor-General by any law for the time being in force relating to the audit of public accounts.

(2) The provisions of the Audit Act, 1902, apply to and in respect of the members of the Council and to the officers and employees of the University in the same manner as they apply to accounting officers of public departments.

34. (1) As soon as practicable after the first day of January in each year, the Council shall prepare and furnish to the Minister a report upon the proceedings of the University during the period of twelve months immediately preceding that day including a summary of the work, researches and investigations carried out by the University during that period.

(2) A copy of each report under subsection (1) shall be laid before both Houses of Parliament as soon as practicable after it has been received by the Minister.

35. A person shall not, by reason of his religious or political views or beliefs, be denied admission as a student of the University or be ineligible to hold office therein or to graduate thereat or to enjoy any benefit, advantage or privilege thereof.

36. The Governor of New South Wales shall be the Visitor of the University with full authority and jurisdiction to do all such things and entertain such causes as may pertain to or be exercised by visitors as often as he thinks fit.

37. (1) The Council shall allow such persons as are --

(a) students of teachers' colleges established under the Public Instruction Act of 1880, teachers in schools established under that Act or members of the Public Service of New South Wales approved by the Minister;

(b) qualified in such manner as may be prescribed by the by-laws to be enrolled as students of the University;

(c) selected by the University for admission to the University; and

(d) not otherwise excluded from the University,

to attend University lectures for the purpose of proceeding to a first degree and to receive tuition for the period required for admission to that degree without payment of lecture, class or tuition fees.

(2) Nothing in subsection (1) shall exempt any person referred to in
that subsection from the payment of such fees, other than lecture, class or tuition fees, as may be approved by the Council.

38. (1) The College is hereby dissolved.

(2) All real and personal property which immediately before the commencement of this Part was held by or was vested in The University of New South Wales or any other body in trust for, or on behalf of, the College shall, by virtue of this Act, be divested from The University of New South Wales or such other body and shall vest in the University to be applied by the University, subject to any trusts or conditions on which it was held immediately before that commencement, for the objects and purposes for which the University is established.

39. (1) This section applies to and in respect of real and personal property, including real and personal property vested in the University pursuant to section 38 (2), which immediately before the commencement of this Part was held by or was vested in The University of New South Wales and used by that University for the purposes of the College.

(2) The Minister shall cause to be constituted a Joint Committee consisting of five members of whom --

(a) one shall be the Auditor-General, or such person as he may nominate, who shall be Chairman and who shall convene, and preside at, all meetings of that Committee;

(b) two shall be such persons as are selected by the Council of The University of New South Wales to be representatives of that University; and

(c) two shall be such persons as are selected by the Council to be representatives of the University.

(3) The function of the Joint Committee is to determine as soon as practicable --

(a) what property to which this section applies (other than property vested pursuant to section 38) is to be transferred to the University;

(b) what debts and liabilities in respect of property to which this section applies are to be transferred to the University;

(c) the manner in which payments on account of leave or upon the retirement or death of a member of the staff of The University of New South Wales who is transferred to the University pursuant to this Act are to be met and the extent to which those payments should be apportioned between The University of New South Wales and the University;

(d) what books, documents, records and papers are to be handed over to the University; and

(e) such other matters relating to the matters referred to in paragraphs (a), (b), (c) and (d) as that committee deems necessary or expedient.

(4) Where a difference of opinion arises between the members of the Joint Committee representing The University of New South Wales and the University in respect of a determination of any of the matters referred to in subsection (3) the matter shall be determined in such manner as the Auditor-General or the person nominated by him to represent him on that Committee directs.

(5) Any determination made by the Joint Committee pursuant to subsection (3) shall have effect according to its tenor.

(6) The Chairman of the Joint Committee shall forward or cause to be forwarded to the Minister, The University of New South Wales and the University written notice of any determination it may make with respect to the matters referred to in subsection (3) and each University shall keep a record of that notice.

(7) Upon the receipt of a notice of any determination made by the Joint Committee, The University of New South Wales shall, as soon as practicable, thereafter give effect to the determination.
### Persons holding office in the College.

40. (1) In this section a reference to an "officer of the College" is a reference to a person who, immediately before the commencement of this Part, held any salaried office or employment at the College otherwise than as --

- a part-time lecturer, tutor or demonstrator;
- a temporary senior lecturer, lecturer, senior tutor, tutor, senior demonstrator or demonstrator; or
- a staff member employed on a fixed term contract.

(2) Every officer of the College shall become, at the commencement of this Part, an officer and an employee of the University on such terms and conditions (including terms and conditions as to remuneration and duration of appointment), not less favourable than those upon which he was employed at the College immediately before that commencement, as the Council determines.

(3) The Council may, in determining terms and conditions in respect of the title, duties or status attaching to offices or employment at the University, determine in relation to an officer of the College terms and conditions less favourable than those on which the officer of the College was employed immediately before the commencement of this Part.

(4) An officer of the College shall not have any right to damages or compensation in respect of the termination, in consequence of the commencement of this Part, of his tenure of any office or employment at the College but he shall be entitled to enforce or enjoy any right or privilege to which he was, by virtue of section 2 of the University of New South Wales Act, 1968, entitled immediately before that commencement as if the right or privilege had been conferred by this Act.

### Amendments.

41. An Act specified in the first column of the Schedule is amended to the extent specified opposite that Act in the second column of the Schedule.

#### SCHEDULE.

**Sec. 41.**

<table>
<thead>
<tr>
<th>Year and No. of Act.</th>
<th>Short title.</th>
<th>Extent of amendment.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1916, No. 28.</td>
<td>Superannuation Act, 1916.</td>
<td>Insert in the definition of &quot;Employee&quot; in section 3(1) after the words &quot;University of New South Wales,&quot; the words &quot;or, subject to subsection (5), a professor of The University of Wollongong, &quot;.  Insert next after section 3(4) the following new subsection: (5) (a) Subject to this subsection the exclusion from the definition of &quot;Employee&quot; of a professor of The University of Wollongong shall not extend to a person whose rights as a contributor are continued by section 40 of the University of Wollongong Act, 1972.  (b) A professor of The University of Wollongong shall cease to be a contributor if, after the commencement of Part III of the University of Wollongong Act, 1972, he becomes, or continues to be, party to any scheme or arrangement to which that University is also a party and under which he is or may become entitled to any pension or annuity or retiring allowance upon retirement from his professorship.  (c) The provisions of subsection (3) shall apply, mutatis mutandis, to professors of The University of Wollongong other than those who are employees by virtue of paragraph (a).  Insert at the end of Schedule III the following words: The University of Wollongong.</td>
</tr>
<tr>
<td>1919, No. 41</td>
<td>Local Government Act, 1919.</td>
<td>Insert next after section 132 (1) (fiv) the following new paragraph:</td>
</tr>
</tbody>
</table>
### SCHEDULE. (CONT'D)

**Sec. 41.**

<table>
<thead>
<tr>
<th>Year and No. of Act.</th>
<th>Short title.</th>
<th>Extent of amendment.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1924, No. 50.</td>
<td>Metropolitan Water, Sewerage, and Drainage Act, 1924.</td>
<td>(f3) land which is vested in The University of Wollongong or in a college thereof and is used or occupied by the University or college, as the case may be, solely for the purposes thereof; and Insert next after section 88 (1) (f2) the following new paragraph: (f3) land which is vested in The University of Wollongong or in a college thereof and is used or occupied by the University or college, as the case may be, solely for the purposes thereof.</td>
</tr>
</tbody>
</table>
THE BY-LAW

The University of Wollongong hereby makes the following By-law:

PART I.

PRELIMINARY.

1. This By-law may be cited as the "University of Wollongong By-law".

2. This By-law is divided into Parts as follows:

   PART I. -- PRELIMINARY.
   
   PART II. -- ELECTION OF MEMBERS OF THE COUNCIL.

SCHEDULE.

3. (1) In this By-law, unless a contrary intention appears --
   "academic staff member" means a member of the Council elected under section 15 (7) (b) of the Act;
   "Act" means the University of Wollongong Act, 1972;
   "Convocation member" means a member of the Council elected under section 15 (7) (a) of the Act;
   "Council" means Council of the University;
   "general staff member" means the member of the Council elected under section 15 (7) (c) of the Act;
   "student member" means a member of the Council elected under section 15 (6) of the Act;
   "University" means The University of Wollongong.

   (2) In this By-law, unless a contrary intention appears, a reference to an authority, officer or office shall be construed as a reference to that authority, officer or office in and of the University.

PART II.

ELECTION OF MEMBERS OF THE COUNCIL.

4. (1) For the purposes of section 15 (6) of the Act the student members shall comprise two persons who are qualified and elected in accordance with this clause.

   (2) The Returning Officer shall keep a roll (in this By-law referred to as the Roll of Students) containing the names and last known addresses of persons who are enrolled as candidates proceeding to a degree or diploma in the University (other than persons so enrolled who are members of the full-time staff of the University).

   (3) The persons qualified to be elected are those persons whose names appear on the Roll of Students at the date and time prescribed pursuant to paragraph 8 of the Schedule for the close of nominations.

   (4) The persons entitled to vote are those persons whose names appear on the Roll of Students at the date and time prescribed pursuant to paragraph 15 of the Schedule for the receipt of completed voting papers.

   (5) The provisions of the Schedule apply to an election conducted under this clause.

5. (1) For the purposes of section 15 (7) (a) of the Act the Convocation members shall comprise three persons who are qualified and elected in accordance with this clause.

   (2) The Returning Officer shall keep a list for the purposes of section 15 (7) (a) of the Act (in this By-law referred to as the Roll of Convocation) containing the names and last known addresses of the members of Convocation.

   (3) The persons qualified to be elected are persons other than full-time members of the staff of the University.

   (4) The persons entitled to vote are those persons whose names appear on the Roll of Convocation at the date and time prescribed pursuant to paragraph 15 of the Schedule for the receipt of completed voting papers.

   (5) The provisions of the Schedule apply to an election conducted under this clause.
6. (1) For the purposes of section 15 (7) (b) of the Act the academic staff members shall comprise four persons who are qualified and elected in accordance with this clause.

(2) The Returning Officer shall keep a roll (in this By-law referred to as the Roll of Academic Staff) containing the names and last known addresses of --

(a) professors within the University;
(b) persons holding the positions of associate professor, reader, senior lecturer, lecturer, senior tutor, senior demonstrator, tutor, demonstrator, tutor/demonstrator and teaching fellow within the University and such other positions within the University as may be specified in regulations made by the Council for the purposes of this paragraph; and
(c) officers holding the positions of Registrar, Bursar, University Librarian and Estate Manager within the University and such other positions within the University as may be specified in regulations made by the Council for the purposes of this paragraph.

(3) Subject to section 15 (7) (b) of the Act, the persons qualified to be elected are those persons whose names appear on the Roll of Academic Staff at the date and time prescribed pursuant to paragraph 8 of the Schedule for the close of nominations.

(4) The persons entitled to vote are those persons whose names appear on the Roll of Academic Staff at the date and time prescribed pursuant to paragraph 15 of the Schedule for the receipt of completed voting papers.

(5) The provisions of the Schedule apply to an election conducted under this clause.

7. (1) For the purposes of section 15 (7) (c) of the Act the general staff member shall comprise a person who is qualified and elected in accordance with this clause.

(2) The Returning Officer shall keep a roll (in this By-law referred to as the Roll of General Staff) containing the names and last known addresses of the full-time staff of the University who are ineligible for election pursuant to section 15 (7) (b) of the Act.

(3) The persons qualified to be elected are those persons whose names appear on the Roll of General Staff at the date and time prescribed pursuant to paragraph 8 of the Schedule for the close of nominations.

(4) The persons entitled to vote are those persons whose names appear on the Roll of General Staff at the date and time prescribed pursuant to paragraph 15 of the Schedule for the receipt of completed voting papers.

(5) The provisions of the Schedule apply to an election conducted under this clause.

8. (1) For the purposes of section 15 (7) (d) of the Act the members elected by the Council shall comprise three persons elected in accordance with this clause.

(2) The election shall be held at a meeting convened by the Returning Officer of those members of the Council who are entitled, pursuant to section 15 (7) (d) of the Act, to vote.

(3) The Returning Officer shall post or deliver to each such member at least ten days before the day of the meeting a notice that the election is to be held.

(4) The notice of election referred to in paragraph (3) shall state --
(a) the number of members to be elected; and
(b) the date, time and place of the meeting.

(5) The election shall be effected in such manner as may be determined at the meeting.

9. (1) For the purposes of section 15 (11) (b) of the Act the prescribed manner for filling a casual vacancy is, subject to subclause (2), the same manner as that in which the person whose seat is vacant was elected.

(2) In the event of a casual vacancy in the office of any member of the Council (other than a member elected under section 15 (7) (d) of the Act) occurring within less than one year of the date on which the member's term of office would have expired, such vacancy shall be filled by some person qualified to hold that office appointed by the Council in the place of that member.

10. (1) An election conducted under this Part shall not be invalid by reason only of the omission of the name of a person who is qualified to be elected or eligible to vote at that election from the Roll of Students, Roll of Convocation, Roll of Academic Staff or Roll of General Staff, as the case may be.

(2) A person who is entitled to be enrolled on a roll or list kept under this Part may inspect that roll or list during the time that the office of the Registrar is open.
11. (1) For the purposes of section 15 (9) (a) of the Act the term of office of a nominated member is three years.

(2) For the purposes of section 15 (9) (d) of the Act --
(a) the term of office of an elected member (other than a student member) is three years; and
(b) the term of office of a student member is two years.

SCHEDULE.

1. The election shall be conducted by the Returning Officer.

2. The Returning Officer shall be the Registrar.

3. In the performance of any of his powers or duties under this By-law, the Returning Officer may be assisted by such persons as he appoints.

4. Subject to this By-law, the election shall be effected in such manner as the Returning Officer determines.

5. In the conduct of the election of student members, academic staff members, and the general staff member, the following intervals shall be allowed:
(a) Between the date of publication or display of the notice of election and the date and time for close of nominations -- not less than fourteen and not more than twenty-eight days;
(b) Between the close of nominations and the despatch of voting papers -- not more than fourteen days; and
(c) Between the despatch of voting papers and the date and time by which completed voting papers must be returned to the Returning Officer -- not less than fourteen and not more than twenty-eight days.

6. In the conduct of the election of Convocation members, the following intervals shall be allowed:
(a) Between the date of publication of the notice of election and the date and time for close of nominations -- not less than fourteen and not more than twenty-eight days;
(b) Between the close of nominations and the despatch of voting papers -- not more than twenty-eight days; and
(c) Between the despatch of voting papers and the date and time by which completed voting papers must be returned to the Returning Officer -- not less than fourteen and not more than sixty days.

7. The Returning Officer shall give notice of the election --
(a) in the case of the election of the academic staff members or the general staff member -- by displaying the notice on a notice board at the University; and
(b) in the case of the election of the student members and the Convocation members -- by publishing the notice at least once in a newspaper circulating within the Wollongong district and the State.

8. The notice of election shall --
(a) state the number of persons to be elected and the qualifications for candidature;
(b) specify the form of the nomination; and
(c) prescribe a date and time by which nominations must reach the Returning Officer.

9. The Returning Officer shall not accept a nomination unless --
(a) it is in writing in the form specified in the notice of election;
(b) it is signed by two persons who are eligible to vote at the election for which the candidate is nominated;
(c) the person nominated has consented to stand for election by a notice in writing given to the Returning Officer before the time prescribed for the close of nominations or by a notation to that effect on the nomination form; and
(d) it is received by the Returning Officer before the time prescribed for the close of nominations.
10. If, following the close of nominations, the number of accepted nominations does not exceed the number of persons to be elected, the Returning Officer shall declare the persons nominated to be elected.

11. If, following the close of nominations, the number of accepted nominations exceeds the number of persons to be elected, the Returning Officer shall send by post or by other means a voting paper to those persons entitled to vote at the address shown in respect of those persons on the Roll of Students, Roll of Convocation, Roll of Academic Staff or the Roll of General Staff, as the case may be.

12. Each voting paper shall contain the names of the candidates in alphabetical order and shall be initialed by the Returning Officer or his deputy.

13. Each voting paper shall be accompanied by a form of declaration that the person so voting is qualified to vote at the election and by two envelopes, one marked "voting paper" and the other addressed to the Returning Officer.

14. Where a voting paper has been lost or destroyed, a duplicate may be issued by the Returning Officer upon receipt of a written declaration that the voting paper has been lost or destroyed.

15. With each voting paper sent in accordance with paragraph 11, there shall be sent a notice which --

   (a) specifies the date and time by which the completed voting paper must reach the Returning Officer;

   (b) contains instructions for the transmission of the completed voting paper to the Returning Officer; and

   (c) states the date and time on which the votes will be counted.

16. The voter shall mark his voting paper by making a cross opposite the name of each candidate for whom he votes, but the number of candidates for whom a vote is cast shall not exceed the number of persons to be elected.

17. At the date and time appointed for the counting of votes, the Returning Officer or his deputy shall --

   (a) open the outer envelope;

   (b) if he is satisfied that the form of declaration has been properly completed, place the envelope marked "voting paper" with other similar envelopes;

   (c) following the opening of all of the outer envelopes, open the envelopes marked "voting paper" and count the number of votes given to each candidate.

18. A voting paper received by the Returning Officer after the close of the poll shall not be taken into account at the election.

19. The Returning Officer shall reject as informal any voting paper in which the voter has not complied with the provisions of this Schedule.

20. Where an election is held to elect one member, the Returning Officer shall declare as elected the candidate who receives the highest number of votes.

21. Where an election is held to elect more than one member, the Returning Officer shall declare as elected the persons who receive the highest number of votes.

22. Where there is an equality of votes, the person to be elected shall be determined by lot by the Returning Officer.

23. For the purpose of paragraph 22, "determined by lot" means determination in the following manner:--

   The name of each candidate shall be written on separate and similar slips of paper and the slips having been folded so as to prevent identification and mixed and drawn at random, the candidate whose name is first drawn shall be the elected candidate.

24. Each candidate shall be entitled to nominate a scrutineer to be present at the counting of votes and any determination by lot.

25. The voting papers in an election shall be kept in safe custody by the Returning Officer for at least four months after the election and may be destroyed at any time thereafter with the approval of the Council.
THE UNIVERSITY OF WOLLONGONG

VISITOR
His Excellency the Governor of New South Wales

CHANCELLOR
The Honourable Mr. Justice Robert Marsden Hope, CMG, LLB Syd.

DEPUTY CHANCELLOR
Vacant

VICE-CHANCELLOR
Emeritus Professor Lindsay Michael Birt, BAgrSc BSc PhD Melb., DPhil Oxf.

DEPUTY VICE-CHANCELLOR
Professor Alexander Marshall Clarke, BA N.S.W., PhD A.N.U., ASTC, FAPsS

THE COUNCIL

ELECTED BY THE LEGISLATIVE COUNCIL
The Honourable Max Frederick Willis, ED, LLB Syd, MLC

ELECTED BY THE LEGISLATIVE ASSEMBLY
The Honourable Lawrence Borthwick Kelly, MP

APPOINTED BY THE GOVERNOR ON THE NOMINATION OF THE MINISTER FOR EDUCATION
To hold office until 7th August, 1981
Colin Denley, LLB Syd.
Brian Somerville Gillett, BA DipEd Syd.
The Honourable Sir Richard Clarence Kirby, LLB Syd.
One vacancy

EX OFFICIO
The Chancellor
The Vice-Chancellor

ELECTED BY THE STUDENTS OF THE UNIVERSITY
To hold office until 10th August, 1979
Murray James Robinson
Robyn Thelma Slater

ELECTED BY CONVOCATION
To hold office until 7th August, 1981
Edgar Beale, Hon. DLitt W'gong.
James Wilmot Dombroski, BSc Syd.
William Edward Parnell, BA BCom N.S.W.

ELECTED BY THE FULL-TIME ACADEMIC STAFF OF THE UNIVERSITY
To hold office until 7th August, 1981
Three Professorial members
Professor Austin Duncan Brown, MSc Syd., PhD Mano.
Professor John Lauchlan Carter Chipman, MA LLB Melb. BPhil DPhil Oxf.
Professor Robert Barry Leal, MA DipEd Syd. PhD Q'ld.
One member other than a Professor
Associate Professor James Seymour Hagan, BA DipEd Syd., PhD A.N.U.

ELECTED BY THE FULL-TIME GENERAL STAFF OF THE UNIVERSITY
To hold office until 7th August, 1981
Elisabeth Ann Hilton

ELECTED BY MEMBERS OF THE COUNCIL
To hold office until 7th August, 1981
Three vacancies
THE ACADEMIC SENATE

EX OFFICIO MEMBERS

The Honourable Justice R.M. Hope, Chancellor
Emeritus Professor L.M. Birt, Vice-Chancellor
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To hold office until 24th May, 1979

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Mr. P. Castle, Faculty of Mathematics
Dr. M.J. Lowrey, Faculty of Engineering
Dr. W. Mitchell, Faculty of Humanities
Dr. A.J. Wright, Faculty of Science

STUDENT MEMBERS

To hold office until 24th May, 1979

Mr. J.P. Malcolm, Faculty of Social Sciences
Mr. M.J. Robinson, Faculty of Engineering
Ms. J.A.E. Symes, Faculty of Humanities

To hold office until 30th March, 1980

Mr. J. Whitehead, Faculty of Science
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L.M. Birt (Emeritus Professor, Australian National University), BAgSc BSc PhD MEng., DPhil

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Social Sciences: B. Natalenko, BA N.S.W. and W'gong.

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B.W. Lake

UNION
SECRETARY/ MANAGER
Mrs. H. Susan Stevenson
FACILITIES AND SERVICES

UNIVERSITY LIBRARY

All staff and students are encouraged to use the University Library and material can be borrowed by using a staff or student library card. Fines are levied for late return of books.

The Library has the responsibility of providing material for all courses in the University curriculum and carries information in books, periodicals, other non-book and archival materials. It has a growing reference collection and endeavours to provide for needs outside curricular and research requirements.

Following the completion of Stage II of the Library complex in 1976, the Library has the capacity to accommodate 250,000 volumes and over 600 readers.

Hours of opening are usually 9a.m. - 10p.m. Monday to Friday, 9a.m. - 5p.m. on Saturday and 1p.m. - 5p.m. on Sunday. Variations in hours are displayed on notice boards in the Library.

The Library is presently used by many people from outside the University campus, particularly qualified personnel from local commerce and industry.

UNIVERSITY UNION

The Union, which provides opportunities for the development of social and intellectual intercourse between members, is housed in buildings near the main entrance at the south-east corner of the campus. It was opened in 1965, Stage II additions were added in 1970, and Stage III was completed early in 1976. Most of the physical facilities normally associated with University Union buildings have now been provided. They include an auditorium, new kitchens, a cafeteria, a coffee bar, a take-away food service, a licensed bar, a licensed restaurant, two squash courts, ample circulating space, some five common rooms and meeting rooms, new administrative offices, a Union shop and branches of the Commercial Banking Company of Sydney Limited and the University Co-operative Bookshop Limited. In 1978 work commenced on extensions and air-conditioning in the bar and bistro, improved facilities in the Union Hall (including the provision of 35mm. projectors) and, funded by the Sports Association, two new squash courts, a sauna and an area for table tennis.

All students and University staff are members of the Union. 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.

The following clubs and societies are affiliated to, and supported by, the Union:

Bridge Club
Camera Club
Car Club
Drama Society
Film Group
Geographical Society

Bridge Club
Geological Society
History Society
II Circolo Italiano
Metallurgical Society
Musical Society
Parents' Club

STUDENTS' REPRESENTATIVE COUNCIL

The Students' Representative Council (S.R.C.) is a body of students elected by and from the students. The S.R.C. is the executive organisation of the entire student body. The S.R.C. promotes student welfare and interests. It provides a channel through which students can express their views on any matter relevant to themselves, their courses, the University, community, national and world affairs.

The S.R.C. is involved with the politics and welfare of being a student. As well as taking an active interest in a wide variety of issues, the S.R.C. organises many social functions. The following clubs and societies are affiliated to and supported by the S.R.C.

Students for A.L.P.
Trainee Teachers Association
Special Admissions Programme Students Association
Psychology Society
Engineering Society
Philosophy Society
Overseas Students Association
W.A.S.S.A. (Sociology)
Environment Club
Magnanimous Society
II Circolo Italiano
Le Club Francais

Part of the compulsory S.R.C. subscription is paid to the Australian Union of Students (A.U.S.), the national student organisation. As a constituent member of A.U.S. the S.R.C. offers travel
Facilities and Services

and health and insurance schemes (at student rates).

Tertangala, the S.R.C. student Journal, and Tertlet, the S.R.C. weekly broadsheet, are published throughout the year. Students are invited to submit articles and items for publication.

Most importantly, students are encouraged to participate in the running and activities of the S.R.C. Some present portfolios and interests are:

<table>
<thead>
<tr>
<th>Education</th>
<th>A.U.S.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Environment</td>
<td>Student Publications</td>
</tr>
<tr>
<td>Women</td>
<td>Social activities</td>
</tr>
</tbody>
</table>

The S.R.C. belongs to the students; they are encouraged to use it.

SPORTS ASSOCIATION

All students pay a compulsory fee which automatically makes them members of the Sports Association. A proposition that all employees of the University automatically become members is under consideration. Membership entitlements include the use of the recreational facilities provided by the Sports Association. Members may also join one or other of the constituent clubs of the Association at a small extra subscription.

The Sports Association aims to provide physical recreation facilities of an opportunity-type for individuals or small groups. In addition, it aims to ensure that its constituent clubs are provided with adequate playing surfaces and associated equipment, that adequate funds are available to subsidise travelling, and that both clubs and individuals are encouraged to attain higher sporting standards through competition under the auspices of local associations and through inter-varsity competitions, representative matches and championships organised by the Australian Universities Sports Association.

A sports pavilion (with licensed bar) and two squash courts have been provided and improvements to existing playing fields are being undertaken. Plans for an indoor recreation centre are being considered. Two additional squash courts, a sauna and a table tennis room are being built.

The constituent clubs of the Sports Association are as follows. Enquiries in respect of them should be made at the Union Office:

<table>
<thead>
<tr>
<th>Australian National Football</th>
<th>Outdoors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Badminton</td>
<td>Rugby Union</td>
</tr>
<tr>
<td>Basketball</td>
<td>Sailing</td>
</tr>
<tr>
<td>Cricket</td>
<td>Soccer</td>
</tr>
<tr>
<td>Fencing</td>
<td>Squash</td>
</tr>
<tr>
<td>Hockey (men)</td>
<td>Surf Riders</td>
</tr>
<tr>
<td>Women's Hockey</td>
<td>Table Tennis</td>
</tr>
<tr>
<td>Hang Glide</td>
<td>Tae Kwon Do</td>
</tr>
<tr>
<td>Judo</td>
<td>Tennis</td>
</tr>
<tr>
<td>Motor Cycle</td>
<td>Volleyball</td>
</tr>
</tbody>
</table>

CHAPLAINCY SERVICE

A Chaplaincy Service is provided within the University, for the benefit of students and staff, by five Christian Churches.

The Service offers fellowship, personal counselling and guidance, and leadership in biblical and doctrinal studies and in worship. The visiting Chaplains maintain close liaison with student religious societies. The visiting Chaplains may be contacted at their private addresses or through the Registrar.

<table>
<thead>
<tr>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>Baptist:</td>
<td>Rev. J.E. Helm, 216 Jacaranda Avenue, Figtree. 2525 Tel. 28 3767 (office) 29 1671 (home).</td>
</tr>
<tr>
<td>Presbyterian:</td>
<td>Rev. I. Cox, 8/10 Corrimal Street, Wollongong. 2500 Tel. 29 1725 (office) 29 5358 (home).</td>
</tr>
<tr>
<td>Roman Catholic:</td>
<td>Rev. Father L. Stevens, The Presbytery, 48 Princes Highway, Unanderra. 2526 Tel. 71 1068.</td>
</tr>
</tbody>
</table>
COUNSELLING SERVICE

The experience of attending the University brings about change in people. The extra knowledge gained in study is only one element of change. So as to make constructive and creative personal change, the Counsellors offer the University community various skills and techniques.

At certain particular stages the assistance of a counsellor may be indicated, e.g. before attending University to make the transition to University as smooth as possible. Where the individual feels distressed or unable to resolve a difficulty alone, where a situation or crisis arises with which it is difficult to cope, individual counselling is available. These situations could involve lack of motivation, inability to study effectively, dissatisfaction with one's rate of progress, anxiety in examinations, uncertainty about course-choice or career goals; they could involve feelings; anxiety, confusion, depression; they may be to do with interpersonal relationships; people with whom one works, studies or lives, family communication; they could involve graduation and dealing with transition from the University.

Counsellors maintain contacts with all sorts of other resource people. So if the Counsellor or client feels that there is more to be gained from talking to someone else, the client can be put in touch with that person, e.g. at the Careers Reference Centre.

However, counselling is not merely a first-aid station for those who are in the throes of some kind of crisis. To help people expand and enrich their lives counsellors are prepared to deal directly with individuals. Groups are also formed from time to time to create more effective learning environments. Such groups aim to improve the quality of living rather than solve problems. Examples are groups devoted to career life planning, increasing social skills, overcoming shyness, developing communication skills and human relations, psychodrama and groups for women.

To a student or member of staff there will simply be times when a more objective and trained listener is of benefit. It is at those times Counsellors hope people will come along to the Counselling Centre (White Hut, Building 9, telephone 29 7311 extension 355). The service is completely confidential and free of charge to all staff, students and intending students.

ACCOMMODATION

The Secretary in the Counselling Centre conducts a Student Accommodation Service for a range of private accommodation, e.g. board (both 7 and 5 day), single rooms, flats and houses made available by the local community in response to media advertisements.

In addition to the General Accommodation Service, the Secretary also conducts a University Leasing Service. The previously established system will continue to operate whereby the University leases a number of flats and cottages and subleases these to groups of students.

Individual students wishing to take private board, or groups of students wishing to lease a property from the University should contact the Secretary in the Counselling Centre which is located in the Hut (near the tennis courts), or telephone her at 29 7311, extension 355 as early as possible in the year.

INTERNATIONAL HOUSE

Warden: T.A. Lambert, ThB, PhD, CMC, JP
Dean of Students: N.Q. Thoi, BE, GradDipAust.

International House is the only residential College at Wollongong affiliated with the University. It is situated between the University and the North Wollongong beaches on the Princes Highway at its junction with the Wollongong "By-pass".

The College is operated as a co-educational non-denominational College by the Council of International House, and is owned by the YMCA of Wollongong. The College philosophy attempts to build a community which combines the best features of the older traditional Colleges with a more modern approach to corporate life. International House holds to a strong belief in the contribution that the individual may make to his community in an atmosphere which will enrich his experience of learning within the University. As indicated by its title, the College provides a place of living for overseas students, thus providing for a meeting place of varying cultures.

The College presently provides for 200 graduate and undergraduate students and 10 tutors.

The resident students, both male and female, are housed in five three-level residential blocks.
Facilities and Services

Facilities include a large common room, dining room, tutorial rooms, music and television rooms, laundry, students' kiosk and a large multi-purpose recreational hall for student functions, films, etc.

Academic Tutorials are available to residents and are organised by the Dean of Students, who is specifically in charge of the student's study life within the College.

To cater for the large number of students who live close to Wollongong and who return home for weekends the cost of meals is not charged in students' fees. Meals may be purchased in the Dining Room as required.

For further information, contact the Warden, International House, P.O. Box 1799, Wollongong, 2500. Tel. 29 9015.

EMPLOYMENT

The Student Employment Service, run in conjunction with the Commonwealth Employment Service, is located in the Hut. The Service provides information about casual and part-time work throughout the year, plus vacation work. All positions available are displayed on two boards; one in the Hut, the other in the Union Foyer.

Students interested in tutoring in any subject at any level may register with the Counselling Centre Secretary. All positions available will be individually notified where possible.

All enquiries concerning casual, part-time, vacation work and tutoring should be directed to the Student Employment Service, telephone 29 7311, extension 355.

MEDICAL SERVICE

A Student Medical Service has been established at the University and is located in the Hut. The names of the practitioners together with surgery times are available on campus notice-boards.

Students registered with Medibank sign Medibank forms for the practitioner and students registered with Private Funds pay a fee equal to the benefit paid for ordinary consultation by the Private Fund. A receipt will be issued to those students so that they can claim benefits.

It is preferable that appointments be made prior to surgery hours.

For enquiries about the Service or to make an appointment contact the Counselling Centre Secretary, telephone 29 7311 extension 355.

CHILD CARE CENTRE

Kids' Uni., a student co-operative child care centre on campus, offers child care facilities to both students and staff. The centre provides a happy and stimulating atmosphere where children can stay while their parents are at classes and/or work.

Fees are calculated on a sliding scale based on income but parent participation is also heavily relied upon. The centre is open from 8.30 a.m. - 5.30 p.m. Monday to Friday for children in the 0-6 year old age group. After school care is also available at these times for older children and child care after hours can be arranged. In 1978, one male and one female director were employed to care for the children and there was a nurse in attendance for children under two years of age.

For further information contact The Secretary, Child Care Committee, c/o The Union, or phone Kids' Uni., The Union extension 14. Information sheets will also be available from Student Services, in Administration or from the Union Office.
ADMISSION AND MATRICULATION

1. GENERAL PROVISIONS

1.1 All candidates for a degree of the University shall:

1.1.1 either (a) have matriculated to the University and have lodged an Application for Admission form, or
(b) applied for admission to the University under the special provisions in these regulations;

1.1.2 have been selected for a degree course; and

1.1.3 have satisfied pre-requisites approved by the Academic Senate for a subject before enrolment in that subject.

1.2 Should the number of qualified persons seeking enrolment in any degree, or subject, exceed the number of places available, the Council may limit the number of students enrolling in a particular degree, or subject. In this event candidates would be required to be selected for the degree or subject for which limitations had been imposed.

2. MATRICULATION

2.1 A person who obtains at an examination approved by the Academic Senate a level of performance determined by the Academic Senate from time to time shall be matriculated to the University; provided that the Academic Senate may grant matriculation to a candidate who has:

2.1.1 matriculated to any Australian university;

2.1.2 matriculated to any university outside Australia approved by the Academic Senate;

2.1.3 graduated from any university approved by the Academic Senate;

2.1.4 submitted evidence acceptable to the Academic Senate of a satisfactory level of performance in year 12 of a school in New South Wales, or its equivalent in other states of Australia;

2.1.5 matriculated to the University under the provisions existing in 1975 and 1976.

3. EXAMINATIONS APPROVED BY THE ACADEMIC SENATE

3.1 Examinations approved by the Academic Senate in accordance with 2.1 above are:

3.1.1 The New South Wales Higher School Certificate examination, provided that the rules of the examination relating to the presentation of subjects as determined by the New South Wales Board of Senior School Studies have been complied with; and

3.1.2 The University of Sydney Matriculation Examination.

4. NEW SOUTH WALES HIGHER SCHOOL CERTIFICATE EXAMINATION

4.1 The following subjects, and any other subjects approved by the Academic Senate, shall be recognised subjects for the purpose of matriculation at the New South Wales Higher School Certificate examination:

- Agriculture
- Ancient History
- Art
- Chinese
- Classical Greek
- Czech
- Econmics
- English
- Farm Mechanics
- Food and Textile Science
- French
- French 2 Unit Z
- General Studies
- Geography
- German
- German 2 Unit Z
- Hebrew
- Home Science
- Hungarian
- Indonesian
- Industrial Arts
- Italian
- Japanese
- Latin
- Lithuanian
- Mathematics
- Modern Greek
- Modern History
- Music
- Polish
- Russian
- Science
- Serbo-Croatian
- Sheep Husbandry and Wool Technology
- Spanish
- Textiles and Design
- Turkish
- Ukrainian

* NOTE: Food and Textile Science cannot be offered together with Home Science and/or Textiles and Design.

4.2 A candidate's performance shall be measured by the aggregate of marks gained in the
Admission and Matriculation

examination, such marks being co-ordinated in a manner approved by the Academic Senate.

4.8 The aggregate of co-ordinated marks shall include the co-ordinated marks achieved in ten units in approved matriculation subjects.

4.4 When more than ten units from approved matriculation subjects are presented, the ten highest co-ordinated marks from among such other subjects shall be counted.

4.5 There shall be no restriction on the number of 4 Unit, 3 Unit, 2 Unit and 2 Unit A courses that may be included in the aggregate of co-ordinated marks.

5. SPECIAL PROVISIONS FOR ADMISSION

5.1 The Academic Senate may grant a candidate admission to the University where the candidate:

5.1.1 has, since leaving school, satisfactorily completed over a period of not less than two years full-time or three years part-time, a course of study acceptable to the Academic Senate for this purpose; or

5.1.2 is not less than twenty-one years of age on 1st March of the year for which admission is sought and the Academic Senate is satisfied that he has reasonable prospects of success in university studies; or

5.1.3 although not qualified for admission under clauses 5.1.1 and 5.1.2 above, nevertheless satisfies the Academic Senate that in the special circumstances of his case he has reasonable prospects of success in university studies.

5.2 The Academic Senate, before admitting a candidate under these special provisions, may prescribe certain requirements including the taking of examinations.

5.3 A candidate admitted under these special provisions shall be subject to the Degree Requirements as if he had been a matriculated student.

5.4 A candidate admitted under these special provisions, after being credited with twenty-four credit points or equivalent in subjects passed at this University, may be granted matriculation by the Academic Senate.

5.5 The Council may impose quotas for the number of candidates to be granted admission under each, or any, of the clauses in 5.1 above.

100-LEVEL SUBJECT PRE-REQUISITES

Although there are no formal pre-requisites for the degree courses, some 100-level (First Year) subjects have N.S.W. Higher School Certificate pre-requisites. These pre-requisites, in many cases, affect the subjects which students may include in their course. In this regard, attention is drawn to the notes listed under the following table. (Similar subjects passed at interstate matriculation examinations will be considered.) Intending Engineering and Metallurgy students should particularly take notice of "Note 1" on the following page.

<table>
<thead>
<tr>
<th>Subject</th>
<th>Mandatory Pre-requisite</th>
<th>Recommended Pre-requisite</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mathematics IA</td>
<td>2 Unit Mathematics at N.S.W.H.S.C.: 2nd grade or higher provided the student has a suitable aggregate score or on the recommendation of the relevant high school principal;</td>
<td>2 Unit Mathematics, 2nd grade or better and 2 Unit Science or 2 Unit Industrial Arts</td>
</tr>
<tr>
<td></td>
<td>3 Unit Mathematics at N.S.W.H.S.C.: 4th grade or higher;</td>
<td>2 Unit Science Course</td>
</tr>
<tr>
<td></td>
<td>4 Unit Mathematics at N.S.W.H.S.C.: either (a) 4th grade or higher (b) 5th grade, provided the student has a suitable aggregate score, or on the recommendation of the relevant high school principal.</td>
<td>2 Unit Mathematics</td>
</tr>
<tr>
<td></td>
<td>English 3rd grade or better</td>
<td>English 3rd grade or better</td>
</tr>
</tbody>
</table>

All first year subjects offered by the departments of Civil, Mechanical and Electrical Engineering and the Department of Metallurgy, Physics, Chemistry, Biology, Economics and Quantitative Methods, Accounting & Financial Management, IA and Law & Society.
NOTES:

1. Mathematics IA is a compulsory subject in all 100-level Engineering and Metallurgy courses and, therefore, the pre-requisite for this subject must also be obtained.

2. Mathematics IA is a co-requisite for 100-level Physics courses (except "Art of Physics" -- this subject is not intended for those majoring in Physics and cannot be counted with other First Year Physics courses) and Mathematics IB.

3. The assumed knowledge of Mathematics IA is that of the 3 Unit Mathematics Course at the N.S.W. H.S.C. examination.

4. 100-level Chemistry is a pre-requisite for later year courses in Biology and Chemistry.

5. Some of the proposed pre-requisites are recommended and not mandatory. However, any student wishing to take Physics, Chemistry or Biology without the recommended 2 Unit Science Course at the N.S.W. H.S.C. examination, would be advised to discuss the matter with the departmental chairman concerned.

CREDIT TOWARDS DEGREE

Students enrolled for degree courses may seek credit on the basis of studies completed prior to their enrolment at the University. Studies undertaken at Universities, Colleges of Advanced Education and Technical Colleges may be considered for the purposes of credit. Normally, credit is not granted for qualifications gained more than ten years previously.

It is the University's policy to grant credit of up to 66 credit points to students who have completed a degree and up to 96 credit points to students who have partially completed a degree at another University. Specific credit in relation to General Studies subjects will only be considered where the application is made for subjects completed at other recognised Universities that are comparable in content and level to those offered as General Studies subjects at this University. Holders of the Diploma in Teaching may be granted unspecified credit of up to 48 credit points in respect of 100-level (first year) subjects, and those with two year teaching qualifications may seek credit of up to 24 credit points in respect of specified subjects at the 100-(first year) level.

Students enrolling in Engineering degree courses who have completed Engineering or other approved Certificate courses offered by the Department of Technical and Further Education, may be granted exemptions in the Engineering degree.

Those seeking credit should apply at the time of enrolment. Applications for credit are referred to Departmental Chairmen for recommendation on the basis of the student's previous academic record and details of the subjects completed. Students seeking credit for previous studies must supply full documentation and, where required, details of the contents of the subjects undertaken. All recommendations must be considered by the Undergraduate Studies Committee and endorsed by the Academic Senate.
ENROLMENT AND RE-ENROLMENT

UNDERGRADUATE

The enrolment procedure in 1979 for the different classes of undergraduate students is as follows:

FIRST ENROLMENTS

All applications for admission must be lodged with the University not later than 2nd October, 1978 by all applicants. Applications received after this date will be considered if possible.

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

RE-ENROLMENTS

All students enrolling other than for the first time should re-enrol by attending the University to complete re-enrolment, including the payment of charges, on days prescribed. Students will be informed by the end of 1978 of the dates and procedures for re-enrolment.

Students who are unable to attend the University to complete re-enrolment on the days prescribed should apply in writing to the Registrar for approval to re-enrol at a later date.

Students who have completed the final examinations but have a thesis still outstanding are required to enrol and pay the requisite charges.

Enrolment must be completed during the prescribed enrolment period. Students who fail to comply with this requirement will incur a late charge of $10. For details of charge requirements, including late charge provisions, see under Charges.

No student is considered to have completed his enrolment until all fees and charges have been paid.

COURSE TRANSFERS

Students who are currently enrolled at the University and who wish to transfer to another course at the University should submit an "Application for Admission" in the same manner as is required of new applicants.

Students whose applications to transfer are successful are required to comply with the enrolment procedures for 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 at the Student Enquiries Office.

RESUMPTION OF COURSES

Students who have been granted leave of absence for 1978 should contact the Registrar by 12th January, 1979, for information on enrolment procedures.

All other students seeking to resume their studies after an absence of twelve months or more are required to submit an "Application for Admission" in the same manner as is required of new applicants.

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.

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 Chairman 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 Academic Senate.
Application forms can be obtained by written application to the Registrar or from the Student Enquiries Office, First Floor, Administration Building. Application forms should be received by the Registrar by 12th January, 1979.

**FINAL DATES FOR COMPLETION OF ENROLMENT**

No enrolments will be accepted from new students after the end of the second week of Session 1 (9th March, 1979) except with the express approval of the Registrar and the Departmental Chairman concerned; no first year enrolments will be accepted after the end of the fourth week of Session 1 (23rd March, 1979) without the express approval of the Registrar which will be given in exceptional circumstances only.

**VARIATION OF ENROLMENTS**

Students wishing to vary their enrolment, that is by discontinuing subject(s) or by enrolling in additional subject(s) may do so by submitting to the Student Enquiries Office a "Notification of Variation of Enrolment" form duly signed by an Academic Adviser.

Where the variation of course includes the discontinuance of subject(s), the student shall be deemed as not having enrolled in the subject(s) if he discontinues before the end of the fourth week of session in which the subject(s) commenced. Where the discontinuance occurs after the end of the fourth week of the session in which the subject commenced, the student shall be recorded as discontinuing from the date on which the discontinuance occurs, except that where a student discontinues after the last day of classes, as set out in the University Calendar for the appropriate session, a result shall be determined.

The following special conditions also apply to the variation of enrolments:

(a) Where a student discontinues a subject or subjects but does not formally advise the Registrar of the discontinuance, a Fail grade will be entered on the student's academic record;
(b) where a student attempts a subject in which he is not formally enrolled, no result will be determined;
(c) any variation of entries included in a student's academic record in pursuance of (a) or (b) above, shall be subject to a charge of $40 for each variation.

Applications for variations to academic records referred to in part (c) of the special conditions mentioned above will be considered in relation to the Bachelor Degree Requirements. Any student wishing to vary his academic record under these special conditions should apply on the appropriate form which is available from the Student Enquiries Office.

Applications for amendments to 1978 academic records must be lodged by 23rd February, 1979.

**POSTGRADUATE RESEARCH DEGREES**

Application forms for registration are obtainable from the Student Enquiries Office, First Floor, Administration Building.

Before lodging an application applicants are advised to contact the appropriate Departmental Chairman to discuss research interests, suitability of qualifications held, and the availability of facilities for research in particular areas.

**COURSES REQUIRING ATTENDANCE AT FORMAL LECTURES**

Students wishing to enrol as candidates for postgraduate degrees or diplomas requiring attendance at formal lectures should make application on the appropriate form available from the Student Enquiries Office.

No enrolments will be accepted after 30th March without the express approval of the Registrar, which will be given in exceptional circumstances only.

Students who have completed the final examinations, but have a thesis or project still outstanding are required to enrol and pay any requisite charges. However, when the student submits his thesis for examination, he will receive a refund of the student charges on the same basis as if he had notified the University of his withdrawal from the course.

**RE-ENROLMENT**

Enrolment forms will be sent to re-enrolling students at the beginning of the year with instructions concerning re-enrolment procedure.
STUDENT CHARGES*

According to Government regulations, students, both undergraduate and postgraduate, are required to meet the following charges where applicable:

1. Penalty charges such as late charges, parking fines, etc.
2. Administrative charges such as "statement of record" charges, "review of result" charges or charges for examinations requiring special arrangements.
3. Cost of travel incurred by students attending practical work for courses in social work, teacher training, etc.
4. Cost of travel incurred by external students attending residential schools.
5. Accommodation charges and cost of subsistence on excursions, field work, etc.
6. Charges for special clothing or laundry costs.
7. Purchase of instruments or equipment.
8. Cost of handbooks and notes.
9. Charges associated with the development and operation of unions, student associations, students' representative councils and other student activities.
10. Deposits and refundable charges.

COMPULSORY CHARGES

All registered students will be required to pay:

University Union# - entrance charge .......................................................... $25
Sports Association# - entrance charge ........................................................ $ 6
Student Activities charges:
  University Union# - annual subscription ................................................. $62
  Sports Association# - annual subscription .............................................. $14
  Students' Representative Council - annual subscription .......................... $14

SPECIAL EXAMINATION CHARGES

Deferred examination ........................................................ $ 8 for each subject
Examinations conducted under special circumstances ......................... $11 for each subject
Review of examination result ......................................................... $11 for each subject

LATE CHARGES

The rules relating to late charges are as follows:

New Students -
All new students shall be required to attend the enrolment centre and pay all charges on the prescribed date.

Re-enrolling Students -
Failure to attend the enrolment centre on the prescribed date - Charge .................. $10

Where charges have not been paid prior to the commencement of Session 1, the following additional charges to apply:
  Charges paid during the first two weeks of session 1 .......................... $20
  Charges paid subsequent to the second week of session 1 ....................... $40

Note: Payment of charges subsequent to the second week of session 1 will only be accepted with the express approval of the Registrar or the Assistant Registrar (Student Administration).

*All charges listed are current at time of printing.
#Life members of these bodies are exempt from the appropriate charge or charges.
CONFIRMATION OF ENROLMENT
Failure to return the Confirmation of Enrolment form by the date to be determined by the Registrar .......................................................... $10

VARIATION OF ACADEMIC RECORD
Variations of entries in a student's academic record in pursuance of conditions (a) and (b)* .......................................................... $40 for each variation

WITHDRAWAL
1. Students withdrawing from a course are required to notify the Registrar in writing.
2. Where notice of withdrawal from a course is received by the Registrar before 26th February a refund of all charges paid will be made.
3. On notice of withdrawal on or after 26th February and prior to 23rd March, a full refund of student activities charges, other than entrance charges, will be made but thereafter no refund will be made, except as provided for in section 4 below. Student activities charges are listed on the previous page.
4. If a student's initial enrolment in any year is made at the commencement of Session 2 for Session 2 only and the student gives notice of withdrawal prior to 10th August, a full refund of student activities charges, other than entrance charges will be made but thereafter no refund will be made.
5. Late charges are not refundable.

EXTENSION OF TIME
Any student who is unable to pay charges by the due date may apply on the prescribed form to the Registrar for an extension of time. Such application must 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 charges is until 23rd March.

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 charges. A refund of charges will be made when the enrolment voucher or letter of authority is subsequently lodged with the Cashier.

FAILURE TO PAY CHARGES
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 charges for the year is outstanding after 10th August.

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

CASHIER'S HOURS
The Cashier's office is open for the payment of charges from 9.30 a.m. to 4.30 p.m., Monday to Friday. The Cashier's office may be open for additional periods during enrolment and re-enrolment. Details of these additional times may be obtained from notices posted at the Cashier's office.

*Refer to "Variation of Enrolment" in Undergraduate Enrolment and Re-enrolment section for details of conditions (a) and (b), p.39
RESEARCH DEGREE - SPECIAL NOTE

A candidate who at the end of a year has completed all work for a postgraduate degree other than the writing up of the thesis and who anticipates submitting the thesis to the Registrar for examination during the following year is required to re-enrol for that year and pay the appropriate student charges outlined above. However, when the student submits his thesis for examination he will receive a refund of the student charges on the same basis as if he had notified his withdrawal from the course.
SCHOLARSHIPS

UNDERGRADUATE SCHOLARSHIPS

TERTIARY EDUCATION ASSISTANCE SCHEME (TEAS)

The Commonwealth Government, through the Tertiary Education Assistance Scheme, provides means-tested financial aid to full-time students who are not bonded, are permanent residents of Australia and are studying in an approved tertiary course.

Allowances are available at the dependent at home, dependent away from home and independent rates. Students who qualify for an allowance will also receive an incidentals allowance of $100.

A fares allowance may also be payable to students receiving the dependent away from home or independent rate to the extent of three return trips a year between the institution and the student's home.

Re-enrolling students should lodge applications as soon as their results are available. New students should lodge applications as soon as possible after they have completed enrolment. Students should ensure that applications are lodged by 31st March, 1979 in order to receive their full year's entitlement.

Information and application forms are available from The Director, New South Wales State Office, Commonwealth Department of Education, 59 Goulburn Street, Sydney (Postal address: P.O. Box 596, Haymarket, NSW. 2000. Telephone: 218 8800).

N.S.W. TEACHER EDUCATION SCHOLARSHIPS

The N.S.W. Department of Education offers scholarships, which provide living allowances, to enable students to undertake studies for a University degree, to specialise in the subjects for which it has a need for teachers in secondary schools, or to become primary teachers. The degree would be followed by a year of teacher education.

Students who have partly completed their courses and graduates are eligible to apply, as are those who have completed secondary education.

Application forms for scholarships, and further information will be available from the Teacher Education Advisory Office on the University of Wollongong campus (P.O. Box 1741, Wollongong, 2500. Telephone: 28 4033).

Applications close on 1st October each year.

COMMONWEALTH TEACHING SERVICE SCHOLARSHIP SCHEME

The Commonwealth Teaching Service Scholarship Scheme (CTSSS) offers a limited number of awards each year to students interested in a teaching career in the ACT or in the Northern Territory. Award holders are chosen on the basis of the need for specialists in certain areas, for example, Special Education, Librarianship or teaching English as a Foreign Language. The Scholarships are not bonded and are highly competitive.

Living allowances are not subject to a means-test and are at the same level as the maximum rates of allowance under the Tertiary Education Assistance Scheme. In addition, all compulsory fees are paid and an $80 book and equipment allowance is paid at the beginning of the academic year.

Application forms may be obtained from the Director, New South Wales State Office, Commonwealth Department of Education, P.O. Box 596, Haymarket, NSW. 2000. (Telephone: 2 0929).

Forms must be lodged by 31st October in the relevant year.

ABORIGINAL STUDY GRANTS SCHEME

The Aboriginal Study Grants Scheme is intended to assist Aboriginals who wish to further their education after leaving school.

Benefits include the payment of all compulsory course fees, book and equipment allowances, travel costs and establishment and clothing allowance.

For full-time students, in 1978 benefits amounted to $47.25 a week for students under 18 and $57.27 a week for students over 18.

A first Dependant's Allowance of $31.40 a week may also be payable where applicable and additional dependants each attract $7.50 a week.

Part-time students are also eligible for some financial assistance.
Further information may be obtained from the Director, New South Wales State Office, Commonwealth Department of Education, P.O. Box 596, Haymarket, NSW. 2000. (Telephone: 2 0929).

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.

Further details of the awards are set out in the postgraduate section of this Calendar.

AUSTRALIAN GOVERNMENT POSTGRADUATE RESEARCH AWARDS

A number of Australian Government Postgraduate Research Awards are available to students undertaking full-time postgraduate research at the University, leading to the degree of Master and/or PhD.

Persons permanently domiciled in Australia, who are University graduates or will graduate in the current academic year, are eligible for the awards.

Applicants should hold, or expect to obtain, at least an upper division second class honours degree or its equivalent.

Awards 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.

Stipend is $4,200 per annum, with a dependants' allowance at the rate of $1,632.80 for dependent wife and $390 for each child. There is provision for Establishment, Travel, Incidentals and Thesis Allowances.

The closing date for applications is 31st October.

AUSTRALIAN GOVERNMENT 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 Australian Government.

Persons permanently domiciled in Australia and who are University graduates or will graduate in the current academic year, are eligible for the awards.

Applicants are expected to have an undergraduate record at better than pass level.

Stipend and allowances are as for the Australian Government Postgraduate Research Awards.

Applications close on 30th September.

APPLICATIONS AND ENQUIRIES

Application forms for postgraduate awards are available from the University. Applications should be lodged with the Registrar by the specified date.

Separate application for registration as a higher degree candidate should be made on the appropriate form, in accordance with conditions applying to the particular degree.

Further enquiries may be directed to the Student Enquiries Office.

*Rates quoted are current at time of publication.
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. Smoking is not permitted during lectures, in examination rooms or in the University Library. Gambling is also forbidden.

Members of the academic staff of the University, senior administrative officers, and other persons 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 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.

Indebtedness to the University includes the non-payment of charges, late charges, library fines, the non-payment of student loans and any arrears in rent or other financial obligations resulting from an accommodation agreement entered into with the University.

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

Students are requested to notify the Registrar in writing of any change in their address as soon as possible. Forms for this purpose are available from the Student Enquiries Office. Failure to do this could lead to important correspondence (e.g. confirmation of enrolment forms, examination results, etc.) or course information not reaching the student. The University cannot accept responsibility if official communications fail to reach a student who has not notified the Registrar of a change of address.

All records held, and statements issued by the University will be in the name given by students at the time of their admission to the University.

Students who change their name by marriage or by Deed Poll and who also wish to change their name on University records should complete a Change of Name form which is available from the Student Enquiries Office, Administration Building, and present for notation the original Marriage Certificate or Deed Poll document.

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.

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.

The various transport authorities provide fare concessions for certain classes of students. Application forms for these concessions may be obtained from the Student Enquiries Office, First Floor, Administration Building.
Train:
Identification cards issued by the Railways of Australia are available to full-time students to enable them to travel at concession rates on railways within Australia.

Air:craft:
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 are issued with a new Student Identification Card at the beginning of each year of enrolment. This card must be carried during attendance at the University and shown on request.

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

The card must be presented when varying enrolment, when applying for travel concessions and when notifying a change of address.

A student who loses his identification card must notify the Registrar as soon as possible. Forms for this purpose are available from the Student Enquiries Office, First Floor, Administration Building.

All students will be issued with a Student Identification Card as soon as possible after enrolment. In the meantime, the receipt form issued at the time of enrolment should be carried during attendance at the University and shown on request. If the identification card is not received within six weeks of enrolment the Student Enquiries Office should be advised.

LOST PROPERTY

Enquiries concerning lost property should be made to the Student Enquiries Office, First Floor, Administration Building, and the Union Office.

APPLICATION OF RULES

Any student who requires information on the application of the rules or any service which the University offers, may make enquiries at the Student Enquiries Office.
EXAMINATIONS

Formal University 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 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 information concerning examinations or results will be given by telephone.

Examination results may be reviewed for a charge of $11 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 charge by the date indicated on the notification of results.

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

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

DEFERRED EXAMINATIONS

Most departments at the University do not offer deferred examinations except in medical and compassionate cases.

TERMINATING PASSES

The award of the grade of terminating 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 pre-requisite. However, students are not prevented from repeating a subject for which a terminating pass has been awarded.

APPLICATION FOR ADMISSION TO A DEGREE OR DIPLOMA

Applications for admission to a degree or the award of a diploma must be made on the appropriate form. Students who complete the requirements for their degrees or diplomas at the end of session 2 should apply by 5th January in the following year. Students who complete their degrees at the end of session 1 and do not wish to wait until the next Graduation Ceremony may choose to have their degrees awarded by resolution of the Council, in which case the application must be submitted to the Registrar by 1st September. All applicants should ensure that they have completed all requirements for the degree or diploma, including industrial training where necessary.
PRIZES
The following prizes are awarded to students of the University. Details of the conditions of the prizes are available from the Student Enquiries Office.

The Australasian Institute of Mining and Metallurgy (Illawarra Branch) Geology Prize
1977: J. Hutahineon

The Australasian Institute of Mining and Metallurgy (Illawarra Branch) Metallurgy Prize
1977: No Award

The Australasian Institute of Mining and Metallurgy (Illawarra Branch) Mining Prize
1977: No Award

The Australian Institute of Metals (Port Kembla Branch) Metallurgy Prize
1977: P.D. Hanouse and N. Tambakis

The Australian Institute of Physics (N.S.W. Branch) Prize (Physics)
1977: No Award

The Australian Iron and Steel Prize (Metallurgy)
1977: No Award

The Australian Society of Accountants Prizes (Accountancy)
1977: (1) T.G. Parkinson
         (2) R.L. Jego
         (3) D.R. Noble

The Peter Beckmann Memorial Prize (Chemistry)
1977: D.M. Howarth

The Blue Circle Southern Cement Limited Maldon Works Prize (Metallurgy)
1977: No Award

The Corporate Affairs Commission Prize (Accountancy)
1977: J. Malver

The Marjory Brown Prize (English - Women Students)
1977: I.M. Luaohitti

The Commonwealth Banking Corporation Prize (Metallurgy)
1977: No Award

The Darryl Condon Memorial Prize (Metallurgy)
1977: P. McQuiness

The G.W. Daniels Memorial Prize (Chemistry)
1977: U.E. Senff

The Illawarra Group of the Institution of Engineers, Australia, Prize for Engineering
1977: Phung Bao Toan

The John Lysaght Australia Limited Prize (Metallurgy)
1977: C.R. Killmore

The Metallurgical Society Award (Metallurgy)
1977: No Award

The Metal Manufactures Prize (Metallurgy)
1977: No Award

The N.S.W. Department of Education Prize (Diploma in Education)
1977: H. Lee

The Gina Savage Prize (Science - Women Students)
1977: M.J. Hamilton
The S.A. Senior Prize (Mathematics)
1977: G.J. Smith

Staff Prizes in Physics
1977: (1) R.J. Atkinson
      (2) No Award
      (3) No Award
      (4) P.J. Quinn
BACHELOR DEGREE REQUIREMENTS*

Being Requirements for:

The Degrees of:

Bachelor of Arts
Bachelor of Commerce
Bachelor of Engineering
Bachelor of Metallurgy
Bachelor of Science
Bachelor of Mathematics

The Honours Degrees of:

Bachelor of Arts
Bachelor of Commerce
Bachelor of Engineering
Bachelor of Metallurgy
Bachelor of Science
Bachelor of Mathematics

PART I -- PRELIMINARY

SHORT TITLE

1. These Requirements may be cited as the "Bachelor Degree Requirements".

COMMENCEMENT

2. These Requirements shall come into operation on 1st January, 1975.

PARTS

3. These Requirements are divided into parts, as follows:

Part I - Preliminary (Clause 1-6)
Part II - General (Clause 7-15)
Part III - Bachelor of Arts (Clause 16)
Part IV - Bachelor of Commerce (Clause 17)
Part V - Bachelor of Engineering (Clause 18)
Part VI - Bachelor of Metallurgy (Clause 19)
Part VII - Bachelor of Science (Clause 20)
Part VIIA - Bachelor of Mathematics (Clause 20A)
Part VIII - Honours Degrees (Clause 21-28)
Part IX - Miscellaneous (Clause 29-31)
Part X - Schedules

ABBREVIATED TITLES

4. In the University of Wollongong there shall be degrees of Bachelor as follows:

4.1 the degrees of

Bachelor of Arts (BA)
Bachelor of Commerce (BCom)
Bachelor of Engineering (BE)
Bachelor of Metallurgy (BMet)
Bachelor of Science (BSc)
Bachelor of Mathematics (BMath)

4.2 the honours degrees of

Bachelor of Arts (BA(Hons))
Bachelor of Commerce (BCom(Hons))
Bachelor of Engineering (BE(Hons))
Bachelor of Metallurgy (BMet(Hons))
Bachelor of Science (BSc(Hons))
Bachelor of Mathematics (BMath(Hons))

*Some proposed amendments to these Requirements are being considered by Council. Students are advised to check with the Student Enquiries Office for any changes which will apply in 1979.
INTERPRETATION
5.1 In these Requirements, unless the contrary intention appears,
5.1.1 "Course" means both the combination of subjects taken in any one year, and the sequence of subjects taken over several years, leading to a degree of the University;
5.1.2 "Subject" means a unit of study of single or double session duration;
5.1.3 "100-level subject" means a subject at first year level, "200-level subject" means a subject at second year level, "300-level subject" means a subject at third year level, "400-level subject" means a subject at fourth year level;
5.1.4 "credit points" means the value attributed to a subject as a component in a degree;
5.1.5 "academic adviser" means a person designated by the Academic Senate to advise a candidate proposing a course of study on the conformity of that course to these requirements;
5.1.6 "candidate" means a candidate for a degree of the University;
5.1.7 "full-time" candidate means a full-time candidate who is enrolled in any year in a subject or subjects with a value of not less than 36 credit points in courses for the degrees of Arts, Commerce, Mathematics or Science, or not less than the equivalent of three quarters of a year's programme in courses for the degrees of Engineering or Metallurgy;
5.1.8 "part-time" candidate means a candidate who is not designated as a full-time candidate.

CONFERRING OF DEGREES
6.1 The degrees or honours degrees of Bachelor, as prescribed by Requirements 4.1 and 4.2 of these Requirements, may be conferred by the Council on a candidate who has to the satisfaction of the Academic Senate, complied with these Requirements; provided that in no case shall any of the degrees referred to in Requirement 4 be conferred more than once on the same candidate.
6.2 The degree of Bachelor of Commerce may be conferred with merit where a candidate has demonstrated a standard of academic achievement approved by the Academic Senate.
6.3 Where a candidate has qualified more than once for the award of the same degree, the Registrar shall issue a certificate certifying to the fact and setting out the subjects and the grades awarded.

PART II -- GENERAL

ENROLMENT
7.1 A candidate qualified for candidature for the degree of Bachelor of Arts, Commerce, Engineering, Mathematics, Metallurgy or Science shall apply to the Registrar and be enrolled in the first and each subsequent year as a full-time or part-time student for one of the above degrees. Unless provided by these Requirements no candidate shall be enrolled for more than one degree in any one year except with the approval of the Academic Senate.

SCHEDULES OF SUBJECTS
8.1 The Academic Senate shall approve the subjects for the degrees in Arts, Commerce, Engineering, Mathematics, Metallurgy and Science. The subjects so approved shall be set out in schedules to these Requirements which shall include where relevant the credit points, subject pre-requisites, co-requisites, when offered and any restrictions or recommendations for each subject. The Schedules of Subjects are:

Arts and General Studies - Schedule A
Commerce - Schedule B
Engineering - Schedule C
Metallurgy - Schedule D
Science - Schedule E
Mathematics - Schedule F
COURSE OF STUDY

9.1 Subject to these Requirements a candidate shall, in each year, enrol in a course of study (selected from the Schedules of Subjects) which he shall propose after consultation with an academic adviser.

9.2 Except with the approval of the Academic Senate, in any year of enrolment a candidate shall not enrol in a subject or subjects with a value less than 12 credit points selected from the Schedules for the degrees of Arts, Commerce, Mathematics and Science, or less than the equivalent of one quarter of the course for a full-time year in the degrees of Engineering and Metallurgy. This requirement shall not apply when a candidate, in order to complete his degree, needs less than 12 credit points in subjects selected from the Schedules for the degrees of Arts, Commerce, Mathematics and Science, or less than one quarter of the course for a full-time year in the degrees of Engineering and Metallurgy; such a candidate must enrol for the amount of his course needed to complete the degree.

9.3 Normally, in any year of enrolment a candidate shall not enrol in subjects with a value of more than 48 credit points in courses for the degrees of Arts, Commerce, Mathematics and Science or more than the equivalent of the programme for a full-time year in the courses for the degrees of Engineering and Metallurgy, except with the approval of the Academic Senate.

9.4 Except with the approval of the Academic Senate, a candidate may not enrol in a subject unless he satisfies the conditions for enrolment specified in the Schedules of Subjects.

CHANGE OF COURSE

10.1 Where a candidate seeks to change his course of study, enrolled in pursuant to Requirement 9.1, he shall apply in writing to the Registrar after consultation with an academic adviser.

10.2 Where the change of course referred to in Requirement 10.1 includes discontinuance of a subject or subjects, the candidate shall be deemed not to have been enrolled in the subject or subjects if he discontinues before the end of the fourth week of the session in which the subject or subjects commenced.

10.3 A candidate discontinuing a subject or subjects after the end of the fourth week of the session in which the subject commenced shall be recorded as discontinuing the subject or subjects as from the date of discontinuance; except that an assessment grade pursuant to Requirement 12.4 shall be determined by the relevant Departmental Chairman and entered on the record of a candidate who discontinues after the last day of classes as set out in the University Calendar for the appropriate session.

10.4 Where a date of discontinuance is recorded it shall be the date on which a notice of discontinuance on the prescribed form is lodged with the Registrar.

LEAVE OF ABSENCE

11. Subject to these Requirements a candidate may be granted leave of absence for up to one year by the Registrar on receipt of an application in writing; applications for leave of absence in excess of one year shall be determined by the Academic Senate.

ASSESSMENT

12.1 Subject to these Requirements, the declaration whether a candidate has completed satisfactorily a subject forming part of his course for the degree of Bachelor so as to gain the number of credit points specified in the Schedules of Subjects for the degrees of Arts, Commerce, Mathematics and Science, or standing in the subject for the degrees of Engineering and Metallurgy, shall be made by the Academic Senate.

12.2 In order to complete a subject satisfactorily and to gain the number of credit points specified for the subject in the Schedules for the degrees of Arts, Commerce, Mathematics and Science or standing in a subject prescribed for a degree in Engineering or Metallurgy, a candidate shall

12.2.1 attend such classes; and

12.2.2 complete such essays, exercises and practical work and present himself for such tests and examinations; and
12.2.3 reach a satisfactory standard in such completed work as may be determined by the relevant Departmental Chairman. Provided that a candidate whose performance was affected or was prevented by illness or other cause beyond his control from satisfying the requirements of this Requirement shall report the circumstances in writing (supported by evidence) to the Registrar who shall inform the Departmental Chairman; and the Departmental Chairman may take into account such illness or other cause when assessing the candidate's performance. The candidate shall submit such a report to the Registrar not later than seven days following the illness or other cause referred to above, except that it may be submitted by some other person if circumstances prevent the candidate from taking the required action.

12.3 The Academic Senate shall determine a period at the end of each session when examinations may be scheduled.

12.4 The Academic Senate shall determine the grades to be used for recording the level of achievement in a subject. The grade of achievement of a candidate in a subject shall be declared by the Academic Senate after advice from the relevant Departmental Chairman whose assessment shall be based on the candidate's level of performance with respect to Requirement 12.2.

MINIMUM RATE OF PROGRESS

13.1 The required minimum rate of progress in the degrees of Arts, Commerce, Mathematics and Science shall be the attainment of a number of credit points (excluding credit points granted pursuant to Requirement 15) aggregated as follows:

13.1.1 during the first two years of candidature, 48 credit points for full-time candidates and 24 credit points for part-time candidates, and

13.1.2 thereafter 32 credit points for each year of full-time candidature and 16 credit points for each year of part-time candidature.

13.2 The required minimum rate of progress in the degrees of Engineering or Metallurgy shall be the successful completion of subjects (excluding standing granted pursuant to Requirement 15) aggregated as follows:

13.2.1 during the first two years of candidature the first year of the course prescribed for full-time candidates, and the equivalent of half of the first year of the course prescribed for part-time candidates;

13.2.2 thereafter two thirds of the course prescribed for each year of candidature.

RESTRICTIONS ON ENROLMENT

14.1 Subject to these Requirements, a candidate who has failed to complete a subject satisfactorily after having enrolled therein twice may not enrol again in that subject except with permission of the Academic Senate.

14.2 Subject to these Requirements, a candidate who fails to maintain the required minimum rate of progress in a course of study set out in Requirement 13 may not enrol in any subject without showing cause to the satisfaction of the Academic Senate why enrolment should be permitted.

14.3 A candidate who, in the opinion of the Academic Senate has an unsatisfactory academic record in any other university or tertiary institution, shall not be permitted to enrol in any subject without the approval of the Academic Senate.

14.4 A candidate not permitted to enrol pursuant to this Requirement in a particular year may apply to the Academic Senate for permission to enrol in the following year.

14.5 Where a candidate required to show cause or to obtain the approval of the Academic Senate under this Requirement is permitted to enrol in any subject or subjects in the University, such enrolment shall be subject to any condition imposed by the Academic Senate.

CREDIT TOWARDS DEGREE

15.1 A candidate who has completed in a university or other tertiary institution approved by the Academic Senate one or more subjects approved for the purpose of this Requirement by the Academic Senate may, subject to this Requirement, be granted such credit therefor as may be determined by the Academic Senate.

15.2 A candidate enrolled for a degree of Arts, Commerce, Mathematics or Science and granted credit pursuant to this Requirement shall in no case be eligible by reason thereof to be credited with more than 96 credit points, and shall in any case
15.2.1 complete such subjects as shall permit the obtaining of at least 24 credit points in 300-level subjects (selected from the Schedules of Subjects referred to in Requirement 8 of these Requirements) determined by the Academic Senate as providing a substantial and coherent study at the 300-level, and

15.2.2 complete such other subject or subjects as may be determined by the Academic Senate.

15.3 A candidate enrolled for a degree of Engineering or Metallurgy and granted credit pursuant to this Requirement shall in no case be eligible by reason thereof to be credited with more than two-thirds of the course and shall in any case

15.3.1 complete such subjects as shall permit the attaining of a satisfactory performance in at least three-quarters of the final year, or its part-time equivalent if a part-time candidate, of the prescribed course determined by the Academic Senate, and

15.3.2 complete such other subject or subjects as may be determined by the Academic Senate.

15.4 A candidate shall not be granted credit pursuant to this Requirement for subjects completed more than 10 years previously, except with the approval of the Academic Senate.

15.5 A candidate may, with the prior approval of the Academic Senate, be permitted to enrol for subjects at another university or tertiary institution and on successful completion of the subjects to have them credited towards a degree of the University.

15.6 Notwithstanding anything to the contrary contained in this Requirement a candidate who is a graduate or who has satisfied the requirements for a degree or other award of a university or other tertiary institution approved by Academic Senate shall not be credited pursuant to this Requirement with more than 66 credit points in the case of degrees in Arts, Commerce, Mathematics and Science, except that appropriate subjects passed but not included in the previous degree may extend the maximum to 96 credit points: or one half of the prescribed course in the case of degrees in Engineering and Metallurgy, except that appropriate subjects passed but not included in the previous degree may extend the maximum to two-thirds of the prescribed course.

15.7 Save with the approval of the Academic Senate a candidate who has satisfactorily completed, either at the university or elsewhere, a subject which, in the opinion of the Academic Senate is a similar subject and for which credit has been obtained for a particular degree shall not be permitted to enrol in that subject for credit towards that particular degree.

PART III -- BACHELOR OF ARTS

DEGREE REQUIREMENTS

16. In order to complete a course of study which qualifies for the award of the degree of Bachelor of Arts, a candidate shall, subject to these Requirements, obtain from the successful completion of subjects listed in Schedule A, an aggregate of not less than 144 credit points of which

16.1 not less than 72 shall be obtained in respect of subjects other than 100-level subjects; and

16.2 not less than 24 shall be obtained in respect of 300-level subjects determined by the Academic Senate as providing a substantial and coherent study at the 300-level.

PART IV -- BACHELOR OF COMMERCE

DEGREE REQUIREMENTS

17.1 In order to complete a course of study which qualifies for the award of the degree of Bachelor of Commerce, a candidate shall, subject to these Requirements, obtain an aggregate of not less than 144 credit points by the successful completion of subjects listed in Schedule A of which

17.1.1 not less than 72 shall be obtained in respect of subjects other than 100-level subjects.

17.2 Subject to these Requirements and any conditions specified in the Schedules, candidates enrolled for the specialisation in Accountancy shall successfully complete the subjects set out in Schedules B1 and B2.

17.3 Subject to these Requirements and any conditions specified in the Schedules, candidates enrolled for the specialisation in Economics shall successfully complete the subjects set out in Schedules B1 and B3.

17.4 Subject to these Requirements and any conditions specified in the Schedule, candidates enrolled for the combined specialisation in Accountancy and Economics shall successfully complete the subjects set out in Schedule B4.
56 Bachelor Degree Requirements

PART V -- BACHELOR OF ENGINEERING

DEGREE REQUIREMENTS

18. In order to complete a course of study which qualifies for the award of the degree of Bachelor of Engineering, a candidate shall, subject to these Requirements, successfully complete the subjects prescribed in one of the courses set out in Schedule C.

PART VI -- BACHELOR OF METALLURGY

DEGREE REQUIREMENTS

19. In order to complete a course of study which qualifies for the award of the degree of Bachelor of Metallurgy, a candidate shall, subject to these Requirements, successfully complete the subjects set out in Schedule D.

PART VII -- BACHELOR OF SCIENCE

DEGREE REQUIREMENTS

20. In order to complete a course of study which qualifies for the award of the degree of Bachelor of Science, a candidate shall, subject to these Requirements, obtain:

20.1 deleted
20.2 an aggregate of not less than 144 credit points by the successful completion of subjects listed in Schedule A of which not less than 108 shall be in respect of subjects selected from Schedule E; these 108 credit points shall

either

20.2.1 include at least 60 credit points in respect of subjects offered by one of the member departments of the Faculty of Science or other subjects specifically recommended by the Faculty of Science and approved by the Academic Senate for the purpose of this Requirement;

or

20.2.2 be gained from subjects offered by any two of the member departments of the Faculty of Science or other subjects specifically recommended by the Faculty of Science and approved by the Academic Senate for the purpose of this Requirement and consist of 54 credit points in respect of subjects offered by each of the two such member departments or other subjects specifically approved by the Academic Senate for the purpose of this Requirement.

20.3 Of the 144 credit points specified in Requirement 20.2,

20.3.1 not more than 60 credit points shall be in respect of 100-level subjects; and

20.3.2 not less than 36 credit points shall be in respect of 300-level subjects, of which at least 24 from Schedule E shall be approved by the Academic Senate as providing a substantial and coherent study at the 300-level;

or

20.3.3 where the 108 credit points referred to in Requirement 20.2 is made up from subjects offered by each of two member departments of the Faculty of Science or other subjects specifically approved by the Academic Senate for the purpose of Requirement 20.2.2, 24 of each of the 54 credit points shall be in respect of 300-level subjects and shall be approved by the Academic Senate as providing a substantial and coherent study at the 300-level.

20.4 Except with the approval of the Academic Senate, not less than half the course of study in any one year of enrolment of a candidate satisfying Requirement 20.2 shall consist of subjects offered by member departments of the Faculty of Science and/or the Faculty of Mathematics or other subjects specifically approved by the Academic Senate for the purpose of Requirement 20.2.

PART VIIA -- BACHELOR OF MATHEMATICS

DEGREE REQUIREMENTS

20A In order to complete a course of study which qualifies for the award of the degree of Bachelor of Mathematics, a candidate shall, subject to these requirements, obtain an aggregate of not less than 144 credit points by the successful completion of subjects listed in Schedule A, of which
Bachelor Degree Requirements

20A.1 Not more than 60 credit points shall be in respect of 100-level subjects; and

20A.2.1 Not less than 84 credit points shall be in respect of subjects selected from Schedule F; and

20A.2.2 Not less than 36 credit points shall be in respect of 300-level subjects, of which at least 24 from Schedule F shall be approved by the Academic Senate as providing a substantial and coherent study at the 300-level;

20A.3.1 Not less than 72 credit points shall be in respect of subjects selected from Schedule F, of which at least 24 credit points shall be approved by the Academic Senate as providing a substantial and coherent study at the 300-level; and

20A.3.2 Not less than 48 credit points shall be in respect of subjects, other than those in Schedule F, offered by, or on behalf of, any one department of the University; of these 48 credit points at least 24 credit points shall be approved by the Academic Senate as providing a substantial and coherent study at the 300-level.

PART VIII -- THE HONOURS DEGREE OF BACHELOR

PRELIMINARY

21. Subject to the succeeding Requirements, Requirements 1 to 20 inclusive of these Requirements shall, unless the context or subject matter indicate a contrary intention, have equal application to candidates for the honours degree of Bachelor as to candidates for the degree of Bachelor.

ADMISSION TO HONOURS DEGREE COURSES IN ARTS, COMMERCE, MATHEMATICS AND SCIENCE

22. In order to be admitted as a candidate for the degree of Bachelor with Honours in Arts, Commerce, Mathematics or Science a candidate shall

22.1 Have (save as determined by the Academic Senate in exceptional cases) qualified for the award of a degree of Bachelor of Arts, Commerce, Mathematics or Science of the University; and

22.2 Have attained in the subjects completed for his degree a standard of achievement approved by the Academic Senate;

22.3 Have completed satisfactorily such subjects as may have been determined by the Academic Senate

or

22.4 Hold from another University qualifications or academic attainments approved by the Academic Senate as equivalent to those set out in Requirements 22.1 and 22.2. Provided that the Academic Senate may require an applicant, before being admitted as a candidate for the honours degree of Bachelor, to complete such work and sit for such examinations as the Academic Senate may determine.

COURSE OF STUDY FOR THE HONOURS DEGREE COURSE IN ARTS, COMMERCE, MATHEMATICS AND SCIENCE

23.1 A candidate for the degree of Bachelor with Honours in Arts, Commerce, Mathematics or Science shall obtain an aggregate of not less than 48 credit points from the successful completion of subjects approved by the Academic Senate from those listed in the Schedules of Subjects at a standard of achievement approved by the Academic Senate.

23.2 A candidate may be enrolled for

either

23.2.1 A single honours degree where subjects are taken from one department,

or

23.2.2 A joint honours degree where subjects are taken from more than one department.
LENGTH OF CANDIDATURE FOR HONOURS DEGREE COURSE IN ARTS, COMMERCE, MATHEMATICS AND SCIENCE

24. Unless otherwise determined by the Academic Senate a full-time candidate shall pursue the course of study approved under Requirement 23 for two successive half-years and a part-time candidate shall pursue the course of study for four successive half-years. Provided that a candidate admitted pursuant to Requirement 22.4 may be required by the Academic Senate to pursue a course of study for more than two successive half-years if a full-time candidate and for more than four successive half-years if a part-time candidate.

ADMISSION, COURSE OF STUDY AND LENGTH OF CANDIDATURE FOR HONOURS DEGREE COURSES IN ENGINEERING AND METALLURGY

26. In order to complete a course of study which qualifies for the award of the degree of Bachelor with Honours in Engineering or Metallurgy, a candidate must complete the course for the degree of Bachelor of Engineering or Metallurgy at a standard of achievement determined by the Academic Senate.

ADDITIONAL HONOURS COURSE

26.1 A candidate who has qualified for the honours degree of Bachelor and who has fulfilled such requirements for admission to a second honours course as may be determined by the Academic Senate may be permitted by the Academic Senate to enrol for the second honours course provided that this course is, in the opinion of the Academic Senate, sufficiently different from the first honours course completed.

26.2 Unless otherwise determined by the Academic Senate a candidate permitted to undertake a second honours course pursuant to Requirement 26.1 shall comply with Requirements 23, 24 and 25 where relevant.

CLASSES OF HONOURS

27. A candidate who has satisfactorily fulfilled the Requirements prescribed may be awarded an honours degree in one of the following classes:

- Honours Class I
- Honours Class II Division 1
- Honours Class II Division 2
- Honours Class III

TERMINATION OF CANDIDATURE

28. Unless otherwise determined by the Academic Senate a candidate who, pursuant to these Requirements, fails to qualify for the award of any class of honours referred to in Requirement 27 may not continue as a candidate for the honours degree of Bachelor.

GENERAL SAVING CLAUSE

29. Notwithstanding anything to the contrary herein contained the Academic Senate may, in any case in which it may deem it appropriate to do so, dispense with or suspend any requirement of or prescription by these Requirements. Any such action by the Academic Senate shall in every instance be reported to the Council at its next meeting.

APPLICATION OF AMENDING REQUIREMENTS

30. Where, after the commencement of these Requirements an amendment relating to the courses of study that may be taken by candidates for the pass degrees of Bachelor or the degrees with honours is made to these Requirements, the amendment does not apply to such a candidate who, before the making of the amendment, completed 12 credit points or the equivalent of one quarter of the course for a full-time year in the degrees of Engineering or Metallurgy, unless

30.1 the candidate elects that the amendment apply to him and submits to the Academic Senate proposed alterations to his course that are in accordance with these Requirements as amended by the amendment and the Academic Senate approved those alterations or
30.2 the Academic Senate otherwise determines.

APPEAL

31. A candidate may appeal against any decision made pursuant to these Requirements to the Academic Senate which may determine the matter as it sees fit.

PART X -- THE SCHEDULES

SCHEDULE A - ARTS AND GENERAL STUDIES
SCHEDULE B - COMMERCE
SCHEDULE C - ENGINEERING
SCHEDULE D - METALLURGY
SCHEDULE E - SCIENCE
SCHEDULE F - MATHEMATICS

All the subjects set out in the Schedules of Subjects are offered contingent upon the availability of staff and the level of student enrolments.

NOTE: A GUIDE TO THE SCHEDULES

Intending students are strongly urged to read the details of each subject in which they are interested. In particular, when selecting their programme of study they should ensure that they are complying with any special requirements concerning the subject or subjects which they wish to study beyond the first year (100-level).

The information in the columns headed "Pre-requisites" and "Co-requisites" indicates the minimum requirements to be met by students wishing to enrol in the various subjects. A pre-requisite subject is one which must be completed successfully prior to undertaking the subject for which it is prescribed. A co-requisite subject is one which must either be completed successfully before or be studied concurrently with the subject for which it is prescribed.

The pre- and co-requisites listed for subjects in the Schedules are described in terms of the current subject titles. Students who have completed similar subjects in previous years are advised to contact the appropriate Departmental Chairman to determine whether these subjects are acceptable as pre- or co-requisites for subjects in their present course.

Students or intending students, who feel that they have good grounds for requesting waiver of a pre-requisite or co-requisite should present their case to the appropriate Departmental Chairman.

Under the Requirements a Departmental Chairman may dispense with the need to comply with a pre-requisite or co-requisite. However, pre-requisites and co-requisites have been carefully determined and waiver will be allowed only in cases where the Departmental Chairman and the Academic Senate are satisfied that the student has a background of study sufficient to take the subject profitably.

In the column headed "Session Offered" the following coding is used:

1 = first half-year
2 = second half-year
3 = full year

The University reserves the right to withdraw any subject or subjects at any time without notice.
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<thead>
<tr>
<th>Number</th>
<th>Subject</th>
<th>Level</th>
<th>Credit Points</th>
<th>Session* Offered</th>
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* May not be offered in 1979
**Compulsory subjects
# Optional subjects, two required

*NOTE: The column headed "Session Offered" the following coding is used: 1 = first half-year; 2 = second half-year; 3 = full year

Entry to the Honours course or honours subjects requires the approval of the Academic Senate on recommendation of the Chairman of the Department: normally the equivalent of a BCom degree with Merit is required for entry.
<table>
<thead>
<tr>
<th>Number</th>
<th>Subject</th>
<th>Level</th>
<th>Credit Points</th>
<th>Session Offered</th>
<th>Pre-Requisite</th>
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<td>2 Unit Science course of N.S.W. H.S.C. recommended Replaces BIOL101. Not to count with BIOL101.</td>
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### DEPARTMENT OF CHEMISTRY

**100-Level**

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**200-Level**

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*Bioenergetics I-IV should be taken in the order stated unless special permission is obtained from the Chairman of the Department of Biology. The subjects Bioenergetics I-IV can also be taken individually, subject to approval from the Chairman of the Department of Biology.*
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DEPARTMENT OF CIVIL ENGINEERING

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Not to count with CSCI101 Computing Science I or CSCI201 Computing Science II or CSCI301 Computing Science IIIA or CSCI302 Computing Science IIIB

Entry to Honours year or Honours subject shall be determined by the Academic Senate on the advice of the Departmental Chairman

Candidature for MSc or DipCompSci
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ECON314 Urban & Regional Economics 300 8 2
ECON315 Microeconomics - Theory and Application 300 8 1
ECON316 History of Economic Thought* 300 8 -
ECON321 Econometrics 300 8 1
ECON322 Mathematical Economics* 300 8 -
ECON323 Econometric Models 300 8 2

ECON322 Mathematical Economics*

*These subjects will not be offered in 1979

DEPARTMENT OF EDUCATION

EDUC211 Educational Psychology and Educational Research and Measurement 200 8 3 36 credit points
EDUC212 Educational Sociology, Philosophy and History 200 8 3 36 credit points

300-Level

EDUC311 Developmental Principles in Education 300 8 3 EDUC211 and 212
EDUC312 Sociology of Education 300 8 3 EDUC211 and 212
EDUC313 History of Education 300 8 3 EDUC211 and 212
EDUC314 Philosophy in Education 300 8 3 EDUC211 and 212
EDUC315 Educational Research Methodology 300 8 3 EDUC211 and 212
EDUC316 Comparative Education 300 8 3 EDUC211 and 212

FACULTY OF SOCIAL SCIENCES

No more than three 300-level subjects to count towards a degree
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DEPARTMENT OF ELECTRICAL ENGINEERING

100-Level

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200-Level

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300-Level

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**200-Level**

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**300-Level**

Students without ENGL101 or ENGL103 or ENGL104 may be admitted to subjects in English 300-level subject to approval by the Departmental Chairman.
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DEPARTMENT OF EUROPEAN LANGUAGES

FRENCH

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**ITALIAN**

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* This will be determined by the Chairman of the Department: normally an acceptable level will be French 2 Unit Grade 2 at N.S.W. H.S.C.

** This will be determined by the Chairman of the Department: normally an acceptable level will be Italian 2 Unit Grade 2 at N.S.W. H.S.C. or attending school in Italy.

Entry to the Honours year shall be determined by the Academic Senate on the Advice of the Departmental Chairman.

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<td>GEOL207 Geophysics*</td>
<td>200</td>
<td>6</td>
<td>2</td>
<td>GEOL101 and GEOL102; or GEOL251</td>
<td></td>
<td>Not to count with GEOL305. Normally taken as a 300-level subject</td>
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DEPARTMENT OF GEOLOGY

FACULTY OF SCIENCE
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Points</th>
<th>Credit</th>
<th>Units</th>
<th>Required Courses</th>
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<tr>
<td>GEOL208</td>
<td>Structural Geology and Geotectonics</td>
<td>200</td>
<td>6</td>
<td>2</td>
<td>GEOL204 or GEOL351</td>
<td>Not to count with GEOL308</td>
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<tr>
<td>GEOL210</td>
<td>Micropalaeontology*</td>
<td>200</td>
<td>6</td>
<td>1</td>
<td>GEOL101 and GEOL102; or GEOL111 and either GEOL212 or GEOL291</td>
<td>Not to count with GEOL310</td>
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<tr>
<td>GEOL211</td>
<td>Basin Analysis and Oceanography</td>
<td>200</td>
<td>6</td>
<td>1</td>
<td>GEOL101 and GEOL102; or GEOL251</td>
<td>Not to count with GEOL311</td>
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<tr>
<td>GEOL212</td>
<td>Fossil and Nuclear Fuels*</td>
<td>200</td>
<td>6</td>
<td>1</td>
<td>GEOL201 or GEOL351</td>
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<td>GEOL213</td>
<td>Economic Geology and Exploration Geochimistry</td>
<td>200</td>
<td>6</td>
<td>2</td>
<td>GEOL201 or GEOL351</td>
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<tr>
<td>GEOL301</td>
<td>Advanced Crystallography, Crystal Chemistry</td>
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<td>GEOL302</td>
<td>Advanced Igneous and Metamorphic Petrology*</td>
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<td>GEOL202</td>
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<td>GEOL303</td>
<td>Advanced Geological Mapping and Geomorphology</td>
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<td>GEOL304</td>
<td>Palaeontology</td>
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<tr>
<td>GEOL305</td>
<td>Sedimentology*</td>
<td>300</td>
<td>6</td>
<td>2</td>
<td>GEOL201 plus three other 200-level Geology subjects</td>
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<tr>
<td>GEOL306</td>
<td>Stratigraphy and Stratigraphic Palaeontology</td>
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<td>Normally four 200-level Geology subjects</td>
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<td>GEOL307</td>
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<tr>
<td>GEOL308</td>
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<td>6</td>
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<td>Normally four 200-level Geology subjects</td>
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<tr>
<td>GEOL309</td>
<td>Mathematical Methods in Geology</td>
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<td>GEOL310</td>
<td>Micropalaeontology*</td>
<td>300</td>
<td>6</td>
<td>1</td>
<td>GEOL304; or GEOL204 and three other 200-level Geology subjects</td>
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<td>GEOL311</td>
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<td>Fossil and Nuclear Fuels*</td>
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*May not be offered in 1979
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<th>Pre-Requisite</th>
<th>Co-Requisite</th>
<th>Remarks</th>
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<tr>
<td>GEOL313</td>
<td>Economic Geology and Exploration Geochemistry</td>
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<td>6</td>
<td>2</td>
<td>GEOL201 plus three other 200-level Geology subjects</td>
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<tr>
<td>GEOL351</td>
<td>Geology for Mining Engineers II</td>
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<td>1</td>
<td>GEOL251</td>
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<td></td>
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<td>400</td>
<td>48</td>
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<td>At least four 200-level and normally eight 300-level Geology subjects together with requirements for the award of the BSc degree</td>
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<td>HIST102</td>
<td>English Social History, 1815-1945</td>
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<tr>
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<td>200</td>
<td>16</td>
<td>3</td>
<td>HIST101 - English Social History, 1750-1940 or HIST102</td>
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<tr>
<td>HIST221</td>
<td>Australian Social History 1850-1930 A</td>
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<td>16</td>
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<td>HIST101 - English Social History, 1750-1940 or HIST102</td>
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<td>HIST222</td>
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<td>HIST101 - English Social History, 1750-1940 or HIST102</td>
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<td>Not to count with HIST226, 227, 316 or 313</td>
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<tr>
<td>HIST223</td>
<td>Religion and Society in Britain from the Reformation A</td>
<td>200</td>
<td>16</td>
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<td>HIST101 - English Social History, 1750-1940 or HIST102</td>
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<td>HIST224</td>
<td>Modern South-east Asian History A</td>
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<td>HIST225</td>
<td>Australian Social History Since the Depression A*</td>
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<td>16</td>
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<td>HIST226</td>
<td>Reformation and Revolution 1517-1660 A</td>
<td>200</td>
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<td>HIST102 or HIST101</td>
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<td>Religion and Society in Britain, 1738-1860 A</td>
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<td>Breadth</td>
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<td>HIST228</td>
<td>English History, 1865-1924</td>
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<td>16</td>
<td>3</td>
<td>HIST102 or HIST101 or equivalent</td>
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<td>Russia, the Soviet Union and International Communism 1885-1962</td>
<td>200</td>
<td>16</td>
<td>3</td>
<td>HIST102 or HIST101 or equivalent</td>
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<td>24</td>
<td>3</td>
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<tr>
<td>HIST311</td>
<td>French History, 1700-1940</td>
<td>300</td>
<td>24</td>
<td>3</td>
<td>Any 200-level History subject except HIST222 - French History, 1700-1940</td>
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<tr>
<td>HIST312</td>
<td>Modern South-east Asian History</td>
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<td>24</td>
<td>3</td>
<td>Any 200-level History subject except HIST224 - Modern South-east Asian History</td>
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<td>Religion and Society in Britain from the Reformation</td>
<td>300</td>
<td>24</td>
<td>3</td>
<td>Any 200-level History subject except HIST223 or HIST226</td>
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<td>HIST314</td>
<td>Australian Social History Since the Depression</td>
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<td>24</td>
<td>3</td>
<td>Any 200-level History subject except HIST225 - Australian Social History Since the Depression</td>
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<tr>
<td>HIST316</td>
<td>Reformation and Revolution</td>
<td>300</td>
<td>12</td>
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<td>Any 200-level History subject except HIST226 or HIST223</td>
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<td>HIST317</td>
<td>Religion and Society in Britain, 1736-1860</td>
<td>300</td>
<td>12</td>
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<td>Any 200-level History subject except HIST223</td>
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<td>HIST318</td>
<td>English History 1865-1924</td>
<td>300</td>
<td>24</td>
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<td>Any 200-level History subject except HIST228</td>
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<tr>
<td>HIST319</td>
<td>Modern Indonesian and Malaysian History</td>
<td>300</td>
<td>12</td>
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<td>Any 200-level History subject except HIST224</td>
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<tr>
<td>HIST320</td>
<td>History of Modern Mainland South-east Asia</td>
<td>300</td>
<td>12</td>
<td>2</td>
<td>HIST319 - Modern Indonesian and Malaysian History</td>
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<td>Any 200-level History subject except HIST220 or HIST231</td>
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<tr>
<td>HIST323</td>
<td>English History 1906-1924</td>
<td>300</td>
<td>12</td>
<td>2</td>
<td>Any 200-level History subject except HIST227</td>
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*Not being offered in 1979

Schedule A - Arts and General Studies Subjects
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<tr>
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<th>Subject</th>
<th>Level</th>
<th>Credit Points</th>
<th>Session Offered</th>
<th>Pre-Requisite</th>
<th>Co-Requisite</th>
<th>Remarks</th>
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<tbody>
<tr>
<td>HIST325</td>
<td>Theory and Method of History (Advanced)</td>
<td>300</td>
<td>8</td>
<td>3</td>
<td>Credit or better in a 100- or 200-level annual History subject</td>
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<td>Normally, this subject will be a pre-requisite for entry to History IV (Honours) in 1980 and following years.</td>
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<tr>
<td>HIST401</td>
<td>History IV Honours</td>
<td>400</td>
<td>48</td>
<td>3</td>
<td>Normally HIST325 Theory and Method of History (Advanced) in 1980 and following years</td>
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<td>Entry to the Honours year shall be determined by the Academic Senate on the advice of the Departmental Chairman</td>
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### DEPARTMENT OF HISTORY AND PHILOSOPHY OF SCIENCE

#### 100-Level

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<tr>
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<th>Credit Points</th>
<th>Session Offered</th>
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<th>Co-Requisite</th>
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<tbody>
<tr>
<td>HPS131</td>
<td>Greek Science A</td>
<td>100</td>
<td>12</td>
<td>3</td>
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<td>Not to count with either HPS110 Greek Science or HPS131 Greek Science A</td>
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<tr>
<td>HPS130</td>
<td>The Scientific Revolution and the Seventeenth Century A</td>
<td>100</td>
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<td>3</td>
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<td>Not to count with HPS130 The Scientific Revolution and the Seventeenth Century A</td>
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#### 200-Level

<table>
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<th>Session Offered</th>
<th>Pre-Requisite</th>
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<tbody>
<tr>
<td>HPS231</td>
<td>Greek Science B</td>
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<td>HPS130 The Scientific Revolution and the Seventeenth Century A</td>
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<tr>
<td>HPS230</td>
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<td>HPS131 Greek Science A</td>
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<tr>
<td>HPS232</td>
<td>The Darwinian Revolution A</td>
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<tr>
<td>HPS213</td>
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<td>Science and Society 2A</td>
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<tr>
<td>HPS225</td>
<td>Historical Perspectives on Scientific Theories</td>
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<tr>
<td>HPS332</td>
<td>The Darwinian Revolution B</td>
<td>300</td>
<td>24</td>
<td>3</td>
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<tr>
<td>HPS314</td>
<td>Philosophical and Ideological Perspectives of Science 1B</td>
<td>300</td>
<td>12</td>
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<td>HPS324</td>
<td>Philosophical and Ideological Perspectives of Science 2B</td>
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<td>12</td>
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<td>HPS313</td>
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<td>HPS323</td>
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<td>HPS316</td>
<td>The History of Theories of Generation and Heredity</td>
<td>300</td>
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HPS131 Greek Science A or HPS130 The Scientific Revolution and the Seventeenth Century A

Either HPS130 The Scientific Revolution and the Seventeenth Century A or HPS131 Greek Science A

Not to count with either HPS210 The Darwinian Revolution A or HPS232 The Darwinian Revolution A

Not to count with either HPS251 Philosophical and Ideological Perspectives of Science 1A or HPS214 Philosophical and Ideological Perspectives of Science 1A

Not to count with either HPS252 Philosophical and Ideological Perspectives of Science 2A or HPS224 Philosophical and Ideological Perspectives of Science 2A

Not to count with HPS213 Science and Society 1A or HPS220 Science and Society A

Not to count with HPS223 Science and Society 2A or HPS220 Science and Society A

HPS130 The Scientific Revolution and the Seventeenth Century A or HPS230 The Scientific Revolution and the Seventeenth Century B or BIOL102 General Biology
<table>
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<th>Number</th>
<th>Subject</th>
<th>Level</th>
<th>Credit Points</th>
<th>Session Offered</th>
<th>Pre-Requisite</th>
<th>Co-Requisite</th>
<th>Remarks</th>
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<tbody>
<tr>
<td>HPS325</td>
<td>Scientific Explanation and Scientific Understanding</td>
<td>300</td>
<td>12</td>
<td>2</td>
<td>Either HPS130 The Scientific Revolution and the SeventeenthCentury A or HPS230 The Scientific Revolution and the Seventeenth Century B or any 100-level subject in Philosophy, or 200-level subject in courses offered by the member Departments of the Faculty of Science</td>
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<tr>
<td>HPS326</td>
<td>The Sciences of Life in the Twentieth Century</td>
<td>300</td>
<td>12</td>
<td>2</td>
<td>Either HPS232 The Darwinian Revolution A or HPS332 The Darwinian Revolution B or HPS316 The History of Theories of Generation and Heredity</td>
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<td>400-Level</td>
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<td>HPS400</td>
<td>History and Philosophy of Science IV</td>
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**DEPARTMENT OF MATHEMATICS**

**100-Level**

| MATH101 | Mathematics IA | 100 | 12 | 3               | One of the following HSC categories; either: (i) 2 unit: 2nd grade or higher, provided the student has a suitable aggregate score, or on the recommendation of the relevant high school principal; or (ii) 3 unit: 4th grade or higher; or (iii) 4 unit: either (a) 4th grade or higher, or (b) 5th grade, provided the student has a suitable aggregate score, or on the recommendation of the relevant high school principal. |                                                |                                                                         |

**FACULTY OF MATHEMATICS**

Assumed knowledge is the 3 unit H.S.C. course. Students who do not meet the requirements of the pre-requisite, and still wish to do Mathematics IA, may attempt a special entry examination offered by the Chairman of the Department of Mathematics.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Level</th>
<th>ECTS</th>
<th>Credits</th>
<th>Prerequisites</th>
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DEPARTMENT OF MECHANICAL ENGINEERING

The Department of Mechanical Engineering does not offer subjects for inclusion in Schedule A.

DEPARTMENT OF METALLURGY

100-Level

METL121 Nature of Materials 100 6 2

DEPARTMENT OF PHILOSOPHY

100-Level

PHIL103 Philosophy 103 100 12 3
PHIL112 Logic A 100 6 2
PHIL123 Philosophy 123 100 12 3
PHIL143 Political Theory 100 12 3
PHIL153 Clear Thinking and Arguments 100 12 3
PHIL163 Introductory History of Western Philosophy 100 6 3

200-Level

PHIL211 Classical Philosophy 200 8 1 Either PHIL112 or PHIL153 or
PHIL222 Set Theory 222 200 8 1 12 credit points in Mathematics
PHIL223 Problems of Philosophy 200 16 3
PHIL231 Formal Logic A 200 8 1 At least 8 credit points in
PHIL232 Political Philosophy A 200 8 2 Philosophy or History or

FACULTY OF HUMANITIES

Not to count with PHIL133
Not to count with PHIL153 or, for students enrolled prior to 1978, with PHIL113
Not to count with PHIL223
Not to count with PHIL112 or PHIL113
Not to count with MATH321
Not to count with PHIL123
Not to count with PHIL361
Not to count with PHIL332
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<td>PHIL251</td>
<td>Ethics A</td>
<td>200</td>
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**400-Level**
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**DEPARTMENT OF PHYSICS**

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<td>Mechanics and Thermodynamics</td>
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<td>Quantum Mechanics and Statistical Mechanics with Electronics</td>
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<td>PHYS318</td>
<td>Quantum Mechanics and High Energy Physics</td>
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<td>PHYS319</td>
<td>Quantum Mechanics and Astrophysics</td>
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<td>Astro-, Nuclear and Solid State Physics</td>
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**Additional Credits**

- PHYS201 and 211 or PHYS205 and PHYS215 or PHYS244
- PHYS201 and 211 or PHYS205 and PHYS215 or PHYS244
- PHYS201 and 211 or PHYS205 and PHYS215 or PHYS244
- PHYS201 and 211 or PHYS205, 215, 225 and 235
- Same as for PHYS311 and CHEM324
- PHYS201 and 211 or PHYS205, PHYS215 and PHYS235 or PHYS244
- PHYS201 and 211 or PHYS205 and PHYS235 or PHYS244
- PHYS 201 and 211 or PHYS205 and PHYS235 or PHYS244 and PHYS244
- PHYS201 and 211 or PHYS205 and PHYS235 or PHYS244 and PHYS244
- PHYS141
- PHYS142

Excludes PHYS311, PHYS315, PHYS316, PHYS318, PHYS319, PHYS321, PHYS322 and PHYS327

Excludes PHYS311, PHYS315, PHYS316, PHYS317, PHYS319, PHYS322 and PHYS328

Excludes PHYS311, PHYS315, PHYS316, PHYS317, PHYS318, PHYS321, PHYS322 and PHYS329

Excludes PHYS312

Excludes PHYS321

Excludes PHYS322

Excludes CHEM306, CHEM308, CHEM313, CHEM324, PHYS311, PHYS315, PHYS326, PHYS327, PHYS328 and PHYS329

Excludes PHYS311, PHYS315, PHYS316, PHYS321, PHYS322, PHYS324, PHYS327, PHYS328 and PHYS329

Excludes PHYS311, PHYS315, PHYS317, PHYS321, PHYS322, PHYS324, PHYS326, PHYS328 and PHYS329

Excludes PHYS311, PHYS315, PHYS316, PHYS317, PHYS321, PHYS322, PHYS324, PHYS326, PHYS327 and PHYS329

Excludes PHYS311, PHYS315, PHYS318, PHYS322, PHYS324, PHYS326, PHYS327 and PHYS329

Excludes PHYS311, PHYS315, PHYS319, PHYS321, PHYS322, PHYS324, PHYS326, PHYS327 and PHYS329

Approval for taking Astronomy at the 300-level is at the discretion of the Chairman of the Department of Physics
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<th>Level</th>
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<tr>
<td>PHYS401</td>
<td>Theoretical Mechanics and Electromagnetism</td>
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<td>PHYS410</td>
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<td>PHYS441</td>
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<td>PHYS443</td>
<td>Quantum Mechanics and Statistical Mechanics</td>
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**DEPARTMENT OF PSYCHOLOGY**

**100-Level**

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<td>PSYC231</td>
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<td>PSYC232</td>
<td>Research Methods &amp; Statistics</td>
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<td>PSYC233</td>
<td>Development</td>
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<td>PSYC234</td>
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**300-Level**

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<tr>
<td>MATH334</td>
<td>Design and Analysis</td>
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<td>PSYC203 and 204 or PSYC232 or PSYC242</td>
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<tr>
<td>PSYC338</td>
<td>Behaviour Modification</td>
<td>300</td>
<td>6</td>
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<td>PSYC205 and 206 or PSYC234 or PSYC244</td>
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**DEPARTMENT OF PSYCHOLOGY**

**FACULTY OF SOCIAL SCIENCES**
<table>
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<tr>
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<th>Course Title</th>
<th>Level</th>
<th>Credit Points</th>
<th>Prerequisites</th>
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<tr>
<td>PSYC335</td>
<td>Humanistic Psychology</td>
<td>300</td>
<td>6</td>
<td>1 PSYC201 and 202 or PSYC231 or PSYC241</td>
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<tr>
<td>PSYC336</td>
<td>Experimental Psychology*</td>
<td>300</td>
<td>6</td>
<td>- PSYC203 and 204 or PSYC232 or PSYC242. Desirable: PSYC205 and 206 or PSYC234 or PSYC244</td>
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<tr>
<td>PSYC346</td>
<td>Experimental Psychology (Science)*</td>
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<td>- As above</td>
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<tr>
<td>PSYC312</td>
<td>Counselling Psychology</td>
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<td>6</td>
<td>1 PSYC201 or PSYC231 or PSYC241 and PSYC235</td>
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<tr>
<td>PSYC348</td>
<td>Behaviour Modification (Science)</td>
<td>300</td>
<td>6</td>
<td>2 PSYC205 and 206 or PSYC234 or PSYC244</td>
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<tr>
<td>PSYC339</td>
<td>Counselling Psychology (Practicum)</td>
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<td>PSYC315</td>
<td>Psychology of Abnormality</td>
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<td>6</td>
<td>2 PSYC201 or PSYC231 or PSYC241</td>
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<tr>
<td>PSYC331</td>
<td>Psychological Theory</td>
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<td>PSYC316</td>
<td>Individual Differences</td>
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<td>6</td>
<td>2 PSYC201 or PSYC231 or PSYC241</td>
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<tr>
<td>PSYC323</td>
<td>Industrial &amp; Organizational Psychology</td>
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<td>2 Desirable: PSYC322 or PSYC342</td>
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<td>PSYC343</td>
<td>Industrial &amp; Organizational Psychology (Science)</td>
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<td>2 Desirable: PSYC322 or PSYC342</td>
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<td>PSYC322</td>
<td>Social Psychology</td>
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<td>PSYC342</td>
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**400-Level**

<table>
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<tr>
<td>PSYC499</td>
<td>Psychology IV Honours</td>
<td>400</td>
<td>48</td>
<td>3 48 credit points of Psychology at the 300-level</td>
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<tr>
<td>PSYC450</td>
<td>Joint Honours in Psychology and Sociology</td>
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*Not offered in 1979

For students wishing to enrol for the 400-Level psychology course leading to the bachelor degree with honours in psychology. **Note:** Entry to the Honours year or Honours subjects shall be determined by the Academic Senate on the advice of the Departmental Chairman. At 100-level, students are required to take 12 credit points of psychology. PSYC101 and PSYC102 must be completed before entering 200-level subjects. At 200-level, students are required to take 24 credit points of psychology, including PSYC232 or PSYC242 which is a compulsory pre-requisite for entry to the honours year and, at least, one of PSYC231 or PSYC234. At 300-level, students are required to take 48 credit points of psychology. Students entering the honours year are advised to formally enrol in MATH34; however, a minimum requirement is to audit this subject.
For students planning to make a substantial and coherent (that is, a major) study of Psychology, for example, to satisfy the bachelor degree requirements towards future associate membership of the Australian Psychological Society, students are required to take 12 credit points of psychology at 100-level, 18 credit points of psychology at 200-level, and 24 credit points of psychology at 300-level. Note: No more than 18 credit points of 300-level psychology can be taken until a minimum of 18 credit points of 200-level psychology have been completed.

The pre-requisite for all 200-level subjects is 12 credit points of 100-level psychology. The pre-requisite for all 300-level subjects is 12 credit points of 200-level psychology.

**DEPARTMENT OF SOCIOLOGY**

<table>
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<tr>
<th>Number</th>
<th>Subject</th>
<th>Level</th>
<th>Credit Points</th>
<th>Session Offered</th>
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<th>Co-Requisite</th>
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<tr>
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<td>Sociology I</td>
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<tr>
<td>SOC202</td>
<td>Sociology IIA: Central Themes in Sociology</td>
<td>200</td>
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<td>SOC213</td>
<td>Belief Systems, Ideologies - A</td>
<td>200</td>
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<td>2</td>
<td>SOC202</td>
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<tr>
<td>SOC214</td>
<td>Class, Power and Social Issues - A</td>
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<tr>
<td>SOC215</td>
<td>Time, Work and Leisure - A</td>
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<tr>
<td>SOC217</td>
<td>Belief Systems, Ideologies - B</td>
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<td>SOC218</td>
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<tr>
<td>SOC222</td>
<td>Sociology II Advanced: Foundations of Sociological Thought</td>
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<tr>
<td>SOC223</td>
<td>Sociology II Advanced: Contemporary European Sociology</td>
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**FACULTY OF SOCIAL SCIENCES**

Not to count with SOC214, SOC215 or SOC217

Not to count with SOC213, SOC215 or SOC218

Not to count with SOC213, SOC214 or SOC219

One of SOC214 or SOC215

One of SOC213 or SOC215

One of SOC213 or SOC214

Normally SOC202

Normally one of SOC213, SOC214 or SOC215
### 300-Level

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<tr>
<td>SOC301</td>
<td>Contemporary Culture A*</td>
<td>300</td>
<td>6</td>
<td>Normally one of SOC213, SOC214 or SOC215</td>
</tr>
<tr>
<td>SOC302</td>
<td>Religion and Society*</td>
<td>300</td>
<td>6</td>
<td>Normally one of SOC213, SOC214 or SOC215</td>
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<tr>
<td>SOC303</td>
<td>The Individual in Society*</td>
<td>300</td>
<td>6</td>
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<tr>
<td>SOC304</td>
<td>Military Sociology*</td>
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<td>Sociology of Migration*</td>
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<td>SOC306</td>
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<td>SOC307</td>
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<td>SOC311</td>
<td>Contemporary Culture B*</td>
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<td>Science, Technology and Society*</td>
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<td>SOC316</td>
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<td>SOC317</td>
<td>Interaction and Small Group Theory*</td>
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<td>SOC322</td>
<td>Sociology III Advanced: Sociology of Knowledge I</td>
<td>300</td>
<td>6</td>
<td>Normally credit in SOC223 and approval of the Departmental Chairman</td>
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*Normally credit in SOC130 and approval by the Departmental Chairman

*See Note at end of Sociology entry
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<td>Key Issues in Contemporary Sociology I</td>
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<td>Entry into the Honours year or Honours subjects will be determined by the Academic Senate on the advice of the Departmental Chairman</td>
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<tr>
<td>SOC411</td>
<td>Key Issues in Contemporary Sociology II</td>
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<td>6</td>
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<td>Normally SOC431 and SOC490</td>
<td>Normaly SOC401, SOC411 and SOC490</td>
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<td>SOC431</td>
<td>Research works in Progress Seminar</td>
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<td>Normally credit within courses totalling at least 36 credit points at Sociology 300-level including credit in SOC322</td>
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<td>Normaly SOC401, SOC411 and SOC431</td>
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<td>Sociology IV Honours Thesis</td>
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<td>Entry into the Honours subject will be determined by the Academic Senate on the advice of the Chairmen of the Departments of Psychology and Sociology</td>
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**NOTES:**
1. All of the starred courses may not be offered in any one year. For advice on 300-level courses offered in 1979, students should consult with the Departmental Chairman.

2. Substantial and coherent study in Sociology requires students to complete at least 24 credit points at 300-level.
SCHEDULE B

Set out below are the subjects that may be taken in the Commerce course. Additional details relating to the subjects listed - such as co- and pre-requisites - are set out in Schedule A.

**SCHEDULE B - 1**

<table>
<thead>
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<td>ACCY110</td>
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<td>ECON101</td>
<td>Economics I</td>
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<td>ECON121</td>
<td>Quantitative Methods I*</td>
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<tr>
<td>ECON122</td>
<td>Quantitative Methods II*</td>
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*Accountancy students may substitute a mathematics course approved by the Chairman of the Department of Accountancy for Quantitative Methods I and II.

**SCHEDULE B - 2**

**FURTHER SUBJECTS REQUIRED FOR THE SPECIALISATION IN ACCOUNTANCY**

| ACCY160 | Law in Society                      | 100   | 6             | 1               |
| ACCY161 | Business Law I                      | 100   | 6             | 2               |
| ACCY214 | Accounting & Financial Management IIA | 200   | 8             | 1               |
| ACCY204 | Accounting & Financial Management IIB | 200   | 8            | 2               |
| ACCY224 | Business Finance                    | 200   | 8             | 1               |
| ACCY234 | Information Systems in Accounting    | 200   | 8             | 2               |
| ACCY302 | Accounting & Financial Management IIIA | 300   | 12            | 1               |
| ACCY312 | Accounting & Financial Management IIIB | 300   | 12            | 2               |

**SCHEDULE B - 3**

**FURTHER SUBJECTS REQUIRED FOR THE SPECIALISATION IN ECONOMICS**

| ECON205 | Macroeconomics                      | 200   | 8             | 1               |
| ECON215 | Microeconomics                      | 200   | 8             | 1               |
| Plus two of the following: | | | | |
| ECON206 | Public Finance                      | 200   | 8             | 2               |
| ECON216 | International Economics             | 200   | 8             | 2               |
| ECON223 | Quantitative Methods III***         | 200   | 8             | -               |
| ECON224 | Quantitative Methods IV             | 200   | 8             | 2               |
| Plus three of the following options: | | | | |
| ECON302 | Comparative Economic Systems        | 300   | 8             | 1               |
| ECON303 | Economic Development Issues         | 300   | 8             | 2               |
| ECON304 | Economic Policy                     | 300   | 8             | 1               |
| ECON305 | Economic Development Planning***    | 300   | 8             | -               |
| ECON306 | International Trade***              | 300   | 8             | -               |
| ECON307 | International Monetary Economics*** | 300   | 8             | -               |

**The Chairman of the Department of Accountancy, in the case of Schedule B - 2, or the Chairman of the Department of Economics, in the case of Schedule B - 3, may approve a candidate enrolling for a subject with a value of at least 6 credit points from Schedule A in place of one of the subjects listed in the relevant Schedule B - 2 or B - 3.**

**These subjects will not be offered in 1979.**
<table>
<thead>
<tr>
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<th>Subject</th>
<th>Level</th>
<th>Credits Points</th>
<th>Session Offered</th>
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<tr>
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<td>Natural Resource Economics</td>
<td>300</td>
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<tr>
<td>ECON312</td>
<td>Industrial Economics***</td>
<td>300</td>
<td>8</td>
<td>-</td>
</tr>
<tr>
<td>ECON313</td>
<td>Transport Economics***</td>
<td>300</td>
<td>8</td>
<td>-</td>
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<tr>
<td>ECON314</td>
<td>Urban and Regional Economics</td>
<td>300</td>
<td>8</td>
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<tr>
<td>ECON315</td>
<td>Microeconomics - Theory &amp; Application</td>
<td>300</td>
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<tr>
<td>ECON316</td>
<td>History of Economic Thought***</td>
<td>300</td>
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<tr>
<td>ECON321</td>
<td>Econometrics</td>
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<tr>
<td>ECON322</td>
<td>Mathematical Economics***</td>
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<td>ECON323</td>
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**SCHEDULE B - 4**

**COMBINED SPECIALISATION: ACCOUNTANCY AND ECONOMICS**

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<tr>
<td>ACCY110</td>
<td>Accounting &amp; Financial Management IB</td>
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<tr>
<td>ACCY160</td>
<td>Law in Society</td>
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<tr>
<td>ACCY161</td>
<td>Business Law I</td>
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<tr>
<td>ECON101</td>
<td>Economics I</td>
<td>100</td>
<td>6</td>
<td>1</td>
</tr>
<tr>
<td>ECON111</td>
<td>Economics II</td>
<td>100</td>
<td>6</td>
<td>2</td>
</tr>
<tr>
<td>ECON121</td>
<td>Quantitative Methods I</td>
<td>100</td>
<td>6</td>
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<tr>
<td>ECON122</td>
<td>Quantitative Methods II</td>
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<tr>
<td>ACCY214</td>
<td>Accounting &amp; Financial Management IIA</td>
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<td>ACCY204</td>
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<tr>
<td>ECON205</td>
<td>Macroeconomics</td>
<td>200</td>
<td>8</td>
<td>1</td>
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<tr>
<td>ECON215</td>
<td>Microeconomics</td>
<td>200</td>
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**and either**

<table>
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<th>Level</th>
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<th>Session Offered</th>
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<tbody>
<tr>
<td>ACCY224</td>
<td>Business Finance</td>
<td>200</td>
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<tr>
<td>Or</td>
<td>ACCY234 Information Systems in Accounting</td>
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**And one of the following Economics 200-level subjects:**

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<th>Session Offered</th>
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<tr>
<td>ECON206</td>
<td>Public Finance</td>
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<tr>
<td>ECON216</td>
<td>International Economics</td>
<td>200</td>
<td>8</td>
<td>2</td>
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<tr>
<td>ECON223</td>
<td>Quantitative Methods III</td>
<td>200</td>
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<tr>
<td>ECON224</td>
<td>Quantitative Methods IV</td>
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**And**

<table>
<thead>
<tr>
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<th>Subject</th>
<th>Level</th>
<th>Credits Points</th>
<th>Session Offered</th>
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<tbody>
<tr>
<td>ACCY302</td>
<td>Accounting &amp; Financial Management IIIA</td>
<td>300</td>
<td>12</td>
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</tr>
<tr>
<td>ACCY312</td>
<td>Accounting &amp; Financial Management IIB</td>
<td>300</td>
<td>12</td>
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</tbody>
</table>

**And three of the Economics 300-level options in Schedule B - 3**

***These subjects will not be offered in 1979.
SCHEDULE C

1. BACHELOR OF ENGINEERING - CIVIL ENGINEERING

The course offered by the Department of Civil Engineering is designed to give a general academic training for the professional Civil Engineer. The course normally extends from a minimum of 8 sessions to a maximum of 16 sessions extending over a period of from 4 to 8 years.

In the earlier sessions of the course students are given further training in the basic sciences - Mathematics, Chemistry, Physics - together with an introduction to Civil Engineering, including practice areas of surveying, construction and design. Subsequent sessions of the course are increasingly devoted to Civil Engineering subjects and the design of Engineering structures, while the final sessions of the course are professionally oriented including Construction, Management, Town Planning and Public Health Engineering. Each student, whether completing the course in minimum time (8 sessions) or longer, is required to prepare a thesis within some area of specialization. A feature of the course is the optional areas of study available and students can include various areas of specialization depending upon their interests and abilities. Professional experience is a necessary part of the course. All students must complete twelve weeks of professional experience during the vacation one year before the completion of their course unless exempted by the Department due to the student's full-time professional employment.

The course offers a number of units each of one session duration which are classified either as core subjects or electives. The study of the core subjects, which are shown in Schedule C, is mandatory.

Generally the course requires the satisfactory completion of 60 units of study, identified in the schedule by a disparate number, the selection of the units being constrained by the pre- and co-requisite requirements. Two patterns of study which meet these requirements are shown, but, as progression within the course is by subject, variation of these programmes may occur subject to approval by the Chairman of the Department.

The subjects Town Planning, Roads Engineering and Public Health Engineering, are recognized by the Local Government Examination Committee as giving exemption from those three areas when applying for a certificate as Engineer under the Local Government Act 1919. Full recognition of the course for the pre- and post-1980 periods has been granted by the Institution of Engineers, Australia. There is but one Wollongong course, whether taken over 8 or 16 sessions and students continuing with their existing courses should note that such courses will be progressively replaced.

The Wollongong course may be taken at various rates to suit the individual student. In general, most students with full-time professional employment may complete their course within 12 sessions.

Assessment: In addition to meeting the requirements set out in the University Calendar a student's performance in a course will be monitored within the Department of Civil Engineering by a grade-point system:

Final grades in each subject of the course will be marked A, B, C, D, E or F; where A = highest, B = above average, C = average, D = passing grade, E = a conceded passing grade and F = failure.

An A pass will count as 5 points for each credit hour of content (e.g. an A in a 3 credit-hour subject will count as 15 grade points), a B will count as 4 points, C as 3 points, D as 2 points, E as 1 point and F as 0 point. Students receiving a grade of F must repeat the subject for credit.

A scholarship index or grade point average is obtained by dividing the total number of grade points obtained by the number of credit hours taken. A minimum of 2.0 corresponding to a D average is required for graduation. Students with less than 2.0 in the first two years of their course will be subject to consideration for exclusion and may be excluded from the course. Thereafter students must maintain a suitable rate of progression within the framework of the University's Degree Requirements to allow graduation.

Note: For subjects listed below, pre-requisites and co-requisites are indicated where applicable.
<table>
<thead>
<tr>
<th>Number</th>
<th>Subject</th>
<th>Level</th>
<th>Session Offered</th>
<th>Pre-Requisite</th>
<th>Co-Requisite</th>
<th>Remarks</th>
</tr>
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</tr>
<tr>
<td>CIVL111</td>
<td>Introduction to Design C</td>
<td>100</td>
<td>2</td>
<td></td>
<td>CIVL171</td>
<td>See Schedule A - Chemistry</td>
</tr>
<tr>
<td>CIVL122</td>
<td>Mechanics and Structures</td>
<td>100</td>
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<td></td>
<td>CIVL171</td>
<td>See Schedule A - Mathematics</td>
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<tr>
<td>CIVL123</td>
<td>Dynamics for Civil Engineers</td>
<td>100</td>
<td>2</td>
<td></td>
<td>CIVL171</td>
<td>See Schedule A - Mathematics</td>
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<tr>
<td>CIVL142</td>
<td>Materials 1C</td>
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<td>CIVL171</td>
<td>See Schedule A - Mathematics</td>
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<td></td>
<td>CIVL171</td>
<td>See Schedule A - Mathematics</td>
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<tr>
<td>CIVL172</td>
<td>Engineering Survey Camp</td>
<td>100</td>
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<td>CIVL171</td>
<td>See Schedule A - Mathematics</td>
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<td>CIVL191</td>
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<td>CIVL171</td>
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<td>CIVL192</td>
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<td>CIVL171</td>
<td>See Schedule A - Mathematics</td>
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<tr>
<td>CIVL193</td>
<td>Excursions 1</td>
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<td>CIVL171</td>
<td>See Schedule A - Mathematics</td>
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<td>CHEM101</td>
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<td>MATH101</td>
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<td>See Schedule A - Mathematics</td>
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<td>See Schedule A - Physics</td>
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<td>CIVL213</td>
<td>Structural Design 1</td>
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<td>CIVL111 or MECH122</td>
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<td>CIVL225</td>
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<tr>
<td>CIVL226</td>
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<td>CIVL231</td>
<td>Hydraulics 1</td>
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<td>2</td>
<td>MATH101</td>
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<tr>
<td>CIVL243</td>
<td>Materials 2C</td>
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<td>CIVL251</td>
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<td>200</td>
<td>1</td>
<td>CIVL122 or MECH101</td>
<td>CIVL281 or MATH281</td>
<td>Depending upon resources, students may be required to enrol in MATH281 in lieu of CIVL281 and CIVL282</td>
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<td>Course Title</td>
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<td>Units</td>
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<td>CIVL294</td>
<td>Civil Engineering Construction 2</td>
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<td>MECH241</td>
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<td>ELEC291</td>
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**300-Level Core Subjects**

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<td>CIVL326</td>
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<td>CIVL332</td>
<td>Hydraulics 2</td>
<td>300</td>
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<td>CIVL231</td>
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<td>CIVL334</td>
<td>Hydraulics 3</td>
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<td>CIVL332</td>
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<tr>
<td>CIVL344</td>
<td>Materials 3C</td>
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<td>2</td>
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<td>CIVL353</td>
<td>Structures 1C</td>
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<tr>
<td>CIVL362</td>
<td>Soil Mechanics 1</td>
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<td>CIVL374</td>
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**300-Level Elective Subjects**

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<td>MECH391</td>
<td>Heat Transfer for Civil Engineers</td>
<td>300</td>
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<td>CIVL314</td>
<td>Structural Design 2*</td>
<td>300</td>
<td>2</td>
<td>CIVL312</td>
</tr>
<tr>
<td>CIVL327</td>
<td>Engineering Mechanics 4*</td>
<td>300</td>
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<td>CIVL226, 282</td>
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* Required core subject normally if not in full-time professional employment

Attending predominantly 200-level subjects
<table>
<thead>
<tr>
<th>Number</th>
<th>Subject</th>
<th>Level</th>
<th>Session Offered</th>
<th>Pre-Requisites</th>
<th>Co-Requisites</th>
<th>Remarks</th>
</tr>
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<tr>
<td>CIVL354</td>
<td>Structures 2C*</td>
<td>300</td>
<td>2</td>
<td></td>
<td></td>
<td>*Required core subjects if not in full-time professional employment</td>
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<tr>
<td>CIVL363</td>
<td>Soil Mechanics 2*</td>
<td>300</td>
<td>2</td>
<td>CIVL353</td>
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<tr>
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<td><strong>400-Level Core Subjects</strong></td>
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<td>CIVL401</td>
<td>Civil Engineering Thesis</td>
<td>400</td>
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<tr>
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</table>
The Department offers a course leading to a Bachelor of Engineering in Electrical Engineering which may be completed in a minimum of four years of full-time study. Subjects are so scheduled that it may also be undertaken on a part-time basis, in which case the duration will depend upon the particular circumstances of the student. Progression is by subject but the various subject pre- and co-requisites must be satisfied. The degree of Bachelor of Engineering (Honours) is awarded for meritorious performance over the course and particularly in the final year thesis projects. The classes of honours awarded are defined in the Bachelor Degree Requirements.

Details of the recommended programme for a full-time four year minimum course are set out in Section (i), while Section (ii) shows details of the preferred programme for students in approved, full-time industrial employment.

### RECOMMENDED FULL-TIME PROGRAMME

**YEAR 1**

<table>
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<tr>
<th>Number</th>
<th>Subject</th>
<th>Level</th>
<th>Session Offered</th>
<th>Pre-Requisite</th>
<th>Co-Requisite</th>
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**YEAR 2**

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See Schedule A - Mathematics
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*See "Notes" at end of Full-time programme
Engineering Options

For 1979 the Engineering Options subjects for the various years (of the course) are as follows:

YEAR 1: Stage 2, Part-time
MECH103 Statics 100 2
MECH121 Eng. Drawing & Graphics 100 1

Year 2: Stage 4, Part-time
CIVL254 Strength of Materials 200 1 100-level subjects
METL201 Materials 1 200 2 200-level subjects

Year 3: Stage 5, Part-time
MECH392 Introd. Thermofluid Dynamics 300 1
MECH344 Heat Transfer 300 2 MECH392

Final Year Electives
These will be selected from the following list of subjects. Unless class numbers warrant, only four electives will be offered in any year.

ELEC404 Circuit Theory 4 400 1 or 2
ELEC424 Electrical Energy Syst. 400 1 or 2
ELEC425 Generalised Mach. Thy. 400 1 or 2
ELEC426 Electromechanical Dyn. 400 1 or 2
ELEC427 Static Converters 400 1 or 2
ELEC432 Computers 4 400 1 or 2
ELEC443 Control 3 400 1 or 2
ELEC462 Communications 2 400 1 or 2
ELEC472 Elect. Prop. of Mats. 400 1 or 2
ELEC475 Composite Elective I 400 1 or 2
ELEC476 Composite Elective II 400 1 or 2
ELEC477 Composite Elective III 400 1 or 2
ELEC481 Probab. & Rand. Proc. 400 1 or 2
ELEC482 System Reliability 400 1 or 2

With the approval of the Departmental Chairman, one Electrical Engineering elective may be replaced by a suitable equivalent subject offered by another department.

General Electives
With the approval of the Departmental Chairman, subjects to the value of not less than 6 credit points may be selected from any Schedule.

Industrial Experience
Full-time BE students must accumulate at least 12 weeks of approved industrial experience, documented in the form of employment reports and preferably in the period between third and fourth year.
Students in approved, full-time industrial employment become eligible to include Industrial Options in their programme in place of an equivalent amount of core subjects, in Science and Engineering.

Each Option is worth 6 credit points and with the approval of the Departmental Chairman, a student may include Industrial Option 1 in his programme after he has completed at least one full year of suitable industrial experience. Similarly, Industrial Options 2, 3, 4 and 5 may be included after 2, 3, 4 and 5 years respectively of approved experience.

Thus a student completing his course after five years of part-time study and one year of full-time study could include in his course, Industrial Options to the value of 24 credit points.

Industrial Options are related to the student's current full-time employment and a student enrolled in an Industrial Option subject is required to submit written reports to his University Departmental supervisors and to participate in seminars as scheduled from time to time.

In addition to the University supervisor, the student's employer will be asked to nominate an industrial supervisor to advise the student in report and seminar preparation and to ensure that company policy on confidentiality is observed.

The written submissions and seminars will deal with a critical analysis and reporting of general (or nominated specific) aspects of the student's employment. Subject to confidentiality requirements these may cover technical, organisational and management aspects of the employer's industry.

The following stages of this programme will be offered in 1979:

**STAGE 1**

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<th>Credits</th>
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**STAGE 2**

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*See "Notes" at end of Full-time programme
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<th>Number</th>
<th>Subject</th>
<th>Level</th>
<th>Session Offered</th>
<th>Pre-Requisites</th>
<th>Co-Requisites</th>
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STAGE 3

STAGE 4

STAGE 5

(ONLY FOR STUDENTS WHO COMPLETED STAGE 4 IN 1978)
year 1

(replacing stages 1 and 2)

See schedule a - mathematics

math101 mathematics ia

100 3

See schedule a - mathematics

phys142 fundamentals of physics b

100 3

See schedule a - physics

elec203 circuit theory 2a

200 3

elec101

MATH201 Mathematics IIA

200 3

MATH101

PHYS205 Modern Physics

200 3

PHYS141, 142

MATH202 and 201 or

MATH284 and 285

elec211 Electronics 1

200 3

ELEC101

ELEC203

elec251 Laboratory 2A

200 3

ELEC11

elec282 Industrial Option 2

200 3

elec211

MATH202 Mathematics IIS

200 3

MATH201

STAGE 3

stages 4 and later are identical to those in the normal part-time programme.

STAGE 4

2(b) BACHELOR OF SCIENCE (ENGINEERING) - ELECTRICAL ENGINEERING

PART-TIME COURSE

No new enrolments will be accepted in this course. The programme for re-enrolling students is set out below.

stage 6

ELEC423 E.C. & D. 3

400 1

ELEC322

ELEC431 Computers 3

400 1

ELEC331

*See "Notes" at end of Full-time programme
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**NOTE: INDUSTRIAL TRAINING**

For the BSc(Eng) degree a minimum of three years approved industrial training concurrent with the course is required.

*See "Notes" at end of Full-time programme (B.E.)
3. BACHELOR OF ENGINEERING - MECHANICAL ENGINEERING

The aim of the course offered by the Department of Mechanical Engineering is to give high academic training in Mechanical Engineering over a minimum period of 4 years (8 sessions). The course can also be taken on a part-time basis.

Introductory subjects from the first year of the course after which the course is divided into streams consisting of the following Mechanical Engineering subjects: Fluid Mechanics, Thermodynamics, Design, Dynamics, Mechanics of Solids, Materials, Control and Systems, Environmental Engineering and Experimental Engineering. The final year of the course consists of a wide selection of electives allowing students to choose subjects within their own areas of specialisation. These electives include the subjects mentioned above, together with subjects of an applications nature including Materials Handling Systems, Refrigeration and Air Conditioning, Lubrication etc.

During the final year each student is required to prepare a thesis on a topic approved by the Chairman of the Department.

The course has been fully recognised for the pre- and post-1980 periods by The Institution of Engineers, Australia, which is the professional accrediting body. This recognition exempts graduates from examinations for admission to the grade of Member of the Institution.

Industrial training and experience is an essential part of the course at Wollongong. Full-time students are required to obtain an aggregate of at least 12 weeks of practical experience during the summer recesses. For part-time students, each year of appropriate full-time industrial employment will be credited as one elective up to a maximum of six electives.

On the following pages three programmes of study are presented: full-time programme; a part-time programme; and a further part-time programme for those students entering the University with a Mechanical Engineering Certificate qualification from the N.S.W. Department of Technical Education. The sequence of subjects will satisfy the pre- and co-requisite requirements. However, as progression within the course is by subject, variations of these programmes may occur subject to approval by the Chairman of Department.

All students must take particular notice of the Bachelor Degree Requirements regarding Minimum Rate of Progress: Requirement 13.2 and Restriction on Enrolment: Requirement 14. For the purposes of Requirement 13.2 a prescribed course in Mechanical Engineering is interpreted as that course which has been prescribed for a particular student by the Chairman of Department. Honours are awarded at the end of the course on the basis of overall performance throughout the course.

FULL-TIME PROGRAMME

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CIVL482  Engineering Management II     400  2 
MECH401  Thesis                        400  3 
Electives                                      400  1 & 2 

Plus at least 7 electives (spread over two sessions) selected from the following electives subject to the approval of the Chairman of the Department.

List of Electives which may be taken in Third or Fourth Year

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Plus at least 13 electives (spread over two sessions) selected from the following electives subject to the approval of the Chairman of the Department. Note that part-time students will be allowed a maximum of six elective exemptions for satisfactory completion of MECH198, 199, 298, 299, 398 and 399.

List of Electives

- MECH301 Mechanics of Solids II 300 1 MECH201
- MECH444 Thermodynamics IV 400 1 MECH342
- MECH423 Applied Dynamics I 400 2 MECH325
- MECH425 Hydraulic and Pneumatic Systems 400 1 MECH224
- MECH473 Materials Handling Systems I 400 1 MECH281
- MECH483 Environmental Engineering II 400 1 MECH363
- MECH464 Systems Analysis II 400 1 MECH213
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<td>MECH403 Mechanics of Solids III</td>
<td>400</td>
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<td>MECH413 Mechanical Engineering Design III</td>
<td>400</td>
<td>1</td>
<td>MECH213</td>
<td>MECH344, MECH342 and MECH333</td>
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<td>MECH445 Refrigeration and Air Conditioning</td>
<td>400</td>
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<td>MECH362 Control Systems II</td>
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<td>MECH443 Thermodynamics III</td>
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<td>MECH424 Applied Dynamics II</td>
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<td>MECH415 Optimum Design</td>
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<td>MECH474 Materials Handling Systems II</td>
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<td>MECH281</td>
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<td>MECH484 Environmental Engineering III</td>
<td>400</td>
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<td>MECH434 Fluids Mechanics IV</td>
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<td>MECH332</td>
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<td>MECH475 Fluid Transport of Bulk Solids</td>
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<td>MECH402 Engineering Materials II</td>
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<td>MECH485 Environmental Engineering IV</td>
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**PART-TIME PROGRAMME FOR STUDENTS ENTERING THE UNIVERSITY WITH THE NSW DEPARTMENT OF TECHNICAL EDUCATION MECHANICAL ENGINEERING CERTIFICATE QUALIFICATION**

<table>
<thead>
<tr>
<th>Subject</th>
<th>Level</th>
<th>Session Offered</th>
<th>Pre-Requisites</th>
<th>Co-Requisites</th>
<th>Remarks</th>
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<tr>
<td>MATH101 Mathematics IA</td>
<td>100</td>
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<tr>
<td>PHYS142 Fundamentals of Physics B</td>
<td>100</td>
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<td>MECH102 Dynamics</td>
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</table>

YEAR 1

(TO REPLACE STAGES 1 AND 2 OF THE NORMAL PART-TIME PROGRAMME)

See Schedule A - Mathematics MATH101
Stages 3, 4 and 5, and Year 6 will be identical to the normal part-time programme (listed above), except that in Year 6, 12 subjects are to be chosen from the list of electives instead of 13 subjects. Experimental work offered in the subject MECH251 Experimental Engineering I in Stage IV of the course will be modified to include computing techniques.
4. BACHELOR OF ENGINEERING - MINING ENGINEERING

The Mining Engineering course offered is designed to give a general academic training for the professional Mining Engineer and to meet all statutory requirements. The course normally extends from a minimum of 8 sessions to a maximum of 16 sessions over a period of from 4 to 8 years.

In the earlier sessions of the course students are given further training in the basic sciences - Mathematics, Chemistry, Physics - together with an introduction to Civil Engineering, including practice areas of surveying, construction and design. Subsequent sessions are increasingly devoted to Mining Engineering subjects and the design of Engineering structures, while the final sessions are completely professionally oriented. Each student, whether completing the course in minimum time (8 sessions) or longer, is required to prepare a thesis within some area of specialization. A feature of the course is the optional areas of study available and students can include various areas of specialization depending upon their interests and abilities. Professional experience is a necessary part of the course. All students should complete at least 2 half-years professional experience before the completion of their course.

The course offers a number of units each of 1 session duration which are classified either as core subjects or electives. The study of the core subjects, which are shown in Schedule C, is mandatory.

Generally the course requires the satisfactory completion of 55 units of study, identified in the schedule by a disparate number, the selection of the units being constrained by the pre- and co-requisite requirements. One pattern of study which meets these requirements is shown, but, as progression within the course is by subject, variation of this programme may occur subject to approval by the Chairman of the Department.

Assessment: In addition to meeting the requirements for the degree set out in the University Calendar a student's performance in a course will be monitored within the Department of Civil Engineering by a grade-point system:

Final grades in each subject of the course will be marked A, B, C, D, E, or F; where A = highest, B = above average, C = average, D = passing grade, E = a conceded passing grade and F = failure.

An A pass will count as 5 points for each credit hour of content (e.g. An A in a 3 credit-hour subject will count as 15 grade points), a B will count as 4 points, C as 3 points, D as 2 points, E as 1 point and F as 0 point. Students receiving a grade of F must repeat the subject for credit.

A scholarship index or grade point average is obtained by dividing the total number of grade points obtained by the number of credit hours taken.

A minimum of 2.0 corresponding to a D average is required for graduation. Students with less than 2.0 in the first two years of their course will be subject to consideration for exclusion and may be excluded from the course. Thereafter students must maintain a minimum rate of progression within the framework of the University's Degree Requirements to allow graduation.

Note: For subjects listed below, pre-requisites and co-requisites are indicated where applicable.

### 100-Level Core Subjects

<table>
<thead>
<tr>
<th>Number</th>
<th>Subject</th>
<th>Level</th>
<th>Session Offered</th>
<th>Pre-Requisite</th>
<th>Co-Requisite</th>
<th>Remarks</th>
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<tbody>
<tr>
<td>MINE111</td>
<td>Industrial Experience</td>
<td>100</td>
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<tr>
<td>MINE112</td>
<td>Professional Practice 1</td>
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<tr>
<td>CIVL111</td>
<td>Introduction to Design C</td>
<td>100</td>
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<tr>
<td>CIVL122</td>
<td>Mechanics and Structures</td>
<td>100</td>
<td>1</td>
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<tr>
<td>CIVL123</td>
<td>Dynamics for Civil Engineers</td>
<td>100</td>
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<tr>
<td>CIVL142</td>
<td>Materials 1C</td>
<td>100</td>
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<tr>
<td>CIVL171</td>
<td>Engineering Surveying 1</td>
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<td>CIVL171</td>
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<td>CIVL172</td>
<td>Engineering Survey Camp</td>
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<td>CIVL191</td>
<td>Building Construction</td>
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<td>CIVL192</td>
<td>Civil Engineering Construction 1</td>
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<td>CIVL171</td>
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<tr>
<td>CIVL193</td>
<td>Excursions 1</td>
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<tr>
<td>CHEM101</td>
<td>Chemistry 1A</td>
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<tr>
<td>MATH101</td>
<td>Mathematics 1A</td>
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<td>PHYS142</td>
<td>Fundamentals of Physics B</td>
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### 200-Level Core Subjests

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<tr>
<td>MINE213</td>
<td>Professional Practice 2</td>
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<tr>
<td>MINE221</td>
<td>Computational Tech. in Mining Engineering</td>
<td>200</td>
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<tr>
<td>MINE231</td>
<td>Engineering Construction 2 (Mining)</td>
<td>200</td>
<td>CIVL192</td>
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<tr>
<td>MINE241</td>
<td>Engineering Surveying 2 (Mining)</td>
<td>200</td>
<td>CIVL171</td>
</tr>
<tr>
<td>CIVL213</td>
<td>Structural Design 1</td>
<td>200</td>
<td>CIVL111 or MECH122</td>
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<tr>
<td>CIVL225</td>
<td>Engineering Mechanics 1</td>
<td>200</td>
<td>CIVL123</td>
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<tr>
<td>CIVL226</td>
<td>Engineering Mechanics 2</td>
<td>200</td>
<td>CIVL281</td>
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<td>CIVL231</td>
<td>Hydraulics 1</td>
<td>200</td>
<td>MATH101</td>
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<tr>
<td>CIVL243</td>
<td>Materials 2C</td>
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<td>CIVL251</td>
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<td>CIVL251</td>
<td>Strength of Materials 1</td>
<td>200</td>
<td>CIVL122 or MECH101</td>
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<tr>
<td>CIVL281</td>
<td>Computational Tech. in Civil Engineering 1</td>
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<td>MATH101</td>
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<tr>
<td>CIVL295</td>
<td>Experimental Engineering 1C</td>
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<td>CIVL111, 122</td>
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<td>CIVL296</td>
<td>Excursions 2</td>
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<tr>
<td>ELEC291</td>
<td>Applied Electricity 1</td>
<td>200</td>
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<tr>
<td>GEOL251</td>
<td>Geology for Mining Engineers 1</td>
<td>200</td>
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### Schedule C - Engineering Subjects

- Depending upon available resources students may be required to enrol in MATH281 in lieu.

- Attending predominantly 200-level subjects

- Excludes GEO.101, GEOL111 and GEOL214
<table>
<thead>
<tr>
<th>Number</th>
<th>Subject</th>
<th>Level</th>
<th>Session Offered</th>
<th>Pre-Requisite</th>
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<tr>
<td>GEOL207</td>
<td>Geophysics</td>
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<td>GEOL101, 102 or GEOL251</td>
<td>GEOL201 or GEOL351</td>
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<tr>
<td>GEOL208</td>
<td>Structural Geology and Geotectonics</td>
<td>200</td>
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<td>GEOL101, 102 or GEOL251</td>
<td>GEOL201 or GEOL351</td>
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<tr>
<td>GEOL212</td>
<td>Fossil &amp; Nuclear Fuels</td>
<td>200</td>
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<td>GEOL201 or GEOL351</td>
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<tr>
<td>GEOL213</td>
<td>Economic Geology &amp; Exploration Geocentrism</td>
<td>200</td>
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<td>GEOL201 or GEOL351</td>
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<tr>
<td>MINE314</td>
<td>Professional Practice 3</td>
<td>300</td>
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<tr>
<td>MINE342</td>
<td>Engineering Surveying 3 (Mining)</td>
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<td>MINE362</td>
<td>Mining Process Engineering</td>
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<tr>
<td>MINE363</td>
<td>Mining Economics</td>
<td>300</td>
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<td>MINE364</td>
<td>Management of Mining Projects</td>
<td>300</td>
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<td>MINE365</td>
<td>Simulation of Mining Operations</td>
<td>300</td>
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<td>MINE366</td>
<td>Mining Equipment</td>
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<td>MINE367</td>
<td>Mine Resources</td>
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<td>MINE368</td>
<td>Market Preparation of Mining Products</td>
<td>300</td>
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<td>GEOL351</td>
<td>Geology for Mining Engineers 2</td>
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<tr>
<td>CIVL362</td>
<td>Soil Mechanics 1</td>
<td>300</td>
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<td>CIVL363</td>
<td>Soil Mechanics 2</td>
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<td>See Schedule A - Geology</td>
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<tr>
<td>GEOL307</td>
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<td>GEOL308</td>
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<tr>
<td>GEOL312</td>
<td>Fossil &amp; Nuclear Fuels</td>
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<tr>
<td>GEOL313</td>
<td>Economic Geology and Exploration Geocentrism</td>
<td>300</td>
<td>2</td>
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## 400-Level Core Subjects

<table>
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<th>Course Title</th>
<th>Credits</th>
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<tr>
<td>MINE469</td>
<td>Mining Engineering 2A</td>
<td>400</td>
<td>MINE361</td>
</tr>
<tr>
<td>MINE470</td>
<td>Mining Engineering 3</td>
<td>400</td>
<td>MINE469</td>
</tr>
<tr>
<td>MINE491</td>
<td>Mining Engineering Thesis</td>
<td>400</td>
<td>Enrolled in predominantly 400-level subjects</td>
</tr>
<tr>
<td>CIVL481</td>
<td>Engineering Management 1</td>
<td>400</td>
<td>Enrolled in predominantly 400-level subjects</td>
</tr>
<tr>
<td>CIVL482</td>
<td>Engineering Management 2</td>
<td>400</td>
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## 400-Level Elective Subjects

<table>
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<th>Course Title</th>
<th>Credits</th>
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<td>CIVL463</td>
<td>Foundation Engineering</td>
<td>400</td>
<td>CIVL363</td>
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<tr>
<td>CIVL486</td>
<td>The Civil Engineer and the Environment</td>
<td>400</td>
<td>Enrolled in predominantly 400-level subjects</td>
</tr>
<tr>
<td>CIVL488</td>
<td>Traffic Engineering &amp; Transport</td>
<td>400</td>
<td>Enrolled in predominantly 400-level subjects</td>
</tr>
<tr>
<td>CIVL491</td>
<td>Computer Applications in Civil Engineering 1</td>
<td>400</td>
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<td>CIVL493</td>
<td>Public Health Engineering</td>
<td>400</td>
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### SCHEDULE D - METALLURGY

#### A) BACHELOR OF METALLURGY -- PART-TIME COURSE

Note: For students enrolled prior to 1976 special programmes will be prescribed by the Department where appropriate. For additional details of subjects see Description of Subjects.

<table>
<thead>
<tr>
<th>Number</th>
<th>Subject</th>
<th>Level</th>
<th>Session Offered</th>
<th>Pre-Requisite</th>
<th>Co-Requisite</th>
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<td>Fundamentals of Physics A</td>
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<td>MATH101</td>
<td>See Schedule A - Physics</td>
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Option in 400-level Metallurgy Subjects***

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* In consultation with Chairman of Department a student wishing to take the full Mathematics II may be permitted to do so and the additional work will be credited to option requirements.
** Normally this will be CHEM219 The Computer in Science.
***See list of 400-level Metallurgy subjects at the end of Schedule D.
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**Option in 400-level Metallurgy subjects***

***See list of 400-level Metallurgy subjects at end of Schedule D.

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* See footnote - Part-time course, Stage 2.
** Normally this will be CHEM219 The Computer in Science.
*** See list of options at end of Schedule D.
**** See list of 400-level Metallurgy subjects at end of Schedule D.

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### (D) BACHELOR OF METALLURGY -- PART-TIME/FULL-TIME COURSE

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*See footnote - Part-time course, stage 2.
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**Option##**

| METL491 | Metallurgy Project 2                   | 400   | 3               | METL391       |              |               |

**400-Level Metallurgy Subjects#**

**Option##**

**YEAR 3**

**YEAR 4**
LIST OF 400-LEVEL METALLURGY SUBJECTS - Additional Metallurgy subjects may also be available from time to time.

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LIST OF OPTIONS - Subjects other than those offered by the Metallurgy Department.

Note: Additional subjects may be added from time to time and approval to include subjects not listed may be given by the Chairman of the Department of Metallurgy.

General Studies

See subjects listed in Schedule A - General Studies.

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Department of Biology

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*May not be offered in 1979
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| BIOL303  | Organismic Physiology: Bioenergetics III                                | 8             | 1              |
| BIOL304  | Ecology: Bioenergetics IV                                               | 8             | 2              |
| BIOL311  | Neurobiology and Behaviour                                              | 8             | 1              |
| BIOL381  | Evolution and Ecology of Man                                            | 6             | 2              |
| BIOL391  | Advanced Biology                                                       | 16            | 1 & 2          |
| MATH334  | Design and Analysis                                                    | 6             | 3              |
| CHEM311  | Inorganic Chemistry III                                                | 8             | 1              |
| CHEM314  | Analytical Chemistry III                                               | 8             | 1              |
| CHEM321  | Organic Stereochemistry and Heterocyclics III                          | 8             | 1              |
| CHEM322  | Organic Spectroscopy and Natural Products III                          | 8             | 2              |
| CHEM323  | Physical Chemistry III                                                 | 8             | 2              |
| CHEM324  | Theoretical Chemistry                                                 | 8             | 2              |
| CSC1301  | Computing Science III A                                                | 12            | 3              |
| CSC1302  | Computing Science III B                                                | 12            | 3              |
| GEOG391  | Fluvial Geomorphology (Science)                                        | 12            | 1              |
| GEOG393  | Coastal Geomorphology (Science)                                        | 12            | 2              |
| GEOL301  | Advanced Crystallography, Crystal Chemistry and Mineralogy              | 6             | 2              |
| GEOL302  | Advanced Igneous and Metamorphic Petrology*                            | 6             | 1              |
| GEOL303  | Advanced Geological Mapping and Geomorphology                          | 6             | 1              |
| GEOL304  | Palaeontology                                                          | 6             | 1              |
| GEOL305  | Sedimentology*                                                         | 6             | 2              |
| GEOL306  | Stratigraphy and Stratigraphic Palaeontology                           | 6             | 1              |
| GEOL307  | Geophysics*                                                            | 6             | 2              |
| GEOL308  | Structural Geology and Geotectonics                                    | 6             | 2              |
| GEOL309  | Mathematical Methods in Geology                                        | 6             | 1              |
| GEOL310  | Micropalaeontology*                                                    | 6             | 1              |
| GEOL311  | Basin Analysis and Oceanography                                        | 6             | 1              |
| GEOL312  | Fossil and Nuclear Fuels*                                              | 6             | 1              |
| GEOL313  | Economic Geology and Exploration Geochemistry                          | 6             | 2              |
| MATH301  | Mathematics III A                                                     | 12            | 3              |
| MATH302  | Mathematics III B                                                     | 12            | 3              |
| MATH351  | Ocean Dynamics                                                         | 12            | 3              |
| MATH334  | Design and Analysis                                                    | 6             | 3              |
| PHYS301  | Classical Mechanics and Electromagnetism                               | 6             | 1              |
| PHYS302  | Classical Mechanics, Electromagnetism and Plasma Physics               | 8             | 1              |
| PHYS307  | Advanced Experimental Physics A                                        | 6             | 1              |
| PHYS308  | Advanced Experimental Physics B                                        | 6             | 2              |
| PHYS309  | Advanced Experimental Physics                                          | 12            | 3              |
| PHYS311  | Quantum and Statistical Mechanics                                      | 8             | 3              |
| PHYS312  | Advanced Experimental Physics with Electronics                         | 16            | 3              |
| PHYS315  | Quantum Mechanics and Statistical Mechanics with Electronics            | 12            | 3              |

*May not be offered in 1979
<table>
<thead>
<tr>
<th>Number</th>
<th>Subject</th>
<th>Credit Points</th>
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<tr>
<td>PHYS316</td>
<td>Quantum Mechanics and Solid State Physics</td>
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<td>PHYS317</td>
<td>Quantum Mechanics and Nuclear Physics</td>
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<td>PHYS318</td>
<td>Quantum Mechanics and High Energy Physics</td>
<td>6</td>
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<td>PHYS319</td>
<td>Quantum Mechanics and Astrophysics</td>
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<tr>
<td>PHYS321</td>
<td>Astro-, Nuclear and Solid State Physics</td>
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<td>PHYS322</td>
<td>Astro-, High Energy, Nuclear and Solid State Physics</td>
<td>8</td>
<td>2</td>
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<tr>
<td>PHYS324</td>
<td>Role of Energy in Microscopic Physics and Chemistry</td>
<td>12</td>
<td>3</td>
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<td>PHYS326</td>
<td>Statistical Mechanics and Solid State Physics</td>
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<td>PHYS348</td>
<td>Astronomy</td>
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**PSYCHOLOGY**

| PSYC342 | Social Psychology (Science)                               | 6             | 1               |
| PSYC343 | Industrial & Organizational Psychology (Science)          | 6             | 2               |
| PSYC348 | Behaviour Modification (Science)                          | 6             | 2               |

**400-Level**

**Biology**

| BIOL401 | Biology Honours                                          | 48            | 3               |

**Chemistry**

| CHEM411 | Selected Topics in Chemistry                             | 16            | 3               |
| CHEM420 | Chemistry Honours Project                                | 32            | 3               |

**Geology**

| GEOL401 | Geology Honours                                          | 48            | 3               |

**Physics**

| PHYS401 | Theoretical Mechanics and Electromagnetism               | 8             | 1               |
| PHYS410 | Honours Project                                          | 18            | 3               |
| PHYS441 | Astro- and Nuclear Physics                               | 8             | 3               |
| PHYS443 | Quantum Mechanics and Statistical Mechanics               | 12            | 3               |
| PHYS446 | Solid State Physics                                      | 8             | 3               |
| PHYS455 | Nuclear and Solid State Physics                          | 12            | 3               |
| PHYS465 | Astro- and Solid State Physics                           | 12            | 3               |
SCHEDULE F

MATHEMATICS

Set out below in Schedule F are the subjects that may be taken in the Mathematics course. Additional details relating to the subjects listed, such as co- and pre-requisites, are set out in Schedule A.

<table>
<thead>
<tr>
<th>Number Level</th>
<th>Subject</th>
<th>Credit Points</th>
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<td>Computing Science</td>
<td>MATH101 Mathematics IA</td>
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<td>MATH102 Mathematics IB</td>
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<td>200-Level</td>
<td>Mathematics</td>
<td>MATH201 Mathematics IIA</td>
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<td>MATH221 Mathematics IIC</td>
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<td>MATH231 Mathematics IID</td>
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<td>Mathematics</td>
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<td>MATH302 Mathematics IIIB</td>
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<td>MATH331 Mathematics IIIG</td>
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<td>MATH351 Ocean Dynamics</td>
<td>12</td>
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<tr>
<td>400-Level</td>
<td>Mathematics</td>
<td>MATH401 Mathematics IV (Honours)</td>
<td>48</td>
</tr>
</tbody>
</table>
DEFINITIONS

The terms used to categorize publications listed in the Description of Subjects section have been defined as follows:

TEXTBOOK

A textbook is a publication considered an essential aid in the study of a subject. A student is required to have a textbook available for regular reference in class and during private study.

(The textbooks listed in this Calendar may be purchased from the University Co-operative Bookshop.)

PRELIMINARY READING

Publications listed under the heading PRELIMINARY READING supply the background knowledge required by a student before he can properly understand and participate in the classes conducted in a subject or in certain parts of a subject.

RECOMMENDED READING

Publications listed under the heading RECOMMENDED READING supplement the textbooks by providing more extensive and/or intensive information and comment on the subject or certain aspects of it.

NOTE: Publications additional to those listed in this Calendar under PRELIMINARY or RECOMMENDED READING may be recommended by tutors and lecturers during the year.

Students are not required to purchase publications listed as PRELIMINARY READING or RECOMMENDED READING but may be advised, in some cases, to own major references. These publications are available for borrowing and/or for consultation in the University Library.
DESCRIPTION OF SUBJECTS

ACCOUNTANCY

The Accountancy Department offers a three-year sequence of subjects which may be studied full time or part time, for the BA or BCom degrees. The accountancy content necessary in order to obtain "a substantial and coherent study at 300 level" for a BA degree is somewhat less than that prescribed for the BCom degree in accountancy. Students with good academic records, particularly in third year, are encouraged to enrol in the Honours degree, completion of which requires a further year of full time study or equivalent. Studies may also be undertaken for the MCom degree which, for students holding an Honours degree, requires a further year of full time study, and may include additional subjects or a thesis. A graduate Diploma in Accountancy, comprising one year of full time study or equivalent, is also available for graduates from other disciplines or for accountancy students wishing to take further subjects from the Department.

The sequence of accounting subjects is designed to provide a comprehensive understanding of the conceptual basis of accounting and the application of these ideas to the management and accountability of both business and government enterprises. Concurrent studies in law give a broad introduction to the legal environment - a necessity for today's managers in commerce and industry.

Throughout the subjects emphasis is upon mastery of ideas and stimulation of ability, thus providing a foundation for personal and professional development. While a BCom degree course including appropriate accounting and legal subjects is a suitable preparation for entry into the accountancy profession, the scope and orientation is much broader than for this purpose alone.

In addition to the two main streams of financial accounting (external financial reporting) and management accounting (internal financial reporting), advanced courses in business finance, information systems in accounting, taxation and legal studies, together with other electives are offered, subject to availability of staff and student demand. Students are also encouraged to complement their main area of study by selection of relevant subjects from other departments, particularly Economics, Mathematics including Computing Science, Psychology and Sociology. A combined specialisation in Accountancy and Economics is available for the BCom degree.

Note: In the descriptions below, all Preliminary Reading, Textbook and Recommended Reading references refer to the latest edition unless otherwise specified.

SCHEDULE ENTRIES

Refer to the schedule entries for further details of subjects, including pre-requisites and exclusions. All subjects described in this section are included in Schedule A. Subjects which also appear in other schedules are:

<table>
<thead>
<tr>
<th>Subject</th>
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<tr>
<td>ACCY100</td>
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<tr>
<td>ACCY110</td>
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<td>B &amp; D</td>
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<td>ACCY161</td>
<td>B &amp; D</td>
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<tr>
<td>ACCY302</td>
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<tr>
<td>ACCY312</td>
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</table>

100-LEVEL

ACCY100 ACCOUNTING AND FINANCIAL MANAGEMENT 1A

First session; 6 credit points (2 lectures, 1 tutorial, 1 workshop per week)

Assessment: assignments, essay(s) and examination(s)

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

TEXTBOOKS


Thacker, R.J. Accounting Principles. Prentice-Hall.
136 Description of Subjects - Accountancy

ACCY100 ACCOUNTING AND FINANCIAL MANAGEMENT 1A (CONT'D)

RECOMMENDED READING


ACCY100 ACCOUNTING AND FINANCIAL MANAGEMENT 1B

Second session; 6 credit points (2 lectures, 1 tutorial, 1 workshop per week)
Assessment: assignments, essay(s) and examination(s).
Development of basic concepts introduced in Accounting and Financial Management 1A including management accounting and operations research, corporate reporting, business finance, system design, elementary computer programming and applications.

TEXTBOOKS AND RECOMMENDED READING

As for Accounting and Financial Management 1A.

ACCY160 LAW IN SOCIETY

First session; 6 credit points (2 lectures, 1 tutorial per week)
Assessment: assignments, essay(s) and examination(s).
An introduction to the nature of law, the legal system, legal reasoning and the administration of justice, including the commercial, sociological and political implications of the legal environment.

PRELIMINARY READING

Students are advised to read at least one of the following:
Sawer, G. The Australian and the Law. Pelican.
Williams, G. Learning the Law. (With Australian Supplement), Stevens.

TEXTBOOKS

Lane, P.H. An Introduction to the Australian Constitution. The Law Book Co.

RECOMMENDED READING

Enright, C. Constitutional Law. The Law Book Co.

ACCY161 BUSINESS LAW I

Second session; 6 credit points (2 lectures, 1 tutorial per week)
Assessment: assignments, essay(s) and examination(s).
Business Law, including law of contract, quasi-contract, bailment, agency and trusts.

TEXTBOOKS


RECOMMENDED READING

Description of Subjects - Accountancy

ACCY214 ACCOUNTING AND FINANCIAL MANAGEMENT IIA

First session; 8 credit points (2 lectures, 2 tutorials per week)
Assessment: assignments, essay(s) and examination(s).

The design, production and use of accounting and other quantitative information in the planning and control of organisations, with particular reference to manufacturing activities and to long and short-term decision-making and financial planning.

TEXTBOOKS


ACCY204 ACCOUNTING AND FINANCIAL MANAGEMENT IIB

Second session; 8 credit points (2 lectures, 2 tutorials per week)
Assessment: assignments, essay(s) and examination(s).

A critical examination of concepts and problems in income measurement and financial reporting for various forms of undertaking with particular reference to corporate organisations, including associated aspects of auditing and taxation.

TEXTBOOKS


RECOMMENDED READING

Australian Accounting Research Foundation.

ACCY212 BUSINESS ORGANISATION AND POLICY

Second session; 6 credit points (2 lectures, 1 tutorial per week)
Assessment: assignments, essay(s) and examination(s).

The relationship of organisation theories and behavioural considerations to the functions of management and of accounting, with particular reference to organisation structures, communication, motivation, inter-personal and inter-group relationships and decision processes. Corporate strategy, policy formulation and integration of business functions.

TEXTBOOKS


ACCY224 BUSINESS FINANCE

First session; 8 credit points (2 lectures, 2 tutorials per week)
Assessment: assignments, essay(s) and examination(s).

The finance function, with particular reference to corporate financing, financial policy and financial management including aspects of Australian financial institutions and the development of theories of financial structure.

TEXTBOOKS

RECOMMENDED READING


ACCY234 INFORMATION SYSTEMS IN ACCOUNTING

Second Session; 8 credit points (2 lectures, 1 tutorial per week)
Assessment: assignments, essay(s) and examination(s).

Management information systems, including data collection and processing, internal control and internal reporting. System design and computer applications.

TEXTBOOKS


ACCY254 TAXATION LAW

Second session; 8 credit points (2 lectures, 1 tutorial per week)
Assessment: assignments, essay(s) and examination(s).

Income tax law and practice.

TEXTBOOKS


RECOMMENDED READING


ACCY262 INDUSTRIAL LAW

First session; 6 credit points (2 lectures, 1 tutorial per week)
Assessment: assignments, essay(s) and examination(s).

An examination of the Commonwealth and State systems, the relationship between them and the effect on industrial relations of the Australian Federal system; with particular reference to the constitution of the tribunals, their respective powers and the effect of awards, agreements and other regulatory activities.

TEXTBOOKS

O'Dea, R. *Industrial Relations in Australia*. West.

RECOMMENDED READING

Mills, C.P. *Workers Compensation (NSW)*. Butterworths.

ACCY264 BUSINESS LAW II

First session; 8 credit points (2 lectures, 1 tutorial per week)
Assessment: assignments, essay(s) and examination(s).
Description of Subjects - Accountancy

ACCY264 BUSINESS LAW II (CONT'D)

Business law of Partnership and Companies.

TEXTBOOKS


RECOMMENDED READING

Baxt, R. An Introduction to Company Law. The Law Book Co.

ACCY281 GOVERNMENT ACCOUNTING AND FINANCIAL MANAGEMENT

First session; 6 credit points (2 lectures, 1 tutorial per week)
Assessment: assignments, essay(s) and examination(s).

An introduction to federal, state, regional and local government accounting and financial management including the accounts of government trading corporations and statutory bodies.

TEXTBOOKS

Levy, V.M. Public Financial Administration. The Law Book Co.

ACCY282 ACCOUNTING FOR SELECTED ENTITIES

First session; 6 credit points (2 lectures, 1 tutorial per week)
Assessment: assignments, essay(s) and examination(s).

Accounting for certain entities to be selected by Chairman of Department. (N.B. The selection would be made from entities such as building societies, finance companies, governmental units, primary producers, trusts, etc. on the basis of staff available).

TEXTBOOKS

To be advised by the Departmental Chairman.

300 LEVEL

ACCY302 ACCOUNTING AND FINANCIAL MANAGEMENT IIIA

First session; 12 credit points (2 lectures, 2 tutorials per week)
Assessment: assignments, essay(s) and examination(s).


TEXTBOOKS

Hendriksen, E.S. Accounting Theory. Irwin.
The Institute of Chartered Accountants in Australia. Statements of Accounting Standards and Statements on Accounting Practice and (current) Preliminary Exposure Drafts. Sydney.
RECOMMENDED READING

Most, K. *Accounting Theory*. Grid.

ACCY303 SELECTED ISSUES IN FINANCIAL ACCOUNTING

First session; 6 credit points (2 seminars, 1 tutorial per week)
Assessment: assignments, essay(s) and examination(s).

Selected issues in external reporting, including issues in international accounting and comparative accounting standards.

TEXTBOOKS

As for Accounting & Financial Management IIIA.

plus


RECOMMENDED READING

As for Accounting and Financial Management IIIA.

ACCY312 ACCOUNTING AND FINANCIAL MANAGEMENT IIIB

Second session; 12 credit points (2 lectures, 2 tutorials per week)
Assessment: assignments, essay(s) and examination(s).

Management Accounting: An advanced treatment of management accounting theory and applications including statistical cost analysis, cost accounting control systems, budgetary and strategic planning and decision models.

TEXTBOOKS

Fatseas, V.A. *Operations Research in Business - An Introduction*. School of Accountancy, University of N.S.W.
Mantel, S.J. *Cases in Managerial Decisions*. Prentice-Hall.

RECOMMENDED READING


ACCY313 SELECTED ISSUES IN MANAGEMENT ACCOUNTING

Second session; 6 credit points (2 seminars, 1 tutorial per week)
Assessment: assignments, essay(s) and examination(s).

Selected issues in management accounting, including international management accounting.

TEXTBOOKS

As for Accounting & Financial Management IIIB.

plus


ACCY322 ADVANCED BUSINESS FINANCE

First session; 6 credit points (2 lectures, 1 tutorial per week)
Assessment: assignments, essay(s) and examination(s).
ACCY322 ADVANCED BUSINESS FINANCE (CONT'D)

Advanced aspects of corporate financial management, growth strategies, combinations and reorganisations; theories and models of capital structure and cost of capital.

TEXTBOOKS

No prescribed textbooks.

ACCY332 ADVANCED INFORMATION SYSTEMS IN ACCOUNTING

First session; 6 credit points (2 lectures, 1 tutorial per week)
Assessment: assignments, essay(s) and examination(s).

Advanced aspects of communication and information theory, system evaluation, design, implementation and management, accounting and associated computer applications, and software development.

TEXTBOOKS


ACCY342 ADVANCED AUDITING

First session; 6 credit points (2 lectures, 1 tutorial per week)
Assessment: assignments, essay(s) and examination(s).

Advanced aspects of auditing, including auditing standards and responsibilities, problems of valuation and verification, organisation and application to various forms of accounting systems including computer systems, and investigations.

TEXTBOOKS

Fraser, D.J. & Aiken, M.E. Stettler's Systems Based Audit. Prentice-Hall.
Newton, S.W. & Stettler, H.F. Practice Case for Auditing. Prentice-Hall.

RECOMMENDED READING

Irish, R.A. Auditing. 4th ed. The Law Book Co.

ACCY352 ADVANCED TAXATION LAW

First session; 6 credit points (2 lectures, 1 tutorial per week)
Assessment: assignments, essay(s) and examination(s).

Advanced aspects of taxation law and an examination of other taxes including sales tax, stamp duty, payroll tax, death duty and estate duty.

TEXTBOOKS

Income Tax (International Agreements) Act 1965-68.
Irving, H.R. The Value on which Sales Tax is Payable. Taxation Institute of Australia.

RECOMMENDED READING


ACCY363 ADMINISTRATIVE LAW

Second session; 6 credit points (2 lectures, 1 tutorial per week)
Assessment: assignments, essay(s) and examination(s).
ACCY363 ADMINISTRATIVE LAW (CONT'D)

The role of administration in controlling relationships between individuals, the state and public authorities, including the constitutional setting; legislation and delegated legislation; "Henry VIII" clauses, privative clauses; rules of natural justice, judicial review of administrative action, prerogative writs; injunctions and declaratory judgments; administrative tribunals; public authorities; legal position of the Crown; privilege; Ombudsmen, etc.

TEXTBOOKS


RECOMMENDED READING


ACCY364 BUSINESS LAW III

Second session; 8 credit points (2 lectures, 1 tutorial per week)

Assessment: Assignments, essay(s) and examination(s).

Business law encompassing consumer protection, trade practices, banker and customer, bankruptcy, insurance, guarantee and suretyship.

TEXTBOOKS


RECOMMENDED READING

CCH. Guidebook to Australian Trade Practices Law. CCH Australia.


400-LEVEL

COMPULSORY SUBJECTS FOR HONOURS DEGREE

ACCY403 ACCOUNTING THEORY

First session; 8 credit points (2 seminars per week)

Assessment: seminars, essay(s) and examination(s).


TEXTBOOKS*

No prescribed textbooks.

ACCY404 CURRENT DEVELOPMENTS IN ACCOUNTING THOUGHT - FINANCIAL

First session; 8 credit points (2 seminars per week)

*Reading is required from a wide variety of references, including books and journal articles. Specific recommendations may be obtained from the Accountancy Department.
ACCY404 CURRENT DEVELOPMENTS IN ACCOUNTING THOUGHT - FINANCIAL (CONT'D)

Assessment: seminars, essay(s) and examination(s)

Review of objectives and functions of external reporting with particular reference to problems of periodic income measurement, value and valuation and communication. Evaluation of accounting measurement and valuation methods, including historical cost, general price level accounting, current value and relative price change accounting models. Contemporary developments in accounting thought arising from alterations in social attitudes, the law and professional pronouncements.

TEXTBOOKS*

No prescribed textbooks.

ACCY413 CURRENT DEVELOPMENTS IN ACCOUNTING THOUGHT - MANAGERIAL

First session; 8 credit points (2 seminars per week)

Assessment: seminars, essay(s) and examination(s).

The conceptual basis of managerial accounting and information systems. Management systems and the management process. Business objectives: multiple and conflicting goals. Qualification of objectives. Information theory and communication within organisations. Developments in decision models, project and period planning, budgetary models and control systems, and measurement of performance, including motivation and behavioural considerations.

TEXTBOOKS*

No prescribed textbooks.

ACCY493 RESEARCH ESSAY

First, second or double session; 8 credit points

Information may be obtained from the Departmental Chairman.

OPTIONAL SUBJECTS FOR HONOURS DEGREE

ACCY405 INTERNATIONAL ACCOUNTING

Second session; 8 credit points (2 seminars per week)

Assessment: seminars, essay(s) and examination(s).


TEXTBOOKS*

No prescribed textbooks.

ACCY406 ISSUES IN FINANCIAL ACCOUNTING AND REPORTING

Second session; 8 credit points (2 seminars per week)

Assessment: seminars, essay(s) and examination(s).

Contemporary issues in the field of financial accountability to external parties, particularly in respect of corporate organisations. Legal, institutional and professional reporting requirements. Financial accounting aspects of short term assets including inventories and long-lived assets and liabilities including intangibles, leases, pensions, long service leave and tax allocation. Proposals for improvement in external reporting.

*Reading is required from a wide variety of references, including books and journal articles. Specific recommendations may be obtained from the Accountancy Department.
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ACCY406 ISSUES IN FINANCIAL ACCOUNTING AND REPORTING (CONT'D)

TEXTBOOKS*

No prescribed textbooks.

ACCY414 MANAGEMENT PLANNING AND CONTROL

Second session; 8 credit points (2 seminars per week)
Assessment: seminars, essay(s) and examination(s).


TEXTBOOKS*

No prescribed textbooks.

ACCY423 INVESTMENT ANALYSIS AND MANAGEMENT

Second session; 8 credit points (2 seminars per week)
Assessment: seminars, essay(s) and examination(s).


TEXTBOOKS*

No prescribed textbooks.

ACCY453 STUDIES IN TAXATION

Second session; 8 credit points (2 seminars per week)
Assessment: seminars, essay(s) and examination(s).

The statutory and common law foundations of the Federal income tax system. Common Law concepts of income and capital and statutory modifications and interpretations of these concepts. Legal and accounting approaches to taxable income. Tax and estate planning concepts. Tax avoidance and evasion. Tax incidence and equity. An examination of tax policies, provisions and problems relating to special entities - companies, partnerships, trusts, superannuation schemes - and special provision areas, such as primary producers, mining and petroleum industries, non-residence, foreign-controlled companies and royalty provisions. International aspects of Australian income tax including double tax agreements.

TEXTBOOKS*

No prescribed textbooks.

ACCY473 HISTORY AND DEVELOPMENT OF ACCOUNTING THOUGHT

Second session; 8 credit points (2 seminars per week)
Assessment: seminars, essay(s) and examination(s).

An examination of the environmental factors and processes by which accounting thought, practices and institutions originated and developed in the ancient, mediaeval and modern eras. Ancient accounts. Special-purpose account-keeping in the Middle Ages. Philosophy, influence and constraints of the double-entry system. Development of basic concepts of continuity, accrual accounting and limited liability. Impact of the Industrial Revolution and changing corporate environments on accounting development. Legislative and institutional influences on accounting.

*Reading is required from a wide variety of references, including books and journal articles. Specific recommendations may be obtained from the Accountancy Department.
Origin and development of educational and professional accountancy bodies and their influence on the development of accounting thought. Historical development of modern cost accounting.

TEXTBOOKS*

No prescribed textbooks.

ACCY483 SPECIAL TOPIC A

First session; 8 credit points (2 seminars per week)
Assessment: seminars, essay(s) and examination(s).

A special topic to be selected from any area of financial accounting, management accounting, business finance, commercial law, government accounting, or information systems.
(N.B. The selection would be made by the Departmental Chairman taking into account the expertise of academic staff, including visiting staff, and the interest of students).

TEXTBOOKS*

No prescribed textbooks.

ACCY484 SPECIAL TOPIC B

Second session; 8 credit points (2 seminars per week)
Assessment: seminars, essay(s) and examination(s)

A special topic to be selected from any area of financial accounting, management accounting, business finance, commercial law, government accounting, or information systems.
(N.B. The selection would be made by the Departmental Chairman taking into account the expertise of academic staff, including visiting staff, and the interest of students).

TEXTBOOKS*

No prescribed textbooks.

*Reading is required from a wide variety of references, including books and journal articles. Specific recommendations may be obtained from the Accountancy Department.
BIOLOGY

The Department of Biology offers a first year course which assumes no previous experience in biology. This course is intended to provide both a general biological education for those who do not proceed further in the subject, as well as an adequate background for those who do. At the present time, the second and third year syllabus deals largely with biochemistry, physiology and ecology with emphasis on biological energetics, biological regulation and, to some extent, on environmental biology. Honours and higher degree research projects can be undertaken within the general areas of animal physiology, microbial physiology, ecology and photosynthesis.

Expansion of the Department will extend the scope of the syllabus and the range of specialization within the Department, but emphasis will continue to be placed on functional rather than descriptive biology. Career opportunities exit in most of the major outlets for graduates in the biological sciences.

Biological Energetics (200- and 300-level). This strand is the core of what will eventually be the full course in biology at 200- and 300-level. It is given as four subject units which, subject to completing the relevant pre-requisites, can be taken at 200- or 300-level. Normally however, Bioenergetics I and II will be taken at 200-level, Bioenergetics III and IV at 300-level. Any variation of that arrangement will require permission of the Chairman of the Department of Biology.

The Department of Biology should be consulted for supplementary references for all subjects.

General Statement of Assessment Methods

Students are assessed on performance in practical work, written assignments, short written examinations during the session and one two- or three-hour written examination at the end of each session.

SCHEDULE ENTRIES

Refer to the schedule entries for further details of subjects, including pre-requisites and exclusions. All subjects described in this section are included in Schedules A and E. The following subject also appears in the schedule as shown below.

<table>
<thead>
<tr>
<th>Subject</th>
<th>Schedule</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL102</td>
<td>D</td>
</tr>
</tbody>
</table>

100-LEVEL

BIOL102 GENERAL BIOLOGY

Double session; 18 credit points (2 hrs lectures, 4 hrs practical/tutorial per week)


TEXTBOOK

Students will be advised of the textbook when they enrol.

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

200-LEVEL

CHEM213 PHYSICAL CHEMISTRY II

This subject is required for a major sequence in Biology. Refer to "Description of Subjects - Chemistry".

ELEC294 INTRODUCTORY SYSTEMS THEORY

A course given by the Department of Electrical Engineering primarily for Biology students and is recommended for progression in Biology.

Refer to "Description of Subjects - Electrical Engineering".
Refer to "Description of Subjects - Geography".

**BIOL201 METABOLISM: BIOENERGETICS I**

*Second session; 8 credit points (2 lectures, 4 hr practical/tutorial per week)*


**TEXTBOOK**


**BIOL202 CELL PHYSIOLOGY: BIOENERGETICS II**

*Second session; 8 credit points (2 lectures, 4 hr practical/tutorial per week)*


**TEXTBOOK**


**BIOL203 ORGANISMIC PHYSIOLOGY: BIOENERGETICS III**

*First session; 8 credit points (2 lectures, 4 hr practical/tutorial per week)*


**BIOL204 ECOLOGY: BIOENERGETICS IV**

*Second session; 8 credit points (3 lectures, 4 hr practical/tutorial per week)*


**TEXTBOOK**

Textbook to be announced.

**RECOMMENDED READING**


This subject is intended to serve primarily as an introduction to Bioenergetics I and II. It is, nevertheless, a self-contained course in biochemistry and can be taken without an intention to progress further in biology. Major topics covered include the chemistry and biochemistry of proteins, carbohydrates, lipids and nucleic acids; properties of lipoproteins membranes; enzymes and enzyme catalysis; intermediary metabolism; biochemical evolution.

TEXTBOOKS
(Lehninger is recommended for students intending to proceed to Bioenergetics I.)

This is a broadly based subject which is not an alternative to Bioenergetics IV (Ecology). It is intended for mature students but there are no formal pre-requisites other than 48 credit points in any subjects. Enrolment at 200- or 300-level will be determined by the number of credit points already achieved.

The subject will cover the following areas:
Principles of evolution: Darwin and natural selection; mechanisms of inheritance; diversity; population genetics.
Human evolution: The fossil record; neurobiological and behavioural evolution; reproduction in man; cultural evolution and human diversity.
Concepts of ecology: Food webs and energetics of ecosystems; species interactions and stability of natural communities.
Human ecology: (a) effects of environment on man; nutrition, disease, pollution. (b) effects of man on environment; population, resources, pollution and conservation. An ecological perspective of man. (c) global interactions between man and the biosphere.

TEXTBOOKS
A textbook will be specified at the beginning of the course and a reading list will be provided.

300-LEVEL

BIOL301 METABOLISM: BIOENERGETICS I
Details: As for BIOL201.

BIOL302 CELL PHYSIOLOGY: BIOENERGETICS II
Details: As for BIOL202.

BIOL303 ORGANISMIC PHYSIOLOGY: BIOENERGETICS III
Details: As for BIOL203.

BIOL304 ECOLOGY: BIOENERGETICS IV
Details: As for BIOL204

First session; 8 credit points (3 lectures, 4 hrs practical/tutorial per week)
Assessment: One written examination, written assignments and assessment of practical work.
Syllabus: Concepts and mechanisms of homeostasis. Evolution and function of regulatory systems. Sensory mechanisms. Function of control centres such as pituitary and hypothalamus. Control of physiological processes such as reflexes, posture, respiration etc. Learning, memory and selected aspects of behaviour.

TEXTBOOK

Students will be advised of the textbook and other reference material.

BIOL381 EVOLUTION AND ECOLOGY OF MAN

Details: As for BIOL281.

BIOL391 ADVANCED BIOLOGY

First or second session; 16 credit points (12 hrs practical per week plus all departmental seminars)
Assessment: Two seminars, two written assignments, two written project reports, one 3-hour written examination based on a reading list.

A student will be assigned to two academic staff members who will each supervise a project for half the session. The projects will be selected primarily to extend and intensify both practical and theoretical experience. Emphasis will be placed on developing competence in a range of laboratory and field techniques not already familiar to the student. The reading list is intended to enhance previous understanding of biological phenomena and to introduce the student to areas of biology not treated elsewhere in the course.

TEXTBOOKS

A reading list will be provided at the beginning of the course.

MATH334 DESIGN AND ANALYSIS

Refer to "Description of Subjects - Mathematics".

400-LEVEL

BIOL401 BIOLOGY HONOURS

Double session; 48 credit points
Information may be obtained from the Departmental Chairman.
CHEMISTRY

The Chemistry Department offers two 100-level, four 200-level, four 300-level single session and one 200-level and one 300-level double session subjects. Entry to Chemistry IV Honours course is determined by the Academic Senate on the advice of the Chairman of the Department of Chemistry.

A student wishing to take out a Bachelor of Science degree with a major sequence in Chemistry must obtain at least 36 credit points at the 300-level of which at least 24 credit points must be from subjects offered by the Department of Chemistry.

No reference books are listed for the Chemistry subjects. Students will be provided with a list of recommended reading at the commencement of each course.

SCHEDULE ENTRIES

Refer to the schedule entries for further details of subjects, including pre-requisites and exclusions. All subjects described in this section are included in Schedules A and E. Subjects which also appear in other schedules are:

<table>
<thead>
<tr>
<th>Subject</th>
<th>Schedules</th>
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<tbody>
<tr>
<td>CHEM101</td>
<td>C&amp;D</td>
</tr>
<tr>
<td>CHEM102</td>
<td>D</td>
</tr>
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<td>CHEM211</td>
<td>D</td>
</tr>
<tr>
<td>CHEM214</td>
<td>D</td>
</tr>
<tr>
<td>CHEM219</td>
<td>D</td>
</tr>
</tbody>
</table>

100-LEVEL

CHEM101 CHEMISTRY IA (INTRODUCTORY PHYSICAL AND GENERAL CHEMISTRY)

First session; 6 credit points (28 hrs lectures, 14 hrs tutorials and 42 hrs practical)
Assessment: Practical and tutorial assignments plus written examination

Atomic theory and structure, chemical bonding, shapes of molecules. Particle theory of matter, gases and liquids, thermodynamics and thermochemistry.

TEXTBOOKS


CHEM102 CHEMISTRY IB (INTRODUCTORY ORGANIC AND PHYSICAL CHEMISTRY)

Second session; 6 credit points (28 hrs lectures, 14 hrs tutorials and 42 hrs practical)
Assessment: Practical and tutorial assignments plus written examination


TEXTBOOKS


200-LEVEL

CHEM211 INORGANIC CHEMISTRY II

Second session; 6 credit points (28 hrs lectures, 14 hrs tutorials, 42 hrs practical)
Assessment: Practical and tutorial assignments plus written examination


TEXTBOOKS

CHEM212 ORGANIC CHEMISTRY II

First session; 6 credit points (28 hrs lectures, 14 hrs tutorials plus 42 hrs practical classes)
Assessment: Practical and tutorial assignments plus written examination


TEXTBOOKS


CHEM213 PHYSICAL CHEMISTRY II

First session; 6 credit points (28 hrs lectures, 14 hrs tutorials plus 42 hrs practical classes)
Assessment: Practical and tutorial assignments plus written examination

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.

Chemical Thermodynamics: Review of 1st, 2nd and 3rd laws. Application of thermodynamics to chemical systems.

TEXTBOOKS


CHEM214 ANALYTICAL CHEMISTRY II

Second session; 6 credit points (28 hrs lectures, 14 hrs tutorials plus 42 hrs practical classes)
Assessment: Practical and tutorial assignments plus written examination

Ionic equilibrium in analytical chemistry: acid base, oxidation-reduction, precipitation. Introductory analytical spectroscopy, separation techniques: chromatography, solvent extraction etc.

TEXTBOOK


CHEM219 THE COMPUTER IN SCIENCE

Double session; 6 credit points (56 hrs lectures, 28 hrs tutorial/practical)
Assessment: Continual assessment plus written examination


TEXTBOOKS


300-LEVEL

CHEM314 ANALYTICAL CHEMISTRY III

First session; 8 credit points (42 hrs lectures and tutorials plus 42 hrs practical classes)
Assessment: Practical and tutorial assignments plus written examination

Electrochemistry and chemical analysis, electrodeposition, potentiometry, polarography, anodic stripping voltammetry. Techniques of trace analysis, sampling, solution concentration, selection of method.
Instrumentation and trace analysis, mass spectrometry, atomic absorption spectroscopy, fluorescence analysis, emission spectroscopy, radiochemistry.

**TEXTBOOKS**


**CHEM311 INORGANIC CHEMISTRY III**

First session; 8 credit points (42 hrs lectures and tutorials plus 42 hrs practical classes)
Assessment: Practical and tutorial assignments plus written examination


**TEXTBOOK**


**CHEM321 ORGANIC STEREOCHEMISTRY AND HETEROCYCLICS III**

First session; 8 credit points (42 hrs lectures and tutorials and 42 hrs practical)
Assessment: Practical and tutorial assignments, and written examination


**TEXTBOOKS**


**CHEM322 ORGANIC SPECTROSCOPY AND NATURAL PRODUCTS III**

Second session; 8 credit points (42 hrs lectures and tutorials and 42 hrs practical)
Assessment: Practical and tutorial assignments, and written examination


**TEXTBOOKS**

CHEM323 PHYSICAL CHEMISTRY III

Second session; 8 credit points (42 hrs lectures and tutorials plus 42 hrs practical classes)
Assessment: Practical and tutorial assignments plus written examination

Chemical Dynamics; correlation of Chemical Reactivity with Molecular Structure; Surface Chemistry and Applications; Transport Processes in Solution; Electrochemistry.

TEXTBOOKS

CHEM324 THEORETICAL CHEMISTRY

Second session; 8 credit points (56 hrs lectures and tutorials plus 28 hrs practical classes)
Assessment: Practical and tutorial assignments plus written examination

The Concepts of Quantum Chemistry; Molecular Orbital Theory of Electronic Structure; Symmetry in Quantum Chemistry and Molecular Spectroscopy; Statistical Mechanics.

TEXTBOOKS

400-LEVEL

CHEM411 SELECTED TOPICS IN CHEMISTRY

Double session; 16 credit points (56 hrs lectures and 56 hrs tutorials)
Assessment: Written examination and seminar

Theories concerning the creation of life on Earth; Organic and Inorganic Geochemistry and its effect on the environment; Vitamins, hormones and important common drugs; Introduction to Digital Instrumentation; The Basic Nature and desirable properties of Materials (e.g. ceramics, glasses, polymeric and composite materials); Chemistry Through the Ages; Chemical Literature; Chemistry and Society; Computer Simulation of Complex Systems; and others added as required.

TEXTBOOKS
A reading list will be provided by the Department at the beginning of each year.

CHEM420 CHEMISTRY HONOURS PROJECT

Double session; 32 credit points
A list of topics available for study in any year will be provided by the Department of Chemistry.

TEXTBOOKS
A reading list will be provided by the supervisor allocated to each student.
Description of Subjects - Civil Engineering

CIVIL ENGINEERING

Normal Structure and Study Patterns

In the operation of the course, subjects are scheduled so that it may be completed within a period of 4 to 8 years. Common patterns are the 4 years pattern (I) and the 6 years pattern (II) but progression within the course is by subject with the restriction of meeting pre-requisite and co-requisite requirements.

Patterns (I) and (II) are shown below.

Industrial Electives

Students in approved full-time employment may become eligible to include the subjects of Civil Engineering Practice in their programme in place of the electives. The inclusion of such work will enable students to complete the course under pattern (II).

Professional Experience

As part of the course requirements, students are required to obtain 12 weeks of approved professional experience; such experience to be obtained in the summer vacation prior to their final year, unless exempted by the Department due to the student's full-time professional employment.

Excursions form an integral part of the course and are mandatory.

Transitional Arrangements

Students enrolled in the B.E. in Civil Engineering prior to January 1976 will be required to complete the course as prescribed in Schedule C - B.E. in Civil Engineering - of the Bachelor Degree Requirements approved as at 1st January, 1975.

The Chairman of the Department of Civil Engineering has the authority to approve any variations to this prescribed programme for the B.E. in Civil Engineering in the event of students enrolled under the 1975 requirements seeking to change over to the 1976 course.

Assessment

All subjects offered for the degree of Bachelor of Engineering in the Department of Civil Engineering normally are assessed by means of a final examination. Set project work, laboratory reports and tutorial assignments may be taken into account in this assessment.

SCHEDULE ENTRIES

Refer to the schedule entries for further details of subjects, including pre-requisites and exclusions. All subjects described in this section are included in Schedule C. Subjects which also appear in other schedules are:

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<td>CIVL115</td>
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<td>CIVL481</td>
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BACHELOR OF ENGINEERING - CIVIL ENGINEERING

PATTERN I: 4 YEAR ATTENDANCE

<table>
<thead>
<tr>
<th>Session 1</th>
<th>Session 2</th>
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<td>Week</td>
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<td>PHYS142 Fundamentals of Physics B</td>
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<td>CIVL171 Eng. Surveying I</td>
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<td>MATH101 Maths IA</td>
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<td>CIVL122 Mechanics and Structures</td>
<td>3</td>
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<td>CIVL191 Building Construction</td>
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*Alternative times for survey camp.
### YEAR 2 OF ATTENDANCE

<table>
<thead>
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<th>Session 2</th>
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<td>CIVL231</td>
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<td>400-Level Electives*</td>
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<td>400-Level Electives*</td>
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### YEAR 3 OF ATTENDANCE

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### YEAR 4 OF ATTENDANCE

<table>
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<th>Session 3</th>
<th>Hours per Week</th>
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</tbody>
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### 300-Level Electives
- ELEC291  Applied Electricity I  3 (for two sessions)
- ECON111  Economics II  4 (for one session)

### 400-Level Electives
(May also be taken as 400-level)

<table>
<thead>
<tr>
<th>Hours per Week</th>
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<tbody>
<tr>
<td>CIVL407  Introductory Modern Languages (if available e.g. French, Italian)</td>
</tr>
<tr>
<td>3</td>
</tr>
<tr>
<td>CIVL494  Coastal Engineering</td>
</tr>
<tr>
<td>3</td>
</tr>
<tr>
<td>CIVL495  Geology for Civil Engineers</td>
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<tr>
<td>4</td>
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<tr>
<td>CIVL496  Roads Engineering</td>
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<tr>
<td>3</td>
</tr>
<tr>
<td>MECH241  Thermodynamics 1</td>
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<tr>
<td>4</td>
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<tr>
<td>ECON215  Microeconomics</td>
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<tr>
<td>3</td>
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<tr>
<td>MECH391  Heat Transfer for Civil Engineers</td>
</tr>
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### 400-Level

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<tbody>
<tr>
<td>CIVL410  Civil Eng. Practice 1</td>
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<td>CIVL411  Civil Eng. Practice 2</td>
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<td>CIVL412  Civil Eng. Practice 3</td>
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<td>CIVL414  Civil Eng. Practice 5</td>
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<td>CIVL445  Civil Eng. Materials 1</td>
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<tr>
<td>CIVL446  Civil Eng. Materials 2</td>
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<tr>
<td>3</td>
</tr>
<tr>
<td>CIVL491  Computer Applications in Civil Eng. 1</td>
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<tr>
<td>3</td>
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<tr>
<td>CIVL492  Computer Applications in Civil Eng. 2</td>
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<tr>
<td>CIVL475  Eng. Surveying 4</td>
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<td>CIVL463  Foundation Engineering</td>
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<tr>
<td>CIVL434  Hydraulic Engineering</td>
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<tr>
<td>CIVL493  Public Health Engineering</td>
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156 Description of Subjects - Civil Engineering

400-Level (Cont'd)

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<td>CIVL455</td>
<td>Structures</td>
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<td>CIVL417</td>
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<td>CIVL486</td>
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<td>CIVL487</td>
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<td>CIVL488</td>
<td>Traffic Engineering and Transportation</td>
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ECON312 Industrial Economics

PATTERN II: 6 YEAR ATTENDANCE

**YEAR 1 OF ATTENDANCE**

<table>
<thead>
<tr>
<th>Session 1</th>
<th>Hours per Week</th>
<th>Session 2</th>
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<tr>
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<td>Building Construction</td>
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<td>CIVL294</td>
<td>Civil Eng. Construction 2</td>
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<td>CIVL332</td>
<td>Hydraulics 2</td>
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<td>CIVL362</td>
<td>Soil Mechanics 1</td>
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**YEAR 2 OF ATTENDANCE**

| CIVL326 | Eng. Mechanics 3                          | 3         |
| CIVL362 | Soil Mechanics 1                           | 3         |
| CIVL353 | Structures 1C                              | 3         |
| CIVL398 | Excursions 3                              | -         |
| CIVL397 | Civil Eng. Construction 3                 | 3         |

**YEAR 3 OF ATTENDANCE**

| CIVL326 | Eng. Mechanics 3                          | 3         |
| CIVL362 | Soil Mechanics 1                           | 3         |
| CIVL353 | Structures 1C                              | 3         |
| CIVL398 | Excursions 3                              | -         |
| CIVL397 | Civil Eng. Construction 3                 | 3         |

**YEAR 4 OF ATTENDANCE**

| CIVL326 | Eng. Mechanics 3                          | 3         |
| CIVL362 | Soil Mechanics 1                           | 3         |
| CIVL353 | Structures 1C                              | 3         |
| CIVL398 | Excursions 3                              | -         |
| CIVL397 | Civil Eng. Construction 3                 | 3         |

**YEAR 5 OF ATTENDANCE**

| CIVL326 | Eng. Mechanics 3                          | 3         |
| CIVL362 | Soil Mechanics 1                           | 3         |
| CIVL353 | Structures 1C                              | 3         |
| CIVL398 | Excursions 3                              | -         |
| CIVL397 | Civil Eng. Construction 3                 | 3         |

**YEAR 6 OF ATTENDANCE**

| CIVL326 | Eng. Mechanics 3                          | 3         |
| CIVL362 | Soil Mechanics 1                           | 3         |
| CIVL353 | Structures 1C                              | 3         |
| CIVL398 | Excursions 3                              | -         |
| CIVL397 | Civil Eng. Construction 3                 | 3         |

* Alternative times for survey camp
** May be taken over 1 or 2 years; vacation at end of year 5 may be used for Thesis commencement.
\[ Total number of 400-level electives required is 11. If 6 Practice Electives are attained (thus leaving 5) then it is usual to read for 2 in Session 1 and 3 in Session 2.
Description of Subjects - Civil Engineering

200-Level Electives

<table>
<thead>
<tr>
<th>Course Code</th>
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<th>Hours per Week</th>
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<td>Soil Mechanics 2</td>
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<td>CIVL314</td>
<td>Structural Design 2</td>
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<td>CIVL354</td>
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<td>CIVL497</td>
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<td>CIVL494</td>
<td>Coastal Engineering</td>
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<td>CIVL495</td>
<td>Geology for Civil Eng.</td>
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<td>CIVL496</td>
<td>Roads Engineering</td>
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400-Level Electives

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<td>Civil Eng. Practice 6</td>
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<td>CIVL446</td>
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<tr>
<td>CIVL456</td>
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<td>CIVL486</td>
<td>The Civil Eng. and the Environment</td>
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<td>CIVL487</td>
<td>Town Planning</td>
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<tr>
<td>CIVL488</td>
<td>Traffic Engineering and Transportation</td>
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</table>
Second Session; 6 credit points
Principles of construction and fabrication of public works including consideration of operating costs, comparative performance of large scale equipment, purchase and operation of plant, job administration and construction labour. The public work to include irrigation and water supply schemes, harbour and river works, pipelines.

RECOMMENDED READING
USCE-CERC. Shore Protection Planning and Design.

CIVL14 SURVEYING*
First Session; 6 credit points
Construction, adjustment and use of surveying instruments; methods of plane traverse and planetable surveying; levelling and contouring; adjustment of surveying errors.

RECOMMENDED READING

CIVL15 PHOTO-INTERPRETATION AND MEASUREMENT*
Second Session; 6 credit points
Introduction to Photogrammetric techniques and their application in land utilization, planning and development.

RECOMMENDED READING
Wolf, P.R. Elements of Photogrammetry. McGraw-Hill.

CIVL16 THE BUILT ENVIRONMENT*
Double Session; 6 credit points
The interchange between man and his artificial environment including the management of natural resources, air movement, shelter and noise. Maintenance of towns, building and roads.

RECOMMENDED READING
Frazer Reekie, R. Design in the Built Environment.
Tetlow, J. & Gogs, A. Homes, Towns and Traffic.

CIVL122 MECHANICS AND STRUCTURES
First Session
Forces and equilibrium; axial forces in trusses; shear forces and bending moments in beams; stresses and strains at a point; bending and shear stresses; introduction to the deflection of beams.

RECOMMENDED READING
Cassie, W.F. Statics, Structures and Stress. Longman.

*Subjects included in Schedule A.
CIVL123 DYNAMICS FOR CIVIL ENGINEERS

Second Session

RECOMMENDED READING
Crede, C.E. Vibrations and Shock Isolation.
Parkin, P.H. and Humphreys, H.R. Acoustics, Noise and Building.

CIVL142 MATERIALS 1C

Second Session
Introduction to the study of the mechanical properties of metals and non-metals; introduction to non-metallic engineering materials including wood, concrete, ceramics. Energy concepts.

RECOMMENDED READING

CIVL171 ENGINEERING SURVEYING 1

First Session
Linear measurements, corrections, chain surveying, simple levelling. Earthworks. Theodolite and compass traversing; simple curves, transition curves, vertical curves, setting out.

RECOMMENDED READING

CIVL172 ENGINEERING SURVEY CAMP

Second Session
An area of land will be surveyed. Experience will be gained in carrying out linear measurements, chain surveys; level circuits; traverse surveys and computations; tacheometrical surveys; setting out of horizontal curves; plane tabling.

RECOMMENDED READING

CIVL191 BUILDING CONSTRUCTION

First Session
Single and ridged roofs; solid and framed walls; footings, stone, brick, tiles, sheets, timber; roof coverings; ventilation ducting; heating and cooling appliances; basements; procedures; quality and management control; Economics.

RECOMMENDED READING
A reading list will be available 1 week before lectures commence.
Description of Subjects - Civil Engineering

CIVL192 CIVIL ENGINEERING CONSTRUCTION 1

Second Session
The classification, selection and use of plant, its organization and costs; site establishment, drilling, blasting, quarrying, tunnelling, pipe lines, pile driving, hoisting and conveying. Project planning, construction and analysing networks. Estimating. Preservation of structures.

RECOMMENDED READING

CIVL193 EXCURSIONS 1

Second Session
Visits to selected works and establishments.

CHEM101 CHEMISTRY 1A

Refer to "Description of Subjects - Chemistry".

MATH101 MATHEMATICS 1A

Refer to "Description of Subjects - Mathematics".

PHYS142 FUNDAMENTALS OF PHYSICS B

Refer to the list of Physics subjects in Schedule A and to "Description of Subjects - Physics".

ECON111 ECONOMICS II

Refer to "Description of Subjects - Economics".

200 - I.EVRL

CIVL213 STRUCTURAL DESIGN 1

Second Session
(a) Steel structures, bolted and welded connections; simple and built up beams; trusses and columns.
(b) Introduction to design with timber and bricks.

RECOMMENDED READING
A.I.S.C. Steel Design Course. Part I and II.
Gorenc, B.E. & Tinkyu, R. Steel Designers Handbook. 2nd ed. N.S.W.U.P.
Lay, M.G. Source Book for the Australian Steel Structures Code.
S.A.A. AS. 1250. Steel Structures Code.

CIVL216 DESIGN M

Double Session
Moving loads; influence lines for beams; design loads and stresses, design of welded plate web girder; project.

RECOMMENDED READING
A.I.S.C. Steel Design Course. Part I & II.
Gorenc, B.E. & Tinkyu, R. Steel Designers Handbook. 2nd ed. N.S.W.U.P.
CIVL219 EXPERIMENTAL STRESS ANALYSIS

Double Session

RECOMMENDED READING
Charlton, W. Model Analysis of Structures.
Frocht, M.M. Photo Elasticity. Vol. II.
Hetenyi, M. Handbook of Experimental Stress Analysis.
Hinsley, J.F. Non Destructive Testing.
Holman, J.P. Experimental Methods for Engineers.

CIVL225 ENGINEERING MECHANICS 1

First Session
Lagrangian equations of motion; vibrations and analogies; introduction to continuum mechanics.

RECOMMENDED READING
A reading list will be available 1 week before lectures commence.

CIVL226 ENGINEERING MECHANICS 2

Second Session
Introduction to systems analysis; modelling and simulation; introduction to decision theory; optimization techniques; dynamic programming.

RECOMMENDED READING
Zikhovitskiy & Aodeyeva. Linear and Convex Programming.

CIVL231 HYDRAULICS 1

Second Session

RECOMMENDED READING

CIVL243 MATERIALS 2C

Second Session
Failure and fracture theories; fatigue; impact strength - approximate methods; stress concentration; notch sensitivity; welding processes and residual stresses.

RECOMMENDED READING
Mann, J.V. Fatigue of Materials. M.I.P.
Petersen, R. Stress Concentration Design Factors. Wiley.
CIVL251 STRENGTH OF MATERIALS 1

First Session
Deflection of beams; flexibility and stiffness concepts; statically indeterminate beams; torsion of circular and thin wall sections; combined loading; strain energy; buckling of compression members; elastic and non-elastic behaviour.

RECOMMENDED READING
Cernica, J.N. Strength of Materials.

CIVL252 STRENGTH OF MATERIALS 2

Second Session
Experimental methods including dynamic loadings; strain gauge techniques; photo-elasticity; testing machines and procedures; methods of non-elastic analysis; applications.

RECOMMENDED READING
Charlton, T.M. Model Analysis of Structures.
Heywood, R.B. Designing by Photo Elasticity.
Holman, Experimental Methods for Engineers.
Zienkiewicz, O.C. & Hollister, G.S. Stress Analysis.

CIVL254 STRENGTH OF MATERIALS

First Session
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.

RECOMMENDED READING
Cernica, J.N. Strength of Materials.

CIVL273 ENGINEERING SURVEYING 2

First Session
Optical distance measurement; electronic distance measurement; precise levelling; precise levelling equipment; triangulation surveys; theory of errors; Geodetic surveying; Geodetic computations.

RECOMMENDED READING
Clark, D. Plane and Geodetic Surveying. Vol. II.
Schofield, W. Engineering Surveying. Vol. II.

CIVL281 COMPUTATIONAL TECHNIQUES IN CIVIL ENGINEERING 1

First Session
Taylor Series and its applications; Fourier methods of analysis; complex variable and contour integration; matrix analysis and its use in Civil Engineering. Computer usage.

RECOMMENDED READING
A reading list will be available 1 week before lectures commence.

CIVL282 COMPUTATIONAL TECHNIQUES IN CIVIL ENGINEERING 2

Second Session
Introduction to statistical methods, quality control; finite differences; concepts of finite elements in relation to two and three dimensions. Computer applications using finite elements.

RECOMMENDED READING
A reading list will be available 1 week before lectures commence.
CIVL294 CIVIL ENGINEERING CONSTRUCTION 2

First Session
(a) Contracts, specifications, Bill of quantities, economic evaluation, Management, Personnel management;
(b) Introduction to transportation engineering; roads and pavements; airport engineering; railroad engineering; river and coastal engineering; pipeline transportation; belt conveyors; underwater transportation; transportation planning.

RECOMMENDED READING

CIVL295 EXPERIMENTAL ENGINEERING 1C

First Session
Design of models; instrumentation for the measurement of load, strain, displacement and deflection; data acquisition and analysis; applications to the manufacture and testing of specimens of civil engineering materials.

RECOMMENDED READING
A reading list will be available 1 week before lectures commence.

CIVL296 EXCURSIONS 2

First Session
Visits to selected works and establishments.

ELEC291 APPLIED ELECTRICITY 1
Refer to "Description of Subjects - Electrical Engineering" -- Servicing subjects.

MECH241 THERMODYNAMICS 1
Refer to "Description of Subjects - Mechanical Engineering".

ECN215 MICROECONOMICS
Refer to "Description of Subjects - Economics".

300-LEVEL
CIVL312 CIVIL ENGINEERING DESIGN

First Session
(a) Topics to be selected from: location and design of earth and rock-fill dams, pipelines. Treatment works.
(b) Design of reinforced concrete elements.

RECOMMENDED READING

CIVL314 STRUCTURAL DESIGN 2

Second Session
(a) Steel Structures - design of continuous structures; rigid mill building frames; plastic design.
(b) Concrete Structures - design of retaining walls, pre-stressed beams and slabs.
(c) Use of Computers.
CIVL314 STRUCTURAL DESIGN 2 (CONT'D)

RECOMMENDED READING

Gorenc, B.E. & Tingou, R. Steel Designer's Handbook. 2nd ed. N.S.W.U.P.
S.A.A. A.S. 1880. Steel Structures Code.
S.A.A. A.S. 1480. Concrete Structures Code.
S.A.A. A.S. 1481. Prestressed Concrete Code.

CIVL326 ENGINEERING MECHANICS 3

First Session
Theory of reinforced concrete; elements of pre-stressing; anchor blocks; limit methods; introduction to creep; initial and residual stresses; thermal strain; computer applications.

RECOMMENDED READING

C. & C.A. Australian Reinforced Concrete Design Handbook.
Cowan, H. & Smith, P.R. The Design of Reinforced Concrete. A. & R.
Ferguson, P.M. Reinforced Concrete Fundamentals. Wiley.
Hughes, B.P. Limit State Theory for Reinforced Concrete. Pitman.
Lin, T.Y. Design of Prestressed Concrete Structures. Wiley.
S.A.A. A.S. 1880. Concrete Structures Code.
S.A.A. A.S. 1481. Prestressed Concrete Code.

CIVL327 ENGINEERING MECHANICS 4

Second Session
Numerical and statistical methods including -
(a) Finite element methods; variational formulation for field problems with special cases.
(b) Probability theory, discrete and continuous data, probability density functions, statistical parameters, correlation and regression analysis, sampling theory, statistical inference, data generation using mathematical models, analysis of variance, goodness of fit tests.

RECOMMENDED READING

Hoel, P.G. Introduction to Mathematical Statistics.

CIVL332 HYDRAULICS 2

First Session

RECOMMENDED READING

Chow, V.T. Open Channel Hydraulics.
Streeter, V.L. Fluid Mechanics.

CIVL334 HYDRAULICS 3

Second Session
The earth's water supply and its utilisation. Water resources and climate, precipitation processes, time and space variations of rainfall, rainfall losses, groundwater, hydrograph analysis, hydrograph synthesis, design flood estimation and recurrence interval, flood routing in rivers and reservoirs, urban drainage design, open channel hydraulics.
RECOMMENDED READING

Institution of Engineers, Australia. Australian Rainfall and Runoff.

CIVL334 MATERIALS 3C

Second Session
Non-destructive testing; properties of concrete - plastic and hardened; structure and composition; cement; mix design; additives; concrete manufacture, field control and acceptance. Introduction to highway materials.

RECOMMENDED READING

Neville, A.M. Properties of Concrete. Pitman.
Orchard, D.F. Concrete Technology. Vols. I & II. CRL.
Stewart. High Quality Concrete. Spon.

CIVL351 STRUCTURES 1

Analysis of statically indeterminate structures; shells; plastic analysis of steel structures; introduction to two-dimensional elasticity; approximate methods.

RECOMMENDED READING

Cassie, W.F. Structural Analysis. Longman.

CIVL353 STRUCTURES 1C

First Session
Analysis of indeterminate structures, including space trusses, cables and arches; influence lines; energy methods. Slope deflection equations; moment distribution; flexibility and stiffness methods.

RECOMMENDED READING

Cassie, W.F. Structural Analysis. Longman.
Gerstle, K.H. Basic Structural Analysis. Prentice-Hall.

CIVL354 STRUCTURES 2C

Second Session
Advanced beam theory: composite and curved beams; beam-columns; beams on elastic foundations. Limit analysis. Experimental structural analysis: direct and indirect techniques. Introduction to computer packages for structural analysis.
RECOMMENDED READING

CIVL354 STRUCTURES 2C (CONT'D)

Heyman, J. Beams and Frame Structures.

CIVL362 SOIL MECHANICS 1

First Session
Principal types of soil; mechanical analysis and index properties of soils; permeability; settlement computation; stress strain behaviour of sands and clay; shearing resistance and conditions of failure for soils; desiccation of soil; flow nets and computation of quantity of seepage; mechanics of piping; introduction to theory of one dimensional consolidation; stability of slopes.

RECOMMENDED READING

Lambe, T.W. Soil Testing for Engineers. Wiley.

CIVL363 SOIL MECHANICS 2

Second Session
Experimental determination of soil index properties; measurement of soil strength; theories of earth pressure; bearing capacity of shallow footings, piers and piles; earth pressure against bracing in cuts; stresses beneath loaded areas. Design of footings, rafts and pile foundations. Sheet piles and analysis for stability. Soil stabilisation. Soil exploration.

RECOMMENDED READING

Lambe, T.W. Soil Testing for Engineers. Wiley.

CIVL374 ENGINEERING SURVEYING 3

Second Session
Photogrammetry: Radial line plotting; stereoscopy; applications to Cadastre; land utilization; route location; town planning and estate development.

RECOMMENDED READING

Wolf, P.R. Elements of Photogrammetry. McGraw-Hill.

CIVL397 CIVIL ENGINEERING CONSTRUCTION 3

First Session
To encompass coffer dams; underpinning and dewatering systems; design of formwork, modular building.

RECOMMENDED READING

Jacoby & Davis. Foundations for Bridges and Buildings.
Tomlinson. Foundation Design & Construction.
First Session
Visits to selected works and establishments.

CIVL398 EXCURSIONS 3

CIVL399 PROFESSIONAL EXPERIENCE

As part of the course requirements, students are required to obtain 12 weeks of approved professional experience; such experience to be obtained in the summer vacation prior to their final year, unless exempted by the Department due to the student's full-time professional employment.

MECH391 HEAT TRANSFER FOR CIVIL ENGINEERS

Refer to "Description of Subjects - Mechanical Engineering".

ECON312 INDUSTRIAL ECONOMICS

Refer to "Description of Subjects - Economics".

400-Level

CIVL401 CIVIL ENGINEERING THESIS

Double Session
Each student is required to prepare a thesis on a subject or topic approved by the Chairman of the Department.

The subject of a thesis may cover:
(a) a report of original work performed by the student in the laboratory or field;
(b) a theoretical and experimental investigation of a Civil Engineering problem;
(c) a set of drawings and calculations covering a Civil Engineering design.

CIVIL ENGINEERING PRACTICE

For students in full employment each year of appropriate supervised employment that is approved by the Chairman of the Department may, on request, be credited to the course. A maximum of six such units are allowed described as:

CIVL410 Civil Engineering Practice 1
CIVL411 Civil Engineering Practice 2
CIVL412 Civil Engineering Practice 3
CIVL413 Civil Engineering Practice 4
CIVL415 Civil Engineering Practice 5
CIVL416 Civil Engineering Practice 6

A Corporate member of the Institution of Engineers representing the organization where the Professional Practice was obtained, must examine and sign for such practice work for it to be applied against the course. A report is to be submitted for each subject, the assessment and evaluation of which will be made by the Departmental Assessment Committee.

CIVL417 STRUCTURAL DESIGN 3

First Session
Problem definition, value and criteria selection; generation of proposals; analyses of proposals; selection of design; development of details of a particular design selected.

Feasibility studies and examination of existing work.

RECOMMENDED READING

A reading list will be available 1 week before lectures commence.
CIVL434 HYDRAULIC ENGINEERING

Second Session
Reservoir design and operation. Spillway design. Hydro-electric schemes. Urban and rural water supply schemes. Sediment transport and river erosion, river control. Flood mitigation schemes.

RECOMMENDED READING
Chow, V.T. Handbook of Applied Hydrology.
Henderson, F.M. Open Channel Flow.
Rouse, H. Engineering Hydraulics.
USRR. Design of Small Dams.

CIVL445 CIVIL ENGINEERING MATERIALS 1

First Session
Properties and applications of timber; physical and mechanical properties of polymers; concrete technology including creep, shrinkage, bond durability, physical and chemical deterioration, permeability, special concretes. Highway material.

RECOMMENDED READING
A reading list will be available 1 week before lectures commence.

CIVL446 CIVIL ENGINEERING MATERIALS 2

Second Session
Structural applications of plastics, reinforced plastics and plastic laminates; composites; mechanical and physical properties of fibre reinforced materials; principles of adhesives; corrosion of metallic and non-metallic materials.

RECOMMENDED READING
A reading list will be available 1 week before lectures commence.

CIVL455 STRUCTURES 3

Second Session

RECOMMENDED READING
Gibson. Design of Cylindrical Steel Roofs.

CIVL456 STRUCTURES 4

Second Session

RECOMMENDED READING
Willems, N. & Lucas, W.M. Matrix Analysis for Structural Engineers. Prentice-Hall.
CIVL463 FOUNDATION ENGINEERING

First Session
Natural soil deposits, discussion of techniques for subsurface investigation, selection of foundation type on different soils, design of individual footings subjected to moment, combined footings and rafts, retaining walls and abutments, anchored bulkheads, braced cuts.

Damage due to construction operations, shoring and underpinning, movements associated with excavations. Techniques for drainage and stabilisation.

RECOMMENDED READING
Karol, R.H. Soil Mechanics.

CIVL464 SOIL MECHANICS

Second Session
Conformal mapping in seepage problems, unconfined seepage; analysis of earth dams for rapid drawdown. Applications of anisotropic elasticity; two and three-dimensional consolidation; special triaxial tests; residual shear strength concepts; stress paths; recent theories (stress dilatancy and camclay); numerical techniques applied to soil mechanics; introduction to soil dynamics.

RECOMMENDED READING
Bishop, A.W. & Henkel, D.J. Measurement of Soil Properties in the Triaxial Test.
Lambe, T.W. & Whitman, R.V. Soil Mechanics.
Terzaghi, K. Theoretical Soil Mechanics.

CIVL475 ENGINEERING SURVEYING

Second Session
Field astronomy; underground surveying; hydrographical surveying.

RECOMMENDED READING
Clark, D. Plane and Geodetic Surveying Vol. II.

CIVL481 ENGINEERING MANAGEMENT

First Session
Theory and practice of organisation and industry; general principles of law of contract.

RECOMMENDED READING
A reading list will be available 1 week before lectures commence.

CIVL482 ENGINEERING MANAGEMENT

Second Session
Industrial relations. Introduction to cost accounting.

RECOMMENDED READING
A reading list will be available 1 week before lectures commence.

CIVL486 THE CIVIL ENGINEER AND THE ENVIRONMENT

First Session
Economic and social evaluation of engineering projects. The interdependence of the roles of the Civil Engineer and Architect, with their responsibilities to the community.

Problems of development and use of resources. Excess waste material. Air pollution, water pollution and noise. Case studies of Civil engineering works, e.g. freeway construction, irrigation vs. flood mitigation, development of unstable areas.
CIVL486 THE CIVIL ENGINEER AND THE ENVIRONMENT (CONT'D)

RECOMMENDED READING


CIVL487 TOWN PLANNING

First Session:
Urbanisation past and present. The modern city in its regional context. Planning processes and techniques. Plans and planners; planning law and administration in New South Wales.

RECOMMENDED READING


CIVL488 TRAFFIC ENGINEERING AND TRANSPORTATION

Second Session
(a) Traffic Engineering
   This course is basically involved with improving traffic flow without major reconstructions.
(b) Transportation
   Transportation Engineering - Roads engineering, airport engineering, railroad engineering, river and coastal engineering, pipeline transportation, belt conveyors, undersea transportation.
   Transportation Planning - Introduction to transportation planning, transportation studies, land use.

RECOMMENDED READING

Institute of Traffic Engineers. *Traffic Engineer's Handbook*.

CIVL490 EXCURSIONS 4

First Session
Visits to selected works and establishments.

CIVL491 COMPUTER APPLICATIONS IN CIVIL ENGINEERING 1

First Session
The writing and use of problem oriented computer programmes, based on I.C.E.S. such as COGO, ROADS, PROJECT, BRIDGE, SEPOL, LEASE, TRAVOL, TOPOLOGY.

RECOMMENDED READING

R67-69 ICES BRIDGE 1 DESIGN SYSTEM. *General Description and Engineering User's Manual*. MIT.
R67-71 ICES BRIDGE 1 DESIGN SYSTEM. *Problem Formulation and Solutions*. MIT.
R68-6 Example Problems for ICES COGO 1. MIT.
Second Session
The writing and use of problem oriented computer languages such as STRUDL II.

RECOMMENDED READING
R68-56 ICES. Subsystem Development Primer. MIT.
R69-34 ICES TABLE II. Engineering User's Manual. MIT.

CIVL493 PUBLIC HEALTH ENGINEERING

First Session

RECOMMENDED READING
Metcalf and Eddy Inc. Wastewater Engineering.
Schroeder, E.D. Water and Wastewater Treatment.
Tebutt, T.H.Y. Principles of Water Quality Control.

CIVL494 COASTAL ENGINEERING

First Session

RECOMMENDED READING
Henderson, F.M. Open Channel Flow.
Ippen, A.T. Estuary and Coastline Hydrodynamics.
USCE-CERC. Shore Protection Planning and Design.
Wiegel, R.L. Coastal Engineering.

CIVL495 GEOLOGY FOR CIVIL ENGINEERS

Second Session

RECOMMENDED READING

CIVL496 ROADS ENGINEERING

First Session
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.

RECOMMENDED READING
CIVL497 INTRODUCTORY MODERN LANGUAGES

First Session
Depending upon the availability, the subject offered will be selected from: French, Italian, Chinese, Bahasa Indonesian, Japanese, Russian.

MINING ENGINEERING

Normal Structure and Study Pattern

In the operation of the course, subjects are scheduled so that it may be completed within a period of 8 to 16 sessions (4 to 8 years). The recommended pattern is that shown and requires a minimum time of 10 sessions (5 years) for completion. Normally the subjects MINE111 and MINE112 should be undertaken as shown but may be deferred on the Chairman of the Department's recommendation. In any case, if professional experience is to be recognized, students must have approval from the Departmental Chairman.

Assessment

All subjects offered for the degree of Bachelor of Engineering in the Department of Civil Engineering normally are assessed by means of a final examination. Set project work, laboratory reports and tutorial assignments may be taken into account in this assessment.

BACHELOR OF ENGINEERING - MINING ENGINEERING

RECOMMENDED PATTERN: TAKEN OVER 10 SESSIONS

Subject to staff and facilities being available, the arrangement of this course will be as shown below. It is possible that there may be variations of the Session in which the subjects are shown to be offered.

<table>
<thead>
<tr>
<th>Session 1</th>
<th>Hours per Week</th>
<th>Session 2</th>
<th>Hours per Week</th>
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</thead>
<tbody>
<tr>
<td>CIVL122 Mechanics &amp; Structures</td>
<td>3</td>
<td>CIVL111 Introduction to Design C</td>
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<tr>
<td>CIVL191 Building Construction</td>
<td>3</td>
<td>CIVL123 Dynamics for Civil Eng.</td>
<td>3</td>
</tr>
<tr>
<td>MATH101 Maths IA</td>
<td>6</td>
<td>MATH101 Maths IA</td>
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<tr>
<td></td>
<td></td>
<td>MINE111 Industrial Experience</td>
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<th>Session 3</th>
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<th>Session 4</th>
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<tbody>
<tr>
<td>CIVL171 Eng. Surveying 1</td>
<td>3</td>
<td>CIVL142 Materials IC</td>
<td>6</td>
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<tr>
<td>CHEM101 Chemistry IA</td>
<td>6</td>
<td>PHYS142 Fundamentals of Physics B</td>
<td>3</td>
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<td>PHYS142 Fundamentals of Physics B</td>
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<td>CIVL1193 Excursions 1</td>
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<td></td>
<td></td>
<td>CIVL172 Eng. Survey Camp*</td>
<td>-</td>
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<tr>
<td></td>
<td></td>
<td>CIVL192 Eng. Construction 1</td>
<td>3</td>
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<tr>
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<td>MINE112 Professional Practice 1</td>
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<th>Session 6</th>
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<tr>
<td>ELEC291 Applied Elect. 1</td>
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<td>ELEC291 Applied Elect. 1</td>
<td>3</td>
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<tr>
<td>CIVL281 Comp Techniques in Civil Eng. 1</td>
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<td>CIVL221 Comp. Techniques in Mining Eng. 3</td>
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<tr>
<td>CIVL295 Experimental Eng. 1C</td>
<td>3</td>
<td>CIVL231 Hydraulics 1</td>
<td>3</td>
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<tr>
<td>CIVL261 Strength of Materials 1</td>
<td>3</td>
<td>CIVL243 Materials 2C</td>
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<tr>
<td>GEOLO251 Geology for Mining Engineering 1 Ø</td>
<td>4</td>
<td>CIVL213 Structural Design 1M</td>
<td>4</td>
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<tr>
<td>MINE241 Eng. Surveying 2 (Mining)</td>
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<td>CIVL172 Eng. Survey Camp*</td>
<td>-</td>
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<tr>
<td>CIVL296 Excursions 2</td>
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<td>MINE231 Engineering Const. 2 (Mining)</td>
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<tr>
<td></td>
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<td>MINE213 Professional Practice 2</td>
<td>-</td>
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</tbody>
</table>

*Alternative Times for Survey Camp
Ø There will be approximately 2 days field work.
### Session 7

<table>
<thead>
<tr>
<th>Subject Code</th>
<th>Subject Name</th>
<th>Hours per Week</th>
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</thead>
<tbody>
<tr>
<td>MECH241</td>
<td>Thermodynamics 1</td>
<td>3</td>
</tr>
<tr>
<td>MINE351</td>
<td>Hydraulics 2 (Mining)</td>
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<td>GEO351</td>
<td>Geology for Mining Engineering 2#</td>
<td>6</td>
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<tr>
<td>MNE361</td>
<td>Mining Eng. 1A</td>
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<tr>
<td>MINE362</td>
<td>Mining Process Engineering</td>
<td>3</td>
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<tr>
<td>MINE363</td>
<td>Mining Economics</td>
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### Session 8

<table>
<thead>
<tr>
<th>Subject Code</th>
<th>Subject Name</th>
<th>Hours per Week</th>
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<tbody>
<tr>
<td>MINE342</td>
<td>Eng. Surveying 3 (Mining)</td>
<td>4</td>
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<tr>
<td>MINE364</td>
<td>Management of Mining Projects</td>
<td>4</td>
</tr>
<tr>
<td>MINE365</td>
<td>Simulation of Mining Operations</td>
<td>6</td>
</tr>
<tr>
<td>MINE366</td>
<td>Mining Equipment</td>
<td>3</td>
</tr>
<tr>
<td>MINE367</td>
<td>Mine Resources+</td>
<td>3</td>
</tr>
<tr>
<td>MINE368</td>
<td>Market Preparation of Mining Products+</td>
<td>3</td>
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<tr>
<td>MINE314</td>
<td>Professional Practice 3</td>
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</table>

### Electives

<table>
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<tr>
<th>Subject Code</th>
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<th>Hours per Week</th>
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<tbody>
<tr>
<td>CIVL463</td>
<td>Foundation Engineering</td>
<td>3</td>
</tr>
<tr>
<td>CIVL362</td>
<td>Soil Mechanics 1</td>
<td>3</td>
</tr>
<tr>
<td>CIVL363</td>
<td>Soil Mechanics 2</td>
<td>3</td>
</tr>
<tr>
<td>CIVL488</td>
<td>Civil Engineer &amp; the Environment</td>
<td>3</td>
</tr>
<tr>
<td>CIVL493</td>
<td>Public Health Engineering</td>
<td>3</td>
</tr>
<tr>
<td>CIVL491</td>
<td>Computer Applications in Civil Engineering 1</td>
<td>3</td>
</tr>
<tr>
<td>CIVL488</td>
<td>Traffic Engineering &amp; Transportation</td>
<td>3</td>
</tr>
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</table>

### Session 8

<table>
<thead>
<tr>
<th>Subject Code</th>
<th>Subject Name</th>
<th>Hours per Week</th>
</tr>
</thead>
<tbody>
<tr>
<td>MINE491</td>
<td>Mining Eng. Thesis</td>
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<tr>
<td>CIVL481</td>
<td>Eng. Management 1</td>
<td>2</td>
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<tr>
<td>MINE469</td>
<td>Mining Engineering 2A</td>
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<tr>
<td>Electives</td>
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<td>3</td>
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</tbody>
</table>

### 100-LEVEL

#### MINE111 INDUSTRIAL EXPERIENCE

Satisfactory experience in industry gained whilst in full employment in the Mining Industry. A report is to be submitted, the assessment and evaluation of which will be made by the Departmental Assessment Committee.

#### MINE112 PROFESSIONAL PRACTICE 1

Satisfactory experience gained whilst in full employment in the Mining Industry. A Corporate member of the Institution of Engineers representing the organisation where the Professional Practice was obtained, must examine and sign for such Practice work for it to be applied against the course. A report is to be submitted for each subject, the assessment and evaluation of which will be made by the Departmental Assessment Committee.

<table>
<thead>
<tr>
<th>Subject Code</th>
<th>Subject Name</th>
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<tbody>
<tr>
<td>CIVL111</td>
<td>INTRODUCTION TO DESIGN C</td>
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<tr>
<td>CIVL122</td>
<td>MECHANICS &amp; STRUCTURES</td>
</tr>
<tr>
<td>CIVL123</td>
<td>DYNAMICS FOR CIVIL ENGINEERS</td>
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<tr>
<td>CIVL142</td>
<td>MATERIALS 1G</td>
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<tr>
<td>CIVL171</td>
<td>ENGINEERING SURVEY CAMP</td>
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<tr>
<td>CIVL172</td>
<td>ENGINEERING SURVEY CAMP</td>
</tr>
<tr>
<td>CIVL191</td>
<td>BUILDING CONSTRUCTION</td>
</tr>
<tr>
<td>CIVL193</td>
<td>EXCURSIONS 1</td>
</tr>
<tr>
<td>CIVL192</td>
<td>CIVIL ENGINEERING CONSTRUCTION 1</td>
</tr>
</tbody>
</table>

Refer to "Description of Subjects - Civil Engineering".

**Session 8 is of seven weeks duration. Immediately after the examinations, students will commence the intensive period of professional practice by working full time in the Mining Industry.**

# There will be approximately 3 days field work.

+ Contributed to by Departments of Geology and Metallurgy.
174  Description of Subjects - Civil Engineering/Mining Engineering

CHEM101 CHEMISTRY 1A

Refer to "Description of Subjects - Chemistry".

MATH101 MATHEMATICS 1A

Refer to "Description of Subjects - Mathematics".

PHYS142 FUNDAMENTALS OF PHYSICS B

Refer to "Description of Subjects - Physics".

200-LEVEL

MINE213 PROFESSIONAL PRACTICE 2

Satisfactory experience gained whilst employed full-time in the Mining Industry during the long vacation. A Corporate member of the Institution of Engineers representing the organisation where the Professional Practice was obtained, must examine and sign for such Practice work for it to be applied against the course. A report is to be submitted for each subject, the assessment and evaluation of which will be made by the Departmental Assessment Committee.

MINE221 COMPUTATIONAL TECHNIQUES IN MINING ENGINEERING

Second Session

MINE231 ENGINEERING CONSTRUCTION 2 (MINING)

Second Session

MINE241 ENGINEERING SURVEYING 2 (MINING)

First Session
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 organisation. Photogrammetric methods.

CIVL213 STRUCTURAL DESIGN 1
CIVL225 ENGINEERING MECHANICS 1
CIVL226 ENGINEERING MECHANICS 2
CIVL231 HYDRAULICS 1
CIVL243 MATERIALS 2C

ELEC291 APPLIED ELECTRICITY

Refer to "Description of Subjects - Electrical Engineering".

GEOL251 GEOLOGY FOR MINING ENGINEERING 1

Refer to "Description of Subjects - Geology".

MECH241 THERMODYNAMICS 1

Refer to "Description of Subjects - Mechanical Engineering".
MINE314 PROFESSIONAL PRACTICE 3

Satisfactory experience gained whilst employed full-time in the Mining Industry. A corporate member of the Institution of Engineers representing the organisation where the Professional Practice was obtained, must examine and sign for such Practice work for it to be applied against the course. A report is to be submitted for each subject, the assessment and evaluation of which will be made by the Departmental Assessment Committee.

MINE342 ENGINEERING SURVEYING 3 (MINING)

Second Session

First Session

MINE351 HYDRAULICS 2 (MINING)

First Session

First Session

MINE361 MINING ENGINEERING 1A

First Session

MINE362 MINING PROCESS ENGINEERING

Second Session
The establishment of mines, including their organisation, control, costing and human relations. The operation of mines and their management.

MINE363 MINING ECONOMICS

MINE364 THE MANAGEMENT OF MINING PROJECTS

Second Session
Simulation by digital computer of the complete operation of a mine including methods of mining, equipment and transport.

MINE366 MINING EQUIPMENT

Second Session
Modern equipment used, including that for drilling, blasting, tunnelling, mining, loading, transport, longwall mining, roof support and control, on-line computer control of mining equipment.

MINE367 MINE RESOURCES

Second Session
176 Description of Subjects - Civil Engineering/Mining Engineering

MINE368 MARKET PREPARATION OF MINING PRODUCTS

Second Session
Methods of preparing coal for the market by washing and beneficiation. Handling of by-products.

CIVL362 SOIL MECHANICS 1
CIVL363 SOIL MECHANICS 2
Refer to "Description of Subjects - Civil Engineering".

Refer to "Description of Subjects - Geology".

GEOL351 GEOLOGY FOR MINING ENGINEERING 2

400-LEVEL

MINE469 MINING ENGINEERING 2A

First Session

Second Session

MINE470 MINING ENGINEERING 3

Double Session
Each Student is required to prepare a thesis on a subject or topic approved by the Chairman of the Department. The subject of a thesis may cover:
(a) a report of original work performed by the student in the laboratory or field;
(b) a theoretical and experimental investigation of a Mining Engineering problem;
(c) a set of drawings and calculations covering a Mining Engineering design.

CIVL463 FOUNDATION ENGINEERING
CIVL464 ENGINEERING MANAGEMENT 1
CIVL465 ENGINEERING MANAGEMENT 2
CIVL466 THE CIVIL ENGINEER AND THE ENVIRONMENT
CIVL467 TRAFFIC ENGINEERS AND TRANSPORTATION
CIVL468 COMPUTER APPLICATIONS IN CIVIL ENGINEERING
CIVL469 PUBLIC HEALTH ENGINEERING

Refer to "Description of Subjects - Civil Engineering".

GEOL207/307 GEOPHYSICS
GEOL208/308 STRUCTURAL GEOLOGY AND GEOTECHNICS
GEOL212/312 FOSSIL AND NUCLEAR FUELS
GEOL213/313 ECONOMIC GEOLOGY AND EXPLORATION GEOCHEMISTRY

Refer to "Description of subjects - Geology".
COMPUTING SCIENCE

Courses offered by the Computing Science Department may be included in the Bachelor of Mathematics, the Bachelor of Science or the Bachelor of Arts degrees. The Computing Science Department offers:

(i) a main-stream sequence of subjects for students who intend to study a major sequence in computing science. Currently available main-stream subjects are: CSCI101, CSCI201, CSCI301, CSCI302

(ii) service subjects for students of other disciplines who require some knowledge of computing science. The currently available service subject is: CSCI241

(iii) honours and graduate courses in computing science.

A student wishing to obtain a Bachelor of Mathematics degree with a major sequence in Computing Science must obtain at least 36 credit points at the 300-level of which at least 24 credit points must be from subjects offered by the Department of Computing Science.

The only additional requirement relating to compulsory subjects for the degree of Bachelor of Mathematics is that a student must take:

either at least 84 credit points of subjects selected from Schedule F, or
72 credit points from Schedule F (24 of which must form a substantial and coherent study at the 300-level) provided a further minimum of 48 credit points are taken from subjects offered by or on behalf of one other department of the university (24 of which must form a substantial and coherent study at the 300-level).

SCHEDULE ENTRIES

Refer to the schedule entries for further details of subjects, including pre-requisites and exclusions. All subjects described in this section are included in Schedule A. Subjects which also appear in other schedules are:

<table>
<thead>
<tr>
<th>Subject</th>
<th>Schedules</th>
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<tbody>
<tr>
<td>CSCI101</td>
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<tr>
<td>CSCI201</td>
<td>E &amp; F</td>
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<tr>
<td>CSCI301</td>
<td>E &amp; F</td>
</tr>
<tr>
<td>CSCI302</td>
<td>E &amp; F</td>
</tr>
<tr>
<td>CSCI401</td>
<td>F</td>
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</tbody>
</table>

TEXTBOOKS AND RECOMMENDED READING

Students will be advised on the appropriate texts for each subject in the first lecture of the subject. In all cases the lecturer should be consulted before textbooks are purchased.

METHOD OF ASSESSMENT

Unless otherwise indicated all subjects offered by the Department of Computing Science will be assessed by formal examinations, class tests and assignments.

COHERENT STUDY IN COMPUTING SCIENCE

The 24 credit points of substantial and coherent study at the 300-level in Computing Science referred to in the Bachelor degree requirements 16.2, 20A.2.2 and 20A.3.1 comprise:

CSCI301 Computing Science IIIA, together with CSCI302 Computing Science IIIB.

100-LEVEL

CSCI101 COMPUTING SCIENCE I

Double session; 15 credit points (3 lectures and 3 hrs laboratory per week)

The objectives of this subject are to provide a foundation for subsequent computing science studies and to develop basic skills in problem solving. The content is as follows:

(a) Methods - simple algorithms, data representation, simple data structures, control structures, programming style, program structures.

(b) Tools - programming languages FORTRAN, RATFOR and COBOL; interactive languages BASIC and SIGMA; introduction to assembler concepts and computer organisation. Basic debugging techniques.

(c) Laboratory Work - practical work in programming, debugging, algorithm design and computer studies will be conducted in the computing science laboratory which is equipped with an INTERDATA 7/32 mini-computer and VDU terminals.
Description of Subjects - Computing Science

CSCI101 COMPUTING SCIENCE I (CONT'D)

TEXTBOOK


RECOMMENDED READING


200-LEVEL

CSCI1201 COMPUTING SCIENCE II

Double session; 12 credit points (3 lectures and 1 tutorial per week)

The objectives of this subject are to develop problem solving skills and programming style so that non-trivial problems of moderate size can be solved quickly, accurately and confidently. The content is as follows:
(a) Methods - Algorithms, recursive algorithms, dynamic information structures, stacks, lists and trees.
(b) Tools - Programming Language PASCAL; Assembly language programming; RATFOR; software tools for text processing; Debugging techniques and programming style.

TEXTBOOKS


RECOMMENDED READING


CSCI241 COMPUTING METHODS

Double session; 6 credit points (3 lectures and 3 hr. laboratory per week)

Objective: to provide basic programming and problem solving skills with emphasis on applications to disciplines other than computing science and to provide a general introduction to computers and computing science.

Content: introduction to computers, their history, uses and applications. Simple algorithms and problem solving techniques. Writing of programs in programming language BASIC. Ability to read FORTRAN programs. Use of program packages, and their applications.

TEXTBOOK


RECOMMENDED READING


300-LEVEL

CSCI301 COMPUTING SCIENCE IIIA

Double session; 12 credit points (4 hours per week)

(a) Computer Hardware - The structure of computers, processor architecture, instruction sets, arithmetic unit, peripheral interfaces and drivers, data collection devices.
(b) Software Tools - Text formatting languages, editors, macros, debuggers and profilers.
(c) Compiler Basics - Assemblers, interpreters, compilers. Basic mechanisms for lexical analysis, parsing and code generation.
(d) Advanced Data Structures - Balanced trees, digraphs, arrays, list structures and files. Database and information system basics.
Description of Subjects - Computing Science

CSCI301 COMPUTING SCIENCE IITA (CONT'D)

RECOMMENDED READING


CSCI302 COMPUTING SCIENCE IIIB

Double session; 12 credit points (3 lectures and 1 tutorial per week)

Operating Systems - a study of the algorithms used by operating systems: sequential and concurrent processes, synchronization of independent processes, memory management, scheduling algorithms, resource allocation, file systems.

Project - a list of project topics is provided each year and students may nominate project topics of their own choice. The project aims to develop the student's ability to handle the design, programming, testing and documentation of the relatively large software project using the skills acquired in their computing courses of earlier years.

TEXTBOOK


400-LEVEL

CSCI401 COMPUTING SCIENCE IV (HONOURS)

Double session; 48 credit points

The Honours degree in Computing Science is achieved by the successful completion of a full year of comprehensive study following a pass degree. Entry to the honours year shall be determined by the Academic Senate on the advice of the Departmental Chairman. The minimum requirement for entry into the honours programme is the completion of a substantial and coherent course in Computing Science at the 300-level with examination results significantly above pass level.

A student taking honours would normally take a selection of topics at fourth year level (subject to approval by the Chairman of the Department) and write a research report under the supervision of an appropriate member of staff.

The subject may include topics from: Operating Systems; Compilers; Machine Architecture; Microprocessors; Information Systems; Software Engineering; Programming Languages; Artificial Intelligence; Mathematics of Computation; Numerical Analysis; Statistics; Probability; Operations Research.

CSCI411 COMPUTING SCIENCE HONOURS SEMINAR

Double session; 12 credit points

The Honours Seminar, which is available as a separate subject for Master of Science or Diploma in Computing Science candidates only, requires the undertaking of a reading course in an appropriate field of study and the presentation of a research report as well as a seminar to the Department of Computing Science.

Assessment of the honours seminar will be on the quality of the research report and of the seminar and will be made by the relevant departmental staff.
180 Description of Subjects - Economics

ECONOMICS

SCHEDULE ENTRIES

Refer to the schedule entries for further details of subjects, including pre-requisites and exclusions. All subjects described in this section are included in Schedule A. All 100-, 200- and 300-level subjects are also included in Schedule B. Subjects which also appear in other schedules are:

<table>
<thead>
<tr>
<th>Subject</th>
<th>Schedules</th>
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<tr>
<td>ECON111</td>
<td>C &amp; D</td>
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<tr>
<td>ECON215</td>
<td>C &amp; D</td>
</tr>
<tr>
<td>ECON312</td>
<td>C &amp; D</td>
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</tbody>
</table>

100-LEVEL

ECON101 ECONOMICS I

First session; 6 credit points (3 lectures, 1 tutorial per week)

Assessment: Examinations, essays, tutorial assignments.

An introduction to macroeconomic analysis including the study of national income and the relationships between flows of payments and flows of goods and services which constitute income.

An introductory study of some important Australian economic institutions and changes in these institutions affecting the structure of markets for products, financial markets, and the labour market.

PRELIMINARY READING


TEXTBOOKS


RECOMMENDED READING


ECON111 ECONOMICS II

Second session; 6 credit points (3 lectures, 1 tutorial per week)

Assessment: Assignments, essays, examinations.

An introduction to microeconomics which includes the market system, demand and supply analysis, the equilibrium of the firm under different market structures, factor pricing and markets, and general equilibrium analysis. The organisational aspects of this analysis will be related to the Australian economy.

PRELIMINARY READING

Dorfman, R. The Price System. Prentice-Hall.

TEXTBOOKS


RECOMMENDED READING


* This book is recommended as an additional reference for students who have not previously studied Economics.
Lipsey, R.G. *An Introduction to Positive Economics*. Weidenfeld and Nicolson.

**ECON111 ECONOMICS II (CONT'D)**

First session; 6 credit points (3 lectures, 1 tutorial per week)
Assessment: Examinations and assignments

Analysis of data, use of matrix algebra in economics, measures of central tendency: time series, trend, seasonal, and cyclical components, index numbers, construction and use; introduction to probability theory as it relates to sampling theory and practice.

TEXTBOOKS

**ECON121 QUANTITATIVE METHODS I**

Second session; 8 credit points (3 lectures, 1 tutorial per week)
Assessment: Examinations and assignments

Introduction to derivatives of functions as it relates to minimisation and maximisation; minimisation of errors in simple regression analysis; introduction to sampling distribution, hypothesis testing and errors as they relate to simple linear regression.

TEXTBOOKS

**ECON122 QUANTITATIVE METHODS II**

**200-LEVEL**

**ECON205 MACROECONOMICS**

First session; 8 credit points (8 class hours: 2 lectures and 1 tutorial per week)
Assessment: Assignments, essay, examinations

This subject is the second core course in the Macroeconomics stream which begins in first year with Economics I and continues to Public Finance. The aim of the subject is development of monetary analysis. The latter stages of the course use this analysis in conjunction with product market analysis to examine the role of money and how it may influence economic activity. The topics covered are introduction to financial institutions as they relate to money supply and money demand, money supply theory, theories of the demand for money and the tools and techniques of monetary policy.

TEXTBOOKS

**RECOMMENDED READING**

**ECON206 PUBLIC FINANCE**

Second session; 8 credit points (8 lectures, 1 tutorial per week)
Assessment: Examinations, essays and tutorial assignments.
The subject is designed to provide an introduction to PUBLIC FINANCE, with special reference to Australia. An analysis of the theoretical issues involved in equity, efficiency and incidence of taxes is used as a basis for an analysis of different types of tax bases. Income tax, company tax, sales taxes, land taxes, turnover taxes, consumption taxes, value added tax and capital gains taxes are all examined. Non tax sources of revenue are also examined as is the Public Debt. Particular attention will be paid throughout to the Australian situation and in particular the effects of the Federal system on Australian Public Finance will be considered.

Public expenditure will also be studied, with particular emphasis on the welfare effects of government expenditure. Questions about the type of goods and services which the government might provide and the size of the government sector will also be examined. The effects of social welfare expenditure and other expenditures on the distribution of income will also be studied.

TEXTBOOKS


RECOMMENDED READING

Mathews, R. ed. Fiscal Federalism: Retrospect and Prospect. ANU Press.
Richardson, I. Patterns of Australian Federalism. ANU Press, 1974.

ECON215 MICROECONOMICS

First session; 8 credit points (2 lecture, 1 tutorial/seminar per week)
Assessment: Examination and written assignments

This subject emphasises the microeconomic aspects of the industrial sector. After a brief introduction to welfare economics, the concept of the centre firm/periphery firm is developed. With this dichotomy as a basis the following topics are discussed: characteristics of the industrial system, administered prices, goals of firms, competitive strategies, market performance of large firms, the investment decision and the process of growth, uncertainty and planning, information and research and development activity, and the problem of power associated with the activities of the large firm.

TEXTBOOKS


RECOMMENDED READING


ECON216 INTERNATIONAL ECONOMICS

Second session; 8 credit points (3 hrs lectures, 1 hr tutorial per week)
Assessment: Tutorial exercises, essays and examinations

This subject extends the study of the international economy in the following areas: the structure and pattern of international trade and income levels; the analysis of resource allocation; protection; factor transfers; the foreign exchange market; the balance of payments and its implications in macroeconomic analysis; the international monetary system.

Australian international economic relations will have special attention.

TEXTBOOKS

Description of Subjects - Economics

ECON216 INTERNATIONAL ECONOMICS (CONT'D)

RECOMMENDED READING


ECON223 QUANTITATIVE METHODS III

First session; 8 credit points (2 lectures, 1 tutorial per week)
Assessment: Assignment, term project, examination

Extension to probability theory, Bayes theorem as it relates to decision theory; managerial
decision theory, types of decisions, Bayesian decision theory, games theory; inventory problems,
replacement problems, queueing theory; discounting procedures, internal rate of return, net
present value, Benefit/cost ratio.

TEXTBOOK


ECON224 QUANTITATIVE METHODS IV

Second session; 8 credit points (2 lectures, 1 tutorial per week)
Assessment: Examinations and assignments

Input-output analysis: theory, economic applications; linear programming: theory, economic
applications, relation to various types of allocation problems.

TEXTBOOKS

Hughes, A.J. & Grawoig, D.E. Linear Programming: An Emphasis on Decision Making. Addison-Wesley,
Massachusetts, 1975.

REFERENCE READING

1958.

300-LEVEL

ECON303 ECONOMIC DEVELOPMENT ISSUES

Second session; 8 credit points (2 lectures, 1 tutorial per week)
Assessment: Examinations, essays, tutorial assignments

The subject concentrates on the study of those factors which characterise underdevelopment.
Particular emphasis is placed on the institutional aspects of underdevelopment and the way in which
these influence the choice of development strategy. Particular emphasis is placed on education and
the role of labour in development, including manpower policies. Other major topics include
distribution of income, agriculture and land reform; industrialisation (with special emphasis on
the traditional small-scale sector); trade; aid and foreign investment. Finally, some of the
newer theories of development which take account of institutional factors in underdeveloped
countries are studied, as well as international factors such as the North-South dialogue.

TEXTBOOKS

Meier, G.M. Leading Issues in Economic Development. O.U.P.

REFERENCE BOOKS

ECON304 ECONOMIC POLICY

First session; 8 credit points (3 hra per week: lecture, organised group work and seminar)
Assessment: Assignments, class work and examinations

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, employment and incomes in Australia and the main instruments available for their implementation.

TEXTBOOKS

RECOMMENDED READING

ECON305 ECONOMIC DEVELOPMENT PLANNING

First session; 8 credit points (2 hra lectures, 1 hr tutorial per week)
Assessment: Assignments, essays and examinations.

This subject emphasises techniques of development planning, and deals with the following topics: models of development and development strategy; programming; project evaluation; budgeting; planning organisation; development plans of some less-developed countries.

TEXTBOOKS

RECOMMENDED READING

ECON306 INTERNATIONAL TRADE

Second session; 8 credit points (2 hra lectures, 1 hr tutorial per week)
Assessment: Assignments, essays and examinations

This subject examines the theory and application of trade policies. It will include protection by tariff and other means, foreign investment, foreign aid, and customs union.

RECOMMENDED READING

ECON307 INTERNATIONAL MONETARY ECONOMICS

Second session; 8 credit points (2 lectures and 1 tutorial per week)
Assessment: Examinations, essays, assignments, seminars

The subject is a study of monetary aspects of International Economics. Balance of payments, theory and policies for internal and external balance will be included, and special attention will be given to international monetary arrangements developed in the post-war period.
Description of Subjects - Economics 185

ECON307 INTERNATIONAL MONETARY ECONOMICS (CONT’N)

RECOMMENDED READING


ECON311 NATURAL RESOURCE ECONOMICS

First session; 8 credit points (1 lecture and 2 seminars per week)

Assessment: Seminar papers

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 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.

TEXTBOOKS


RECOMMENDED READING


ECON312 INDUSTRIAL ECONOMICS

Second session; 8 credit points (1 lecture, 1 seminar, 1 tutorial per week)

Assessment: Examinations and written assignments

A study of factors affecting production and productivity, with particular regard for industrial organisation in Australia. The emphasis will be on the industry, the economic sector, and the regional and national organisation of industry, as they affect decisions on prices, employment, investment, innovation, output and income distribution.

RECOMMENDED READING


ECON313 TRANSPORT ECONOMICS

Second session; 8 credit points (2 lectures, 2 tutorials, fieldwork)

Assessment: 1 examination, research report, seminar papers/essay

This subject considers the significance of transport systems in structuring spatial patterns. It examines system concepts, analysis and structure for selected modal systems at various scales - for example, intra-urban transit systems, inter-urban road, rail systems and international air and maritime systems.

It also deals with techniques for network analysis, optimizing flows in networks and related methodology.
Description of Subjects - Economics

ECON313 TRANSPORT ECONOMICS (CONT'D)

TEXTBOOKS


RECOMMENDED READING


ECON314 URBAN AND REGIONAL ECONOMICS

Second session: 8 credit points (3 lectures per week)
Assessment: Continuous assessment based on 2 essays, a mid-session and a final examination

Presentation of a general theory of Urban and Regional economic growth. Analysis of inter-urban and inter-regional disparities in levels of unemployment, income, migration and population growth. Examination of evidence relating to the economic costs of such disparities. Analysis of government policies for control of the spatial distribution of economic activities. Examination of the effectiveness of such policies.

Detailed consideration is given to material relating to the Australian economy, and brief consideration to material relating to various other market and command economies.

TEXTBOOKS


ECON315 MICROECONOMICS - THEORY AND APPLICATION

First session: 8 credit points (2 lectures, 1 tutorial per week)
Assessment: Examinations and assignments

The course consists of two-thirds advanced microeconomic theory and one-third theoretical applications. The advanced theory topics would include resource allocation, product distribution, equilibrium analysis, income distribution and factor markets. The areas of application might vary from year to year but would include topics such as economics of education, health, working women and public regulation.

RECOMMENDED READING


ECON316 HISTORY OF ECONOMIC THOUGHT

Second session: 8 credit points (2 lectures, 1 seminar per week)
Assessment: Examinations and written assignments

A course designed to introduce students to the main developments in economic theory from the 17th to 20th centuries. Internal changes in theories, relationships between successive theories and external influences on this development will be examined. External influences to be considered will include not only historical events but also contemporary climates of opinion. Students will be expected to read widely in both primary and secondary sources.
Description of Subjects — Economics 187

ECON316 HISTORY OF ECONOMIC THOUGHT (CONT'D)

PRELIMINARY READING


TEXTBOOKS

either

or


ECON321 ECONOMETRICS

First session; 8 credit points (2 lectures, 1 tutorial per week)
Assessment: Assignment, term project, examinations

The subject will be an introduction to the use of multiple regression in economic analysis. The major concern will be with the estimation of single equations. A theoretical framework for the second session subject Econometric Models is provided.

TEXTBOOK


RECOMMENDED READING


ECON322 MATHEMATICAL ECONOMICS

First session; 8 credit points (2 class hours per week: 2 lectures, 1 tutorial)
Assessment: Assignments, examinations

Material for this subject will be drawn from the following: Mathematical treatment of Microeconomics and Macroeconomics. Market equilibrium, perfect competition, imperfect competition; welfare economics, pareto optimality; consumption, savings, investment function; Keynesian models, dynamic multiplier; simple models.

PRELIMINARY READING


TEXTBOOK


ECON323 ECONOMETRIC MODELS

Second session; 8 credit points (2 lectures, 1 tutorial per week)
Assessment: Assignments, term project, examinations

This subject will complete the series in Econometrics. It will be an applied course in evaluating and building of Econometric Models. Single equation, recursive and simultaneous models will be considered.

TEXTBOOK


RECOMMENDED READING

ECON 302 COMPARATIVE ECONOMIC SYSTEMS

First session: 8 credit points (3 lectures per week)
Assessment: Continuous assessment based on 2 essays, a mid-term and a final examination


TEXTBOOKS


400-LEVEL

ECON 431 ADVANCED ECONOMIC ANALYSIS

Double session; 30 credit points (6 hrs tuition and supervised class work)
Assessment: Assignments, class work and examinations

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.

ECON 441 HONOURS THESIS

Double session; 18 credit points (3 hrs seminar and consultation with supervisor as required)
Assessment: Thesis

At the end of second session students enrolled for the bachelor degree with honours in Economics are required to submit a thesis, based on independent study in theoretical or applied economics. The field of inquiry and the subject must be approved by the Chairman of the Department.
EDUCATION

SCHEDULE ENTRIES

Refer to the schedule entries for further details of subjects, including pre-requisites and exclusions. All subjects described in this section are included in Schedule A.

200-LEVEL

Subjects offered at this level are intended as introductory courses in educational studies. Normally, students enrolling in these courses shall have passed not fewer than three first-year subjects or the equivalent*, although this condition may be modified in special circumstances by the Chairman of the Department.

Students intending to take 24 credit points of 300-level study in education are required to pass subjects at the 200-level to the value of 16 credit points.

EDUC211 EDUCATIONAL PSYCHOLOGY & EDUCATIONAL RESEARCH & MEASUREMENT

Double session; 8 credit points (3 hrs per week: Lectures, seminars, tutorials, and school-based laboratory exercises)

Assessment: Examinations, tests, assignments

(a) Educational psychology of typical and atypical children. A treatment in the educational context of the behaviour of typical children, emphasizing problems of perception, learning, motivation, and environmental influences, and with special reference to the adolescent.

(b) Educational measurement and research methodology. An introduction to basic statistical procedures, test construction and experimental design in relation to educational studies.

TEXTBOOKS


EDUC212 EDUCATIONAL SOCIOLOGY, PHILOSOPHY AND HISTORY

Double session; 8 credit points (3 hrs per week: Lectures, seminars, tutorials, and school-based laboratory exercises)

Assessment: Examinations, tests, assignments

(a) Educational Sociology (compulsory section): A course of one hour a week for one year, with additional tutorials. The Sociology of Education section of the Education II course will include enquiries into the role of the school in society, teaching as a career, the teacher's role in the education system, role conflict in teaching, and social problem areas of students.

(b) Philosophy in Education: The course will serve to show the role philosophy has had to play in determining the practices of education. It will also suggest that this role is continuing, and that one of its essential functions, today, is to bring about an understanding of the function of education in an age of change and innovation. The course in particular will attempt: to give an account of the nature of philosophy and education, and the nature of their interdependence; to examine the traditional theories of education; and to provide a philosophical understanding of the commoner concepts of education.

(c) The History of Western Education: An introduction to the historical study of education as a social process, with primary focus on educational institutions. Particular themes will include: the educational revolution of the sixteenth and seventeenth centuries; changing views of childhood and adolescence in the eighteenth century; the rise of the schooled society; the relationship between the social structure and educational institutions in the twentieth century.

*The equivalent of one full first-year subject is 12 credit points.
Eight subjects are listed at 300-level, each valued at 8 credit points. Students intending to take 24 credit points in education at the 300-level must take at least two subjects from the following: EDUC311, 312, 313, 314, 315.

EDUC311 DEVELOPMENTAL PRINCIPLES IN EDUCATION

Double session; 8 credit points (3 hrs per week: Lectures, seminars, tutorials, and school-based laboratory exercises)

Assessment: Examinations and assignments

This unit offers an opportunity to study the concept of human development, emphasising cognition, and a selection of contemporary theories of development within the context of contemporary society and education. Course work will include a child study.

TEXTBOOKS


EDUC312 SOCIOLOGY OF EDUCATION

Double session; 8 credit points (3 hrs per week: Lecture, tutorial, research)

Assessment: Continuous. Essay, Project and school-based laboratory exercises

An examination of sociological theory with critical evaluation together with an analysis of critical issues in education.

TEXTBOOKS


EDUC313 HISTORY OF EDUCATION

Double session; 8 credit points (3 hrs per week: 1 Lecture and 3-hour seminar per week)

Assessment: Essay, seminar papers, and examination

Education and Society: Great Britain, United States and Australia 1780-1970. A comparative examination of the historical relationship between education and society in three related but different cultural contexts. Students will be introduced to the major historiography; considerable emphasis will be placed on historical methodology and the use of primary source material. Major themes will be: education and social control; education and the economy; the historical sociology of curriculum change; the politics of education; the influence and impact of educational ideas and the role of educational bureaucracies.

RECOMMENDED READING

EDUC313 HISTORY OF EDUCATION (CONT'D)

Turren, C. Sources in the History of Australian Education. Angus & Robertson, 1976.

EDUC314 PHILOSOPHY IN EDUCATION

Double session; 8 credit points (3 hrs per week: Lectures, seminars, tutorials)
Assessment: Examinations and assignments

A study is offered of recent and contemporary ideas and philosophy in education, including educational outcomes of traditional and contemporary philosophical points of view, and a consideration of aims of education and means by which they might be realized.

TEXTBOOKS


EDUC315 EDUCATIONAL RESEARCH METHODOLOGY

Double session; 8 credit points (3 hrs per week: Lectures, seminars, tutorials)
Assessment: Examinations and assignments

This unit offers a study of the nature of educational research, surveys and experiments, and the evaluation of research, and report writing. Problems in designing conventional and action research programmes will be discussed.

TEXTBOOKS


EDUC316 COMPARATIVE EDUCATION

Double session; 8 credit points (3 hrs per week: Lectures, seminars, tutorials)
Assessment: Examinations and assignments

A comparative treatment of schooling in the social context, the preparation of teachers and tertiary education in a selection of cultures in relation to the Australian educational scene.

TEXTBOOKS


EDUC317 PRINCIPLES OF CURRICULUM THEORY

Double session; 8 credit points (3 hrs per week: 1 lecture, 2 seminars)
Assessment: 1 major essay, weekly assignments and 1 prepared seminar

An examination of (a) the major educational concepts and principles related to the area of curriculum theory and development and (b) selected curriculum designs and approaches.

TEXTBOOKS

Double session; 8 credit points (3 hrs per week: Lectures, Seminars)
Assessment: Examinations, assignments, seminar papers

Principles of organisational psychology and sociology. School structure as a determinant of conditions for learning. Implications for the learning environment of Federal and State educational management structures and policies. Theories of innovation as devices in policy formulation. The funding of education in Australia.

RECOMMENDED READING

400-LEVEL
The main purpose of Education IV is to provide an Honours year for those students wishing to specialise in educational studies. Considerable emphasis will be laid upon research and research methodology, and students will be expected to apply their knowledge in research to one or more of the areas of Educational Psychology, Educational Sociology, Comparative Education, History of Education, Philosophy of Education and Theories of Education. A thesis equivalent in time to one-third of the year's work is also required. Above average performance at third year level is a prerequisite and entry to the Honours year will be determined by the Academic Senate on the advice of the Departmental Chairman.

It is hoped that students who complete an Honours degree through Education IV might continue their interest in research subsequently through higher degree work.

EDUC401 EDUCATION IV

Double session; 48 credit points (8 hrs of lectures/seminars; 4 hrs of tutorials)
Assessment: Formal examinations, test, assignments and associated projects (if appropriate)

All students must take the following topics totalling 16 credit points in the area of educational Research Methodology and Design:
- The logic of educational research
- Descriptive techniques
- Inferential techniques
- Sampling problems
- Validity of experiments in social settings
- Statistical and scientific hypotheses
- Quasi-experimental designs
- Generalisations and predictions
- Applications of research to the classroom
- Applications of research to education

Students must also complete 16 credit points comprising two groups of the following topics:

Educational Psychology Topics A
- Language in early childhood
- Language in the school
- Continuity and discontinuity in development tests of conceptual and language development
- Special topic

Educational Psychology Topics B
- Social class and intelligence
- Ethnic differences and mental growth
- Compensatory education
- Literacy and numeracy programmes
- Special topic

Educational Sociology Topics A
- The family and education
- Social class and education
- The economy and education

Educational Sociology Topics B
- The political functions of education
- The use of education for selection
Implications of teaching becoming a profession
The roles of the teacher

Comparative Education and History of Education
Systematic study of education systems selected from Australia, U.S.A., U.K., France, Japan, S.E. Asia and China.
Selected case study analyses showing the problem and inductive approaches in comparative methodology.
Interdisciplinary contributions to Comparative Education.
The Australian context.
Historical antecedents to formal education systems in selected countries.

Philosophy of Education and Theories of Education
Impact of philosophers on education
Application of philosophical methods of enquiry to education
Social philosophies and their impact on education
Survey of major educational theories and theorists
Critical issues in Curriculum Theory and Development
Mass compulsory education in post-industrial society

RECOMMENDED READING

ELECTRICAL ENGINEERING

Assessment

All subjects offered by the Department of Electrical Engineering are normally assessed by means of a final examination. In addition, set project work, laboratory reports and tutorial problems undertaken by the student throughout the session may also be taken into account. Lecturers in the individual subjects will provide details at the beginning of each session.

SCHEDULE ENTRIES

Refer to the schedule entries for further details of subjects, including pre-requisites and exclusions. All subjects described in this section are included in Schedule C (with the exception of ELEC191, 192, 292, 294, 295, 391 and 392). Subjects which appear in other schedules are:

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1. CORE MATERIAL

ELEC101 ELECTRICAL ENGINEERING 1

Double session; 6 credit points (A total of 84 hrs of lectures and tutorials)

Introduction to electrical quantities and measurements, circuit analysis, energy conversion, electronic devices and circuits.

RECOMMENDED READING


ELEC151 INSTRUMENTATION AND MEASUREMENTS

First and second sessions (42 hrs of lectures and laboratory work)


TEXTBOOK


ELEC203 CIRCUIT THEORY 2A

Double session (84 hrs of lectures and tutorials)

Development of circuit analysis from field descriptions; validity of KCL and KVL; topological properties of networks; mesh current, node voltage and cut-set analysis; classical solution of network equations; special case of sinusoidal steady state, phasor and impedance concepts. Generalised network analysis via Laplace transforms.

Network theorems, sinusoidal steady state, 3 phase systems. Further analysis in the S-domain; Fourier series and transform applications; two-part networks; state space and matrix methods.

TEXTBOOKS

**Double session (48 hrs of lectures and tutorials)**

Filters, introduction to random signal theory, correlation functions, power density spectrum, probabilistic network analysis, optimal design of filters, computational aspects of network analysis.

**TEXTBOOK**


**RECOMMENDED READING**


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**ELEC211 ELECTRONICS 1**

**Double session (48 hrs of lectures and tutorials)**

Semi-conductor devices and device models; current transport in semi-conductors, diodes, bipolar and field-effect transistors, circuit modelling, biasing, single-stage wideband amplifiers, frequency response, design procedures.

**TEXTBOOKS**


**RECOMMENDED READING**


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**ELEC311 ELECTRONICS 3A**

**Double session (64 hrs of lectures and tutorials)**

Analysis and design of multistage amplifiers, feedback amplifiers, and sinusoidal oscillators. Applications of integrated circuits as building blocks for linear and non-linear analog systems.

Analysis and design of digital, switching, and power circuits: IC logic gates, combinational digital circuits; discrete-component multivibrators and IC flip-flops, sequential circuits; basic methods for analog/digital conversions; stabilised power supplies, thyristor regulators.

**TEXTBOOK**


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**ELEC221 ENERGY CONVERSION AND DISTRIBUTION 1**

**Double session**

**ELEC322 ENERGY CONVERSION AND DISTRIBUTION 2**

**Double session**

**ELEC423 ENERGY CONVERSION AND DISTRIBUTION 3**

**First session**

Each of the above subjects comprises 48 hrs of lectures and tutorials. The details for the above 3 subjects are as follows:

- Recapitulation of basic laws in electro and magneto statics and dynamics. Properties of ferromagnetic materials and magnetic circuits. Energy conversion principles, with emphasis on electro mechanical devices. Coupled circuits, polyphase and instrument transformers; dynamic circuit theory; transducers.


- Transmission line parameters and system modelling. Load flow analysis; frequency and voltage control; maximum power transfer, steady state stability. Symmetrical and unsymmetrical fault calculations.

- Static converters; applications to a.c. and d.c. machine control.
ELEC221, ELEC322, ELEC423 ENERGY CONVERSION AND DISTRIBUTION 1, 2, 3 (CONT'D)

TEXTBOOKS

Energy Conversion and Distribution 1:

Energy Conversion and Distribution 2:

Energy Conversion and Distribution 3:

ELEC131 COMPUTERS 1

Second session (42 hrs lectures and tutorials)
Fundamental concepts - the evolution of computers, number systems, codes, Binary arithmetic, Boolean Algebra and computer logic, Truth functional calculus.
High level programming languages, FORTRAN in particular. Analogue computer components, analogue programming, time and magnitude scaling, engineering applications.

TEXTBOOKS


RECOMMENDED READING


ELEC331 COMPUTERS 2

Double session (42 hrs lectures and tutorials)
Combinational logic, simplification of logic expressions, Karnaugh map, Quine-McCluskey minimisation. Sequential logic, flip-flops, registers, clock, timing and synchronisation problems. Sequential machines, Mealy and Moore machines, timing diagrams and state tables.

TEXTBOOK


RECOMMENDED READING


ELEC431 COMPUTERS 3

First session (42 hrs lectures and tutorials)
Computer architecture, central processing unit, memory (ROM and RAM), input/output devices. Basic computer organisation, Binary data and instruction codes, Machine and assembly languages - instruction set, direct and indirect addressing. Interrupt, I/O bus and interface, direct memory access, I/O communication protocol. Introduction to hybrid computers, simulation and modelling of engineering systems on computers.

TEXTBOOK


RECOMMENDED READING

How to Use the Nova Computers. Data General Corp.

ELEC343 CONTROL SYSTEMS

Double session (84 hrs of lectures and tutorials)
Description and physical systems by differential equations - Lagrange's equations; the convolution integral, transfer functions, block diagrams and signal flow graphs; feedback and its effects; analog computer simulation; stability by Routh-Hurwitz criteria; frequency response on polar and rectangular plots; stability by Nyquist criterion and its extension to Bode Plots; System types and performance with standard inputs.
Root locus methods, frequency response and transient response from root locus diagram; performance criteria and their application to design; synthesis of single-input single-output linear systems by root locus, and Bode diagram; minor loop design.

**Textbook**
Double session

This comprises two projects (a minimum of 112 hrs in session 1 and 164 hrs in session 2)

Each project involves the design and construction of experimental apparatus together with extensive laboratory testing. Where possible the projects are related to the research programme of the Department and are chosen to develop the students' initiative. Each student is required to deliver a seminar paper and to prepare a thesis on the result of the project work.

INDUSTRIAL OPTIONS

Students in full-time employment become eligible to include Industrial Options in their course. Such inclusion is subject to the approval of the Chairman of the Department.

ELEC181 Industrial Option 1
ELEC282 Industrial Option 2
ELEC283 Industrial Option 3
ELEC384 Industrial Option 4
ELEC485 Industrial Option 5

A student enrolled in an Industrial Option is required to submit written reports and to participate in seminars within the Department. These will deal with a critical analysis and reporting of general (or nominated specific) aspects of Professional Practice as experienced by the student. A Corporate Member of the Institution of Engineers representing the organisation wherein the Professional Practice is obtained must examine and sign for such Professional Practice work before it can be accepted and assessed by the Departmental Assessment Committee.

2. ELECTIVES

All single session subjects (3 hrs per week)

Second session (42 hrs of lectures and tutorials)

Atomic bonding and the nature of solids; phase relationship and micro structure; mechanical behaviour of materials, electrical and magnetic properties; corrosion and oxidation of metals.

RECOMMENDED READING

Van Vlack, L.H. Elements of Materials Science. Addison-Wesley.

ELEC404 CIRCUIT THEORY 4

First or second session

Network functions, analysis and synthesis techniques, computer-aided approaches, large scale analysis, state space methods, network optimisation, signal flow graphs.

TEXTBOOK


RECOMMENDED READING


ELEC424 ELECTRIC ENERGY SYSTEMS

First or second session

System modelling, application of the computer to load flow analysis. Optimum operating conditions, frequency and voltage control. Economic aspects of power transmission.

Unsymmetrical fault analysis, interruption theory, surges, transient stability. Transient characteristics of synchronous machines. System protection.
ELEC424 ELECTRIC ENERGY SYSTEMS (CONT'D)


ELEC425 GENERALISED MACHINE THEORY

First or second session
Development of machine models, transformations, methods of solution, small signal responses, transfer and weighting function representation, with emphasis on synchronous and induction machines.

ELEC426 ELECTROMECHANICAL DYNAMICS

First or second session (43 hrs of lectures and tutorials)
Field description of electromechanical interaction, field transformations; generalised Ohms Law for plasma, transition to liquid and solid conductors; magnetic diffusion, levitation, charge relaxation; forces in magnetic and electrostatic field systems, Maxwell stress tensor, magnetization and polarisation force densities; electromechanical dynamics of solid continua, incompressible fluids and compressible fluids.


ELEC427 STATIC CONVERTERS

First or second session (43 hrs of lectures and tutorials)
Characteristics of rectifiers, inverters, pulse and cycloconverters and their application to a.c. and d.c. variable speed drives.

ELEC432 COMPUTERS 4

First or second session (43 hrs of lectures and tutorials)
Advance features, memory architecture (memory interleaving, cache memory and hierarchy of memories), micro-programming, micro-processors and micro-computer hardware (bus system, multiplex bus system organisation), interface design. Programming of micro-computers with reference to appropriate micro-computers. Micro-computer applications.

RECOMMENDED READING

ELEC443 CONTROL 3

First or second session

RECOMMENDED READING

ELEC462 COMMUNICATIONS 2

First or second session
Scope: analysis and design of communication circuits for analog signal processing and frequency-domain multiplexing.
ELEC462 COMMUNICATIONS 2 (CONT'D)

No set text.

ELEC472 ELECTRICAL PROPERTIES OF MATERIALS

First or second session
Electric conduction and breakdown in solid, liquid and gaseous dielectrics; field strength calculations using Laplace and Poisson's equations. High voltage testing.

RECOMMENDED READING

ELEC481 PROBABILITY AND RANDOM PROCESSES

First or second session
Probability theory; random variables, distribution and density functions, mean values and moments, ergodicity and stationarity; correlation functions, spectral densities, linear system response to random inputs; filtering and prediction.

TEXTBOOK

ELEC475 COMPOSITE ELECTIVE I

First or second session (42 hrs of lectures and tutorials)
Selected topics from not more than three of the following:
ELEC404, ELEC424, ELEC425, ELEC426, ELEC427, ELEC432, ELEC443, ELEC462, ELEC472, ELEC481, ELEC482

TEXTBOOKS
Reading as appropriate.

ELEC476 COMPOSITE ELECTIVE II

First or second session (42 hrs of lectures and tutorials)
Selected topics from not more than three of the following:
ELEC404, ELEC424, ELEC425, ELEC426, ELEC427, ELEC432, ELEC443, ELEC462, ELEC472, ELEC481, ELEC482

TEXTBOOKS
Reading as appropriate.

ELEC477 COMPOSITE ELECTIVE III

First or second session (42 hrs of lectures and tutorials)
Selected topics from not more than three of the following:
ELEC404, ELEC424, ELEC425, ELEC426, ELEC427, ELEC432, ELEC443, ELEC462, ELEC472, ELEC481, ELEC482

TEXTBOOKS
Reading as appropriate.

ELEC482 SYSTEM RELIABILITY

First or second session (42 hrs of lectures and tutorials)
Introduction to reliability engineering, mathematical system modelling, reliability assessment techniques, redundant systems, reliability improvement, reliability optimisation, Markovian processes, applications to electronic, power and telecommunication networks, computer-aided techniques.
RECOMMENDED READING:

3. SERVICING SUBJECTS

ELEC191 COMPUTERS 1S

Second session; 6 credit points
Comprising: ELEC151 Instrumentation and Measurements and ELEC131 Computers 1

ELEC291 APPLIED ELECTRICITY 1

Double session; 8 credit points
Topics selected from circuit theory, electronic devices and their application in linear and digital circuits.

TEXTBOOK

ELEC192 INTRODUCTORY ELECTRONICS

Double session; 6 credit points (42 hte lectures and tutorials; 42 hte practical)
Assessment: Class tests, final examination and reports

The course provides an introduction to electronic devices, circuits and systems for students in Science, Social Science and the Humanities.

TEXTBOOKS

ELEC292 APPLIED ELECTRICITY 2

Double session; 8 credit points
Electromagnetic devices, d.c. and a.c. machines, transmission systems, and instrumentation.

TEXTBOOK

ELEC293 COMPUTERS 1M

Double session; 6 credit points
Switching algebra, combination and sequential logic. Number systems and codes. Use and application of high-level and assembler language.
Digital computer organisation and control, arithmetic and memory elements, input-output devices.
Analogue computer components, setting up linear systems, time and magnitude scale factors.

TEXTBOOKS

ELEC294 INTRODUCTORY SYSTEMS THEORY

Second session; 6 credit points

Definition and measures of information; introduction to some of the properties of the measures and to the idea of channel capacity and coding. The relationship between thermodynamics and information; information and organisation.
Concept and examples of systems, dynamic properties; modelling; introduction to methods of analysis of linear systems with extension to non-linear problems. Analogue simulation and system model analysis by digital and analogue computer. Deterministic and stochastic responses and models; continuous and discrete signals.
Description of Subjects - Electrical Engineering

ELEC294 INTRODUCTORY SYSTEMS THEORY (CONT'D)

RECOMMENDED READING


First session; 6 credit points
Comprising: ELEC331 Computers 2
Plus 42 hrs of appropriate tutorial and practical work

ELEC295 COMPUTERS 2S

First session; 6 credit points
Comprising: ELEC431 Computers
Plus 42 hrs of appropriate tutorial and laboratory work

ELEC391 COMPUTERS 3S

Second session; 6 credit points (56 hrs of lectures and tutorials)
Aspects of: mini-computers, peripherals, interfaces, data conversion, microprocessors, memory elements and organisation.

RECOMMENDED READING

The Department of English offers subjects in English Language at 100-, 200-, 300- and 400 (Honours)-level, in English Literature at 100-, 200-, 300- and 400 (Honours)-level and in Drama at 100-level in the BA Degree course.

A comprehensive course of study in English comprises not less than 60 credit points taken from 100-, 200- and 300-level subjects (excluding Additional Subjects). Entry to 400-level English is determined by Senate on the recommendation of the Departmental Chairman.

Each subject comprises at least 28 hours (2 hours per week per session) of lectures, seminars and tutorials. The Departmental Chairman reserves the right to place a limit on numbers in 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 the staff available.

N.B. SUBJECTS DISTINGUISHED BY AN ASTERISK WILL BE OFFERED IN 1979 AND NOT IN SUBSEQUENT YEARS.

In all subjects, students are required to hand in written assignments. English IV Honours students are also required to write a thesis of 10,000 words on a topic approved by the Professor of English.

All students are required to possess The Concise Oxford English Dictionary and H. Coombes' Literature and Criticism (Penguin) in addition to the texts prescribed for the subjects in which they are enrolled. Students intending to pursue a comprehensive course in English are also advised to obtain The Oxford Anthology of English Literature, 2 vol. edn., ed. Kermode and Holland.

SCHEDULE ENTRIES

Refer to the schedule entries for further details of subjects, including pre-requisites and exclusions. All subjects described in this section are included in Schedule A.

ENGLISH LITERATURE

100-LEVEL

ENGL101 INTRODUCTION TO MODERN LITERATURE

Double session; 18 credit points (2 lectures, 1 tutorial per week)
Assessment (each session): 1 essay, 1 tutorial paper, 2 practical criticism exercises

First Session

Critical Method and Modern Prose. The problems and techniques involved in the criticism of prose; critical discussion of selected modern short stories and novels.

PRELIMINARY READING


TEXTBOOKS


RECOMMENDED READING


Second Session

Critical Method and Modern Poetry. Problems and techniques involved in the criticism of poetry; critical discussion of selected poems.
ENGL101 INTRODUCTION TO MODERN LITERATURE (CONT'D)

TEXTBOOKS

200-LEVEL

ENGL217 SIXTEENTH CENTURY POETRY AND PROSE A

*First session; 6 credit points (2 lectures, 1 tutorial per week)*

Assessment: One 1000 word essay, one 750 word tutorial paper, two practical criticism exercises

An examination of the treatment of love in the works of several major Elizabethan poets and in some prose texts of the period. Because the course is also concerned with the cultural context of the literature, students will be offered two hours of lectures per week in addition to the weekly tutorial they are required to attend.

TEXTBOOKS

ENGL218 ELIZABETHAN AND JACOBEAN DRAMA A

*Second session; 6 credit points (1 lecture, 1 tutorial per week)*

Assessment: One 1000 word essay, one 750 word tutorial paper, two practical criticism exercises

A study of selected plays of Marlowe, Shakespeare, Jonson and Webster.

TEXTBOOKS

ENGL219 SEVENTEENTH CENTURY POETRY AND PROSE A

*Second session; 6 credit points (1 lecture, 1 tutorial per week)*

Assessment: One 1000 word essay, one 750 word tutorial paper, two practical criticism exercises

A study of English poetry and prose of the seventeenth century.

TEXTBOOKS

ENGL227 RESTORATION AND EIGHTEENTH CENTURY DRAMA A

*Second session; 6 credit points (1 lecture, 1 tutorial per week)*

Assessment: One 1000 word essay, one 750 word tutorial paper, two practical criticism exercises

A study of English drama from 1660 to the end of the eighteenth century.

TEXTBOOKS
Second session; 6 credit points (1 lecture, 1 tutorial per week)

Assessment: 1 essay, 2 tutorial papers, 1 practical criticism exercise

A study of some literary portrayals of imaginary societies.

TEXTBOOKS


RECOMMENDED READING


300-LEVEL

ENGL320 SIXTEENTH CENTURY POETRY AND PROSE B*

First session; 6 credit points (2 lectures, 1 tutorial per week)

Assessment: One 1500 word essay, one 1000 word tutorial paper, two practical criticism exercises

An examination of the treatment of love in the works of several major Elizabethan poets and in some prose texts of the period. Because the course is also concerned with the cultural context of the literature, students will be offered two hours of lectures per week in addition to the weekly tutorial they are required to attend.

TEXTBOOKS


ENGL321 ELIZABETHAN AND JACOBEAN DRAMA B*

First session; 6 credit points (1 lecture, 1 tutorial per week)

Assessment: One 1500 word essay, one 1000 word tutorial paper, two practical criticism exercises

A study of selected plays of Marlowe, Shakespeare, Jonson and Webster.

TEXTBOOKS


ENGL322 SEVENTEENTH CENTURY POETRY AND PROSE B*

Second session; 6 credit points (1 lecture, 1 tutorial per week)

Assessment: One 1500 word essay, one 1000 word tutorial paper, two practical criticism exercises

A study of English poetry and prose of the seventeenth century.

TEXTBOOKS


#Additional subject - refer to pre-amble.

*Refer to pre-amble.
ENGL323 RESTORATION AND EIGHTEENTH CENTURY DRAMA B*

Second session; 6 credit points (1 lecture, 1 tutorial per week)
Assessment: One 1500 word essay, one 1000 word tutorial paper, two practical criticism exercises.
A study of English drama from 1660 to the end of the eighteenth century.

TEXTBOOKS

ENGL324 EIGHTEENTH CENTURY PROSE

First session; 6 credit points (1 lecture, 1 tutorial per week)
Assessment: One 1500 word essay, one 1000 word tutorial paper, two practical criticism exercises.
A study of English prose literature of the eighteenth century.

TEXTBOOKS

ENGL325 EIGHTEENTH CENTURY POETRY

First session; 6 credit points (1 lecture, 1 tutorial per week)
Assessment: One 1500 word essay, one 1000 word tutorial paper, two practical criticism exercises.
A study of the poetry of Dryden, Pope, Johnson, Gray, Goldsmith, Crabbe, Collins and Cowper.

TEXTBOOKS

ENGL326 NINETEENTH CENTURY PROSE

Second session; 6 credit points (1 lecture, 1 tutorial per week)
Assessment: One 1500 word essay, one 1000 word tutorial paper, two practical criticism exercises.
A study of English prose literature of the nineteenth century.

TEXTBOOKS

*Refer to pre-amble.
ENGL327 NINETEENTH CENTURY POETRY

Second session: 6 credit points (1 lecture, 1 tutorial per week)
Assessment: One 1500 word essay, one 1000 word tutorial paper, two practical criticism exercises
A study of English poetry of the nineteenth century.

TEXTBOOKS

ENGLISH LANGUAGE
100-LEVEL

ENGL103 INTRODUCTION TO ENGLISH LANGUAGE STUDIES A
First session: 6 credit points (2 lectures, 2 tutorials per week)
Assessment: 1 phonetics exercise, 2 tutorial papers, 2 class exercises
(i) The Development of English up to the Middle English Period, and
(ii) Introduction to Mediaeval Life and Thought

TEXTBOOKS

ENGL104 INTRODUCTION TO ENGLISH LANGUAGE STUDIES B
Second session: 6 credit points (2 lectures, 2 tutorials per week)
Assessment: 1 long essay, 2 tutorial papers, 2 class exercises
(i) The Development of English from the Middle English Period to the present day.
(ii) Introduction to Early English Language and Literature: a study of Chaucer's language and of selected Canterbury Tales.

TEXTBOOK

ENGL105 INTRODUCTION TO ENGLISH LANGUAGE STUDIES C
Second session: 6 credit points (1 lecture, 2 tutorials per week)
Assessment: One long essay, one phonetics exercise, one tutorial paper, two class exercises
A survey of modern approaches to basic problems in philology. The course will investigate such controversial questions as grammatical and phonological classification and terminolgy and doctrines of correctness in language study.

TEXTBOOKS

200-LEVEL

ENGL223 OLD ENGLISH
Double session: 12 credit points (1 lecture, 1 tutorial per week)
Assessment: 1 essay, 1 tutorial paper, 2 class exercises
An introduction to the language, literature and culture of the Anglo-Saxons and a study of Old English poetry and prose.
208 Description of Subjects - English

**ENGL223 OLD ENGLISH (CONT'D)**

**RECOMMENDED READING**


**ENGL224 MIDDLE ENGLISH**

Double session; 12 credit points (1 lecture, 1 tutorial per week)

Assessment: 1 essay, 1 tutorial paper, 2 class exercises

An introduction to the language and literature of England between the Norman Conquest and the Age of Chaucer to be followed by a study of the poetry, prose and drama of the later Middle English period.

**RECOMMENDED READING**


**300-LEVEL**

**ENGL316 ADVANCED OLD ENGLISH**

First session; 6 credit points (1 lecture, 1 tutorial per week)

Assessment: 1 essay, 1 tutorial paper, 2 class exercises

A detailed study of some of the more difficult texts in Old English poetry and prose.

**RECOMMENDED READING**


**ENGL317 MEDIAEVAL ROMANCE IN ENGLAND**

First session; 6 credit points (1 lecture, 1 tutorial per week)

Assessment: 1 essay, 1 tutorial paper, 2 class exercises

A detailed study in the original language of the romance genre in Mediaeval English literature.

**TEXTBOOKS**


**ENGL318 OLD AND MIDDLE ENGLISH LYRIC**

Second session; 6 credit points (1 lecture, 1 tutorial per week)

Assessment: 1 essay, 1 tutorial paper, 2 class exercises

A study of the origins and nature of Old and Middle English lyrics.

**TEXTBOOKS**


**ENGL319 MEDIAEVAL DRAMA IN ENGLAND**

Second session; 6 credit points (1 lecture, 1 tutorial per week)

Assessment: 1 essay, 1 tutorial paper, 2 class exercises

A study of drama in England from the earliest times up to the early-Tudor period.

**TEXTBOOK**

ENGL106 INTRODUCTION TO DRAMA STUDIES

Double session; 18 credit points (1 lecture, 1 tutorial and 1 practical (workshop) session per week)
Assessment: 1 essay, 1 tutorial paper, 2 practical exercises per session.

The aim of this course is to explore the manifestations and potentialities of drama as a natural rather than an artificial mode of human behaviour. It involves the study of the expression of beliefs, values, attitudes and opinions by means of moving (and vocal) figures and the examination of the growth of dramatic institutions from ritual to television, including contemporary trends and developments in all dramatic media and forms.

Practical, experiential activities will form a significant component of the course.

First Session
Human Drama. Specific areas to be considered include: children's play; drama and socialization; drama and self-realization; games; simulation gaming; drama as communication; the body as a medium of expression; role-playing; role-playing and acting; drama and stereotypes; playing and not playing the part; drama and diagnosis; drama and therapy; psychodrama; drama and encounter techniques; improvisation.

PRELIMINARY READING

TEXTBOOKS
A detailed list of various sources to be consulted by students will be supplied at the beginning of the course.

Second Session
Institutionalised Drama. Specific areas to be considered include: drama, magic and ritual; from ritual to theatre; theatre and dramatic conventions; dramatic form and theatrical technology; cinema and the film; dramatic form and cinematographic technology; television and radio; the medium and the message/message; documentary drama in the various media; producers, performers, audiences and viewers.

PRELIMINARY READING

TEXTBOOKS
A detailed list of various sources to be consulted by students will be supplied at the beginning of the course.

ENGL400 ENGLISH IV HONOURS

Double session; 48 credit points
Assessment: Class exercises, seminar papers, long essays and/or examinations, and by a thesis of not more than 10,000 words

First Session
(1) Classical, Romantic and Modern.
Description of Subjects - English

ENGL400 ENGLISH IV HONOURS (CONT'D)

TEXTBOOKS


Students will study selections from Sidney, Pope, Wordsworth, Keats, Emerson, Whitman, Yeats, Pound and Eliot.

or

(2) Classical and Mediaeval.

TEXTBOOKS


Students will study selections from Plato, Aristotle, Horace, Longinus, Quintilian, Pseudo-Cicero, Bede and Geoffroi de Vinsauf.

ELIZABETHAN DRAMA. A study of the dramatic literature of the second half of the sixteenth century.

TEXTBOOKS


RENAISSANCE POETRY A. An examination of Elizabethan lyric poetry, the sonnet and Ovidian poetry.

TEXTBOOKS


(A) BEOWULF AND RELATED HEROIC POETRY. A study of Old English heroic poetry.

TEXTBOOK


(A) FOURTEENTH CENTURY LITERATURE. Students will study the works of Chaucer and selections from Langland, Gower and the Gawain poet.

Second Session

CRITICAL THEORY AND PRACTICE. Romantic and Modern.

TEXTBOOKS

As for first session.

or

THE HISTORY OF PHILOLOGY. A study of Linguistic Theory and Method from classical, through mediaeval times, up to the present day.

Students will study a selection from Plato, Aristotle, Quintilian, Mediaeval Christian Philosophers, Eighteenth Century Linguists, Nineteenth Century Comparative Philologists and the Twentieth Century Linguists.

JACOBEAN DRAMA. Selected plays by Jonson, Chapman, Marston, Tourneur, Webster, Middleton, Beaumont and Fletcher, Massinger.

RENAISSANCE POETRY B. A study of the Elizabethan pastoral and the poetry of Spenser.

TEXTBOOKS


LITERARY SCHOLARSHIP. An introduction to Paleography, with special reference to Early Tudor textual problems.

(B) FOURTEENTH CENTURY LITERATURE. As for First Session.

(B) BEOWULF AND RELATED HEROIC POETRY. As for First Session.
The Department of European Languages currently offers courses in French and Italian not only for those who have already achieved a certain proficiency in the subject but also for beginners or near-beginners. Both categories of students may major in one or both languages and pursue their studies to postgraduate level.

SCHEDULE ENTRIES

Refer to the schedule entries for further details of subjects, including pre-requisites and exclusions. All subjects described in this section are included in Schedule A.

FRENCH

100-LEVEL

EURO103 INTRODUCTORY FRENCH

Double session; 12 credit points (6hrs practical/tutoria per week)
Assessment: Regular exercises in aural comprehension, spoken and written expression.

This is an audio-visual course for beginners or near-beginners in French. Initially there is concentration exclusively on hearing and speaking, with the gradual introduction of written expression. Classes will be in tutorial groups of about 15 students and extensive use will be made of the language laboratory. Successful completion of Introductory French qualifies students for entry into French IIC.

TEXTBOOKS

Manson, J.E. ed. *Harrop's Shorter French and English Dictionary*. Harrap, London. (2 vols. - may also be purchased in 1 vol.)

EURO111 FRENCH IA

First occasion; 6 credit points (3 hrs lectures, 3 hrs tutorials per week)
Recommended Pre-requisites: Prior French study to an acceptable level: normally this would mean a standard equivalent to French 2 unit or Grade 2 at N.S.W. H.S.C.
Assessment:
(a) Language: regular assignments in written and oral expression and in aural comprehension;
(b) Civilization: essays during session.

This subject consists of 2 parts: (a) French IA language and (b) French IA civilization.

(a) FRENCH IA LANGUAGE:

In this course the principal emphasis is on the improvement of aural comprehension of normal French conversation and the ability to express relatively simple ideas in grammatically correct French. Lectures are devoted to a linguistic study of the reading passages in L'Actualité française and a systematic coverage of basic French grammar. Regular attention is given to accurate discrimination and reproduction of French sounds and sound patterns.

TEXTBOOKS

Manson, J.E. ed. *Harrop's Shorter French and English Dictionary*. Harrap, London. (2 volumes - may be purchased in 1 vol.)

(b) FRENCH IA CIVILIZATION:

This is a study of various political, literary, artistic and social aspects of 20th century France. Representative literary texts and documents are treated to illustrate the development of both literary and social trends.

TEXTBOOKS

To be advised.
Second session; 8 credit points (2 hre lectures, 3 hre tutorials per week)
Assessment:
(a) Language: regular assignments in written and oral expression and in aural comprehension; 
(b) Literature: essays during session.
This subject consists of 2 parts: (a) French IB language and (b) French IB literature.

(a) FRENCH IB LANGUAGE:
The programme of aural comprehension, grammar and the linguistic analysis of written passages begun in French IA is sustained and regular opportunity is provided for conversation in small groups.

TEXTBOOKS
As for French IA.

(b) FRENCH IB LITERATURE:
Through a selection of 20th century French plays students are introduced to techniques of literary analysis.

TEXTBOOKS

200-LEVEL
EURO201 FRENCH IIC

First session; 8 credit points (2 hre lectures, 3 hre tutorials per week)
Assessment:
(a) Language: regular exercises in written and oral expression and in aural comprehension. There will be an oral examination at the end of session; 
(b) Literature: essays during session.
This subject consists of 2 parts: (a) French IIC language and (b) French IIC literature.

(a) FRENCH IIC LANGUAGE:
Written expression, reading, comprehension and formal grammar are emphasised. The skills in aural comprehension and spoken expression acquired in French 103 are further developed in tutorial groups and language laboratory sessions.

TEXTBOOKS

(b) FRENCH IIC LITERATURE:
This course involves the literary and linguistic study of a number of short stories and poems.

TEXTBOOKS
A selection of French poems to be distributed.

EURO202 FRENCH IID

Second Session; 9 credit points (2 hre lectures, 3 hre tutorials per week)
Assessment:
(a) Language: regular assignments in written and oral expression and in aural comprehension. There will also be an oral examination at the end of session; 
(b) Civilization: essays during session.
This subject consists of 2 parts: (a) French IID language and (b) French IID civilization.
(a) FRENCH IID LANGUAGE:

Through the analysis of written and recorded documents, different patterns of French usage are explored. Continuing stress is also placed on accurate written and spoken expression and reading comprehension.

TEXTBOOK


(b) FRENCH IID LITERATURE:

Through a selection of 20th century French plays students are introduced to techniques of literary analysis.

TEXTBOOKS


First session; 8 credit points (2 hrs lectures, 3 hrs tutorials per week)

Assessment:

(a) Language: regular assignments in written and oral expression and in aural comprehension.

(b) Literature: essays during session.

This subject consists of 2 parts: (a) French IID language and (b) French IID literature.

(a) FRENCH IIA LANGUAGE:

This course consists of a programme of aural comprehension in the language laboratory; practice in spoken French in conversation groups; regular exercises in written expression; and a small amount of more formal grammar and translation work.

TEXTBOOKS


(b) FRENCH IIA LITERATURE:

The novel and short story in 19th century France.

TEXTBOOKS


Second session; 8 credit points (2 hrs lectures, 3 hrs tutorials per week)

Assessment:

(a) Language: regular assignments in written and oral expression and in aural comprehension.

(b) Civilization: essays during session.

This subject consists of 2 parts: (a) French IIB language and (b) French IIB civilization.

(a) FRENCH IIB LANGUAGE:

This course consists of a programme of aural comprehension in the language laboratory; practice in spoken French in conversation groups; regular exercises in written expression; and a small amount of more formal grammar and translation work.
(b) FRENCH IIB CIVILIZATION:
French cinema and society since 1920. A study of the work of a number of 20th century French cineasts, with particular reference to their presentation of contemporary society. Selected films will be shown during session.

TEXTBOOKS
Films, Scenarios and textbooks to be studied will be advised by the Department early in 1979.

300-LEVEL
EURO301 FRENCH IIIC

First session; 12 credit points (2 hrs lectures, 3 hrs tutorials per week)
Assessment:
(a) Language: regular exercises in written and oral expression and in aural comprehension.
(b) Literature: essays during session.

This subject consists of 2 parts: (a) French IIIC language and (b) French IIIC literature.

(a) FRENCH IIIC LANGUAGE:
Familiarity with normal French expression is developed through aural comprehension exercises and language drills in the language laboratory, written comprehension and expression, a linguistic analysis of a range of written texts and conversation with a native French speaker.

TEXTBOOKS

(b) FRENCH IIIC LITERATURE:
The novel and short story in 19th century France

TEXTBOOKS

EURO302 FRENCH IIID

Second session; 12 credit points (2 hrs lectures, 3 hrs tutorials per week)
Assessment:
(a) Language: regular exercises in written and oral expression and in aural comprehension.
(b) Civilization: essays during session.

This subject consists of 2 parts: (a) French IIID language and (b) French IIID Civilization.

(a) FRENCH IIID LANGUAGE:
Familiarity with normal French expression is developed through aural comprehension exercises and language drills in the language laboratory, written comprehension and expression, a linguistic analysis of a range of written texts, and conversation with a native French speaker.

TEXTBOOKS
As per EURO301
(b) FRENCH IIID CIVILIZATION:

French cinema and society since 1920. A study of the work of a number of 20th century French cineasts with particular reference to their presentation of contemporary society. Selected films will be shown during session.

TEXTBOOKS

Films, scenarios and textbooks to be studied will be advised by the Department early in 1979.

EURO311 FRENCH IIIA

First session; 12 credit points (2 hrs lectures, 3 hrs tutorials per week)

Assessment:
(a) Language: regular exercise in aural comprehension, oral expression and stylistic analysis. There will be an oral examination at the end of session.
(b) Literature: essays during session.

This subject consists of 2 parts: (a) French IIIA language and (b) French IIIA literature.

(a) FRENCH IIIA LANGUAGE:

This course involves detailed stylistic analysis of written documents covering different registers of language and different literary periods. Programmes of aural comprehension in the language laboratory and conversation groups will be conducted throughout the session.

TEXTBOOKS


(b) FRENCH IIIA LITERATURE

French poetry 1850-1950.

TEXTBOOKS


EURO312 FRENCH IIIB

Second session; 12 credit points (2 hrs lectures, 3 hrs tutorials per week)

Assessment:
(a) Language: regular exercises in aural comprehension, oral expression and translation. There will be an oral examination at the end of session.
(b) Civilization: essays during session.

This subject consists of 2 parts: (a) French IIIB language and (b) French IIIB civilization.

(a) FRENCH IIIB LANGUAGE:

This course will examine techniques of precise translation from English to French. It further develops skills of written expression and reading comprehension, and provides regular sessions of aural comprehension in the language laboratory and conversation in small groups.

TEXTBOOKS


(b) FRENCH IIIB CIVILIZATION:

French cinema and society since 1920. A study of the work of a number of 20th century French cineasts with particular reference to their presentation of contemporary society. Selected films will be shown during session.

TEXTBOOKS

Films, scenarios and textbooks to be studied will be advised by the Department early in 1979.
400-LEVEL

DOUBLE SESSION; 48 CREDIT POINTS (9 HRS LECTURES/SEMINARS PER WEEK)

(a) APPROACHES TO LITERARY CRITICISM
A survey of literary criticism in France with particular emphasis on critical method since 1945.
Assessment is by seminar papers and essays.

TEXTBOOKS

(b) SUPPLEMENTARY STUDY
To be chosen in consultation with the Departmental Chairman.

(c) SPECIAL SUBJECT
A detailed study on a topic of French literature, civilization or language to be chosen in consultation with the Departmental Chairman. An essay of about 10,000 words in French is required.

(d) PHONETICS
An examination of the sounds of French, the principles governing their articulation and operation when combined in words and sentences.
Assessment will be based on regular transcription and dictation exercises and a written examination.

TEXTBOOK

(e) OLD FRENCH
A study of aspects of the semantic and morphological evolution of the French language from Latin to the sixteenth century through an examination of Old French documents, followed by the study of a major work of Old French literature.
Assessment will be based on regular written assignments.

TEXTBOOKS

(f) TRANSLATION
Development of skill in the precise rendition of English expression into French, and French to English will be developed through regular exercises in translation. Assessment will be based on these exercises.

TEXTBOOKS

(g) STYLISTICS
Through the analysis of a selection of written documents, students will be required to demonstrate their awareness of techniques employed by writers (especially at the levels of syntax and vocabulary) for the effective communication of their ideas.
This work will be complemented by the phonostylistic analysis of a series of recorded documents.
Assessment will be by regular written assignments and a final examination.
**TEXTBOOKS**


**CONVERSATION**

There will be weekly classes for conversation with a native French speaker.

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**ITALIAN**

**100-LEVEL**

**EURO153 INTRODUCTORY ITALIAN**

Double session; 12 credit points (8 hrs practical/tutorial per week)

Assessment: Regular exercises in aural-oral comprehension and reading and writing.

This is an audio-lingual course for beginners or near-beginners in Italian. The emphasis is initially on oral communication with a gradual development of competence in all four aspects of second-language acquisition: listening, speaking, reading and writing. Classes will be in tutorial groups of no more than 20 students and extensive use will be made of the language laboratory. Successful completion of EURO153 qualifies students for entry into EURO251 Italian IIC.

**TEXTBOOKS**


**EURO161 ITALIAN IA**

First session; 6 credit points (3 hrs lectures, 2 hrs tutorials per week)

Recommended Pre-requisite: Prior Italian study to an acceptable level: normally this would mean satisfactory performance in Italian at the N.S.W. H.S.C. or proficiency attained from another source such as attending school in Italy.

Assessment:

(a) Language: periodic assessments in aural-oral comprehension, reading comprehension, writing and composition;
(b) Literature: periodic comprehension achievement assessments and essays during session.

This subject consists of 2 parts: (a) Italian IA language and (b) Italian IA literature.

(a) **ITALIAN IA LANGUAGE**

In this course the principal emphasis is on the improvement of aural-oral comprehension of standard Italian, on fluency for oral communication and on stylistic analysis and development for reading comprehension and for written communication and composition. Italian phonemics and phonetics are reviewed. Major attention is given to lexical development and the analysis of language structure and its use.

**TEXTBOOKS**


**RECOMMENDED READING**

(b) ITALIAN IA LITERATURE

The Italian Theatre of the Twentieth Century: Through a selection of 20th Century Italian plays students are introduced to stylistics, techniques of literary analysis and an overview of modern Italian life as seen by a selection of Italian playwrights.

TEXTBOOKS


RECOMMENDED READING


Second session; 6 credit points (3 hrs lectures, 2 hrs tutorials per week)

Assessment:

(a) Language: periodic assessments in aural-oral comprehension, reading comprehension, writing and composition;
(b) Civilization: periodic comprehension achievement assessments and essays during session.

This subject consists of 2 parts: (a) Italian IB language and (b) Italian IB civilization.

(a) ITALIAN IB LANGUAGE

The programme begun in Italian IA is sustained with regular opportunity provided for the expression of ideas on subjects of interest presented by the various texts or chosen by the student. These themes are also used as a basis for the written expression required during the session.

TEXTBOOKS

As for Italian IA.

RECOMMENDED READING

As for Italian IA.

(b) ITALIAN IB CIVILIZATION

Modern Italy: this is a study of the cultural development of the Italian people since their unification as a modern state in 1860.

TEXTBOOKS


RECOMMENDED READING

Description of Subjects - European Languages

200-LEVEL

First session; 8 credit points (3 hrs lectures, 2 hrs tutorials per week)
Assessment:
(a) Language: periodic assessments in aural-oral comprehension, reading comprehension, writing and composition; there will be an oral and written examination at the end of the session;
(b) Literature: periodic comprehension achievement assessments and essays during session.
This subject consists of 2 parts: (a) Italian IIC language and (b) Italian IIC literature.

(a) ITALIAN IIC LANGUAGE

In this course the principal emphasis is on the improvement of aural-oral comprehension of standard Italian, on fluency for oral communication and on stylistic analysis and development for reading comprehension and for written communication and composition. Italian phonemics and phonetics are reviewed. Major attention is given to lexical development and the analysis of language structure and its use.

TEXTBOOKS


RECOMMENDED READING

An annotated bibliography with recommended readings will be supplied when classes begin.

(b) ITALIAN IIC LITERATURE

Through a selection of 19th and 20th Century Italian prose selections and novels students are introduced to Italian prose stylistics, techniques of literary analysis and an overview of modern Italian life as seen by a selection of Italian narrators.

TEXTBOOKS

And two of the following novels:

RECOMMENDED READING

Getto, Giovanni. *La prosa dal Carducci ai contemporanei*.

Second session; 8 credit points (3 hrs lectures, 2 hrs tutorials per week)
Assessment:
(a) Language: Periodic assessments in aural-oral comprehension, reading comprehension, writing and composition;
(b) Civilization: periodic comprehension achievement assessments and essays during session.
This subject consists of 2 parts: (a) Italian IID language and (b) Italian IID civilization.
(a) ITALIAN IID LANGUAGE

The programme begun in Italian IIC is sustained with regular opportunity provided for the expression of ideas on subjects of interest presented by the various texts or chosen by the student. These themes are also used as a basis for the written expression required during the session.

TEXTBOOKS

As for Italian IIC.

RECOMMENDED READING

As for Italian IIC.

(b) ITALIAN IID CIVILIZATION

The course is a study of Italian opera from its beginnings as an outgrowth of the Renaissance theatre in Italy to the genre as we know it today. The main composers will be studied with emphasis on the relationship between literature and libretto. The relationship between Italian opera and the other arts will also be treated.

TEXTBOOKS

The texts will be a selection of the following opera librettos:

Monteverdi. Orfeo ed Euridice.
Metastasio. Attilio Regolo.
Bellini. La Sonnambula.
Donizetti. Lucia di Lammermoor.
Verdi. La Traviata; Il Trovatore; Rigoletto; Otello.
Mascagni. Cavalleria Rusticana.
Puccini. Tosca; Le Bohème; Madame Butterfly.

RECOMMENDED READING


EURO261 ITALIAN IIA

First session; 8 credit points (3 hrs lectures, 2 hrs tutorials per week)

Assessment:

(a) Language: periodic assessments in aural-oral comprehension, reading comprehension, writing and composition. There will be an oral and written examination at the end of the session.

(b) Literature: periodic comprehension achievement assessments and essays during session.

This subject consists of 2 parts: (a) Italian IIA language and (b) Italian IIA literature.

(a) ITALIAN IIA LANGUAGE

Vocabulary building for oral fluency and advanced stylistics for written expression are emphasised. The skills acquired in ITALIAN IA AND IB are further developed in tutorial groups and language laboratory sessions.

TEXTBOOKS


RECOMMENDED READING

An annotated bibliography with recommended readings will be supplied when classes begin.

(b) ITALIAN IIA LITERATURE

Through a selection of 19th and 20th Century Italian prose selections and novels students are introduced to Italian prose stylistics, techniques of literary analysis and an overview of modern Italian life as seen by a selection of Italian narrators.
TEXTBOOKS


RECOMMENDED READING

As for EURO251.

EURO262 ITALIAN IIB

Second session; 8 credit points (3 hrs lectures, 2 hrs tutorials per week)
Assessment:
(a) Language: periodic assessments in aural-oral comprehension, reading comprehension, writing and composition. There will be an oral and written examination at the end of the session.
(b) Civilization: periodic comprehension achievement assessments and essays during session.

This subject consists of 2 parts: (a) Italian IIB language and (b) Italian IIB civilization.

(a) ITALIAN IIB LANGUAGE
The programme begun in Italian IIA is sustained.

TEXTBOOKS
As for Italian IIA.

RECOMMENDED READING
As for Italian IIA.

(b) ITALIAN IIB CIVILIZATION
The course is a study of Italian opera from its beginnings as an outgrowth of the Renaissance theatre in Italy to the genre as we know it today. The main composers will be studied with emphasis on the relationship between literature and libretto. The relationship between Italian opera and the other arts will also be treated.

TEXTBOOKS
The texts will be a selection of the following opera librettos:
Monteverdi. *Orfeo ed Euridice*.
Metastasio. *Attilio Regolo*.
Bellini. *La Sonnambula*.
Donizetti. *Lucrezia di Lammermoor*.
Verdi. *La Traviata, Il Trovatore, Rigoletto, Otello*.
Mascagni. *Cavalleria Rusticana*.
Puccini. *Tosca, La Bohème, Madama Butterfly*.

RECOMMENDED READING
As for EURO252.

300-LEVEL

EURO361 ITALIAN IIIA

First session; 12 credit points (3 hrs lectures, 2 hrs tutorials per week)
Assessment:
(a) Language: periodic assessments in aural-oral comprehension, reading comprehension, writing and composition. There will be an oral and written examination at the end of the session.
(b) Literature: periodic comprehension achievement assessments and essays during session.

This subject consists of 2 parts: (a) Italian IIIA language and (b) Italian IIIA literature.

(a) ITALIAN IIIA LANGUAGE
Extensive lexical and structural development and analysis for total oral fluency and comprehension will be stressed along with advanced stylistics for written expression. The skills acquired in Italian II are further developed in tutorial groups and language laboratory sessions.
TEXTBOOKS
Migliorini & Chiappelli. Lingua e stile. (grammatica, lessico, stilistica, versificazione, breve guida al comporre). Le Monnier, Firenze.

RECOMMENDED READING
An annotated bibliography with recommended readings will be supplied when classes begin.

(b) ITALIAN IIIA LITERATURE
This course involves the study of highlights of the masterpieces of the greatest writers of the Italian "Trecento": Dante, Petrarcha and Boccaccio.

TEXTBOOKS

RECOMMENDED READING

EURO362 ITALIAN IIIB
Second session; 12 credit points (3 hrs lectures, 2 hrs tutorials per week)
Assessment:
(a) Language: periodic assessments in aural-oral comprehension, reading comprehension, writing and composition. There will be an oral and written examination at the end of the session.
(b) Civilization: periodic comprehension achievement assessments and essays during session.
This subject consists of 2 parts: (a) Italian IIIB language and (b) Italian IIIB civilization.

(a) ITALIAN IIIB LANGUAGE
The programme begun in Italian IIIA (EURO361) is sustained.

TEXTBOOKS
As for Italian IIIA (EURO361).

RECOMMENDED READING
As for Italian IIIA (EURO361).
(b) ITALIAN IIIB CIVILIZATION

The Italian Renaissance: This is the study of the socio-economic political and cultural factors that led to the rebirth of classical civilization first in the city of Florence and then throughout the remainder of the Italian peninsula. Exemplary Renaissance humanistic literary texts will be studied and analysed along with monographs on Italian Renaissance painting, sculpture, architecture, music, philosophy and science.

TEXTBOOKS


RECOMMENDED READING


GENERAL STUDIES

General Studies exists to enrich the curriculum of the University in two main ways: (1) by broadening the student's range of study through the provision of areas of interest beyond his necessarily specialized professional course and (2) by attempting to exploit the interrelation between disciplines which (in the modern university) are generally studied as quite distinct subjects or courses, and to link such disciplines in relevant and fruitful ways.

1. NEW GENERAL STUDIES SUBJECTS

The subjects have no pre-requisite (other than a minimum of credit points for 200-level subjects) and are intended to be available to any student in the University.

SCHEDULE ENTRIES

Refer to the schedule entries for further details of subjects, including pre-requisites and exclusions. All subjects described in this section are included in Schedule A.

100-LEVEL

GENE102 INDUSTRIAL RELATIONS A: WAGE DETERMINATION IN AUSTRALIA

Second session; 6 credit points (2 lectures, 1 seminar/tutorial per week)

Assessment: Will be based on essays and tutorial/seminar exercises (a total of approx. 3000 words) and one 2-hour examination.

The objective of the course is to examine some of the institutional arrangements and other factors which influence wages determination in Australia. Special emphasis is placed on the development of the Arbitration System and the effects this has had on trade unions, employer groups and wages. Topics to be studied include the industrial situation before Arbitration, reasons for the adoption of an Arbitration system, an examination of alternatives to Arbitration (Wages Boards and Collective Bargaining), the mechanics of award making, differences between Commonwealth and State tribunals, Basic Wage, Margins, Productivity and Wages, Wages share in national income, Wages and Price Adjustment, Wages Drift, Market influences on wages, social factors influencing wage differentials, Total Wage, Minimum Wage and Wage Indexation.

TEXTBOOK


RECOMMENDED READING


200-LEVEL

GENE203 THE WORLD OF LANGUAGE A

First session; 8 credit points (2 lectures, 1 tutorial/demonstration per week)

Assessment: Will be based on 3 class tests, and assignments mainly in the form of short answers to specific questions in textbook.

An investigation of the nature and uses of Language, especially as it touches life and learning at so many points. At such points of contact the interdisciplinary aspects of the subject will be developed.

Part A will serve as a general introduction and then deal specifically with the phonological and semantic aspects.

TEXTBOOKS


RECOMMENDED READING

SECOND SESSION: 8 CREDIT POINTS (3 LECTURES, 1 TUTORIAL/DISCUSSION PER WEEK)

Aim: Examination will be based on 3 class tests, and weekly assignments mainly in the form of short answers to specific questions in textbook.

CONTINUES the investigation of aspects of language, such as grammar and usage, and looks at certain specific contexts of language use, e.g., educational, sociological, computational, literary.

TEXTBOOKS


RECOMMENDED READING


Second session; 8 credit points (2 lectures, 2 tutorials per week plus attendance at a prescribed film programme)

Assessment: One essay of up to 3,500 words and two 1,500 word tutorial papers

This subject deals with changes in the status of women from 1750 with special reference to women in England and Australia.

TEXTBOOKS


RECOMMENDED READING


GENE214 WOMEN IN SOCIETY B

First session; 8 credit points (2 lectures, 1 tutorial per week, 2 seminars per fortnight, plus attendance at a prescribed film programme)

Assessment: Will be based on written assignments and tutorial contribution

This subject will critically examine the proposition that science has been used to contribute to the oppression of women through those theories and practices which reflect and reinforce traditional sex roles and stereotypes. It will examine major biological, medical, psychological and sociological theories relating to women as well as the economic and political situation of women in different societies.

TEXTBOOKS


RECOMMENDED READING

A list of recommended reading will be provided at enrolment.

GENE220 CONCEPTS OF THE MODERN UNIVERSE

First session; 8 credit points (28 hrs lectures, 14 hrs tutorials, 14 hrs laboratory and one 3-hr field trip to the University Observatory)

Assessment: Will be based upon performance in tests, written assignments and one two-hour examination

Note: No special ability in Mathematics or Physics is required for this subject.

Astronomy is the most ancient of all sciences. Present-day astronomers are on the verge of great discoveries and the relationship between man and the universe is gradually being revealed. This subject will illustrate the techniques used by astronomers and will attempt to give an understanding of the universe as we presently understand it. A field trip to the University’s Observatory will give the opportunity to observe the phenomena discussed.

The Birth of Astronomy; The development of Astronomy as a Science; The Planets - A Description; The Formation of the Solar System; The Space Programme - Moon; To the Planets; The Search for Life; Future of the Space Programme; The Sun as a Star; The Violent Sun; Aurora; Eclipses; Starlight; The Message of Starlight; The Visible Stars; The Variation in Stars; The Birth and Death of Stars; Telescopes, Big and Small; The Milky Way; The Universe of Galaxies; The Universe in Perspective.

TEXTBOOK

**GENE220 CONCEPTS OF THE MODERN UNIVERSE (CONT'D)**

**RECOMMENDED READING**

- **Lovel, B.** *Man's Relation to the Universe.* Freeman, Calif., 1975.

**GENE221 SCIENCE, TECHNOLOGY AND SOCIAL PROGRESS**

Second session: 8 credit points (2 lectures/seminars, 1 tutorial per week)

**Assessment:** Will be based on two Seminar papers and one essay of approximately 5000 words.

The subject will study aspects of science and technology from the standpoint of their influence, both beneficial and detrimental, on the fabric and beliefs of society, with special reference to social progress.

The role of science and technology in society will be examined together with its effects on the relationship between humanity and nature and also on relationships between people. The origins of contemporary attitudes to science and technology in particular and progress in general will be examined from an historical and cross-cultural perspective.

In the light of this, a more detailed analysis of some contemporary issues will be made. Particular issues might include resource scarcity, energy production systems, environmental pollution, environmental quality, the Green Revolution, medicine and health, and professionalism. Alternatives to the current scientific and technological mode will be explored in the light of the changes in current social and political organization implicit in such alternatives.

**RECOMMENDED READING**


**GENE231 RELIGIOUS STUDIES A**

First Session: 8 credit points (1 lecture, 2 seminars per week)

**Assessment:** Will be based on two 2000-word essays and one 1-hour examination

**APPROACHES TO RELIGION:** One lecture and one tutorial each week will be devoted to linguistic, historical and philosophical problems to be found in the study of religion. One tutorial a week will concentrate on a second strand of the subject, namely the study of some major religious documents. The two strands will be closely integrated, and, in the first session, selections from the New Testament will be studied.

(a) The Language of Religion. This segment includes a study of: the distinctiveness of religious language; anthropomorphism, both essential and extravagant; the disclosure language of revelation; and the question of the necessity and validity of ‘religious’ words used to describe the transcendental. This study will adopt a linguistic and anthropological approach.

(b) Religion and History. An examination of the implications for historical understanding of the life of Jesus. Consideration will be given to the historical purpose of the authors of the New Testament and a Christian interpretation of history will be explored.

(c) Religion and Philosophy - Testimony and Religious Truth. An examination of the nature, relevance and validity of attempts to support religious beliefs and attitudes by appeals to historical and personal experience. Particular attention will be paid to (i) methodological problems surrounding religious inferences based on the content of the Gospels and (ii) attempts to support, or refute, religious belief by appeal to facts about the physical world.

**TEXTBOOKS**


**RECOMMENDED READING**

A list of recommended reading will be provided at enrolment.
GENE232 RELIGIOUS STUDIES

Religion in the Modern World: One lecture and one tutorial a week will be devoted to an examination of the relationship between religion and science, modern theistic and atheistic thinking, problems in the sociology of religion and the sociological analysis of religion in Australia today. In the second tutorial a study will be made of the Upanishads, the Bhagavad Gita and the Koran.


(b) Modern Theistic and Atheistic Thinkers. This section is an introduction to four thinkers who have exercised a significant influence on the religious thinking of twentieth-century man: Friedrich Nietzsche, Albert Camus, Teilhard de Chardin, and Dietrich Bonhoeffer.

(c) A Sociological Approach to Australian Religion. An examination of the function of religious belief in Australian culture.

TEXTBOOKS

RECOMMENDED READING
A list of recommended reading will be provided at enrolment.
A full three year programme of Geography subjects may be included in the pass BA, BSc or BCom degrees. Fourth year studies in Geography are available for the BA Honours degree only at this stage.

At 100-level, two one-session subjects are offered, one in Physical, the other in Human Geography. Students may choose to do either or both but those thinking of continuing their studies in the discipline are advised to enrol for both subjects to minimise limitations on subject choice in later years. At higher levels students may choose to emphasise either physical or human geography or to combine the two by selecting from the range of options available.

Normally, students wishing to enter the Fourth year Honours programme should have completed at least 16 credit points of Geography at 200-level and either 48 credit points of 300-level Geography or 36 credit points in 300-level Geography and 12 credit points in a cognate field approved by the Department, usually at credit level or better.

In any subject field classes may be required as a normal part of the work load. For details, consult individual subjects.

In all subjects overall grades may include the assessment of essays, tutorials, seminars, projects, periodic tests, field and practical work and/or terminal examinations. The precise weighting to be given each component will be discussed with classes early in the session.

**SCHEDULE ENTRIES**

Refer to the schedule entries for further details of subjects, including pre-requisites and exclusions. All subjects described in this section are included in Schedule A. Subjects which also appear in other schedules are:

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**100-LEVEL**

**GEOG102 THE HUMAN ENVIRONMENT**

*Second session; 6 credit points (1 lecture & workshop/tutorial per week, fieldwork)*
*Assessment: 1 examination, mid-session test, workshop/tutorial reports*

This subject focuses upon the spatial structure of modern, urban-industrial socio-economic systems and on the inter-relationships between structure and behaviour in the system. Comparative references will be made to situations in the developing world. Topics treated include socio-economic development and the evolution of population concentrations, metropolitan dominance and the spatial structuring of the metropolitan region, regional disparities in welfare and the quality of life, the internal structuring of the metropolis, population densities and social pathologies in the metropolis, urban expansion and renewal, environmental quality, migration and diffusion. Workshops focus on information gathering, processing and presentation in geographical research.

**TEXTBOOKS**


**RECOMMENDED READING**

This subject presents an introduction to geomorphology in general and Australian landforms in particular. Consideration is given to the development of landforms and associated landscapes; and to the geomorphic, biologic and climatic processes involved, and the way in which these vary over time. Topics covered include structural and tectonic landforms, weathering and soil formation, hillslope evolution, fluvial and coastal morphodynamics, and aspects of applied geomorphology.

TEXTBOOK


RECOMMENDED READING


GEOG192 THE PHYSICAL ENVIRONMENT (SCIENCE)

First session; 6 credit points (2 lectures, 3 hrs practical/tutorial per week, fieldwork)  
Assessment, Description and Books: See GEOG112

GEOG193 THE HUMAN ENVIRONMENT (SCIENCE)

Second session; 6 credit points (2 lectures, 3 hrs workshop/tutorial per week, fieldwork)  
Assessment, Description and Books: See GEOG102

200-LEVEL

GEOG202 URBAN LOCATION AND STRUCTURE

First session; 8 credit points (2 lectures, 3 hrs practical/tutorial per week)  
Assessment: 1 examination; 1 essay; 1 tutorial paper; practical session reports

This subject focuses on the city and the urban system as they have developed in western societies. Lecture and tutorial classes examine hypotheses and theories relating to city growth, the evolution and present structure of regional and national urban systems, the processes by which land uses and social groups are sorted in the urban landscape, and the possible impacts of technological developments on the future form and operation of cities and urban systems. Practical sessions concentrate on the basic quantitative techniques necessary for an understanding of the contemporary literature of urban analysis.

RECOMMENDED READING


GEOG206 ARID LANDSCAPES

First session; 8 credit points (2 lectures, 3 hrs practical/seminar tutorial per week, fieldwork)  
Assessment: 1 examination; practical/research reports; 1 essay
This introduction to arid landscapes is based on comparative studies of major deserts, especially those of Australia and North America. The main focus will be the interaction of past and present-day climates with landforms and vegetation. Attention will also be given to the diverse ways in which man has responded to and modified arid landscapes. Practical classes will deal with the analysis of aerial and satellite imagery of arid terrain.

**TEXTBOOKS**


**RECOMMENDED READING**


**GEOG210 SOUTH AND SOUTHEAST ASIA**

First session: 8 credit points (8 lectures, 3 hrs practical/seminar/tutorial per week)
Assessment: 1 examination; 2 essays

This subject concentrates on the physical, cultural and economic bases of internal variability in the South and Southeast Asian regions. Particular attention is paid to development patterns and problems e.g., modernisation of agriculture, industry, settlements, and transport. The development patterns and processes are discussed and illustrated by detailed regional studies.

**RECOMMENDED READING**

Malenbaum, W. Modern India’s Economy. Merrill, Columbus, 1971.

**GEOG212 BIOGEOGRAPHY**

Second session: 8 credit points (8 lectures, 2 hrs practical, 1 hr tutorial per week, 5 days, normally including a 4 day residential field camp)
Assessment: 1 examination; laboratory/fieldwork reports; tutorial essays

This subject examines the character and distribution of plant communities and soil types. Soil formation and characteristics are related to geomorphic, geological, chemical, botanical and climatic processes. Population dynamics, plant succession, species diversity, and climax associations are studied in the light of traditional contemporary theories in these fields, and particular attention is given to describing the unique characteristics of island communities. Present knowledge of glacial events, plate tectonics and the formation of land bridges is used to interpret the distribution of land vertebrates and plants, and late Quaternary changes in climate are related to associated changes in plant species and their abundance. The subject matter for the course is mainly drawn from North American and Australasian examples.
GEOG212 BIOGEOGRAPHY (CONT'D)

TEXTBOOKS


RECOMMENDED READING


GEOG220 SOCIAL BEHAVIOUR IN URBAN SPACE

Second session; 8 credit points (2 lectures, 2 hrs seminar/tutorial per week)
Assessment: Final examination, essays, seminar reports; the precise weighting of components will be determined after consultation with the class.

This subject takes as its starting point an understanding of the spatial structure of urban areas in the Western world i.e. their built environments and the patterning of residential differentiation which is the spatial reflection of the prevailing social order. Against this background the subject explores the meaning of this structure to urban dwellers, their spatial "images", the role of the urban environment - real and perceived - as a backdrop for and stimulus to social behaviour, and the significance of these issues for urban policy formulation. Topics to be considered will include "mental maps"; the neighbourhood; patterns of deviance; deprivation; social behaviours such as migration, voting behaviour, educational achievement; community action programmes; urban planning strategies.

RECOMMENDED READING


GEOG291 BIOGEOGRAPHY (SCIENCE)

Second session; 8 credit points (2 lectures; 2 hrs practical; 1 hr tutorial per week; Fieldwork 6 days, normally including a 4 day residential field camp)
Assessment, Description and Books: See GEOG212

GEOG296 ARID LANDSCAPES (SCIENCE)

First session; 8 credit points (2 lectures, 3 hrs practical/seminar/tutorial per week, fieldwork)
Assessment, Description and Books: See GEOG 206

300-LEVEL

GEOG311 FLUVIAL GEOMORPHOLOGY

First session; 12 credit points (2 lectures, 4 hrs practical/seminar/tutorial per week, fieldwork 6 days, normally 6 days in a residential field camp)
Assessment: 1 examination; laboratory/fieldwork reports; essays

This subject studies the processes which control the formation of stream channels and drainage basins. The course provides an introduction to fluid mechanics, describes the morphology of rivers and fluvial landscapes, examines the main processes operating in fluvial systems, and attempts to explain the formation of fluvial landforms. Emphasis is also given to the interpretation of sedimentary structures for reconstructing flow environments.
Surface water hydrology is included as an integral part of drainage basin analysis.

**TEXTBOOK**


**RECOMMENDED READING**


**GEOG391 FLUVIAL GEOMORPHOLOGY (SCIENCE)**

First session; 12 credit points (3 lectures, 3 hrs practical/seminar/tutorial per week, fieldwork 6 days, normally 4 days in a residential field camp)
Assessment, Description and Books: See GEOG311

**GEOG331 FLUVIAL GEOMORPHOLOGY (CONT'D)**

Second session; 12 credit points (3 lectures, 3 hrs practical/seminar/tutorial per week, fieldwork)
Assessment: 1 examination, essays, field project and class discussion

This subject considers contemporary processes affecting the geomorphology of sandy beaches and coastal lagoons. Topics covered include: nearshore morphology, wave and water circulation patterns; nearshore zone sediment transport; interactions among waves, water table and beach front geomorphology; aeolian processes and coastal dune morphology; and estuarine geomorphology.

Particular attention will be given to field measurement techniques, and the application of all principles considered to beaches of Southeastern Australia (Adelaide to Southern Queensland).

**PRELIMINARY READING**


**GEOG313 COASTAL GEOMORPHOLOGY**

RECOMMENDED READING

Davies, J.L. *Geographical Variation in Coastal Development.* Longmans, 1977.*

*Highly recommended
GEOG303 COASTAL GEOMORPHOLOGY (SCIENCE)

Second session: 12 credit points (2 lectures, 4 hrs practical/seminar/tutorial per week)
Assessment: Description and Books: See GEOG313

GEOG315 SOUTH AND SOUTH EAST ASIA (ADVANCED)

First session: 12 credit points (2 lectures, 4 hrs practical/seminar/tutorial per week)
Assessment: Description and Books: As for GEOG210 South and South East Asia

GEOG320 WELFARE: A GEOGRAPHICAL PERSPECTIVE

First session: 12 credit points (2 lectures, 4 hrs tutorial/workshop/seminar per week)
Assessment: Description of Books: As for GEOG210 South and South East Asia

A subject in applied human geography, Welfare: A Geographical Perspective deals with theoretical and empirical problems in the definition, measurement and explanation of socio-spatial variations in welfare, and in the planning and delivery of welfare services (such as income supplementation schemes, education, public transport and medical care). On a theoretical level, the subject explores such questions as the definition of welfare, the social, economic and political roots of sectoral and spatial welfare disparities, definitions of an acceptable distribution of welfare, alternative methods of achieving such distributions, and the resolution of supposedly conflicting objectives (notably, equity and efficiency). On a more immediate and empirical level, attention is directed toward techniques for describing and evaluating the distributions of welfare, access-opportunity, welfare services and service-consumption, methods of determining optimal and acceptable facility-locations, problems faced by contemporary service providers, and methods of manipulating the spatial distributions of public, private and charitable welfare services.

RECOMMENDED READING


GEOG322 RURAL AND REGIONAL DEVELOPMENT

Second session: 12 credit points (2 lectures, 4 hrs practical/seminar/tutorial per week)
Assessment: Description of Books: As for GEOG210 South and South East Asia

The focus of this subject is on practical questions relating to rural and regional development in various parts of the world. It considers regional development theories as means to understanding the emergence within national space-economies of 'problem regions' of various types, and canvasses some of the strategies employed by planning agencies in the resolution of regional stresses in these areas. Particular issues examined will include the identification of the dimensions of rural and regional problems, the cases for and against strategies of decentralisation from metropolitan regions, the formulation of rural development plans and the resolution of problems associated with their implementation, and policies for rural settlement in undeveloped areas. The principal illustrative context will be Australia, but cases drawn from other parts of the world will be utilised where appropriate.

RECOMMENDED READING

Final year Honours students are required to write a thesis of approximately 20-25,000 words on an approved topic embodying the results of a piece of supervised research and to participate in a seminar programme.

Double session; 48 credit points

In the first session the seminar programme is concerned with questions of methodological and philosophical significance to research and teaching in modern Geography. In addition candidates will be involved in a directed reading/seminar course which explores a particular research field and culminates in the preparation of a research proposal. The second session is devoted mainly to research but participation in a workshop seminar is also required.

Assessment is based upon seminar papers and thesis: the thesis is examined both externally and internally.

RECOMMENDED READING

Provided in class.
GEOL101 and 102 form the basic 100-level subjects and are the pre-requisites for all 200- and 300-level subjects in Geology. The subjects GEOL111 and 112 (Geology, Resources and the Environment I and II) are intended to be non-professional and will not normally be considered sufficient pre-requisites for the Geology II Science programme.

A no-credit point bridging course (intended to bring a student to a standard sufficient to undertake 200-level subjects) is available to students who wish to proceed on to 200 and 300-level subjects after satisfactorily completing GEOL111 and GEOL112. Students interested in doing this bridging course should contact the Chairman of the Department as soon as possible after the examination results for GEOL111 and GEOL112 have been posted.
GEOL101 INTRODUCTORY GEOLOGY, CRYSTALLOGRAPHY, MINERALOGY, PETROLOGY

First session; 6 credit points (3 hrs lectures and 3 hrs practical per week)
Assessment: 1 theory examination; 3 multiple choice tests; 1 practical examination; 1 field tutorial essay

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).

Petroleum: Field occurrence, lithological characters, classification and structural relationships of igneous, sedimentary and metamorphic rocks.

Economic Geology: Descriptive mineralogy of minerals of economic importance. Occurrence of ore deposits, coal and petroleum geology.

Practical Work: Study of crystal models in clinographic and stereographic projection. Identification and description of common minerals and rocks in hand-specimen. Two days of field tutorials will be conducted.

TEXTBOOKS
Wollongong Sheet Geological Map. 1:250,000. Mines Department, New South Wales.

RECOMMENDED READING
Mason, B. & Berry, L.G. Elements of Mineralogy. Freeman, San Francisco, 1968.*

GEOL102 PHYSICAL GEOLOGY, PALAEONTOLOGY AND STRATIGRAPHY, MAPPING

Second session; 6 credit points (3 hrs lectures and 3 hrs practical per week)
Assessment: 1 theory examination; 1 multiple choice test; 3 exercises; 1 practical examination; 1 field tutorial essay


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, 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. Two days of field tutorials will be conducted.

TEXTBOOKS

*The purchase of these books is suggested for students who intend to proceed to later units in Geology.
Description of Subjects - Geology

GEOL102 PHYSICAL GEOLOGY, PALAEOONTOLOGY AND STRATIGRAPHY, MAPPING (CONT'D)

Wollongong Sheet Geological Map 1:250,000. Mines Department, New South Wales.
A mapping handbook prepared by the Department of Geology.

RECOMMENDED READING:


GEOL111 GEOLOGY, RESOURCES AND THE ENVIRONMENT I

First session; 6 credit points (2½ hrs lecture, ¼ hr seminar and 1 hr tutorial/practical per week (on average)
Assessment: 1 theory examination; 2 essays; 1 multiple choice test; 1 practical examination; practical book mark


Practical Work: Will illustrate the lecture material. Two days of field tutorials will be conducted.

TEXTBOOKS

Bickford, M.E. et al. ('Contributing Consultants'). Geology Today. C.R.M. Books, Del Mar, California, 1973. (This is also a textbook for GEOL112).

The following books could be an alternative to Bickford et al., but do complement it.

RECOMMENDED READING

Menard, F. Geology, Resources, and Society. W.H. Freeman, San Francisco, 1974. A list of other relevant books will be distributed at the start of the course.

GEOL112 GEOLOGY, RESOURCES AND THE ENVIRONMENT II

Second session; 6 credit points (2½ hrs lectures, ¼ hr seminar, and 1 hr tutorial/practical per week (on average)
Assessment: 1 theory examination; 2 essays; 3 class exercises; 2 practical examinations


Practical Work: Will illustrate the lecture material. Two days of field tutorials will be conducted.

TEXTBOOKS


*The purchase of these books is suggested for students who intend to proceed to later units in Geology.
RECOMMENDED READING

A list of other relevant books will be distributed at the start of the course.

200-LEVEL

Note: GEOL201 is a pre-requisite for eight of the more advanced courses in Geology.

GEOL201 CRYSTALLOGRAPHY, CRYSTAL CHEMISTRY AND MINERALOGY

First session; 6 credit points (2 hrs lectures and 4 hrs practical per week)
Assessment: 1 theory examination; practical exercises; 1 practical examination

Crystallography: Stereographic projection, Wulff net. Crystal classes and point groups.
Bravais lattices. Zones, zone law. Internal symmetry, space groups. Use of spherical triangles.
Napierian triangles.

Optical Crystallography: Properties of waves, refraction in isotropic and anisotropic media.


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 laboratory study of the optical properties of minerals using the petrological microscope. A study of minerals in hand-specimen and thin-section.

TEXTBOOKS


RECOMMENDED READING

Berry, L.G. & Mason, B. Mineralogy. Freeman, San Francisco, 1959.

GEOL202 IGNEOUS AND METAMORPHIC PETROLOGY

Second session; 6 credit points (2 hrs lectures and 4 hrs practical per week)
Assessment: 1 theory examination; practical exercises; 1 practical examination

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: Study of rocks in hand-specimen and thin-section.
TEXTBOOK


RECOMMENDED READING


GEOL203 PRINCIPLES OF GEOLOGICAL MAPPING

Second session; 6 credit points (1 hr lectures, 1½ hrs practical per week and up to a total of 10 days of fieldwork)
Assessment: 1 theory examination; 2 reports; field mapping assignments; practical exercises; seminars

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.

RECOMMENDED READING


GEOL204 PALAEOLOGY

First session; 6 credit points (3 hrs lectures and 3 hrs practical per week)
Assessment: 1 theory examination; 1 practical examination; 1 essay; practical exercises


TEXTBOOKS


RECOMMENDED READING


GEOL205 SEDIMENTOLOGY

Second session; 6 credit points (2 hrs lectures and 4 hrs practical per week)
Assessment: 1 theory examination; 1 practical examination; 2 assignments; practical exercises


GEOL205 SEDIMENTOLOGY (CONT'D)

TEXTBOOKS


RECOMMENDED READING


GEOL206 STRATIGRAPHY AND STRATIGRAPHIC PALAEONTOLOGY

First session; 6 credit points (2 hrs lectures and 4 hrs practical per week)

Assessment: 1 theory examination; 2 assignments; 1 practical examination

Description: Rock, time and time-rock unit concepts. Correlation methods and problems in the Pre-Cambrian and the Phanerozoic. A systematic treatment of the geological column discussing type successions together with other important overseas successions and those of representative Australian regions. The history of the Tasman, Caledonian, Alpine and other geosynclines.

Practical: Demonstrations of suites of rocks and fossils from important successions.

TEXTBOOK


RECOMMENDED READING


GEOL207 GEOPHYSICS

Second session; 6 credit points (2 hrs lectures and 4 hrs practical per week)

Normally Geophysics should be taken as a 300-level subject.

Assessment: 1 theory examination; laboratory practical exercises; 1 field project essay, 1 seminar

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 the geomagnetic field, especially as recorded in rocks and similar material. The sun, planets, moon, meteorites and their relationships. Geochronology - methods of radiometric dating and correlation. Geothermy - thermal properties of the earth, heat flow.

TEXTBOOK


RECOMMENDED READING


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:

Recommended Reading:

GEOL208 STRUCTURAL GEOLOGY AND GEOTECTONICS

Second session: 6 credit points (2 hrs lecture, 1 hr tutorial and 4 hrs practical per week)

Assessment: 1 theory examination; laboratory practical exercises; laboratory modelling; 1 essay

Description: 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. Plate tectonics. Structural analysis, and 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.


Textbooks:

Recommended Reading:

GEOL210 MICROPALAEONTOLOGY

First session: 8 credit points (1 hr lecture, 1 hr tutorial and 4 hrs practical per week)

Assessment: 1 theory examination; 1 practical examination; 2 seminars; practical exercises

Description: Methods of preparation for microscopic study of microfossil concentrates from sediment samples; study of general attributes of these concentrates. Studies of taxonomy, ecology and evolution of the important microfaunal groups (Foraminifera, Radiolaria, Ostracoda, Conodonta) and the important microfloral groups (spores, pollens, diatoms, coccoliths, chitinozoans).
RECOMMENDED READING


GEOL211 BASIN ANALYSIS AND OCEANOGRAPHY

First session; 6 credit points (2 hrs lectures and 4 hrs practical per week)
Assessment: 1 theory examination; 4 assignments; 1 seminar


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


RECOMMENDED READING


GEOL212 FOSSIL AND NUCLEAR FUELS

First session; 6 credit points (2 hrs lectures and 4 hrs practical per week)
Assessment: 1 theory examination; 1 practical examination; 1 assignment; practical exercises


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.

RECOMMENDED READING


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 cuttings samples.

TEXTBOOKS AND RECOMMENDED READING


GEOL213 ECONOMIC GEOLOGY AND EXPLORATION GEOCHEMISTRY

Second session; 6 credit points (2 hrs lectures and 4 hrs practical per week)
Assessment: 1 theory examination; practical exercises; 1 essay; 1 practical examination

Description: 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. Geochemical prospecting.

Practical: An introductory course in ore microscopy. The mineragraphy of some important Australian ore bodies.

TEXTBOOKS


RECOMMENDED READING


GEOL214 GEOLOGY FOR ENGINEERS

(2 hrs lectures and 3 hrs practical per week)
Assessment: 1 theory examination; 2 essays; 1 multiple choice test; 1 practical examination


Practical Work: Will include introductory mineralogy, petrology (including weathered rocks) and introductory mapping. Field work (two days) will be a necessary part of the practical work. Satisfactory reports of the practical work must be completed.


**RECOMMENDED READING**


**GEOL251 GEOLOGY FOR MINING ENGINEERS I**

*First session; (2 hrs lectures, 2 hrs practical and seminars per week)*

**Assessment:**
- 1 theory examination
- 2 essays
- 1 multiple choice test
- 1 practical examination
- practical book mark

**Description:**

**Practical Work:**
- Will illustrate the lecture material. Two days of field tutorials will be conducted.

**TEXTBOOKS AND RECOMMENDED READING**


**300-LEVEL**

Field tutorials are an integral part of 300-level subjects.

**GEOL301 ADVANCED CRYSTALLOGRAPHY, CRYSTAL CHEMISTRY AND MINERALOGY**

*Second session; 6 credit points (2 hrs lectures and 4 hrs practical per week)*

**Assessment:**
- 1 theory examination
- practical exercises
- 1 practical examination

- Optical Crystallography:
  - Oil immersion techniques and mineral determination by 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.

- Crystal Chemistry:
  - Solid-solid phase transitions, transformations of secondary co-ordination, transformations of primary co-ordination, transformations of the bond type, transformations of order-disorder, order-disorder reactions and the feldspars. Phase transitions at high pressures.
  - Crystal chemistry of the pyroxenes and amphiboles. Crystal pathology. Aluminium silicates in metamorphism.

- Crystallography, Mineralogy:
  - An introduction to modern techniques used in crystallography and mineralogy -- X-ray diffraction, X-ray fluorescence, electron microscopy, electron probe, spectroscopy, D.T.A., D.T.G., S.E.M.

- Geochemistry:
  - Elements of structural chemistry and some principles of thermodynamics. Structure of the atom, isotopes, radioactivity, ionic size, aggregates of ions, the crystalline state.
GEOL301 ADVANCED CRYSTALLOGRAPHY, CRYSTAL CHEMISTRY AND MINERALOGY (CONT'D)

Practical: Determination of unknown mineral grains by immersion techniques and in thin-section. Exercises involving use of the universal stage. Determination of crystal class and cell dimensions from powder photographs. Silicate melts. Calculation of problems in geochemistry.

TEXTBOOKS

RECOMMENDED READING

GEOL302 ADVANCED IGNEOUS AND METAMORPHIC PETROLOGY

First session: 6 credit points (2 hrs lectures and 4 hrs practical per week)
Assessment: 1 theory examination; practical exercises; 1 practical examination

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: Study of suites of rocks in hand-specimen and thin-section. Thin-section studies of rock textures. Use of phase diagrams.

TEXTBOOKS

RECOMMENDED READING

GEOL303 ADVANCED GEOLOGICAL MAPPING AND GEOMORPHOLOGY

First session: 6 credit points (1 hr lecture and 1/4 hrs practical per week and up to a total of 10 days of fieldwork)
Assessment: 1 theory examination; field mapping assignments and reports; seminars; practical exercises

Advanced Geological Mapping: Fieldwork will normally be conducted at the end of the vacation before first session. Students intending to enrol in this unit should consult the Chairman of the Department during the previous session.
Description: Lecture and laboratory tutorial course work will include the use of aerial photographs (including stereoscopic exercises) and satellite photographs in compiling geological maps. The emphasis will be on the use of these techniques in geological map compilation. The field tutorial will be similar to that outlined for Principles 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.

Geomorphology: The study of landforms and some other aspects of geomorphology.

Practical: Study of different landforms in stereoscopic pairs of photographs.

RECOMMENDED READING


GEOL304 PALAEONTOLOGY

First session; 6 credit points (3 hrs lectures and 3 hrs practical per week)
Assessment, Description and Books: See GEOL204

GEOL305 SEDIMENTOLOGY

Second session; 6 credit points (2 hrs lectures and 4 hrs practical per week)
Assessment, Description and Books: See GEOL205

GEOL306 STRATIGRAPHY AND STRATIGRAPHIC PALAEONTOLOGY

First session; 6 credit points (2 hrs lectures and 4 hrs practical per week)
Assessment, Description and Books: See GEOL206

GEOL307 GEOPHYSICS

Second session; 6 credit points (2 hrs lectures and 4 hrs practical per week)
Assessment, Description and Books: See GEOL207

GEOL308 STRUCTURAL GEOLOGY AND GEOTECTONICS

Second session; 6 credit points (2 hrs lectures and 4 hrs practical per week)
Assessment, Description and Books: See GEOL208

GEOL309 MATHEMATICAL METHODS IN GEOLOGY

First session; 6 credit points (2 hrs lectures and 4 hrs practical per week)
Assessment: 1 theory examination; 6 assignments.


Practical: Preparation of simple computer programmes. Use of library programmes to solve geological problems.

TEXTBOOKS

Description of Subjects - Geology

GEOL309 MATHEMATICAL METHODS IN GEOLOGY (CONT'D)

RECOMMENDED READING


GEOL310 MICROPALAEONTOLOGY

First session; 6 credit points (1 hr lecture, 1 hr tutorial and 4 hrs practical per week)
Assessment, Description and Books: See GEOL 210

GEOL311 BASIN ANALYSIS AND OCEANOGRAPHY

First session; 6 credit points (2 hrs lectures and 4 hrs practical per week)
Assessment, Description and Books: See GEOL211

GEOL312 FOSSIL AND NUCLEAR FUELS

First session; 6 credit points (2 hrs lectures and 4 hrs practical per week)
Assessment, Description and Books: See GEOL212

GEOL313 ECONOMIC GEOLOGY AND EXPLORATION GEOCHEMISTRY

Second session; 6 credit points (2 hrs lectures and 4 hrs practical per week)
Assessment, Description and Books: See GEOL213

GEOL351 GEOLOGY FOR MINING ENGINEERS II

First session; 8 credit points (2 hrs lectures, 1 hr tutorial, 3 hrs practical per week)
Assessment: 1 theory examination; practical exercises; field tutorial essay; 1 practical examination

Mineralogy and Petrology: Including identification by elementary microscope techniques. Petrography of rocks stressing building materials.

Structural Geology: Strength properties of rocks, alteration and discontinuities, geological influences on the stability of mine openings. Geological basis of natural and artificial slope stability.


Introductory Geophysics: Geophysical methods with reference to hazard assessment in engineering works, seismic techniques.

Systematic Palaeontology and Stratigraphy.
Elementary Structures and Mapping.

Practical: Practical work includes the identification of minerals, rocks and ores in hand-specimen and thin-section. Geological mapping description of fossils. Seminars. Three days of field tutorials will be conducted.

TEXTBOOKS AND RECOMMENDED READING


Double session; 48 credit points
Pre-requisites: Students must satisfy requirements for the award of the degree of BSc in the Faculty of Science and have satisfactorily completed at least four 200-level and normally eight 300-level Geology subjects including: GEOL201, 202, 203, 204/304, 205/305, 206/306, 207/307 and 208/308.

Assessment: 2 theses; 4 theory examinations; 4 seminars

Description: The formal parts of this subject will consist of at least four courses to be offered per year from the following: history of geological thought, some topical aspects of geology, mineral paragenesis, rock magnetism, biostratigraphy, mathematical geology, coal and petroleum geology, sedimentology. The other parts of the course will be field and laboratory projects, seminars and study of selected references.

RECOMMENDED READING

The Head of the Department should be consulted. However, readings in "History of Geological Thought" will be selected from the following:

SCHEDULE ENTRIES

Refer to the schedule entries for further details of subjects, including pre-requisites and exclusions. All subjects described in this section are included in Schedule A.

100-LEVEL

HIST102 ENGLISH SOCIAL HISTORY, 1815-1945

Double session; 12 credit points (1 lecture, 2 tutorials per week)
Assessment: 3 essays: 1,000 words, 2,000 words & 3,000 words; 2 tutorial papers: 750 words each
This subject is concerned with the shape of English society and in particular with changes in the class structure and in political, religious, legal and educational institutions. The other, and related, areas of concern are industrialisation, popular taste and culture in the 19th century, crime and public order, Victorian respectability, the emergence of the welfare state, and the social impact of the two world wars.

PRELIMINARY READING


TEXTBOOKS


RECOMMENDED READING


200-LEVEL

HIST221 AUSTRALIAN SOCIAL HISTORY, 1850-1930 A

Double session; 16 credit points (1 lecture, 2 tutorials per week)
Assessment: 4 essays: 1500 to 3000 words 70%; tutorial performance 20%; an examination 10%

The programme for the two sessions is as follows:
(a) Australian social history from 1850 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 1930. The emphasis remains as in session 1.
HIST221 AUSTRALIAN SOCIAL HISTORY, 1850-1930 A (CONT'D)

Credit for completion of the first session will be given only after successful completion of the second session.

RECOMMENDED READING

Barcan, A. A Short History of Education in N.S.W. Martindale, Sydney, 1965.

HIST222 FRENCH HISTORY, 1700-1940 A

Double session; 16 credit points (1 lecture, 2 tutorials per week)

Assessment: Essays: total number of words 7,500 (normally three 2,500 word essays).

Session 1 - The chief events in French History from the age of Louis XIV to 1815 with emphasis on the growth of the state; the relationship of state and society; and with particular reference to science, enlightenment and revolution in French history to 1815. The emphasis in this part of the course will be on the relationship of the Enlightenment to the French Revolution.

Session 2 - The approach will be the same as in Session 1, the only difference being in the period to be covered, namely from 1815 to 1940. The course will include a detailed study of France in the age of Napoleon III.

RECOMMENDED READING

Harvey, D.J. France Since the Revolution. N.Y., 1968.
Stearns, P.N. European Society in Upheaval. N.Y., 1975.

HIST223 RELIGION AND SOCIETY IN BRITAIN FROM THE REFORMATION A

Double session; 16 credit points (1 lecture, 2 tutorials per week)

Assessment: Two 2,500 word essays, 2 reports on documents and 6 summaries of selected extracts

The subject is concerned with the history of religion in its relations to three themes: (a) Crisis in Government with particular reference to the Henrician Reformation, the Elizabethan Settlement, the Puritan Revolution, and the Revolution of 1688. (b) Social developments such as the rise of capitalism, the industrial revolution, and the relations between social classes. (c) The history of ideas with particular reference to the challenge to religious faith from rationalism and the scientific revolution.

Session 1: 1517 - 1738 - From the Reformation to the Conversion of John Wesley.

Session 2: From the Evangelical Revival to the end of the Victorian Age.

TEXTBOOK

Documents: Documents to be studied in tutorials will be selected from Elton, G.R. The Tudor Constitution. C.U.P., 1960.
RECOMMENDED READING

Bennett, G.V. & Walsh, J.D. eds. Essays in Modern Church History. Black, 1966.

HIST224 MODERN SOUTHEAST ASIAN HISTORY A

Double session: 18 credit points (1 lecture, 2 tutorials per week)
Assessment: 2 short essays, 1 long essay and one 2 hour examination.

The basic aim of this subject is to introduce students to the nature and history of neighbouring societies which differ radically from those of European type; to discuss key problems of culture contact, especially those stemming from Western colonialism; and to analyse the historical sources of major problems in the region.

The subject begins with a broad geographical, social, and philosophical analysis. Then follows some consideration of the principal pre-European states and empires, with the stress on the origin and nature of their particular culture patterns. The central part of the course deals with the European impact and the Southeast Asian response, contrasting Dutch, British, French and Australian systems of administration in the East Indies, Malaya, Indochina, and New Guinea respectively. This leads on naturally to discussion of the causes of current social, economic and political patterns and problems.

Generally, the lectures concentrate on specific examples of particular problems (e.g. Western political forms in Indonesia), with some reference by extension to Burma, Thailand, and the Philippines. Some lectures (e.g. on medieval Indonesian art) are illustrated; and tapes are used in some tutorials.

RECOMMENDED READING

HIST224 MODERN SOUTHEAST ASIAN HISTORY A (CONT'D)


HIST226 REFORMATION AND REVOLUTION, 1517-1660 A

First session subject: 8 credit points (1 lecture, 2 tutorials per week)
Method of Assessment: One 2,500 word essay, 1 report on a document and 3 summaries of selected extracts.
Other details: As for the session 1 component of HIST223

HIST227 RELIGION AND SOCIETY IN BRITAIN 1738-1860 A

Second session: 8 credit points (1 lecture, 2 tutorials per week)
Assessment: One 2,500 word essay plus 1 report on documents and 3 summaries of selected extracts
Other details: As for the session 2 component of HIST223

HIST231 RUSSIA, THE SOVIET UNION AND INTERNATIONAL COMMUNISM 1885-1962 A

Double session: 16 credit points (1 lecture, 2 tutorials per week)
Assessment: Two 2,000 word seminar papers per session and one 2,000 word essay during the year plus one critical commentary on tutorial papers per week

Session 1 will be devoted to a discussion of the collapse of the Tsarist Empire, the rise of Social-Democracy in Russia, its links with the International Socialist movement and the formation of the Soviet Union. Session 2 will concentrate on the development of the Soviet Union, the origins of the Cold War and the establishment and activities of the Communist International. Throughout, class relationships will be explored and economic development and its implications for society and politics will be emphasized.

Credit for completion of the first session will be given only after successful completion of the second session.

RECOMMENDED READING


300-LEVEL

HIST311 FRENCH HISTORY 1700-1940 B

Double session: 24 credit points (1 lecture, and 2 tutorials per week)
Assessment: Four 2,500 word essays and an examination
Other details: As for HIST222

HIST312 MODERN SOUTHEAST ASIAN HISTORY B

Double session: 24 credit points (1 lecture, 2 tutorials per week)
Method of Assessment: 2 short essays, 1 long essay and one 2 hour examination
Other details: As for HIST224
DOUBLE SESSION; 24 CREDIT POINTS (1 LECTURE, 2 TUTORIALS PER WEEK)

ASSESSMENT: Two 5,000 word essays, 4 reports on documents and 8 summaries of selected extracts.

THE SUBJECT IS CONCERNED WITH THE HISTORY OF RELIGION IN ITS RELATIONS TO THREE THEMES: (a) THE CRISIS IN GOVERNMENT WITH PARTICULAR REFERENCE TO THE HENRICIAN REFORMATION, THE ELIZABETHAN SETTLEMENT, THE PURITAN REVOLUTION, AND THE REVOLUTION OF 1688. (b) SOCIAL DEVELOPMENTS SUCH AS THE RISE OF CAPITALISM, THE INDUSTRIAL REVOLUTION, AND THE RELATIONS BETWEEN SOCIAL CLASSES. (c) THE HISTORY OF IDEAS WITH PARTICULAR REFERENCE TO THE CHALLENGE TO RELIGIOUS FAITH FROM RATIONALISM AND THE SCIENTIFIC REVOLUTION.

SESSION 1: 1517 - 1738 - FROM THE REFORMATION TO THE CONVERSION OF JOHN WESLEY.

SESSION 2: FROM THE EVANGELICAL REVIVAL TO THE END OF THE VICTORIAN AGE.

TEXTBOOK


RECOMMENDED READING

AS FOR HIST223

HIST316 REFORMATION AND REVOLUTION, 1517-1660 B

FIRST SESSION; 12 CREDIT POINTS (1 LECTURE, 2 TUTORIALS PER WEEK)

METHOD OF ASSESSMENT: One 5,000 word essay, 2 reports on a document and 4 summaries of selected extracts.

OTHER DETAILS: AS FOR THE SESSION 1 COMPONENT OF HIST223

HIST317 RELIGION AND SOCIETY IN BRITAIN 1738-1860 B

SECOND SESSION; 12 CREDIT POINTS (1 LECTURE, 2 TUTORIALS PER WEEK)

ASSESSMENT: One 5,000 word essay, 2 reports on documents and 4 summaries of selected extracts.

OTHER DETAILS: AS FOR THE SESSION 2 COMPONENT OF HIST223

HIST318 ENGLISH HISTORY 1865-1945 B

DOUBLE SESSION; 24 CREDIT POINTS (1 LECTURE, 2 TUTORIALS PER WEEK)

ASSESSMENT: Two 5,000 word essays or one 10,000 word essay, plus tutorial attendance and performance.

THE SUBJECT IS CONCERNED WITH THE PERSONALITIES AND POLITICAL IMPACTS OF SIX MAJOR POLITICIANS OF THE PERIOD COVERED BY THE SUBJECT. THESE ARE: GLADSTONE, DISRAELI, JOSEPH CHAMBERLAIN, RAMSAY MACDONALD, LLOYD GEORGE AND WINSTON CHURCHILL. THE ATTITUDES OF EACH TO PARTY AFFILIATIONS AND SOCIAL REFORM WILL RECEIVE PARTICULAR ATTENTION, AS WILL THE RISE AND DECLINE OF THE LIBERAL PARTY.

CREDIT FOR COMPLETION OF THE FIRST SESSION WILL BE GIVEN ONLY AFTER SUCCESSFUL COMPLETION OF THE SECOND SESSION.

PRELIMINARY READING

NEITHER TEXTBOOKS NOR REFERENCE BOOKS ARE RECOMMENDED FOR THIS COURSE. STUDENTS ARE EXPECTED TO DO THEIR OWN BIBLIOGRAPHICAL WORK. HOWEVER, THE FOLLOWING BOOKS, WHICH CONTAIN USEFUL BIBLIOGRAPHIES, AND ARE AVAILABLE IN THE CAMPUS BOOKSHOP, ARE RECOMMENDED FOR PRELIMINARY READING:

ADELMAN, PAUL. GLADSTONE, DISRAELI AND LATER VICTORIAN POLITICS. LONDON, 1970.

MORGAN, K.0. THE AGE OF LLOYD GEORGE. LONDON, 1975.

HIST319 MODERN INDONESIAN AND MALAYSIAN HISTORY B

FIRST SESSION; 12 CREDIT POINTS (1 LECTURE, 2 TUTORIALS PER WEEK)

ASSESSMENT: Two 2,500 word essays plus a tutorial paper.

STUDY WILL FOCUS ON FOUR MAIN ELEMENTS: (a) BASIC CULTURAL CONCEPTS AND PATTERNS - THIS WILL INVOLVE BRIEF REFERENCE TO HISTORY IN THE PRE-MODERN PERIOD; (b) ASSESSMENTS OF THE WESTERN COLONIAL IMPACT (POLITICAL, SOCIAL, AND ECONOMIC); (c) CONCEPTUAL AND SOCIAL CHANGE RELATED TO THE EMERGENCE OF MODERN NATIONALISM; (d) SOME KEY PROBLEMS IN THE TWO COUNTRIES, TREATED IN HISTORICAL PERSPECTIVE.
HIST319 MODERN INDONESIAN AND MALAYSIAN HISTORY B (CONT'D)

RECOMMENDED READING


HIST320 HISTORY OF MODERN MAINLAND SOUTHEAST ASIA B

Second session; 12 credit points (1 lecture, 2 tutorials per week)
Assessment: Two 2,500 word essays and one tutorial paper

This subject is designed to build on the foundation provided by the previous subject (HIST319). It takes further examples of East-West contact, in the region from Burma through to the Philippines, and introduces students to the elements of social, political, and economic change, within the broad context of conceptual and institutional interaction. Major foci will be the policies of the various colonial powers, and Southeast Asian responses; and the nature of modern nationalism.

RECOMMENDED READING


HIST321 RUSSIA, THE SOVIET UNION AND INTERNATIONAL COMMUNISM 1885-1962 B

Double session; 24 credit points (1 lecture, 2 tutorials per week)
Assessment: Two 2,000 word seminar papers per session; one 2,000 word essay and a group project of 5,000 words; plus one critical commentary on tutorial papers per week

Other details: As for HIST321

HIST323 ENGLISH HISTORY 1906-1924

Second session; 12 credit points (Two 1½ hr seminars per week)
Assessment: One 5,000 word essay or two 2,500 word essays, plus tutorial attendance and performance plus one 1,000 word tutorial paper

The subject is concerned with the personalities and political impacts of major politicians of the period covered by the course. The attitudes of each to party affiliations and social reform will receive particular attention, as will the rise and decline of the Liberal Party.

PRELIMINARY READING


RECOMMENDED READING

Students are required to do their own bibliographical work.
Description of Subjects - History 257

HIST325 THEORY AND METHOD OF HISTORY (ADVANCED)

Double session; 8 credit points (1 tutorial per week)

Assessment: One long essay (5,000-7,000 words)

Note: This subject will be a pre-requisite for entry to History IV Honours in 1980 and following years.

A detailed study of the nature of historical enquiry.

RECOMMENDED READING

Students to compile their own bibliographies.

400-LEVEL

HIST401 HISTORY IV (HONOURS)

Double session: 48 credit points

Students are advised to contact the Department. On broad outline, the Course consists of a thesis, worth 24 credit points and two courses, each of which counts for 12 credit points. Details of these courses are available in the Department.
HISTORY AND PHILOSOPHY OF SCIENCE

SCHEDULE ENTRIES

Refer to the schedule entries for further details of subjects, including pre-requisites and exclusions. All subjects described in this section are included in Schedule A.

100-LEVEL

HPS131 GREEK SCIENCE A

Double session; 12 credit points (2 lectures, 1 tutorial per week)
Assessment: 2 examinations; 4 essays

It is commonly stated that natural science as an intellectual discipline had its origins in Greece about 600 B.C. The subject begins with a brief account of Egyptian and Babylonian science and civilizations and examines in detail the following topics: presocratic philosophy; the metaphysics of Socrates; Plato and Aristotle and the influence these views had on the development of science; Aristotle and his scientific thought; Hellenistic science and the decline of Greek Science. Each topic is discussed in the context of political, social, religious and economic developments which influenced the progress of science itself and which were influenced in turn by that progress. The course does not require any previous training in science or mathematics.

TEXTBOOKS


HPS130 THE SCIENTIFIC REVOLUTION AND THE SEVENTEENTH CENTURY A

Double session; 12 credit points (2 lectures, 1 tutorial per week)
Assessment: 2 examinations; 4 essays

In the seventeenth and early eighteenth centuries, Europeans began to look at the world around them in new ways. New questions were developed. Fundamental changes took place in science in this period; Galileo created a new dynamics; Kepler revised the laws of planetary motion; and Newton, building on their work, set out a radically new theory of the universe. In medicine, anatomy and physiology as well as in philosophy and religion, old, established ideas were challenged by Vesalius, Harvey, Bacon, Descartes, Leibniz and many others. Taken all together, the work of these men amounted to an intellectual revolution.

The subject begins with a brief examination of major trends in Greek and mediaeval science, and proceeds to discuss five groups of topics.

Bacon and Baconianism: Empiricism; Experimentation and the virtuosi; the idea of Progress.
Descartes and Cartesianism: Rationalism; the Revival of Atomism; Materialism.
Newton and Newtonianism: the "New Philosophy"; the implications of the New Dynamics and Astronomy; the Mathematisation of Science.
Science and Religion: The Decline of Superstition and the Growth of Scepticism; the Physico-Theologists; Deism and the Argument of Design.
General Topics: Philosophy and Science; Methodology, the Problem of Certainty; Literature, Language and Science; the Battle of the Ancients and Moderns; the Advent of the Age of Reason. Early Scientific Institutions.

TEXTBOOKS

Description of Subjects - History and Philosophy of Science 259

200-LEVEL

HPS231 GREEK SCIENCE B

Double session; 16 credit points (2 lectures, 1 seminar per week)
Assessment: 1 examination; 2 essays; 2 seminar papers
Description and Books: See HPS131 Greek Science A

HPS230 THE SCIENTIFIC REVOLUTION AND THE SEVENTEENTH CENTURY B

Double session; 16 credit points (2 lectures, 1 seminar per week)
Assessment: 1 examination; 2 essays; 2 seminar papers
Description and Books: See HPS130 The Scientific Revolution and the Seventeenth Century A

HPS232 THE DARWINIAN REVOLUTION A

Double session; 16 credit points (2 lectures, 1 tutorial per week)
Assessment: 1 examination; 2 essays; 1 research project

The eighteenth century brought new thinking with it; new thinking in terms of change. Social and political change were soon to grow out of it, and the idea of species change grew with them. Evolution and revolution had a common philosophical background, and the idea of evolution was to initiate its own revolution in the linked sciences of biology and geology and their religious and social ramifications of the late nineteenth century.

The subject will begin with an examination of eighteenth century ideas on progress, perfectability and history; the 'discovery of time' and the rejection of the static Newtonian picture; the 'temporalizing' of the Great Chain of Being.

This will provide a foundation for the study of the emergence of evolutionary ideas through the application of historical explanation to the biological problems of form and development, culminating in the fully articulated Darwinian theory of evolution by natural selection.

A detailed examination of the Darwinian theory of evolution, its philosophic, social, and cultural dimensions will follow.

Students will be expected to read extensively and to engage in cooperative group research in analysing the impact of Darwinism on later nineteenth and twentieth century scientific, religious, social, economic or political ideas. An inter-disciplinary approach will be stressed in selecting themes for research.

TEXTBOOKS


RECOMMENDED READING


HPS213 SCIENCE AND SOCIETY 1A

First session; 8 credit points (2 lectures, 1 tutorial per week)
Assessment: 1 examination; 1 essay; 1 tutorial paper

An account of the growth of the scientific movement from the early 17th to the 19th century, in relation to
(a) its social and cultural environment and the effects of social structures and social changes upon it;
(b) its internal organisation;
(c) its effects, intellectual and (via technology) material, upon society.

The emergence of an independent social role for science, as formulated by Bacon and actualized by the Royal Society and other organizations in the 17th century, and its subsequent development in Europe and elsewhere to the end of the 19th century; with emphasis on topics such as the Enlightenment, the Industrial Revolution, education, government and public attitudes in relation to the scientific movement in different countries during this period.
Description of Subjects - History and Philosophy of Science

HPS213 SCIENCE AND SOCIETY 1A (CONT'D)

TEXTBOOKS


HPS223 SCIENCE AND SOCIETY 2A

Second session; 8 credit points (2 lectures, 1 tutorial per week)
Assessment: 1 examination; 1 essay; 1 tutorial paper

Science in 20th century society, dealing with such topics as science and war, the relation between
science, technology and economic growth, government science policy, the movement for social res­
ponsibility in science and the anti-science movement, ethical issues in scientific progress,
modern pressures on traditional scientific values, science in totalitarian and developing
countries, the dilemmas of "trans-science".

TEXTBOOKS


HPS225 HISTORICAL PERSPECTIVES ON SCIENTIFIC THEORIES

Second session; 8 credit points (2 lectures, 1 tutorial per week)
Assessment: 2 essays; examination

This course will critically examine scientific theories - their origins, their nature, their
fruitfulness and their replacement. Historical examples will be selected from both the physical
and biological sciences. A number of philosophically interesting problems relating to scientific
theories will be subjected to analysis. Topics considered will include theory construction, the
roles of observation and perception, meaning change, incommensurability, inter-theory relation­
ships, relationships between theory and observation, the functions of models, the principles of
theory establishment and rejection.

TEXTBOOKS

Kuhn, T.S. The Structure of Scientific Revolutions. 2nd ed. Chicago University Press, Chicago,

RECOMMENDED READING

Lakatos, I. & Musgrave, A. eds. Criticism and the Growth of Knowledge. Cambridge University
Losee, J. A Historical Introduction to the Philosophy of Science. Oxford University Press, London,
1972.

300-LEVEL

HPS332 THE DARWINIAN REVOLUTION B

Double session; 14 credit points (2 lectures, 1 tutorial, 1 seminar per week)
Assessment: 1 examination; 2 essays; 1 research project; 2 seminar papers

An advanced subject in the historical and philosophical development of the idea of biological
evolution and its impact on Western thought.

Description and Books: See HPS232 The Darwinian Revolution A

HPS314 PHILOSOPHICAL AND IDEOLOGICAL PERSPECTIVES OF SCIENCE 1B

First session; 12 credit points (2 lectures, 1 tutorial per week; 2 seminars per fortnight)
Assessment: 1 examination; 1 essay; 1 tutorial paper; 1 seminar paper

This subject will focus on the epistemological issues of the status and demarcation of scientific
knowledge, beginning with an examination of the problem of induction and the different resolutions
of it suggested by philosophers and scientists such as Hume, Mach, Popper and Medawar. The more
sociological views of science put forward by Kuhn, Ravetz and Ziman will then be discussed,
TEXTBOOKS

RECOMMENDED READING

HPS324 PHILOSOPHICAL AND IDEOLOGICAL PERSPECTIVES OF SCIENCE 2B

Second session; 12 credit points (2 lectures, 1 tutorial per week; 2 seminars per fortnight)
Assessment: 1 examination; 1 essay; 1 tutorial paper; 1 seminar paper
An initial examination of the contention that science is neither objective nor ideologically neutral. This will be followed by an analysis of selected scientific theories, focusing on the demonstration of values and ideological influences in these theories and examining the ways in which these same theories in their turn have been used as scientific validation of the very values and ideologies they embody.

The major area of study used to develop this thesis will be evolutionary biology and ideology.

TEXTBOOKS

RECOMMENDED READING
worth 16 credit points and four courses, each of which counts for 8 credit points. Details of these courses are available in the Department.

400-LEVEL

Double session; 48 credit points

Students are advised to contact the Department. On broad outline, the course consists of a thesis, worth 16 credit points and four courses, each of which counts for 8 credit points. Details of these courses are available in the Department.
From 1979, students wishing to take a major sequence of Mathematics may enrol in a Bachelor of Mathematics Degree. The only requirement relating to compulsory subjects in this degree is that a student must take at least 84 credit points (*) of subjects selected from Schedule F (24 of which must form a substantial and coherent study at the 300-level). By virtue of pre- and co-requisites, MATH101 - Mathematics IA will need to be included, and it is strongly advised that MATH102 - Mathematics IB should also be included.

(*) It is possible to take only 72 credit points of subjects from Schedule F (24 of which must form a substantial and coherent study at the 300-level), provided a further minimum of 48 credit points are taken from subjects offered by, or on behalf of, one other department of the University (24 of which must form a substantial and coherent study at the 300-level).

**SCHEDULE ENTRIES**

Refer to the schedule entries for further details of subjects, including pre-requisites and exclusions. The subjects described in this section are included in the following schedules:

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<th>Subject</th>
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<td>MATH101</td>
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<td>MATH202</td>
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<td>MATH211</td>
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<td>MATH411</td>
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**TEXTBOOKS AND RECOMMENDED READING**

Students will be advised on the appropriate texts for each subject in the first lecture of the subject. In all cases, the lecturer should be consulted before textbooks are purchased.

**METHOD OF ASSESSMENT**

Unless otherwise indicated, all 100-, 200-, 300- and 400-level subjects offered by the Department of Mathematics will be assessed by formal examination, tests and assignments.

**100-LEVEL**

**MATH101 MATHEMATICS IA**

**Double session; 12 credit points (6 hrs per week)**

**Assumed knowledge for the subject Mathematics IA is the 3 unit N.S.W. H.S.C. course.**

(a) Calculus Methods (Functions, differentiation, integration and applications, partial differentiation).

(b) Algebra Methods (Complex numbers, matrices, determinants, systems of equations, \( e, j, k \) vectors).

(c) Numerical Analysis (Finite difference calculus, iterative techniques, elementary FORTRAN).

(d) Further Calculus Methods (Polar co-ordinates, introduction to sequences and series, first and second order differential equations).

**RECOMMENDED READING**

Double session; 12 credit points (6 hrs per week)

This subject is normally taken by students who intend to major in any branch of Mathematics. It presents the fundamentals as a background for further study at higher levels in Mathematics. The subject is recommended for intending teachers in Mathematics.

(a) Linear Algebra (Real numbers, functions, real n-dimensional space, bases, linear functions, matrices, applications to eigenvalues, difference equations, differential equations).

(b) Introduction to Analysis (Further properties of real numbers, sequences, series, limits, continuity, derivatives, Riemann integration, fundamental theorem of calculus).

(c) Introduction to Probability and Statistics (Discrete and continuous random variables, the binomial, normal and Poisson distributions with applications).

(d) Linear Programming (Inequalities, convex sets, physical problems, solution of L.P. problems by graphical means and the Simplex Method).

RECOMMENDED READING


Giles, J.R. Real Analysis - An Introductory Course. Wiley.


MATH201 MATHEMATICS IIA

Double session; 12 credit points (4 hrs per week)

(a) Multivariate Calculus (Partial derivatives and their applications, multiple integrals).

(b) Fourier Series.

(c) Numerical Analysis (Numerical processes applied to functions, equations, differential equations, integration, matrices).

(d) Complex Variable (Complex functions, analytic functions, Laurent series, singularities, residues, contour integrals and applications).

RECOMMENDED READING


Froberg, C.E. Introduction to Numerical Analysis. Addison-Wesley.

Kaplan, W. Advanced Calculus. Addison-Wesley.


MATH211 MATHEMATICS IIB

Double session; 12 credit points (4 hrs per week)

(Essential for majors in Applied Mathematics)

(a) Vector Calculus (Vector functions of several variables, general integral theorems).

(b) Boundary Value Problems (Further work on the solution of differential equations, including series solutions, introduction to boundary value problems, eigenvalues and eigenfunctions, and applications).

(c) Matrix Analysis (Further properties of matrices, eigenvalues, eigenvectors, quadratic forms).

(d) Dynamical Systems (System behaviour, transfer functions, convolution, auto-correlation, spectral analysis).

RECOMMENDED READING


Davis, H.E. Vector Analysis. Allyn and Bacon.

Kaplan, W. Operational Methods for Linear Systems. Addison-Wesley.


Description of Subjects - Mathematics

MATH202 MATHEMATICS II A

Double session; 6 credit points (2 hrs per week)
Vector algebra, vector calculus, general integral theorems, matrix algebra, eigenvalues and
eigenvectors, linear transformations, vector spaces.

RECOMMENDED READING

MATH221 MATHEMATICS II C

Double session; 12 credit points (4 hrs per week)
(Essential for majors in Pure Mathematics)
(a) Linear Analysis (Linear Algebra, eigenvalues and eigenvectors, diagonalization and canonical
forms, inner product spaces, orthogonalization, application to Fourier series and linear
differential equations).
(b) Multivariate Differential Analysis (Differentiable functions between $R^n$ and $R^m$, the derivat-
ive as a linear function, the chain rule, implicit and inverse function theorems).
(c) Real Analysis (Sequences and series of functions, uniform convergence).
(d) Elementary theory of finite groups.

RECOMMENDED READING
Bartle, R.G. The Elements of Real Analysis. Wiley.
Kreider, D., Kuller, R., Ostberg, D., Perkins, F. An Introduction to Linear Analysis. Addison-
Wesley.
Lang, S. Analysis I. Addison-Wesley.

MATH231 MATHEMATICS IID

Double session; 18 credit points (4 hrs per week)
(Essential for majors in Probability, Statistics, or Operations Research)
(a) Probability and Statistics (Sampling distributions, estimation, tests of hypotheses,
regression, analysis of variance, design of experiments, and applications).
(b) Finite Mathematics and Combinatorial Analysis (A selection of topics from Graph Theory,
networks, finite Markov chains, game theory, and combinatorics).

RECOMMENDED READING
Beckenbach, E.F. Applied Combinatorial Analysis. Wiley.

MATH233 MATHEMATICS IIP

Double session; 6 credit points (2 hrs per week)
Probability, discrete and continuous distributions, random variables and expected values, sampling
distributions, estimation, testing of hypotheses, regression analysis and analysis of variance.

RECOMMENDED READING
McGraw-Hill.

MATH234 STATISTICAL METHODS

Double session; 6 credit points (2 hrs per week; 1 lecture & 1 tutorial)
Session I: Frequency distributions, histograms, measures of central tendency and dispersion;
Mean, Mode, Median, Range, Standard Deviation, Probability, Normal Distribution, Testing of
Hypothesis, one sample case.

TEXTBOOK

MATH234 STATISTICAL METHODS (CONT'D)

Double session (6 hrs per week)
(a) Matrix algebra, eigenvalues, eigenvectors, vector algebra, vector calculus, general integral theorems.
(b) Partial differentiation, multiple integrals, Fourier series, special functions, complex variable.
(c) Further differential equations, series solutions, Laplace and other transforms, introduction to boundary value problems.

RECOMMENDED READING

MATH281 MATHEMATICS IIE

First session (4 hrs per week)
Partial differentiation, multiple integrals, Fourier series, further work in the solution of differential equations of the first and second order.

RECOMMENDED READING

MATH282 MATHEMATICS IIM

Double session (3 hrs per week)
(a) Multivariate Calculus (Partial derivatives and their applications, multiple integrals).
(b) Fourier Series.
(c) Complex Variable (Complex functions, analytic functions, Laurent series, singularities, residues, contour integrals and applications).

RECOMMENDED READING
Kaplan, W. *Advanced Calculus*. Addison-Wesley.
Polya, G. & Latta, G. *Complex Variables*. Wiley.

MATH284 MATHEMATICS IIA PART 1

Double session (1 hr per week)
Successful completion of both Mathematics IIA Part 1 and Mathematics IIA Part 2 will give a student equivalent standing of having passed the subject Mathematics IIA.

RECOMMENDED READING
Froberg, C.E. *Introduction to Numerical Analysis*. Addison-Wesley.
Double session; 12 credit points (4 hrs per week)

(a) Special Functions (Error, gamma, beta, Bessel, hypergeometric, Legendre, Laguerre and Hermite functions).
(b) Integral Transforms (Laplace, Fourier, Hankel and Mellin transforms).
(c) Conformal Transformations (Elementary transformations, Schwarz-Christoffel transformation, and applications).
(d) Variational Calculus (Fundamentals).

RECOMMENDED READING


MATH302 MATHEMATICS IIIB

Double session; 12 credit points (4 hrs per week)

(a) Ordinary Differential Equations (The study of the existence, uniqueness and stability of solutions to linear and non-linear ordinary differential equations and applications).
(b) Partial Differential Equations (First order linear and some non-linear partial differential equations and second order partial differential equations of Mathematical Physics).

RECOMMENDED READING


MATH303 MATHEMATICS IIIC

Double session; 12 credit points (4 hrs per week)

Numerical Analysis (Recurrence relations, iterative methods, least squares, Gaussian elimination, LR decomposition, eigenvalues and eigenvectors of matrices, LR and QR algorithms, multiple integrals, boundary value problems).

RECOMMENDED READING

Froberg, C. Introduction to Numerical Analysis. Addison-Wesley.
Varga, R.S. Matrix Iterative Analysis. Prentice-Hall.

MATH311 MATHEMATICS IIDD

Double session; 12 credit points (4 hrs per week)

(For majors in Applied Mathematics)

(a) Ocean Dynamics (Properties of water waves and ocean currents).
(b) Continuum Mechanics (Elementary continuum mechanics with selected problems from elasticity theory and fluid dynamics).

RECOMMENDED READING

Double session; 12 credit points (4 hre per week)
(For majors in Pure Mathematics)

(a) Abstract Algebra (Algebraic structures such as groups, rings, fields, Boolean algebras and their quotient structures, embedding of integral domains, construction of the reals, introduction to Galois theory and number theory).

(b) Logic and Set Theory (Axiomatic, propositional, and predicate calculus; axiomatic set theory, cardinal and ordinal numbers, the axiom of choice, Zorn's Lemma and applications).

RECOMMENDED READING
Dean, R.A. Elements of Abstract Algebra.
Herstein, I.N. Topics in Algebra. Ginn Blaisdell.
Paley, H. & Weichsel, P.M. A First Course in Abstract Algebra. Holt.

MATH322 MATHEMATICS IIIF

Double session; 12 credit points (4 hre per week)
(For majors in Pure Mathematics)

(a) Functional Analysis (Hilbert and Banach spaces, linear operators, dual spaces, application to (some of) Fourier series, differential and integral equations, quadrature formulae, orthogonal functions and expansions).

(b) Topology (Elementary general topology, open and closed sets, continuity, applications to differential and integral equations, approximation theory).

(c) Complex Analysis (Further topics in complex analysis including properties of entire and meromorphic functions).

RECOMMENDED READING
Simmons, G.F. Introduction to Topology and Modern Analysis. McGraw-Hill.

MATH331 MATHEMATICS IIIG

Double session; 12 credit points (4 hre per week)
(For majors in Probability, Statistics and Operations Research)

(a) Operations Research (Linear, non-linear and dynamic programming, queueing theory, theory of games, simulation).

(b) Stochastic Processes (Probability measures, random variables, branching processes, renewal processes, Markov chains, tests of significance, sequential analysis).

RECOMMENDED READING

MATH334 DESIGN AND ANALYSIS

Double session; 6 credit points (2 hre per week: 1 lecture & 1 tutorial)

Topics will include the structure and planning of experiments; one way analysis of variance; two-way analysis of variance; three way analysis of variance; multiple comparison procedures; non-parametric analysis of variance -- the Kruskal-Wallis test; analysis of co-variance; regression analysis; multiple correlation and multiple regression; correlations involving ranks and dichotomous data; and introduction to factor analysis.

RECOMMENDED READING
Description of Subjects - Mathematics

MATH351 OCEAN DYNAMICS

Double session; 12 credit points (4 hrs per week)
This subject has been approved as part of a coherent study at 300-level when taken together with GEOG313 Coastal Geomorphology.

Special Functions (Error, gamma, beta, Bessel, hypergeometric, Legendre, Laguerre and Hermite functions).

Integral Transforms (Laplace, Fourier, Hankel and Mellin transforms).

Edge waves, tidal dynamics, estuary and coastline dynamics, introduction to ocean currents.

RECOMMENDED READING

400-LEVEL
MATH401 MATHEMATICS IV (HONOURS)

Double session; 48 credit points
A student taking Honours would normally take a selection of topics at 4th year level (subject to approval by the Chairman of the Department) and a minor thesis, under the supervision of an appropriate member of staff.

The subject may include topics from: Numerical Analysis; Ocean Dynamics; Nuclear Reactor Theory; Computing Science; Statistics; Probability; Operations Research; Functional Analysis; Measure Theory; Abstract Algebra; Logic; Set Theory; Topology; Perturbation Theory; Matrix Analysis; Continuum Mechanics; Non-Linear Partial Differential Equations; Mathematical Methods; or Classical Analysis.

RECOMMENDED READING
See Lecturer concerned.

MATH411 MATHEMATICS HONOURS SEMINAR

Double session; 12 credit points
The Honours Seminar, which is available as a separate subject to candidates for MSc or DipMath only, requires the undertaking of a reading course in the appropriate field of study and the presentation of a substantial essay together with a Seminar to the Department of Mathematics.

The method of assessment of the Mathematics Honours Seminar will be on the quality of the essay and of the Seminar and will be made by the relevant departmental staff.

COHERENT STUDIES IN MATHEMATICS

Either of the following methods may be used by Mathematics students to declare the 24 credit points of substantial and coherent study at 300-level referred to in the Bachelor Degree Requirements 16.2, 20A.2.2 and 20A.3.1.

(a) By the successful completion of any 24 credit points from 300-level Mathematics subjects; or
(b) By the successful completion of both: MATH351 Ocean Dynamics, and GEOG313 Coastal Geomorphology.

SUGGESTED UNDERGRADUATE DEGREE PROGRAMMES IN MATHEMATICS

The following information is intended as a guideline to the student in selecting suitable supplementary subjects to do to make a reasonable pattern for Mathematics degrees in the various fields of Mathematics.

All students are expected to consult with the Mathematics Department and Faculty advisors before committing themselves completely to any particular pattern, whether outlined below or not.
Description of Subjects - Mathematics

It is emphasised that the following programmes are based on the usual 48 credit points per year, totalling 144 credit points over 3 years.

In the following, unless otherwise indicated, Mathematics, Ocean Dynamics and Computing Science subjects are each 12 credit points.

PROGRAMME 1: APPLIED MATHEMATICS (General)
First Year - Mathematics IA and IB (and 24 other credit points)
Second Year - Mathematics IIA, IIB (at least 1 other Schedule F Mathematics subject, and 12 other credit points)
Third Year - Mathematics IIIA, IIID (and 2 other Schedule F Mathematics subjects, e.g. Mathematics IIIB, IIC, IIIF or IIIG)

PROGRAMME 2: NUMERICAL ANALYSIS
First Year - Mathematics IA
Second Year - Mathematics IIA and at least one of Mathematics IIB or IIC
Third Year - Mathematics IIIA and IIC

Supplementary Subjects:
For a Mathematics major it is recommended that the complete course should also include Computing Science I, Computing Science II, Mathematics IB and at least one of Mathematics IIIB, or Mathematics IIID. If Mathematics IB is taken in First Year, the sequence Mathematics IID, Mathematics IIIG is also possible.

PROGRAMME 3: OCEAN DYNAMICS
(a) Mathematical
First Year - Mathematics IA, IB
Second Year - Mathematics IIA, IIB, IID
Third Year - Mathematics IIIA, IIC, IIID and possibly either IIB or IIIG
Alternative
Third Year - Ocean Dynamics, Mathematics IIIA, IIC, IIIG

Supporting Programmes:
36 credit points chosen from 100-level Physics, Geography, Geology; 200-level GEOG212 Biogeography (8 credit points), GEOL211 Basin Analysis and Oceanography (6 credit points); 300-level GEOG313 Coastal Geomorphology (12 credit points)

(b) Mathematics and Coastal Dynamics
First Year - Mathematics IA, GEOG112 and 102, GEOL101 and 102, BIOL101
Second Year - Mathematics IIA, IIB, IIP (6 credit points), GEOL211
Third Year - Mathematics IIIA, Ocean Dynamics, GEOG313, GEOG311 plus 4 credit points which could be achieved by replacing Mathematics IIP with Mathematics IB

PROGRAMME 4: DECISION SCIENCES
First Year - Mathematics IA and IB (and 24 other credit points)
Second Year - Mathematics IIA, IID (and at least 1 other Schedule F Mathematics subject, and 12 other credit points)
Third Year - Mathematics IIIG (and 3 other Schedule F Mathematics subjects, e.g. Mathematics IIIA, IIB and IIC)

PROGRAMME 5: PURE MATHEMATICS (General)
First Year - Mathematics IA and IB (and 24 other credit points)
Second Year - Mathematics IIA, IIC (and at least 1 other Schedule F Mathematics subject, and 12 other credit points)
Third Year - Mathematics IIIE, IIIF (and 2 other Schedule F Mathematics subjects, one possibly being Mathematics IIIA)
PROGRAMME 6: INTENDING HIGH SCHOOL TEACHERS IN MATHEMATICS

First Year - Mathematics IA and IB (and 24 other credit points, possibly including Computing Science I)
Second Year - 4 second year Schedule F Mathematics subjects
Alternative - 3 second year Schedule F Mathematics subjects (and 12 other credit points)
Second Year
Third Year - 4 third year Schedule F Mathematics subjects
Alternative - 3 third year Schedule F Mathematics subjects (and 12 other credit points)
Third Year

Notes on PROGRAMME 6 for Students who are on W.S.W. Teacher Education Mathematics Scholarships:

1. The minimum requirement for these students is 60 credit points of Mathematics, including a coherent study at 300-level, although a student is encouraged to do a Mathematics degree (through Schedule F), which requires either
   (a) 84 credit points of Schedule F Mathematics subjects as a minimum; or
   (b) 72 credit points of Schedule F Mathematics subjects, together with 48 credit points of subjects offered by, or on behalf of, one other Department in the University.

2. In order to gain increments in the "Teachers College Scholarships" allowance, students should seek advice on the possibility of including some 200- and 300-level Education subjects in their programme.

3. These students should get written approval for their programme from the Education Department's advisory office before embarking on any programme in mathematical studies.

PROGRAMME 7: MATHEMATICS/PSYCHOLOGY

First Year - Mathematics IA and IB, Psychology IA and IB (and 12 other credit points)
Second Year - Any 24 credit points of 200-level Schedule F Mathematics subjects, and any 18 credit points 200-level Psychology subjects, (and 6 other credit points)
Third Year - Any 24 credit points of 300-level Schedule F Mathematics subjects, and any 24 credit points 300-level Psychology subjects

Notes on PROGRAMME 7:

A student wishing to take this combined programme (e.g. under degree regulations 20A.3.1 and 20A.3.2) should consult jointly with the Departments of Mathematics and Psychology to determine the best possible combinations of 200- and 300-level subjects for the type of employment the student may be requiring at the completion of the degree.

PROGRAMME 8: LOGIC (and PHILOSOPHY)

First Year - Mathematics IA and IB, PHIL112 Logic A (6 credit points) and 18 other credit points at least 12 of which should be in Philosophy
Second Year - Mathematics IIA and IIC, PHIL231 Formal Logic A and PHIL222 Set Theory (8 credit points each) and 8 other credit points (e.g. PHIL211 or 212)
Third Year - PHIL381 Formal Logic D (8 credit points) and PHIL362 Modal Logic (12 credit points), and 24 credit points of Schedule F Mathematics (probably including Mathematics IIIF), and 4 other credit points.

PROGRAMME 9: MATHEMATICS/GEOGRAPHY

(a) Physical Geography
First Year - Mathematics IA and IB, GEOG102 and GEOG112 (and 12 other credit points)
Second Year - Mathematics IIA and IIR, GEOG212 and GEOG206 (and 8 other credit points)
Third Year - Mathematics IIA and IIO, GEOG311 and GEOG313
Alternative - Mathematics IIC and Ocean Dynamics, GEOG311 and GEOG313
Third Year

(b) Human Geography
First Year - Mathematics IA and Mathematics IB, GEOG102 and GEOG112 (and 12 other credit points)
Second Year - Mathematics IIA, IIO and IIS, GEOG202 and GEOG220 (and 2 other credit points, which could be achieved by replacing Mathematics IIS by Mathematics IIB)
Description of Subjects - Mathematics

Third Year - Mathematics IIIA and IIIC, GEOG320 and GEOG322

Notes on PROGRAMME 9:
A student wishing to take this combined programme (e.g. under degree regulations (20A.3.1 and 20A.3.2) should consult jointly with the Departments of Mathematics and Geography to determine other possible combinations of 200- and 300-level subjects depending on the type of employment the student may be requiring at the completion of the degree.

PROGRAMME 10: MATHEMATICS/PHYSICAL CHEMISTRY
First Year - Mathematics IA and IB, CHEM101, CHEM102 (and 12 other credit points)
Second Year - Mathematics IIA and IIB, CHEM212, CHEM213, CHEM219 (and 6 other credit points)
Third Year - Mathematics IIIA and IIIC, CHEM322, CHEM323 and CHEM324.

Notes on PROGRAMME 10:
A student wishing to take this combined programme (e.g. under degree regulations (20A.3.1 and 20A.3.2) should consult jointly with the Departments of Mathematics and Chemistry to determine other possible combinations of 200- and 300-level subjects depending on the type of employment the student may be contemplating at the completion of the degree.
MECHANICAL ENGINEERING

SCHEDULE ENTRIES

Refer to the schedule entries for further details of subjects, including pre-requisites and exclusions. All subjects described in this section are included in Schedule C. Subjects which also appear in other schedules are:

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<td>MECH464</td>
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100-LEVEL

MECH101 STATICS

First session; (28 hrs lectures, 14 hrs tutorials)
Assessment: One 2 hour examination at end of course. Other short examinations and tutorial performances will be incorporated in the final assessment.

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.

TEXTBOOK

Meriam, J.L. Statics. 2nd ed. (S.I. version), Wiley.

RECOMMENDED READING


MECH103 STATICS

Second session

All details, with the exception of the session offered, are identical with MECH101 Statics.

MECH102 DYNAMICS

Second session; (28 hrs lectures, 14 hrs tutorials)
Assessment: One 2 hour examination at end of course. Other short examinations and tutorial performances will be incorporated in the final assessment.

Kinematics of a particle; Kinetics of a particle: equations of motion; dynamic equilibrium; work and energy; impulse and momentum. Systems of particles. Introduction to rigid body dynamics.

TEXTBOOK

Meriam, J.L. Dynamics. 2nd ed. (S.I. version), Wiley.

RECOMMENDED READING


MECH121 ENGINEERING DRAWING AND GRAPHICS

First session; (14 hrs lectures, 28 hrs tutorials)
Assessment: Parts (a) and (b) by class examinations. Part (c) by 2 hour examination at end of course.

(a) Engineering Drawing and Design.

Introduction and standards information; geometrical constructions; the production of a mechanical drawing; pictorial drawing (isometric and oblique parallel projection); limits and fits; drawing analysis; elementary ideas of design.
MECH121 ENGINEERING DRAWING AND GRAPHICS (CONT'D)

(b) Descriptive Geometry.
Fundamental principles of projection; visibility; applications of the fundamental principles of orthographic projection including true length of a line segment, bearing and grade of a line, point view of a line, edge view of a plane surface and true shape of a plane surface; angle between plane surfaces; angle between intersecting and skew lines; angle between a line and a plane.

(c) Graphical Computation.
Graphical presentation of data including nomograms; graphical integration; graphical differentiation; empirical equations including semi-log and log-log plots.

TEXTBOOKS

RECOMMENDED READING

MECH122 DESIGN I

Second session; (14 hrs lectures, 38 hrs tutorials)
Assessment: Parts (a) and (b) by class examinations. Part (c) by design assignments and a creative design project

(a) Descriptive Geometry.
Developments including prisms, cylinders, pyramids, cones and transition pieces: intersection of solids bounded by plane surfaces; intersection of conics.

(b) Engineering Drawing.
Auxiliary views; advanced exercises in drawing analysis; advanced exercises in orthographic projection.

(c) Design I.
The phases of design; design processes; models; design economics; decision processes; creative design.

TEXTBOOKS

RECOMMENDED READING

MECH131 ENGINEERING PROCESSES AND PRACTICE

First session; (42 hrs lectures and tutorials)
Assessment: Assignments during session and one 2 hour examination at end of session


RECOMMENDED READING
To be advised during course.
For students in full-time employment who are enrolled in a part-time programme, each year of appropriate employment will be credited as one elective with a maximum accreditation of six electives for the course.

In the last week of Session 2 of each stage of the course students must submit a report on their industrial activities during the foregoing year. The report should be approximately 1000 words long.

Accreditation is granted if the report is passed as satisfactory by the Chairman of Department.
MECH214 STRUCTURAL DESIGN FOR MECHANICAL ENGINEERS

Second session; (18 hrs lectures, 14 hrs tutorials)
Assessment: No formal examination. Students are assessed on the basis of drawing office assignments.
Basic design of steel structures and of simple elements in reinforced concrete using codes of practice.

TEXTBOOKS
BHP-AIS. Hot Rolled Carbon Steel Sections and Plates. BHP Co. Ltd.
SAA Steel structures code. AS 1250, 1975.

RECOMMENDED READING
Ferguson, P.M. Reinforced concrete fundamentals. John Wiley & Sons.
Lay, M.G. Source book for the Australian Steel Structures Code AS1250. AICE.

MECH223 ENGINEERING DYNAMICS

First session; (28 hrs lectures, 14 hrs tutorials)
Assessment: One 2 hour examination at the end of the course. Other short examinations and tutorial performances will be incorporated in the final assessment.
Kinematics of rigid bodies. Dynamics of rigid bodies in plane motion; moments of inertia, equations of motion, dynamic equilibrium; momentum and impulse, energy analysis. Dynamics of simple mechanisms. Introduction to mechanical vibrations.

TEXTBOOKS
Hirschhorn, J. Dynamics of Machinery. Nelson.

RECOMMENDED READING
Church, A.H. Mechanical Vibrations. Wiley.

MECH251 EXPERIMENTAL ENGINEERING I

First session; (18 hrs lectures, 30 hrs tutorials and laboratory)
Assessment: No formal examination. Assessment will be based on laboratory reports all of which are compulsory.

RECOMMENDED READING

MECH231 FLUID MECHANICS I

First session; (28 hrs lectures, 14 hrs tutorials)
Assessment: One 2 hour examination will be held at the end of the course. Short tests may be held during the course and will count towards the final result.
Review of physical properties of fluids; fluid statics and manometry; continuity and momentum equations; rotation and vorticity; equations of motion; steady flow energy equation; fluid flow measurements.

TEXTBOOK

RECOMMENDED READING
Olson, R.M. Engineering Fluid Mechanics. 3rd ed. Intext.
MECH224 SYSTEM DYNAMICS

Second session; (28 hrs lectures, 14 hrs tutorials)
Assessment: One 2 hour examination at the end of the course. Other short examinations and tutorial performances will be incorporated in the final assessment.

System classification - ordinary and partial differential equations that commonly occur in engineering problems. Circuit diagrams for mechanical systems; "through" and "across" variables; equilibrium analysis; block diagrams; reduction of equations; concept of state; free and forced response; system functions; stability; sinusoidal response; Fourier Series and Integral; Laplace Transform applied to linear systems.

TEXTBOOK

RECOMMENDED READING
Haberman, C.M. Engineering Systems Analysis. Merrill.
Meriam, J.L. Dynamics. Wiley.
Shearer, J.L. Introduction to System Dynamics. Addison-Wesley.

MECH241 THERMODYNAMICS I

Second session; (28 hrs lectures, 14 hrs tutorials)
Assessment: One 2 hour examination at the end of the course. Other short examinations and tutorial performances will be incorporated in the final assessment.


TEXTBOOK

RECOMMENDED READING

MECH281 ENVIRONMENTAL ENGINEERING I

First session; (28 hrs lectures, 14 hrs tutorials)
Assessment: One 2 hour examination at the end of course. Five compulsory assignments have to be submitted during the course.

An introduction to the following topics:
(a) The environmental crisis.
   Air pollution : its causes and control.
   Water pollution : its causes and control.
   Noise pollution : its causes and control.
   Solid-waste : its generation and disposal.

(b) The energy crisis.

RECOMMENDED READING

300-LEVEL

MECH301 MECHANICS OF SOLIDS II

First session; (28 hrs lectures, 14 hrs tutorials)
Assessment: One 2 hour examination at end of course. Other short examinations and tutorials will be incorporated in the final assessment.

Bending of curved beams; statically indeterminate structures, plastic analysis methods; strain energy methods; struts; deformation symmetrical about an axis; residual stresses; dynamic loading; introduction to elasticity theory.
MECH301 MECHANICS OF SOLIDS II (CONT'D)

TEXTBOOK

RECOMMENDED READING

MECH313 MECHANICAL ENGINEERING DESIGN II

First session; (42 hrs lectures and Drawing Office)
Assessment: No formal examination. Students are assessed on the basis of assignments given in the Drawing Office classes
Crane and hoist design: Application of the design of machine elements to mechanical engineering systems.

TEXTBOOK

RECOMMENDED READING
To be advised during course.

MECH361 CONTROL SYSTEMS I

First session; (28 hrs lectures, 14 hrs tutorials)
Assessment: One 2 hour paper at end of course
Principles and techniques applicable to the analysis and design of feedback control systems with particular application to industrial processes. Modelling of control systems. Basic control actions, time domain and frequency domain analysis of linear systems, stability analysis, Nyquist Criterion, Bode Diagrams, Nichols Charts. Analogue computers.

TEXTBOOK
Ogata, K. Modern Control Engineering. Prentice-Hall.

RECOMMENDED READING
Kuo, B.C. Automatic Control Systems. Prentice-Hall.

MECH362 CONTROL SYSTEMS II

Second session; (28 hrs lectures, 14 hrs tutorials)
Assessment: One 2 hour paper at end of course

TEXTBOOK
Ogata, K. Modern Control Engineering. Prentice-Hall.

RECOMMENDED READING
De Russo, P.M. et al. State Variables for Engineers. Wiley.
Kuo, B.C. Automatic Control Engineering. Prentice-Hall.

MECH353 EXPERIMENTAL ENGINEERING II

Second session; (14 hrs lectures, 38 hrs laboratory)
Assessment: No formal examinations. Assessment will be based on laboratory reports all of which are compulsory
Testing of reciprocating and rotodynamic machine; refrigeration plant, nozzles; heat exchangers.

RECOMMENDED READING
To be advised during course.
MECH332 FLUID MECHANICS II

First session; (28 hrs lectures, 14 hrs tutorials)
Assessment: One 2 hour examination at the end of the course. Other short examinations and tutorial performances will be incorporated in the final assessment.


TEXTBOOK

RECOMMENDED READING
Olson, R.M. Engineering Fluid Mechanics. 3rd ed. Intext.

MECH333 FLUID MECHANICS III

Second session; (28 hrs lectures, 14 hrs tutorials)
Assessment: One 2 hour paper at end of course.


TEXTBOOK

RECOMMENDED READING
Olson, R.M. Engineering Fluid Mechanics. 3rd ed. Intext.

MECH344 HEAT TRANSFER

First session; (28 hrs lectures, 14 hrs tutorials)
Assessment: One 2 hour paper at end of course.

One and two-dimensional steady state conduction; free and forced convection; radiation; combined heat transfer mechanics and applications.

TEXTBOOK

RECOMMENDED READING

MECH342 THERMODYNAMICS II

First session; (28 hrs lectures, 14 hrs tutorials)
Assessment: One 2 hour paper at end of course.


TEXTBOOKS
or
Wark, K. Thermodynamics. 2nd ed. McGraw-Hill

RECOMMENDED READING
Shepherd, D. Introduction to the Gas Turbine. 2nd ed. Van Nostrand.
MECH325 MACHINE DYNAMICS

First session; (28 hrs lectures, 14 hrs tutorials)
Assessment: One 2 hour paper at end of course

RECOMMENDED READING
Hirschhorn, J. Dynamics of Machinery. Nelson.
Holowenko, A.R. Dynamics of Machinery. Wiley.

MECH363 SYSTEMS ANALYSIS I

Second session; (28 hrs lectures, 14 hrs tutorials)
Assessment: One 2 hour examination at the end of the course
Linear programming; network analysis; dynamic programming; queueing theory.

TEXTBOOK

RECOMMENDED READING
Rosenbrock, H. & Storey, S. Computational Techniques for Chemical Engineers. Pergamon.

MECH391 HEAT TRANSFER FOR CIVIL ENGINEERS

Second session; (28 hrs lectures, 14 hrs tutorials)
Assessment: One 2 hour paper at end of course
One and two dimensional steady state conduction; radiation; applications in Civil Engineering.

TEXTBOOK

RECOMMENDED READING

MECH392 INTRODUCTORY THERMOFLUID DYNAMICS

First session; (28 hrs lectures, 14 hrs tutorials)
Concepts and definitions; energy transfer and the first law; fluid properties; control mass and control volume analysis; dimensional analysis; dynamic similitude; boundary layer theory; flow around bluff bodies; flow of real fluids in ducts; some practical demonstrations.

RECOMMENDED READING
To be advised during course.

400-LEVEL

MECH402 ENGINEERING MATERIALS II

Second session; (28 hrs lectures, 14 hrs tutorials)
Assessment: One 2 hour examination at end of course. Other short examinations and tutorials will be incorporated in the final assessment.
Phase equilibrium; alloying; diffusion; grain growth; heat treatment; thermal, magnetic and special properties of engineering materials; selection of materials for special application, high strength, high temperature, wear, bearing, impact and corrosion resistant; use of specifications; composite materials.
MECH402 ENGINEERING MATERIALS II (CONT'D)

RECOMMENDED READING

Keyser, C.A. Materials Science in Engineering. Merrill.
U.S. Steel Co. The Making, Shaping and Treating of Steel.

MECH403 MECHANICS OF SOLIDS III

First session; (28 hrs lectures, 14 hrs tutorials)
Assessment: One 2 hour examination at end of course. Other short examinations and tutorials will be incorporated in the final assessment.

Bending of flat plates; membrane stresses in shells; torsion of non-circular shafts; membrane analogy; application of strain energy methods to thin-walled curved tubes and plates and to buckling problems; bending of thick curved beams; real and complex stress functions; stress concentrations; stress waves; introduction to finite element method; bounds for plastic collapse loads in two-dimensional structures.

RECOMMENDED READING


MECH413 MECHANICAL ENGINEERING DESIGN III

First session; (14 hrs lectures, 28 hrs tutorials)
Assessment: No formal examination. Assessment will be based on drawing office assignments.

Design of process and industrial machinery with reference to internal combustion engines, turbo-machines, air pollution control equipment, heat transfer apparatus, etc. Review of operational and safety requirements; principles of optimization and system synthesis.

TEXTBOOKS AND RECOMMENDED READING

To be advised during course, depending on projects undertaken.

MECH415 OPTIMUM DESIGN

Second session; (14 hrs lectures, 28 hrs tutorials)
Assessment: No formal examination. Assessment will be based on drawing office assignments.

The use of computers for mechanical engineering design. Optimization techniques and their application to selected machine elements. Case studies and assignments to exemplify the principles of optimum design.

RECOMMENDED READING


MECH423 APPLIED DYNAMICS I

Second session; (28 hrs lectures, 14 hrs tutorials)
Assessment: One 2 hour paper at end of course

Kinematics of particles and rigid bodies in three dimensions. Three dimensional dynamics of rigid bodies; inertia tensor; Euler’s equations of motion. Relativistic dynamics. Dynamic analysis of mechanisms.

TEXTBOOKS


RECOMMENDED READING

Holowenko, A.R. Dynamics of Machinery. Wiley.
Mable, H.H. & Ocvirk, F.W. Mechanics and Dynamics of Machinery. Wiley.
McCuskey, S.W. Introduction to Advanced Dynamics. Addison-Wesley.
MECH424 APPLIED DYNAMICS II

Lagrangian Dynamics and Hamilton's Principle applied to particles and rigid bodies; holonomic and non-holonomic constraints; dynamics of continuous systems; introduction to statistical mechanics.

TEXTBOOKS
To be advised.

RECOMMENDED READING
McCuskey, S.W. Introduction to Advanced Dynamics. Addison-Wesley.

MECH425 HYDRAULIC AND PNEUMATIC SYSTEMS

Analysis of hydraulic, pneumatic and vacuum power units for the provision of power and/or control in machines; circuit component characteristics; safety features, synthesis of systems.

RECOMMENDED READING
To be advised during course.

MECH433 LUBRICATION


RECOMMENDED READING
To be advised during course.

MECH434 FLUID MECHANICS IV


RECOMMENDED READING
Pao, R.H.F. Fluid Dynamics. Merrill.

MECH443 THERMODYNAMICS III

Property relations-Jacobians. Thermographics. Availability and irreversibility. Statistical thermodynamics; Maxwell-Boltzman, Fermi-Dirac and Bose-Einstein statistics; partition function and relation to macroscopic properties of ideal gases. Irreversible processes; coupled flows and phenomenological relations; Thermomechanical and thermo-electric effects. Combustion and thermio-chemistry. Chemical equilibrium.
Description of Subjects - Mechanical Engineering

MECH443 THERMODYNAMICS III (CONT'D)

RECOMMENDED READING


MECH444 THERMODYNAMICS IV

First session; (28 hrs lectures, 14 hrs tutorials)
Assessment: One 2 hour paper at end of course
Thermodynamic analysis of combustion engines, steam turbines and complete power systems.

RECOMMENDED READING


MECH445 REFRIGERATION AND AIR CONDITIONING

First session; (28 hrs lectures, 14 hrs tutorials)
Assessment: One 2 hour examination at end of course
Studies of components used in refrigeration and air conditioning systems. Industrial applications.

TEXTBOOK


RECOMMENDED READING


MECH463 CONTROL SYSTEMS III

Second session; (28 hrs lectures, 14 hrs tutorials)
Assessment: One 2 hour paper at end of course. Assignments may be incorporated into final assessment.
Review of classical control techniques; matrix calculus, multi-input multi-output systems; state-space analysis; stability; optimal control; interaction; Inverse Nyquist array.

RECOMMENDED READING


MECH464 SYSTEMS ANALYSIS II

First session; (28 hrs lectures, 14 hrs tutorials)
Assessment: One 2 hour paper at end of course
Probabilistic models; simulation; reliability and inventory theory; non-linear programming.

RECOMMENDED READING


MECH465 SYSTEMS ANALYSIS III

Second session; (28 hrs lectures, 14 hrs tutorials)
Assessment: One 2 hour paper at end of course. Assignments may be incorporated in final assessment.
MECH465 SYSTEMS ANALYSIS III (CONT'D)

Random signal analysis; experimental identification; analytical modelling; solution of equations; rate expressions; introduction to reactor design; non-ideal flow in reactors.

TEXTBOOK


RECOMMENDED READING


MECH473 MATERIALS HANDLING SYSTEMS I

First session; (28 hrs lectures, 14 hrs tutorials)

Assessment: One 2 hour examination at end of course. All set assignments must be completed satisfactorily

Principles of granular mechanics; flow patterns in hoppers and bins; measurement of flow properties in relation to hopper design; feeders; flow rate prediction; prediction of pressures on bin walls.

RECOMMENDED READING


MECH474 MATERIALS HANDLING SYSTEMS II

Second session; (28 hrs lectures, 14 hrs tutorials)

Assessment: One 2 hour paper at end of course. All set assignments must be completed satisfactorily

Advanced techniques for predicting bin loads; methods for improving hopper flow characteristics; flow of fine powders from storage; considerations of failure criteria for granular materials; solids mixing; dust hazards.

RECOMMENDED READING

As for MECH473 plus selected research papers.

MECH475 FLUID TRANSPORT OF BULK SOLIDS

Second session; (28 hrs lectures, 14 hrs tutorials)

Assessment: One 2 hour examination at end of course. All set assignments must be completed satisfactorily.

Classification of systems for the hydraulic or pneumatic transport of bulk solids; fluid/solid flow studies; friction losses; conveying equipment; system design; economics; wear of plant and degradation of materials.

RECOMMENDED READING

To be advised during course.

MECH481 SPECIAL TOPICS IN MECHANICAL ENGINEERING I

First session; (42 hrs lectures and tutorials)

There is no set syllabus for this subject. It is intended that it normally be offered on a specialised mechanical engineering topic given by visiting academic staff or engineering consultants.
MECH482 SPECIAL TOPICS IN MECHANICAL ENGINEERING II

Second session; (42 hrs lectures and tutorials)

There is no set syllabus for this subject. It is intended that it normally be offered on a specialised mechanical engineering topic given by visiting academic staff or engineering consultants.

MECH483 ENVIRONMENTAL ENGINEERING II

First session; (28 hrs lectures, 14 hrs tutorials)

Assessment: One 2 hour examination at end of course together with one 2 hour class examination held during the course

The course aims to examine in detail industrial water pollution identification and control.

RECOMMENDED READING
N.S.W. Regulations to Clean Waters Act 1972.
Patterson, J.W. Wastewater Treatment Technology. Ann Arbor.

MECH484 ENVIRONMENTAL ENGINEERING III

Second session; (28 hrs lectures, 14 hrs tutorials)

Assessment: One 2 hour examination at end of course together with one 2 hour class examination held during the course

The course aims to examine in detail the causes and control of air pollution.

RECOMMENDED READING
Crawford, M. Air Pollution Control Theory. McGraw-Hill.

MECH485 ENVIRONMENTAL ENGINEERING IV

Second session; (28 hrs lectures, 14 hrs tutorials)

Assessment: One 2 hour examination at end of course together with one 2 hour examination held during the course

The course aims to discuss in detail the causes and control of noise pollution.

RECOMMENDED READING

MECH497 INDUSTRIAL TRAINING

While enrolled in the Mechanical Engineering course students are required to obtain an aggregate of at least twelve weeks of relevant practical experience during the summer recesses. This training period must be spent in a suitable industrial environment outside the University.

Upon completion of their industrial training students must prepare a report on their training activities for submission to the Department for assessment.
Double session: 20 credit points
Assessment: Assessment of a submitted written thesis

During the final year of study for the Bachelor of Engineering Degree, each student is required to prepare a thesis on a subject or topic approved by the Chairman of the Department. Two bound copies of the completed thesis must be lodged with the Chairman of the Department by the due date posted.

The subject of a thesis may cover:
(a) a report of original work performed by the student in the laboratory or field;
(b) a theoretical and experimental investigation of a Mechanical Engineering problem;
(c) a set of drawings and calculations covering a Mechanical Engineering design.

The aim of the thesis is for the student to learn how to examine published and experimental data, set objectives, organize a programme of work, and analyse results and evaluate these in relation to existing knowledge. The thesis will be judged on the extent and quality of the student's work, and particularly how critical, perceptive and constructive he has been in assessing his own work and the work of others.

Students anticipating an Honours Degree are required to show facility in original and critical thought. Although sufficient time is allowed in their final year, part-time students are recommended to commence their thesis at the end of Stage V and then attend the University full-time for a period of three weeks during January, February or June of their final year.
METALLURGY

Society uses a very wide variety of materials; metals, plastics, semiconductor materials and ceramics, to mention only the most familiar. Metallurgy is an applied science concerned with the extraction of metals from their ores and with the processes used to convert them into useful products. Although metallurgists are particularly concerned with metallic materials, they pursue their subject in the broad context of materials generally. Accordingly, the subject is a diverse one and is divided into several branches. The fundamental principle guiding physical metallurgy is that the properties of all materials are determined by their detailed atomic architecture, so that if the relationship between structure and properties is understood it is possible to synthesize materials suited to any particular application. This relationship is investigated mainly by the methods of the physical sciences such as optical and electron-optical microscopy, X-ray and electron diffraction.

In extractive metallurgy the methods of chemistry and chemical engineering are used to develop processes for "extracting" metals from their ores and refining them to a satisfactory purity. Topics of special interest include high-temperature physical chemistry, heat transfer and the flow of liquids and gases.

The courses provided in the Department of Metallurgy are broadly based and prepare a graduate for later specialization in any chosen branch of the subject.

Full-time and part-time courses are offered. The full-time course occupies four years; the part-time course normally takes six years to complete, but this may be reduced to five years by spending a year in full-time study.

While all courses are largely prescribed, options are provided and are chosen in consultation with the Chairman of the Department.

Assessment: Subjects are assessed by written examinations at the end of each session, together with credit for assignments and laboratory work. Projects 1 and 2: examination of report or thesis, together with oral examination.

Note: For students enrolled prior to 1976 special programmes will be prescribed by the Department where appropriate.

SCHEDULE ENTRIES

Refer to the schedule entries for further details of subjects, including pre-requisites and exclusions. All subjects described in this section are included in Schedule D (with the exception of METL201). Subjects which also appear in other schedules are:

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100-LEVEL

METL121 NATURE OF MATERIALS

Second session: 6 credit points
Planar patterns: plane lattices, unit cells, symmetry, geometrical properties.
Three dimensional patterns: space lattices, macroscopic and microscopic symmetry, unit cell, crystal classifications, Bravais lattices, geometrical properties.
Crystals: structure of crystals, elements, compounds, solid solutions, ordering.
Defects in crystals: lattice properties - thermal, electrical, magnetic, optical.
Bonding in solids, liquids and gases.
Non-crystalline materials: structures of polymers, glasses, liquids, relationship with properties.
Crystals and polycrystals: microstructures, genesis of structure, relationship with properties.
Observation of structure: resolution of microscopical techniques, X-ray diffraction, Bragg Law, geometrical theory, determination of crystal structure.

TEXTBOOK

200-LEVEL

METL211 THERMODYNAMICS 1

First or second session
Definitions. First, second and third law. Auxiliary functions. Experimental methods and calculations. Elementary thermodynamics in metallurgy, particularly metal extraction and refining: uses and limitations.
METL211 THERMODYNAMICS 1 (CONT'D)

TEXTBOOK

METL231 MECHANICS OF SOLIDS 1

First or second session
Resolution of stress and strain, complex stress, Poisson contraction, strain energy, yield criteria, stress concentration; surface energy, stress concentration and plastic work, approaches to fracture.

METL241 FLUID FLOW

First or second session

TEXTBOOK

METL251 STRUCTURE OF METALS 1

First or second session
Binary phase equilibrium diagrams; genesis of microstructure of one and two phase alloys; elementary transformation theory; transformations under non-equilibrium conditions; optical metallography; quantitative metallography, recovery, recrystallization and grain growth.

TEXTBOOKS

METL252 STRUCTURE AND MECHANICAL PROPERTIES 1

First or second session
Elementary ideas of stress and strain, general introduction to mechanical behaviour, structure dependence of mechanical properties, time and temperature sensitivity, elementary behaviour of dislocations, strain rate sensitivity, yield phenomena.

TEXTBOOK

RECOMMENDED READING

METL271 TRANSFORMATIONS 1

First or second session
Kinetics; diffusion; Ficks laws; mechanisms of nucleation and interface propagation in solids; recrystallization and grain growth.

TEXTBOOK

METL281 EXTRACTIVE METALLURGY

First or second session
TEXTBOOKS

METL281 EXTRACTIVE METALLURGY (CONT'D)

TEXTBOOKS

METL301 CERAMICS

First or second session

METL311 THERMODYNAMICS 2

First or second session

TEXTBOOK

METL312 ELECTROCHEMICAL PROCESSES

First or second session
Dry corrosion: gas-metal reactions. Oxide scales - formation and properties. Protection.

TEXTBOOK

METL321 PHYSICS OF METALS 1

First or second session
Electrons in solids; zone and band theory; conductivity and magnetism; electron/crystal interactions; X-ray diffraction; electron diffraction and transmission microscopy, scanning electron microscopy, electron probe microanalysis, field ion microscopy, field emission microscopy, etc.

TEXTBOOKS

METL331 MECHANICS OF SOLIDS 2

First or second session
Plastic flow, complex strain, plastic instability, analysis of shaping processes by work evaluation, by force equilibrium and by shear line field methods, friction effects, applications to common deformation conditions.

TEXTBOOK
Backofen, W.A. Deformation Processing. Addison-Wesley.

RECOMMENDED READING
First or second session

TEXTBOOKS

First or second session

TEXTBOOK

First or second session
Heat treatment, microstructure and properties of plain carbon steels and cast iron: ternary phase equilibria; ternary phase diagrams; structure and properties of alloy steels; hardenability; engineering applications and failure analysis.

TEXTBOOK

First or second session
Theory of phase transformations in steel; strengthening of ferrous and non-ferrous alloys; relationships between strength, toughness and microstructures produced by thermomechanical treatments; strength and ductility at elevated temperatures.

First or second session

TEXTBOOK

First or second session
Discussion of selected topics to illustrate particular application of metallurgical engineering principles of fluid flow, heat and mass transfer, thermodynamics and reaction engineering to such topics as the development of a heat transfer model of continuous casting using analog and digital computer simulation; the development of slag theories and their application in extraction; reaction engineering of iron ore reduction in direct reduction processes and blast furnaces; the application of fluid flow theory to investigate jets, nozzles, tuyeres.

Double session
A literature survey and experimental work on some aspect of metallurgy.
METL401 METALLURGICAL RESOURCES

First or second session
Metallurgical resources and their utilization. The influence of technological developments in Metallurgical industries. Detailed consideration of particular industries such as the iron and steel industry.

METL421 PHYSICS OF METALS 2

First or second session
Advanced geometrical, kinematical and dynamical electron and X-ray diffraction theory; reciprocal lattice, stereographic projection.

TEXTBOOK

METL431 FRACTURE

First or second session
Plastic constraint, fracture mechanics for conditions of plane stress and strain and of general yielding, C.O.D. testing, fatigue, stress corrosion, mechanisms of crack nucleation and propagation.

METL441 PROCESS MODELLING

First or second session
Analogue computer simulation. Linear, non-linear and memory components. Scaling. Parallel logic. Applications in Metallurgical systems.

METL451 STRUCTURE OF METALS 3

First or second session
Strengthening of ferrous and non-ferrous alloys; relationships between strength, toughness and microstructure; thermomechanical treatments, ausforming, isoforming, austempering, martempering, maraging, etc.; high performance alloys.

METL452 STRUCTURE & MECHANICAL PROPERTIES 2

First or second session
Relationships among elastic constants for isotropic continua, generalised Hooke's law, yield surface for anisotropic materials, development of preferred orientations, elastic properties of dislocations, dislocation interactions and reactions, strain hardening.

TEXTBOOK
Hull, D. Introduction to Dislocations. Pergamon.

METL453 STRUCTURE & MECHANICAL PROPERTIES 3

First or second session
Hot deformation processes; creep; superplasticity; high temperature fracture; dynamic recovery and recrystallization.

METL461 REACTION ENGINEERING 2

First or second session

TEXTBOOK

*A selection of 400-level subjects is to be selected in consultation with the Chairman of the Department of Metallurgy. Some of the 400-level subjects listed may not be available in any given year.
292  Description of Subjects - Metallurgy

First or second session
Theory of transformation of austenite to pearlite, bainite and martensite; tempering; transformation diagrams.

First or second session

First or second session

First or second session

Double session
A literature survey and experimental work on some aspect of metallurgy.
PHILOSOPHY

Philosophy studies those problems which cannot be solved by the methods of the natural sciences; i.e. which cannot be solved by carrying out a physical experiment, making an observation, or doing a mathematical calculation. Examples of these non-scientific but nonetheless real problems are:

1. Is there a God beyond the physical world?
2. Do moral distinctions rest on objective foundations or are good and bad matters of subjective preference?
3. How should I relate to other individuals and to institutions such as the state?
4. Am I a purely material being or does my having a mind set me apart from nature?
5. Is free will a reality or an illusion?
6. The nature of truth and the methods by which it can be approached.

The two main reasons for studying philosophy are firstly to attempt to formulate and justify one's own solutions to these and many other problems (and to find out and understand what others have said), and secondly to unearth and critically examine the many unstated assumptions implicit in our everyday thought and conduct. The study of philosophy does not depend upon any discipline or body of information acquired in secondary education.

Philosophy may be studied at first, second, third and fourth year levels. The fourth year is the Honours year and entry depends upon the quantity and quality of the student's philosophical studies during the first three years.

Students contemplating progressing to Honours in Philosophy should discuss their proposed programme of study with the Honours (fourth year) co-ordinator at the beginning of each year of enrolment. Entry to Honours is determined by the Academic Senate on the advice of the Chairman of the Department of Philosophy. Students may be expected to be recommended for admission if they:

(a) complete at least 48 of their 144 credit points in PHIL subjects, including at least 24 credit points at 300-level, and
(b) they attain an average of Credit or better in post 100-level PHIL subjects, and
(c) they acquire a basic competence in Logic (e.g. as certified by at least a pass in PHIL153 or PHIL22 or PHIL261 or PHIL361 or (for students enrolled prior to 1979) PHIL103 or PHIL113 or PHIL123), and
(d) they acquire a basic competence in Metaphysics and Epistemology (e.g. as certified by at least a pass in PHIL262 or PHIL322 or PHIL323).

Notwithstanding these provisions the Chairman of the Department of Philosophy may in respect of any applicant for entry to Honours, request written work and/or the opinions of the applicant's previous teachers as further evidence of the applicant's capacity to undertake the study of Philosophy at advanced level.

SCHEDULE ENTRIES

Refer to the schedule entries for further details of subjects, including pre-requisites and exclusions. All subjects described in this section are included in Schedule A.

100-LEVEL

PHIL103 PHILOSOPHY 103

Double session; 12 credit points (2 Lectures, 1 tutorial per week)
Assessment: Written work submitted during the year - 50%; and 3 hour examination at the end of the second session - 50%

An introduction to Philosophy via a study of three famous philosophical essays. The first session is concerned mainly with questions of metaphysics (theory of being) and epistemology (theory of knowledge). Issues considered include (i) what, if anything, can be known with certainty, (ii) the essence of the human person, personal individuality, and the nature of the self, (iii) the relation between the mind and the body, (iv) attempts to prove (or refute) the existence of God, (v) human imperfection, and (vi) our knowledge of the external world. The Meditations of the seventeenth century French philosopher Rene Descartes will be given critical attention. This session includes a brief introduction to philosophical sources and vocabulary and some of the fundamental concepts of modern logic.

The second session is concerned mainly with questions of political and moral philosophy. Issues considered include (i) the relations between law and morality, (ii) legal constraint and individual liberty, (iii) welfarism versus libertarianism, (iv) the degree to which I am responsible for what I become, (v) the character of existentialism, (vi) criteria for a moral stance, and (vii) self-discovery, self-deception, and self-modification. John Stuart Mill's On Liberty and Jean-Paul Sartre's Existentialism is a Humanism will be given critical attention.

TEXTBOOKS

Description of Subjects - Philosophy

PHIL103 PHILOSOPHY 103 (CONT'D)

RECOMMENDED READING


PHIL112 LOGIC A

Second session; 6 credit points (2 lectures per week; 1 tutorial per week)
Assessment: 4 written assignments during the year - 40%, and one test paper at the end of session 2 - 60%; or one 3-hour examination paper at the end of session 2 - 100%.

A second session introduction to elementary logic and its relation to natural language and reasoning. Topics dealt with include (1) demonstrative and problematic arguments, (2) logical form, (3) propositional calculus, (4) predicate calculus and its extensions, (5) decision procedures and glimpses of meta-theory. Natural deduction techniques will be used in proof construction, however proof trees and axiomatic methods will be introduced. No mathematical or technical knowledge of any sort is pre-supposed, and the connections with everyday thought and language are considered.

TEXTBOOK


PHIL123 PHILOSOPHY 123

Double session; 12 credit points (2 lectures per week; 1 tutorial per week)
Assessment: Written work submitted during the year - 50%; and one 3-hour examination at the end of the second session - 50%.

This is an introduction to Philosophy based on a study of several fundamental philosophical problems. These include (1) the nature of philosophical inquiry, (2) the interpretation of religious language, and arguments attempting to prove, or refute, the existence of God, (3) human behaviour and the question of whether humans have genuine and creative freedom of the will, or are just very complicated pre-determined organic structures, (4) the mind and its relation to the brain and body, and the possibility of life after death, (5) the nature of truth, and its relation to evidence and uncertainty, (6) language and perception as representations of an independent reality, and (7) human conduct, moral authority and responsibility, and arguments about the nature and sources of value. Basic concepts and vocabulary of logic will be introduced as required during the course.

TEXTBOOKS


PHIL143 POLITICAL THEORY

Double session; 12 credit points (2 lectures, 1 tutorial per week)
Assessment: 3 hour examination paper (50%); 2 essays (each 2,000 words) (30%); tutor's assessment (20%)
A full year introduction to the study of politics covering three closely related areas: political science, theory of democracy, and democracy in Australia. The course aims to develop skills in the analysis of conceptual, empirical, and normative issues in politics. The topics of the course include some central concepts of politics, classical and pluralist theory of democracy and their conservative and radical critiques, and Australia's political institutions.

TEXTBOOKS


RECOMMENDED READING


Sawer, G. *The Australian Constitution*. AGPS, Canberra.

**PHIL153 CLEAR THINKING AND ARGUMENTS**

Double session; 12 credit points (2 lectures per week; 1 tutorial per week)
Assessment: 8 written assignments during the year - 40% and 2 test papers (1 at the end of each session) - 60%; or one 3-hour examination paper at the end of session 2 - 100%

An elementary full-year course in (i) clarity of expression of thought, and (ii) sound reasoning. Under (i) consideration is given to different types of definition, precision and vagueness, ambiguity, and open texture. Under (ii) special attention is paid to the distinctions between truth and validity, and demonstrative versus problematical reasoning (including deduction and induction). Students will be trained in spotting bad inferences and in the recognition of common techniques of persuasion. The course is designed to be of general interest, and of use to students irrespective of whether they intend to proceed to further studies within the Department of Philosophy. Students will be given a working knowledge of the propositional calculus and predicate calculus, and invited to consider the relationship between formal logical systems and ordinary thought, reasoning, and language. No technical knowledge of mathematics is presupposed.

TEXTBOOKS


RECOMMENDED READING


**PHIL163 INTRODUCTORY HISTORY OF WESTERN PHILOSOPHY**

Double session; 6 credit points (2 lectures/discussions per week)
Assessment: 4 essay-style projects of 1,500 words each, 2 in each session.

A full year critical introductory survey of a selection of the most influential doctrines in Philosophy through a study of its evolution from ancient Greece to the present day. The course examines briefly the teachings of the influential pre-Socratics (Thales, Anaximander, Anaximenes, Heraclitus, Parmenides, Zeno, Empedocles, Anaxagoras, Leucippus, and Democritus), Socrates and the Sophists, Plato and his theory of forms and of the soul, and the Logic of Aristotle.

It then proceeds to a consideration of some of the major philosophical contributions of Mediaeval Catholicism, and in particular of St. Thomas Aquinas. Post-Renaissance Continental Rationalism (Descartes, Spinoza, and Leibniz) is compared with British Empiricism (Locke, Berkeley, and Hume). Kant's Impact in ethics and metaphysics is considered in relation to the subsequent dialectical philosophy of Hegel and the historical materialism of Marx. The political philosophies of Hobbes, Locke, Rousseau and Bentham are also discussed. Nineteenth century American pragmatism (James, Peirce) is contrasted with Italian and British Absolute Idealism of the early twentieth century.
The Vienna Circle's logical positivism and its English versions (Popper, Ayer), Cambridge analytical philosophy (Moore, Russell, Wittgenstein), Oxford linguistic philosophy (Ryle, Hare, Strawson) and European existentialism and phenomenology (Husserl, Jaspers, Sartre) are considered as introducing students to contemporary philosophy. The course concludes with a survey of contemporary Australian philosophy. Students will be required to make use of available primary sources.

**Note:** This course taken by itself does not meet the pre-requisite requirements of those PHIL 200-level subjects with 100-level pre-requisites.

### RECOMMENDED READING


Flew, A. An Introduction to Western Philosophy. Thames and Hudson, 1971.


### 200-LEVEL

**PHIL221 CLASSICAL PHILOSOPHY**

**First session:** 8 credit points (Three 1-hr lecture/discussions per week)

**Assessment:** 80% - 3-hr examination paper at end of session 1; 10% - essay of 2,500 words; 10% - teacher's assessment

A detailed examination of Plato's *Republic* and an assessment of Plato's opinions on such questions as the point of morality, the nature of knowledge, knowledge of the universal as well as the particular, assessment and evaluation by standards of ideals, the perfect form of government, the purposes of education, and the responsibilities of the philosopher.

**TEXTBOOKS**


**RECOMMENDED READING**


**PHIL222 SET THEORY '222**

**First session:** 8 credit points (Three 1-hr lecture/discussions per week)

**Assessment:** 60% - 3 hr examination paper at the end of session 2; 10% - essay of 2,000 words; 20% - two sets of revision exercises; 10% - teacher's assessment

An examination of the origins and developments of the general theory of classes sufficient (1) to understand and consider philosophical controversies surrounding the foundations of mathematics number theory, and infinity, and (2) to comprehend applications of set theory to model theory in general and semantics in particular. This course assumes a working knowledge of the propositional and predicate calculi, and is assumed by the Advanced Formal Logic option in fourth year honours. The approach will generally be discursive and critical and will not emphasise the finer technicalities of proof construction. The system taught is a variant of von Neumann-Bernays-Gödel set theory, however Zermelo-Fraenkel and Russellian variations are noted. Topics discussed include (1) Paradoxes, (11) Relations and their Formal properties, (111) Cardinals and Ordinals, (iv) Infinites, and (v) The Axiom of Choice.

(Students who have passed MATH321 are welcome to attend but cannot claim credit for this subject.)
PHIL222 SET THEORY 222 (CONT'D)

**TEXTBOOK**

**RECOMMENDED READING**

PHIL223 PROBLEMS OF PHILOSOPHY

Double session; 16 credit points (2 lectures per week; 1 tutorial per week)
Assessment: One 3-hour examination (60%); 2x2,500 word essays (2 x 15%); tutor's assessment (10%)

This full year course examines several recurring philosophical problems, selected because of their familiarity to reflective people who have never begun any systematic study of philosophy. The problems come from a number of different branches of philosophy including metaphysics (Is there a God?) human nature (Do we have freedom of the will? Is life after death possible? Is the mind spiritual?) semantics (What is truth? What is meaning?) philosophical psychology (What is the nature and what is the value of philosophical inquiry?)

**TEXTBOOKS**

**RECOMMENDED READING**

PHIL231 FORMAL LOGIC A

First session; 8 credit points (Three 1-hour lecture/discussions per week. Additional practice classes optional)
Assessment: 50% - 3 hour examination paper at end of session 1; 50% exercises submitted during the course

The course consists of (i) an examination of some of the fundamental concepts involved in the study of logic and (ii) an introduction to some systems of truth-functional and quantificational logic. Topics discussed will include some basic set theory, the development of formal languages, properties of these languages and their relation to natural languages, translation into formal languages, the development of systems of sentential and predicate calculi and a study of methods of proof within these systems. A brief introduction to axiomatics will be included. Particular attention will be given to the role of formal logic in elucidating the nature of ordinary reasoning and in evaluating such reasoning.

**PRELIMINARY READING**

**TEXTBOOK**

**RECOMMENDED READING**
PHIL232 POLITICAL PHILOSOPHY A

Second session; 8 credit points (9 lecture/discussions per week)

Assessment: One 3-hour examination at the end of session 2. One essay of 2,500 words. The proportion of marks will be determined by the class during the first contact hour. The exam will be at least 60% of marks; the exam and essay together will be 90% of marks. 10% will be tutor's assessment.

A critical introduction to the writings of some of the main classical political philosophers. Particular emphasis will be given to Plato, Aristotle, Hobbes, Locke, Rousseau, Marx and Engels. The subject covers conservative, liberal and radical views of the nature of the state and is especially suitable for students with a limited philosophy background.

TEXTBOOKS


RECOMMENDED READING


PHIL242 CONTEMPORARY CONTINENTAL PHILOSOPHY

Second session; 8 credit points (9 lecture/discussions per week)

Assessment: Three essays, each 2,500 words (90%); Teacher's assessment (10%)

An examination, in English translation, of some of the major influences in twentieth century philosophy in France and Germany. Special attention will be paid to the movements of phenomenology and existentialism, and the contributions of Husserl, Sartre, Merleau-Ponty, and Levi-Strauss, particularly in respect of questions of method.

TEXTBOOKS


RECOMMENDED READING


PHIL251 ETHICS A

First session; 8 credit points (9 lecture/discussions per week)

Assessment: Tutorial assessment - 10%; 1x2,500 word essay - 20%; one 3-hour examination - 70%

Note: Students may reduce the examination proportion to 50% by submitting additional written work during the session.

This first session subject is a critical appraisal of the status of morality and the nature of moral judgements and statements, designed to provide an awareness of the theoretical issues basic to discussion of contemporary ethical controversies. Questions considered include: (1) How is morality to be defined, and how are the moral beliefs and rules of a society to be distinguished? (2) Is morality culturally relative? (3) Are there objective moral values or is a subjectivist account of morality correct? (4) How, if at all, can one rationally support a moral conclusion? (5) How is the morality of an act to be determined? (In this last topic, the contrasting of
ethics of consequences with ethics of principles will include a detailed examination of influential ethical theories, e.g. Egoism and Utilitarianism, and a discussion of a morality of rules or duties.)

TEXTBOOKS

RECOMMENDED READING

PHIL252 AESTHETICS A

Second session; 8 credit points (3 lecture/discussions per week)
Assessment: One 3-hour examination paper (70%); 1x2,500 word essay (20%); teacher's assessment (10%)

An examination in second session of concepts of natural and artistic beauty, the nature and value of a work of art, the relation between artistic creation and artistic intentions, artistic communication and aesthetic evaluation. No special artistic knowledge or practical artistic ability is presupposed. The views of the German philosopher Immanuel Kant, and of the recent Italian idealist philosopher Benedetto Croce, and in particular his version of expressionism, will be given special attention.

TEXTBOOKS

RECOMMENDED READING

PHIL262 EMPIRICISM A

Second session; 8 credit points (3 lecture/discussions per week)
Assessment: One 3-hour examination paper (80%); one essay of 2,500 words (10%); teacher's assessment (10%)

An examination in second session of the metaphorical, epistemological and linguistic doctrines of the British Empiricists of the seventeenth and eighteenth centuries; particular attention will be given to the views of the English philosopher John Locke, the Irish philosopher George Berkeley, and the Scottish philosopher David Hume. Questions considered include (i) How do words relate to things and to ideas? (ii) Might the so-called material world exist entirely in our minds (the
PHIL262 EMPIRICISM A (CONT'D)

debate between Idealists, Representationalists, and Realists)? (iii) What is a cause? (iv) Must the world have a Creator? (v) What gives a thing or a person its identity through a period of change?

TEXTBOOKS

RECOMMENDED READING

PHIL271 SPECIAL PHILOSOPHICAL QUESTIONS I A

First session; 8 credit points (3 lecture/discussions per week)
Assessment: Either 3x2,000 word essays or a 3-hour examination at the end of session or combination of essays and examination.

A detailed, supervised investigation of an approved philosophical topic, author, period, or school of thought.

RECOMMENDED READING

PHIL272 SPECIAL PHILOSOPHICAL QUESTIONS I I A

Second session; 8 credit points (3 lecture/discussions per week)
Assessment: As for PHIL271

DESCRIPTION AND RECOMMENDED READING: As for PHIL271

PHIL292 SOCIAL PHILOSOPHY A

Second session; 8 credit points (3 lecture/discussions per week)
Assessment: Tutorial assessment (10%); 2x2,500 word essays (40%); one 2-hour examination (50%)

A critical examination of the status of rights and the nature of rights-talk, together with a detailed examination of two claimed basic rights - the right to life, and the right to autonomy. Discussions of the morality of terminating life, and of issues arising from claims to particular freedoms, will include topics from the following range: abortion, euthanasia and suicide; warfare; punishment; animal rights; civil disobedience and conscientious objection; reverse discrimination; group self-determination; privacy.

RECOMMENDED READING
PHIL301 ETHICS B

First session; 12 credit points (3 lecture/discussions per week; one 2-hour seminar per week)
Assessment: Tutorial assessment (10%); 1x3,000 word essay (25%); one 3-hour examination (65%)
Note: Students may reduce the examination proportion to 50% by submitting additional written work during the course.
A first session course for senior students in the fundamental issues of moral philosophy. Relativity, the possibility of moral knowledge, moral subjectivism, morality and reasons, and principles and consequences, are among the issues considered in the course.

TEXTBOOKS AND RECOMMENDED READING
As for PHIL251 Ethics A.

PHIL302 AESTHETICS B

Second session; 12 credit points (3 lecture/discussions per week; one 2-hour seminar per week)
Assessment: One 3-hour examination paper (70%); 1x3,000 word essay (20%); teacher’s assessment (10%)
A second session subject for senior students concerning beauty in nature and art, artistic value, creativity and artistic intention, beauty and concepts (Kant), intuition and expression (Croce).

TEXTBOOKS AND RECOMMENDED READING
As for PHIL252.

PHIL303 IMMANUEL KANT’S CRITIQUE OF PURE REASON

Double session; 16 credit points (2 lectures/discussions per week; one 2-hour seminar per week)
Assessment: One 3-hour examination at end of session 2 - 50%; two 2-3,000 word essays - 40%; Teacher’s assessment - 10%
An examination of Immanuel Kant’s seminal work on the theory of knowledge and the nature of metaphysics.

TEXTBOOKS

RECOMMENDED READING

PHIL312 PHENOMENOLOGY AND EXISTENTIALISM

Second session; 12 credit points (three 1-hour lectures and one 2-hour seminar per week)
Assessment: 60% - 2 essays of 3,000 words to be submitted during the session; 30% - 3 hour examination paper at the end of session 2; 10% - Teacher’s assessment
An introduction to and exploration of the (mainly European) movements of phenomenology and existentialism, with particular reference to the views of Edmund Husserl, Martin Heidegger, Maurice Merleau-Ponty, Jean-Paul Sartre, and Paul Ricoeur. Questions examined include the nature of consciousness, consciousness as a means of knowledge, the presuppositions of knowledge, and knowledge of oneself. The possibility, conditions for, and limitations of our knowledge of other people are also considered, together with the ethical implications.

TEXTBOOKS

RECOMMENDED READING
PHILO32 PHENOMENOLOGY AND EXISTENTIALISM (CONT'D)


PHILO321 LOGICAL ANALYSIS

First session; 12 credit points (3 lecture/discussions per week; one 2-hour seminar per week)

Assessment: One 3-hour examination at end of session 1 - 70%; one 2-3,000 word essay - 20%; Teacher's assessment - 10%

This first session subject deals with the modern Empiricist development of the philosophy of language. Topics considered include: G.E. Moore's "commonsense" philosophy, Bertrand Russell's Logical Atomism and Theory of Descriptions, Verificationism and the contemporary ideas of W.V. Quine.

PRELIMINARY READING


TEXTBOOKS


RECOMMENDED READING


PHILO322 EMPIRICISM B

Second session; 12 credit points (3 lecture/discussions per week; one 2-hour seminar per week)

Assessment: One 3-hour examination paper at the end of second session (70%); 2 essays of 1,500 words (20%); Teacher's assessment - 10%

A second session study of the metaphysical and epistemological principles and doctrines of the British empiricists (John Locke, George Berkeley, and David Hume) and their relationship to contemporary philosophical issues.

TEXTBOOKS AND RECOMMENDED READING

As for PHIL262.

PHILO323 CONTEMPORARY ANALYTIC PHILOSOPHY

Double session; 16 credit points (3 lecture/discussions per week; one 2-hour seminar per week)

Assessment: One 3-hour examination at end of session 2 - 50%; two 2-3,000 word essays - 40%; Teacher's assessment - 10%

This full year subject examines the development of the most important parts of contemporary philosophy. In the first session, the programme of analysis is introduced by way of the "commonsense" philosophy of G.E. Moore and the logical atomism of Bertrand Russell, both of whom may be seen as reacting to the Idealism of F.H. Bradley and others. In the remainder of the session, the Empiricist tradition, championed by Russell, is traced through the later works of the Logical Positivists and, in our own day, W.V. Quine. In the second session, attention is focused on those philosophers who, by and large, opposed that tradition - the later Wittgenstein, J.L. Austin, Gilbert Ryle and again in our own day, P.F. Strawson. The last part of the course will be devoted...
to a brief study of the late nineteenth century philosopher, Gottlob Frege, who in recent times, has been hailed as one of the Fathers of modern philosophy.

PRELIMINARY READING


TEXTBOOKS

Geach, P. & Black, M. eds. Translations from the Philosophical Writings of Gottlob Frege.

RECOMMENDED READING


PHIL332 POLITICAL PHILOSOPHY B

Second session; 18 credit points (3 lecture/discussions per week; one 2-hour seminar per week)
Assessment: One 3-hour examination at the end of session 2. Two 2,500 word essays. The proportion of marks will be determined by the class during the first contact hour. The exam will be at least 50% of marks, the exam and essays together will be 90% of marks. 10% will be tutor's assessment.

The subject has three basic aims. (1) To find the essential differences between conservative, liberal, and radical political philosophies. (2) To find the claims and assumptions which explain these differences. (3) To critically examine these claims and assumptions. The relevant writings of Plato, Aristotle, Hobbes, Locke, Rousseau, Marx and Engels, among others, will be discussed.

TEXTBOOKS


RECOMMENDED READING

PHIL342 PROBABILITY AND INDUCTION

Second session; 12 credit points (three 1-hour lecture/discussions; one 2-hour seminar per week)
Assessment: Either one 3-hour examination paper at the end of Session 2 or three essays of 2,000 words each.

Some central questions in philosophy of science will be discussed in detail. In particular, distinctions will be drawn between different concepts of probability and proposed accounts of each of these concepts will be critically analysed. Considerable attention will be given to the concept of probability involved in inductive arguments. Classical and recent accounts will be presented and their ramifications regarding the characterisation of inductive arguments, inductive logic and the problem of induction will be discussed.

TEXTBOOKS

RECOMMENDED READING

PHIL361 FORMAL LOGIC B

First session; 12 credit points (3 lecture/discussions per week; one 2-hour seminar per week)
Assessment: One 3-hour examination at end of session 1 (50%) and written work submitted during the year (50%)

An introduction to the nature and use of the techniques of formal logic for evaluating philosophical argument. The course is a study of fundamental concepts of logic leading to the development of various systems of propositional and predicate logic; and a discussion of related issues.

PRELIMINARY READING, TEXTBOOK and RECOMMENDED READING
As for PHIL231 Formal Logic A.

PHIL362 MODAL LOGIC

Second session; 12 credit points (3 lecture/discussions per week; one 2-hour seminar per week)
Assessment: One 3-hour examination paper at end of Session 2 (50%); exercises submitted during the course (50%)

The course consists of a study of the development of modal logic and how recent developments in this area bear on some fundamental philosophical problems. The lectures will consist of a discussion of various systems of modal logic, uses of these systems and decision procedures for them. Particular emphasis will be placed on the development of possible world semantics for modal logic and philosophical interpretations of these semantics. Alternative semantics will also be considered. Extending these systems to systems of predicate modal logic raises questions about de re and de dicto modalities and the relationship between them; and the doctrine of essentialism. These questions will be discussed along with considerations relating to choosing between systems and semantical interpretations of quantified modal operators. A brief introduction to the logic of counter-factuals will be included.

TEXTBOOK

RECOMMENDED READING
PHIL371 FORMAL LOGIC C

First session; 12 credit points (3 lecture/discussions per week; one 2-hour seminar per week)
Assessment: One 3-hour examination paper (40%); four written assignments (40%); Teacher's assessment (20%)

A rigorous and critical treatment of the fundamentals of logic and meta-logic. A working knowledge of the propositional calculus and predicate calculus is assumed, together with a modest acquaintance with set theory.

TEXTBOOK

RECOMMENDED READING

PHIL381 FORMAL LOGIC D

First session; 8 credit points (3 lecture/discussions per week)
Details as for PHIL371 FORMAL LOGIC C minus the weekly 2-hour seminar.

PHIL392 SOCIAL PHILOSOPHY B

Second session; 12 credit points (3 lecture/discussions per week; one 2-hour seminar per week)
Assessment: Tutorial assessment - 10%; 2x2,500 word essays - 40%; one 2-hour examination at the end of session - 50%

A critical examination at senior level of the status of rights and the nature of rights-talk, together with a detailed examination of two claimed basic rights - the right to life, and the right to autonomy. Discussions of the morality of terminating life, and of issues arising from claims to particular freedoms, will include topics from the following range: abortion, euthanasia and suicide; warfare; punishment; animal rights; civil disobedience and conscientious objection; reverse discrimination; group self-determination; privacy.

RECOMMENDED READING
As for PHIL292, together with such additional reading as may be set in the senior seminar.

400-LEVEL

PHIL403 PHILOSOPHY HONOURS

Double session; 48 credit points (five 2-hour seminars and one hour of personal supervision per week)
Assessment: Dissertation - 25%; four electives - 75%. At least one of the examiners of the dissertation shall be external to the University. The method of assessment in each of the electives shall be by essay(s) and/or written examination(s) as determined by the students to be assessed in the elective in conjunction with the academic staff responsible for the elective, such determination to be made during the first four weeks of session, subject to endorsement by the Philosophy Departmental Committee. All candidates may be required, in addition, to attend for a viva voce examination.

REQUIREMENTS
All candidates are expected to show in their work a high level of analytical, critical, and scholarly development, and evidence of significant independence of thought.

1. DISSERTATION
Candidates shall present a dissertation, recommended to be no longer than 8,000 to 10,000 words, embodying a sustained and semi-independent study of the work of a major philosopher, period of philosophical thought, or philosophical problem. The choice of area or topic is subject to the availability of a member of the department willing and able to supervise and assess the candidate's progress, and the accessibility to the candidate of a substantial proportion of the relevant literature.

The candidate shall submit to the Department two copies of the dissertation, suitably presented for assessment, no later than on August 31st of the year in which the final Honours examination is to be taken.

2. PHILOSOPHICAL INQUIRY SEMINAR
Candidates shall attend regularly, and present at least two prepared papers to the weekly PHILOSOPHICAL INQUIRY SEMINAR.
3. ELECTIVES

Candidates shall regularly attend and participate in at least four of the following weekly two-hour seminars, and must be assessed in each of four as part of their overall Honours assessment. (Not every seminar will be offered in every year).

PHILOSOPHY OF VALUE

An examination of contemporary discussions of selected problems in ethics, aesthetics, and moral psychology, against the background of a detailed examination of two of Aristotle's major contributions.

PRELIMINARY READING


TEXTBOOKS

Wertheimer, R. Significance of Sense: Meaning, Modality, and Morality. Methuen.

RECOMMENDED READING

Baier, K. Moral Point of View. Cornell U.P.
Donne, R.S. Roles and Values. Methuen.
Toulmin, S. An Examination of the Place of Reason in Ethics. Cambridge U.P.
Wilson, J. Reason and Values. Cambridge U.P.

SOCIAL, LEGAL AND POLITICAL PHILOSOPHY

An examination in the light of three classical texts, of a selection of current controversies relating to such issues as the proper form and extent of government, political ideals (e.g. equality, justice), and the function, nature and legitimacy of law.

PRELIMINARY READING

Mabbott, J.D. The State and the Citizen. Hutchinson.

TEXTBOOKS


RECOMMENDED READING

Golding, M. Philosophy of Law. Prentice-Hall.
Plamenatz, J.P. Democracy and Illusion. Longman.
Wilson, J. Equality. Hutchinson.

MENTAL PHILOSOPHY

A study of a selection of philosophical problems relating to the nature of the human person, the characteristics of mind and perception, and issues to do with action and agency.
Description of Subjects - Philosophy

PHIL403 PHILOSOPHY HONOURS (CONT'D)

PRELIMINARY READING

Shaffer, J. Philosophy of Mind. Prentice-Hall.

TEXTBOOKS

Vendler, Z. Roe Cottiune, an Essay in Rational Psychology. Cornell U.P.

RECOMMENDED READING

Cormman, J.W. Materialism and Sensations. Yale U.P.
Danto, A.C. Analytical Philosophy of Action. Cambridge U.P.

EPISTEMOLOGY AND METHODOLOGY

An examination of a selection of problems to do with the justification of belief, the conditions for knowledge, and erecting, testing, confirming and falsifying hypotheses.

PRELIMINARY READING

Chisholm, R. Theory of Knowledge. Prentice-Hall.
Hempel, C. Philosophy of Natural Science. Prentice-Hall.
Salmon, W. Logic. Prentice-Hall.

TEXTBOOKS

Swinburne, R. Introduction to Confirmation Theory. Methuen.
Unger, P. Ignorance. Oxford U.P.

RECOMMENDED READING

Achinstein, P. Law and Explanation. Oxford U.P.
Ackermann, R. Belief and Knowledge. Macmillan.
Barker, S.F. Induction and Hypothesis. Cornell U.P.
Brathwaite, R.B. Scientific Explanation. Cambridge University Press.
Cohen, L.D. Implications of Induction. Methuen.
Hacking, I. The Logic of Statistical Inference. Cambridge U.P.
Hanson, N.R. Constellations and Conjectures. Reidel.
Reichenbach, H. Experience and Prediction. Chicago U.P.
Wright, G.H.V. The Logical Problem of Induction. Blackwell.

FREE WILL, RESPONSIBILITY AND LIBERTY

An investigation of the nature of free will and socio-political liberty and the relation between them; and a detailed examination of one of the fundamental presuppositions of a system of morality, that persons are responsible for their actions.

RECOMMENDED READING


ADVANCED FORMAL LOGIC

A selection of advanced topics in formal logic, including a study of the development of modal logic; an introduction to some systems of modal logic, uses of these systems and proofs of some metatheoretic results. A detailed discussion of semantics for modal logic and the philosophical interpretation of such semantics; and of philosophical problems arising from a study of predicate modal logic.

PRELIMINARY READING


TEXTBOOKS


RECOMMENDED READING

As for PHIL362, together with articles selected by the lecturer.

NOTE: This elective is not available to candidates who have passed PHIL351 or PHIL352 or PHIL362 or PHIL371 or PHIL381.

CONTEMPORARY PHILOSOPHY OF LANGUAGE

An enquiry into recent work in the philosophy of language, with emphasis on theories of truth and meaning.

PRELIMINARY READING


TEXTBOOKS

There are no set texts; selected articles will be prescribed by the Lecturer.

RECOMMENDED READING


NOTE: Candidates taking this elective should have attained at least a pass in PHIL321 or PHIL323.

PHILOSOPHICAL LOGIC

An investigation of a selection of theories dealing with the concepts of existence, reference and predication.

TEXTBOOKS


Plus selected articles to be prescribed by the Lecturer.

RECOMMENDED READING


NOTE: Candidates taking this elective should have attained at least a pass in PHIL321 or PHIL323.

KANT
A detailed study of selected areas in Kant's Critical Philosophy.

TEXTBOOKS

RECOMMENDED READING
Ewing, A.C. A Short Commentary on Kant's Critique of Pure Reason. Methuen, London, 1950 (2nd ed.)

NOTE: This elective is not available to candidates who have passed PHIL311 or PHIL303.

WITTGENSTEIN
A critical examination of Wittgenstein's contribution to philosophy, with special reference to his views on method, epistemology, philosophy of mind, judgement, logic, and mathematics.

TEXTBOOKS

RECOMMENDED READING
PHYSICS

SCHEDULE ENTRIES

Refer to the schedule entries for further details of subjects, including pre-requisites and exclusions. All subjects described in this section are included in Schedule A and also, with the exception of PHYS251, in Schedule E. Subjects which also appear in other schedules are:

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100-LEVEL

PHYS141 FUNDAMENTALS OF PHYSICS A

Double session; 6 credit points (48 hrs lectures, 14 hrs tutorials and 28 hrs laboratory)
Assessment: Will be carried out according to performance in homework assignments, practical work, tests and sessional examinations
Vectors; vector algebra; motion in one dimension; motion in a plane; particle dynamics; work and energy; conservation of energy; conservation of momentum; collisions; rotational kinematics; rotational dynamics; conservation of angular momentum; equilibrium of rigid bodies; gravitation; elasticity; temperature; heat and the first law; kinetic theory of gases; heat and the second law; fluid statics; fluid dynamics.

TEXTBOOK

RECOMMENDED READING
Marion, J.B. A Universe of Physics; A Book of Readings. Wiley (Paperback).

PHYS142 FUNDAMENTALS OF PHYSICS B

Double session; 6 credit points (48 hrs lectures, 14 hrs tutorials and 28 hrs laboratory)
Assessment: The same as for PHYS141
Charge and matter; electric field; Gauss' Law; electric potential; capacitance; current and resistance; Emf and circuits; magnetic fields; Ampere's Law; Faraday's Law; inductance; simple harmonic motion; waves; reflection and refraction; interference; diffraction; polarization; optical instruments; quantum physics; waves and particles; atomic physics; the Bohr atom; special relativity; nuclear physics.

TEXTBOOKS

NOTE: For students taking both PHYS141 and PHYS142:

RECOMMENDED READING
Marion, J.B. A Universe of Physics; A Book of Readings. Wiley (Paperback).

PHYS151 THE ART OF PHYSICS

Second session; 6 credit points (48 hrs lectures, 14 hrs tutorials and 14 hrs laboratory/demonstrations)
Assessment: Continuous assessment through quizzes, laboratory participation and home project reports
This subject consists of five independent parts. The content of each topic is indicated below.
SOLAR SYSTEM ASTRONOMY
Planetary motion; moon phases; the Zodiac; the seasons; sun; moon; planets; comets; meteorites.

PHYSICS OF CAR AND RACE TRACK
Speed, velocity; acceleration; force; torque; friction; lubrication with application to car systems; motion in a circle; energy; power; heat; thermodynamic efficiency with application to efficiency of engines.
PHYSICS OF COMMUNICATION

Electric charges and currents; electric and magnetic fields with applications to modern devices; electromagnetic waves with consideration of radio and TV transmission.

MODERN PHYSICS

Relativity; atomic structure; nuclear forces and energy with modern applications.

ASTROPHYSICS

Stars; galaxies; unusual extra-terrestrial objects.

TEXTBOOKS

Each student may choose, according to her/his own preference, one text from:


And one text from:


RECOMMENDED READING


200-LEVEL

PHYSICS 201 INTERMEDIATE PHYSICS A

Double session; 12 credit points (86 hrs lectures, 14 hrs tutorials and 56 hrs practical)

Assessment: Each section (see below) will be assessed separately and a final evaluation determined using a weighting factor based on contact hours. The individual assessments will be made using an appropriate combination of performance in homework assignments, tests, laboratory and sessional examinations.

The subject consists of electricity and magnetism, modern physics, mechanics and practical classes.

The topics, and their dispositions, are as follows:

ELECTRICITY AND MAGNETISM (First session topic; 28 hrs lectures and 7 hrs tutorials)

Vector algebra and calculus; electrostatics; electric field and potential; electric dipole; charge cluster; integral and differential forms of Gauss' Law; Poisson's and Laplace's Equations; method of electrostatic images; dielectric theory; polarization fields; electrical susceptibility and dielectric constant; boundary conditions; cavities; Clausius-Mossotti Equation; electrostatic energy; forces on charge distributions; magnetostatics; Ampere's Law; B; Lorentz force; magnetic vector potential; integral and differential form of Ampere's Law; magnetic dipole; magnetic properties of matter; magnetization; H; dia- and paramagnetism; boundary conditions; electromagnetic induction; differential form of Faraday's Law; self and mutual induction; electric current; equation of continuity; Maxwell's Equations; direct current circuits; transients; alternating current circuits.

TEXTBOOKS


MODERN PHYSICS (Double session topic, 42 hrs lectures)

Special theory of relativity; the experimental basis of relativity; alternate theories; Lorentz transformations; consequences for the measurement of length, time, energy and mass; quantum effects; constituents and structure of the atom; wave particle duality; black body radiation; photo-electric effect; pair production; bremsstrahlung; Compton effect; production, scattering and absorption of X-rays; de Broglie hypothesis; diffraction of particles; quantum mechanics; wave packets; uncertainty principle; Schrödinger Equation; correspondence principle; particle in a box; qualitative description of the wave functions of the hydrogen atom; discovery and properties of α, β, γ, n, p, v; decay laws; binding energies of nucleons; nuclear reactions; fission and fusion; cosmic rays; origin of the elements; statistical distribution functions; particle in a periodic potential; energy bands; impurity states; physics of the p-n junction and transistor.

TEXTBOOK

PHYS201 INTERMEDIATE PHYSICS A (CONT'D)

MECHANICS (Second session topic; 28 hrs lectures and 7 hrs tutorials)

Vector calculus; kinematics of a particle; dynamics of a particle; moving reference systems; central forces; dynamics of a system of particles; mechanics of rigid bodies; Lagrange's Equations.

TEXTBOOK

EXPERIMENTAL (First session topic; 50 hrs laboratory)
14 Experiments selected from:

Errors: direct reading potentiometer; E.M.F. of thermo-couples by potentiometric method; sensitivity of the galvanometer; use of the ballistic galvanometer; measurement of the magnetisation of iron; absolute measurement of mutual inductance, A.C. circuits: series resonance; parallel resonance; photoelectric cell; determination of e/m for electrons; atomic spectra: Na and H; Stefan-Boltzman Law; constant of universal gravitation; X-rays; nuclear physics; velocity of light from Michelson interferometer; Frank Herz experiment.

PHYS205 MODERN PHYSICS

Double session; 6 credit points (42 hrs lectures and 42 hrs practical)
Assessment: Same as for PHYS201
Consists of the modern physics section of PHYS201 and 10 experiments selected from the experimental section of PHYS201.

PHYS211 INTERMEDIATE PHYSICS B

Double session; 12 credit points (112 hrs lectures and 56 hrs practical)
Assessment: Same as for PHYS201
The subject consists of thermodynamics, kinetic theory, vibrations, waves and optics, electronics and practical classes. These topics and their disposition are as follows:

THERMODYNAMICS AND KINETIC THEORY (Double session topic; 28 hrs lectures)

Thermodynamic systems; equations of state; work; the first law of thermodynamics and its consequences; the second law of thermodynamics; entropy; combined first and second laws; thermodynamic potentials; applications of thermodynamics including black bodies, voltaic cells and thermo-electric effects; kinetic theory of the ideal gas; the distribution of molecular velocities.

TEXTBOOK

VIBRATIONS, WAVES AND OPTICS (Double session topic; 42 hrs lectures)

Simple harmonic motion; two body oscillations; damped harmonic oscillator; power dissipation; quality factor; driven harmonic oscillator; superposition principle; superposition of vibrations; Fourier analysis; waves; Huygen's principle; laws of reflection and refraction; analytical treatment of wave motion; sinusoidal waves; group velocity; dispersion; Young's experiment; interference; coherence; Stokes' treatment of reflection and refraction; interference involving multiple reflections; applications; standing waves; Fabry-Perot interferometer; Michelson interferometer; Fourier spectroscopy; Fresnel diffraction; Fraunhofer diffraction; resolving power of optical instruments; chromatic resolving power; diffraction grating; holography; polarization of waves; double refraction; interference of polarized light.

TEXTBOOKS

ELECTRONICS (Double session topic; 42 hrs lectures)
This topic is offered by the Department of Electrical Engineering as ELEC211 Electronics 1.

EXPERIMENTAL (Second session topic; 56 hrs laboratory)
14 Experiments selected from:

Velocity of sound in air by stationary waves; Newton's rings; Fresnel Bi-Prism; diffraction grating; resolving power of telescope; Michelson and Fabry-Perot interferometer; dispersive power of glass; thermal conductivity of a bad conductor and of glass tubing; polarised light;
microwave optics; variation of boiling point with pressure; determination of $\frac{C_p}{C_v}$ for air; heat engine; electronics.

PHYS215 VIBRATIONS, WAVES AND OPTICS

Double session; 6 credit points (48 hrs lectures and 48 hrs practical)
Assessment: Same as for PHYS205
Consists of the vibrations, waves and optics section of PHYS211 and 10 experiments selected from the experimental sections of PHYS201 and PHYS211.

PHYS220 INTERMEDIATE PHYSICS FOR ENGINEERS

Double session; 12 credit points (112 hrs lectures and 56 hrs practical)
Assessment: Same as for PHYS201
This subject consists of materials selected from PHYS201 and PHYS211 as follows:
- Electricity and magnetism and modern physics from PHYS201
- Vibrations, waves and optics from PHYS211
- 14 experiments selected from the experimental sections of PHYS201 and PHYS211.

PHYS225 INTERMEDIATE ELECTRICITY AND MAGNETISM

Double session; 6 credit points (28 hrs lectures; 7 hrs tutorial and 49 hrs practical)
Assessment: Same as for PHYS205
Consists of the electromagnetism section of PHYS201 and 12 experiments selected from the experimental section of PHYS201.

PHYS235 MECHANICS AND THERMODYNAMICS

Double session; 6 credit points (56 hrs lectures; 7 hrs tutorials and 81 hrs practical)
Assessment: Same as for PHYS205
Consists of the mechanics section of PHYS201 and thermodynamics and kinetic theory section of PHYS211. Also contains 5 experiments selected from the experimental sections of PHYS201 and PHYS211.

PHYS244 MODERN PHYSICS, VIBRATIONS, WAVES AND OPTICS

Double session; 8 credit points (84 hrs lectures and 28 hrs practical)
Assessment: Same as for PHYS205
Consists of the modern physics section of PHYS201 and vibrations, waves and optics section of PHYS211. Also contains 7 experiments selected from the experimental sections of PHYS201 and PHYS211.

PHYS248 ASTRONOMY

Double session; 6 credit points (42 hrs lectures; 14 hrs tutorials and 28 hrs practical)
Assessment: Performance in the course is assessed from laboratory work and sessional examinations
Deep-sea navigation; the celestial sphere; position lines; the computation of the deep-sea position; celestial mechanics; Newton's Laws; derivation of Kepler's Laws; position and motion in an orbit; the solar system; the sun; stellar positions, distances and masses; photometry and spectroscopy; stellar spectral classification; nuclear reactions in stars; formation of elements; Hertzsprung-Russell diagram; equations of stellar structure; stellar evolution; galactic and extra-galactic astronomy; structure of our galaxy; classification and evolution of galaxies; exploding galaxies; quasars and black holes; cosmology; outstanding problems.

TEXTBOOK

PHYS251 CONCEPTS OF THE MODERN UNIVERSE

First session; 6 credit points (56 hrs lectures; 14 hrs tutorials; 16 hrs laboratory and 1 hr 2-hour field trip to the University Observatory)
Assessment: Will be based upon performance in tests, written assignments and one 2-hour examination
NOTE: No special ability in Mathematics or Physics is required for this subject.
Astronomy is the most ancient of all sciences. Present-day astronomers are on the verge of great discoveries and the relationship between man and the universe is gradually being revealed. This course will illustrate the techniques used by astronomers and will attempt to give an understanding of the universe as we presently understand it. A field trip to the University's Observatory will give the opportunity to observe the phenomena discussed.

The birth of astronomy; the development of astronomy as a science; the planets - a description; the formation of the solar system; the space programme - moon; to the planets; the search for life; future of the space programme; the sun as a star; the violent sun; aurorae; eclipses; starlight; the message of starlight; the visible stars; the variation in stars; the birth and death of stars; telescopes, big and small; the milky way; the universe of galaxies; the universe in perspective.

TEXTBOOK

RECOMMENDED READING
First session; 6 credit points (84 hrs laboratory)
Assessment: Based on classroom performance and laboratory assignments
Transistor amplifiers; microwave diffraction; transmission lines; carrier lifetime measurements in semiconductors; atomic spectra; microwave waveguide measurements; Frank-Hertz tube; positron annihilation; $\gamma$-rays $\rightarrow 0$ analogues; interferometers; Zeeman effect; logic and computer circuits.

PHYS308 ADVANCED EXPERIMENTAL PHYSICS B
Second session; 6 credit points (84 hrs laboratory)
Assessment: Based on classroom performance and laboratory assignments
Fourier Transform spectroscopy; magnetic resonance; interferometry measurements; cloud physics; resonant absorption and phase-sensitive detection; Raman spectra; magnetostriction; superconductivity; stellar interferometer; noise factor of a radio receiver; nuclear experiments.

PHYS309 ADVANCED EXPERIMENTAL PHYSICS
Double session; 12 credit points (168 hrs laboratory)
Assessment: Based on classroom performance and laboratory assignments
Selections are to be made from the combined topics of PHYS307 and PHYS308.

PHYS311 QUANTUM AND STATISTICAL MECHANICS
Double session; 8 credit points (112 hrs lectures)
Assessment: Same as for PHYS301
This subject consists of two topics with the following content:

QUANTUM MECHANICS (56 hrs lectures)
Operators in co-ordinate and momentum space with applications; spherically symmetrical potentials; spherical harmonics; angular momentum operators; uncertainty relations for angular momentum operators; Stern-Gerlach experiments and their impact on the meaning of measurement; topics of significance to spectroscopy - 3-D symmetric harmonic oscillator; rigid rotator, molecular spectra, hydrogen atom, normal Zeeman effect, spin, spin-orbit interaction, vector model for addition of angular momentum, anomalous Zeeman effect, L-S coupling, J-J coupling, excited states of helium, selection rules, hyperfine structure; periodic table; time independent perturbation theory; Stark effect; matrix treatment of the harmonic oscillator.

STATISTICAL MECHANICS (56 hrs lectures)
Review of thermodynamics; concepts of quantum statistical mechanics; sharply peaked distributions; ensembles; systems in thermal contact - entropy and temperature; systems in diffusive contact - the chemical potential; Gibbs and Boltzmann factors - partition functions; fluctuations; pressure and thermodynamic identity; Boltzmann definition of entropy; Identical particles - fermion and boson distribution functions; applications to electrons in metals; blackbody radiation and debye theory of vibrations in solids; Bose-Einstein condensation and properties of liquid helium; classical limit of the quantum distribution functions; monatomic ideal gas; Maxwell-Boltzmann velocity distribution; kinetic theory; transport processes.

PHYS312 ADVANCED EXPERIMENTAL PHYSICS WITH ELECTRONICS
Double session; 16 credit points (48 hrs lectures and 168 hrs laboratory)
Assessment: Grade determined in the ratio 3:1: Experimental Physics: Electronics. Assessment according to that for PHYS309 and ELEC311
Same as PHYS309 Advanced Experimental Physics, but includes ELEC311 Electronics II offered by the Department of Electrical Engineering in Session I.

PHYS319 QUANTUM MECHANICS AND ASTROPHYSICS
Double session; 6 credit points (96 hrs lectures)
Assessment: Each section will be assessed separately and given weight proportionate to contact hours of lectures
This subject consists of the quantum mechanics section of PHYS311 and the astrophysics section of PHYS321.

**ASTROPHYSICS**

Cosmic distance scale; dynamics and masses of astronomical bodies; random processes in astronomy; photons and fast particles; electromagnetic processes in space; quantum processes in astrophysics; structure and evolution of stars; cosmic gas and dust; structure of the universe.

**TEXTBOOK**


**NUCLEAR PHYSICS**

Rutherford scattering; energy loss processes for heavy charged particles, electrons and photons; basic properties of nuclei - radius and charge distribution; angular momentum; magnetic moment; parity; quadrupole moment; binding energies; excited states; nuclear models - Fermi gas, shell, liquid rotator, liquid drop; semi-empirical mass formula - phenomenology, beta stability criteria; decay laws; partial half-lives; alpha decay theory; beta decay theory - neutrino hypothesis; weak interaction; Fermi's golden rule; Kurie plots; classification of transitions and selection rules; electron capture; inverse beta decay; conservation of parity; universal Fermi interaction; gamma decay - vector model for addition of angular momentum; electric and magnetic multipole radiation; internal conversion; nuclear forces - characteristics, Yukawa theory.

**TEXTBOOK**


**INTRODUCTORY SOLID STATE PHYSICS**

Symmetry operations; the lattice; crystal systems; Bravais lattices; crystal structure; Miller indices; the reciprocal lattice; the Laue equations; bonding; molecular spectra; lattice vibrations; monatomic linear chain; Einstein's theory of specific heat; the free electron theory of metals; electrical conductivity and Ohm's law; Hall effect; electronic specific heat; Fermi-Dirac statistics; the band theory of solids; nearly free electron approximation; extended and reduced zones; metals, insulators and semi-conductors; tight binding approximation; effective mass; Bloch's theorem; the positive hole; semi-conductors; intrinsic conductivity; electron and hole concentrations; superconductivity.

**TEXTBOOK**

Special notes.
PHYS317 QUANTUM MECHANICS AND NUCLEAR PHYSICS

Double session; 6 credit points (84 hrs lectures)
Assessment: Each section will be assessed separately and given weight proportionate to contact hours of lectures.
This subject consists of the quantum mechanics section of PHYS311 and the nuclear physics section of PHYS321.

PHYS318 QUANTUM MECHANICS AND HIGH ENERGY PHYSICS

Double session; 6 credit points (84 hrs lectures)
Assessment: Each section will be assessed separately and given weight proportionate to contact hours of lectures.
This subject consists of the quantum mechanics section of PHYS311 and the high energy physics section of PHYS322.

PHYS322 ASTRO-, HIGH ENERGY, NUCLEAR AND SOLID STATE PHYSICS

Second session; 8 credit points (98 hrs lectures and 14 hrs tutorials)
Assessment: Same as for PHYS302
The contents of this subject are as follows:
Astrophysics, nuclear and solid state physics sections of PHYS321.

AND

HIGH ENERGY PHYSICS (14 hrs lectures and 14 hrs tutorials)
Particle accelerators and detectors; principles of focussing; characteristics of particles and resonances; conservation laws; strangeness; particle multiplets; the eightfold way; quarks; colour and charm; cosmic rays.

TEXTBOOK

In addition to the prescribed text, an extensive reading list will be supplied.

PHYS324 ROLE OF ENERGY IN MICROSCOPIC PHYSICS AND CHEMISTRY*

Double session; 12 credit points (112 hrs lectures and 28 hrs laboratory)
Assessment: Practical and tutorial assignments, plus written examinations
This subject consists of CHEM324 and the statistical mechanics section of PHYS311.

PHYS326 STATISTICAL MECHANICS AND SOLID STATE PHYSICS

Double session; 6 credit points (84 hrs lectures)
Assessment: Each section will be assessed separately and given weight proportionate to contact hours of lectures.
This subject consists of the statistical mechanics section of PHYS311 and the solid state physics section of PHYS321.

PHYS327 STATISTICAL MECHANICS AND NUCLEAR PHYSICS

Double session; 6 credit points (84 hrs lectures)
Assessment: Same as for PHYS326
This subject consists of the statistical mechanics sections of PHYS311 and the nuclear physics section of PHYS321.

PHYS328 STATISTICAL MECHANICS AND HIGH ENERGY PHYSICS

Double session; 6 credit points (84 hrs lectures)
Assessment: Same as for PHYS326
This subject consists of the statistical mechanics section of PHYS311 and the high energy physics section of PHYS322.

*This subject may not be offered every year.
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PHYS329 STATISTICAL MECHANICS AND ASTROPHYSICS

Double session; 8 credit points (84 hrs lectures)
Assessment: Same as for PHYS326

This subject consists of the statistical mechanics section of PHYS311 and the astrophysics section of PHYS321.

PHYS348 ASTRONOMY

Double session; 8 credit points (42 hrs lectures, 14 hrs tutorials and 28 hrs practical)
(Approval for taking Astronomy at the 300-level is at the discretion of the Chairman of the Department of Physics.)
Assessment: Same as for PHYS248

DESCRIPTION AND BOOKS: See PHYS248

400-LEVEL

The honours degree in physics for a BSc is achieved by the successful completion of a full year of comprehensive study following qualification for a BSc pass degree. Assessment is based entirely on the honours year programme, a programme designed to provide a formal coverage of the core subjects of physics and also involve the student in one or more of the active areas of research in the department.

Entry to the Honours year shall be determined by the Academic Senate on the advice of the Departmental Chairman (who will be advised by the Departmental Assessment Committee). Each student will be assessed individually for entry into each subject. This assessment will replace the pre- and co-requisite requirements. The minimum requirements for a student to enrol in the Honours programme is that he/she should have completed a substantial and coherent course at the 300-level in physics and that a significant number of examination results should be better than Pass Level in these 300-level subjects.

PHYS401 THEORETICAL MECHANICS AND ELECTROMAGNETISM

First session; 8 credit points (56 hrs lectures)
Assessment: Each topic (see below) is assessed separately and is of equal weight. The individual assessments are based on assigned problems, tests and sessional examinations.

The contents of the topics are as follows:

THEORETICAL MECHANICS (28 hrs lectures)

Lagrange Equations with applications including generalized potentials, dissipation, holonomic and integral constraints; gauge transformation of lagrangian; conservation theorems; Hamilton's principle; principle of least action; Hamilton's formulation of mechanics; canonical transformation; Hamilton-Jacobi theory; Poisson brackets; canonical invariants; Liouville's theorem.

TEXTBOOK

ELECTROMAGNETISM (28 hrs lectures)

Poisson's and Laplace's Equations; Green's theorem and functions; method of images; method of inversion; Green's function for sphere; boundary value problems in common coordinate systems; eigenfunction expansions; multipoles; dielectrics; magnetostatics; time varying fields; plane electromagnetic waves in media with dielectric interfaces in conducting media including plasmas; wave guides and resonant cavities; radiating systems and diffraction.

TEXTBOOK
Jackson, J.D. Classical Electrodynamics. Wiley, 2nd ed.

PHYS410 HONOURS PROJECT

Double session; 18 credit points (560 hrs)
Assessment: Based on contribution to the project and written and oral presentations of report.

The student is required to participate actively in an existing research project under the supervision of staff member(s). It is expected that the student will contribute to the successful development, and/or productivity of the project. A report on the project is to be compiled by the
A preliminary presentation of the content of the report is to be delivered to the department at one of the formal departmental colloquia in the latter part of the academic year. The clarity and completeness of this presentation will form part of the assessment of the subject.

**PHYS441 ASTRO- AND NUCLEAR PHYSICS**

Double session; 12 credit points (66 hrs lectures)

Assessment: Same as for PHYS401

The contents of the topics are as follows:

**ASTROPHYSICS** (38 hrs lectures)

Review of observational data; radiative transfer; absorption, emission, equation of transfer and its solution; the calculation of absorption coefficients, excitation, ionization, and absorption processes; stellar atmospheres, equations, convective and radiative transfer; models for given temperature and surface gravity; the theory of line absorption, line profiles, equivalent widths, the curve of growth; equations for stellar interiors; radiative and convective equilibrium; nuclear processes; calculation of evolutionary sequences; stellar evolution; protostars, main sequence, red-giant and final evolutionary stages for various masses; white dwarfs, supernovae and formation of elements; neutron stars, gravitational collapse.

**TEXTBOOK**


**NUCLEAR PHYSICS** (28 hrs lectures)

Nuclear wave functions and potentials; the deuteron; exchange forces (Wigner, Bartlett, Majorana, Heisenberg); angular momentum coupling; analog states and the charge independence of nuclear forces; nuclear reactions - compound nucleus formation, resonances, optical model, direct reactions; theory of fission; fusion reactors - magnetic confinement, heating and instabilities of plasmas, implosion techniques; elementary particles.

**TEXTBOOK**


**PHYS443 QUANTUM MECHANICS AND STATISTICAL MECHANICS**

Double session topic; 56 hrs lectures)

Assessment: Each topic is assessed separately and weighted in proportion to the number of contact hours (see below). The individual assessments are based on assigned problems, tests and sessional examinations

The contents of the topics are as follows:

**QUANTUM MECHANICS** (Double session topic; 56 hrs lectures)

Relationship between operators, basis sets and matrices; change of basis sets; commutator algebra, raising and lowering operators, exponentiated operators; commutation rules for angular momentum operators; orbital angular momentum; application to various spherically symmetric potentials; scattering theory, Born approximation, partial waves and phase shifts; time independent degenerate and non-degenerate perturbation theory; time dependent perturbation theory, Fermi's golden rule, photo-emission, multipole transitions, spontaneous emission, Einstein transition probabilities; Schrodinger, Heisenberg and interaction pictures; variational methods, identical particles, Hartree and Hartree-Fock theory, Koopman's theorem; addition of angular momentum, Clebsch-Gordon coefficient, spin-orbit interaction.

**TEXTBOOK**

Powell, J. & Craseman, B. *Quantum Mechanics*. Addison-Wesley.


**STATISTICAL MECHANICS** (Second session topic; 28 hrs lectures)

Boltzmann transport equation with applications to transport properties; Boltzmann's H theorem; Liouville's theorem and its application to classical statistical mechanics; conservation laws; the classical ensembles with applications; the generalised equipartition theorem; density fluctuations and phase transitions; imperfect gases; the density matrix; quantum ensembles; classical limit of the partition function; further applications of quantum distribution functions to systems of interest in modern physics.

**TEXTBOOK**

Huang, K. *Statistical Mechanics*. Wiley.
Description of Subjects - Physics

PHYS446 SOLID STATE PHYSICS

Double session; 8 credit points (56 hrs lectures)
Assessment: Based on homework assignments, tests and sessional examination

Crystallography; diffraction of waves by crystals; crystal binding; elasticity; normal modes; lattice vibrations; lattice specific heat; free electron theory of solids; electronic specific heat; electrical conductivity; Hall effect. Cyclotron resonance; band theory of solids; Bloch's theorem; nearly free electron approximation; tight binding approximation; properties of Bloch functions; metals; effective mass; the hole; semiconductors, intrinsic and extrinsic; superconductivity.

TEXTBOOK

PHYS455 NUCLEAR AND SOLID STATE PHYSICS

Double session; 12 credit points (84 hrs lectures)
Assessment: Same as for PHYS443

The contents of the two topics are:
Nuclear Physics section of PHYS441;
Solid State Physics, PHYS446.

PHYS465 ASTRO- AND SOLID STATE PHYSICS

Double session; 12 credit points (84 hrs lectures)
Assessment: Same as for PHYS443

The contents of the two topics are:
Astrophysics section of PHYS441;
Solid State Physics, PHYS446.
PSYCHOLOGY

SCHEDULE ENTRIES

Refer to the schedule entries for further details of subjects, including pre-requisites and exclusions. All subjects described in this section are included in Schedule A. Subjects which also appear in other schedules are:

<table>
<thead>
<tr>
<th>Subject</th>
<th>Schedule</th>
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<tbody>
<tr>
<td>PSYC101</td>
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<td>PSYC102</td>
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100-LEVEL

PSYC101 PSYCHOLOGY IA

First session; 6 credit points (6 contact hrs: 4 lectures; 2 proo/demonstrations)
Chairpersons for the subject: Professor A.M. Clarke & Dr. N.L. Adams
Assessment: Within session assignments consisting of reports on laboratory work and statistics, one essay, and two end-of-session examinations
The subject will consist of four areas of study: research methods and statistical techniques (first part); psychobiology; development and social processes, and motivation and emotion (first part).

TEXTBOOK

PSYC102 PSYCHOLOGY IB

Second session; 6 credit points (6 contact hrs: 4 lectures; 2 proo/demonstrations)
Chairpersons for the subject: Professor A.M. Clarke & Dr. N.L. Adams
Assessment: Within session assignments consisting of reports on laboratory work and statistics, one essay, and two end-of-session examinations
The four areas of study in this subject are: research methods and statistical techniques (second part); motivation and emotion (second part); learning and cognition; abnormal psychology and individual differences.

TEXTBOOK

200-LEVEL

PSYC231 PERSONALITY

First session; 6 credit points (4 contact hrs: 8 lectures; 2 seminar/lab)
Chairperson for the subject: Dr. B.M. Walker
Assessment: Examination, essay, laboratory reports, seminar papers
This subject comprises two closely related strands. The lecture course introduces the major theories of personality. Detailed critical analysis and comparison will be made of the principal paradigms - the psychoanalytic, behaviourist, and existential - as well as theories that have evolved from them such as ego-psychology, social learning theory and self theory. Consideration will also be given to more empirically based theorists. The laboratory work will include class exercises and research projects based on work covered in the theoretical strand.

TEXTBOOK

RECOMMENDED READING
For intending honours students:
PSYC232 RESEARCH METHODS AND STATISTICS

Second session; 6 credit points (4 contact hrs: 2 lectures; 2 tutorials)
Chairperson for the subject: Dr. S. Ginsberg
Assessment: Assignments, midterm exam, and final exam

A general introduction to research methodology and related statistical techniques and their application to selected problems in psychology. The research-methods lectures progress from general ideas about research, scientific method, and experimental inference to special problems of psychology as a science, formulation of a research problem, choice of a method or design, interpretation and explanation of data, significance and generality of the findings, and communication to the public.

The main aspects of statistical analysis covered are: probability theory; regression and prediction; normal and binomial distributions; statistical inference with two independent samples; statistical inference with correlated samples; one-way analyses of variance; power of a test and types of errors; nonparametric tests with categorical and ordinally scaled variables (binomial test, chi-squared, Mann-Whitney U-test, Wilcoxon test).

TEXTBOOKS

PSYC233 DEVELOPMENT

Second session; 6 credit points (4 contact hrs: 2 lectures; 2 seminar/pracs)
Chairperson for the subject: Dr. B.M. Walker
Assessment: Seminar papers, reports and examination

This subject considers development throughout the life span and includes appropriate theories and empirical work. Emphasis will be placed on both the social and societal contexts in which development occurs and on the extent to which the theories discussed are culturally bound.

Topics will include: Maternal deprivation; the relevance of the nuclear family to development; cognitive theories and research; personality development; influences of and changes in social interaction. Students may specialise in child development or in ageing, and should purchase the texts appropriate to their choice. Students are cautioned that much of the material dealt with in this course relies on a knowledge of material presented in PSYC231.

TEXTBOOKS
Flavell, J.M. Cognitive development.

PSYC234 PSYCHOLOGY OF LEARNING

Second session; 6 credit points (4 contact hrs: 2 lectures; 2 lab)
Chairperson for the subject: Dr. S. Ginsberg
Assessment: Laboratory reports and examinations

Lecture topics will include: fundamental principles of Pavlovian and instrumental conditioning; basic reinforcement principles, learning theories, extinction, patterns of reinforcement, emotion and motivation, generalization, discrimination, concept identification, verbal learning, memory, and language learning. The laboratories will be devoted to exercises and projects based on the work covered in the lectures.

TEXTBOOK

PSYC235 PSYCHOLOGICAL ASSESSMENT

First session; 6 credit points (4 contact hrs: 3 lectures; 1 lab; 1 seminar)
Chairperson for the subject: Dr. J.L. Morris
Assessment: Examination, test construction, test administration, assignment

Topics include: (a) test classification, test administration, interpretation of scores, dissemination of test results; (b) test theory which includes a consideration of reliability, validity, test construction, item analysis, factor analytic construction of tests, personnel selection; (c) types of tests and special uses - education, clinical work-management; (d) non-test techniques of assessment; (e) problems and limitations of testing; (f) practical work which includes the construction of tests and the taking and administration of individual and group tests.
TEXTBOOK

PSYC236 APPLIED PSYCHOLOGY

First session; 6 credit points (3 contact hrs: 2 lectures; 1 seminar/tutorial)
Chairperson for the subject: Dr. N.L. Adams
Assessment: Seminar papers; essay and/or examination

This subject introduces the student to applied aspects of several of the areas of psychology which are dealt with at a more advanced standard in individual 300-level subjects. The subject will explore: ways in which psychologists suggest that behaviour may be modified; and the various uses made of psychology in counselling; in vocational guidance and selection; in humanistic endeavours; in job design and industrial relations; and in social psychology.

TEXTBOOKS
To be notified.

300-LEVEL
PSYC331 PSYCHOLOGICAL THEORY

First session; 6 credit points (3 contact hrs: 1 lecture; 2 seminars)
Chairperson for the subject: Professor A.M. Clarke
Assessment: Class participation, seminar papers

This subject will provide the historical and philosophical context in which to place contemporary theories and psychological systems. Topics will include: psychology and science; associationism; structuralism; functionalism; phenomenology; psychoanalysis; behaviourism; Gestalt psychology; field theory; varieties of S-R theory; personality theories; engineering and mathematical influences and psychology.

TEXTBOOKS
To be notified.

MATH334 DESIGN AND ANALYSIS

Double session; 6 credit points
Refer to “Description of Subjects - Mathematics”.

PSYC338 BEHAVIOUR MODIFICATION

Second session; 6 credit points (4 contact hrs: 2 lectures; 2 laboratory)
Chairperson for the subject: Professor A.M. Clarke
Assessment: Within session assignments and end of session examination


TEXTBOOKS

RECOMMENDED READING

PSYC348 BEHAVIOUR MODIFICATION (SCIENCE)

Second session; 6 credit points (6 contact hrs: 2 lectures; 2 labs; 2 hrs supervised project)
Chairperson for the subject: Professor A.M. Clarke
Other details: Same as PSYC338
PSYC335 HUMANISTIC PSYCHOLOGY

First session; 6 credit points (6 contact hrs: 1 lecture; 2 seminars; 2 practical)
Chairperson for the subject: Dr. D.D. Diespecker
Assessment: One oral examination (end-of-session), one essay, two seminar papers

The course is designed to study the emerging field of humanistic psychology. Lectures and seminars will examine such topics as the development of human potential (acceptance of responsibility, feelings, change and growth), the holistic doctrine, group dynamics and interactions, evaluation of personality change, humanistic and existential approaches to psychotherapy, and theoretical contributions from humanistic psychology. A two-hours workshop, "The Educational Community", will allow students to participate in experiential sessions. Practical work will include exercises in body awareness, guided fantasy, T'ai Chi Chuan, Gestalt techniques, and the microlab approach to learning. Attendance at the practical sessions is not compulsory and no assessment will be made of these.

PRELIMINARY READING

TEXTBOOKS

RECOMMENDED READING

PSYC312 COUNSELLING PSYCHOLOGY

First session; 6 credit points (4 contact hrs)
Chairperson for the subject: Dr. J.L. Morris
Assessment: Examination, assessment assignment

Topics will include the social context of counselling; counselling and psychotherapy; application of personality theory to practice; establishment of an effective relationship; interview techniques; assessment and testing; diagnosis; special areas of interest including transactional analysis and behaviour modification.

TEXTBOOK

RECOMMENDED READING

PSYC315 PSYCHOLOGY OF ABNORMALITY

Second session; 6 credit points (3 contact hrs: 1 lecture; 2 seminars)
Chairperson for the subject: Ms. Anita Arnold
Assessment: Examination and seminar papers

The subject is designed to explore contrasting notions regarding the onset of mental disturbances or disorders. Biological, psychoanalytic, humanistic, behavioristic, and other systems will be considered. Topics to be discussed include normality, stress, sociocultural factors, transient situational disturbances, personality disorders, the neuroses, the psychoses, psychophysiologic disorders, brain disorders, mental retardation, diagnosis and treatment.
PSYC315 PSYCHOLOGY OF ABNORMALITY (CONT'D)

PRELIMINARY READING


TEXTBOOK


RECOMMENDED READING


PSYC316 INDIVIDUAL DIFFERENCES

Second session; 6 credit points (4 contact hrs: 2 lectures; 2 seminars)
Chairperson for the subject: Dr. B.M. Walker
Assessment: Seminar papers and examinations

Psychology will be considered not from the standpoint of general laws, but from the view of individual variation.

It is intended to consider the nature, assessment, structure, growth and decline of individual differences in:
(i) ability;
(ii) personality (including motivation).

In addition it is intended to explore current trends in some more specialized aspects of the above, e.g. cognitive styles, creativity, racial differences, sex differences, cross-cultural differences.

TEXTBOOK


RECOMMENDED READING


PSYC323 INDUSTRIAL AND ORGANIZATIONAL PSYCHOLOGY

Second session; 6 credit points (4 contact hrs: 3 hrs lecture/tutorials; 2 hrs seminar bi-weekly; 2 hrs supervised research; 2 half-day industrial visits)
Chairperson for the subject: Dr. N.L. Adams
Assessment: Seminar papers and examination or research paper

Through the use of experiential group sessions, visits to industrial organisations and lectures by visiting management and union representatives as well as seminars, this subject aims to explore the relationships between psychological theory and human behaviour in the work place. Particular topics of study will be selected from: job design; job satisfaction; worker participation and autonomous work groups; communication within organisations; group dynamics in the organization; competition and co-operation; problems in industrial relations; leadership at shop floor and board room levels.

PRELIMINARY READING


TEXTBOOK

To be announced.

PSYC343 INDUSTRIAL AND ORGANIZATIONAL PSYCHOLOGY (SCIENCE)

Second session; 6 credit points (6 contact hrs: 3 hrs lecture/tutorials; 2 hrs seminar bi-weekly; 2 hrs supervised research; 2 half-day industrial visits)
Chairperson for the subject: Dr. N.L. Adams
Other details: Same as for PSYC323
PSYC322 SOCIAL PSYCHOLOGY

First session; 6 credit points (4 contact hrs: 3 hrs lecture/tutorials; 2 hrs seminar bi-weekly)
Chairperson for the subject: Dr. N.L. Adams
Assessment: Seminar papers and examination or research paper

Topics will include research methods in social psychology; laboratory and natural settings studies; questionnaire design and attitude measurement; the phenomenological approach in social psychology; interaction in small groups; roles; interpersonal attraction; processes of social influence; the learning of attitudes and values; group conflict; and violence.

Further topics will be selected from among the following: Obedience; authoritarianism and ethnocentrism; political socialization; co-operation and competition; non-verbal communication, proxemics and kinesics; knowing and evaluating persons; and helping behaviour.

TEXTBOOKS

RECOMMENDED READING
To be notified.

PSYC339 COUNSELLING PSYCHOLOGY (PRACTICUM)

Second session; 6 credit points (4 contact hrs: 1 lecture; 2 seminar/case handling; 1 tutorial)
Chairperson for the subject: Dr. J.L. Morris
Assessment: (a) written case study report; (b) supervisor's assessment of case handling

This subject is intended as a follow on to PSYC312 Counselling Psychology. It provides an opportunity to employ theory and techniques developed in PSYC312.

Students are required to interview clients and prepare case study reports. The usual arrangements for interviewing are:

(a) at the Department of Psychology;
(b) at approved community agencies in which counselling services are provided.

However, other arrangements may be made where special facilities and experiences are available.

PRELIMINARY READING

TEXTBOOK

RECOMMENDED READING

400-LEVEL
See pre-requisite column and note in Schedule A concerning entry into the Honours year.

PSYC499 PSYCHOLOGY IV HONOURS

Double session; 48 credit points (4 contact hrs: 4 seminars)
Chairperson for the subject: Dr. D.D. Diespecker
Assessment: Coursework and two theses

There are three components. Each candidate will be required to complete a supervised thesis (Theoretical Essay) of between 6,000 and 8,000 words describing a theoretical issue in psychology. A second requirement (Empirical Thesis) will consist of a supervised research project to be summarized and presented as a 12,000 to 15,000 words thesis.

Each candidate will also be required to complete short essays following a series of lectures by members of staff.

Candidates intending to complete this programme as part-time students will generally do the coursework and theoretical essay in their first year and complete the empirical thesis in their second year.
JOINT HONOURS IN PSYCHOLOGY AND SOCIOLOGY

The four year programme for students intending to do joint Honours in Psychology and Sociology should include the following:

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<th>Level</th>
<th>Psychology Credit points</th>
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<tr>
<td>100-level</td>
<td>12</td>
<td>12</td>
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<tr>
<td>200-level</td>
<td>24</td>
<td>16 (pass level)</td>
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<td></td>
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<td>12 (advanced level)</td>
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<tr>
<td>300-level</td>
<td>24</td>
<td>12 (pass level)</td>
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<td></td>
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<td>12 (advanced level)</td>
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In addition, students who intend to complete joint Psychology/Sociology Honours, must select one of the subjects for which accreditation by both Departments has been accepted, to complete an additional 6 credit points above a normal 48 credit point load. These subjects are as follows:

- Psychology subjects accredited (by the Department of Sociology) as equivalent to a Sociology requirement:
  - PSYC335 Humanistic Psychology (6 credit points)
  - PSYC323 Industrial and Organisational Psychology (6 credit points)
  - PSYC322 Social Psychology (6 credit points)

- Sociology subjects accredited (by the Department of Psychology) as equivalent to a Psychology requirement:
  - SOC317 Interaction and Small Group Behaviour (6 credit points)
  - SOC313 The Individual in the Organisation (6 credit points)
  - SOC303 The Individual in Society (6 credit points)

MATH334 Design and Analysis (6 credit points)

400-LEVEL

PSYC450/SOC450 JOINT HONOURS IN PSYCHOLOGY AND SOCIOLOGY

Double session; 64 credit points

Students enrolled in this subject are required to:

1. Complete a joint Psychology/Sociology thesis (theoretical and empirical) of about 15,000 words.

2. Attend Psychology Seminars.

3. Audit the Psychology coursework programme.

4. Attend SOC401 and SOC411 Key Issues in Contemporary Sociology I & II seminars.

5. Audit SOC431 Research Works in Progress seminar.

6. Complete a theoretical essay in Psychology of about 6,000 words.
SOCILOGY

Introductory Notes

1. All seminars in Sociology at 100, 200, 300 and 400-levels are 2 hours long, except for the SOC100 'Open Seminar', which is a 3 hour class.

2. Students should consult with the Department of Sociology before purchasing textbooks for any of the courses offered in 1979.

SCHEDULE ENTRIES

Refer to the schedule entries for further details of subjects, including pre-requisites and exclusions. All subjects described in this section are included in Schedule A.

100-LEVEL

SOC100 SOCIOLOGY I

Double session; 12 credit points (1 lecture, 1 seminar, 1 open seminar per week)

Assessment: A process of continuous assessment, which will include 2 theory essays, 1 research essay, 4 seminar assignments

Sociology I is intended as an introduction to the basis of sociological theory, to the nature of sociological understanding and 'knowledge', to the application of sociology to current social issues. Students will be expected, through the subject, to develop a sociological analytic way of thinking about social issues. Early focus of the course is on the individual in society and construction of social meaning; from this basis, coursework expands into examination of wider society and wider issues of sociological enquiry and debate.

Teaching will be conducted in a one hour lecture, two hour seminar and an 'open' seminar each week. Within this perspective, the subject will move through the following topics:

First Session

THE INDIVIDUAL IN SOCIETY
A. Nature of sociology, sociological perspective, explanation, theory.
B. The individual in society - roles, freedom vs. conformity; Socialisation, the family, school, mass media, small groups, reference groups, adult socialisation; Social control and conformity, deviance.
C. Consciousness and culture, knowledge and epistemology.

Second Session

A. SOCIETY AS A 'WHOLE'

The modern shape of work, industrial context of work, capitalism, rationality, features of human relationships in a modern work context.


B. SOCIETY AS DIFFERENTIATED


C. BELIEF SYSTEMS, RELIGION AND IDEOLOGY

D. THE SOCIOLOGIST IN SOCIETY, BASES OF SOCIOLOGICAL METHOD

TEXTBOOKS


200-LEVEL

SOC202 SOCIOLOGY IIA: CENTRAL THEMES IN SOCIOLOGY

First session; 8 credit points

This subject is in two parts: (1) Sociological Theory (lecture per week - 1; seminar per week -
SOC202 SOCIOLOGY IIA: CENTRAL THEMES IN SOCIOLOGY (CONT'D)

1) and (2) Sociological Method I (lecture per week - 1; seminar per fortnight - 1)
Assessment: (1) Essays - 1; Seminar papers - 2; (2) Research project - 1; Seminar papers - 1

(1) SOCIOLOGICAL THEORY

This subject examines some of the classic statements in the history of sociological thought from its origins in early 19th Century positivism, Marxism, Social Darwinism and psychoanalysis to 20th Century perspectives such as symbolic interaction, functionalism, the conflict paradigm, phenomenology and critical theory.

RECOMMENDED READING*


(2) SOCIOLOGICAL METHOD II

This section, as an extension of Sociological Method I, will include "works in progress" seminars aimed at developing individual student's competence, via the medium of individual research projects.

TEXTBOOKS


*Students are advised to purchase books only after consultation with the Course Director.
SOC214 CLASS, POWER AND SOCIAL ISSUES A (CONT'D)

(1) CLASS, POWER AND SOCIAL ISSUES
This course evaluates both Marx's class model and social stratificationist analyses of inequality against contemporary social issues such as poverty, media, women, cities, trade unions, aboriginals and professionalism.

RECOMMENDED READING

(2) SOCIOLOGICAL METHOD II
This section, as an extension of Sociological Method I, will include "works in progress" seminars aimed at developing individual student's competence, via the medium of individual research projects.

TEXTBOOKS

SOC215 TIME, WORK AND LEISURE A

Second session; 8 credit points
This subject is in two parts: (1) Time, Work and Leisure (lecture per week - 1; seminar per week - 1) and (2) Sociological Method II (seminar per fortnight - 1; lecture per fortnight - 1)
Assessment: (1) Essays - 1; Seminar papers - 2; (2) Research project - 1

(1) TIME, WORK AND LEISURE
This section examines the relationship between time, work and leisure in modern industrial society. The section emphasises the changing status of work as a value from pre-industrial through to post-industrial society.

TEXTBOOKS

(2) SOCIOLOGICAL METHOD II
This section, as an extension of Sociological Method I, will include "works in progress" seminars aimed at developing individual student's competence, via the medium of individual research projects.

TEXTBOOKS

SOC217 BELIEF SYSTEMS, IDEOLOGIES B

Second session; 6 credit points (seminars per week - 1; lectures per week - 1)
Assessment: Essays - 1; Seminar papers - 2
The subject will cover a number of different perspectives or views. Systems of thought and action which involve different ways of viewing the world, and thus provide a broader base for examining our own culture.

TEXTBOOKS

SOC218 CLASS, POWER AND SOCIAL ISSUES B

Second session; 6 credit points (seminars per week - 1; lectures per week - 1)
Assessment: Essays - 1; Seminar papers - 2
This subject evaluates both Marx's class model and social stratificationist analyses of inequality against contemporary social issues such as poverty, media, women, cities, trade unions, aboriginals and professionalism.
**Description of Subjects - Sociology 331**

**SOC218 CLASS, POWER AND SOCIAL ISSUES**

**RECOMMENDED READING**


**SOC219 TIME, WORK AND LEISURE**

Second session: 6 credit points (lecture per week - 1; seminars per week - 1)
Assessment: Essays - 1; Seminar papers 2

This subject examines the relationship between time, work and leisure in modern industrial society. The subject emphasises the changing status of work as a value from pre-industrial through to post-industrial society.

**TEXTBOOKS**


**SOC222 SOCIOLOGY II ADVANCED: FOUNDATIONS OF SOCIOLOGICAL THOUGHT**

First session: 6 credit points (one 2-hour seminar per week)
Assessment: Essays - 1; Seminar assignments - 1

This subject will explore the central sociological concerns of Karl Marx and relate these to the writings of Max Weber and Emile Durkheim. The contribution of Marx to mainstream sociological theory and to forms of contemporary society will be examined from this base.

**TEXTBOOKS**


**SOC223 SOCIOLOGY II ADVANCED: CONTEMPORARY EUROPEAN SOCIOLOGY**

Second session: 8 credit points (seminars per week - 1)
Assessment: Essays - 1; Seminar assignments - 1

This subject reviews recent trends in sociological theory arising largely from the resurgence of interest in Marx during the mid-1960's. Specifically, it will focus on the substantive concerns and implicit methodologies of Marcuse, Habermas, Sartre, Levi-Strauss and Althusser.

**RECOMMENDED READING**

- Frisby, D. The Popper-Adorno Controversy in Philosophy of Social Science, 1972, 2, 105-119.

*Students are advised to purchase books only after consultation with the Course Director.*
SOC301 CONTEMPORARY CULTURE A

First session; 6 credit points (seminars per week - 1)
Assessment: Essays - 1; Seminar papers - 2

This subject is centred around an investigation of communication in modern society. Communication tends to be a residual topic, but its operation and aims are not clearly understood. Detailed examination will focus upon the mass media, pop music and science fiction.

TEXTBOOKS
A detailed list of the various sources to be consulted by students will be supplied at the beginning of the course.

SOC302 RELIGION AND SOCIETY

Second session; 6 credit points (seminars per week - 1)
Assessment: Essays - 1; Seminar papers - 2

An historical and cross-cultural examination of the relationship between religion and other social institutions. Particular emphasis will be placed on the conflicting roles of religion as an integrative (conservative) and divisive (revolutionary) force in society.

TEXTBOOKS

SOC303 THE INDIVIDUAL IN SOCIETY

First session; 6 credit points (seminars per week - 1)
Assessment: Essays - 1; Seminar papers - 2

An examination of some theories from a cross cultural perspective of the nature of society and their assumptions with regard to the nature of the individual implicit in such theories.

TEXTBOOKS
The New Testament
Watts, A. The Book: On the Taboo Against Knowing Who You Really Are.

Plus:
Original writings of traditional sociological theorists: particularly Marx, Weber, Durkheim, Comte, Parsons, Mills. (Detailed reference list can be obtained from Tutor in charge of the course).

SOC304 MILITARY SOCIOLOGY

First session; 6 credit points (seminars per week - 1)
Assessment: Essays - 1; Seminar papers - 2; Compulsory excursion to the Royal Military College, Dunroon.

Warfare continues to absorb a considerable portion of all government spending. Yet the military machine, its aims, functions, and interactions with the rest of society, is only hazily understood. The focus of this subject will be upon the development of modern military systems, and their real and projected employments.

TEXTBOOKS

SOC305 SOCIOLOGY OF MIGRATION

First session; 6 credit points (seminars per week - 1)
Assessment: Essays - 1; Seminar papers - 2

This subject will explore the role of migrants and migration in host societies, with particular reference to Australia.
SOC305 SOCIOLOGY OF MIGRATION (CONT'D)

A detailed list of the various sources to be consulted by students will be supplied at the beginning of the course.

SOC306 SOCIOLOGICAL MEASUREMENT

First session; 6 credit points (seminars per week - 1)
Assessment: Essays - 1; Seminar papers - 2

This subject is designed to introduce students to some of the basic methods of quantitative measurement in sociology. Emphasis in the subject will be on survey measurement utilizing a computerized statistical package.

SOC307 SOCIOLOGY OF COMMUNITY AND URBAN ENvironments

First session; 6 credit points (seminars per week - 1)
Assessment: Essays - 1; Seminar assignment - 1; Research assignment - 1

This course will examine theoretical approaches in community and urban sociology, and relate them to practical experience of pertinent community problems and organisation within Wollongong.

SOC311 CONTEMPORARY CULTURE B

Second session; 6 credit points (seminars per week - 1)
Assessment: Essays - 1; Seminar papers - 2

This subject follows on from Contemporary Culture A, to explore in greater depth issues raised in the First Session course.

SOC312 SCIENCE, TECHNOLOGY AND SOCIETY

Second session; 6 credit points (seminars per week - 1)
Assessment: Essays - 1; Seminar papers - 2

This subject will locate present thinking in the sociology of science into recent development of theoretical and empirical literature and changes in perspective. It will explore the institutionalisation of science - treated both as knowledge system and social process; its forms of relationship to technology, and social/economic/political context in which this relationship is set. It will explore the nature of impact of the evolving role of science in structuring the role of man and woman in society, their consciousness and culture, together with action by society on science. Finally, the subject will explore the substance of contemporary social movements (e.g., ecology action, radical science, acculturation from Eastern thought) that are refashioning the relationship between science and society.

TEXTBOOKS


SOC313 THE INDIVIDUAL IN THE ORGANISATION

Second session; 6 credit points (seminars per week - 1)
Assessment: Essays - 1; Seminar papers - 2

This subject uses work in the fields of psychology and sociology to study the relationship between the individual and the organisation at various organisational levels and in different situations. Emphasis is on the extent to which the individual has autonomy within the organisation.
SOC313 THE INDIVIDUAL IN THE ORGANISATION (CONT'D)

TEXTBOOKS


SOC315 ETHOLOGY

Second session; 6 credit points (seminars per week - 1)
Assessment: Essays - 1; Seminar papers - 2

This subject is designed to broaden the student's understanding of society through the study of non-human societies at various levels on the phylogenetic scale. For purpose of illustration particular emphasis will be given to insect and primate societies.

TEXTBOOKS

A detailed list of the various sources to be consulted by students will be supplied at the beginning of the course.

SOC316 RESEARCH TECHNIQUES OF SOCIAL ENQUIRY

Second session; 6 credit points (one 2-hour seminar per week)
Assessment: Research project - 1; Seminar assignment - 1

This subject will explore the comparative validity of alternate techniques of research enquiry (with particular emphasis on the contrast of empirical vs. subjective forms of analysis). Students will gain experience in using traditional sociological tools of analysis - questionnaire, interviewing and formal observation, as well as in less conventional - film, video, participant and unobtrusive techniques of observation and measurement.

TEXTBOOKS

A detailed list of the various sources to be consulted by students will be supplied at the beginning of the course.

SOC317 INTERACTION AND SMALL GROUP BEHAVIOUR

Second session; 6 credit points (lectures per week - 1; seminars per week - 1)
Assessment: Essays - 1; Seminar papers - 2

The course moves from theories of interpersonal relations (e.g., Laing, Berne, Goffman and Homans) and research findings on small groups, to some practical demonstrations of the less tangible aspects of communication. Interactions in families and other special settings will be discussed in passing. Students will be expected to participate in group projects and exercises as well as written work.

RECOMMENDED READING


SOC322 SOCIOLOGY III ADVANCED: SOCIOLOGY OF KNOWLEDGE I

First session; 6 credit points (seminars per week - 1)
Assessment: Essays - 1; Seminar papers - 1

The aim of this subject is to examine the epistemological basis for scientific theories from a sociological viewpoint. Basic themes include an examination of the culturally determined criteria for the acceptance of knowledge as "scientific", and some consideration of how scientific knowledge "progresses".

TEXTBOOKS

SOC323 SOCIOLOGY III ADVANCED: SOCIOLOGY OF KNOWLEDGE II

Second session; 6 credit points (seminars per week - 1)
Announcement: Essays - 1; Seminar papers - 1

This will examine knowledge as a social phenomenon. Topics covered will include: different types of knowledge; the epistemological basis of scientific theories; the institutionalisation of knowledge; how knowledge changes; cross cultural studies of different bodies of knowledge; the role of language in knowledge; and "class statements" on the sociology of knowledge.

TEXTBOOKS

400-LEVEL

SOC401 KEY ISSUES IN CONTEMPORARY SOCIOLOGY I

First session; 6 credit points (seminars per week - 1)

For subject description and reading list, students should contact Chairman, Department of Sociology.

SOC411 KEY ISSUES IN CONTEMPORARY SOCIOLOGY II

Second session; 6 credit points (seminars per week - 1)

For subject description and reading list, students should contact Chairman, Department of Sociology.

SOC431 RESEARCH WORKS IN PROGRESS SEMINAR

Double session; 12 credit points (seminars per week - 1)

Subject description and reading list will vary each year, depending upon student research projects. For details, contact Chairman, Department of Sociology.

SOC490 SOCIOLOGY IV HONOURS THESIS

Double session; 24 credit points

A supervised thesis of approximately 15,000 words about a theoretical issue in Sociology. The work can utilise field research and/or documentary material.

JOINT HONOURS IN PSYCHOLOGY AND SOCIOLOGY

Details of the four year programme for students intending to do joint Honours in Psychology and Sociology are given in the entry under the Department of Psychology.

PSYC450/SOC450 JOINT HONOURS IN PSYCHOLOGY AND SOCIOLOGY

Double session; 54 credit points

For details, see the entry under the Department of Psychology.
1978 GRADUATION.

From left to right: Emeritus Professor L.M. Birt (Vice-Chancellor), Emeritus Professor C.M.H. Clarke (Occasional Speaker), Justice R.M. Hope (Chancellor).
POSTGRADUATE STUDY

In 1979 students at The University of Wollongong may undertake studies leading to the graduate Diplomas in Accountancy, Computing Science, Education, Intercultural (Migrant) Education, Mathematics, Metallurgy and Philosophy and to Masters and Doctoral degrees. The conditions governing the award of the doctorates contain not only the usual provision for the Doctor of Philosophy (PhD) by thesis but also a special provision for a PhD awarded on the basis of published work. The higher doctorates, the Doctor of Letters (DLitt) and the Doctor of Science (DSc), are awarded for published work which makes "an original contribution of distinguished merit ... to the knowledge and understanding of any branch of learning with which the University is concerned".

Students who enrol for postgraduate degrees and diplomas of the University of Wollongong will have to meet the Requirements of the University. The Departments' current research interests, the postgraduate degree and diploma Requirements, the Schedule of Graduate Subjects and the postgraduate subject descriptions may be found in the following pages. Diploma and degree courses are described under Departmental headings, e.g. The Diploma in Accountancy and Masters degrees in Accountancy are described under "ACCOUNTANCY".

Students requiring further information are advised to contact the Department concerned or the Student Enquiries Office, Administration Building.

NOTE: Details of the enrolment procedures, charges and scholarships which apply at the time of printing are set out in earlier sections of this Calendar. Conditions of University Postgraduate Awards are set out after Current Research Interests in this section.

SOME CURRENT RESEARCH INTERESTS

Persons interested in pursuing postgraduate studies should contact the appropriate Departmental Chairman. The research interests of the staff cover a wide range of topics, and some current fields of interest are listed.

ACCOUNTANCY

Accounting theory construction and verification.
Administrative law.
Analysis of Australian company financial reporting practices.
Behavioural aspects of management information systems.
Business finance.
Business objectives.
Capital and profit concepts, including cost and value concepts, and their measurement.
Capital expenditure decision-making.
Constitutional law.
External reporting in the extractive industries.
History and development of accounting thought.
Interfirm comparisons.
International accounting.
Learning curve.
Small business management.
Statements on accounting standards by professional bodies, and other means of improving accounting practice.
Taxation.
The use of computers in accounting, auditing and business decision-making.
Trade practices and consumer protection.

BIOLOGY

Microbial Water Relations
Metabolic regulation in response to environmental stress.
Cellular mechanisms of retention of "compatible solutes" at high concentrations.
Photosynthesis
Chloroplast function and energy transfer within the plant cell.

Environmental Animal Physiology
Temperature regulation.
Thyroid function in vertebrates.
Hormones and metabolism.

Ecology
Ecological and behavioural mechanisms regulating spacial and temporal patterns of population distribution.
Theoretical and mathematical ecology.

CHEMISTRY

Information retrieval from computer-based libraries of mass spectral and other data.
Applications of computer controlled mass spectrometers to analytical problems.
Investigation of the role of ozone and its metastable cyclic conformer in atmospheric phenomena.
CHEMISTRY (CONT'D)

Quantum Theoretical search for potential high energy chemical lasers.
Prediction of the electronic structure and properties of transition metal complexes in crystalline and biological environments.
Spectroscopic investigation of simple transition metal complexes in crystals at cryogenic temperatures.
Development of sensitive new analytical methods for organic nitrogen compounds and nitrogen oxides.
Use of peroxides for wastewater treatment.
Development of computerised feed forward control systems for cyanide, sulphide, phenols and other contaminants.
Surface chemistry of iron oxides.
Isolation and structure elucidation of alkaloids from a New Guinean plant.
Synthetic modification of tylocrebrine, an antileukaemia agent.
Synthetic approaches to brain-active drugs.
Trace analysis especially related to electrochemical techniques.
Solvent effects in acid-base studies.
Thermodynamics of non-reacting systems involving high temperature calorimetry.
The Application of Chemical Ionization Mass Spectrometry to the analysis of biological fluids.
The determination of absolute configuration of asymmetric molecules by gas chromatography and mass spectrometry.
The sequencing of tryptic peptides by Cathepsin "C" and mass spectrometry.
Absorption studies on supported metal catalyst systems.
Exchange reactions on heterogeneous catalysts.
Detector systems based on specificity of heterogeneous catalysed reactions.
Variable temperature (4-300°K) Magnetochemistry of First Row Transition Metal Polynuclear Complexes.
Structure and Properties of oxygen carrying transition Metal Complexes.
Structure and Properties of Transition Metal Complexes of Polydentate Schiff Base Ligands.
A Study of the Infrared Spectra of Transition Metal Complexes using the Metal Isotope Substitution Method.
Variable Temperature (4-300°K) Magnetoochemistry of Polynuclear Transition Metal Complexes.
Structure and Properties of Lanthanide Schiff Base Complexes.

CIVIL ENGINEERING

Load Distribution in Orthotropic Bridge Decks.
Dynamic Behaviour of Elastic Plate Systems.
Road Materials Research - Skid Resistance.
The C.C.T.V. Camera as a Research Tool.
Stress Analysis Using Holography.
The Analysis of Stress Distribution Produced at Abrupt Changes in Section.
The Investigation of Curvature Produced in Plates with Edge Loading Using Moire Fringe Techniques.
The Analysis of Whole Stress Fields under Impact Conditions.
Experimental Analysis of Structures.
The Development of High Speed Photographic Techniques.
Identification of System Dynamic Characteristics by Cross Correlation Analysis.
Stability of Natural Slopes.
Finite Element Applications in Geomechanics.
Soil Anisotropy.
Temperature Wave Method Applied to Determining Fracture Toughness.
Hydrology of the Storm Rainfall-Runoff Process.
A Computerised System for the Design of Prestressed Multispan Box Girder Bridges.
Cracking and the Rigidities of Concrete Multicellular Bridge Decks.
The Use of Granulated Slag in Concrete.
The Use of Granulated Slag in Asphaltic Surfacings.
Preparation of Noise Level Maps.
Planning and Design of Buildings for Comfort.
Non-Linear Analysis of Box-Type Structures by Special-purpose Finite Element Techniques.
Flood Frequency Studies.
Sediment Transport in Streams.
The Effect of Slow Moving Heavy Vehicles on Road Pavements.
Delays caused by Commercial Vehicles.
The Effect of Commercial Vehicles on Accident Rates.

COMPUTING SCIENCE

Portable Operating Systems.
Performance Evaluation of Software Systems.
Interactive Languages.
Text Processing Techniques and Methods.
Software Tools.

ECONOMICS

Industrial economics.
Urban and regional studies.
Economic development.
ECONOMICS (CONT'D)
Economics of migration.
Labour economics.
Monetary economics.
Natural resource economics.
International economics.
International commodity problems.

EDUCATION
Classificatory ability in Australian children.
Cognitive development of minority groups.
Convergent, divergent and operational thinking among white and Aboriginal children.
Curriculum studies and development.
Effects of mass media on children.
Enrichment programmes for disadvantaged preschoolers.
Schooling and social class.
Socialization of children, migrants and minority groups.
Educational administration.
Organizational behaviour.
Open Education.
Work preparation of the mildly mentally retarded.
Migrant education through the media.
Curriculum theory and development.
Instructional design.
Politics in education.

ELECTRICAL ENGINEERING
Automatic control.
Plant identification.
Electrostatic precipitation.
Static converters.
Electrical machines.
Computer systems.
Reliability techniques.
Large-scale systems.
Communications.
Computer-aided analysis and design.
Transportation.

ENGLISH
Old English language and literature.
Middle English language and literature.
Early-Tudor literature.
Elizabethan literature.
Early seventeenth century literature.
The works of James Joyce.
Modern drama.
Media studies.

EUROPEAN LANGUAGES
19th and 20th century French novel and theatre.
Eroticism in contemporary French literature.
Literature and religion.
18th century French literature and intellectual history.
Linguistics applied to the teaching of French as a second language.
Intonation analysis.
Audio-visual methods in the teaching of French.
Italian "verismo": 19th century realism (Verga, Capuana, De Roberto).
Pedagogical aspects of teaching Italian.
Italian-American "teatro populare".
20th century Italian poetry (Ungaretti).

GEOGRAPHY
Transport systems analysis.
Agricultural geography.
Coastal geomorphology.
Fluvial geomorphology.
Urban studies.
Biogeography.
Population studies.
Regional development and planning.
GEOGRAPHY (CONT'D)
South-east Asian studies.
Socio-spatial variations in welfare.
Health and welfare service planning.
Evolution of the Australian eastern highlands.

GEOLOGY
The geology of coal measures.
Rock magnetism and related geophysical phenomena.
Textures and petrochemistry of igneous and metamorphic rocks.
Invertebrates of the Early and Middle Palaeozoic of Australasia.
Terrestrial and shallow marine sedimentology.
Igneous petrology of the Illawarra district.
Organic geochemistry.
Economic and environmental geology.
Geothermal properties.

HISTORY
19th and 20th century English social and political History.
French History from 1650.
Russian History from 1825.
Religious History in Australia and Modern Britain.
Industrial, Trade Union and socio-political history of Australia.
Modern South East Asian history.

HISTORY AND PHILOSOPHY OF SCIENCE
Early 19th century British philosophy of science.
Women and science.
The history of evolutionary biology.
19th and 20th century genetics.
Contemporary analytical philosophy of science.

MATHEMATICS
Numerical analysis.
Matrix analysis.
Oceanography.
Nuclear reactor theory.
Statistical decision theory.
Probability.
Operations research.
Functional analysis.
Measure theory.
Abstract algebra.
Logic.
Set theory.
Topology.
Continuum mechanics.
Non-linear partial differential equations.

MECHANICAL ENGINEERING
Determination of flow properties of bulk solids.
Dynamic analysis and optimization of bulk handling systems.
Flow of granular materials.
Design of bins for bulk solids.
Computer simulation.
Process modelling and control.
Random signal analysis and stochastic processes.
System identification studies.
Computer aided control system design.
Multivariable control system theory and design.
Some applications of solar energy.
Boiling heat transfer.
Exhaust emissions from internal combustion engines.
Propagation of waves in small bore tubes.
Treatment and disposal of industrial effluents.

METALLURGY
Deformation and fracture at elevated temperatures, with particular reference to multiphase materials.
Solidification of metals.
METALLURGY (CONT'D)

High temperature calorimetry.
Development of precision testing equipment for studies of metal deformation in uniaxial and biaxial tension.
Analysis and structural interpretation of plastic behaviour in metals.
Studies of transformations in various alloys having the property that shape deformation by loading at some appropriate temperature is recovered by heating at some higher temperature (shape memory alloys).
Metallographic studies of alloys of commercial importance.
Studies of the structures developed in metals by recrystallisation, with particular reference to rapid recrystallisation.
Studies of flow phenomena in packed beds.

PHILOSOPHY

Interpretation and evaluation of Kant's critical philosophy.
Philosophical logic, with special reference to existence and truth.
Legal and political obligation and its basis.
Aesthetics of Benedetto Croce.
Private enterprise based social philosophy.
Philosophy of mind.
Marxism.
Anarchism.
The liberal theory of the state.
Self-determination and secession ethics.
The concept of privacy and the right to privacy.
Identity and criteria.
Mathematical logic - its history, development and applications.
Probability and its theoretical interpretation.
Induction.
Responsibility, with reference to action, motive and intention.
Issues arising from the Catholic doctrine of double effect.
Contemporary aspects of Thomistic thought.
The ethical evaluation of the life and teachings of Jesus.

PHYSICS

Astronomy - Visible and Infrared.
Experimental Nuclear Physics.
Infra-red Detectors.
Musical Acoustics.
Scattering of Light by Solids.
Solid State Spectroscopy of Impurities in Semi-Conductors.
Studies of Electronic Wave Functions in Solids.

PSYCHOLOGY

Accidents in industry - psychological and physical factors.
Achievement motivation.
Action research and organizational development in industry and other organizations.
Attitudes.
Autonomic components of the orienting reaction.
Classical and instrumental autonomic conditioning.
Decision and risk taking.
Disadvantaged children.
Gestalt therapy.
Human Learning.
Intensive groups.
Personnel - selection and placement.
Prediction of academic success.
Psychophysiology of the autonomic nervous system.
Sex roles.
Social psychology of industry.
Student guidance and counselling services.
Time perception.

SOCIOLGY

Knowledge and Theory
The sociology of knowledge.
The development of "interpretive" sociological theory and research.
The dialectic in social theory.
The cultural location of Eastern and Western knowledge systems.
Sociology of Science
Development of an "interpretive" sociology of science.
Mission-orientation.
Professional socialisation.
Research communication and production.
The impact of science and technology on industry and society.
Science, technology and developing countries.

Social Process
Self concept development and socialisation theory.
Interaction and small group behaviour.
Sociology of conflict.

Social Phenomena
Sociology of organisations.
Professions - established vs. marginal.
Consumer behaviour.
Sociology of migration, migrant integration and education.
Military sociology.
Religion, ideology and belief systems.
CONDITIONS OF UNIVERSITY POSTGRADUATE AWARDS

University Postgraduate Awards are tenable at the University for full-time study normally leading to a Master's degree or a PhD.

DURATION OF AWARD

The maximum period for which an award may be held is four years subject to the following provisions:

(a) A candidate for a Master's degree may hold an award for a period not in excess of two years from the commencement of studies.

(b) A PhD candidate may hold an award for three years from commencement of studies. An extension for a fourth year may be granted.

RENEWAL

Awards are renewable annually. Applications for renewal for a fourth year (in the case of PhD candidates) will be treated as special cases.

PROGRESS REPORT

Scholars are required to submit a progress report before the end of each calendar year and on completion of studies. A form on which the report is to be made is provided about October each year.

RECREATION LEAVE

Scholars may be granted recreation leave of up to four weeks annually at the discretion of the University.

LEAVE OF ABSENCE

Scholars are required to pursue their studies on a full-time basis. Absence from studies should be reported by the scholar to his supervisor, as soon as possible.

INTERRUPTION

When a scholar's progress is likely to be adversely affected due to absence from studies, his award may be interrupted. During the period of interruption the scholar will not be entitled to receive any benefits from his award. When he is fit to resume his studies he may apply for restoration of benefits and he may have the period of the interruption added to the normal time for which the award may be held. Interruptions will not in general exceed twelve months.

RESTORATION

Before an award may be restored after a period of interruption the scholar will be required to show that he is in a position to resume full-time study. Where the interruption was due to illness a medical certificate must be produced. In all cases the student must satisfy the Registrar that he is able to resume full-time study. (Following the birth of a child, for example, a female scholar should provide evidence that arrangements made to care for the child are such that she is able to undertake full-time study).

OVERSEAS STUDY

Where a scholar is required to pursue his studies abroad for a limited period in order to advance his research programme, he may apply for permission to hold his award while overseas. The following requirements must generally be met:

(a) the period abroad will not exceed twelve months;
(b) adequate supervision of the scholar's research programme abroad has been arranged by the University before his departure;
(c) the scholar will remain enrolled at the University;
(d) the scholar will return to Australia to complete his research programme immediately following the completion of his study abroad; and
(e) the period of overseas study will be credited towards the scholar's degree or research programme at the University.

A scholar may apply for permission to hold his University Postgraduate Award concurrently with another award for overseas study.

FIELD WORK

Where a scholar is required to undertake field work or research away from the University, but in Australia, he should enquire from his supervisor concerning expenses.
EMPLOYMENT

Scholars may with the approval of their supervisors, engage in a limited amount of paid part-time teaching or demonstrating provided that such employment does not interfere with their study programme. Generally the employment should not exceed six hours in any one week, or a total of 180 hours in a year.

TRANSFER

The scholarship is not transferable to another University.

BENEFITS

Stipend: From 1st January, 1978, scholars will receive a stipend at the rate of $4200 per annum which will be paid fortnightly by cash or directly into a current account, whichever is preferred. Payment of stipend will be calculated from the date of commencement of study.

Dependants' Allowance: Married male scholars will receive a dependants' allowance (paid fortnightly) at the rate of $1632.80 per annum for a dependant spouse, and a further $390 per annum for each child.

Travel Allowance: A travel allowance (equivalent to a tourist air fare where appropriate) may be paid for a scholar who is obliged to move from one Australian city to another in order to take up his award. Travel allowance is payable also for dependants.

Establishment Allowance: An allowance of $200 will be paid to married scholars, and $150 to single scholars, who are entitled to a Travel Allowance. The establishment allowance is intended to assist scholars with removal expenses and with the expenses of setting up new quarters.

Thesis Allowance: A scholar may claim reimbursement of an amount of up to $400 to assist with PhD thesis costs for a PhD and up to $250 for a Master's thesis.

Incidentals Allowance: An incidentals allowance of $100 will be paid to assist students in meeting the cost of fees such as student representative council, union and sports fees.

RELINQUISHMENT

Scholars are required to give the Registrar at least twenty-one days notice of their intention to relinquish their awards (e.g. on completion of studies, discontinuation of research, etc.).

TERMINATION OF AWARDS

Awards may be terminated at the discretion of the University.

FEES

Scholars will be advised by the Registrar of fees payable.
CONDITIONS FOR THE AWARD OF GRADUATE DIPLOMAS

1. The Diploma may be awarded by the Council on the recommendation of the Academic Senate to a candidate who has completed an approved course of study.

2. An application to register as a candidate for a diploma 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 as a candidate for the diploma shall have been admitted to the degree of Bachelor in the University or other approved institution in an appropriate department.

(ii) In special circumstances a person may be permitted to register as a candidate for a diploma if he submits evidence of such academic and professional attainments as may be approved by the Academic Senate.

4. Notwithstanding any other provisions of these conditions, the Academic Senate may require an applicant to demonstrate fitness for registration by carrying out such work and sitting for such examinations as the Academic Senate may determine.

5. The approval of the Chairman of the appropriate Department for the proposed programme must be obtained by the candidate prior to enrolment. For the purpose of this regulation the Chairman of Department will normally be the Chairman of the Department providing supervision of the project, or if there is no project, the major field of study.

6. A candidate for a diploma shall complete subjects approved by the Chairman of the appropriate Department, which shall total not less than 48 credit points.

7. No candidate shall, without the approval of the Academic Senate be enrolled at the same time for any other degree or diploma in the University or elsewhere.

8. The results of examinations shall be submitted to the Academic Senate which shall recommend whether or not the diploma be awarded.

9. A candidate shall be required to pay such charges as may be determined from time to time by the Council.

CONDITIONS FOR THE AWARD OF BACHELOR POSTGRADUATE DEGREES

At present, the University offers one Bachelor Postgraduate degree -- the Bachelor of Education. Students interested in this degree should consult the conditions for the award of the Bachelor of Education printed under the Department of Education heading in the Postgraduate Courses section, (page 388).
The degree of Master may be conferred by the Council on the recommendation of the Academic Senate to a candidate who has with the approval of the Academic Senate satisfactorily completed:

(a) a thesis embodying the results of an investigation; or
(b) study comprising formal coursework; or
(c) study comprising formal coursework and a minor thesis;

and who has satisfied the other requirements specified for the award of the degree.

An application to register as a candidate for the degree of Master 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 intends to register.

The candidate for registration for the degree of Master shall have qualified for:

(a) a degree of bachelor in the University; or
(b) a degree from another institution approved by the Academic Senate.

In appropriate 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 Academic Senate.

A candidate who is qualified for the degree of Bachelor with honours or equivalent may be considered for the award of Master after the completion of two academic sessions of full-time study or its equivalent by obtaining an aggregate of not less than 48 credit points from the schedule of graduate subjects approved by the Academic Senate.

A candidate qualified for the degree of Bachelor of a standard below honours may be considered for the award of the degree of Master after the completion of four academic sessions of full-time study or its equivalent by obtaining an aggregate of not less than 96 credit points of which not less than 48 credit points shall be obtained in respect of subjects taken from the schedule of graduate subjects approved by the Academic Senate.

Notwithstanding any other provisions of these conditions the Academic Senate may require an applicant to demonstrate fitness for candidature by carrying out such work and sitting for such examinations as it may determine.

In every case, before permitting an applicant to register as a candidate, the Academic Senate shall be satisfied that adequate supervision and facilities are available.

An approved candidate shall register with the University in one of the following categories:

(a) a student undertaking full-time study; or
(b) a student undertaking part-time study.

No candidate shall, without the approval of the Academic Senate, be enrolled at the same time in any other degree or diploma in the University or elsewhere.

A candidate may apply to the Academic Senate for change of registration from the degree of Master to the degree of Doctor of Philosophy.

A candidate who is undertaking full-time study shall present himself for examination not later than six academic sessions from the date of his registration. A candidate who is undertaking part-time study shall present himself for examination not later than ten academic sessions from the date of his registration. In exceptional cases an extension of these times may be granted by the Academic Senate.

The maximum period for a candidate to re-apply after discontinuation shall be determined by the Academic Senate.

Every candidate for the degree by thesis or a combination of formal coursework and minor thesis where the thesis is not less than 24 credit points as approved by the Academic Senate shall comply with the following:

(a) he shall undertake where required by the Academic Senate a formal course of study appropriate to his research;
(b) he shall take such examinations and perform such other work as may be prescribed by the Academic Senate;
(c) he shall submit four copies of the thesis embodying the results of an investigation;
(d) 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;
(e) he may submit for consideration any work he has published;
(f) a candidate required to submit a thesis 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 except as permitted by section 20(v) of the Requirements for the award of Doctor of Philosophy.
For each candidate required to submit a thesis there shall be at least two examiners one of whom shall be external to the University appointed by the Academic Senate to examine the thesis.

After examining the thesis the examiners may:
(a) recommend that the thesis reaches a satisfactory standard; or
(b) recommend that the candidate be required to resubmit his thesis in revised form after a further period of study and/or research; or
(c) recommend that an oral examination be held to determine whether the candidate has reached a satisfactory standard; or
(d) recommend without further test that the candidate be not awarded the degree of Master.

Every candidate for the degree by formal coursework shall have approved by the Academic Senate a programme of study recommended by the Chairman of the appropriate Department.

For the purposes of these requirements the Chairman of a Department will normally be the Chairman of the Department providing supervision of the project or if there is no project the major field of study.

The investigation, formal coursework or any other work as provided in sections (14) and (17) shall be carried out under the direction of a supervisor or supervisors appointed by the Academic Senate under such conditions as it may determine.

If the supervisor appointed by the Academic Senate is to be absent from the University for any period exceeding six weeks, the Supervisor shall make alternative supervision arrangements which shall be subject to the approval of the Departmental Chairman and subject to the endorsement of the Academic Senate on the recommendation of the Graduate Studies Committee.

The results of examinations including where appropriate the examination of the thesis shall be submitted to the Academic Senate and the Academic Senate shall recommend whether or not the candidate may be admitted to the degree.

A candidate shall be required to pay such charges as may be determined from time to time by Council.

The Masters' Degrees approved under these requirements are:
- Master of Arts
- Master of Commerce
- Master of Education
- Master of Engineering
- Master of Metallurgy
- Master of Science
CONDITIONS FOR THE AWARD OF DEGREE OF DOCTOR OF PHILOSOPHY

The Degree of Doctor of Philosophy may be granted by the Council on the recommendation of the Academic Senate to a candidate who has made an original and significant contribution to knowledge and who has satisfied the following requirements -

1 A candidate for registration for the degree of Doctor of Philosophy shall -
   (i) normally hold an honours degree from the University; or
   (ii) hold an honours degree of equivalent standing from another institution approved by the Academic Senate;
   (iii) if he holds a degree without honours from the University or other approved institution have achieved by subsequent work and study a standard recognised by the Academic Senate as equivalent to honours; or
   (iv) in exceptional cases, submit such other evidence of general and professional qualifications as may be approved by the Academic Senate on the recommendation of the Graduate Studies Committee.

2 When the Academic Senate is not satisfied with the qualifications submitted by a candidate, the Graduate Studies Committee may require him, before he is permitted to register, to undergo such examination or carry out such work as it may prescribe.

3 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;
   (ii) submit with his application a certificate from the Chairman of the University Department 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 Department is willing to undertake the responsibility of supervising the work of the candidate, and of reporting to the Academic Senate at the end of the course on the merits of the candidate's performance in the prescribed course.

4 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 Academic Senate may be exempted from not more than two academic sessions;
   (ii) in special circumstances the Academic Senate 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 Academic Senate;
   (iii) in exceptional cases, the Academic Senate on the recommendation of the Graduate Studies Committee may grant permission for a candidate to be exempted from not more than two academic sessions.

5 A candidate who is fully engaged in research for the degree shall present himself for examination not later than eight academic sessions from the date of his registration. A candidate not fully engaged in research shall present himself for examination not later than fourteen academic sessions from the date of his registration. In exceptional cases an extension of these times may be granted by the Academic Senate.

6 The candidate shall be required to devote his whole time to advanced study and research and to report annually to the Academic Senate, save that -
   (i) the Academic Senate may permit a candidate on application to undertake a limited amount of University teaching or outside work which in its judgement 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 Academic Senate shall prescribe a minimum period for the duration of the programme;
   (iii) in special circumstances, the Academic Senate may accept as a part-time candidate for the degree a person who is not a member of the full-time staff of the University, but who in the opinion of the Academic Senate has a substantial research record and is engaged in an occupation which leaves the candidate substantially free to pursue his programme in a department of the University. In such a case the Academic Senate 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 department, is equivalent to the six sessions ordinarily required;
   (iv) no candidate will be accepted under clause 6(iii) unless his employer agrees in writing that he will be free to attend the University on an average of one day per
Every candidate shall pursue his programme under the direction of a supervisor or supervisors appointed by the Academic Senate from the full-time members of the University staff. The work, other than field work, shall be carried out in a department of the University save that in special cases the Academic Senate 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.

The Academic Senate may on written application from a candidate, approve a change of supervisor or supervisors after consultation with the Departmental Chairman.

If the supervisor appointed by the Academic Senate is to be absent from the University for any period exceeding six weeks, the Supervisor shall make alternative supervision arrangements which shall be subject to the approval of the Departmental Chairman and subject to the endorsement of the Academic Senate on the recommendation of the Graduate Studies Committee.

The Academic Senate shall approve the topic of the research. After the topic has been approved it may not be changed except with the permission of the Academic Senate.

Not later than four academic sessions after registration the candidate shall submit the title of his thesis for approval by the Academic Senate. After the title has been approved it may not be changed except with the permission of the Academic Senate.

A candidate may be required by the Academic Senate to attend a formal course of study appropriate to his work.

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 PhD 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 Humanities may be required by the Academic Senate, 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.

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 Academic Senate is satisfied of the candidate's part in the joint research.

Every candidate shall be required to preface his thesis with a short abstract comprising not more than 600 words.

A candidate may not submit as the main content of his thesis any work or materials which he has previously submitted for a University degree or other similar award.

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 charge.

Five copies of the thesis will be submitted to the Registrar in a form which complies with the requirements of the University for the preparation and submission of higher degree theses.

The Academic Senate will request the supervisor to submit a certificate stating that the candidate has completed the prescribed course of study.

The University will retain the five copies of the thesis submitted for examination.

10. There shall normally be three examiners of the thesis, appointed by the Academic Senate on the recommendation of the Graduate Studies Committee, of whom one shall normally be an internal examiner and two shall be external examiners.

After examining the thesis the examiners may -

(i) decide that the thesis reaches a satisfactory standard; or

(ii) decide that the thesis reaches a satisfactory standard subject to minor revisions; or

(iii) recommend that the candidate be required to re-submit his thesis in revised form after a further period of study and/or research; or

(iv) recommend that the candidate be required to submit a further examination; or

(v) recommend that the candidate be allowed to submit the thesis for a Masters degree; or

(vi) recommend without further test that the candidate be not awarded the degree of Doctor of Philosophy.
Conditions of Award - PhD

21 If the thesis reaches the required standard, the examiners may recommend that the candidate 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.

22 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 that the University permit the candidate to re-present the same thesis and submit to a further oral, practical or written examination within a period specified by them but not exceeding three academic sessions.

23 At the conclusion of the examination, the examiners will submit to the Graduate Studies Committee a concise report on the merits of the thesis and on the examination results, and the Academic Senate shall recommend whether or not the candidate may be admitted to the degree.

24 No candidate shall, without the approval of the Academic Senate be enrolled at the same time for another degree or diploma in the University or elsewhere.

25 A candidate shall be required to pay such charges as may be determined from time to time by the Council.

SPECIAL CONDITIONS FOR THE DEGREE OF DOCTOR OF PHILOSOPHY

1 A candidate wishing to proceed to the PhD Degree under these Requirements shall be required to give proof of a significant contribution to scholarship.

2 Except as provided in Requirement 2.1 any person may be a candidate for the PhD Degree who is a graduate of the University or of the University of New South Wales, having completed the requirements for the Degree at Wollongong University College and who, either
   (a) is of not less than eight years' standing from admission to his first degree of the University, or
   (b) is of not less than two years' standing from admission to a Masters Degree of the University provided that he is of not less than eight years' standing from admission to his first degree of some other University.

2.1 A person who is not a graduate of the University but who is a member of the full-time academic staff of the University of at least five years' standing, provided that he is of not less than eight years' standing from admission to his first degree of some other University, may be a candidate for the PhD Degree.

3 A candidate for admission to the PhD Degree under these requirements shall make his application in writing to the Registrar, stating the Department with which he considers that the subject of his contribution to scholarship is most nearly connected, and specifying the published work or works on which his claim for the degree is based. He shall at the same time send to the Registrar five copies of each of the published works specified in his application, and five copies of a list of these works.

4 A candidate shall also be required to declare whether or not any of the published works referred to in Requirement 3 have been submitted for a degree or diploma or other qualification at any other University. All the works submitted, apart from quotations, shall be written in or translated into English, unless in a particular case, the Academic Senate shall have allowed the candidate to submit work in some other language.

5 If the Academic Senate shall be of the opinion that the published work or works submitted constitute prima facie a qualification for the degree, they shall appoint and refer the application to not less than three examiners, at least two of whom shall be external.

6 The examination for the PhD Degree under these requirements shall consist of the submission of published work, and of an oral examination on the work submitted and on the general field of knowledge within which it falls.

7 Each examiner shall make an independent report on the published work or works before the oral examination and shall present questions to be asked at the oral examination.

8 If the examiners are not satisfied with the candidate's performance in the oral examination, the Academic Senate may allow the candidate to present himself for that examination on one more occasion at a time to be appointed by the examiners.
If the examiners do not agree in their recommendations or if for any other reason the Academic Senate needs a further opinion or opinions on the merit of the work submitted, the Academic Senate may appoint an additional examiner or additional examiners. Any additional examiner or examiners thus appointed shall make an independent report on the work submitted by the candidate, and may at the discretion of such examiner or examiners, conduct an oral or written examination on that work and on the general field of knowledge within which it falls.

At the conclusion of the examination, the examiners will submit to the Academic Senate a concise report on the merits of the published work and on the examination results, and the Academic Senate shall recommend whether or not the candidate may be admitted to the degree.

If his application for the degree fails, the candidate may re-apply on one occasion only, after a period of not less than three years from the date of his original application.

No candidate for the degree shall be present at the deliberations of the Academic Senate in respect of his own candidature.
CONDITIONS FOR THE DEGREES OF DOCTOR OF LETTERS AND DOCTOR OF SCIENCE

1. There shall be the degrees of
   (a) Doctor of Letters (DLitt)
   (b) Doctor of Science (DSc)

2. The degree of Doctor deemed appropriate may be awarded by the Council on the recommendation of the Academic Senate for an original contribution (or contributions) of distinguished merit adding to the knowledge and understanding of any branch of learning with which the University is concerned.

3. A candidate for the degree of Doctor shall hold a degree of the University of Wollongong, or shall have been a full-time member of the academic staff of the University for a period of at least three years, or shall have been admitted to the status of a degree of the University, save that on the recommendation of the Graduate Studies Committee, the Academic Senate may vary this requirement to include former staff or students of the Wollongong University College. No candidate shall make application for the degree of Doctor until eight years after the award of his first degree.

4. (i) A candidate for the degree shall forward to the Registrar an application accompanied by the prescribed charge. With such application the candidate shall forward five copies (wherever possible) of the published work which he wishes to have examined. The publications shall be a record of original research or critical inquiry undertaken by the candidate, who shall state the sources from which his information was derived, and the extent to which he has availed himself of the work of others.

   (ii) If the publications submitted, whether published in the candidate's sole name or under conjoint authorship, record work carried out conjointly, the candidate shall state the extent to which he was responsible for the initiation, conduct or direction of such conjoint research or inquiry, however published.

   (iii) Where the principal publications, as distinct from supporting papers, incorporate work previously submitted for a degree or award the candidate shall clearly indicate which portion of the publications was so submitted.

   (iv) A candidate may submit additional work, published or unpublished, in support of his application.

5. When the Graduate Studies Committee is satisfied that the published work is prima facie worthy of examination for the degree and a recommendation for the appointment of the examiners, the Graduate Studies Committee may recommend to the Academic Senate the appointment of at least three examiners of whom at least one shall normally be a member of the Department concerned and at least two shall be external examiners.

6. The candidate may be required to answer orally or in writing any questions concerning his work.
PREPARATION AND SUBMISSION OF THeses FOR HIGHER DEGREES

1. (a) Every candidate required to submit a thesis for the degree of Master shall submit to the Registrar four copies of the thesis and supporting work, together with a certificate from the supervisor to the effect that the thesis is in a form suitable for submission to the examiner. 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 degree to any other university or institution.

(b) Every candidate for the degree of Doctor of Philosophy shall submit to the Registrar five copies of the thesis and supporting work, together with a certificate from the supervisor to the effect that the thesis is in a form suitable for submission to the examiner. All copies of the thesis shall contain an abstract of the thesis comprising not more than 600 words and a certificate signed by the candidate to the effect that the work has not been submitted for a degree to any university or such institution except where specifically indicated.

2. The specifications currently approved for higher degree theses are as follows and any variation must be approved by the Academic Senate in consultation with the supervisor.

(a) The text of the thesis, normally in English, shall be in double-spaced typescript.

(b) The size of the paper shall approximate International Standards Organization paper size A4 (297mm x 210mm) except for illustrative material such as drawings, maps and printouts, on which no restriction is placed. The paper used in all copies shall be white opaque paper of good quality.

(c) The margins on each sheet shall be not less than 40mm on the bound side, 20mm on the unbound side, 30mm at the top and 20mm at the bottom.

(d) There shall be a title sheet set out in accordance with the style sheet attached.

3. The required copies of the thesis shall be either assembled securely in a demountable form, or bound, for transmission to the examiners. The demountable form required is one where the sheets are held by posts, and the method of binding is described in paragraph 4.

4. One copy of the thesis is for deposit in the University Library and shall be presented in a permanent and legible form, either in original typescript, stencil copy, offset printing or Xerographic copy, using dry plain paper copying technique.

If the thesis is submitted in demountable form, all copies are to be bound after the Examiners' Reports are received and any necessary alterations made, unless the Department does not wish its copy to be bound.

(i) The thesis shall be bound in boards, covered with buckram.

(ii) The lettering on the spine binding will be:

(a) 15mm from the bottom and across - UW;

(b) 70mm from the bottom and across - the degree and, underneath, the year of submission of the thesis, for example:

PhD
1975

(c) evenly spaced between the degree and the top, reading upwards, the name of the author, initials first and surname or family name.

(iii) No further lettering or decoration is required on the spine or elsewhere on the binding.

(iv) In the binding of a thesis which includes mounted photographs, graphs, etc., or contains a back-pocket, packing shall be inserted at the spine to ensure even thickness of the volume.

A completed and signed "Declaration Relating to Disposition of Thesis" form shall be placed to the inside of the front cover of the Library deposit copy. The form may be obtained from the office of the Registrar.

5. The copies of the thesis and other relevant work may be submitted for examination to the Registrar at any time provided the candidate has completed the minimum period of registration.

6. The degree will not be awarded until the bound Library-deposit copy is lodged with the Registrar.

7. Presently, the University holds that no thesis submitted for a higher degree should be retained in the Library for record purposes only, but within copyright privileges of the author, should be public property and accessible for consultation at the discretion of the Librarian.

8. In order to ascertain the wishes of a candidate for a higher degree regarding the use to which his thesis may be put, he is required to complete a declaration (obtainable from the Registrar) which would -
Preparation of Theses

(a) grant the University Librarian permission to publish or to authorize the publication of the thesis or grant access to it (Form 1);
(b) withhold the right of the University Librarian to publish the thesis (Form 2);
(c) allow the University Librarian to publish the thesis under certain conditions (Form 3); or
(d) withhold the right of the University Librarian to grant access, without written consent of the author, to the thesis for up to three years (Form 4).

REQUIREMENTS FOR TITLE SHEET OF THESIS

(TITLE OF THESIS)

A thesis submitted in (partial) fulfilment of the requirements for the award of the degree of

(NAME OF DEGREE)

from

THE UNIVERSITY OF WOLLONGONG

by

(AUTHOR'S NAME, DEGREE(S) HELD)

(NAME OF DEPARTMENT)

(YEAR)
## SCHEDULE OF GRADUATE SUBJECTS

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### Number 
#### Subject 
#### Credit 
#### Points 
#### Session 
#### Offered 
#### Pre- 
#### Requisite 
#### Remarks 

**EDUC946**  
Introduction to Educational Research Methodology  
8  
1 or 2 or 3  
Not to count with EDUC939  

**EDUC947**  
Introduction to Curriculum Theory and Development  
8  
1  

**EDUC948**  
Advanced Curriculum Theory and Development  
8  
2  
EDUC947  

**EDUC949**  
School Administration  
8  
1 or 2 or 3  

**EDUC950**  
Dynamics of Classroom Interaction  
8  

**EDUC951**  
Developmental Theories and School Educational Practice  
8  

**EDUC952**  
Introduction to the History of Education  
8  

**EDUC953**  
Education and Modern Society  
8  

**EDUC954**  
Special Topic in Education A  
8  
Demonstrated expertise in a special area of Educational practice  

**EDUC955**  
Special Topic in Education B  
8  
Demonstrated expertise in a special area of Educational practice  

**EDUC956**  
Special Topic in Education C  
8  
Demonstrated expertise in a special area of Educational practice  

#### MASTER OF ARTS 

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**NOTE:** A combination of Economics and Accountancy subjects may be approved by the Chairman of the two Departments and:

Subjects aggregating not more than 12 credit points may be selected from those offered by other Departments where approval is given by the Chairman of the respective Departments (i.e., the Department offering the subject on one hand, and on the other, either Accountancy or Economics as appropriate in each case. The appropriate Department would be the Department in which the student had taken or planned to take more than 48 credit points in honours subjects for the undergraduate degree and graduate subjects for this degree).

A candidate may not include for this degree subjects similar in content to subjects included in the honours part of the undergraduate course.
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**MASTER OF COMMERCE**

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**MASTER OF EDUCATION**

| EDUC970  | Educational Psychology A                     | 8             |
| EDUC971  | Educational Psychology B                     | 8             |
| EDUC972  | Curriculum Studies A                         | 8             |
| EDUC973  | Curriculum Studies B                         | 8             |
| EDUC974  | Educational Administration and Organisation A| 8             |
| EDUC975  | Educational Administration and Organisation B| 8             |
| EDUC976  | Educational Research and Design of Experiments*| 8             |
| EDUC977  | Education, Industrialization and Culture     | 8             |
| EDUC978  | The Politics of Education                    | 8             |
| EDUC979  | Special Topic in Education A**               | 8             |
| EDUC980  | Special Topic in Education B**               | 8             |
| EDUC981  | Minor Project in Education#                  | 8             |
| EDUC982  | Major Project in Education##                 | 16            |
| EDUC983  | Minor Thesis                                 | 24            |
| EDUC984  | Thesis                                       | 48            |

**MASTER OF ENGINEERING**

| CIVL910  | Advanced Foundation Engineering              | 5             |
| CIVL901  | Advanced Mechanics of Solids I               | 5             |
| CIVL902  | Advanced Mechanics of Solids II              | 5             |
| CIVL909  | Advanced Soil Mechanics                      | 5             |
| CIVL916  | Analysis and Design of Bridge and Related Structures| 5             |
| CIVL908  | Civil Engineering Computations               | 5             |
| CIVL904  | Concrete Technology                          | 5             |
| CIVL914  | Engineering Hydrology                        | 5             |
| CIVL915  | Estuary and Coastal Engineering              | 5             |
| CIVL912  | Experimental Methods in Civil Engineering    | 5             |
| CIVL913  | Finite Element Methods in Structural Engineering | 5             |
| CIVL905  | Highway Materials                            | 5             |

* Strongly recommended for each candidate unless otherwise recommended by Supervisor.
**Demonstrated expertise in an area of educational practice or theory.
# Not to count with Major Project in Education or Minor Thesis.
##Not to count with Minor Project in Education or Minor Thesis.
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<p>|          | <strong>MECHANICAL ENGINEERING</strong>                                             |               |
| MECH901  | Advanced Heat Transfer 1                                                | 5             |
| MECH902  | Advanced Heat Transfer 2                                                | 5             |
| MECH903  | Statistical Thermodynamics                                             | 5             |
| MECH904  | Gas Dynamics and Compressible Fluid Flow                               | 5             |
| MECH905  | Advanced Dynamics                                                      | 5             |
| MECH906  | Experimental and Analytical Modelling                                  | 5             |
| MECH907  | Design of Control Systems I - Multivariable Systems                    | 5             |
| MECH908  | Computer Aided Design                                                  | 5             |
| MECH909  | Wastewater Treatment and Disposal                                      | 5             |
| MECH910  | Water Resource Management                                              | 5             |</p>
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**MASTER OF METALLURGY**

| METL901  | Metallurgical Resources II                                             | 8             |
| METL921  | Physics of Metals III                                                   | 8             |
| METL931  | Mechanical Behaviour of Materials                                       | 8             |
| METL932  | Mechanical Behaviour of Materials at Elevated Temperatures              | 8             |
| METL933  | Fracture of Materials                                                   | 8             |
| METL941  | Process Modelling III                                                   | 8             |
| METL951  | Structure and Properties of Materials                                   | 8             |
| METL952  | Advanced Metallographic Methods                                         | 8             |
| METL971  | Solidification II                                                      | 8             |
| METL981  | Advanced Extractive Metallurgy                                          | 8             |
| METL990  | Major Thesis                                                           | 48            |
| METL993  | Metallurgy Project IV                                                   | 16            |

**MASTER OF SCIENCE**

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**CHEMISTRY**

<p>| CHEM901  | Advanced Topics in Inorganic Chemistry                                  | 16            |
| CHEM902  | Advanced Topics in Organic Chemistry                                    | 16            |
| CHEM903  | Advanced Topics in Physical Chemistry                                   | 16            |
| CHEM904  | Advanced Topics in Analytical Chemistry                                 | 16            |
| CHEM905  | Advanced Topics in Quantum Chemistry                                    | 16            |
| CHEM906  | Advanced Topics in Spectroscopy                                         | 16            |
| CHEM918  | Chemistry Report                                                        | 16            |
| CHEM910  | Selected Topics in Chemistry                                            | 16            |
| CHEM920  | Chemistry Research Project                                              | 48            |</p>
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*The Department now offers an MA by coursework - see the Master of Arts Schedule

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<td>MATH963</td>
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<td>PHYS942</td>
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<td>PHYS948</td>
<td>Astrophysics Seminars</td>
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<td>PHYS955</td>
<td>Mathematical Methods for Physicists B</td>
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<td>PHYS960</td>
<td>Advanced Project in Physics B</td>
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<td>PHYS970</td>
<td>The Physics of Measurements</td>
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<td>PHYS990</td>
<td>Plasma Physics</td>
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<td>PHYS997</td>
<td>Special Topic in Physics B</td>
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<tr>
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DESCRIPTIONS OF POSTGRADUATE COURSES

NOTE: The following Departments offer Masters degree study only by research thesis:

- **BIOLOGY**
- **ENGLISH**
- **EUROPEAN LANGUAGES**
- **HISTORY**
- **PSYCHOLOGY**
- **SOCIOLOGY**

**ACCOUNTANCY**

**DIPLOMA IN ACCOUNTANCY**

In accordance with the general conditions governing graduate diplomas, candidates for the Diploma in Accountancy must have been admitted to the degree of Bachelor in the University or other approved institution, and, for the award of the Diploma, are required to complete subjects approved by the Chairman of the Department of Accountancy, and aggregating not less than 48 credit points in one year of full-time study or equivalent.

An important purpose of the Diploma is to provide in a recognized University course a means for accountancy students to study the additional subjects required for cross credit to professional examinations, and which were not included in their Bachelor degree. Further, students who had included in the BCom degree all subjects required for admission to the Australian Society of Accountants could study appropriate 400-level subjects leading to advancement to Senior Associate status. The Diploma may also appeal to graduates in other disciplines who wish to obtain a background in Accounting and Financial Management.

Specific requirements for the Diploma are:

1. Not less than 30 credit points (of the minimum required of 48) are to be obtained from 200- and/or 300-level subjects offered by the Department of Accountancy.
2. With the approval of the Chairman of the Department of Accountancy subjects may be selected from 400-level subjects offered by the Department of Accountancy. (Any subjects selected under this clause may be included in the 30 credit points required under 1.).
3. The whole course for the diploma is to be approved by the Chairman of the Department of Accountancy as providing a coherent course of study.

**THE MASTER OF COMMERCE DEGREE, ACCOUNTANCY OR ECONOMICS**

A. 1. Candidates who have completed the requirements for the award of the BCom(Hons) in Accountancy or Economics, or an equivalent degree, may qualify for the award of the MCom degree by completing at honours standard any one of the following courses of study.

   (i) Thesis (48 credit points).
   or (ii) Project (16 credit points) and course work aggregating not less than 32 credit points.
   or (iii) Research report (24 credit points) and course work aggregating not less than 24 credit points.
   or (iv) Course work aggregating not less than 48 credit points.

2. Subjects are to be selected from 900-level subjects offered by either the Department of Accountancy or the Department of Economics, and included in the Schedule of Graduate Subjects; provided that:

   (a) A combination of Economics and Accountancy subjects may be approved by the Chairmen of the two Departments, and
   (b) Subjects aggregating not more than 12 credit points may be selected from those offered by other Departments, where approval is given by the Chairmen of the respective Departments (i.e., the Department offering the subject on one hand, and on the other, either Accountancy or Economics as appropriate in each case. The appropriate Department would be the Department in which the student had taken or planned to take more than 48 credit points in Honours subjects for the undergraduate degree and graduate subjects for this degree.).

3. A candidate may not include for this degree subjects similar in content to subjects included in the honours part of the undergraduate course.

B. Candidates who have completed the requirements for the BCom degree, or equivalent degree, may, subject to the attainment of a satisfactory standard in that degree, be permitted to register
as candidates for the MCom degree. Such candidates may qualify for the award of the degree by completing at honours standard subjects aggregating not less than 96 credit points of which subjects aggregating not less than 48 credit points shall be selected in accordance with the requirements (1) to (3) above.

THE MASTER OF ARTS DEGREE,
ACCOUNTANCY OR ECONOMICS

A. 1. Candidates who have completed at an acceptable standard the requirements for the award of the BA(Hons) in Accountancy or Economics, or an equivalent degree, may qualify for the award of the MA degree by completing at honours standard any one of the following subjects, or combination of subjects:

(i) Thesis (48 credit points).

or (ii) Project (16 credit points) and course work aggregating not less than 32 credit points.

or (iii) Research report (24 credit points) and course work aggregating not less than 24 credit points.

or (iv) Course work aggregating not less than 48 credit points.

2. Subjects are to be selected from 900-level subjects offered by either the Department of Accountancy or the Department of Economics, and included in the Schedule of Graduate Subjects; provided that:

(a) A combination of Economics and Accountancy subjects may be approved by the Chairmen of the two Departments, and

(b) Subjects aggregating not more than 12 credit points may be selected from those offered by other Departments, where approval is given by the Chairmen of the respective Department, i.e., the Department offering the subject on one hand, and on the other, either Accountancy or Economics as appropriate in each case. The appropriate Department would be the Department in which the student had taken or planned to take more than 48 credit points in Honours subjects for the undergraduate degree and graduate subjects for this degree.

3. A candidate may not include for this degree subjects similar in content to subjects included in the honours part of the undergraduate course.

B. Candidates who have completed the requirements for the BA degree, or equivalent degree, may, subject to the attainment of a satisfactory standard in that degree, be permitted to register as candidates for the MA degree. Such candidates may qualify for the award of the degree by completing at honours standard subjects aggregating not less than 96 credit points of which subjects aggregating not less than 48 credit points shall be selected in accordance with the requirements (1) to (3) above; and subjects not exceeding 48 credit points may be selected from the 400-level Honours subjects in Accountancy or Economics.

For details of the subjects listed below (with the exception of ACCY994, 995 and 996), refer to the 400-level Accountancy subjects with the same subject names in the "Description of Subjects" (Undergraduate section).

Credit Points: All subjects listed below, with the exception of ACCY994, 995 and 996, have a credit point value of 8.

Contact Hours for each subject: 2 hr seminar per week

Assessment: Seminar presentation of assigned topic, essays and final examination

ACCY903 ACCOUNTING THEORY
ACCY904 CURRENT DEVELOPMENTS IN ACCOUNTING THOUGHT - FINANCIAL
ACCY913 CURRENT DEVELOPMENTS IN ACCOUNTING THOUGHT - MANAGERIAL
ACCY914 MANAGEMENT PLANNING AND CONTROL
ACCY953 STUDIES IN TAXATION
ACCY905 INTERNATIONAL ACCOUNTING
ACCY973 HISTORY AND DEVELOPMENT OF ACCOUNTING THOUGHT
ACCY906 ISSUES IN FINANCIAL ACCOUNTING AND REPORTING
ACCY923 INVESTMENT ANALYSIS AND MANAGEMENT
ACCY983 SPECIAL TOPIC A
ACCY984 SPECIAL TOPIC B
ACCY993 RESEARCH ESSAY
ACCY994 PROJECT (16 credit points)
ACCY995 RESEARCH REPORT (24 credit points)
ACCY996 THESIS (48 credit points)
CHEMISTRY

MASTER OF SCIENCE

Introduction and Objectives
There have been many rapid advances in Chemistry, particularly in chemical instrumentation, over the past decade. Many techniques and applications are now in common use which did not even exist five years ago. There is therefore a need for Chemistry graduates, especially those of some standing, to become aware of, and proficient in, at least some of these new developments. The proposed courses are intended to provide for the specific needs and interests of applicants from both Industry and Education.

Structure of the Course
The course will be made up of subjects selected from those described below, in accordance with the Conditions for the Award of the Degree of Master.

The subject CHEM910 Selected Topics in Chemistry is intended to be a "broadening" subject and is compulsory for all students undertaking the degree by course work unless they have already passed CHEM411, which is similar in structure.

Students entering with an Honours degree in Chemistry will take subjects to a value of 48 credit points.

Students entering with a pass degree will take subjects to a value of 96 credit points.

Subjects to be offered each year will depend upon student and staff availability.

Entry to the Course
This is subject to the approval of the Academic Senate on the advice of the Chairman, Department of Chemistry.

Selection of Subjects
Students must consult the Chairman, Department of Chemistry, for approval of their proposed choice of subjects.

Reading Lists
Reading lists will be provided by the staff involved in each subject.

Pre-requisites
The minimum pre-requisite for all subjects is that the student must have graduated with at least 24 credit points of 300-level Chemistry subjects.

CHEM901 ADVANCED TOPICS IN INORGANIC CHEMISTRY

Double session; 16 credit points (66 hrs lectures, 56 hrs tutorials)
Assessment: Written examination + Continual assessment + assignments + Seminar

Crystallography; Molecular structure determination by X-ray diffraction techniques; Advanced magnetochemistry. Magnetic properties of poly-nuclear transition metal complexes. Transition metal ions in cubic and axially symmetric crystal fields; Inorganic Chemistry and problems in biological systems; Metal clusters, Boron cage compounds; Inorganic rings and chains; Organometallic chemistry, and others added as required.

CHEM902 ADVANCED TOPICS IN ORGANIC CHEMISTRY

Double session; 16 credit points (66 hrs lectures, 56 hrs tutorials)
Assessment: Written examination + Continual assessment + assignments + Seminar

Natural Products Chemistry; Photochemistry; Organic Synthesis and Analysis; Medicinal and Pharmaceutical Chemistry; Stereochemistry, and others added as required.

CHEM903 ADVANCED TOPICS IN PHYSICAL CHEMISTRY

Double session; 16 credit points (66 hrs lectures, 56 hrs tutorials)
Assessment: Written examination + Continual assessment + assignments + Seminar

Reaction kinetics; Linear free energy relationship; Surface chemistry and heterogeneous catalysis; Molecular structure and chemical reactivity; Gas chromatography, and others added as required.
CHEM904 ADVANCED TOPICS IN ANALYTICAL CHEMISTRY

Double session; 16 credit points (56 hrs lectures, 56 hrs tutorials)

Assessment: Written examination + Continual assessment + assignments + Seminar

Solvent effects, Thermochemistry; acidity and solubility; trace analysis; analytical chemistry of some elements; modern automation techniques; errors and limitations in analysis; and other topics as required.

CHEM905 ADVANCED TOPICS IN QUANTUM CHEMISTRY

Double session; 16 credit points (56 hrs lectures, 56 hrs tutorials)

Assessment: Written examination + Continual assessment + assignments + Seminar

Mathematical and Computational techniques in quantum chemistry; Quantum prediction of molecular properties and of reaction rates and specificity. Computer experiments and simulation of chemical systems. Energy transfer and storage processes in chemical systems; Energy trapping. Spectroscopic techniques in quantum chemistry; picosecond pulsed laser experiments, and others added as required.

CHEM906 ADVANCED TOPICS IN SPECTROSCOPY

Double session; 16 credit points (56 hrs lectures, 56 hrs tutorials)

Assessment: Written examination + Continual assessment + assignments + Seminar

Recent advances in instrumentation and applications in Mass Spectroscopy. U.V. - visible and I.R. Spectroscopy. N.M.R. Atomic absorption spectroscopy, and others added as required.

CHEM910 SELECTED TOPICS IN CHEMISTRY

Double session; 16 credit points (56 hrs lectures, 56 hrs tutorials)

Compulsory for all students doing MSc in Chemistry by coursework, except for students who have passed CHEM11

Not to count with CHEM11

Assessment: Written examination + Seminar

Theories concerning the creation of life on Earth; Organic and Inorganic Geochemistry and its effect on environment; Vitamins, hormones and important common drugs; Introduction to Digital Instrumentation; The Basic Nature and desirable properties of Materials (e.g. ceramics, glasses, polymeric and composite materials); Chemistry Through the Ages; Chemical Literature; Chemistry and Society; Computer Simulation of Complex Systems; and others added as required.

CHEM918 CHEMISTRY REPORT

Double session; 16 credit points (112 hrs tutorials)

Assessment: Substantial report

Under the supervision of staff appointed by the Chairman, Department of Chemistry, students will survey the chemical literature and prepare a report on a topic chosen by the supervising staff.

CHEM920 CHEMISTRY RESEARCH PROJECT

48 credit points

Assessment: Major thesis

Topic to be arranged in consultation with the Chairman, Department of Chemistry and approved by the Graduate Studies Committee.
CIVIL ENGINEERING

The Department of Civil Engineering offers the following opportunities for graduates to conduct research or pursue an advanced course of study:

1. Master of Engineering Degree by coursework.

1. The Master of Engineering Degree by Coursework

The Master of Engineering Degree by coursework is intended for engineers who have had some professional experience after graduating. It consists of lecture courses together with a project. The lectures and projects will be closely related where possible to the professional interest of those taking part.

2. The Master of Engineering Degree by Research Thesis

The Master of Engineering Degree by research thesis is intended for those engineers qualified and interested in specific problems.

3. The Master of Engineering Degree by Combinations of Coursework and Research Thesis

This is the more normal course for the younger Civil Engineer, and gives him training in research and also gives greater depth of understanding in specialist postgraduate areas.

MASTER OF ENGINEERING RESEARCH THESIS TOPICS

The following subject areas are available for graduates wishing to conduct research for the Master of Engineering Degree.

Transportation, highway materials; planning for recreation, planning for urban and regional purposes. Computer applications in traffic engineering. Economic analysis and highway inventories. Designs of highways, computer methods.

Estuary and coastal engineering, breakwater design, propagation of tides with estuaries, sediment transport. Hydraulic models.

Engineering hydrology, analysis of storms, development of catchment models, development of cost benefit methods for drainage.

Finite element methods, the application of finite element methods to the design of bridges and flat plate structures. Foundations, slopes. Failure of rock and soil masses.

Mathematical theories of elasticity and plasticity applied to engineering problems. Experimental methods. Vibrations.


AIMS OF THE COURSE

The programmes of study allow the student to combine specialist postgraduate subjects according to his undergraduate background, with project work. It is intended to strengthen professional training in a context of problems and policies which reach beyond the conventionally recognised boundaries of single disciplines. Elective postgraduate subjects and introductions to disciplines in which the student has no experience, are available.

The programme for the Master of Engineering Degree offered by the Department of Civil Engineering has two explicit aims:

(a) Specialist Training. Postgraduate training is provided for students with appropriate backgrounds, to enable professional development in their particular discipline. This is achieved by providing access to existing postgraduate courses already offered by Civil Engineering.

(b) Interdisciplinary Training. An interdisciplinary framework is provided, within which postgraduate training in Civil Engineering may be integrated with other disciplines. This is achieved by the provision of limited access to concentrated study in other disciplines.

ENTRY REQUIREMENTS

Normally the course is of 1 year full-time or 2 years part-time study for those candidates who possess a Bachelor Degree with Honours. Applicants possessing a Bachelor degree of a standard less than Honours will have their programme approved by the Academic Senate after consultation with the Chairman of the Department of Civil Engineering.

CREDIT POINTS

Each of the subjects listed below, except where otherwise stated, has a credit point value of 5.
Postgraduate Courses - Civil Engineering

CIVL901 ADVANCED MECHANICS OF SOLIDS 1

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 shear forces on the critical load; 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; twist bend 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.

RECOMMENDED READING
Little, R.W. Elasticity.
Prescott, J. Applied Elasticity.

CIVL902 ADVANCED MECHANICS OF SOLIDS 2

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.

RECOMMENDED READING
Johnson, W. & Mellor, P.B. Plasticity for Mechanical Engineers.

CIVL903 THEORY OF ELASTICITY

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.

RECOMMENDED READING
Green, A.E. & Zerna, W. Theoretical Elasticity.
CIVL904 CONCRETE TECHNOLOGY

Mix design theories; design of high strength and lightweight concrete, elastic behaviour; strength, creep, shrinkage; significance of tests and properties of constituent materials; analysis of results; non-destructive tests; special concrete applications.

RECOMMENDED READING
Lydon, F.D. Concrete Mix Design. A.S.
Neville, A.M. Properties of Concrete. Pitman.
Relevant Australian Standards - to be specified during course.

CIVL905 HIGHWAY MATERIALS

Soil and roadmaking aggregate surveys; compaction of soil; road construction with soil and low-grade aggregates; mechanical, cement, bituminous, and resinous stabilisation; constructional methods in soil stabilisation.
The origin, preparation, constitution and rheology of bituminous binders; Mechanical and physical properties of bituminous materials. Close and open textured materials. Surface dressing. Plant. Sampling and testing. Maintenance.
Concrete construction. Materials; mixing; laying; sampling and testing. Maintenance.
Pavement design and evaluation - a review of current Australian, European and North American Practice.

RECOMMENDED READING
HMSO. Soil Mechanics for Road Engineers.
HMSO. Bituminous Materials in Road Construction.
UNESCO. Low Cost Roads.

CIVL906 TRANSPORTATION ENGINEERING

Roads & Pavements - design and construction. Airport Engineering - classification, design standards, layout & development, terminal facilities, City - airport transport systems; railroad engineering - urban rail transit, light rail rapid transit, advanced passenger trains, evaluation of service. Pipeline transportation - growth, storage, types, construction. Belt conveyors - goods and passengers; Undersea Transportation - vehicles, support systems.

RECOMMENDED READING

CIVL907 TRAFFIC ENGINEERING


RECOMMENDED READING

CIVL908 CIVIL ENGINEERING COMPUTATIONS

(i) The use of problem oriented languages in solving Civil Engineering problems, including I.C.E.S. STRUDL, COGO, ROADS, TRANSET, PROJECT, BRIDGE, SEPOL, LEASE, TRAVOL. In general these subsystems can be applied to Structural systems, co-ordinate geometry, roadway analysis, transportation networks, project engineering bridge design, settlement problems, stability of slopes and traffic volume problems.

(ii) The development of general user programmes using ICES Command Definition Language, Command Interpreter System, ICETRAN.
CIVL908 CIVIL ENGINEERING COMPUTATIONS (CONT'D)

This course will concentrate on STRUDL which is designed for application to a wide range of structural types, both two and three dimensional, including trusses, frames and continuous finite elements. Any combination of these components may be used with a variety of analysis and design procedures including linear elastic static analysis, finite element analysis, nonlinear geometric analysis, dynamic analysis, frame optimization, steel frame member design, and design and checking of reinforced concrete building frames including beams, columns, slabs, steel quantity and location, material take-off etc. Input data includes member and structure boundary conditions, prismatic or variable section members, any number of loading conditions consisting of any number of uniform, linear, or concentrated member loads, uniform or concentrated member loads, uniform or concentrated member distortions and temperature loads, and joint loads and joint displacements.

TEXTBOOKS AND RECOMMENDED READING
ICES User Manuals as advised during the course.

CIVL909 ADVANCED SOIL MECHANICS

Soil Structure and clay mineralogy; Yield criteria and theories of failure for soil masses; recent theories of soil behaviour; Theoretical and mathematical considerations concerning limiting equilibrium of soil structures; bearing capacity and stability of slopes, rigorous and simplified methods; Soil dynamics, forced harmonic vibrations, co-efficient of dynamic subgrade reaction, Recent developments in the theory of consolidation.

RECOMMENDED READING
Grim. Clay Mineralogy. 
Richart. Soil Dynamics. 
Terzaghi. Theoretical Soil Mechanics. 

CIVL910 ADVANCED FOUNDATION ENGINEERING

General principle concerning selection of foundation type on different types of soil, particular reference to collapsing and swelling soils, compacted fill and non-uniform soils. Foundation design in relation to ground movements, settlement due to construction operations, performance observations. 
Buoyancy rafts and basements, pier and caisson foundations, cofferdams, dam foundations. 
Analysis and design of pile and raft foundations, pile groups, laterally loaded piles, sheet pile structures. 
Computer methods of analysis; Finite element analysis for earth pressure, stress-distribution, bearing capacity, and seepage studies. 

RECOMMENDED READING
Leonards. Foundation Engineering. 
Tomlinson. Foundation Design and Construction. 

CIVL911 VIBRATION OF STRUCTURES


RECOMMENDED READING
To be advised. 

CIVL912 EXPERIMENTAL METHODS IN CIVIL ENGINEERING

Dimensional analysis and principles of similitude, model analysis and design of models. Instrumentation and special methods of measurement. Evaluation of data. Transient and cyclic phenomena. Photoelasticity, Moire Fringes and Holography. 

RECOMMENDED READING
To be advised.
CIVL913 FINITE ELEMENTS METHODS IN STRUCTURAL ENGINEERING


RECOMMENDED READING
To be advised.

CIVL914 ENGINEERING HYDROLOGY

Storm models, storm maximisation, extreme precipitation estimates, intensity-frequency-duration analysis, design storms; rainfall losses, infiltration models, design losses; advanced unit-hydrograph theory, synthetic unit hydrographs; hydrograph synthesis by runoff-routing; design floods for rural and urban catchments.

RECOMMENDED READING
Wiesner, C.J. Hydrometeorology. Chapman & Hall.

CIVL915 ESTUARY AND COASTAL ENGINEERING

Theory of deep and shallow water waves, wave generation and decay, wave breaking, wave forces on structures; harbour resonance and seiche action, wave refraction and diffraction; breakwater design; shoreline processes, beach protection; tidal theory, propagation of tides into estuaries; sediment transport; fixed and loose bed hydraulic models; inspection of hydraulic model.

RECOMMENDED READING
Wiegel, R.L. Oceanographical Engineering.

CIVL916 ANALYSIS AND DESIGN OF BRIDGE AND RELATED STRUCTURES

Types of bridge; similarities between bridges and some plate- and shell-type building structures; loadings; analytical methods; load distribution technique, orthotropic plate theory, grillage and space frame methods, finite strip procedure, finite element method and finite difference approach; computer programme suites; design codes; design of super-structures; design of foundations.

RECOMMENDED READING
To be advised.

CIVL917 NUMERICAL METHODS IN CIVIL ENGINEERING


RECOMMENDED READING
Hartree, D.R. Numerical Analysis.
Synge, J.L. The Hypercircle in Mathematical Physics.
Zukhovitsky, S.I. Linear & Complex Programming.

CIVL950 THESIS
Double session; 8 credit points

CIVL951 THESIS
Double session; 12 credit points
Postgraduate Courses - Civil Engineering

CIVL952 MAJOR THESIS

Double session; 48 credit points

CIVL953 ADVANCED STUDIES IN CIVIL ENGINEERING

Topics will be selected from those areas of Civil Engineering in which staff members or visiting staff members to the department, are engaged in active research.

TEXTBOOKS AND RECOMMENDED READING
Reading list will be prescribed by Lecturer.

CIVL954 ADVANCED STUDIES IN WASTE DISPOSAL & TREATMENT 1

Theory of Physical, Chemical and Biological processes used in waste water treatment. Monitoring and control.

TEXTBOOKS AND RECOMMENDED READING
Reading list will be prescribed by Lecturer.

CIVL955 ADVANCED STUDIES IN WASTE DISPOSAL & TREATMENT 2

Industrial and solid waste disposal: landfill, incineration recycling. Pollution control. Systems design and layout.

TEXTBOOKS AND RECOMMENDED READING
Reading list will be prescribed by Lecturer.

CIVL956 ADVANCED STUDIES IN WASTE DISPOSAL & TREATMENT 3


TEXTBOOKS AND RECOMMENDED READING
Reading list will be prescribed by Lecturer.

CIVL999 ADVANCED TOPICS IN ENGINEERING

Double session; 48 credit points

Details of this subject are the same as for ELEC999 Advanced Topics in Engineering, as described in the postgraduate entry under the Department of Electrical Engineering*, with the addition of the following two topics:

Advanced Metallographic Methods
Structure and Properties of Materials

The selection of the topics will be subject to the approval of the Chairman of the Department of Civil Engineering.

RECOMMENDED READING
A reading list will be given for each topic by the lecturer concerned.

*See p. 399
COMPUTING SCIENCE

DIPLOMA IN COMPUTING SCIENCE

The Diploma course is designed to provide advanced studies in Computing Science at a professional level to graduates of this or another university who have some (not necessarily advanced) background in Computing Science.

The Graduate Diploma in Computing Science shall be subject to the University requirements for the award of Graduate Diplomas together with the following conditions:

1. Entry to the Diploma will normally be from a pass degree. The expected level of Computing Science background will be equivalent to Computing Science II (CSCI201).

2. The Diploma course is a coherent programme of study (48 credit points) normally occupying two sessions of full-time study or four sessions of part-time study and will involve the successful completion of:

   (i) the subject CSCI411 Computing Science Honours Seminar (12 credit points); and
   (ii) subjects chosen from the Schedule of Subjects for the Master of Science Degree (Computing Science) to the value of 12 credit points; and
   (iii) further subjects chosen from the Schedule of subjects for the Master of Science Degree (Computing Science), and/or the Schedule of Subjects for the Master of Science Degree (Mathematics), and/or Schedule F to the value of 24 credit points.

3. A candidate may not include in this diploma programme any subject which the candidate has previously credited towards another degree or diploma of the University. Subject to staff and resources some graduate subjects may not be available in any given year.

MASTER OF SCIENCE

CSCI911 COMPUTER METHODS

6 credit points

Review of Programming Languages: FORTRAN, PASCAL, C, COBOL, Algol 60, Algol 63; Programming style, techniques and structured programming; Algorithms, problem solving methods.

RECOMMENDED READING


CSCI921 INFORMATION PROCESSING SYSTEMS

6 credit points


RECOMMENDED READING

CSCI931 COMPILERS

6 credit points
Introduction to languages, grammars, compilers and interpreters; lexical analysis; regular expressions; basic parsing techniques; syntax analysis, LL parsers and recursive descent; LR parsers; symbol tables; run-time storage management; code generation; error detection and recovery.

RECOMMENDED READING

CSCI941 ADVANCED TOPICS IN COMPUTING SCIENCE A

6 credit points
Topics will be selected from those areas of computing science in which staff members or visiting staff members of the department are engaged in active research.

RECOMMENDED READING
Prescribed by instructor.

CSCI942 ADVANCED TOPICS IN COMPUTING SCIENCE B*

6 credit points
Topics will be selected from areas of computing science in which staff members or visiting staff members of the department are engaged in active research.

RECOMMENDED READING
Prescribed by instructor.

CSCI991 PROJECT

12 credit points

CSCI992 MINOR THESIS

24 credit points

CSCI993 THESIS

48 credit points

*Will not be offered until 1980.
ECONOMICS

MASTER OF COMMERCE AND MASTER OF ARTS DEGREES,
ACCOUNTANCY OR ECONOMICS

See entry under Department of Accountancy.*

MASTER OF COMMERCE, INDUSTRIAL RELATIONS

A. 1. Candidates who have completed at an acceptable standard the requirements for the award of
a bachelor's degree with honours in Economics or Psychology, or who have an equivalent
qualification, may fulfil the requirements for an M.Com. degree in Industrial Relations
by completing at honours standard an approved course of at least 48 credit points from the
following schedule:

(i) Thesis (48 credit points).
or (ii) Project (16 credit points) and course work aggregating
not less than 32 credit points.
or (iii) Research report (24 credit points) and course work
aggregating not less than 24 credit points.
or (iv) Course work aggregating not less than 48 credit points.

2. Supervision of research and approval of courses will be organized jointly by the Chairmen
of Departments of Economics and Psychology.

3. Subjects are to be selected from the Schedule of Graduate Subjects; subjects aggregating
not more than 12 credit points may be selected from those offered by other Departments
than Economics and Psychology.

B. Applicants who have completed at an acceptable standard the requirements for a bachelor's
degree with a specialisation in Economics or Psychology, or who have an equivalent qualifi-
cation, may be permitted to register as candidates for the M.Com. degree in Industrial
Relations. Such candidates may qualify for the award of the degree by completing at
honours standard subjects aggregating not less than 96 credit points of which subjects
aggregating not less than 48 credit points shall be selected in accordance with require-
ments 1, 2 and 3 above.

Composition of Courses and Credit Points:

Three hours per week and 8 credit points for all of the subjects described below other than

Assessment:

Continuous assessment by written assignments and Departmental examinations.

ECON901 MONETARY ECONOMICS

The course is in two sections. The first section compares the monetarist theory of money with the
reinterpreted Keynesian theory of money, examining: theories and evidence on the demand for money;
the relative stability debate; the transmission mechanism and the policy implications of both
theories.

The second section examines conflicting theories such as Monetarist and Keynesian Neutral. The
topics to be covered are: The theories of the supply of money; the effect of the growth of
financial institutions on the efficacy of monetary policy; and the debate on the term structure of
interest rules.

Much of the course will be based on the formal articles in which most of the debates have been
carried. The following are considered useful references for the course.

RECOMMENDED READING

American Economics Association. Reading in Monetary Theory.

*See pp. 364, 365
ECON901 MONETARY ECONOMICS (CONT'D)


ECON902 ADVANCED INTERNATIONAL MONETARY ECONOMICS

Foreign exchange markets; banking and financial institutions; money supply, price level and international adjustment; international monetary system.

RECOMMENDED READING
Machlup, F. Re-making the International Monetary System; the Rio Agreement and Beyond. Johns Hopkins, 1968.

ECON903 PUBLIC FINANCE

This course further develops topics encountered in the undergraduate Public Finance course. Particular emphasis will be placed on issues surrounding intergovernmental fiscal relations in a federal system. Questions of fiscal transfer mechanisms, divisions of powers and responsibilities and the equalisation measures which might be used will be considered.

RECOMMENDED READING

ECON904 PUBLIC SECTOR ECONOMICS

The course examines the public sector as an economic entity in an industrial economy. The concept of a public good is discussed and the question of what goods the government should provide is examined. The growth of the public sector is analysed and the undernourishment thesis is examined. Public enterprises' pricing policies, goals, and efficiency are then examined. Finally the interaction between private and public sectors is considered.

RECOMMENDED READING

ECON905 INPUT OUTPUT ANALYSIS

Design and estimation of input-output matrices. Basic equilibrium, optimising and forecasting techniques. Application to planning and some regional problems.

RECOMMENDED READING
ECON906 HISTORY OF ECONOMIC THOUGHT

A study of the history of Economics, mainly concerned with the origins and development of modern Economics.

RECOMMENDED READING


ECON911 ADVANCED INTERNATIONAL ECONOMICS

Aspects of some of the following topics are studied in depth:

1. Growth and Trade
2. Factor Transfers (Foreign Investment)
3. Tariffs
4. Import-Substituting Industrialisation
5. Foreign Exchange Market
6. Internal and External Balance (the two-gap model)

RECOMMENDED READING

Adelman, I. Practical Approaches to Development Planning. Ch.4.


Findlay, R. & Grubert, H. Factor Intensities, Technological Progress and the Terms of Trade, in Bhagwati, J. International Trade.


Papaneck, G.F. The Effects of Aid and Other Resource Transfers on Savings and Growth in Less Developed Countries. EJ, September, 1972.


ECON912 LABOUR ECONOMICS

The theory of the labour market and applications to the Australian situation, including labour supply and demand. Special emphasis is placed on analysing the character of the workforce and structural changes in industries and occupations. Wage theory and practice are examined under conditions of collective bargaining and arbitration. The development of the arbitration system in Australia and principles of wage determination followed by the Commission are of particular importance. Wages and income policies, including indexation policies will also be studied, as will wage developments outside the arbitration system.

TEXTBOOK


RECOMMENDED READING

ECON912 LABOUR ECONOMICS (CONT'D)


ECON913 INDUSTRIAL ECONOMICS

A study of industrial organisation and performance, decision-making criteria and constraints affecting output and distribution of revenue, market behaviour, and matters of ownership and control of the unit of organisation.

RECOMMENDED READING

ECON914 ECONOMICS OF SOCIAL WELFARE I

A study of the theoretical basis of economic policy decisions and the economic significance of criteria adopted or proposed for policy decisions about the use of public goods or about conditions affecting the use of private goods.

RECOMMENDED READING

ECON915 ECONOMICS OF SOCIAL WELFARE II

The course is concerned with aspects of the distribution of income. Various theories of distribution are studied, and these are related to welfare economics. In addition, there is considerable emphasis on empirical studies of functional and personal income distribution in various countries. The impact of the government sector on income distribution is studied. Particular emphasis is placed on the measurement of poverty and the economic measures which might be used to alleviate poverty.

TEXTBOOKS
ECON915 ECONOMICS OF SOCIAL WELFARE II (CONT'D)

RECOMMENDED READING
A.E.A. The Distribution of National Income.
Brenfenbrenner, M. Income Distribution Theory.
Schoville, J.G. Perspectives on Poverty and Income Distribution.
Titmuss, R. Income Distribution and Social Change.

ECON916 MICROECONOMIC ANALYSIS

Several areas of Microeconomic theory will be selected for advanced treatment. Within each topic contemporary applications will be explored after the development of a theoretical base.

RECOMMENDED READING

ECON921 ECONOMETRIC MODELS

This is an applied course in econometric model building. Both single equations and multi-equation models will be analysed. Emphasis will be placed on the use of theory and a priori information in model modification and forecasting evaluation. Some background in theoretical econometrics is required for the course.

TEXTBOOKS

RECOMMENDED READING

ECON931 LABOUR-MANAGED SYSTEMS

This is a study of the Economics of Participatory and Labour-Managed Systems. The theoretical and practical implications of worker management and participation are considered. The economic efficiency of both the labour managed firm and economy are examined in detail. Special attention is given to deriving policies to counter the poor survival record of labour managed firms.

TEXTBOOKS

ECON991 PROJECT
16 credit points

ECON992 RESEARCH REPORT
24 credit points

ECON993 THESIS
48 credit points
GRADUATE DIPLOMA IN INTERCULTURAL (MIGRANT) EDUCATION - DI(M)E
(CENTRE FOR MULTI-CULTURAL STUDIES)

The Diploma course in Intercultural (Migrant) Education has been designed primarily to provide training and pertinent background knowledge for those engaged in the teaching and counselling of migrants. The Diploma shall be subject to the University requirements for the award of Graduate Diplomas together with the following conditions:

1. The Diploma in Intercultural (Migrant) Education will be offered at post-graduate level, and will require two years part-time study.

2. Over the period of four sessions, candidates for the Diploma will be required to complete subjects with a total value of 48 credit points.

Further details are available from the Registrar, Mr. R.F. Stewart, (042) 29-7311, Ext. 891.

DIPLOMA IN EDUCATION

The Diploma in Education is a professional course in education for graduates of this or another approved university 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. 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 local schools.

Intending applicants for the Diploma in Education course are advised that it may be necessary to restrict enrolments to the course in 1979. If this is necessary, selection to the course will be made on the basis of academic merit and suitability of degree to teaching requirements. Students are advised to consult staff before purchasing text books.

Teacher Education Scholarship holders are advised that it is necessary for them to make application for the Diploma in Education course and should be aware that possession of a Scholarship does not guarantee admission to the course.

COURSE OUTLINE

Students are required to complete subjects as set out below, with a total of 48 credit points. Credit points for specific subjects are indicated in brackets. The decision as to whether subjects are offered in first or second session or both, is taken at enrolment time in the light of staff availability.

EDUCATION

Australian Education (4)
Educational Practice (4)
Educational Psychology (4)
Sociology of Education (4)
Philosophy in Education (4)
Education Seminars (4)
Teaching Methods (3 + 3)

Students must study two methods, averaging 6 hours of class time per week and including lectures, seminars, observations, demonstrations, and field experience.

SELECTED TOPICS

Physical Education (2)
Communication Skills (3)
Health Education (3)
Electives (4)

Supervised Teaching Practice (6)

The equivalent of eight weeks in term time at schools in the Wollongong area, or elsewhere by arrangement with the Departmental Chairman.

EDUC901 AUSTRALIAN EDUCATION

4 credit points

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 primary, 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.
EDUC901 AUSTRALIAN EDUCATION (CONT'D)

TEXTBOOKS


RECOMMENDED READING

Bean, G.W. Here, My Son. Angus and Robertson, 1950.
The Australian Journal of Education. ACER.
The Australian University. Australian Vice-Chancellors' Committee.
The Forum of Education. Sydney Teachers' College.

EDUCATIONAL PRACTICE

4 credit points

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 utilization 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.

TEXTBOOKS


RECOMMENDED READING


EDUC903 EDUCATIONAL PSYCHOLOGY

4 credit points

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

de Lacey, P.R. So many lessons to learn. Penguin, Ringwood, Vic., 1974.

RECOMMENDED READING


Selected Journals:

British Journal of Educational Psychology.
Education Research.

EDUC904 SOCIOLOGY OF EDUCATION

4 credit points

The aim of this course is to study all aspects of education within a sociological perspective. Models of society will be discussed as will the role of the school in society.

TEXTBOOKS


RECOMMENDED READING


Selected Journals:

American Sociological Review
Australian and New Zealand Journal of Sociology
British Journal of Sociology
Sociology of Education. The American Sociological Assoc.
EDUC905 PHILOSOPHY IN EDUCATION

4 credit points
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.

TEXTBOOK

RECOMMENDED READING

Selected Journals:
Educational Philosophy and Theory. Univ. of N.S.W.

EDUC916 EDUCATION SEMINARS

4 credit points
Details will be provided by the Department of Education.

EDUC921 ECONOMICS AND COMMERCE METHOD

3 credit points
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.

RECOMMENDED READING

Selected Journals:
Economica. London School of Economics.
The Economic Record. The Economic Society of Australia and New Zealand.
EDUC922 ENGLISH METHOD

3 credit points

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.

RECOMMENDED READING


Selected Journals:

English in Australia. Australian Association for the Teaching of English, Melbourne.
The Teaching of English. English Teachers' Association of N.S.W.

EDUC923 GEOGRAPHY METHOD

3 credit points

A survey of the principles and problems underlying the selection, organization and presentation of geographical knowledge. Topics include: the place of geography in the secondary school, the nature and organization of programmes, the inter-relationship of systematic and regional geography, and specific aspects of classroom practice and field studies.

RECOMMENDED READING


Selected Journals:

Australian Geographer. Geographical Society of N.S.W.

EDUC924 HISTORY METHOD

3 credit points

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, organization and presentation of historical information. Topics include the nature of history; the purposes behind its teaching; programming; practical aspects of classroom work.

RECOMMENDED READING


Selected Journals:

English-History Bulletin. N.S.W. Department of Education.
Teaching History. Journal of the N.S.W. History Teachers' Association.
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.

RECOMMENDED READING

Selected Journals:
Australian Mathematics Teacher.
N.S.W. Department of Education Mathematics Bulletin.

Science First Method seeks to prepare graduates to teach science at the junior secondary school level (yrs 7 - 10).

Science Second Method seeks to prepare graduates to teach senior secondary school science (yrs 11 - 12).

Both methods are concerned with science curricula, teaching arts, records and assessment, teaching procedures, and safety precautions. During the course, attention is given to the aims and philosophy of science teaching.

Science First Method is to be preferred if the student takes only one science method.

RECOMMENDED READING
A Biology Course for Teachers. Correspondence course prepared in the School of Biological Sciences, University of Sydney.
McDonald, Massey & Tebbutt. Enquiring into the Earth.
Notes on Biology - Forms V and VI. Dept. Education, N.S.W., In-service Training Branch.

Selected Journals:
Science Education News. Science Teachers' Association of N.S.W.
3 credit points;

TEXTBOOKS

EDUC938 PRIMARY II METHOD

3 credit points;
Study of aims and objectives of Primary Education in N.S.W; Planning and programming in Mathematics, Language, and Social Sciences; Planning lessons and units; Professional development - study of Education of handicapped, exceptionally intelligent, and migrant children.

TEXTBOOKS

SELECTED TOPICS
The selected topics are of two kinds: professional skills and academic electives.

EDUC912 PHYSICAL EDUCATION

2 credit points
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.

EDUC911 HEALTH EDUCATION

3 credit points
Students are given guidance concerning physical and mental health, and informed of resources available in the schools.

EDUC910 COMMUNICATION SKILLS

3 credit points
Students are made more aware of problems of communication in the classroom, and their own personal competence is improved.

EDUC914 ELECTIVES

4 credit points
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

EDUC915 TEACHING PRACTICE

6 credit points
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.
BACHELOR OF EDUCATION

1. The degree of Bachelor of Education may be conferred by the Council on the recommendation of the Academic Senate on a candidate who has with the approval of Academic Senate satisfactorily completed courses of study to the value of 48 credit points and who has satisfied other requirements specified for the award of the degree.

2. An application to register as a candidate for the degree of Bachelor of Education 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 intends to register.

3. The candidate for registration for the degree of Bachelor of Education shall have qualified for
   (a) a degree of bachelor in the University or a degree from another institution approved by the Academic Senate; and
   (b) the Diploma in Education in the University or an equivalent qualification approved by the Academic Senate.

4. In appropriate 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 Academic Senate.

5. Notwithstanding any other provisions of these conditions the Academic Senate may require an applicant to demonstrate fitness for candidature by carrying out such work and sitting for such examinations as it may determine.

6. An approved candidate shall register with the University in one of the following categories:
   (a) a student undertaking full-time study; or
   (b) a student undertaking part-time study.

7. No candidate shall, without the approval of the Academic Senate, be enrolled at the same time in any other degree or diploma in the University or elsewhere.

8. A candidate who is undertaking full-time study will normally be examined after 2 academic sessions but shall not be allowed to proceed with the degree if the requirements have not been fulfilled after registration for 4 academic sessions. A candidate who is undertaking part-time study normally shall not be allowed to proceed if the requirements for the degree have not been fulfilled after registration for 8 academic sessions. In exceptional cases an extension of these times may be granted by the Academic Senate.

9. The maximum period for a candidate to re-apply after discontinuation shall be determined by the Academic Senate.

10. A candidate shall be required to pay such charges as may be determined from time to time by Council.

11. In satisfying the requirements for the degree the candidate shall complete subjects to the value of 48 credit points from the Schedule of Subjects for the Bachelor of Education degree (Department of Education) such subjects to be selected in consultation with an academic adviser appointed by the departmental chairman.

12. A candidate may not include in this degree programme any subject which the candidate has previously taken and had credited towards a qualification accepted for admission under Section 3 of these requirements.

EDUC915 TEACHING PRACTICE (CONT'D)

EDUC939 EDUCATIONAL RESEARCH METHODOLOGY AND DESIGN

Double session; 16 credit points (4 hrs per week: lectures, seminars & tutorials)
Assessment: Formal examinations, test, assignments and associated projects (if appropriate)

The logic of educational research.
Descriptive techniques.
Inferential techniques.
Sampling problems.
Validity of experiments in social settings.
Statistical and scientific hypotheses.
EDUC939 EDUCATIONAL RESEARCH METHODOLOGY AND DESIGN (CONT'D)

Quasi-experimental designs.
Generalizations and predictions.
Applications of research to the classroom.
Applications of research to education.

TEXTBOOK

EDUC940 EDUCATIONAL PSYCHOLOGY TOPIC A

First session; 8 credit points (3 hrs per week: lectures, seminars & tutorials)
Assessment: Formal examinations, test, assignments and associated projects (if appropriate)

Language in early childhood.
Language in the school.
Continuity and discontinuity in development Tests of conceptual and language development.
Special topic.

TEXTBOOKS

EDUC941 EDUCATIONAL PSYCHOLOGY TOPIC B

Second session; 8 credit points (3 hrs per week: lectures, seminars & tutorials)
Assessment: Formal examinations, test, assignments and associated projects (if appropriate)

Social class and intelligence.
Ethnic differences and mental growth.
Compensatory education.
Literacy and numeracy programmes.
Special topic.

TEXTBOOKS
As for EDUC940.

EDUC942 EDUCATIONAL SOCIOLOGY TOPIC A

First session; 8 credit points (3 hrs per week: lectures, seminars & tutorials)
Assessment: Formal examinations, test, assignments and associated projects (if appropriate)

The family and education.
The economy and education.

TEXTBOOKS

EDUC943 EDUCATIONAL SOCIOLOGY TOPIC B

Second session; 8 credit points (3 hrs per week: lectures, seminars & tutorials)
Assessment: Formal examinations, test, assignments and associated projects (if appropriate)

The political functions of education.
The use of education for selection.
Implications of teaching becoming a profession.
The roles of the teacher.

TEXTBOOKS
As for EDUC942.
EDUC944 COMPARATIVE EDUCATION AND HISTORY OF EDUCATION

First session: 8 credit points (3 hrs per week: lectures, seminars & tutorials)
Assessment: Formal examinations, test, assignments and associated projects (if appropriate)

Systematic study of educational systems selected from Australia, U.S.A., U.K., France, Japan, S.E. Asia and China.
Selected case study analyses showing the problem and inductive approaches in comparative methodology.
Interdisciplinary contributions to Comparative Education.
The Australian context.
Historical antecedents to formal education systems in selected countries.

TEXTBOOKS

EDUC945 PHILOSOPHY OF EDUCATION AND THEORIES OF EDUCATION

Second session: 8 credit points (3 hrs per week: lectures, seminars & tutorials)
Assessment: Formal examinations, test, assignments and associated projects (if appropriate)

Impact of philosophers on education.
Application of philosophical methods of enquiry to education.
Social philosophies and their impact on education.
Survey of major educational theories and theorists.
Mass compulsory education in post-industrial society.

TEXTBOOKS
As for EDUC944.

EDUC946 INTRODUCTION TO EDUCATIONAL RESEARCH METHODOLOGY

First or second or double session: 8 credit points (3 hrs per week: lectures and seminars)
Assessment: Examination and assignments

Principles of Educational Research.
Descriptive Techniques.
Inferential Techniques.
Problem Identification.
Design and Analysis.
Interpretation of Findings.

TEXTBOOK

EDUC947 INTRODUCTION TO CURRICULUM THEORY AND DEVELOPMENT

First session: 8 credit points (3 hrs per week)
Assessment: Examinations and assignments.

Origins of the Curriculum in Public School systems.
Curriculum theories of (a) Gwyn and Chase (b) Hirst and Peters (c) Saylor and Alexander
(d) Contemporary Australian Theorists.
The socio-philosophical bases of the curriculum.
General methods of developing, implementing, and evaluating curriculum at the school and classroom level.

TEXTBOOKS

EDUC948 ADVANCED CURRICULUM THEORY AND DEVELOPMENT

Second session: 8 credit points (3 hrs per week: lectures, tutorials & seminars)

Modelling procedures in curriculum design; analysis of educational contexts defining a curriculum design: e.g., teaching, learning, organisational, philosophical, sociological, political, and economic.
None specified - students will draw from an extensive bibliography of primary and secondary literature.

**RECOMMENDED READING**


**EDUC949 SCHOOL ADMINISTRATION**

First or second or double session; 8 credit points (3 hrs per week: lectures & seminars)

Assessment: Assignments and project

Organisation for Instruction.
Grouping Procedures.
The Leadership Function.
Role Expectations.
Characteristics of Organisation.
Informal Organisation.

**TEXTBOOKS**


**EDUC950 DYNAMICS OF CLASSROOM INTERACTION**

First or second or double session; 8 credit points (3 hrs per week: lectures & seminars)

Assessment: Examinations and assignments

Examination of social and institutional pressures affecting the behaviour of individuals in an educational setting.
The notions of deviance and adjustment.
Institutional socialization.
Consensus and conflict.

**TEXTBOOKS**


**EDUC951 DEVELOPMENTAL THEORIES AND SCHOOL EDUCATIONAL PRACTICE**

First or second or double session; 8 credit points (3 hrs per week: lectures & seminars)

Assessment: Examination and assignments

A treatment of a selection of developmental theories in relation to formal and informal educational principles.

**TEXTBOOKS**


**EDUC952 AN INTRODUCTION TO THE HISTORY OF EDUCATION**

First or second or double session; 8 credit points

An introduction to the historical study of education. The content of the course will focus on the history of western education since the Renaissance with a concern for education as a social process. Considerable emphasis will be placed on historical methodology, particularly the use of primary sources, relevant historiography, and the relationship between history and the social sciences.

**RECOMMENDED READING**

A critical evaluation of historical literature and the compilation of bibliographies is an essential part of the course. The following texts may be regarded as basic secondary sources:
EDUC952 AN INTRODUCTION TO THE HISTORY OF EDUCATION (CONT'D)


EDUC953 EDUCATION AND MODERN SOCIETY

First or second or double session; 8 credit points

A study of western and non-western societies and their respective educational systems since the eighteenth century. The major theme of the course will be the process of modernization from pre-industrial to industrial societies. There will be comparative historical studies of the U.K., U.S.A., U.S.S.R., Germany, France, Australia, China and Japan.

RECOMMENDED READING

The course is designed to provide opportunities for basic historical research. The following sources may be regarded as a basic guide:


EDUC954 SPECIAL TOPIC IN EDUCATION A

First or second or double session; 8 credit points (3 hrs per week: tutorials & seminars)

Pre-requisites: Demonstrated expertise in a special area of Educational Practice as determined by the Chairman of the Department

Assessment: Project

The special subject topics in Education exist to enable advanced study to be undertaken by practitioners who have already reached an advanced level of performance in the area concerned.

Syllabus will be designed on an individual basis.

EDUC955 SPECIAL TOPIC IN EDUCATION B

First or second or double session; 8 credit points (3 hrs per week: tutorials & seminars)

Pre-requisites: Demonstrated expertise in a special area of Educational Practice as determined by the Chairman of the Department

Assessment: Project

The special subject topics in Education exist to enable advanced study to be undertaken by practitioners who have already reached an advanced level of performance in the area concerned.

Syllabus will be designed on an individual basis.

EDUC956 SPECIAL TOPIC IN EDUCATION C

First or second or double session; 8 credit points (3 hrs per week: tutorials & seminars)

The special topics in education exist to enable advanced study to be undertaken by practitioners who have already reached an advanced level of performance in the area concerned.

Syllabus to be designed on an individual basis.

TEXTBOOKS

None specified - Reading lists to be arranged in consultation with academic adviser.
MASTER OF EDUCATION

The degree of Master of Education (MEd) in the Department of Education shall be subject to the University's requirements for the award of the degree of Master together with the following conditions:

1. Entry to the degree programme will normally be available to a person who has:
   (a) Completed the requirements for the University's Bachelor of Education degree with the results averaging credit level or better;
   (b) completed qualifications deemed by the Academic Senate to be the equivalent of the University's Bachelor of Education degree with results averaging credit level or better;
   (c) completed the requirements for an approved Bachelor's degree with Honours and who holds an approved teaching qualification; or
   (d) completed such other qualifications as might be approved by the Academic Senate on the recommendation of the Departmental Chairman provided that in view of the Academic Senate any such person shall have accumulated the equivalent of 48 credit points beyond a Pass degree.

2. The degree programme will normally be completed in two sessions of full-time study or four sessions of part-time study.

3. The degree programme shall involve:
   (a) Satisfactory completion of a project whose credit point value is 8 together with the satisfactory completion of graduate subjects chosen from the Schedule of Subjects for the Master of Education degree (Department of Education) to the value of 40 credit points; or
   (b) satisfactory completion of a project whose credit point value is 16 together with satisfactory completion of graduate subjects chosen from the Schedule of Subjects for the Master of Education degree (Department of Education) to the value of 32 credit points; or
   (c) a minor thesis embodying the results of an investigation whose credit point value is 24 together with satisfactory completion of graduate subjects chosen from the Schedule of Subjects for the Master of Education degree (Department of Education) to the value of 24 credit points; or
   (d) a thesis embodying the results of an investigation to the value of 48 credit points.

4. A candidate may not include in this degree programme any subject which the candidate has previously taken and had credited towards a qualification accepted for admission under Section 1 of these requirements.

5. Each candidate for the degree programme in 3.1(a) or 3.1(b) shall be assigned a supervisor by the Chairman of the Department of Education. Where a candidate has enrolled in a degree programme that includes either a thesis or a minor thesis the Academic Senate shall appoint a supervisor on the recommendation of the Chairman of the Department of Education.

6. A project completed in satisfaction of 3.1(a) or 3.1(b) shall be assessed by two examiners appointed by the Chairman of the Department of Education.

EDUC970 EDUCATIONAL PSYCHOLOGY A

Double session; 8 credit points (3 hrs per week: lectures & seminars)
Assessment: Examination and assignments

An intensive study of contemporary issues in learning in a formal educational context. Opportunity will be provided for students to specialise in early and middle childhood learning or learning of adolescents.

TEXTBOOKS
Although a text will be arranged, wide recourse will be made to the literature available at the commencement of the course.

EDUC971 EDUCATIONAL PSYCHOLOGY B

Double session; 8 credit points (3 hrs per week: lectures & seminars)
Assessment: Examination and assignments

This course offers a detailed enquiry into theories of motivation and achievement motivation.

TEXTBOOKS
Although a text will be arranged, wide recourse will be made to the literature available at the commencement of the course.
EDUC972 CURRICULUM STUDIES A

Double session; 8 credit points (3 hrs per week: lectures & seminars)
Assessment: Examination and assignments

(a) Survey of the origins of the curriculum in public school systems - historical, political, economic, and philosophical antecedents to the development of the modern public school curriculum.
(b) Methods of designing curricula for a variety of educational environments and socio-political philosophies.
(c) Curriculum construction, implementation, and evaluation at the local school level.
(d) Transitional concepts of curriculum development in relation to the contemporary relocation in the locus of control over educational outcomes.

TEXTBOOKS
None specified: students will draw from an extensive bibliography of selected primary and secondary literature.

EDUC973 CURRICULUM STUDIES B

Double session; 8 credit points (3 hrs per week: lectures & seminars)
Assessment: Examination and assignments

(a) Advanced topics in curriculum theory, planning and instructional design.
(b) Humanistic, pragmatic, and rationalistic approaches to curriculum theory.
(c) The 'systems' approach to curriculum planning and instructional design.
(d) Selected topics from (i) curriculum development for primary schools, (ii) curriculum development for secondary schools, (iii) curriculum development for senior secondary schools, (iv) curriculum development for higher educational programmes.

TEXTBOOKS
None specified: students will draw from an extensive bibliography of selected primary and secondary literature.

EDUC974 EDUCATIONAL ADMINISTRATION AND ORGANISATION A

Double session; 8 credit points (3 hrs per week: lectures & seminars)
Assessment: Examination and assignments

Structure and processes in organisation.
Bureaucracy in Education.
Policy-making.
Educational leadership in a changing society.

TEXTBOOKS

EDUC975 EDUCATIONAL ADMINISTRATION AND ORGANISATION B

Double session; 8 credit points (3 hrs per week: lectures & seminars)
Assessment: Examination and assignments

Assessment and accountability of teachers.
Role theory and educational administration.
The economics and administration of education.
The politics of educational administration.

TEXTBOOKS
As for EDUC974.
EDUC 976 EDUCATIONAL RESEARCH AND DESIGN OF EXPERIMENTS

Double session; 8 credit points (3 hrs per week: lectures and seminars)
Assessment: Examination and assignments

This subject is strongly recommended for each MEd candidate unless otherwise recommended by supervisor. Experimental and Quasi-experimental designs for Research; Planning Research; Sampling; Interviewing; Questionnaires; Data Processing; Personality Assessing; Attitude Measurement; Observation and Case Studies; Interpreting Results; Report Writing.

TEXTBOOKS

EDUC 977 EDUCATION, INDUSTRIALIZATION AND CULTURE

Single session; 8 credit points (3 hrs per week: lectures & seminars)

A study of the cultural purpose of education in modern society as understood by intellectuals, philosophers, and educators during the past two centuries. Figures studied will include:

Robert Owen, J.M. Newman, T.H. Huxley, Herbert Spencer, Matthew Arnold, John Dewey,
Maria Montessori and T.H. Eliot.

RECOMMENDED READING
Bantock, G.H. Education in an Industrial Society. Faber and Faber, 1963.
Rothblatt, S. Tradition and Change in English Liberal Education. Faber and Faber, 1976.

EDUC 978 THE POLITICS OF EDUCATION

Single session; 8 credit points (3 hrs per week: lectures & seminars)

The politics of education in modern society. There will be an emphasis on the political role of educational institutions as well as the relationship between political and educational systems. Individual case studies of the politics of national educational systems as well as general theoretical issues of methodology.

RECOMMENDED READING
The following may be regarded as basic introduction to source material:


EDUC 979 SPECIAL TOPIC IN EDUCATION A

Double session; 8 credit points (3 hrs per week: tutorials & seminars)
Pre-requisite: Demonstrated expertise in an area of educational practice or theory
Assessment: Project

The special subject topics in Education exist to enable advanced study to be undertaken by practitioners who have already reached an advanced level of performance in the area concerned.

EDUC 980 SPECIAL TOPIC IN EDUCATION B

Double session; 8 credit points (3 hrs per week: tutorials & seminars)
Pre-requisite: Demonstrated expertise in an area of educational practice or theory
Assessment: Project

The special subject topics in Education exist to enable advanced study to be undertaken by practitioners who have already reached an advanced level of performance in the area concerned.

EDUC 981 MINOR PROJECT IN EDUCATION

8 credit points

EDUC 982 MAJOR PROJECT IN EDUCATION

10 credit points
396 Postgraduate Courses - Education

EDUC983 MINOR THESIS

24 credit points

EDUC984 THESIS

48 credit points
MASTER OF ENGINEERING

Under the Requirements for the degree of Master of Engineering, candidates may meet the major requirements by satisfactorily completing:

(a) a thesis embodying the results of an investigation; or
(b) a study comprising formal course work; or
(c) study comprising formal course work and a minor thesis.

(No new candidates for the degree of Master Engineering Science will be accepted; so graduates wishing to undertake additional formal studies in electrical engineering will now be able to do so by following one of the three prescriptions (a), (b) or (c) above.)

The majority of engineering graduates seeking entry to the Masters programme will have qualifications which fall within one of four main categories, namely:

(i) A nominal 6 year, part time pass degree e.g. BSc (Eng).
(ii) A nominal 4 year, full time pass degree e.g. BE.
(iii) A nominal 6 year, part time degree with Merit.
(iv) A nominal full time, 4 year degree with Honours.

Those in categories (iii) and (iv) qualify for entry under Section 5 of the Conditions for the Award of the Degree of Master, while those in sections (i) and (ii) must seek entry under Section 6.

ENTRY UNDER SECTION 5 - GRADUATES WITH HONOURS DEGREE

Under Section 5 of the Conditions, candidates must accumulate a total of not less than 48 credit points by the successful completion of subjects from the Schedule of Graduate Subjects, which are described below.

ENTRY UNDER SECTION 6 - GRADUATES WITH PASS DEGREE

Under Section 6 of the Conditions, candidates are required to accumulate 96 credit points of which at least 48 points shall be from subjects included in the Schedule of Graduate Subjects; the remaining 48 credit points however need not be for subjects at the Postgraduate level. Graduates in category (i) above could take a selection of 400-level subjects from Schedule C of the Bachelor Degree Requirements. However, it is expected that Graduates in categories (i) and (ii) will enrol in ELEC999 ADVANCED TOPICS IN ENGINEERING.

In any year a restricted range of topics only will be offered, both in ELEC999 and from other Postgraduate subjects, so graduates intending to enrol should arrange to discuss their desired programme with the Department as soon as possible in order to ensure that an appropriate selection of topics will be offered. Formal Postgraduate lectures normally begin at the end of March.

Subject to the approval of the Departmental Chairman and the Graduate Studies Committee, courses offered by other Departments will be acceptable for the Masters Course in Electrical Engineering.

DETAILS OF SUBJECTS

There are no exclusions, pre-requisites or co-requisites within the subjects offered.

Unless otherwise stated each subject comprises 56 hours of lectures and tutorials, is worth six credit points and may be offered in the first or second session or throughout the year.

There are no set textbooks or recommended reading but each year reading lists will be set from the published literature.

ELEC901 COMPUTER AIDED ANALYSIS AND DESIGN


ELEC911 RELIABILITY ENGINEERING

Methods of analysis, modelling, probabilistic system analysis and design. Redundant systems, computer techniques and reliability optimisation. Fault identification techniques.
ELEC921 MATRIX ANALYSIS OF ELECTRICAL MACHINES

Derivation of mathematical models, properties and applications of transformations, solution methods; non-ideal machines.

ELEC922 MACHINES IN CONTROL SYSTEMS

Stability and transient performance, heating and ratings, simplified models, converter-fed a.c. and d.c. machines as control system elements.

ELEC923 STATIC CONVERTERS

Properties, protection and control of high power solid state switching elements. Characteristics of rectifiers, inverters, pulse and cycloconverters and their application to a.c. and d.c. variable speed drives.

ELEC924 ADVANCED POWER SYSTEMS

An advanced course on industrial and high voltage power systems dealing with load flow, faults, stability, transients, insulation co-ordination, economic evaluations and application of computers.

ELEC931 CONTROL COMPUTING


ELEC941 CONTROL SYSTEM ANALYSIS AND DESIGN

A unified approach using "classical" and "modern" methods to treat the control problems of identification, representation and solution, stability, design and optimisation.

ELEC942 OPTIMAL CONTROL SYSTEMS

Problem formulation and methods of solution including advanced optimisation techniques, variational, dynamic programming and Pontryagin's Maximum Principle.

ELEC943 NONLINEAR CONTROL SYSTEMS

Analysis of nonlinear control systems including numerical, series approximation, graphical and describing function methods. Stability investigation using Lyapunov's methods and extensions, and functional methods.

ELEC944 SAMPLED-DATA CONTROL SYSTEMS

Topics related to the use of digital equipment in control systems. Analysis and synthesis of control systems using sampling techniques.

ELEC961 NOISE AND INFORMATION THEORY

Principles of coding, channel capacity, redundancy; application of information theory to engineering systems.

ELEC962 ELECTROMAGNETIC FIELDS AND ANTENNAS

Analysis of biconical and cylindrical antennas, aperture radiating systems. Obstacles and mounts in waveguides, numerical methods for solution of field problems.

ELEC963 MICROWAVE DEVICES AND ELECTRONICS

Scattering matrix analysis; structures and mounts; transistor amplifiers; parametric amplifiers; Impatt and Gunn devices; electron beam devices.
ELEC971 HIGH VOLTAGE PROPERTIES OF MATERIALS

Electrical conduction and breakdown in gases, liquids and solids. Advanced application of ionised gases. Generation and measurement of high voltages and non-destructive dielectric test techniques.

ELEC972 AIR POLLUTION CONTROL TECHNIQUES

Surface, dynamic, optical and adhesive properties of particulates, effects of particulates and gases on air quality, basic theory of particulate collection using electrostatic, inertial and gravitational forces, filtration and measurement methods.

ELEC981 MATHEMATICAL METHODS IN ELECTRICAL ENGINEERING 1

Transform methods applied to analysis and synthesis problems arising in electrical engineering, properties and applications of Fourier, Laplace and Z transforms.

ELEC982 MATHEMATICAL METHODS IN ELECTRICAL ENGINEERING 2

Time domain methods applied to analysis and synthesis problems arising in electrical engineering, state variable methods, linear and nonlinear systems, input-output and convolution.

48 credit points

ELEC951 THESIS

24 credit points

ELEC952 THESIS

18 credit points

ELEC953 REPORT

ELEC999 ADVANCED TOPICS IN ENGINEERING

Double session subject, 48 credit points
18 hrs per week, including 2 seminar hrs and some project work
Assessment: Formal examinations, tests, assignments and associated (if any) experimental work

Students will normally take a selection of topics at advanced level. The selection of the topics will be subject to the approval of the Chairman of the Department in which the student wishes to enrol and subsequently specialise.

The subject may include topics from:
Air, noise and water pollution
Air pollution control techniques
Anisotropic elasticity
Analog and digital filters
Antennas
Boiling heat transfer
Boundary layer theory
Computer aided analysis and design
Computer methods
Conformal mapping
Control computing
Economic & social evaluation of engineering projects
Electrical properties of materials
Energy from the environment
Field theory
Finite element techniques
Heat and mass transfer
Microscopic thermodynamics
Microwave electronics
Modern control systems theory
Noise and information theory
Numerical techniques
Power system and analysis and design
Process control
Propagation
Refrigeration and air conditioning
Signal processing
Simulation
Static converters
Structural dynamics
Structural topology
Transient performance of machines
Variational methods
POSTGRADUATE COURSES - GEOGRAPHY

MASTER OF ARTS BY COURSE WORK

INTRODUCTION

There is an increasing need in the community for graduates in Geography with more advanced and
extensive knowledge of the discipline than is commonly attained by the 3 year pass degree holder.
Such a need is not always most appropriately satisfied by requiring graduates to embark on the
fourth year Honours programme with its heavy research component. Accordingly, the Department of
Geography offers a programme of post-graduate level courses which leads to the degree of M.A. in
Geography. Such qualifications will be of particular use to geographers engaged in Education or
employed in other areas such as the various branches of the Public Service, in Local Government or
in Planning Consultancies where an up to date knowledge of urban, social and environmental matters
is imperative.

STRUCTURE

Students entering the programme with a pass degree in Geography or some other appropriate dis­
cipline (Category A) will be required to complete subjects with a value of at least 96 credit
points. Those with an Honours degree or its equivalent (Category B) will be required to complete
subjects with a minimum value of 48 credit points.

CATEGORY A

Students are required to take their first 48 credit points from the following subjects.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GEOG901</td>
<td>Issues in the Philosophy and Methodology of Geography</td>
<td>12 cr. pts.</td>
</tr>
<tr>
<td>GEOG902</td>
<td>Special seminar in Geography</td>
<td>12 cr. pts.</td>
</tr>
</tbody>
</table>

plus either GEOG903 Special Project in Geography (24 cr. pts.) or GEOG904 Special Topics in
Geography (24 cr. pts.).

CATEGORY B

Category B students and Category A students who have successfully completed the first 48 credit
points of the programme will select their subjects from the following.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GEOG907</td>
<td>Advanced Topics in Economic Geography</td>
<td>12 cr. pts.</td>
</tr>
<tr>
<td>GEOG908</td>
<td>Advanced Topics in Social Geography</td>
<td>12 cr. pts.</td>
</tr>
<tr>
<td>GEOG909</td>
<td>Advanced Topics in Urban Geography</td>
<td>12 cr. pts.</td>
</tr>
<tr>
<td>GEOG911</td>
<td>Advanced Topics in Fluvial Geomorphology</td>
<td>12 cr. pts.</td>
</tr>
<tr>
<td>GEOG912</td>
<td>Advanced Topics in Coastal Geomorphology</td>
<td>12 cr. pts.</td>
</tr>
<tr>
<td>GEOG913</td>
<td>Advanced Topics in Environmental Management</td>
<td>12 cr. pts.</td>
</tr>
<tr>
<td>GEOG921</td>
<td>Research Report in Geography A</td>
<td>12 cr. pts.</td>
</tr>
<tr>
<td>GEOG922</td>
<td>Research Report in Geography B</td>
<td>12 cr. pts.</td>
</tr>
<tr>
<td>GEOG923</td>
<td>Minor Thesis in Geography</td>
<td>24 cr. pts.</td>
</tr>
</tbody>
</table>

but must include at least one of the subjects GEOG921, 922, 923.

ENTRY TO COURSE

Entry to the course will be dependent upon approval by the Departmental Chairman.

PROGRAMME DETERMINATION

Students wishing to enrol for this programme must have their proposed course of study approved by
the Departmental Chairman.

GEOG901 ISSUES IN THE PHILOSOPHY AND METHODOLOGY OF GEOGRAPHY

Contact hrs per week: 4 hrs

Assessment: Essays; seminar papers; examination

Changing view on the nature of Geography from the ancient Greeks to the present; issues and trends
in modern Geography; for example, determinism; exceptionalism; cause and effect; theory in
Geography; the quantitative revolution; the ecological approach; systems in Geography; humanistic
Geography; radical Geography; etc.

RECOMMENDED READING

Reading lists will be distributed in class.
GEOG902 SPECIAL SEMINAR IN GEOGRAPHY

Contact hrs per week: 4 hrs
Assessment: Reports and tutorial participation

A guided reading course in a topic selected by the student in consultation with a staff member, leading to the preparation of an extensive review and critique of the relevant literature.

RECOMMENDED READING

Reading lists will be distributed in class.

GEOG903 SPECIAL PROJECT IN GEOGRAPHY

Contact hrs per week: 4 hrs
Assessment: Project report (external assessment)

A report on a piece of supervised research.

GEOG904 SPECIAL TOPICS IN GEOGRAPHY

Contact hrs per week: 6 hrs lecture/seminar/tutorial/laboratory/field work as appropriate
Assessment: Examination, essays/seminar papers, project work. The precise weighting of any element to be determined after consultation with class.

Students will take a selection of topics appropriate to their field of special interest, subject to the approval of the Chairman of Department and to their availability in any year.

The subject may include topics from:
- Agricultural Geography
- Population Dynamics
- Urban Structure
- Urban Systems
- Transportation Systems
- Urban and Regional Planning
- Location Theory
- Social Behaviour in Urban Space
- Asian Geography
- Medical Geography
- Health Service Planning
- Urban Ecology
- Spatial Perspectives on Welfare
- Positive and Normative Economic Geography
- Biogeography
- Ecology
- Pedology
- Environmental Management
- Surface Hydrology
- Channel Dynamics
- Fluid Mechanics
- Coastal Lagoons and Estuaries
- Quaternary Geomorphology
- Sandy Beach Morphodynamics
- Origins and Characteristics of Arid Climates
- Climatic-Vegetational Relationships in Arid Areas

RECOMMENDED READING

Lists will be supplied in class.

GEOG907 ADVANCED TOPICS IN ECONOMIC GEOGRAPHY

Contact hrs per week: 4 hrs
Assessment: Assignments, participation in seminars

Topics to be considered will vary from year to year according to staff involvement.

RECOMMENDED READING

Lists will be supplied in class.

GEOG908 ADVANCED TOPICS IN SOCIAL GEOGRAPHY

Contact hrs per week: 4 hrs
Assessment: Assignments, participation in seminars

Topics to be considered will vary from year to year according to staff involvement.
GEOG908 ADVANCED TOPICS IN SOCIAL GEOGRAPHY (CONT'D)

RECOMMENDED READING
Lists will be supplied in class.

GEOG909 ADVANCED TOPICS IN URBAN GEOGRAPHY

Contact hrs per week: 4 hrs
Assessment: Assignments, participation in seminars
Topics to be considered will vary from year to year according to staff involvement.

RECOMMENDED READING
Lists will be supplied in class.

GEOG911 ADVANCED TOPICS IN FLUVIAL GEOMORPHOLOGY

Contact hrs per week: 4 hrs
Assessment: Assignments, participation in seminars
Topics to be considered will vary from year to year according to staff involvement.

RECOMMENDED READING
Lists will be supplied in class.

GEOG912 ADVANCED TOPICS IN COASTAL GEOMORPHOLOGY

Contact hrs per week: 4 hrs
Assessment: Assignments, participation in seminars
Topics to be considered will vary from year to year according to staff involvement.

RECOMMENDED READING
Lists will be supplied in class.

GEOG913 ADVANCED TOPICS IN ENVIRONMENTAL MANAGEMENT

Contact hrs per week: 4 hrs
Assessment: Assignments, participation in seminars
Topics to be considered will vary from year to year according to staff involvement.

RECOMMENDED READING
Lists will be supplied in class.

GEOG921 RESEARCH REPORT IN GEOGRAPHY A

Contact hrs per week: 4 hrs
Assessment: Research report
A report on an investigation into an approved topic conducted by the candidate.

GEOG922 RESEARCH REPORT IN GEOGRAPHY B

Contact hrs per week: 4 hrs
Assessment: Research report
A report on an investigation into an approved topic conducted by the candidate in an area not already covered in GEOG921.

GEOG923 MINOR THESIS IN GEOGRAPHY

Contact hrs per week: 4 hrs
Assessment: Thesis
A thesis embodying the results of an original investigation of a problem approved by the Department Chairman under the supervision of a staff member and in accordance with Section 14 of the Masters' Degree Requirements.
The rapid development of earth sciences has produced a need for postgraduate coursework. The courses offered by the Department of Geology will provide further training to graduates currently employed in industry or in education. The courses are intended to provide general rather than specialist coursework training. Specialist training is mainly by the preparation of a thesis, but specialist coursework training is also available.

**STRUCTURE OF THE COURSE**

The course will be made up of subjects selected from those described below, in accordance with the Conditions for the Award of the Degree of Master.

Students entering with an Honours degree in Geology will take subjects to a value of 48 credit points.

Students entering with a pass degree will take subjects to a value of 96 credit points.

Subjects to be offered each year will depend upon student and staff availability.

**ENTRY TO THE COURSE**

Entry is subject to the approval of the Academic Senate on the advice of the Chairman, Department of Geology.

**SELECTION OF SUBJECTS**

Students must consult the Chairman, Department of Geology, for approval of their proposed choice of subjects.

**READING LISTS**

Reading lists will be provided by the staff involved in each subject.

**PRE-REQUISITES**

The minimum pre-requisite for all subjects is that the student must have graduated with at least 24 credit points of 300-level Geology subjects.

**GEOL901 HISTORY OF GEOLOGICAL THOUGHT**

Single Session Subject; 6 credit points (14 hrs lectures and 14 hrs tutorials)

Assessments, and written examination at the end of session.

Development through to the Wernerian and Huttonian schools of thought.

Uniformitarianism and catastrophism from Hutton, Buckland and Cuvier through Umbgrove, to the present spectrum of attitudes concerning these concepts. The influence of Lyell upon the early development of geological studies. Geosynclinal theory and continental drift from Hall, Dana, Taylor and Wegener to Hess, Dietz, Vine and Dewey and the plate tectonics theory.

The influence of other disciplines on major strands of geological thought. Kelvin and the age of the earth. Jeffrey's effect on continental drift theory contrasted with the conclusions from studies of rock magnetism.

Great problems and their "solution". The granite problem. The sudden appearance of Metazoa in the Phanerozoic.

Strzelecki and Clarke and their successors.

**GEOL902 RECENT ADVANCES IN GEOLOGY**

Single Session Subject; 6 credit points (14 hrs lectures and 14 hrs tutorials)

Assessments, and written examination at the end of session.

Topics of current interest and significance.

**GEOL903 BIOSTRATIGRAPHY**

Single Session Subject; 6 credit points (14 hrs lectures and 14 hrs tutorials)

Assessments, and written examination at the end of session.

Australian and, to a lesser extent, other sequences of special interest.

Important faunal groups, assemblages and sequences, from the point of view of morphology, taxonomy, ecology, palaeogeography, correlation.

Principles of, and recent developments in, correlation.
**GEOL904 ASPECTS OF COAL AND PETROLEUM GEOLOGY**

*Single Session Subject; 6 credit points (14 hr lectures and 14 hr tutorials)*

Assessments, and written examination at the end of session.

Organic material in sediments, its origin, nature, biochemical and physico-chemical alteration. The influence on organic matter of geological factors such as the mineralogy of the host rock, the rate of alteration, the nature and intensity of stress fields.

Artificial coalification, and the artificial generation of alkanes from coal and kerogen.

The relation of alkane distribution of sediment extracts to coal rank. The vertical and lateral variation of coal rank in the interpretation of the sedimentation, thermal and structural history of basins.

**GEOL905 MATHEMATICAL GEOLGY**

*Single Session Subject; 6 credit points (14 hr lectures and 14 hr tutorials)*

Assessments, and written examination at the end of session.

The quantitative approach in geology. Experimental design as applied to normal field activities. Recent case studies in applying mathematical methods.

**GEOL906 MINERAL PARAGENESIS**

*Single Session Subject; 6 credit points (14 hr lectures and 14 hr tutorials)*

Assessments, and written examination at the end of session.

Metamorphic mineral paragenesis with examples of metamorphic facies.

Thermodynamic considerations for equilibrium mineral assemblages.

Patterns of igneous phenomena and crystal-liquid equilibria.

**GEOL907 ROCK MAGNETISM**

*Single Session Subject; 6 credit points (14 hr lectures and 14 hr tutorials)*

Assessments, and written examination at the end of session.

Detailed study of remanent magnetizations - acquisition, stability, separation and relative importance. Influence of remanence in magnetic surveys. Use of remanence - palaeomagnetism, history of the Earth's magnetic field, including reversals and multipoles, and the use of such data in broader geological and geophysical theory. The iron-titanium oxides in rock magnetism - especially in igneous rock-types, effect of composition, oxidation and textural influences. Magnetic susceptibility anisotropy.

**GEOL908 SEDIMENTOLOGY**

*Single Session Subject; 6 credit points (14 hr lectures and 14 hr tutorials)*

Assessments, and written examination at the end of session.

The major sedimentary facies, their development and characteristics. The analysis of sedimentary assemblages and the synthesis of the results of analysis. Sedimentary structures and their use in the interpretation of palaeoenvironments.

**GEOL950 THESIS**

18 credit points

**GEOL990 ADVANCED TOPICS IN GEOLOGY**

*Double Session Subject; 48 credit points (18 hr per week including 2 seminar hr and some project work)*

Assessment: formal examinations, tests, assignments and where appropriate, field and laboratory work. Students will take a selection of the following topics at advanced level. The selection of topics will be subject to the approval of the Chairman of the Department of Geology and will be subject to their availability in any given year.

Topics from:

HISTORY AND PHILOSOPHY OF SCIENCE

HPS901 ADVANCED TOPICS IN PHILOSOPHY OF SCIENCE

12 credit points (contact hrs per week: 3 hrs seminars)
Assessment: Three essays
Structure of explanation. The nature of theories, models, analogy and metaphor in science. The logic of justification versus the logic of discovery.

HPS902 ISSUES IN HISTORICAL METHODOLOGY

12 credit points (contact hrs per week: 3 hrs seminars)
Assessment: Three essays
Historiography of the history of science. Philosophy of history. Research methods.

HPS903 MINOR THESIS

24 credit points (contact hrs per week: 4 hrs)
Assessment: Thesis
A thesis embodying the result of an original investigation of a problem approved by the Departmental Chairman under the supervision of a staff member and in accordance with Section 14 of the Masters' Degree Requirements.

HPS999 MAJOR THESIS

Double session, 48 credit points
DIPLOMA IN MATHEMATICS

The Graduate Diploma in Mathematics shall be subject to the University requirements for the award of Graduate Diplomas together with the following conditions.

1. A candidate shall undertake a course of graduate studies in one or more of the following fields:

2. Entry to the Diploma will normally be from a pass degree with an appropriate 3 year sequence in Mathematics, or, subject to the approval of the Academic Senate on the recommendation of the Chairman of the Department of Mathematics, from a degree or diploma containing substantial study in an appropriate discipline.

3. The diploma will normally occupy two sessions of full time study or four sessions of part time study, and will involve:
   - The successful completion of the Mathematics Honours Seminar whose credit point value is 12, and the satisfactory completion of subjects chosen from the Schedule of Subjects for the Master of Science Degree (Department of Mathematics) and Schedule F of the Bachelor Degree Requirements to the credit point value of 36, provided that not less than 24 credit points shall be obtained in respect to graduate subjects taken from the Schedule of Subjects for the Master of Science Degree.

4. A candidate may not include in this diploma programme any subject which the candidate has previously taken and had credited towards another degree or diploma of the University.

5. Not all graduate subjects will necessarily be available during a given year.

6. Unless otherwise determined by the Academic Senate, the registration of a candidate shall be terminated if that candidate fails subjects to the total value of 18 or more credit points.

MASTER OF SCIENCE

The degree of Master of Science (MSc) in the Department of Mathematics shall be subject to the University requirements for the award of the degree of Master together with the following conditions.

1. A candidate shall undertake research, or a course of graduate studies and research in one or more of the following fields:

2. Entry to the degree programme will normally be from an Honours degree in Mathematics or from a pass degree with an appropriate 3 year sequence in Mathematics. Entry to the degree programme may also be approved by the Academic Senate for candidates with the qualification of Diploma in Mathematics on the recommendation of the Chairman of the Department of Mathematics.

3. Where entry to the degree programme has been approved from an Honours degree or a Diploma in Mathematics, it will normally occupy two sessions of full time study or four sessions of part time study, and shall involve:
   - a thesis embodying the results of investigation to the value of 48 credit points, or
   - a minor thesis embodying the results of an investigation whose credit point value is 24 together with the satisfactory completion of graduate subjects chosen from the Schedule of Subjects for the Master of Science Degree (Department of Mathematics) to the value of 24 credit points, or
   - satisfactory completion of a project whose credit point value is 12 together with the satisfactory completion of graduate subjects chosen from the Schedule of Subjects for the Master of Science Degree (Department of Mathematics) to the value of 36 credit points.

4. Where entry to the degree programme has been approved from a pass degree, it will normally occupy four sessions of full time study or eight sessions of part time study, and shall involve:
   - a thesis embodying the results of an investigation whose credit point value is 48 together with the successful completion of the Mathematics Honours Seminar whose
Postgraduate Courses - Mathematics

credit point value is 12 and the satisfactory completion of subjects chosen from the Schedule of Subjects for the Master of Science Degree (Mathematics) and Schedule F of the Bachelor Degree Requirements to the credit point value of 36, provided that not less than 24 credit points shall be obtained in respect of graduate subjects taken from the Schedule of Subjects for the Master of Science Degree, or

(b) a minor thesis embodying the results of an investigation whose credit point value is 24 together with the successful completion of the Mathematics Honours Seminar whose credit point value is 12 and the satisfactory completion of subjects chosen from the Schedule of Subjects for the Master of Science Degree (Department of Mathematics) and Schedule F of the Bachelor Degree Requirements to the credit point value of 60, provided that not less than 48 credit points shall be obtained in respect to graduate subjects taken from the Schedule of Subjects for the Master of Science Degree, or,

(c) satisfactory completion of a substantial written project whose credit point value is 12 together with the successful completion of the Mathematics Honours Seminar whose credit point value is 12 and the satisfactory completion of subjects chosen from the Schedule of Subjects for the Master of Science Degree (Department of Mathematics) and Schedule F of the Bachelor Degree Requirements to the credit point value of 72, provided that not less than 60 credit points shall be obtained in respect to graduate subjects taken from the Schedule of Subjects for the Master of Science Degree.

5. A candidate may not include in this degree programme any subject which the candidate has previously taken and had credited towards another degree or diploma of the University.

6. All subjects chosen from either the Schedule of Subjects for the Master of Science Degree or Schedule F of the Bachelor Degree Requirements for inclusion into the degree programme shall be subject to the approval of the Chairman of the Department of Mathematics.

7. Not all graduate subjects will necessarily be available during a given year.

8. Notwithstanding the conditions relating to the limitation of time for the degree of Master, the registration of a candidate will be subject to termination if that candidate fails subjects to the total value of 18 or more credit points.

9. Each candidate for the degree programme under 3(c) or 4(c) shall be assigned a supervisor by the Chairman of the Department of Mathematics.

Where a candidate has enrolled in a degree programme that includes either a thesis or a minor thesis, the Academic Senate shall appoint a supervisor on the recommendation of the Chairman of the Department of Mathematics.

10. The graduate project referred to in 3(c) and 4(c) shall be assessed by two examiners appointed by the Chairman of the Department of Mathematics.

DETAILS OF SUBJECTS

Textbooks and Recommended Reading

Students will be advised on the appropriate texts for each subject in the first lecture of the subject. In all cases, the lecturer should be consulted before textbooks are purchased.

Credit Points

All subjects listed below, with the exception of MATH991, 992 and 993, have a credit point value of 6.

Contact Hours

All subjects listed below involve at least one contact hour per week for both sessions, or its equivalent.

Method of Assessment

All 900-level subjects will be assessed by final examinations, or final examinations and limited assignments.

NOTE: Not all graduate subjects will necessarily be available during a given year.

MATH911 ADVANCED MATHEMATICS METHODS A

Asymptotic Expansions, Advanced Ordinary Differential Equations, and Weierstrassian Elliptic Functions.

RECOMMENDED READING

The basic principles of continuum mechanics and the solved problems of finite elasticity. Equations for small deformations superimposed upon a state of finite strain and applications to stability problems. Linear elasticity. Selected problems from the theories of non-Newtonian fluids, plasticity and fibre-reinforced materials.

**TEXTBOOK**


**RECOMMENDED READING**


**MATH913 NONLINEAR PARTIAL DIFFERENTIAL EQUATIONS**


**TEXTBOOKS**


**MATH914 QUANTUM MECHANICS IN HILBERT SPACE**

In the first part of the course the axioms of Hilbert space, linear functionals, and linear operators are introduced and the spectral theorem is discussed. The second part of the course deals with the physical foundations seen from a mathematical viewpoint. The course tries to show how physical ideas can be expressed much more forcefully and clearly if they are presented in the appropriate language.

**RECOMMENDED READING**


**MATH915 ADVANCED MATHEMATICS METHODS B**


**RECOMMENDED READING**


**MATH916 EIGENVALUE THEORY OF ORDINARY DIFFERENTIAL EQUATIONS**

Linear operators in Hilbert space, spectral decomposition of symmetric operators, Weyl's theory of singular differential equations of the second order.

**RECOMMENDED READING**

Fredholm and Volterra Integral Equations, eigenvalues and eigenfunctions, spectral decomposition of integral operators, and its use in solving integral equations, relationship to differential equations. Other aspects of the subjects which may be considered are: singular integral operators (Hilbert's transform), Wiener-Hopf equations, non linear integral equations.

RECOMMENDED READING

MATH931 LINEAR PROGRAMMING
Linear programming using the matrix approach. Topics covered include: introduction to linear programming and revision of matrices, the simplex procedure, revised simplex procedure, parametric programming, integer programming, decomposition method, transportation and network problems.

RECOMMENDED READING
Hadley, G. Linear Programming. Addison-Wesley.

MATH932 OPTIMIZATION TECHNIQUES
Solution of non-linear optimization problems. Topics covered include: unconstrained minimisation using Fletcher-Powell and related techniques, the linear search problem, solution methods specific to least squares problems, linear constraints, penalty function methods, Huhn Tucker conditions, Lagrange multipliers.

RECOMMENDED READING

MATH933 SPARSE MATRIX TECHNIQUES
Solution of partial differential equations using finite difference and finite element techniques. Topics covered include formulation of finite difference and finite element approximations to partial differential equations, matrix properties of the approximate equations, methods of solution of the approximate equations.

RECOMMENDED READING
Varga, R.S. Matrix Iterative Analysis. Prentice-Hall.

MATH934 ADVANCED NUMERICAL ANALYSIS

RECOMMENDED READING

MATH935 NUMERICAL LINEAR ALGEBRA
Modern methods of solving the algebraic eigenvalue problem including the generalized problem $Ax = A^*Bx$.

RECOMMENDED READING

*Will not be offered until 1980.
POSTGRADUATE COURSES - MATHEMATICS

MAIH941 SIMULATION TECHNIQUES


RECOMMENDED READING

MAIH942 REPLACEMENT THEORY AND POPULATIONS


RECOMMENDED READING

MAIH943 QUEUEING


RECOMMENDED READING
Cox, D.R. & Smith, W.L. Queues. Methuen.

MAIH944 INVENTORY CONTROL

Structure of inventory models. Static and dynamic models. Economic lot size models and their sensitivity. Two bin models. Karlin Fabens model. Inventory control and computer systems.

RECOMMENDED READING

MAIH945 PRINCIPLES OF OPERATIONS RESEARCH

The construction of models for decision analysis. Case exercises in Operations Research with particular application to local Industries.

RECOMMENDED READING

MAIH951 COASTAL DYNAMICS

Generation and propagation of continental shelf waves of high and low frequency in homogeneous and non-homogeneous oceans, response of the ocean over a shelf to atmospheric disturbances, detection and measurement of shelf waves, dissipative influences, standing edge waves and their relation to beach geomorphology, modelling of physical marine systems.

RECOMMENDED READING

MAIH952 DATA ANALYSIS

Oceanographic data acquisition, preliminary data editing and reduction, probe arrays, first and second order recursive filters, bandpass filters, Fourier transform techniques in oceanography, statistical errors, data windows, coherence functions, spectral studies of oceanographic phenomena.

RECOMMENDED READING
Basic equations of motion, perturbation equations, density fields, internal waves and currents, topographic effects, propagation of tides, current metres, use of current measurements, major ocean currents, geostrophic currents, inertial currents, gradient currents, wind-driven waves and currents in a homogeneous and non-homogeneous ocean.

**RECOMMENDED READING**


**MATH961 FUNCTIONAL ANALYSIS**

Banach spaces, Linear Operators between Banach spaces, the Uniform Boundedness Principle, Closed graph theorem and open mapping theorem, Hahn-Banach theorem, applications to some of the following: Fourier series, integral equations, quadrature formulae, approximation theory, analytic function theory, spectral theory.

**RECOMMENDED READING**


**MATH962 HARMONIC ANALYSIS**

The course will consist of a certain amount of Lebesque Integration Theory which will be applied to a discussion of various topics in the theory of Fourier Series. The generalization of Fourier Series to harmonic analysis on groups will also be considered.

**RECOMMENDED READING**


**MATH963 INTEGRATION THEORY AND ITS APPLICATIONS**

Integration on a general measure space, the space $L^p$ of functions having integrable $p$th power, geometrical properties of $L^p$ and other Banach spaces, applications to analysis and the measure theoretic formulation of probability theory.

**RECOMMENDED READING**

Bartle, R.G. *The Elements of Integration*. Wiley.
Day, M.M. *Normed Linear Spaces*. Springer.
Halmos, P.R. *Measure Theory*. Van Nostrand.

**MATH964 DISTRIBUTIONS**

Mikusinsks theory of convolution quotients, and an introduction to L. Schwartz's theory of distributions. Properties of the space of continuous functions of a single real variable (equipped with a suitable topology ) and its dual space.

**RECOMMENDED READING**


**MATH965 INDEPENDENCE PROOFS IN SET THEORY**

Independence of the axioms of constructibility and choice and of the Generalized Continuum Hypothesis.
Postgraduate Courses - Mathematics

MATH965 INDEPENDENCE PROOFS IN SET THEORY (CONT'D)

RECOMMENDED READING

MATH966 LOGIC AND SET THEORY

Primitive Recursive and recursive functions. Arithmetization, Gödel's Theorem, Recursive undecidability, Axioms for set theory, ordinal numbers, equinumerosity, Hartog's theorem, the Axiom of Choice.

RECOMMENDED READING

MATH967 COMBINATORY LOGIC

Introduction to Pure and Illature combinatory logic, relation to lambda-conversion, functionality, application to propositional and predicate calculus.

RECOMMENDED READING

MATH968 TOPICS IN ALGEBRA A

Partially ordered sets, lattices, modular lattices, Boolean Algebras and Boolean rings, ortho-modular lattices.

RECOMMENDED READING
Halmos, P.R. Lectures on Boolean Algebra. Van Nostrand.
Sikorski, R. Boolean Algebras. Springer-Verlag.

MATH969 TOPICS IN ALGEBRA B

Partially ordered sets and residuated mappings, Boolean lattices, involution posets, filters in lattices and posets.

RECOMMENDED READING
Halmos, P.R. Lectures on Boolean Algebra. Van Nostrand.

MATH971 DECISION THEORY

Subjective Probability, Axiomatic Development of utility theory, conjugate prior distributions, Estimation and Testing of Hypothesis, Sequential Decision Procedures, Martingales, Optimality Principle, House Hunting Problem, Parking Place Problem, Quiz Show Problem, Duel Problems, Control and Search Problems.

RECOMMENDED READING

MATH972 REGRESSION ANALYSIS

Linear Regression, Multiple Regression, Examination of Residuals, Model Building, Stepwise and stagewise regression, Relationship between regression analysis and analysis of variance models, Non-linear Models, Models not of Full Rank.
MATH972 REGRESSION ANALYSIS (CONT'D)

RECOMMENDED READING

MATH973 TIME SERIES

Autocorrelation function, Periodogram Analysis, spectrum and spectral density function, Models for Stationary and Non-Stationary time series, Identification and Estimation of ARIMA models, seasonal Models, Forecasting, Transfer Function Models.

RECOMMENDED READING

MATH974 MATHEMATICAL STATISTICS

A treatment of the theory and practical application of multivariate statistical analysis.

RECOMMENDED READING

MATH991 PROJECT

12 credit points

MATH992 MINOR THESIS

24 credit points

MATH993 THESIS

48 credit points
MECHANICAL ENGINEERING

MASTER OF ENGINEERING

Entry under Section 5 - Graduates with Honours Degree

Students entering the course under Section 5 of the Conditions for the Award of the Degree of Master are required to complete subjects from the Schedule of Graduate Subjects with an aggregate of not less than 48 credit points. Programmes of study provided by the Department of Mechanical Engineering include a dissertation with a credit point rating of 8 (MECH950), 28 (MECH951), or 48 (MECH952), depending on whether the course chosen is mainly by formal subject matter (6 subjects), or by a combination of dissertation and formal subject matter (4 subjects) or entirely by dissertation.

Entry under Section 6 - Graduates with Pass Degree

Students entering the course under Section 6 of the Conditions for the Award of the Degree of Master are required to complete subjects with an aggregate of not less than 96 credit points. Programmes of study under this section will normally consist of the subject MECH999 Advanced Topics in Engineering (48 credit points) plus one of the programmes provided under Section 6 (above).

DESCRIPTION OF SUBJECTS

Each of the subjects described below, with the exception of MECH950, 951, 952 and 999, are valued at 5 credit points and have a total contact of 4 hours per week for one session, although in certain cases they may be offered over two sessions.

Similar subjects offered by other departments will be acceptable for the Masters degree course in Mechanical Engineering subject to the approval by the Departmental Chairman and the Graduate Studies Committee.

MECH901 ADVANCED HEAT TRANSFER 1

**CONDUCTION HEAT TRANSFER.** 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 HEAT TRANSFER.** 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 behaviours of gases and vapours.

**RECOMMENDED READING**


Schneider. *Conduction Heat Transfer.*


MECH902 ADVANCED HEAT TRANSFER 2


**RECOMMENDED READING**


MECH903 STATISTICAL THERMODYNAMICS

History and review of classical thermodynamics and 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; Schrödinger 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; thermo-electric and thermochemical phenomena.
**MECH903 STATISTICAL THERMODYNAMICS (CONT'D)**

**RECOMMENDED READING**

Lee, Sears and Tuncotte. *Statistical Thermodynamics*.
Kreith. *Introduction to Statistical Thermodynamics*.
Sonntag and Van Wylen. *Fundamentals of Statistical Thermodynamics*.
Ter Haar. *Elements of Thermostatics*.

**MECH904 GAS DYNAMICS AND COMPRESSIBLE FLUID FLOW**


**RECOMMENDED READING**

Chapman & Walker. *Introductory Gas Dynamics*.
Liepman & Roshko. *Elements of Gas Dynamics*.
Owczarek. *Fundamentals of Gas Dynamics*.
Thompson. *Compressible Fluid Dynamics*.

**MECH905 ADVANCED DYNAMICS**

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 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.

**RECOMMENDED READING**

To be advised during course.

**MECH906 EXPERIMENTAL AND ANALYTICAL MODELLING**

Stochastic processes; Random signal analysis; Correlation function; Probability functions and spectral density functions; System identification; Correlation analysis; Spectral analysis.

Modelling of continuous systems using analytical methods; Lumped parameter systems; Linearisation. Solution of equations. Parameter estimation.

Rate expressions; introduction to reactor design; non-ideal flow in reactors.

**RECOMMENDED READING**


**MECH907 DESIGN OF CONTROL SYSTEMS I - MULTIVARIABLE SYSTEMS**

Review of classical control techniques; Multi-input multi-output systems; Transfer Functions; State space analysis. Stability analysis. Interaction and inverse Nyquist array. Optimal control.

**RECOMMENDED READING**

Ogata, K. *State Space Analysis of Control Systems*. Prentice-Hall.

**MECH908 COMPUTER AIDED DESIGN**

The application of computers to design; standards for documentation and checking of computer aided engineering computations; computer simulation and optimising techniques.
Postgraduate Courses - Mechanical Engineering

MECH908 COMPUTER AIDED DESIGN (CONT'D)

RECOMMENDED READING


Plus others to be advised during course appropriate to individual assignments.

MECH909 WASTEWATER TREATMENT AND DISPOSAL

Developments and trends in wastewater engineering; wastewater characteristics; physical unit operations; chemical unit processes; biological unit processes; design of facilities for physical and chemical treatment of wastewater; design of facilities for biological treatment of wastewater; advanced wastewater treatment; water-pollution control and effluent disposal; wastewater treatment studies; legal requirements.

RECOMMENDED READING


MECH910 WATER RESOURCE MANAGEMENT


RECOMMENDED READING


MECH911 BULK SOLIDS HANDLING SYSTEMS 1

Flow patterns of bulk solids constrained by bins and hoppers; theory of flow; determination of flow properties; hopper design; bin loads.

RECOMMENDED READING

Selected research papers.

MECH912 BULK SOLIDS HANDLING SYSTEMS 2

Further consideration concerning bin design; failure criteria for bulk solids; flow promotion; two-phase flow; effects of interstitial gas on flow of fine powders; screening and grading of bulk solids; mixing of dry solids; dust explosions.

RECOMMENDED READING

Selected research papers.

MECH913 PNEUMATIC AND HYDRAULIC TRANSPORT OF BULK SOLIDS

Classification and selection of transport systems; flow patterns; pressure drop, minimum operating velocities; design parameters and examples; feeding and withdrawal methods.

RECOMMENDED READING

Selected research papers.

MECH914 AIR POLLUTION

MECH914 AIR POLLUTION (CONT'D)

RECOMMENDED READING


MECH915 NOISE POLLUTION


RECOMMENDED READING


MECH916 DESIGN OF CONTROL SYSTEMS II - OPTIMAL CONTROL

Formulation of the optimal control problem: performance criteria; solution of the optimal control problem using calculus of variations, dynamic programming and the maximum principle; applications.

RECOMMENDED READING

Ogata, K. *State Space Analysis of Control Systems*. Prentice-Hall.

MECH917 REFRIGERATION AND AIR CONDITIONING

Theoretical aspect of refrigeration and air conditioning. Advanced treatment of topics selected from various systems. Design and calculations.

RECOMMENDED READING

Jones, W.P. *Air Conditioning Engineering*. Edward Arnold.

MECH918 DESIGN OF CONTROL SYSTEMS III - INVERSE NYQUIST ARRAY TECHNIQUES

Review of matrix analysis; input-output systems; transfer matrices; system realisation; interactive graphics; diagonal dominance; Inverse Nyquist array; applications.

RECOMMENDED READING

Selected research papers.

MECH919 SPECIAL TOPICS IN MECHANICAL ENGINEERING

There is no set syllabus for this subject. It is intended that it normally be offered on a specialised mechanical engineering topic given by visiting academic staff or engineering consultants.

MECH920 NUMERICAL METHODS IN MECHANICAL ENGINEERING

Iteration techniques; interpolation; curve fitting; matrix inversion and evaluation of eigenvalues; numerical differentiation and integration; solution of ordinary differential equations, second order partial differential equations and integral equations; accuracy and conservative formulations; introduction to stability analysis; application to engineering problems.
RECOMMENDED READING

Selected research papers.

Applications of complex potential; unsteady fluid flows; foil theory and applications; cavitations and discontinuous flows; body hydrodynamics.

RECOMMENDED READING

Batchelor, G.K. An Introduction to Fluid Dynamics. Cambridge University Press.

MECH920 NUMERICAL METHODS IN MECHANICAL ENGINEERING (CONT'D)

8 credit points

MECH950 DISSERTATION

28 credit points

MECH951 DISSERTATION

48 credit points

MECH952 DISSERTATION

MECH999 ADVANCED TOPICS IN ENGINEERING

Double session subject, 48 credit points

Details of this subject are the same as for ELEC999 Advanced Topics in Engineering as described in the postgraduate entry under the Department of Electrical Engineering.*

*See p. 399
METALLURGY

DIPLOMA IN METALLURGY

Entry to the diploma normally will be from a bachelor's degree in metallurgy or other appropriate discipline and the candidate will be required to undertake a programme either of full-time study for two academic sessions or of part-time study for four academic sessions. The programme comprises courses totalling 48 credit points made up as follows:

(i) METL992 Metallurgy Project III 24 credit points
(ii) Three of the advanced topics in Metallurgy described below 24 credit points

ADVANCED TOPICS IN METALLURGY FOR THE POSTGRADUATE DIPLOMA

Each subject is presented in one session, has a value of 8 credit points and comprises a minimum of one lecture per week with associated tutorials, assignments and laboratory work. Subjects are assessed by written examination together with credit for assignments and laboratory and other work.

METL902 MATERIALS RESOURCES


METL903 DEVELOPMENTS IN MATERIALS

Critical appraisal of recent and projected developments in metallurgical and other materials. Consideration of micro- and crystal-structures, physical and mechanical properties, applications, and the trends in processing of such materials.

METL942 MODELLING TECHNIQUES IN METALLURGY

Application of digital and analogue computing techniques in the development and evaluation of mathematical and other models of physical systems in metallurgy.

METL953 MANUFACTURING PROPERTIES OF MATERIALS


METL982 EXTRACTIVE METALLURGY - PAST, PRESENT AND FUTURE


MASTER OF METALLURGY

Entry under Section 5 - Honours Graduates

A candidate who enters under Section 5 of the Conditions for the Award of the Degree of Master, (i.e. who has qualified for the degree of Bachelor of Metallurgy with honours or equivalent) will be required to undertake the subject METL980 Major Thesis by a programme either of full-time research for at least two academic sessions or of part-time research for at least four academic sessions and the submission of a thesis embodying the results of that research. The subject is valued at 48 credit points. Also, entry may be approved by the Academic Senate for candidates with the qualifications of Diploma in Metallurgy and who have successfully completed any additional work specified by the Chairman of the Department of Metallurgy.

Entry under Section 6 - Pass Graduates

A candidate who enters under Section 6 of the Conditions for the Award of the Degree of Master, (i.e. who has qualified for the degree of Bachelor of Metallurgy at a standard below honours) will be required to undertake a programme of work normally for either four academic sessions full-time study or eight academic sessions part-time study. The programme comprises courses totalling 96 credit points made up as follows:
(i) METL993 Metallurgy Project IV
16 credit points
(ii) Four of the advanced topics in metallurgy described below
32 credit points
(iii) METL990 Major Thesis (as for Honours Entry)
48 credit points

ADVANCED TOPICS IN METALLURGY FOR THE MASTERS DEGREE

Each subject is presented in one session, has a value of 8 credit points and comprises a minimum of one lecture per week and associated tutorials, laboratory work and assignments. Subjects are assessed by written examinations together with credit for assignments and laboratory and other work.

METL901 METALLURGICAL RESOURCES II

Metallurgical resources and their utilization. The influence of technological developments in metallurgical industries. Detailed consideration of particular industries, for example the iron and steel industry.

METL921 PHYSICS OF METALS III

Advanced geometrical, kinematical and dynamical theories of electron and x-ray diffraction; reciprocal lattice, stereographic projection.

METL931 MECHANICAL BEHAVIOUR OF MATERIALS

Generalised Hooke’s law, yield surface for anisotropic materials, development of preferred orientations, elastic properties of dislocations, dislocation interactions and reactions, strain hardening.

METL932 MECHANICAL BEHAVIOUR OF MATERIALS AT ELEVATED TEMPERATURES

Hot deformation processes, creep, superplasticity, high temperature fracture, dynamic recovery and recrystallisation.

METL933 FRACTURE OF MATERIALS

Plastic constraint, fracture mechanics for conditions of plane stress and strain and of general yielding, C.O.D. testing, fatigue, stress corrosion, mechanisms of crack nucleation and propagation.

METL941 PROCESS MODELLING III

Theory and application of computing techniques for process modelling and simulation.

METL951 STRUCTURE AND PROPERTIES OF MATERIALS

Strengthening of ferrous and non-ferrous alloys; relationships between strength, toughness and microstructure; thermomechanical treatments, ausforming, isostempering, austempering, maraging etc; high performance alloys.

METL952 ADVANCED METALLOGRAPHIC METHODS

Advanced theory and practice of light-optical and electron-optical techniques for the analysis of the fine structure of metals and other materials.

METL971 SOLIDIFICATION II

Nucleation, growth structures in pure metals, single and polyphase alloys, cast structure development and control, grain refinement and modification, segregation, thermodynamics and fluid flow in solidification, processing and properties.

METL981 ADVANCED EXTRACTIVE METALLURGY

Mixing and segregation, effect on yield, design for heterogeneous reacting systems, fluid-solid and fluid-fluid systems, rate expressions for various kinetic regimes, design strategy for single and multiple reactors, applications.
GRADUATE DIPLOMA IN PHILOSOPHY

The purpose of the Graduate Diploma in Philosophy is to provide in a recognised University course a means for graduates with limited acquaintance with logic and philosophy to acquire competence in these subjects at a reasonably advanced level. The Diploma shall be subject to the University requirements for the award of Graduate Diplomas together with the following conditions.

1. Candidates are required to complete subjects totalling 48 credit points from those listed in Schedule A under 'Philosophy'. Of these at least 24 must be from 300-level subjects and the remainder from 200-level subjects. Provided that, subject to the joint approval of the Chairmen of the Departments of Philosophy and Education up to 16 credit points at 200-level and/or 8 credit points at 300-level may be taken from subjects listed in Schedule A under 'Education'; and provided that, subject to the joint approval of the Chairmen of the Departments of Philosophy and History and Philosophy of Science, up to 16 credit points at 200-level and/or 8 credit points at 300-level may be taken from subjects listed in Schedule A under 'History and Philosophy of Science'. Under no circumstances may the total number of subjects credited towards the Graduate Diploma in Philosophy taken from subjects other than those listed under 'Philosophy' total more than 24 credit points.

2. A candidate may not include in his or her diploma programme any course component which substantially duplicates a subject or part of a subject previously passed by the candidate as part of any degree or diploma already held or previously attempted.

3. The selection of courses and the programme of study shall be approved by the Departmental Chairman.

4. A full-time candidate shall normally complete the diploma in one academic year, a part-time candidate in no less than two and no more than three academic years.

5. Admission to candidature for the Diploma is on the recommendation of the Chairman of the Philosophy Department who shall assess the applicant's aptitude for sustained philosophical study at a reasonably advanced level.

MASTER OF ARTS

PHIL913 ADVANCED PHILOSOPHICAL TOPICS

Double session subject; 48 credit points
Variable combination of seminars, lectures and lecture-discussions
Pre-requisites: Entry is restricted to students seeking admission to the Master's degree under section 6 of the requirements for the Master's degree
Assessment: Essays and three hour written examinations as laid down in the requirements for such components as are approved or prescribed

An approved or prescribed selection of courses provided by the Department under other designations deemed by the Departmental Chairman to be appropriate as a foundation for postgraduate studies, given the background and intended pursuits of the individual student.

TEXTBOOKS AND RECOMMENDED READING
As laid down in the requirements for the component courses.

PHIL999 MAJOR THESIS

Double session subject; 48 credit points
PHYSICS

MASTER OF SCIENCE

The degree of Master of Science (MSc) by course work in the Department of Physics shall be subject to the University requirements for the award of the degree of Master together with the following conditions:

1. Entry to the degree programme will be normally from an Honours degree in Physics or from a pass degree with an appropriate three year sequence in physics.

2. Where entry to the degree programme is from an Honours degree, it will normally occupy two sessions of full-time study or four sessions of part-time study. It will require the successful completion of 48 credit points taken from the Schedule of Graduate Subjects in Physics. If either PHYS905 Mathematical Methods for Physicists A, or PHYS955 Mathematical Methods for Physicists B, or both, are included in the 48 credit points, then the contents of these subjects must differ from those of other subjects previously taken and credited towards another degree of the University.

3. Where entry to the degree programme is from a pass degree, it will normally occupy four sessions of full-time study or eight sessions of part-time study. It will require the successful completion of 96 credit points.

COURSE OBJECTIVES

After completion of an undergraduate degree in physics, an individual is equipped to work as a professional physicist in research and industry under the direction of more highly qualified staff. In order to achieve some measure of independence, he/she requires advanced training. Additionally, a teacher needs to keep abreast of current developments (and exercise independent judgement of their importance) to be fully effective; this requires broader and more advanced training in the discipline. The objectives of the present programme are to provide an offering necessary to accomplish the above and to give supplementation to the candidate's mathematical background sufficient for coherence and comprehension of the course.

DETAILS OF SUBJECTS

PHYS905 MATHEMATICAL METHODS FOR PHYSICISTS A

42 hrs lectures; 6 credit points

Pre-requisite, Co-requisite and Assessment: to be determined by the Departmental Chairman

Ordinary Differential Equations; Partial Differential Equations; Non-linear Partial Differential Equations.

TEXTBOOK

To be determined after consultation with the Departmental Chairman.

PHYS910 ADVANCED PROJECT IN PHYSICS A

First session subject; 6 credit points

48 hrs laboratory

Assessment: This will be based on the satisfactory operation of the completed experiments and the adequacy of the written descriptions of the experiments

The student will be required to design and construct several self-contained experiments at the level of those encountered in PHYS309 Advanced Experimental Physics. The number and type shall be determined by two members of the academic staff of the Department of Physics.
PHYS 942 ELEMENTARY PARTICLE PHYSICS

Double session subject; 6 credit points
42 hr lectures
Pre-requisite: PHYS 321 Solid State, Nuclear and Astro-Physics (or PHYS 322 Astro-, High Energy, Nuclear and Solid State Physics) and PHYS 443 Quantum Mechanics and Statistical Mechanics
Assessment: Based on assigned problems, tests and sessional examinations

Properties of Elementary Particles; Interaction of Elementary Particles with Matter; Strong Interactions: Feynman Diagrams; Electromagnetic Interactions; Weak Interactions; The K*-K' System and CP Violation; The Eight-fold Way, Quarks and SU(3) Symmetry.

TEXTBOOK

PHYS 944 ADVANCED QUANTUM MECHANICS

Double session subject; 6 credit points
42 hr lectures
Pre-requisite: PHYS 443 Quantum Mechanics and Statistical Mechanics
Assessment: As for PHYS 942

Review of Non-Relativistic Quantum Mechanics; Klein-Gordon Equation; Dirac Equation; Free Electron and Positron States; Electrons and Positrons in a Coulomb Field; Spin; Spin-Orbit Interaction; Foldy-Wouthuysen Transformation; Dirac-Hartree-Fock Theory for Many-Electron Atoms; Second Quantization, Quantization of the Electromagnetic Field; The Hanbury-Brown Twiss Experiment; Glauber States; Uncertainty in Phase and Photon Number.

TEXTBOOKS

RECOMMENDED READING

PHYS 946 ADVANCED SOLID STATE PHYSICS

Double session subject; 6 credit points
42 hr lectures
Pre-requisite: PHYS 401 Theoretical Mechanics and Electromagnetism, PHYS 443 Quantum Mechanics and Statistical Mechanics, and PHYS 446 Solid State Physics
Co-requisite: PHYS 944 Advanced Quantum Mechanics
Assessment: As for PHYS 942

Crystal Symmetries; Groups of Linear Transformations; Abstract Groups; Theory of Group Representations; Group of the Schrödinger Equation; Selection Rule Theorem; Groups of Physical Interest; Rotation Operations; Double Valued Representations; Direct Products; Crystal Fields; Adiabatic Approximation; Bloch's Theorem; The Effective Mass Expansion; Spin-Orbit Interaction; Time-Reversal Symmetry; Symmetry Properties of Wave Vectors; Band Theory; Impurities in Semiconductors.

TEXTBOOK

RECOMMENDED READING

PHYS 947 SPECIAL TOPIC IN PHYSICS A

First session subject; 6 credit points (14 hr seminars and 14 hr tutorials)
(14 hr seminars and 14 hr tutorials)
A special topic to be selected from any area of physics. The selection to be made by the Departmental Chairman in consultation with the Departmental Assessment Committee.
First session subject; 6 credit points (42 hr lectures)
Pre-requisite: PHYS319 or PHYS321 or PHYS322 or PHYS329, together with either PHYS441 or PHYS465.
Corequisite: Participation in, and presentation of seminars
Assessment: Participation in, and presentation of seminars
Library projects and seminars aimed at ascertaining the frontiers of knowledge in currently active fields, e.g. formation of the solar system; solar research; star formation; late stages of stellar evolution; neutron stars; black holes; supernovae; infrared astronomy; interstellar medium; evolution of galaxies; intergalactic matter; cosmology.

TEXTBOOK

Second session subject; 6 credit points
42 hr lectures
Pre-requisite, Co-requisite and Assessment: To be determined by the Departmental Chairman
Special functions; Green's functions; co-variant and contravariant tensors; Hilbert space; integral equations.

TEXTBOOK
To be determined after consultation with the Departmental Chairman.

PHYS955 MATHEMATICAL METHODS FOR PHYSICISTS B

42 hr lectures; 6 credit points
Pre-requisite, Co-requisite and Assessment: To be determined by the Departmental Chairman
Special functions; Green's functions; co-variant and contravariant tensors; Hilbert space; integral equations.

Second session subject; 6 credit points
42 hr laboratory
Assessment: This will be based on the satisfactory operation of the completed experiments and the adequacy of the written descriptions of the experiments
The student will be required to design and construct several self-contained experiments at the level of those encountered in PHYS309 Advanced Experimental Physics. The number and type shall be determined by two members of the academic staff of the Department of Physics.

PHYS960 ADVANCED PROJECT IN PHYSICS B

Double session subject; 6 credit points
42 hr lectures
Pre-requisite: PHYS309 Advanced Experimental Physics
Assessment: As for PHYS942
A course dealing with the design of experiments and the physical principles underlying the techniques of measurement for specific physical quantities and the general principles of instrument design.
Aims of good design; replication; randomization; blocking, Latin squares; instrumental profile; optical transfer function; noise limitations; integrator; the phase sensitive detector; the box car detector; the correlator; the matched filter; resistors; galvanometers; electrometers; Q-meters; mass measurement; volume measurement; density measurement; pressure measurement; time interval measurement; measurement of small displacements; measurement of large displacements; measurement of angles; coherence; classification of interferometers; light sources; commonly used interferometers; Fourier spectrometry; detection of interference patterns; interference filters.

PHYS970 THE PHYSICS OF MEASUREMENTS

Double session subject; 6 credit points
42 hr lectures
Pre-requisite: Statistical Mechanics part of PHYS311; PHYS401 Theoretical Mechanics and Electromagnetism
Assessment: As for PHYS942
Review of Maxwell's equations; Fourier analysis of Maxwell's equations; motion of a charged particle in electromagnetic fields; dynamics of many-particle systems; the Boltzmann-Vlasov equation; magnetohydrodynamics; Alfen waves; Chew, Goldberger, low approximation; plasma oscillations.

PHYS990 PLASMA PHYSICS
TEXTBOOK


RECOMMENDED READING


PHYS997 SPECIAL TOPIC IN PHYSICS B

Second session subject, 6 credit points (14 hrs seminars and 14 hrs tutorials)
Pre-requisites, Co-requisites and Assessment: Same as for PHYS947
A special topic to be selected from any area of physics. The selection to be made by the Departmental Chairman in consultation with the Departmental Assessment Committee.

PHYS998 COSMOLOGY

Second session subject, 6 credit points (14 hrs lectures and 14 hrs seminars)
Pre-requisites: PHYS319 or PHYS321 or PHYS322 or PHYS329
Co-requisite: None
Assessment: Same as for PHYS942
History; homogeneity and isotropy of the universe; Hubble's constant and the cosmic time scale; mean mass density of the universe; microwave background and the primeval fireball hypothesis; cosmological models.

TEXTBOOK


PHYS999 MAJOR THESIS

Double session subject, 48 credit points
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DEPARTMENTAL ACADEMIC CALENDARS

The formal Academic Calendar for 1979 approved by Council is based on a 28 week teaching year, but individual departments have been given the option of adopting a shorter teaching year.

The formal 28 week Academic Calendar is:

Session 1: February 26 to May 13
   May 21 to June 10 (14 weeks)

Session 2: July 16 to August 26
   September 10 to November 4 (14 weeks)

The following departments have indicated that they will be adopting this Calendar.

Accountancy  General Studies
Biology  Geography
Chemistry  Geology
Civil Engineering  Mathematics
Computing Science  Mechanical Engineering
Economics  Metallurgy
Education  Physics
Electrical Engineering  Sociology
European Languages

Two 26 week patterns have been adopted by other departments as follows:

(1) Session 1: February 26 to May 6
      May 21 to June 10 (13 weeks)
Session 2: July 16 to August 26
      September 10 to October 28 (13 weeks)

   English  History
   History  History and Philosophy of Science
   Psychology

(2) Session 1: February 26 to May 13
      May 21 to June 3 (13 weeks)
Session 2: July 16 to August 26
      September 10 to October 28 (13 weeks)

AMENDED BSc. REQUIREMENTS

It is anticipated that the University Council will approve amendments to part VII of the Bachelor Degree Requirements (Bachelor of Science) prior to the commencement of the 1979 academic year.

The amendments are expected to provide a new, third way in which the BSc degree may be obtained.

Details will be available at the time of enrolment or may be obtained beforehand from the Student Enquiries Office.
**Appendix 431**  
**UNDERGRADUATE SUBJECTS TO BE OFFERED IN 1979**

Departments have indicated that they anticipate that 100-, 200- and 300-level subjects will be offered in 1979 as set out below. Details of Honours subjects are not included and information concerning these may be obtained from the Student Enquiries Office or from the relevant department.

**ACCOUNTANCY**

All subjects listed in Schedule A will be offered with the exception of

- ACCY 281 Government Accounting and Financial Management
- ACCY 282 Accounting for Selected Entities
- ACCY 303 Selected Issues in Financial Accounting
- ACCY 313 Selected Issues in Management Accounting
- ACCY 322 Advanced Business Finance
- ACCY 332 Advanced Information Systems in Accounting
- ACCY 363 Administrative Law

**BIOLOGY**

All subjects listed in the Calendar will be offered.

**CHEMISTRY**

All subjects listed in the Calendar will be offered.

**CIVIL ENGINEERING AND MINING ENGINEERING**

All 100-, 200- and 300-level 'CIVL' and 'MINE' subjects listed in Schedule C will be offered. Details of 400-level subjects will be available from the Department.

**COMPUTING SCIENCE**

All subjects listed in Schedule A will be offered.

**ECONOMICS**

All subjects listed in Schedule A will be offered with the exception of

- ECON 223 Quantitative Methods III
- ECON 305 Economic Development Planning
- ECON 306 International Trade
- ECON 307 International Monetary Economics
- ECON 312 Industrial Economics
- ECON 313 Transport Economics
- ECON 314 Urban and Regional Economics
- ECON 316 History of Economic Thought
- ECON 322 Mathematical Economics

**EDUCATION**

All subjects listed in Schedule A will be offered with the exception of

- EDUC 312 Sociology of Education
- EDUC 313 History of Education
- EDUC 315 Educational Research Methodology
- EDUC 316 Comparative Education
- EDUC 318 Educational Administration

**ELECTRICAL ENGINEERING**

The servicing subject ELEC 292 Applied Electricity 2 will not be offered and ELEC 192 Introductory Electronics will only be offered if 25 or more students enrol in the subject. Not more than four 400-level electives will be offered. Apart from these, all subjects listed in the Schedules will be offered.

**ENGLISH**

The following subjects will not be offered in 1979:

- ENGL 105 Introduction to Modern English language Studies C
- ENGL 324 Eighteenth Century Prose
- ENGL 326 Nineteenth Century Prose
- ENGL 327 Nineteenth Century Poetry

It is anticipated that a subject in Australian Literature will be offered in Session II, 1979, but details were not available at the time of printing. Further information will be available from the Department of English prior to enrolment.
At the time of printing it was not certain whether ENGL 220 Utopian and Anti-Utopian Literature will be offered or not in 1979.

Students may wish to note that ENGL 324, ENGL 326 and ENGL 327 will be offered in 1980 while ENGL 105 may be offered in 1980.

EUROPEAN LANGUAGES
All subjects listed in Schedule A will be offered.

GENERAL STUDIES
All subjects listed in Schedule A, including GENE 303 World of Language IIA and GENE 304 World of Language IIB which are described in this appendix, will be offered.

GEOGRAPHY
All subjects listed in Schedule A will be offered.

Change of Session: Students should note that GEOG 313 and GEOG 393 will be offered in first session and GEOG 311 and GEOG 391 will be offered in second session in 1979.

GEOLOGY
Subjects to be offered are listed at the beginning of the Geology Description of Subjects section on page 237 of the Calendar. Details concerning the offering of GEOL 251 Geology for Mining Engineers I and GEOL 351 Geology for Mining Engineers II were not available at the time of printing.

HISTORY
All subjects listed in Schedule A will be offered with the exception of:

HIST 224 Modern South-east Asian History A
HIST 225 Australian Social History Since the Depression A
HIST 228 English History, 1865-1924 A
HIST 310 Australian Social History, 1850-1930 B
HIST 314 Australian Social History Since the Depression B
HIST 318 English History, 1865-1924 B
HIST 319 Modern Indonesian and Malaysian History B

HISTORY AND PHILOSOPHY OF SCIENCE
All subjects listed in Schedule A will be offered subject to staff availability.

MATHEMATICS
All subjects listed in Schedule A together with Engineering servicing subjects listed in Schedules C and D will be offered.

MECHANICAL ENGINEERING
All 100-, 200-, and 300-level subjects listed in the Schedules will be offered. Details of 400-level subjects should be obtained from the Department.

METALLURGY
All 100-, 200- and 300-level subjects listed in the prescribed course in Schedule D will be offered. Details of 400-level options should be obtained from the Department.

PHILOSOPHY
All subjects listed in Schedule A will be offered with the exception of:

PHIL 143 Political Theory
PHIL 231 Formal Logic A
*PHIL 222 Set Theory 222
PHIL 242 Contemporary Continental Philosophy
PHIL 292 Social Philosophy A
*PHIL 321 Logical Analysis
*PHIL 323 Contemporary Analytical Philosophy
*PHIL 303 Immanuel Kant's Critique of Pure Reason
PHIL 312 Phenomenology and Existentialism
PHIL 361 Formal Logic B
PHIL 362 Modal Logic
PHIL 392 Social Philosophy B

* For advice on these subjects, students should see the Departmental Secretary at the beginning of the year.
PHILOSOPHY (Cont'd)

Nota: The Department has advised that subjects not offered in 1979 will be offered in 1980.

PHYSICS

All subjects listed in the Schedules will be offered.

PSYCHOLOGY

All subjects listed in Schedule A will be offered with the exception of

- PSYC 336 Experimental Psychology
- PSYC 346 Experimental Psychology (Science)
- PSYC 342 Social Psychology (Science)

SOCIOLOGY

All subjects listed in Schedule A will be offered with the exception of

- SOC 304 Military Sociology
- SOC 306 Sociological Measurement
- SOC 315 Ethology
- SOC 316 Research Techniques of Social Enquiry
SUBJECT AMENDMENTS AND ADDITIONS

PRE-REQUISITES - ACCOUNTANCY SUBJECTS

The pre-requisites for the subjects ACCY 363 Administrative Law and ACCY 364 Business Law III have been amended to read "Business Law I plus 6 credit points of legal subjects at 200-level offered by the Department of Accountancy.

SCHEDULE E - PSYCHOLOGY SUBJECTS

The following subjects offered by the Department of Psychology have been deleted from Schedule E:

- PSYC 342 - Social Psychology (Science)
- PSYC 343 - Industrial and Organisational Psychology (Science)
- PSYC 346 - Experimental Psychology (Science)
- PSYC 348 - Behaviour Modification (Science)

The following subjects offered by the Department of Psychology are now included in Schedule E:

- PSYC 338 - Behaviour Modification
- PSYC 336 - Experimental Psychology

GENERAL STUDIES SUBJECTS

GENE 241 FINE ARTS A

This subject, while remaining a single session subject, will now be offered in both first and second sessions

ADDITIONAL SUBJECTS TO BE OFFERED

GENE303 THE WORLD OF LANGUAGE IIA: THE STRUCTURE OF LANGUAGE

First session: 8 credit points (one 2 hr lecture-seminar, 1 hr tutorial per week plus consultation for project supervision).

Pre-requisites: The World of Language A and B.

Assessment: Regular progressive tests and supervised written projects.

Students will continue the study of structure begun in World of Language I (GENE 203, 204) and topics will include: grammatical notions and functions; modern approaches to grammar; grammar and the school teacher; correctness and acceptability; some practical applications.

TEXTBOOKS


GENE304 THE WORLD OF LANGUAGE IIB: LANGUAGE IN THE COMMUNITY

Second session: 8 credit points (one 2 hr lecture-seminar, 1 hr tutorial per week plus consultation for project supervision)

Pre-requisites: The World of Language A and B.

Assessment: Regular progressive tests and supervised written projects.

Varieties of language - regional and social dialect; stylistic variation; language in a mixed society; specific uses - the language of politics, the media etc.

TEXTBOOKS
