
FACULTY OF PROFESSIONAL STUDIES
1975 HANDBOOK
ONE DOLLAR



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

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General Information

In order to minimize the time and effort that you will put into your study you should make an effort to learn what facilities the University offers, to investigate the best methods of study and to discover as much as possible about the course for which you are enrolled.

This Handbook has been specially designed as a detailed source of reference for you in all matters related to your Faculty. The General Information Section is intended to help you put the Faculty into perspective with the University as a whole, to introduce you to some of the services available to students and to note some of the most important rules and procedures.

For fuller details about the University and its activities you should consult the University Calendar.

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Calendar of Dates for 1975

- Session 1:** March 3 to May 11
May Recess: May 12 to May 18
 May 19 to June 15
Midyear Recess: June 16 to July 20
- Session 2:** July 21 to August 24
August Recess: August 25 to August 31
 September 1 to November 2
Study Recess: November 3 to November 9

JANUARY

- Wednesday 1 New Year's Day—Public Holiday
 Friday 10 Last day for application for review of results of *annual* examinations
 Last day for application for permission to re-enrol by students who infringed re-enrolment rules at *annual* examinations
 Monday 13 Timetables for *deferred* examinations available
 Friday 17 Last day for acceptance of applications by Admissions Office for transfer to another course within the University
 Monday 27 Australia Day—Public Holiday
 Tuesday 28 *Deferred* examinations begin

FEBRUARY

- Saturday 8 *Deferred* examinations end
 Friday 14 Last day for appeal against exclusion by students who infringed re-enrolment rules at *annual* examinations
 Monday 17 Enrolment period begins for new students and students repeating first year
 Friday 21 *Deferred* examination results available
 Monday 24 Enrolment period begins for second and later year students
 Tuesday 25 Last day for application for review of *deferred* examination results
 Friday 28 Last day for application for permission to re-enrol by students who infringed re-enrolment rules at *deferred* examinations

MARCH

- Monday 3 Session 1 commences
 Friday 14 Last day for acceptance of enrolments by new students (late fee payable)
 Thursday 20 Last day for appeal against exclusion by students who infringed re-enrolment rules at *deferred* examinations
 Thursday 27 Last day for changes in course programmes
 Last day for acceptance of enrolments by students re-enrolling in second and later years (late fee payable)
 Friday 28 to Easter
 Monday 31

APRIL

- Thursday 3 Last day for students other than those attending a university for the first time to discontinue without failure subjects which extend over Session 1 only
- Thursday 24 Last day for students attending a university for the first time to discontinue without failure subjects which extend over Session 1 only
- Friday 25 Anzac Day—Public Holiday

MAY

- Tuesday 6 Publication of provisional timetable for June/July examinations
- Monday 12 May Recess begins
- Tuesday 13 Last day for acceptance of corrected enrolment details forms
- Friday 16 Last day for students other than those attending a university for the first time to discontinue without failure subjects which extend over the whole academic year
- Sunday 18 May Recess ends
- Monday 19 Last day for students to advise of examination timetable clashes

JUNE

- Tuesday 3 Publication of timetable for June/July examinations
- Sunday 15 Session 1 ends
- Monday 16 Queen's Birthday—Public Holiday
- Tuesday 17 Midyear Recess begins
- Midyear examinations begin

JULY

- Tuesday 1 Midyear examinations end
- Sunday 20 Midyear Recess ends
- Monday 21 Session 2 begins
- Thursday 31 Foundation Day

AUGUST

- Friday 1 Last day for students attending a university for the first time to discontinue without failure subjects which extend over the whole academic year
- Thursday 21 Last day for students other than those attending a university for the first time to discontinue without failure subjects which extend over Session 2 only
- Monday 25 August Recess begins
- Sunday 31 Holiday for non-academic staff
- August Recess ends
- Last day for acceptance of applications for re-admission in 1976 after exclusion under the re-enrolment rules

SEPTEMBER

- Friday 12 Last day for students attending a university for the first time to discontinue without failure subjects which extend over Session 2 only
- Monday 15 Last day for return of corrected enrolment details forms
- Last day for applications from students graduating in 1976 for admission to University degrees and diplomas
- Tuesday 23 Publication of provisional timetable for annual examinations

OCTOBER

Wednesday 1	Last day to apply to MUAC for transfer to another university in Sydney metropolitan area and Wollongong
Friday 3	Last day for students to advise of examination timetable clashes
Monday 6	Eight Hour Day—Public Holiday
Tuesday 21	Publication of timetable for annual examinations

NOVEMBER

Monday 3	Study Recess begins
Sunday 9	Session 2 ends
Monday 10	Annual examinations begin

DECEMBER

Tuesday 2	Annual examinations end
Thursday 25	Christmas Day—Public Holiday
Friday 26	Boxing Day—Public Holiday

1976

- Session 1:** March 1 to May 9
May Recess: May 10 to May 16
 May 17 to June 13
Midyear Recess: June 14 to July 18
- Session 2:** July 19 to August 22
August Recess: August 23 to August 29
 August 30 to October 31
Study Recess: November 1 to November 7

JANUARY

Friday 9	Last date for application for review of results of annual examinations
Monday 12	Publication of timetable for deferred examinations
Friday 16	Last day for acceptance of applications by Admissions Office for transfer to another course within the University
Monday 26	Australia Day—Public Holiday
Tuesday 27	Deferred examinations begin

FEBRUARY

Saturday 7	Deferred examinations end
Monday 16	Enrolment period begins for new students and students repeating first year
Friday 20	Results of deferred examinations available
Monday 23	Enrolment period begins for second and later year students

The Academic Year

The academic year is divided into two sessions, each containing 14 weeks for teaching. There is a recess of five weeks between the two sessions as well as short recesses of one week within each of the sessions.

Session 1 commences on the first Monday of March.

Organization of the University

Rapid development has been characteristic of the University of New South Wales since it was first incorporated by an Act of Parliament in 1949, under the name of the New South Wales University of Technology.

In 1974 the University had 17,355 students and 3,958 staff who worked in more than eighty buildings. If staff and students at Broken Hill (W. S. and L. B. Robinson University College), Wollongong (an autonomous university in 1975), Duntroon (the Faculty of Military Studies) and Jervis Bay were included there were 19,594 students and 4,522 members of staff (academic and non-academic).

The Council The chief governing body of the University is the Council which has the responsibility of making all major decisions regarding its policy, conduct and welfare.

The Council consists of 42 members representative of the professions, commerce and industry, the legislature, employee organizations, rural, pastoral and agricultural interests, and the academic staff of the University, its graduates and students.

The Council meets six times per year and its members also serve on special committees dealing with such matters as finance, buildings and equipment, personnel matters, student affairs and public relations.

The Chairman of the Council is the Chancellor, Sir Robert Webster, and the Deputy Chancellor is the Hon. Sir Kevin Ellis.

The Professorial Board The Professorial Board is one of the two chief academic units within the University and includes all the professors from the various faculties. It deliberates on all questions such as matriculation requirements, the content of courses, the arrangement of syllabuses, the appointment of examiners and the conditions for postgraduate degrees. Its recommendations on these and similar matters are presented to Council for its consideration and adoption.

The Faculties The Dean, who is also a professor, is the executive head of the Faculty. Members of each Faculty meet regularly to consider matters pertaining to their own areas of study and research, the result of their deliberations being then submitted to the Professorial Board.

The term "faculty" is used in two distinct senses in the University. Sometimes it is used to refer to the group of Schools comprising the Faculty, and at others to the deliberative body of academic members of the Schools within the Faculty.

The eleven Faculties are Applied Science, Architecture, Arts, Biological Sciences, Commerce, Engineering, Law, Medicine, Military Studies, Professional Studies, and Science. In addition, the Board of Studies in General Education fulfils a function similar to that of the faculties.

The Board of Studies in Science is responsible for the academic administration of the Science course.

The Schools Once courses of study have been approved they come under the control of the individual Schools (e.g. the School of Chemistry, the School of Mathematics, etc.). The professorial Head of the School in which you will be studying will be the person in this academic structure with whom you will be most directly concerned.

Executive Officers As chief executive officer of the University the Vice-Chancellor, Professor Rupert Myers, is charged with managing and supervising the administrative, financial and other activities of the University.

He is assisted in this task by three Pro-Vice-Chancellors, Professor J. B. Thornton, Professor R. E. Vowels and Professor A. H. Willis; the Deans and the three heads of the administrative divisions.

General Administration The administration of general matters within the University comes mainly within the province of the Registrar, Mr. C. G. Plowman, the Bursar, Mr. T. J. Daly, and the Business Manager (Property), Mr. R. K. Fletcher.

The Registrar's Division is concerned chiefly with academic matters such as the admission of students, and the administration of examinations as well as the various student services (health, employment, amenities, and counselling).

The Bursar's Division is concerned with the financial details of the day-to-day administration and matters to do with staff appointments, promotions, etc. The Property Division is concerned with the maintenance of buildings and grounds and equipment, and includes the University Architect's office.

Student Representation on Council and Faculties Three members of the University Council are students. All students who are not full-time members of staff are eligible to stand for a two-year term of office. The students who are elected to the Council are eligible for election to the Committees of Council.

Students proceeding to a degree or a graduate diploma may elect one of their number to a Faculty for each 500 registered students, with a minimum of three students per Faculty. Elections take place towards the end of the academic year for a one-year term of office.

Open Faculty Meetings

If you wish you may attend a Faculty meeting. You should advise the Chairman of the Faculty you wish to attend, as different faculties have their own rules for the conduct of open meetings.

Identification of Subjects by Numbers Each subject provided by a School has an identifying number. The integer is the identifying number of the School and the numbers after the decimal point

distinguish the subject from others conducted by that School, some of which may have the same name. For example, Physics I has several variations. The subject number 1.001 denotes Physics I and is the physics subject included in first year Applied Science, Science and Engineering course programmes; 1.011 is the corresponding subject at a higher level; 1.081 is the special Physics I subject included in the first year Medicine course; and so on.

As well as providing a clear means of identifying subjects with the same or similar names, the subject number is also used in the recording of enrolment and examination information on machine data processing equipment. It is therefore emphasized that students should cite both the correct subject name, subject number and course code in all correspondence or on forms dealing with courses.

You should become familiar with the identifying numbers of the Schools in which you will be studying, according to the following list:

Identifying Number	School, Faculty or Department	Identifying Number	School, Faculty or Department
1	School of Physics	43	School of Botany
2	School of Chemistry	44	School of Microbiology
3	School of Chemical Engineering	45	School of Zoology
4	School of Metallurgy	50	School of English
5	School of Mechanical and Industrial Engineering	51	School of History
6	School of Electrical Engineering	52	School of Philosophy
7	School of Mining Engineering	53	School of Sociology
8	School of Civil Engineering	54	School of Political Science
9	School of Wool and Pastoral Sciences	55	School of Librarianship
10	School of Mathematics	56	School of French
11	School of Architecture	57	School of Drama
12	School of Psychology	58	School of Education
13	School of Textile Technology	59	School of Russian
14	School of Accountancy	62	School of History and Philosophy of Science
15	School of Economics	63	School of Social Work
16	School of Health Administration	64	School of German
17	Biological Sciences	65	School of Spanish and Latin American Studies
18	Department of Industrial Engineering	66	University of Sydney subjects
19	School of Transportation and Traffic	69	Centre for Medical Education, Research and Development
20	School of Highway Engineering	70	School of Anatomy
21	Department of Industrial Arts	71	School of Medicine
22	School of Chemical Technology	72	School of Pathology
23	School of Nuclear Engineering	73	School of Physiology and Pharmacology
25	School of Applied Geology	74	School of Surgery
26	Department of General Studies	75	School of Obstetrics and Gynaecology
27	School of Geography	76	School of Paediatrics
28	School of Marketing	77	School of Psychiatry
29	School of Surveying	79	School of Community Medicine
31	School of Applied Physics and Optometry	80	Faculty of Medicine
33	Graduate School of Business	85	National Postgraduate School of Management Education
35	School of Building	90	School of Law
36	School of Town Planning	97	Division of Postgraduate Extension Studies
41	School of Biochemistry		
42	School of Biological Technology		

In Section D of the Calendar a short syllabus is given for each subject.

Student Services and Activities

The Library The University Library is on the upper campus and adjacent to the Chancellery and the Sciences, Arts and Commerce Buildings. It contains about 650,000 books and subscribes to more than 18,000 periodicals.

Students may borrow books by presenting a current Union card and the books at the Circulation Desk. New students can collect temporary borrowing cards at the Library in Orientation Week. It is recommended that students attend the *Introduction to the Library* held during Orientation Week and the first week of Session 1.

Specific library problems should be referred to the Reader Assistance Unit located in the foyer of the Library. Copies of the *Library Guide* are available on request.

The Bio-Medical Library is located in the Biological Sciences Building. The Law Library is on the 4th Floor of the Sciences Building. A Physical Sciences Library is being developed at present in the main Library building.

Accommodation

There are seven **residential colleges** on campus which offer accommodation to male and female students. The philosophy of the management, the residence fees and facilities vary from college to college. It is anticipated that the fees in most colleges will be increased for 1975. In addition, assistance is provided in finding **off-campus accommodation**.

The Kensington Colleges The Kensington Colleges comprise Basser College, Goldstein College, and Philip Baxter College. They house 450 men and women students, as well as staff members. Board and residence fees, which are payable on a session basis, amount to slightly more than \$30 per week. Apply in writing to the Master, P.O. Box 24, Kensington, N.S.W. 2033.

International House International House accommodates over 120 students from Australia and twenty other countries. Preference is given to more senior undergraduates and postgraduate students. Fees in 1974 were \$28 per week. Apply in writing to the Warden, International House, P.O. Box 88, Kensington, N.S.W. 2033.

New College This Church of England College is open to all students without regard to race or religion. It has accommodation for approximately 220 students and is co-educational. Fees in 1974 were \$31 for undergraduates and \$32 for postgraduate students. Fees may change in 1975. Enquiries should be addressed to the Master, New College, Anzac Parade, Kensington, N.S.W. 2033.

Shalom College Shalom College provides accommodation for 86 men and women students. The basic fee for residence in 1975 is \$38 per week. Non-resident membership is available to students who wish to avail themselves of the Kosher dining room and tutorial facilities. Apply in writing to the Master, Shalom College, The University of New South Wales, P.O. Box 1, Kensington, N.S.W. 2033.

Warrane College An affiliated Roman Catholic residential college, Warrane provides accommodation for 200 men students, both post-graduate and undergraduate. Basic fees in 1974 were \$30.50 per week for board and residence, payable on a session basis. Apply in writing to the Master, Warrane College, P.O. Box 123, Kensington, N.S.W. 2033.

Off-campus Housing The Student Amenities and Recreation Unit maintains an up-to-date record of different types of off-campus housing including hostels, full board, bed and breakfast, flats and houses for rent. For information and assistance apply to the Housing Officer, Hut B, at the foot of Basser Steps (extension 3260).

Student Employment The Student Employment Unit offers assistance with career employment for final year students and graduates of the University. This service includes the mailing of regular job vacancy notices to registered students and a campus interview programme for final year students.

Careers advice and assistance is also available to undergraduates. Assistance is offered in finding vacation employment which gives either course related experience or industrial training experience, where this is a course requirement. Information and advice regarding cadetships, undergraduate and postgraduate scholarships is also available.

The service is located in the Chancellery on the ground floor. Telephone extension 3259 for employment and careers advice, or extension 2086 for cadetships and industrial training information.

Student Health The Student Health Unit, staffed by qualified medical personnel, offers free medical and first aid services to male and female students. The service is not intended to replace private or community health services and thus if chronic or continuing conditions are revealed or suspected you will be advised and referred to your own doctor or an appropriate hospital. The health service is not responsible for fees incurred in these instances. Confidential appointments can be made at Hut E at the foot of Basser Steps between 9 a.m. and 5 p.m. Monday to Friday, and 6 p.m.-9 p.m. on Tuesdays and Thursdays. Telephone extension 2679 or 3275.

Student Counselling and Research Unit The Student Counselling and Research Unit provides individual and group counselling for all students—prospective, undergraduate and postgraduate. If you have any personal needs, worries or confusion use this free, informal, personal service to help you sort out the basic issues. If the counsellor can't help you himself he usually knows someone who can.

Confidential appointments are made by dropping in to the counselling unit (Huts B and I at the foot of Basser Steps) or by telephoning extensions 2600-2605 between 9.00 a.m. and 5.00 p.m. Evening appointments are also available.

Student Amenities and Recreation Unit This Unit, working in close liaison with the Sports Association, assists various recognized clubs by arranging and providing facilities and by handling on their behalf all inquiries and applications for membership.

It also provides a recreational programme for students and staff at the Physical Education and Recreation Centre; liaises with the Public Transport Commission of New South Wales on matters concerning student travel concessions; and assists students in finding suitable accommodation off the campus.

Concessional application forms for all types of travel may be obtained at the Student Amenities and Recreation Unit or at the Inquiry Desk in the Chancellery.

The Student Amenities and Recreation Unit is located in Hut B at the foot of Basser Steps. The various services may be contacted by phone on the following extensions: Sports Association, 2235; Physical Education and Recreation Centre, 3271; Travel, 3261; Accommodation, 3260.

Physical Education and Recreation Centre The Physical Education and Recreation Centre consists of eight squash courts and a main building. The latter has a large gymnasium and ancillary practice rooms for fencing, table tennis, judo, weight-lifting and a physical fitness testing room. The Supervisor of Physical Recreation is responsible for the Centre and provides a recreational programme for both students and staff. If you would like to take part in any of the programmes contact the Supervisor on extension 3271.

The University Union The University Union provides the facilities students, staff and graduates require in their daily University life and thus an opportunity for them to know and understand one another through associations outside the lecture room, the library and other places of work.

The Union is housed in three buildings near the entrance to the Kensington Campus from Anzac Parade. These are the Roundhouse, the Blockhouse and the Squarehouse. Membership of the Union is

compulsory for all registered students and is open to all members of staff and graduates of the University.

The full range of facilities provided by the Union includes a cafeteria service and other dining facilities, a large shopping centre, cloak room, banking and hairdressing facilities, showers, a women's lounge, common, games, reading, meeting, music, practice, craft and dark rooms. Photocopying, sign printing, and stencil cutting services are also available. The Union also sponsors and conducts courses in many facets of the arts including weaving, photography, creative dance and yoga.

The University Union should not be confused with the Students' Union or Students' Representative Council as it is known in some other universities. This latter body has a representative function and is the instrument whereby student attitudes and opinions are crystallized and presented to the University and the community.

The Students' Union The Students' Union is run by students and represents them on and off campus. Presidential elections are by popular vote and all students who have completed two years at the University are eligible for election.

Membership is compulsory at \$10 per annum.

The activities of the Students' Union include:

(a) Infakt—a student-run information referral service. If you want someone to talk to or need help of any kind see the people at Infakt located in the bus at the foot of Basser Steps.

(b) A casual employment service.

(c) Organization of Orientation Week.

(d) Organization of Foundation Day.

(e) A nursery/kindergarten, "The House at Pooh Corner".

(f) Publication of the student paper "Tharunka".

The Students' Union is affiliated with the Australian Union of Students (AUS) which represents students on the national level.

The Students' Union is located on the second floor, Stage III, the Union.

Student Clubs and Societies

CASOC All clubs and societies on campus (except sporting clubs) are loosely organized under the umbrella of CASOC, which is a committee of the Students' Union. Some of these clubs are: the Motor Cycle Club; Chess Club; Dramsoc; Opunka; Ngunnagan Club; Kite Club and the Jazz Society.

The Sports Association The Sports Association caters for a variety of competitive sports for both men and women. Membership of the Association is compulsory for all registered students and the annual subscription is \$4.00.

Details of sporting facilities are available in "Action 75", available at the Student Amenities and Recreation Unit (Hut B at the foot of Basser Steps).

School and Faculty Associations Many Schools and Faculties have special clubs with interests in particular subject fields. Enquire at your Faculty Office for information.

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

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

University Co-operative Bookshop Limited Membership is open to all students, on payment of a fee of \$5.00, refundable when membership is terminated. Members receive an annual rebate on purchases of books.

Cashier's Hours The University cashier's office is open from 9.30 a.m. to 1.00 p.m. and from 2.00 p.m. to 4.30 p.m., Monday to Friday. It is open for additional periods during the first four weeks of Session 1. Consult notice boards for details.

Australian Armed Forces Enquiries should be directed to:
Royal Australian Navy: Royal Australian Naval Liaison Officer, Professor J. S. Ratcliffe, Commander, R.A.N.R., at the School of Chemical Engineering. Phone 663 0351, extn. 2406.

University of New South Wales Regiment: The Adjutant, Regimental Depot, Day Avenue (just west of Anzac Parade).

Air Force Squadron: The N.S.W. University Squadron has ceased to exist but students interested in the Royal Australian Air Force may apply for information to The Commanding Officer, N.S.W. Air Training Corps, 7 Hickson Road, Millers Point, N.S.W. 2000. Telephone 27 5412.

Financial Assistance to Students

Tertiary Education Assistance Scheme

The Tertiary Allowance Scheme, first introduced in 1974, has been renamed the Tertiary Education Assistance Scheme. Under this scheme assistance is available as follows:

- for full-time study in approved courses
- subject to a means test
- on a non-competitive basis
- without restriction
- to students who are not bonded
- to students who are permanent residents of Australia.

The following types of university courses will be eligible for assistance:

- Undergraduate and postgraduate degree courses
- Postgraduate diplomas
- Approved combined Bachelor degree courses
- Master's qualifying courses where the course is the equivalent of an honours year and the student has not attempted an honours year.

Benefits

Means-tested Living Allowance The maximum rates of living allowances are \$1,000 per annum for students living at home and \$1,600 per annum for students living away from home. The maximum rates of living allowance will be paid where the adjusted family income is equal to or less than \$6,300 per annum. The adjusted family income is assessed by subtracting from the gross income of both parents their business expenses and an amount of \$450 for each dependent child other than the student.

When the adjusted family income exceeds \$6,300 p.a. the amount of living allowance will be reduced by \$2 for every \$10 of income until the family income exceeds \$12,600 per annum. After this level, the living allowance will be reduced by \$3 for every \$10 of income.

A concession may be made where there are other children in the family undertaking tertiary education with scholarship assistance from schemes other than the Tertiary Education Assistance Scheme of less than \$600 p.a.

Students qualifying for living allowance will also receive the following allowances where appropriate:

Incidentals Allowance The Incidentals Allowance of \$100 is designed to help the student meet the cost of those fees which have not been abolished—the Students' Union, University Union and Sports Association fees, and other expenses associated with their studies.

Travel Allowance Students whose home is in the country may be reimbursed the cost of three return trips per year, during vacation time.

Dependants' Allowance This is made up of allowances of \$8 per week for a dependent spouse and \$5 per week for each child.

How To Apply

Two different forms are used:

- 1 1974 Higher School Certificate candidates will be sent forms in early January. Applications should be made immediately after enrolment.
- 2 All other students should apply by 31st October. Forms will be sent in September to students who have been receiving an allowance. Other students may obtain forms from the Admissions Section or the Student Employment and Scholarships Unit, or from the Regional Director, N.S.W. State Office, Department of Education, Central Square, 323 Castlereagh Street, Sydney, N.S.W. 2000 (Telephone 2 0929).

Scholarships, Cadetships

1 *Undergraduate Scholarships* In addition to finance provided under the Australian Government's Tertiary Education Assistance Scheme there are a number of scholarships, cadetships and other forms of assistance available to undergraduate students.

Details of procedures for application for these awards are contained in the University Calendar.

Further information and advice regarding scholarships is available from the Student Employment and Scholarships Unit in the Chancellery Building.

2 *Postgraduate Awards* An honours degree is generally an essential requirement for gaining one of the many postgraduate scholarships which are available at the University. Therefore gifted students should not neglect the opportunity to qualify for honours and thus become eligible for an award.

Details of postgraduate awards are contained in the University Calendar.

Other Financial Assistance

In addition to the Tertiary Education Assistance Scheme financed by the Australian Government the following forms of assistance are available.

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

Three main forms of assistance are available:

- 1 *Deferment of Payment of Fees* Deferments may be granted for a short period, usually one month, without the imposition of a late

fee penalty, provided the deferment is requested prior to the due date for fee payments.

In exceptional circumstances the University may consider granting deferments for up to twelve months or even longer. In cases where payment is deferred to 31st December, examination results will not be published or made available until such time as the outstanding fees are paid. Where deferments are granted to a date beyond 31st December, the University may require the student to enter into a formal agreement to repay the fees.

2 Short Term Cash Loans Donations from the Students' Union, the University Union and other sources have made funds available for urgent cash loans not exceeding \$100. These loans are normally repayable within one month.

3 Long Term Cash Loans An amount of up to \$300 is available from this fund. Repayments must be started not later than twelve months after graduation or upon withdrawal from the course. This scheme is funded jointly by the University and the Students' Union. Students are required to enter into a formal agreement with the University to repay such a loan.

(b) Early in 1973 the Australian Government made funds available to the University to provide loans to students in financial difficulty. The loans are to provide for living allowances and other approved expenses associated with attendance at University. Repayment usually commences twelve months after graduation or upon withdrawal from the course. Students are required to enter into a formal agreement with the University to repay the loan.

From the same source of funds as mentioned in the preceding paragraph students who are in extremely difficult financial circumstances may apply for assistance by way of non-repayable grant. In order to qualify for a grant a student must generally show that the financial difficulty has arisen from misfortune beyond his control.

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

Applications may be made personally to the Deputy Registrar (Student Services), Room 148A, The Chancellery.

Financial Assistance to Aboriginal Students

Financial assistance is available from a number of sources to help Aboriginal students. Apart from the Australian Government's Tertiary Education Assistance Scheme there is a Commonwealth Aboriginal Study Grant Scheme. Furthermore, the University may assist Aboriginal students with some essential living expenses in exceptional circumstances.

All enquiries relating to this scheme should be directed to the Deputy Registrar (Student Services), Room 148A, The Chancellery.

Rules and Procedures

The University, in common with other large organizations, has some agreed ways of doing things in order to operate efficiently and equitably for the benefit of all members. The rules and procedures listed below will affect you at some time or another. In some cases there are penalties (e.g. fines or exclusion from examinations) for failure to observe these procedures and therefore they should be read with care.

The information is arranged as answers to questions most asked by students. The first group of questions concerns admission and enrolment, the second fees and other money matters, the third examinations, and the remainder more general matters such as student conduct on campus.

Admission and Enrolment

How do I qualify for admission? In order to enter an undergraduate course you must qualify for matriculation to the University; satisfy requirements for admission to the course of subjects chosen; and be selected for admission to the faculty or course you wish to enter. Full details of matriculation and admission requirements are contained in a pamphlet obtainable at the Admissions Office and in the University Calendar.

When and where do I enrol? To effect formal enrolment it is necessary to present a duly completed and authorized enrolment form to the University cashier together with, where payable, either the appropriate fees, or an authority authorizing those fees to be charged to some other person or institution.

All students are required to attend the appropriate enrolment centre during the prescribed enrolment period for authorization of course programme. Failure to do so will incur a fee of \$10. These enrolment centres and the times are listed in a leaflet called "Enrolment Procedures" which is available from the Admissions Office.

Fees should be paid during the prescribed enrolment period but will be accepted during the first two weeks of Session 1 (for late fees see below). No student is regarded as having completed enrolment until fees have been paid. Fees will not be accepted (i.e. enrolment cannot be completed) from new students in year-long courses after 14th March, 1975, and after 31st March from students who are re-enrolling, except with the express approval of the Registrar, which will be given in exceptional circumstances only.

Students enrolling for the first time in any year at the commencement of Session 2 for Session 2 courses only are required to pay all fees due within the first two weeks of that Session. Students' Activities fees payable will be half of the annual fees.

Medical Students

Although the structure of the academic year in the later years of the course in Medicine differs from that followed in other courses, medical students are required to observe the same dates for payment as apply to students in other courses.

How do assisted students (e.g. scholarship holders) enrol? Scholarship holders or sponsored students who have an enrolment voucher or letter of authority from their sponsor should present it at the time of enrolment. If this voucher or letter is not available when enrolling they should complete their enrolment paying their own fees. A refund of fees will be made when the enrolment voucher or letter of authority is subsequently lodged with the Cashier.

What special rules apply if I wish to be considered for admission with advanced standing? If you make application to register as a candidate for any degree or other award granted by the University you may be admitted to the course of study with such standing on the basis of previous attainments as may be determined by the Professorial Board. For complete details regarding "Admission with Advanced Standing" consult the University Calendar.

What happens if I am unable to pay fees at the time of enrolment? If you are unable to pay fees by the due date you may apply in writing to the Deputy Registrar (Student Services) for an extension of time.

Your application must give year or stage, whether full-time or part-time, and the course in which you wish to enrol. State clearly and fully the reasons why payment cannot be made and the extension is sought and lodge your application before the date on which a late fee becomes payable. Normally the maximum extension of time for the payment of fees is one month for fees due in Session 1 and one month from the date on which a late fee becomes payable in Session 2.

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

What happens if I fail to pay the prescribed fees or charges? If you fail to pay prescribed fees or charges or become otherwise indebted to the University and you fail to make a satisfactory settlement of your indebtedness upon receipt of due notice then you cease to be entitled to the use of University facilities. You will not be permitted to register for a further session, to attend classes or examinations, or be granted any official credentials.

You will not be eligible to attend the annual examinations in any subject if any portion of your fees for the year is outstanding after the end of the fourth week of Session 2 (15th August, 1975).

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

Can I transfer from one course to another? To transfer from one course to another you must apply on an application form obtainable from the Admissions Office by 17th January. If your application is successful you are required to comply with the enrolment procedures for the year/stage of the new course and, unless otherwise instructed, you should present the letter granting transfer to the enrolling officer. You should also inform the enrolling officer of the school in which you are enrolled of your intention to transfer.

Can I change my course programme? If you wish to seek approval to substitute one subject for another, add one or more subjects to your programme or discontinue part or all of your programme, you must make application to the Registrar through the Head of the School responsible for the course on forms available from the School office. The Registrar will inform you of the decision. Application to enrol in additional subjects must be submitted by 31st March.

It is emphasized that failure to sit for examinations in any subject in which you are enrolled will be regarded as failure to satisfy the examiners in that subject unless written approval to withdraw without failure has been obtained from the Registrar.

Withdrawal from subjects

Students are permitted to withdraw from subjects without being regarded as having failed, provided they apply by the dates indicated.

First Year Students

- 1 one-session subjects: the end of the eighth week of session;
- 2 double-session subjects: the end of the second week of Session 2.
For the purpose of this rule a first-year student is defined as one who is attending the University for the first time either on a full- or part-time basis and is enrolled in the first year or first stage of a course.

Other Students

- 1 one-session subjects: one calendar month from the beginning of session;
- 2 double-session subjects: the end of the May Recess.

How do I enrol after an absence of twelve months or more? If you have had a leave of absence for twelve months and wish to resume your course you should follow the instructions about re-enrolling given in the letter granting your leave of absence. If you do not fully understand or have lost these instructions, then you should contact the Admissions Office in December of the preceding year or before 17th January of the same year that you wish to resume your course. If you have not obtained leave of absence from your course and have not been enrolled in the course over the past twelve months or more, then you should apply for admission to the course through the Metropolitan Universities Admission Centre before the end of October in the year preceding that in which you wish to resume studies.

Are there any restrictions upon students re-enrolling? The University Council has adopted the following rules governing re-enrolment with the object of requiring students with a record of failure to show cause why they should be allowed to re-enrol and retain valuable class places. They apply to all students other than those enrolled in programmes leading to a higher degree or diploma. It should be noted that these rules are independent of one another in that a student may infringe more than one rule simultaneously. A subject is defined as a unit of instruction identified by a distinctive subject number. At present the Appeal Committee referred to in Rule 8 consists of a Pro-Vice-Chancellor (Chairman), the Chairman of the Professorial Board, and the Member of Council elected by the graduates of the University. The Pro-Vice-Chancellor is Professor J. B. Thornton.

First-year Rule

- 1 i A student enrolled in the first year or first stage of any course, other than course 380, the Medical (MB BS) degree course, shall be required to show cause why he should be allowed to continue the course if he fails more than half the subjects in that year or stage.
- ii A student enrolled in the first year of course 380, the Medical (MB BS) degree course, shall be required to show cause why he should be allowed to continue the course if he fails more than two subjects in that year.
- iii The provisions of paragraphs (i) and (ii) shall be deemed to apply to a student enrolled in the second or later year or the second or later stage of any course who has transferred from another course or institution and who, in the first year of enrolment immediately following transfer, is enrolled in subjects so chosen that half or more are listed in the current University Calendar as first-year subjects.

Repeated-failure Rule

- 2 A student shall be required to show cause why he should be allowed to repeat a subject which he has failed more than once. *Where the subject is prescribed as part of the student's course he shall be required to show cause why he should be allowed to continue that course.* Failure in a deferred examination as well as in the initial examination counts for the purposes of this rule as one failure.

Time Rule—Completion of Years or Stages

- 3 i A full-time student in either course 340, the Arts (BA) degree course, or 403, the Social Work (BSW) degree course, shall be required to show cause why he should be allowed to continue the course if he is unable to complete eight one-session subjects (or the equivalent) by the end of his second year of attendance.
- ii Unless the provisions of paragraph (i) apply, a full-time student shall be required to show cause why he should be allowed to continue a course if he is unable to complete all subjects in the first year of the course by the end of his second year of attendance.
- iii A student in course 380, the Medical (MB BS) degree course, shall be required to show cause why he should be allowed to continue the course if he is unable to complete all subjects in the second year of the course by the end of his third year of attendance and the third year by the end of his fourth year.
- iv A part-time student in course 397, the Science (BSc) degree course, shall be required to show cause why he should be allowed to continue the course if he is unable to complete eight level-one units, including two in mathematics, by the end of his fourth year of attendance and fourteen units, including at least three at level two, by the end of his seventh year.
- v Unless the provisions of paragraph (iv) apply, a part-time student shall be required to show cause why he should be allowed to continue a course if he is unable to complete all subjects in the first two stages of the course by the end of his fourth year of attendance and the third and fourth stages by the end of his seventh year.

Time Rule—Completion of Course

- 4 A student shall be required to show cause why he should be allowed to continue a course which he is unable to complete in the time set down in the following schedule:

Number of years in course	Total years allowed from first enrolment to completion
3	5
4	6

5	8
6	9
7	11
8	12
9	14

Continuation Rule

- 5 i A student enrolled in a course who has transferred with a record of failure from another tertiary institution shall be required to show cause why he should be allowed to continue the course if he fails more than half the subjects in his first year of enrolment immediately following transfer.
- ii A student excluded from a course under the provisions of the Rules who has subsequently been allowed to re-enrol in that course or to transfer to another course shall show cause why he should be allowed to continue the course if he fails one or more subjects in his first year of re-enrolment or transfer.

General Exclusion Rule

- 6 The Vice-Chancellor may, on the recommendation of the Re-enrolment Committee of the Professorial Board, exclude from a course or courses any student who has been excluded from any other course under the provisions of the Rules and whose record at the University demonstrates the student's lack of fitness to pursue such course or courses.

'Showing Cause'

- 7 i A student wishing to 'show cause' must apply for special permission to re-enrol. Application should be made on the form available from the Examinations and Student Records Section and should be lodged with the Registrar.
- ii Any such application shall be considered by the Re-enrolment Committee which shall determine whether the cause shown is adequate to justify the student's being allowed to re-enrol.

Appeal

- 8 i Any student who is excluded by the Re-enrolment Committee from a course and/or subject(s) under the provisions of the Rules may appeal to the Appeal Committee constituted by Council for this purpose. The decision of the Appeal Committee shall be final. In lodging such appeal with the Registrar the student should ensure that a complete statement is furnished of all grounds on which the appeal is based.
- ii The notification to any student of a decision by the Re-enrolment Committee to exclude him from re-enrolling in a course and/or subject(s) shall indicate that the student may appeal against that decision to the Appeal Committee.

- iii The Appeal Committee shall determine the appeal after consideration of the student's academic record and the stated grounds. In exceptional circumstances the Appeal Committee may require the student to appear in person.

Exclusion

- 9 i A student who is required to 'show cause' under the provisions of Rule 1 and either does not attempt to 'show cause' or whose application for special permission to re-enrol does not satisfy the Re-enrolment Committee (or the Appeal Committee on appeal) shall be excluded from re-enrolling in the subject(s) and course on account of which he was required to 'show cause'. Where the subjects are a prescribed part of any other course (or courses) he shall not be allowed to enrol in that course (or courses).
- ii A student who is required to 'show cause' under the provisions of Rule 2 and either does not attempt to 'show cause' or whose application for special permission to re-enrol does not satisfy the Re-enrolment Committee (or the Appeal Committee on appeal) shall be excluded from re-enrolling in any subject he has failed twice. *Where the subject is a prescribed part of the student's course he shall also be excluded from that course.* Where the subject is a prescribed part of any other course (or courses) he shall not be allowed to enrol in that course (or courses).
- iii A student who is required to 'show cause' under one or more of Rules 3-5 and either does not attempt to 'show cause' or whose application for special permission to re-enrol does not satisfy the Re-enrolment Committee (or the Appeal Committee on appeal) shall be excluded from re-enrolling in the course on account of which he was required to 'show cause'.
- iv A student excluded from a course under the provisions of any one or more of paragraphs (i)-(iii) may not enrol in miscellaneous subjects unless he has received the approval of the Admissions Committee of the Professorial Board.

Re-admission after Exclusion

- 10 i An excluded student may apply to the Re-enrolment Committee for re-admission after two academic years.
- ii An excluded student who intends applying for re-admission at a future date may seek advice as to ways in which he may enhance his prospects of re-admission. Such enquiries should be made on the form available from the Examinations and Student Records Section and should be lodged with the Registrar.
- iii An application for re-admission after exclusion should be made on the form available from the Examinations and Student Records Section and should be lodged with the Registrar not

later than 31st August in the year prior to that for which re-admission is sought. A late application will only be accepted at the discretion of the University.

iv An application should include:

- (a) evidence of appropriate study in the subject(s) (or the equivalent) on account of which the applicant was excluded, and
- (b) evidence that the circumstances which were deemed to operate against satisfactory performance at the time of exclusion are no longer operative or are reduced in intensity.

How do I apply for admission to degree or diploma? Applications for admission to a degree or diploma of the University must be made on the appropriate form by 12th September, in a student's final year. Applicants should ensure that they have completed all requirements for the degree or diploma, including industrial training where necessary. Any variation such as cancelling of application in order to proceed to an honours degree or submission of an application following discontinuation of honours programme, must be submitted in writing to the Registrar no later than 30th January.

Fees*

Do I have to pay fees for tuition? No. On 1st January, 1974, fees for tuition were abolished. Other fees and charges remain payable.

What other fees and charges are payable? These include those charges raised to finance the expenses incurred in operating student activities such as the University Union, the Students' Union, the Sports Association and the Physical Education and Recreation Centre. Late fees are charged where a student fails to observe required procedures by the appropriate time. Charges may also be payable, sometimes in the form of a deposit, for the hiring of kits of equipment which are lent to students for their personal use during attendance in certain subjects. Accommodation charges and costs of subsistence on excursions, field work, etc., and for hospital residence (medical students) are payable in appropriate circumstances.

How much is my contribution to student activities and services on campus? All undergraduate students and students taking miscel-

* Fees quoted are current at the time of publication and may be amended by the Council without notice.

laneous subjects (with the exception of External Students) will be required to pay:

University Union†—\$20 entrance fee

Student Activities Fees

University Union†—\$30 annual subscription

Sports Association†—\$4 annual subscription

Students' Union†

Students enrolling in full-time courses—\$10 annual subscription

Students enrolling in part-time courses—\$8 annual subscription

Miscellaneous—\$17 annual fee.

(The miscellaneous fee is used to finance expenses generally of a capital nature relating to student activities. Funds are allocated to the various student bodies for projects recommended by the Student Affairs Committee and approved by the University Council.)

Where applicable, students will also be required to pay \$10 for the Pathology Instrument Kit, refundable on return in satisfactory condition.

The Deputy Registrar (Student Services) may, on application, waive student fees for students who, while enrolled in a degree or diploma course at another University in New South Wales, are given approval to enrol at the University of New South Wales in miscellaneous subjects which will be acceptable for credit towards the degrees or diplomas for which they are enrolled.

How much will textbooks and special equipment (if any) cost? You must allow quite a substantial sum for textbooks. This can vary from \$200 to \$600 depending on the course taken. These figures are based on the cost of new books. The Students' Union operates a second-hand bookshop. Information about special equipment costs, accommodation charges and cost of subsistence on excursions, field work, etc., and for hospital residence (medical students) are available from individual schools.

Are fees charged for examinations? Generally there are no charges associated with examinations; however, two special examination fees are applied:

Examinations conducted under special circumstances—for	
each subject	\$11
Review of examination result—for each subject	\$11

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

What penalties exist for late payment of fees? The following additional charges will be made in 1975 when fees are paid late:

Session 1—First Enrolments

Fees paid on the late enrolment date, 28th February or later but before 3rd March	\$10
Fees paid between 3rd and 14th March	\$20
Fees paid after 14th March with the express approval of the Deputy Registrar (Student Services) and Head of the School concerned	\$40

Session 1—Re-enrolments

Failure to attend enrolment centre during enrolment week 24th to 28th February	\$10
Fees paid between 17th and 31st March	\$20
Fees paid after 31st March where accepted with the express approval of the Deputy Registrar (Student Services)	\$40

Session 2—All Enrolments

Fees paid between 4th and 11th August	\$20
Fees paid thereafter	\$40

Will I receive any refund if I withdraw from a course? Yes. The following rules apply:

- 1 If you withdraw from a course you are required to notify the Registrar in writing.
- 2 Where notice of withdrawal from a course is received by the Registrar before the first day of session a refund of all fees paid will be made. After that time only a partial refund will be made.

Examinations

When are examinations held? Most annual examinations are held in November-December but examinations in many subjects are also held during the mid-year recess.

Provisional timetables indicating the dates and times of examinations and notices of the location of examinations are posted on the central notice boards in the Wallace Wurth Medical School, Biological Sciences Building, the Chancellery, Central Lecture Block, Dalton Building (Chemistry), Main Building (Mining and Physics), outside the Sciences Building and in the Western Grounds Area on 6th May and 23rd September. You must advise the Examinations Unit (Chancellery) of a clash in examinations by 19th May and 3rd October. Final timetables are displayed and individual copies are available for students on 3rd June and 21st October.

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

In the assessment of your progress in University courses, consideration is given to work in laboratory and class exercises and to any term or other tests given throughout the year as well as to the results of written examinations.

How are examination passes graded? Passes are graded: High Distinction, Distinction, Credit and Pass. A Pass Conceded may be granted to a student whose mark in a subject is slightly below the standard required for a pass but whose overall satisfactory performance warrants this concession.

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

When are examination results available? Final examination results will be posted to your term address (which can be altered up to 30th November) or to your vacation address (fill in a form obtainable at the Enquiry Desk, Chancellery, also by 30th November). Results are also posted on School noticeboards and in the foyer of the Sir John Clancy Auditorium. No examination results are given by telephone.

Can examination results be reviewed? Examination results may be reviewed for a fee of \$11 a subject, which is refundable in the event of an error being discovered. This review consists mainly of ensuring that all questions attempted have been marked and checking the total of the marks awarded. Applications for review must be submitted on the appropriate form to the Examinations and Student Records Section together with the necessary fee by the following dates:

Annual examinations held in	
November/December, 1974	Friday, 10th January, 1975
Deferred examinations held in	
January/February, 1975	Tuesday, 25th February, 1975
Annual examinations held in	
November/December, 1975	Friday, 9th January, 1976
Deferred examinations held in	
January/February, 1976	Tuesday, 24th February, 1976

Are allowances made if students are sick before or during an examination? A student who through serious illness or other cause outside his control is unable to attend an examination is required to bring the

circumstances (supported by a medical certificate or other evidence) to the notice of the Registrar *not later than seven days after the date of the examination*, and may be required to submit to medical examination.

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

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

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

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

How are examinations conducted? Examinations are conducted in accordance with the following rules and procedure:

- 1 Candidates are required to obey any instruction given by an examination supervisor for the proper conduct of the examination.
- 2 Candidates are required to be in their places in the examination room not less than ten minutes before the time for commencement.
- 3 No bag, writing paper, blotting paper, manuscript or book, other than a specified aid, is to be brought into the examination room.
- 4 No candidate shall be admitted to an examination after thirty minutes from the time of commencement of the examination.
- 5 No candidate shall be permitted to leave the examination room before the expiry of thirty minutes from the time the examination commences.
- 6 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.
- 7 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.

- 8 Smoking is not permitted during the course of examinations.
- 9 All answers must be in English unless otherwise directed. Foreign students who have the written approval of the Officer-in-Charge of Examinations may use standard translation dictionaries.
- 10 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.

Under what circumstances are deferred examinations granted?
Deferred examinations may be granted in the following cases:

- 1 When a student through illness or some other acceptable circumstance has been prevented from taking the annual examination or has been placed at a serious disadvantage during the annual examinations.
- 2 To help resolve a doubt as to whether a student has reached the required standard in a subject.
- 3 To allow a student by further study to reach the required standard in a subject.
- 4 Where a student's progression or graduation is inhibited by his failure in one subject only, a deferred examination may be granted notwithstanding his failure otherwise to qualify for this concession.

In the Faculties of Arts, Commerce and Law special circumstances apply in the granting of deferred examinations. Details in each circumstance are given in the section *Faculty Information* in the respective handbooks for these faculties, or in Section A of the University Calendar.

Deferred examinations must be taken at the centre at which the student is enrolled, unless he has been sent on compulsory industrial training to a remote country centre or interstate. In this case the student must advise the Registrar, on a form available from his school or the Enquiry Desk, the Chancellery, of relevant particulars, before leaving for his destination, in anticipation that deferred examination papers may have to be forwarded to him. Normally, the student will be directed to the nearest University for the conduct of the deferred examination.

Can I buy copies of previous examination papers? Yes—for 5c each from the Union Shop in the University Union.

Student Conduct on Campus

Is there a detailed code of rules related to the general conduct of students? No. The University has not considered it necessary to formulate a detailed code of rules relating to the general conduct of students, beyond prohibiting gambling on the campus and smoking during lectures, at examinations or in the library.

However, now that you have become a member of the University you should understand that this involves an undertaking on your part to observe its rules, by-laws and other requirements, and to conduct yourself at all times in a seemly fashion.

What are the rules related to attendance at classes? You are expected to be regular and punctual in attendance at all classes in the course or subject in which you are enrolled. All applications for exemption from attendance at lectures or practical classes must be made in writing to the Registrar.

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

Applications for exemption from lectures (leave of absence) should be addressed to the Registrar and, where applicable, should be accompanied by a medical certificate. If examinations have been missed, state this in your application.

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

If you attend less than eighty per cent of your possible classes, you may be refused permission to sit for the examination in that subject.

Why is my University Union card important? All students are issued with a University Union membership card. Your card must be carried during attendance at the University and shown on request.

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

The card must be presented when borrowing from the University libraries, when applying for travel concessions and when notifying a change of address. It must also be presented when paying fees on

re-enrolment each year when it will be made valid for the year and returned. Failure to present the card could result in some inconvenience in completing re-enrolment.

If you lose your Union card it is important to notify the University Union as soon as possible.

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

Why should I inform the University if I change my address? If you change your address you should notify the Student Records Section of the Registrar's Division as soon as possible. Failure to do this could lead to important correspondence not reaching you. The University cannot accept responsibility if official communications fail to reach students who have not notified their change of address. A Change of Address Advice Form is available at Faculty and School offices and at the Enquiry Counters on the Ground Floor of the Chancellery Building.

How are student records kept up to date? All students will receive enrolment details forms by 29th April and 1st September. It is not necessary to return these forms unless any information recorded thereon is incorrect. Amended forms must be returned to the Examinations and Student Records Section by 13th May and 15th September respectively. Amendments notified after the closing date will not be accepted unless exceptional circumstances exist and approval is obtained from the Registrar. Where a late amendment is accepted, a late fee of \$8 will be payable. Amended forms returned to the Registrar will be acknowledged in writing within fourteen days.

Is there any rule related to the ownership of students' work? Yes. 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 you as part of your courses, or submitted for any award or competition conducted by the University.

Can I get a permit to park on campus? Because of the limited amount of parking space available, only the following categories of students may apply for a permit: motor cycle owners (annual fee \$3.90); higher degree students (limited issue, annual fee \$7.80);

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

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

Further Information

Where can I get further information concerning courses, admission requirements, scholarships and enrolment procedure?

General

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

Admissions Office

The Admissions Office provides students with information concerning courses, admission requirements, scholarships and enrolment procedure.

It will receive applications from students who wish to defer or resume courses of study, to transfer from one course to another, or seek any concession in relation to a course in which they are enrolled.

These applications should, wherever possible, be lodged before the beginning of the academic year in which the concession is to apply.

Students in doubt as to whether an application is necessary to cover their own particular situation should enquire at the Admissions Office.

The Admissions Office is located in the Chancellery on the upper campus. Office hours are from 9 a.m. to 1 p.m. and 2 p.m. to 5 p.m. Monday to Friday. An evening service is provided during the enrolment period.

Notices

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

Appeals

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

INTRODUCTION

The Faculty of Professional Studies which was originally the Board of Vocational Studies, changed its name last year to the Board of Professional Studies, and achieved full faculty status in 1975. Its purpose is essentially the teaching and examination of subjects concerned with certain forms of professional training, and it consists of the Schools of Education, Health Administration, Librarianship, Social Work, and the Department of Industrial Arts.

Students since 1971 have had three elected representatives on the Faculty. Members of the Faculty are aware of the contribution student members can make to the activities of the Faculty and they welcome students as observers at their meetings.

This handbook provides general information concerning the requirements for admission, enrolment and re-enrolment, as well as conditions for the award of degrees, course structures, subject descriptions and the textbook requirements. It is important that students become well acquainted with the information presented here, and if there is any difficulty they should consult the University's Admissions Office (Ground Floor, Chancellery) or their School Office.

A. H. WILLIS
PRO-VICE-CHANCELLOR
FACULTY OF PROFESSIONAL STUDIES

FACULTY OF PROFESSIONAL STUDIES

PRO-VICE-CHANCELLOR—Professor A. H. Willis

CHAIRMAN—Professor G. R. Palmer

SCHOOL OF EDUCATION

PROFESSOR OF EDUCATION AND HEAD OF SCHOOL

L. M. Brown, MA MEd Syd., PhD Lond.

PROFESSOR OF EDUCATION

D. J. Drinkwater, MA Syd., MA PhD Lond.

PROFESSOR OF SCIENCE EDUCATION AND DIRECTOR OF SCIENCE TEACHERS' COURSES

A. A. Hukins, MScDipEd Syd., PhD Alta., MACE.

SENIOR LECTURER

P. H. Meade, MA LaT., BSc BEd Qld.

LECTURERS

R. J. Barry, BSc N.S.W., BA DipEd Syd., MSc Macq.

R. M. Bibby, MA Otago

Rae M. Boyd, MA PhD Otago

Patricia Davies, BA CUNY, MSc Lond.

C. J. Field, MA Syd.

J. Fitzgerald, BADipEd Syd., LittB N.E., MA Macq.

C. F. Gauld, BSc DipEd PhD Syd.

C. K. Harris, BA MEd Syd.

B. C. Newman, MSc PhD Syd.

Shelley Phillips, BA Melb., PhD Syd.

Shirley L. Smith, BA PhD Syd.

J. Sweller, BA PhD Adel.

F. E. Trainer, BA Syd.

SENIOR ADMINISTRATIVE OFFICER

Jane Wholohan, BA DipEd Syd.

ADMINISTRATIVE ASSISTANT

Kathleen M. Briese, BA DipEd N.E.

Staff Seconded from the New South Wales Department of Education

LECTURERS

G. J. Forth, BA LittB N.E.

D. C. Geddes, BCom DipEd BEd Melb.

M. J. Gunnourie, BSc DipEd Syd.

P. D. Henderson, BSc DipEd Syd.

M. G. Khamis, BA *N.E.*
 P. T. Kitley, BA DipEd BEd *N.E.*
 Yvonne A. Larsson, BA *Syd.*
 Judith MacKinolty, BA *Melb.*, MA *Macq.*
 H. M. Mendham, BA *N.E.*
 H. Plunkett, BA *Syd.*
 J. J. Shelley, BEc *Syd.*
 K. V. Swinson, BA *N.E.*
 K. E. Wheeler, BA *N.E.*

SCHOOL OF HEALTH ADMINISTRATION

PROFESSOR AND HEAD OF SCHOOL

G. R. Palmer, BSc *Melb.*, MEc *Syd.*, PhD *Lond.*, FSS, FHA

ASSOCIATE PROFESSOR

J. C. H. Dewdney, BA MB BS *Melb.*, DPH *Lond.*, FACMA, MFCM, MACE

SENIOR LECTURERS

Erica Bates, BA DipSocStud *Syd.*, PhD *N.S.W.*
 J. R. B. Green, ARIBA, ARAIA, AADipl

LECTURERS

S. S. W. Davis, LLM *Syd.*
 S. J. Duckett, BEc *A.N.U.*, MHA *N.S.W.*
 C. Grant, MA *Oxon.*, AHA

TEACHING FELLOW

Chloe Refshauge, BA *Macq.*

ADMINISTRATIVE ASSISTANT

Audrey Ferguson, BA DipSocStud *Syd.*

HONORARY ASSOCIATES

R. L. Thomas, BCom *Melb.*, FHA, FCIS, AASA
 T. J. Wood, MB BS *Melb.*, MHA *N.S.W.*, FRACP, FACMA, AHA

DEPARTMENT OF INDUSTRIAL ARTS

ASSOCIATE PROFESSOR

L. M. Haynes, BA Med *Syd.*, FRSA, FBPsS, FAIM, MACE

LECTURER

K. A. Lodge, BE *Syd.*, SAEA

SENIOR INSTRUCTOR

H. E. Larsen, DipDesign *Copenhagen*

PROFESSIONAL OFFICER

Janice M. Waddell, BA *Melb.*

SCHOOL OF LIBRARIANSHIP**PROFESSOR OF LIBRARIANSHIP AND HEAD OF SCHOOL**

Vacant

SENIOR LECTURER

Carmel Maguire, BA *Qld.*, MA *A.N.U.*, ALAA

LECTURERS

Jennifer L. Affleck, BA *Syd.*, DipLib *N.S.W.*, ALAA

A. M. Hall, BA DipLib *N.S.W.*

J. R. Nelson, MA *Syd.*, ALAA

P. Orlovich, MA DipEd *Syd.*, MLib *N.S.W.*, ALAA

TUTORS

Merilyn Bryce, BA *Syd.*, DipLib *N.S.W.*

Patricia Byrne, BA *N.E.*, ALAA

Melanie Seymour, BA DipEd *Syd.*, DipLib *N.S.W.* ALAA

ADMINISTRATIVE ASSISTANT

P. F. Kowald, BA DipEd *Syd.*

HONORARY ASSOCIATE

Wilma Radford, BA MEd *Syd.*, BS *Col.*, FLAA

SCHOOL OF SOCIAL WORK**PROFESSOR OF SOCIAL WORK AND HEAD OF SCHOOL**

R. J. Lawrence, BA DipSocSc *Adel.*, MA *Oxon.*, PhD *A.N.U.*

SENIOR LECTURER

G. Audrey Rennison, MA *Camb.*, CertSocSci&Admin *L.S.E.*

LECTURERS

Dee Barlow, BA MSW *Calif.*

Elspeth Browne, BA DipSocStud *Syd.*

Claire Bunday, BA *N.S.W.*, DipSocStud *Syd.*

C. M. R. Cornwell, BA BSocStud *Qld.*

June Huntington, BA *Lond.*

Margaret T. Lewis, BSocStud *Qld.*, MSW *N.S.W.*

C. J. Marshall, BA DipSocWk DipCrim *Syd.*

Bethia C. Stevenson, BA DipSocStud *Melb.*

Pamela M. Thomas, BA DipSocStud *Syd.*, MS *Col.*

SENIOR TUTOR

Jennifer Wilson, BA BSocStud *Syd.*

TUTORS

Caroline Bray, BA DipSocStud *Syd.*

Susan M. Burgoyne, BA *N.E.*, DipSocWk *Syd.*

Jane Fishburn, BSW *N.S.W.*

ADMINISTRATIVE OFFICER

Patricia McPaul, BA DipSocWk *Syd.*

FACULTY INFORMATION

FACULTY OF PROFESSIONAL STUDIES ENROLMENT INFORMATION

TIMETABLE

Science (Education)

Students will be re-enrolled in Unisearch House as follows:

Year II Wednesday, 26th February
9.30 a.m. to 12.30 p.m.

Years III and IV Tuesday, 25th February
9.30 a.m. to 12.30 p.m.

Industrial Arts Course

Students in the BSc or BSc (Tech) degree course Industrial Arts should attend *Hut 34, Western Grounds Area*, for re-enrolment as follows:

All re-enrolling students	Wednesday, 26th February
	10.00 a.m. to 12.30 p.m.
	2.00 p.m. to 4.30 p.m.
	6.00 p.m. to 8.00 p.m.

Social Work Course*

Students in the Bachelor of Social Work degree course should attend for re-enrolment at the **School of Social Work**, in accordance with the following timetable:

Full-time Course

Year II	Tuesday, 25th February
Surnames A to K	9.30 a.m. to 12.30 p.m.
Surnames L to Z	2.00 p.m. to 5.00 p.m.

Year III	Wednesday, 26th February
Surnames A to K	9.30 a.m. to 12.30 p.m.
Surnames L to Z	2.00 p.m. to 5.00 p.m.

Year IV	Thursday, 27th February
Surnames A to J	9.30 a.m. to 12.30 p.m.
Surnames K to Z	2.00 p.m. to 5.00 p.m.

* Since personal qualities are of particular significance in the practice of social work, it has been found useful for intending students to be interviewed by a member of staff in the School of Social Work at some stage prior to enrolment.

Re-enrolling Students at all stages

Friday, 28th February
9.30 a.m. to 12.30 p.m.
2.00 p.m. to 5.00 p.m.

Friday, 28th February
9.30 a.m. to 12.30 p.m.
2.00 p.m. to 5.00 p.m.

Students who fail to attend personally will be required to attend one of the late enrolment sessions (see relevant section).

In exceptional cases due to illness or absence interstate or overseas, students may seek written permission from the enrolling officer of the School of Social Work to attend a late enrolment session without penalty, provided such permission is granted before Tuesday 25th February 1975.

Full-time Course

Students will be re-enrolled in Room G37A, the Chancellery (South Wing) on Friday, 28th February at 2.00 p.m.

Industrial Arts

Hut 34
Western Grounds Area
(Northern end)

Social Work

School of Social Work

Science (Education)

**Unisearch House
221 Anzac Parade
(across from Main
Campus)**

Health Administration

Room G37A
the Chancellery

Industrial Arts

**Hut 34,
Western Grounds Area,
(Northern End)
5.00 p.m. to 7.00 p.m.**

Social Work

The School of Social Work
5.00 p.m. to 7.00 p.m.

Science (Education)

**Room 41,
Building M,
Western Grounds Area
5.00 p.m. to 7.00 p.m.**

Health Administration	School Office Room LG29, The Chancellery, (South Wing) 10.00 a.m. to 12.00 noon
Formal Masters' Courses and Graduate Diploma Courses	At Office of appropriate School

MASTER AND GRADUATE DIPLOMA COURSES

Diploma in Education (DipEd)

Surnames A to L	Wednesday, 12th February 10.00 a.m. to 12.30 p.m.
Surnames M to Z	2.00 p.m. to 4.30 p.m.
Lecture Hall 100	
Western Grounds Area	

Master of Education (MEd)

Room 26	Wednesday, 19th February 3.00 p.m. to 5.00 p.m.
Building M	
Western Grounds Area	

Master of Health Administration (MHA)

Room G31	Friday, 28th February 10.00 a.m. to 4.00 p.m.
The Chancellery	

Health Administration (GradDip)

Room G37	Friday, 28th February 2.00 p.m.
The Chancellery	

Industrial Design (GradDip)

Hut 34	Friday, 28th February 6.00 p.m. to 7.30 p.m.
Western Grounds Area	

Master of Librarianship, Diploma in Librarianship and Diploma in Archives Administration

Office of the School of Librarianship	Wednesday, 26th February 9.30 a.m. to 12.00 noon
Hut 12	2.00 p.m. to 7.00 p.m.

Master of Social Work (MSW)

School of Social Work	Friday, 28th February 2.00 p.m. to 5.00 p.m.
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STUDENT ASSOCIATIONS

Appropriate Faculty Associations are open to students in the various courses. Full details are available in other Faculty handbooks, the following list merely indicating the range.

The Commerce Society; The Arts Faculty Society; Dramsoc; The Historical Society; The Politics Club; The French Society; Socratic Society; The Julian Society.

Social Work Students' Association

The Association's primary function is that of a communication channel operating not only among the students themselves but also between students and staff of the School. Through functions and informal gatherings professional aspects of social work, specific grievances and the course itself may be discussed. Students become members of the Association automatically on admission to the School of Social Work, and elect an executive committee which maintains a formal liaison with the School's staff. A regular newsletter, "Catalyst", is produced.

Representatives of the Association attend meetings of the Australian Association of Social Workers (N.S.W. Branch) and the Council of Social Services of N.S.W., while contact with student bodies in other universities is maintained through the Federation of Australian Social Work Students Association. Further details may be obtained from the Social Work students notice board and the Enquiries Office of the School of Social Work.

Industrial Arts Society

The Industrial Arts Society aims at providing opportunities for students to meet staff and fellow students through both social functions and educational activities such as films, lectures, seminars and visits to promote awareness of the opportunities available in the field of Industrial Arts.

Membership is open to all students of the Department of Industrial Arts including postgraduate students. The Annual General Meeting is held in March. Further details regarding membership and activities may be obtained by contacting the Secretary of the Society, C/- Department of Industrial Arts, Western Grounds Area.

SCHOLARSHIPS

The Health Commission of New South Wales, Red Cross and other bodies also from time to time offer scholarships for social work students in later years.

Scholarships in Health Administration

A number of scholarships and cadetships are available to students enrolling in courses offered by the School of Health Administration. Details are available from the Head of the School.

PRIZES

<i>Faculty/School</i>	<i>Donor/Name of Prize</i>	<i>Value</i>	<i>Awarded for</i>
General	Sydney Technical College Union Award.	\$ 50.00	Leadership in the development of student affairs and academic proficiency throughout the course.
	University of New South Wales Alumni Association	Statuette	Achievement for community benefit—students in their final or graduating year.
School of Health Administration	Rupert Fanning Memorial	25.00	Bachelor of Health Administration.

THE FACULTY

The Faculty of Professional Studies comprises the Schools of Education, Health Administration, Librarianship and Social Work, as well as the Department of Industrial Arts. Undergraduate courses within the Faculty's responsibility include the Bachelor of Science (Education) course, and the courses in health administration, industrial arts and social work.

Originally named the Board of Vocational Studies, and in 1974 the Board of Professional Studies, the Faculty achieved full faculty status from the beginning of 1975.

It should be noted that any statement in this handbook referring to "the Board of Vocational Studies" or "the Board of Professional Studies" now applies to the Faculty of Professional Studies.

CONDITIONS FOR THE AWARD OF GRADUATE DIPLOMAS

Conditions for the Award of Graduate Diplomas in the Board of Professional Studies

1. An application for admission to a graduate diploma course in the Board of Professional Studies shall be made on the prescribed form which should be lodged with the Registrar at least two full calendar months before the commencement of the course.
2. An applicant for admission to a graduate diploma course shall be—
 - (a) a graduate of the University of New South Wales or other approved university,
 - (b) a person with other qualifications as may be approved by the Higher Degree Committee of the Board of Professional Studies (hereinafter referred to as the Committee).
3. Notwithstanding clause (2) above, the Committee may require an applicant to take such other pre-requisite or concurrent studies and/or examinations as it may prescribe.
4. Every candidate for a graduate diploma shall be required to undertake the appropriate course of study, to pass any prescribed examinations, and if so laid down in the course, to complete a project or assignment specified by the Head of the School. The format of the report on such project or assignment shall accord with the instructions laid down by the Head of the School.
5. To qualify for the award of the graduate diploma a candidate shall:
 - (i) complete a one-year full-time course within four consecutive sessions, *or*
 - (ii) complete a two-year part-time course within six consecutive sessions.
6. In exceptional cases the Committee may extend the period in which a candidate must complete his graduate diploma course.
7. An approved applicant shall be required to pay the fee for the course in which he desires to register. Fees shall be paid in advance.

SCHOOL OF EDUCATION

The School of Education offers a four-year Bachelor of Science (Education) degree course; a one year full-time course for graduates leading to the Diploma in Education; and also a course leading to the degree of Master of Education.

THE BACHELOR OF SCIENCE (EDUCATION) DEGREE COURSE

The Bachelor of Science (Education) degree course (BSc(Ed)) is designed primarily for the preparation of teachers of science in secondary schools.

One feature of the course is the breadth of study over a range of science subjects. The course also provides depth by requiring that at least one of the science subjects be taken to a minimum of seven units. The science subjects studied are mostly subjects available in the Science Course. Another feature is the study of education subjects along with science subjects in the second, third and fourth years. Two stages of History and Philosophy of Science are included in the course structure to give an understanding of the nature of science and of its relationship to society.

Honours

The BSc(Ed) may be awarded with honours. The grade of honours is determined by the quality of work performed throughout the course which includes the fourth year honours research seminar and thesis. The classes and divisions of honours are: Class 1, Class 2 (Division 1), Class 2 (Division 2).

Applications for admission to the honours programme should be made in writing to the Head of School on the completion of third year.

Progression

Progression in the Bachelor of Science (Education) course is permitted by subject. However:

- (1) Course programmes will continue to be stated and timetabled by year and it cannot be guaranteed that non-standard programmes can be completed in the minimum number of years. A non-standard programme is one which involves enrolment in subjects or units from more than one year or comprises subjects which do not normally constitute a particular year's course work.

- (2) Students must satisfy the rules governing re-enrolment; in particular, these require all subjects of the first year to be completed by the end of two years of full-time (or four years of part-time) study.
- (3) Before enrolling in any subject a student must have satisfied the relevant prerequisite and co-requisite requirements unless permission to vary this has been granted by the Head of the appropriate School.
- (4) Only in exceptional circumstances will a student be permitted to enrol for more than twenty-four hours of course work per week.
- (5) Notwithstanding the above, before a student can enrol in any non-standard programme, such programme must meet with the approval of the Head of School of Education.

The Science Component

The study of science subjects constitutes a principal part of the course. In the choice of these subjects the following requirements apply:

- (1) there shall be a total of at least 19 science units
- (2) there shall be a major science strand consisting of at least seven units from one of the areas Physics, Chemistry, Biology, Geology.
- (3) the subjects 1.001 or 1.011, 2.001, 10.001 or 10.011 or 10.021, 17.011, 17.021 and 25.111 shall be included.
- (4) at least two units in the *List of Science Subjects* shall be selected from areas other than the area of the major strand.
- (5) under special circumstances a student may select a science unit other than those in *List of Science Subjects* with approval of the Head of School.

406. SCIENCE (EDUCATION)—FULL-TIME COURSE

Bachelor of Science (Education)

YEAR 1		Hours per week for 2 sessions	
		Lec.	Lab./Tut.
1.011	Higher Physics I or	3	3
1.001	Physics I		
2.001	Chemistry I	2	4
10.001	Mathematics I or	4	2
10.011	Higher Mathematics I or		
10.021	Mathematics IT†		
17.011	Biology of Mankind and	2	4
17.021	Comparative Functional Biology		
25.111	Geoscience I	2	4
		11	13

†Students taking 10.021 Mathematics IT will not be allowed to proceed beyond First Year Physics.

YEAR 2						Hours per week
17.011	Biology of Mankind <i>and</i>	..	..	..	..	6
17.021	Comparative Functional Biology	..	..	..	..
	<i>or</i>					
25.111	Geoscience I	..	..	..	..	12
Four other Science units						3
58.512	Introduction to Education*	..	..	..	..	21
						<hr/>

* Directed observations in schools are additional to this time.

YEAR 3

Three Science units						9
58.513	Education IA	..	..	..	..	4½
58.523	Education IB	..	..	..	..	5*
62.001	History & Philosophy of Science I	..	..	..	..	3
						<hr/>
						21½
						<hr/>

* School experience including teaching practice is additional to these hours.

YEAR 4

Two Science units						6
58.514	Education IIA	..	..	..	..	4
58.524	Education IIB	..	..	..	..	6*
58.554	Research seminar and thesis†	..	..	..	..	2
62.002	History and Philosophy of Science II	..	..	..	..	3
						<hr/>
						21
						<hr/>

* School experience including teaching practice is additional to these hours.

† Honours students only.

List of Science Subjects

PHYSICS AREA

1.112A	Electromagnetism
1.112B	Modern Physics
1.112C	Thermodynamics and Mechanics
1.113A	Wave Mechanics and Spectroscopy
1.113B	Electromagnetic Fields and Physical Optics
1.113C	Statistical Mechanics and Solid State
1.113D	Astrophysics and Nuclear Physics
1.113Z	Techniques and Design for Experimental Physics
1.133A	Electronics
1.143A	Biophysics
1.143B	Solid State Devices and Electronics
1.143D	Conceptual Framework of Physics
1.143E	Electrical and Optical Properties of Solids
1.212A	Geometrical Optics
1.212B	Electronics
1.212G	An Introduction to Solids

NOTE: Higher Physics units may also be selected.

CHEMISTRY AREA**Level II Units ****

- 2.002A Physical Chemistry
- 2.042C Inorganic Chemistry
- 2.002D Analytical Chemistry
- 2.002B Organic Chemistry

Level II/III Units††

- 2.003H Molecular Spectroscopy & Structure
- 2.003J Fundamentals of Biological Chemistry
- 2.013A Introductory Quantum Chemistry
- 2.003E Nuclear & Radiation Chemistry
- 2.003K Solid State Chemistry

Level III Units

- 2.003L Applied Organic Chemistry
- 2.003A Physical Chemistry
- 2.003C Inorganic Chemistry
- 2.003D Instrumental Analysis
- 2.003B Organic Chemistry
- 2.003M Organometallic Chemistry
- 2.033A Physical Chemistry of Macromolecules
- 2.043A Environmental Chemistry
- 2.023A Chemical Physics
- 2.013L Chemistry and Enzymology of Foods
- 2.053A Chemical Kinetics and Reaction Mechanisms
- 2.013M Thermochemistry
- 2.023L Biological and Agricultural Chemistry
- 2.063A Advanced Molecular Spectroscopy
- 2.013C Advanced Inorganic Chemistry
- 2.013D Advanced Analytical Chemistry
- 2.013B Synthesis of Complex Organic Molecules
- 2.023B Natural Product Chemistry
- 2.033L Applied Organic Chemistry (double unit)
- 2.043L Chemistry and Enzymology of Foods (double unit)
- 2.053L Biological and Agricultural Chemistry (double unit)

** The levels referred to are levels in the Science Course.

†† Level II/III units are counted as level III units for degree purposes but may be done in second or third year.

NOTE:

1. Not more than two level II/III units may be studied unless at least one level II unit is also studied.
2. Not more than one of the double units 2.033L, 2.043L, 2.053L may be credited for degree purposes in the BSc(Ed) Course.

BIOLOGY AREA

- 17.012 General Ecology
- 41.101A Chemistry of Biologically Important Molecules
- 41.101B Metabolism
- 41.101C Control Mechanisms
- 41.102A Biochemistry of Macromolecules and Cell Biochemistry
- 41.102B Metabolic Pathways and Control Mechanisms
- 43.101A Genetics
- 43.111 Plant Evolution and Ecology
- 43.121 Plant Physiology
- 43.102 Advanced Genetics

- 43.112 Plant Taxonomy
- 43.122 Advanced Plant Physiology
- 43.132 Mycology
- 43.142 Environmental Botany
- 43.152 Plant Pathology
- 44.101 Introductory Microbiology
- 44.102 General Microbiology
- 44.122 Immunology
- 45.311 Biometry
- 45.321 Invertebrate Zoology
- 45.331 Vertebrate Zoology
- 45.341 Field Ecology
- 45.302 Marine Ecology
- 45.322 Animal Behaviour
- 45.332 Comparative and Environmental Physiology
- 45.342 Developmental and Reproductive Biology
- 45.362 Vertebrate Zoogeography
- 45.382 Advanced Invertebrate Zoology
- 45.391 Insect Structure and Classification
- 45.401 Insect Physiology
- 45.411 Applied Entomology
- 73.011A Principles of Physiology*

* Double unit, 6 hours per week for both sessions.

MATHEMATICS AREA

- 10.111A Pure Mathematics II—Linear Algebra
or
- 10.111B Pure Mathematics II—Analysis
or
- 10.211A Applied Mathematics II—Mathematical Methods
or
- 10.331 Statistics SS

GEOLOGY AREA

- 25.502 Geology II
- 25.503 Geology III
- 25.504 Geology IV

556. GRADUATE DIPLOMA IN EDUCATION DipEd

Since 1966 a course leading to the award of the Diploma of Education (DipEd) has been available to graduates from the University or other approved universities. The one-year full-time Graduate Diploma course is designed to give professional training in education to postgraduate students, but it is also possible for it to be taken over two years, and in some circumstances over three years, on a part-time basis. The course includes lecture-

seminars and associated group activities, individual assignments, observations of teaching methods and practice teaching.

Conditions for the award of the graduate diploma are published above.

		Hours per week for two sessions*
58.080	Education A	5
58.081	Education B	5
58.082	Education C	9
		<hr/>
		19

* A weekly average for the two sessions.

Re-enrolment in Diploma in Education

A candidate who fails in half or more of his subjects will not be permitted to re-enrol unless the Higher Degree Committee of the Board of Professional Studies grants permission because it considers the circumstances to be exceptional.

Further, a candidate who fails in both Education A and Education B, and whose overall performance is considered unsatisfactory by the Committee will be required to repeat all components. In exceptional cases the Committee may grant permission to re-enrol in only those components failed.

MASTER OF EDUCATION

The conditions for the award of the Master of Education degree are set out below. The course is designed for educationists who wish to study education at an advanced level and may be taken at two levels—pass and honours.

The Pass degree is generally taken by formal course work in four subjects together with a minor thesis or project. In approved cases students may take formal course work in two subjects only, and follow these with a major thesis. Applicants for registration for the honours degree are normally expected to satisfy in two formal courses at a suitable standard, and to submit a major thesis. Alternatively students without an honours degree in Education (or other relevant subject) may apply for registration after completing two formal courses at a suitable standard. Such successful applicants are expected to take two further formal courses, again at a suitable standard, and to submit a major thesis.

No student is permitted to proceed with experimental research in education unless he has included a formal course in Educational Research I. (This rule is waived only when the student has evidence of alternative qualifications or experience.)

299. MASTER OF EDUCATION
(AT HONOURS LEVEL, BY RESEARCH)
MEd

891. MASTER OF EDUCATION
(BY FORMAL COURSE WORK)
MEd

	Hours per week
58.201G Comparative Education	2
58.202G Educational Planning and Administration	2
58.203G Educational Psychology	2
58.204G Educational Theory in the Twentieth Century ..	2
58.206G History of Education	2
58.207G Philosophy in Education	2
58.208G Child Growth and Development	2
58.210G Science Education	2
58.211G Sociology of Education	2
58.212G Mathematics Education	2
58.213G Educational Research I	2
58.214G Educational Research II	2
58.215G Social Sciences Education	2

Conditions for the Award of Degree of Master of Education

1. An application to register as a candidate for the Degree of Master of Education shall be made on the prescribed form which shall be lodged with the Registrar at least one full calendar month before the first session of the year for which the candidate requires to be registered.
2. An applicant for registration shall—
 - (i) hold a degree of the University of New South Wales or other approved University,
 - (ii) hold the Diploma in Education of the University of New South Wales or other approved university or possess qualifications accepted by the Higher Degree Committee of the Board of Vocational Studies (hereinafter referred to as "the Committee") as equivalent, and
 - (iii) have had at least one year's practical experience in some branch of education acceptable to the Committee.
3. In special circumstances a person may be permitted to register as a candidate for the degree if he submits evidence of such academic and professional attainments as may be approved by the Committee.
4. An approved applicant shall register in one of the following categories:

- (i) student in full-time attendance at the University;
 - (ii) student in part-time attendance at the University;
 - (iii) student working externally to the University;
- and shall pay such fees as may be determined from time to time by the Council.

5. The degree shall be awarded in two grades, namely the Pass degree and the degree with Honours. There shall be two classes of Honours, namely Class I and Class II.

6. *Pass Degree*

- (i) Notwithstanding any other provisions of the conditions for registration, the Committee may require an applicant to demonstrate his fitness for registration for the pass degree by carrying out such work and passing such examinations as the Committee itself may determine.
- (ii) The programme for the pass degree shall include four formal courses in education and the submission of a report on a topic approved by the Committee, but in exceptional cases, and at the discretion of the Higher Degree Committee, the number of formal courses required may be reduced by either one or two.
- (iii) No student shall be considered for the award of the degree until the lapse of two sessions for a full-time student, or four sessions for a part-time or external student, from the date on which registration becomes effective. A student taking the Pass degree course on a full-time basis shall be required to complete it within four sessions, and one taking it part-time or working externally within eight sessions. Extension beyond these periods shall be granted only with the approval of the Committee.
- (iv) Each report as provided for in para. 6 (iv) shall have two examiners approved by the Committee.

7. *Honours Degree*

- (i) An applicant for registration for the Honours degree of Master of Education shall have been admitted to a Bachelor's degree in an approved university by a school or department of education, or to a degree of any other school or department considered appropriate by the Committee, at a standard not below second class Honours.
- (ii) A student who does not satisfy the conditions for registration as provided in para. 7 (i) may apply for registration as an Honours candidate on completion of at least two of the formal courses provided for the Pass degree of Master of Education, at a standard approved by the Committee.

- (iii) Notwithstanding any other provisions of these conditions the Committee may, on the recommendation of the Head of the School, require an applicant to demonstrate fitness for registration as a candidate for the Honours degree by carrying out such work and passing such examinations as the Committee may determine.
 - (iv) A student satisfying conditions for registration provided in para. 7 (i) shall be required to pass, at a standard approved by the Committee, two of the formal courses provided for the pass degree of Master of Education except that in special circumstances he may be granted exemption from this requirement.
 - (v) A student satisfying conditions for registration provided in para. 7 (ii) shall complete, at a standard approved by the Committee, a total of four such formal courses including the number passed prior to his registration as an Honours student.
 - (vi) No student shall proceed with experimental research in education unless he has included a formal course in 58.213G Educational Research I, or has such other qualifications or experience as the Committee considers appropriate.
 - (vii) Every candidate for the Honours degree shall submit a thesis embodying the results of an original investigation. He shall 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.
 - (viii) For each candidate submitting a thesis for the Honours degree there shall be at least two examiners appointed by the Professorial Board on the recommendation of the Committee, one of whom shall, if possible, be an external examiner.
 - (ix) No student shall be considered for the award of the degree until the lapse of four sessions for a full-time student, or six sessions for a part-time or external student, from the date on which registration becomes effective. A student taking the Honours degree course on a full-time basis shall be required to complete it within four sessions, and one taking it part-time or working externally within eight sessions. Extension beyond these periods shall be granted only with the approval of the Committee.
8. Every candidate who submits a thesis, for either an Honours or a Pass degree, shall submit three copies of the thesis in a form which complies with the requirements of the University for the preparation and submission of higher degree theses.

9. It shall be understood that the University retains the three copies of the thesis submitted for examination and is free to allow the thesis to be consulted or borrowed. Subject to the provisions of the Copyright Act, 1968, the University may issue the thesis in whole or in part in photostat or microfilm or other copying medium.

SCHOOL OF HEALTH ADMINISTRATION

The School of Health Administration, which was founded in 1956 with a grant from the W. K Kellogg Foundation, offers both undergraduate and graduate programmes. The undergraduate course may be taken on a part-time basis and leads to the award of Bachelor of Health Administration. The School also offers one formal course in Health Administration leading to the award of a Graduate Diploma and another to the degree of Master of Health Administration. In addition, the Master's degree and the degree of Doctor of Philosophy may be taken following periods of full-time or part-time research in hospital and health service administration for which the School offers excellent facilities.

Because the Bachelor's course has been revised, a student enrolled prior to 1973, who has passed in nine or more subjects, will be permitted to complete the requirements for the degree under the regulations which applied in 1972 (see page B 314, 1972 Calendar). A student enrolled prior to 1973, who has passed less than nine subjects under the old regulations, will complete the requirements for the degree under the new regulations. Where he has already passed 16.501 Economics (Health Administration), he will substitute 16.801 The Australian Health Care System for this subject in Year 2 (full-time) or Stage III (part-time external).

BACHELOR OF HEALTH ADMINISTRATION

Conditions for the Award of the Degree of Bachelor of Health Administration

1. A candidate for the degree of Bachelor of Health Administration shall:—
 - (a) comply with the requirements for admission;
 - (b) follow the prescribed course of study in the School of Health Administration and satisfy the examiners in the necessary subjects.
2. A student who is following the prescribed course of study as a part-time (external) student shall in each year attend the residential school conducted by the School of Health Administration.
3. A full-time student shall be required to complete the first year of the course in not more than two years. A part-time student

shall be required to complete the first two stages of his course in not more than four years. Re-enrolment thereafter will be governed by the general regulations of the Professorial Board.

4. A student may be granted advanced standing by the Professorial Board on the recommendation of the Board of Vocational Studies. A student coming from another institution must follow an approved course of study in this University for at least two years if a full-time student or at least four years if a part-time student.

404. HEALTH ADMINISTRATION—FULL-TIME COURSE

Bachelor of Health Administration

Hours per week

SESSION 1† SESSION 2‡

YEAR 1*		Lec.	Tut.	Lec.	Tut.
14.001	Introduction to Accounting	4	2	0	0
14.023	Accounting for Health Administration ..	0	0	4	2
16.001	Management I	0	0	4	2
16.201	Law I	4	2	0	0
16.701	Statistics	0	0	4	2
16.801	The Australian Health Care System	4	2	0	0
		12	6	12	6

YEAR 2

16.501	Economics (Health Administration)	4	2	0	0
16.002	Management II	4	2	0	0
16.003	Management III	0	0	4	2
16.202	Law II	0	0	4	2
16.921	Health Care Planning I	4	2	0	0
16.922	Health Care Planning II	0	0	4	2
		12	6	12	6

YEAR 3

16.101	Comparative Health Care Systems	0	0	4	2
16.301	Political Science	4	2	0	0
16.302	Social Administration	0	0	4	2
16.601	Behavioural Science I	4	2	0	0
16.602	Behavioural Science II	0	0	4	2
16.923	Health Care Planning III	4	2	0	0
		12	6	12	6

† May be varied with approval of head of school.

* Not offered in 1975

404. HEALTH ADMINISTRATION—PART-TIME COURSE (EXTERNAL STUDIES)

Bachelor of Health Administration

		Hours per week for 2 sessions	
STAGE 1		Lec.	Tut.
14.001	Introduction to Accounting	2	1
16.201	Law I	2	1
16.801	The Australian Health Care System	2	1
		<hr/> 6	<hr/> 3
STAGE 2			
14.023	Accounting for Health Administration	2	1
16.001	Management I	2	1
16.701	Statistics	2	1
		<hr/> 6	<hr/> 3
STAGE 3			
16.501	Economics (Health Administration)	2	1
16.002	Management II	2	1
16.921	Health Care Planning I	2	1
		<hr/> 6	<hr/> 3
STAGE 4			
16.003	Management III	2	1
16.202	Law II	2	1
16.922	Health Care Planning II	2	1
		<hr/> 6	<hr/> 3
STAGE 5			
16.301	Political Science	2	1
16.601	Behavioural Science I	2	1
16.923	Health Care Planning III	2	1
		<hr/> 6	<hr/> 3
STAGE 6			
16.101	Comparative Health Care Systems	2	1
16.302	Social Administration	2	1
16.602	Behavioural Science II	2	1
		<hr/> 6	<hr/> 3

558. GRADUATE DIPLOMA IN HEALTH ADMINISTRATION

GradDip

The School of Health Administration offers a course in Health Administration leading to the award of a Graduate Diploma.

The course provides an educational programme for persons employed in the health services who hold a degree, or equivalent qualification, and who wish to qualify for or extend their knowledge of administrative practice.

The Diploma is awarded on the successful completion of the following programme. The course may be taken by one year of full-time study or over two years on a part-time basis.

Conditions for the award of the graduate diploma are published above.

FULL-TIME COURSE

YEAR 1—SESSION 1		Hours per week
16.901G	Health Services Statistics I	2
16.911G	Health Services Administration I	3
16.913G	Health Care Facilities A	2
16.914G	Health Care Facilities B	3
16.915G	Health Care Facilities C	3
16.916G	Health Care Facilities D	2
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YEAR 1—SESSION 2		
16.902G	Health Services Statistics II	2
16.905G	Health Services Accounting	3
16.908G	Behavioural Science (Health Administration) ...	2
16.912G	Health Services Administration II	3
16.917G	Personnel Practice (Health Administration)	2
16.918G	Health Services Law	3
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MASTER OF HEALTH ADMINISTRATION

The conditions for the award of the degree of Master of Health Administration, together with an outline of the formal course are set out overleaf.

296. MASTER OF HEALTH ADMINISTRATION (BY RESEARCH)

MHA

Facilities are available in the School for students to undertake research studies leading to the degree of Master of Health Administration, either as full-time internal students or as part-time students external to the University. Students are required to have a suitable

first degree and are normally expected to have considerable experience in their proposed field of study within health or hospital services. Enquiries should be directed to the Head of School.

890. MASTER OF HEALTH ADMINISTRATION (BY FORMAL COURSE WORK) MHA

Acceptance into this course is dependent on the attainment of a satisfactory score on the Princeton Test for Graduate Study in Business. Information about this Test is available from the School of Health Administration.

The course has been designed to equip students with the basic store of knowledge required for senior administrative and planning work in hospitals and other health services. It does not emphasize training in specialized techniques but aims to introduce basic concepts and to educate students for management in the broadest sense of that term.

FULL-TIME COURSE

YEAR 1—SESSION 1		Hours per week
16.901G	Health Services Statistics I	2
16.903G	Health Services Organization	3
16.904G	Australian Health Care System	2
33.302G	Behavioural Science I*	3
33.303G	Management Accounting and Information Systems I*	2
33.305G	Organization Theory I*	3
		<hr/>
		15
		<hr/>
YEAR 1—SESSION 2		
16.902G	Health Services Statistics II	2
16.905G	Health Services Accounting	3
16.908G	Behavioural Science (Health Administration) ...	2
33.308G	Behavioural Science II*	3
33.310G	Management Accounting and Information Systems II*	2
33.311G	Organization Theory II*	3
		<hr/>
		15
		<hr/>
YEAR 2—SESSION 1		
16.906G	Hospital Organization and Management I	3
16.909G	Community Health Planning	3
16.910G	Comparative Hospital and Health Services Administration	3

* This subject is offered by the Graduate School of Business as part of the requirements for the Master of Business Administration degree.

6. Every candidate for the degree shall be required:
- (i) To carry out a programme of advanced study; to take such examinations and to perform such other work as may be prescribed by the Board.
The programme of advanced study shall include:—
 - (a) attendance at the University in a prescribed course of formal work;
 - (b) attachments to hospitals and other organisations for in-service experience;
 - (c) the preparation and submission of a report on a project demonstrating originality.

The attachments referred to in paragraph 6(i)(b) and the investigation referred to in paragraph 6(i)(c) shall be under the direction of supervisors appointed by the Board or under such conditions as the Board may determine.

A candidate who has already had adequate and satisfactory in-service experience may, with the approval of the Board, be exempt from the attachments referred to in paragraph 6(i)(b);

OR

- (ii) To carry out a programme of advanced study and take such examinations and perform such other work as may be prescribed by the Board. The programme shall include the preparation and submission of a thesis embodying the results of an original investigation or design. The candidate may submit also for examination any work he has published, whether or not such work is related to this thesis.
7. An approved applicant shall register in one of the following categories:—
- (i) student in full-time attendance at the University;
 - (ii) student in part-time attendance at the University;
 - (iii) student working externally to the University.
8. The report referred to in paragraph 6(i)(c) shall be on a topic approved by the Board on the recommendation of the Head of the School before the end of the third term of Year I. Unless permission to the contrary has been granted, a candidate shall be required to submit his report not earlier than four sessions, and not later than six sessions, from the date of registration.
9. Candidates for the award under the conditions contained in paragraph 6(ii) shall not be considered for the award of the degree until the lapse of four complete sessions from the date from which the registration becomes effective, save that in the case of full-time candidate who has obtained the degree of Bachelor with Honours or who has had previous research

16.919G	Research Project	2
33.304G	Micro-economics and Business Decisions*	2
33.306G	Quantitative Analysis in Business I*	3
		<hr/>
		16
		<hr/>

YEAR 2—SESSION 2

16.907G	Hospital Organization and Management II	3
16.919G	Research Project	2
16.918G	Health Services Law	3
33.309G	Macro-economics and Policy*	2
33.313G	Quantitative Analysis in Business II*	3
	Elective†	4
		<hr/>
		17
		<hr/>

Conditions for the Award of the Degree of Master of Health Administration

1. An application to register as a candidate for the degree of Master of Health Administration shall be made on the prescribed form which shall be lodged with the Registrar by the thirty-first of August of the year preceding that year in which the candidate desires to commence the course.
2. (i) An applicant for registration for the degree shall have been admitted to an appropriate degree in the University of New South Wales or other approved university.
(ii) In special circumstances a person may be permitted to register as a candidate for the degree if he submits evidence of such academic and professional attainments as may be approved by the Board of Vocational Studies (hereinafter referred to as "the Board") on the recommendation of its Higher Degree Committee.
3. Notwithstanding any other provisions of these conditions, the Board may require an applicant to demonstrate fitness for registration by carrying out such work and sitting for such examinations as the Board may determine.
4. In every case, before permitting an applicant to register as a candidate, the Board shall be satisfied that adequate supervision and facilities are available.
5. An approved applicant shall pay such fees as may be determined from time to time by the Council.†

* This subject is offered by the Graduate School of Business as part of the requirements for the Master of Business Administration degree.

† Subject to approval of head of school.

† For details of fees, see earlier under "Fees".

experience, this period may with the approval of the Board be reduced by not more than two sessions.

10. Every candidate for the degree shall be required to submit three copies of the report or thesis as the case may be. 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.*
11. It shall be understood that the University retains the three copies of the report or thesis submitted for examination, and is free to allow the report or thesis to be consulted or borrowed. Subject to the provisions of the Copyright Act, 1968, the University may issue the report or thesis in whole or in part, in photostat or microfilm or other copying medium.
12. For each candidate's report or thesis there shall be at least two examiners, appointed by the Professorial Board on the recommendation of the Board of Vocational Studies, one of whom shall if possible be an external examiner.
13. The award of the degree taken in accordance with paragraph 6 (i) shall depend upon:—
 - (i) the candidate's performance in his in-service attachments;
 - (ii) the candidate's performance in the examinations;
 - (iii) the quality of the candidate's report.

* See Section C of the University Calendar.

DEPARTMENT OF INDUSTRIAL ARTS

The Department of Industrial Arts offers a BSc degree available through full-time study in the general field of Industrial Arts. The subjects required to qualify for the degree are set out elsewhere in this Handbook. At the postgraduate level, the Department offers a Master of Science degree by research as well as a course in Industrial Design leading to the award of a Graduate Diploma.

The Subject Matter of Industrial Arts

Through the ages, man has used his intellect, imagination and skill to create useful things. The term "industrial arts" has come to be used to describe these activities.

Man-made objects form a large part of the human environment — shelter, furniture, fabrics, vessels, tools, machines, vehicles and labour-saving devices of many kinds. Although these objects are designed and made primarily for some practical purpose, each individually makes some contribution to the total quality of the environment. Well-designed, well-made things of the practical kind may be considered "works of art"; thus the best products, whether handmade or factory produced are evidence of the industrial arts.

Before the growth of modern industrial society, it was possible to identify the industrial arts with certain skilled occupations, for example, gold and silversmithing, weaving, metalworking, wood-working and pottery. Industrial methods and mass production have changed the forms of intellect, imagination and skill required for the creation of useful objects. Products are now seldom the result of the activity of single individuals, rather they reflect the skills of many people applied through the industrial organisation. The study basic in Industrial Arts is the relationship between man and his material environment. The important elements in this study are man himself, the materials of his environment, the objects he produces and the processes he uses for production.

Such studies can be concerned as much with the useful objects of antiquity as with those of contemporary industrial civilisation. Thus the research activities of the Department of Industrial Arts range from an investigation into the traditional technologies of the ancient cultures to an analysis of the problems of industrial design in contemporary technological society.

The Industrial Arts Course

The course offered by the Department of Industrial Arts is intended to provide a broad understanding of the man-product relationship, with studies in depth of the most relevant areas of knowledge drawn from natural science, technology, social science and other fields. Of central importance is the subject Industrial Arts. The core study in this subject is Tectonic Design. Tectonics is the science and/or art of making things that are both useful and beautiful. Tectonic design is the process whereby materials, functional requirements, appearance, mechanical factors, cost etc. are related and integrated into products which satisfy human needs. The design strand is supported by parallel studies in graphics, materials, education. Graphics — the “visual language” of design — includes a variety of methods of drawing as well as other methods of visual representation, communication and analysis. The other subjects provide specialised information which is needed for the study and teaching of design, in particular, and of industrial arts generally.

Also included are First Year Engineering Units and elective studies in the sciences and general studies.

The Industrial Arts course covers the major subject areas included in both the secondary and senior secondary school curricula. After completion of the degree, graduates will be eligible to become certificated by the Department of Education as four-year trained teachers.

The undergraduate degree also provides a sound basic education for people intending to seek employment in the design field. A Graduate Diploma course in Industrial Design is available for those wishing to become professional Industrial Designers in the product design field.

In general, the Industrial Arts course provides a broad education which embraces the sciences, technological studies, the humanities, social sciences, and the arts. Education of this type is becoming increasingly important for employment in semi-technical fields such as technical sales, engineering administration, work study, technical writing and information services.

400. INDUSTRIAL ARTS—FULL-TIME COURSE

Bachelor of Science

A four year course of full-time study leading to the degree of Bachelor of Science (pass or honours).

Hours per week for 2 sessions

YEAR 1

		Lec.	Lab./Tut.
1.011	Higher Physics I <i>or</i>	3	3
1.001	Physics I		
2.001	Chemistry I	2	4
5.010	Engineering A*	3½	2½
5.030	Engineering C*		
12.001	Psychology I	3	2
		11½	11½

YEAR 2

4.911	Materials Science	1	½
	Psychology II†	4	3
21.011	Industrial Arts I	1	2
21.201	Freehand Drawing	0	3
58.512	Introduction to Education	1	2½

An elected science subject

10.001	Mathematics I	4	2
	<i>or</i>		
27.801	Introduction to Physical Geography* ..	2	2½
27.802	Introduction to Human Geography* ..		

YEAR 3

4.951	Materials Technology	2	2
21.012	Industrial Arts II	1	3
21.211	Drawing and Design	0	2
21.902	Seminar	0	1
58.071	Methods of Teaching IA	2	1½
58.513	Education IA	2½	2
	General Studies	1	½

An elected science subject

10.111A	Pure Mathematics II—Algebra	4½	1½
10.111B	Pure Mathematics II—Analysis		
10.211A	Applied Mathematics II— Mathematical Methods		
	<i>or</i>		
27.811	Physical Geography**	2	½
27.812	Human Geography**		

* One session only.

† Psychology II comprises three units, 12.052 Basic Psychological Processes, 12.062 Complex Psychological Processes and 12.152 Research Methods.

**Two upper level units selected in consultation with the School of Geography.

‡ School experience including teaching practice will be additional to these hours.

YEAR 4

Hours per week for 2 sessions

		Lec.	Lab./Tut.
21.013	Industrial Arts III	2	— 3
21.903	Project	0	— 3
58.072	Methods of Teaching IIA	2	— 1‡
58.514	Education IIA	2	— 2

An elected science subject

10.111C	Pure Mathematics II—Abstract Algebra		
10.112D	Pure Mathematics III—Set Theory		
10.212A	Applied Mathematics III—Numerical Analysis <i>plus</i> one of 10.112C, 10.112E or 10.212D.	6	— 2
	<i>or</i>		
	Geography†	2	— ‡
	<i>or</i>		
	Psychology III*	4	— 4

* Psychology III comprises four units selected in consultation with the School of Psychology.

† Two upper level units selected in consultation with the School of Geography.

‡ School experience including teaching practice is additional to these hours.

INDUSTRIAL ARTS—PART-TIME COURSE

Bachelor of Science (Technology)

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

Postgraduate Courses

At postgraduate level the Department of Industrial Arts offers a Master of Science degree by research as well as a course in Industrial Design leading to a Graduate Diploma.

295. MASTER OF SCIENCE (BY RESEARCH)

MSc

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

557. GRADUATE DIPLOMA IN INDUSTRIAL DESIGN

GradDip

The Graduate Diploma course provides a broad education in industrial design for those students who hold first degrees. Although it is expected that students will, in general, come from the professions of engineering and architecture, the course has been so structured that graduates with the necessary talents and interests from other disciplines are provided for. According to demand, the course may be available on a full-time basis over one year or on a part-time basis over two years.

Conditions for the award of the Graduate Diploma are published above.

PART-TIME COURSE

		Hours per week for 2 sessions
YEAR 1		
21.501/1G	Industrial Design	4
21.511/1G	Design Projects	3
21.521/1G	Seminar	1
21.531/1G	Creative Art Elective	3
		<hr/> 11

YEAR 2		
21.501/2G	Industrial Design	4
21.511/2G	Design Projects	3
21.521/2G	Seminar	1
21.531/2G	Creative Art Elective	3
		<hr/> 11

SCHOOL OF LIBRARIANSHIP

The School of Librarianship offers postgraduate training leading to the degree of Master of Librarianship (MLib), the Diploma in Librarianship (DipLib) and the Diploma in Archives Administration (DipArchivAdmin).

DIPLOMA COURSES

Progression in School's Diploma Courses

A candidate who fails in half or more of his subjects will not be permitted to re-enrol unless the Higher Degree Committee of the Faculty of Professional Studies grants permission because it considers the circumstances to be exceptional.

559. GRADUATE DIPLOMA IN LIBRARIANSHIP

The Graduate Diploma course leading to the award of the Diploma in Librarianship is designed to provide university graduates with a basic education in librarianship and some opportunity to specialize. Candidates must hold a degree, other than in Librarianship, from the University of New South Wales or other approved University, and those enrolling in the two School Libraries subjects must also hold a Diploma in Education or a qualification accepted by the Higher Degree Committee of the Faculty of Professional Studies as equivalent. The University is unable, at this stage, to provide facilities for all eligible applicants, and admission is, therefore, competitive.

The course is a one-year full-time programme.

Conditions for the award of the Graduate Diploma are published above.

The Course

The course is made up of five compulsory subjects, four optional subjects and an assignment on an approved topic. The selection of optional subjects must be approved by the Head of the School of Librarianship, and must generally include two from Group I and two from Group II (55.385 School Libraries I and 55.386 School Libraries II count as three subjects).

FULL-TIME COURSE*

YEAR 1		Hours per session		Hours per week
Compulsory		SESSION 1	SESSION 2	
55.112	Libraries and Information	42	0	
55.114	Communication and Record	42	0	
55.122	Library Materials Selection and Organization	56	5	
55.123	Reference Service and Materials	56	0	
55.124	Library Administration	14	2	
55.991	General Assignment	0	0	
Optional†				
<i>Group I</i>				
55.231	Subject Bibliography: The Humanities	0	2	
55.232	Subject Bibliography: The Social Sciences	0	2	
55.233	Subject Bibliography: Pure and Applied Sciences	0	2	
55.236	Subject Bibliography: Law (Co-requisite 55.238)	0	2	
55.238	Subject Bibliography: Government Publications	0	2	
55.371	Literature for Young People	0	2	
<i>Group II</i>				
55.362	Mechanized Systems for Libraries	0	2	
55.373	Public Libraries	0	2	
55.378	University and College Libraries	0	2	
55.381	Special Libraries	0	2	
55.385	School Libraries I (Co-requisites 55.371, 55.386)	0	3	
55.386	School Libraries II (Co-requisites 55.371, 55.385)	0	3	

560. GRADUATE DIPLOMA IN ARCHIVES ADMINISTRATION

DipArchivAdmin

The Graduate Diploma course leading to the award of the Diploma in Archives Administration is designed to provide education in the principles and methods of the administration of archives and allied materials, including current records and collections of manuscripts.

Candidates must hold a degree from the University of New South Wales or any other approved university. Candidates who have not studied Australian history and politics may be required

* In addition to formal course work there will be occasional field excursions, and students taking 55.385 and 55.386 will be required to serve an attachment to a public library and a school library for the equivalent of 4 hours weekly, or a 4-week block if totally outside of session.

† Not all the optional subjects will necessarily be available each year.

to take a qualifying or concurrent programme approved by the Faculty of Professional Studies.

Each candidate will complete the programme of study which may be taken as a full-time course in one year or as a part-time course over two years. Both are day-time courses.

In addition to formal course work there may be excursions to relevant institutions.

Conditions for the award of the Graduate Diploma are published above.

FULL-TIME COURSE

		Hours per week	
		SESSION 1	SESSION 2
55.123	Reference Service and Materials	4	—
55.238	Subject Bibliography: Government Publications	—	2
55.712	Archives Theory and History	4	4
55.713	Archives Administration	4	7
55.714	Information Environment for Archivists and any one of	3	—
55.231	Subject Bibliography: The Humanities	—	2
55.232	Subject Bibliography: The Social Sciences	—	2
55.233	Subject Bibliography: Pure and Applied Sciences	—	2
55.236	Subject Bibliography: Law	—	2
		15	15

PART-TIME COURSE

YEAR 1

55.123	Reference Service and Materials	4	—
55.238	Subject Bibliography: Government Publications	—	2
55.712	Archives Theory and History	4	4
55.231	Subject Bibliography: The Humanities	—	2
55.232	Subject Bibliography: The Social Sciences	—	2
55.233	Subject Bibliography: Pure and Applied Sciences	—	2
55.236	Subject Bibliography: Law	—	2
		8	8

YEAR 2

55.713	Archives Administration	4	7
55.714	Information Environment for Archivists	3	—
		7	7

MASTER OF LIBRARIANSHIP DEGREE

As the University's facilities are limited, admission may be competitive.

Not all subjects will necessarily be available each year.

298. MASTER OF LIBRARIANSHIP (BY RESEARCH) MLib

In addition to the thesis requirement, each candidate will complete the following two subjects* to be taken in one year:

		Hours per week	
		Session 1	Session 2
55.805G	Issues in Librarianship	0	2
55.807G	Research Methods in Librarianship	2	0

* If there is sufficient demand and if the resources of the University permit, these subjects may be offered in a block period of six to eight weeks to candidates in special circumstances, such as those living long distances from the University.

892. MASTER OF LIBRARIANSHIP (BY FORMAL COURSE WORK) MLib

Advanced training in librarianship by formal course work is designed to provide education in broad areas of specialization beyond the basic professional level. The present programme of study provides a course for those who will specialize in the application of principles to the organization and management of libraries and library departments.

Each candidate will complete the programme of study which may be taken on a full-time basis in one year and on a part-time basis over two years.

In addition to the formal course work, each candidate will be required to submit a report on a project (55.901G) involving individual study and investigation.

There may be occasional field excursions at times to be arranged.

FULL-TIME COURSE

		Hours per week	
		Session 1	Session 2
33.302G	Behavioural Science I	3	0
33.305G	Organization Theory I	3	0
33.308G	Behavioural Science II	0	3
33.311G	Organization Theory II	0	3
55.801G	Library and Information Services Management A	2	2
55.803G	Library and Information Services Management B	2	2
55.805G	Issues in Librarianship	0	2
55.807G	Research Methods in Librarianship	2	0
55.901G	Project Report		

PART-TIME COURSE

YEAR 1

33.302G	Behavioural Science I	3	0
33.305G	Organization Theory I	3	0
33.308G	Behavioural Science II	0	3
33.311G	Organization Theory II	0	3
55.801G	Library and Information Services Management A	2	2

YEAR 2

55.803G	Library and Information Services Management B	2	2
55.805G	Issues in Librarianship	0	2
55.807G	Research Methods in Librarianship	2	0
55.901G	Project Report		

Conditions for the Award of the Degree of Master of Librarianship (By Research)

1. The degree of Master of Librarianship (by research) may be awarded by the Council on the recommendation of the Professorial Board to a candidate who has demonstrated ability to undertake research by the submission of a thesis embodying the results of an original investigation.
2. *Qualifications*
 - (i) An applicant for registration for the degree shall—
 - (a) have been admitted to an appropriate degree in the University of New South Wales or other approved University at a level approved by the Higher Degree Committee of the Board of Vocational Studies (hereinafter referred to as the Committee) and
 - (b) hold the Diploma in Librarianship of the University of New South Wales or possess a qualification accepted by the Committee as equivalent.
 - (ii) In exceptional cases an applicant 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 Committee.
 - (iii) Notwithstanding any other provisions of these conditions the Committee may require an applicant to demonstrate fitness for registration by carrying out such work and sitting for such examinations as the Committee may determine.
 - (iv) In every case before permitting an applicant to register as a candidate the Committee shall be satisfied that adequate supervision and facilities are available.

3. *Registration*

- (i) An application to register as a candidate shall be made on the prescribed form which shall be lodged with the Registrar at least six (6) weeks before the commencement of the session in which the candidate desires to commence registration.
- (ii) An applicant shall enrol in one of the following categories—
 - student in full-time attendance at the University;
 - student in part-time attendance at the University;
 - student working externally to the University.

In all cases the proposed course of study shall be submitted to the Head of the School of Librarianship for approval.
- (iii) A candidate shall be required to undertake an original investigation on a topic approved by the Committee. A candidate may also be required to perform other work as may be prescribed by the Committee. The Committee shall determine the maximum period of registration.
- (iv) The progress of a candidate shall be reviewed annually by the Committee on the recommendation of the Head of the School of Librarianship and as a result of such review the Committee may terminate the candidature.
- (v) No candidate shall be considered for the award of the degree until the lapse of three complete sessions in the case of a full-time candidate or four complete sessions in the case of a part-time or external candidate from the date from which registration becomes effective.
- (vi) Notwithstanding clause 3 (v) above, the Committee may approve remission of up to one session for a full-time candidate or two sessions for a part-time or external candidate.

4. *Thesis*

- (i) A candidate for the degree shall be required to submit three copies of a thesis embodying the results of the original investigation referred to in 3 (iii) above. 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.
- (ii) It shall be understood that the University retains the three copies of the thesis submitted for examination and is free to allow the thesis to be consulted or borrowed. Subject to the provisions of the Copyright Act, 1968 the University may issue the thesis in whole or in part, in photostat or microfilm or other copying medium.

5. *Examination*

- (i) A candidate shall give in writing two months' notice of his intention to submit his thesis and such notice shall be accompanied by the appropriate fee.
- (ii) For each candidate there shall be at least two examiners appointed by the Committee, one of whom shall be an external examiner.
- (iii) A candidate may be required to attend for an oral or written examination.
- (iv) Consequent upon consideration of the examiners' reports the Committee shall recommend to the Professorial Board whether the candidate may be admitted to the degree.

6. *Fees*

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

Conditions for the Award of the Degree of Master of Librarianship (By Formal Course Work)

1. The degree of Master of Librarianship (by formal course work) may be awarded by the Council on the recommendation of the Professorial Board to a candidate who has satisfactorily completed a programme of advanced study comprising formal course work and including the submission of a report on a project approved by the Higher Degree Committee of the Board of Vocational Studies (hereinafter referred to as the Committee).
2. *Qualifications*
 - (i) An applicant for registration for the degree shall—
 - (a) have been admitted to an appropriate degree in the University of New South Wales or other approved University at a level approved by the Committee, and
 - (b) hold the Diploma in Librarianship of the University of New South Wales or possess a qualification accepted by the Committee as equivalent.
 - (ii) In exceptional cases an applicant 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 Committee.

- (iii) Notwithstanding any other provisions of these conditions the Committee may require an applicant to demonstrate fitness for registration by carrying out such work and sitting for such examinations as the Committee may determine.

3. *Registration*

- (i) An application to register as a candidate shall be made on the prescribed form which shall be lodged with the Registrar at least six (6) weeks before the commencement of the session in which the candidate desires to commence registration.
- (ii) A candidate for the degree shall be required to undertake such course of formal study, pass such examinations and submit a report on a project, as prescribed by the Committee.
- (iii) No candidate shall be considered for the award of the degree until the lapse of two sessions in the case of a full-time candidate or four sessions in the case of a part-time candidate from the date from which registration becomes effective. The Committee may approve remission of up to two sessions for a part-time candidate.
- (iv) The progress of a candidate shall be reviewed annually by the Committee on the recommendation of the Head of the School of Librarianship and as a result of such review the Committee may terminate the candidature.

4. *Project*

- (i) A report on a project approved by the Committee may be submitted at the completion of the formal section of the course, but in any case shall be submitted not later than one year after the completion of such course.
- (ii) The format of the report shall accord with the instructions of the Head of School and shall comply with the requirements of the Committee for the submission of project reports.
- (iii) (a) The report shall be examined by two examiners appointed by the Committee.
(b) A candidate may be required to attend for an oral or written examination.

5. *Recommendation for Admission to Degree*

Consequent upon consideration of the examiners' reports and the candidate's other results in the prescribed course of study,

the Committee shall recommend to the Professorial Board whether the candidate may be admitted to the degree.

6. *Fees*

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

SCHOOL OF SOCIAL WORK

The School of Social Work offers a course leading to the degree of Bachelor of Social Work. The degree of Master of Social Work (MSW) is also available, and may be undertaken by course work or by research.

BACHELOR OF SOCIAL WORK (BSW) DEGREE COURSE

This undergraduate course is designed to prepare students for the professional practice of social work. It is normally undertaken as a four-year full-time programme. However, at the discretion of the Head of School, a student unable to study full-time may, under special circumstances, take the course over a period of time not exceeding seven (7) years.

The social work profession is primarily focused on problems in man's social relationships — in his interaction with other human beings and with man-made structures. The profession is concerned with the patterns, directions, quality, and outcomes of man's social relationships. It seeks to enhance social functioning by directing its attention both to the capacity of individuals, groups, organizations and communities for effective interaction, and to the contribution of socially-provided resources to social functioning.

Through their professional education, social work practitioners share common knowledge, values and skills. To become a professional person, the social work student needs to be as well informed about broad social welfare problems, policies and provision, and individual, group and sociocultural determinants of behaviour, as he is skilful in the use of social work methods. Members of the profession are particularly concerned that all people are treated with understanding and respect, especially those who are experiencing difficulties in their social living.

The objective of the course is to lay the ground-work for a variety of professional social work tasks. It is concerned with general approaches to problem-solving on a basis of scientific knowledge, professionally accepted values, and skills in inter-personal relations. While each student learns about all the main social work methods—social casework, social group work, community work, administration, and research—special care is taken to ensure that he acquires initial professional competence in at least one. In the later stages of the course the student concentrates upon the professional method of his choice.

The School provides opportunities, both in its regular subjects and in occasional special courses, for experienced social workers to keep abreast of educational developments in their specialized field, or method of work, or in some other field or method in which they have new responsibilities.

Field Education

A fundamental aspect of the course is supervised learning in the field, and this is in fact a basic requirement for the professional recognition of the degree. In the field instruction subjects—Social Work Practice IB, Social Work Practice IIB, and Social Work Practice IIIB—a student is under the supervision of a field instructor of the School, usually in a social work agency, while he learns to apply the principles of professional practice in an actual practice setting. From half-way through second year, a total of 178 seven-hour days are taken up in this way. About half of these days are scheduled during academic recess periods. A student's four field work placements will be in more than one type of social work setting. Some of the settings used are: medical, psychiatric, family and child welfare, services to the aged, and corrective services. Non-government agencies and agencies at all levels of government are included in the programme.

Admission to the Course

Students should note that lack of facilities has caused restriction on entry to the course.

Progression

Except with the permission of the Head of School, a student may not proceed to the next year of the full-time course until he has fulfilled all the requirements of the previous year or stage.

Honours

An Honours degree is awarded for superior performance throughout the course, with greater weight being given to later years. There are three classes of Honours—First, Second (Division 1), and Second (Division 2).

403. SOCIAL WORK—FULL-TIME COURSE

Bachelor of Social Work

YEAR 1

Hours per week

Session 1 Session 2

12.001	Psychology I	5	—	5
53.111	Sociology I	3	—	3
63.001	Australian Social Organization	3	—	3
	and one other subject approved as counting towards the B.A. degree.			

YEAR 2

63.412	Social Philosophy and Policy	3	—	3
63.421	Social Welfare Systems I	3	—	—
63.511	Human Behaviour I	6	—	3
63.611A	Social Work Practice IA	4	—	4
63.611B	Social Work Practice IB	—	—	—*
	General Studies Elective	1½	—	1½

* 2-week block in mid-year recess + 2 days a week (no recess) for second half of the academic year—42 days (294 hours).

YEAR 3

63.422	Social Welfare Systems II	4	—	4
63.512	Human Behaviour II	4	—	4
63.612A	Social Work Practice IIA	4	—	4
63.612B	Social Work Practice IIB	—*	—	—
63.621	Social Work Research Methods I	—	—	2
	General Studies Elective	1½	—	1½

* 3-week block in February + 2 days a week (no recess) for Session 1—45 days (315 hours).

YEAR 4

63.423	Social Welfare Systems III	4	—	4
63.613A	Social Work Practice IIIA	7	—	5
63.613B	Social Work Practice IIIB	—*	—	—*
63.622	Social Work Research Methods II	2	—	—
	General Studies Elective**	1½	—	1½

* Part 1: 8-week block in January and February—40 days (280 hours).
Part 2: 3-week block in mid-year recess + 2 days a week during Session 2, + 1-week block after end of session—51 days (357 hours).

**Not required of students who entered the course prior to 1972.

MASTER OF SOCIAL WORK

The degree of Master of Social Work may be undertaken by research or by formal course work.

297. MASTER OF SOCIAL WORK (BY RESEARCH) MSW

The primary requirement for the research degree is the submission of a thesis embodying the results of an original investigation. Candidates are also required to complete the subjects 63.807G Social Policy Analysis and 63.814G Social Planning.

893. MASTER OF SOCIAL WORK (BY FORMAL COURSE WORK) MSW

The course work Master's degree is designed to extend the professional knowledge of qualified social workers. Candidates may specialize either in interpersonal helping or in community work and administration. The course will be offered on a full-time basis in 1975, but may in the future be available over two years of part-time study.

YEAR 1—SESSION 1		Hours per week
*63.801G	Advanced Social Work Practice I (Interpersonal Helping)	5
	<i>or</i>	
†63.803G	Advanced Social Work Practice I (Community Work and Administration)	5
63.805G	Issues for the Social Work Profession	1
63.806G	Behavioural Science Seminar	2
63.807G	Social Policy Analysis	2
63.808G	Professional Interpersonal Competence	1
63.809G	Project	5
63.815G	Social Work Research Methods	2
		—
		18

YEAR 1—SESSION 2

*63.802G	Advanced Social Work Practice II (Interpersonal Helping)	5
	<i>or</i>	
†63.804G	Advanced Social Work Practice II (Community Work and Administration)	5
63.808G	Professional Interpersonal Competence	1
63.809G	Project	6
63.811G	Practice Theory and Social Welfare Administration	2
63.812G	Project Seminar	2
63.814G	Social Planning	2
		<hr/> 18

* To be taken only by students specialising in Interpersonal Helping.

† To be taken only by students specialising in Community Work and Administration.

Conditions for the Award of the Degree of Master of Social Work (by research)

1. The degree of Master of Social Work (by research) may be awarded by the Council on the recommendation of the Professorial Board to a candidate who has demonstrated ability to undertake research by the submission of a thesis embodying the results of an original investigation, and who has completed a prescribed programme of advanced study extending over one academic year.
2. *Qualifications*
 - (i) An applicant for registration for the degree shall—
 - (a) have been admitted to the degree of Bachelor of Social Work at honours standard in the University of New South Wales, or hold equivalent qualifications, or
 - (b) have been admitted to the degree of Bachelor of Social Work in the University of New South Wales or hold equivalent qualifications accepted by the Higher Degree Committee of the Board of Vocational Studies (hereinafter referred to as the Committee) at a level approved by the Committee; and shall have had at least one year's professional experience acceptable to the Committee.
 - (ii) In exceptional cases an applicant 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 Committee.
 - (iii) Notwithstanding any other provisions of these conditions the Committee may require an applicant to demonstrate

fitness for registration by carrying out such work and sitting for such examinations as the Committee may determine.

- (iv) In every case before permitting an applicant to register as a candidate the Committee shall be satisfied that adequate supervision and facilities are available.

3. *Registration and Candidature*

- (i) An application to register as a candidate shall be made on the prescribed form which shall be lodged with the Registrar at least six (6) weeks before the commencement of the session in which the candidate desires to commence registration.
- (ii) An applicant shall enrol in one of the following categories:
 - student in full-time attendance at the University
 - student in part-time attendance at the University
 - student working externally to the University.
- (iii) In all cases the proposed course of study shall be submitted to the Head of the School of Social Work for approval.
- (iv) Every candidate for the degree shall be required
 - (a) to prepare and submit a thesis on a topic approved by the Committee, embodying the results of an original investigation; and
 - (b) to carry out a prescribed programme of advanced study extending over one year, as approved by the Committee.
- (v) The progress of a candidate shall be reviewed annually by the Committee on the recommendation of the head of the School of Social Work and as a result of such review the Committee may terminate the candidature.
- (vi) Unless permission to the contrary has been granted, a full-time candidate shall be required to submit his thesis not earlier than three sessions, and not later than four sessions, from the date of registration; a part-time candidate, not earlier than four sessions, and not later than six sessions, from the date of registration.

4. *Thesis*

- (i) A candidate for the degree shall be required to submit three copies of a thesis embodying the results of the original investigation referred to in 3 (iv) above. 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.

- (ii) It shall be understood that the University retains the three copies of the thesis submitted for examination and is free to allow the thesis to be consulted or borrowed. Subject to the provisions of the Copyright Act, 1968, the University may issue the thesis in whole or in part, in photostat or microfilm or other copying medium.

5. *Examination*

- (i) A candidate shall give in writing two months' notice of his intention to submit his thesis and such notice shall be accompanied by the appropriate fee.
- (ii) For each candidate there shall be at least two examiners appointed by the Committee, one of whom shall be an external examiner.
- (iii) A candidate may be required to attend for an oral or written examination.
- (iv) Consequent upon consideration of the examiners' reports the Committee shall recommend to the Professorial Board whether the candidate may be admitted to the degree.

6. *Fees*

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

Conditions for the Award of the Degree of Master of Social Work (by formal course work)

- 1. The degree of Master of Social Work (by formal course work) may be awarded by the Council on the recommendation of the Professorial Board to a candidate who has satisfactorily completed a programme of advanced study comprising formal course work and including the submission of a report on a project approved by the Higher Degree Committee of the Board of Vocational Studies (hereinafter referred to as the Committee).

2. *Qualifications*

- (i) An applicant for registration for the degree shall—
 - (a) at a level approved by the Committee, have been admitted to the degree of Bachelor of Social Work in the University of New South Wales, or hold equivalent qualifications accepted by the Committee; and
 - (b) have had at least one year's professional experience acceptable to the Committee.

- (ii) In exceptional cases an applicant 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 Committee.
- (iii) Notwithstanding any other provisions of these conditions the Committee may require an applicant to demonstrate fitness for registration by carrying out such work and sitting for such examinations as the Committee may determine.

3. *Registration and Candidature*

- (i) An application to register as a candidate shall be made on the prescribed form which shall be lodged with the Registrar at least six weeks before the commencement of the session in which the candidate desires to commence.
- (ii) A candidate for the degree shall be required to undertake such course of formal study, submit a report on a project, and pass such examinations as prescribed by the Committee.
- (iii) The progress of a candidate shall be reviewed annually by the Committee on the recommendation of the Head of the School of Social Work and as a result of such review the Committee may terminate the candidature.

4. *Project*

- (i) The report on the project approved by the Committee may be submitted at the completion of the formal section of the course, but in any case shall be submitted not later than one session after the completion of such course.
- (ii) The format of the report shall accord with the instructions of the Head of the School of Social Work and shall comply with the requirements of the Committee for the submission of project reports.
- (iii) (a) The report shall be examined by two examiners appointed by the Committee.
(b) A candidate may be required to attend for an oral or written examination.

5. *Recommendation for Admission to Degree*

Consequent upon consideration of the examiners' reports and the candidate's other results in the prescribed course of study, the Committee shall recommend to the Professorial Board whether the candidate may be admitted to the degree.

6. *Fees*

An approved candidate shall pay such fees as may be determined from time to time by Council.

DESCRIPTION OF SUBJECTS

For General Studies booklists and descriptions of subjects please consult General Studies handbook which is available free of charge.

SCHOOL OF PHYSICS

The School of Physics offers most courses at lower and higher levels. The following descriptions refer to lower level courses. A student may substitute a corresponding higher level course, provided that the prerequisites and co-requisites are satisfied.

1.001 Physics I

Aims and nature of physics and the study of motion of particles under the influence of mechanical, electrical, magnetic and gravitational forces. Concepts of force, inertial mass, energy, momentum, charge, potential, fields. Application of the conservation principles to solution of problems involving charge, energy and momentum. Electrical circuit theory application of Kirchoff's Laws to AC and DC circuits. Uniform circular motion, Kepler's Laws and Rotational mechanics.

The application of wave and particle theories in physics. A review of the atomic theory of matter and the structure and properties of atomic nuclei. A molecular approach to energy transfer, kinetic theory, gas laws and calorimetry. The wave theories of physics, transfer of energy by waves, properties of waves. Application of wave theories to optical and acoustical phenomena such as interference, diffraction and polarisation. Interaction of radiation with matter, photoelectric effect, Compton effect, spectroscopy. Resolution of the wave—particle paradox by means of wave mechanics and the uncertainty principle.

TEXTBOOK

Bueche, F. *Introduction to Physics for Scientists and Engineers*. McGraw-Hill.

PRINCIPAL REFERENCE BOOKS

Ference, M., Lemon, H. & Stephenson, R. J. *Analytical Experimental Physics*. Chicago U.P.

Halliday, D. & Resnick, R. *Physics for Students of Science and Engineering*. Vols. I & II, Wiley.

Wiedner, R. T. V. and Sells, R. L. *Elementary Classical Physics*. Vols. I & II, Allyn & Bacon.

Physics Level II Units

1.112A Electromagnetism

Prerequisites: 1.001, 10.001. Co-requisite: 10.211A.

Electrostatics in vacuum and in dielectrics. Magnostatics in vacuum and in magnetic materials. Maxwell's equations and simple applications.

TEXTBOOK

Reitz, J. R. & Milford, F. J. *Foundation of Electromagnetic Theory*. 2nd ed. Addison-Wesley.

PRINCIPAL REFERENCE BOOKS

Schwarz, W. M. *Intermediate Electromagnetic Theory*. Wiley, 1964.
Whitmer, R. M. *Electromagnetics*. 2nd ed. Prentice-Hall, 1963.

1.112B Modern Physics

Prerequisites: 1.001, 10.001. Co-requisite: 10.211A. Students cannot take both 1.112B and 1.212C.

Special theory of relativity, Lorentz transformation, relativistic mass momentum and energy; Schrödinger wave equation expectation values, operators, eigenfunctions, eigenvalues, free-particle, bound-particle and applications to physical systems, spectra, electron spin, spin-orbit coupling, exclusion principle, origins and spectra of X-rays, electron energy levels in solids.

TEXTBOOK

Beiser, A. *Perspectives of Modern Physics*. McGraw-Hill.

PRINCIPAL REFERENCE BOOKS

Arya, A. P. *Elementary Modern Physics*. Addison-Wesley.
Eisberg, R. M. *Fundamentals of Modern Physics*. Wiley.
Mermin, N. D. *Space Time and Relativity*. McGraw-Hill.

1.112C Thermodynamics and Mechanics

Prerequisites: 1.001, 10.001. Co-requisite: 10.211A.

Thermodynamics: First and second laws of thermodynamics. Thermodynamic functions and simple applications. Statistical foundations of thermodynamics. *Mechanics:* Properties of solids and liquids, elasticity, hydrostatics, hydrodynamics, vibration of systems with one degree of freedom, S.H.M., superposition, damped S.H.M., forced vibration, resonance, Fourier analysis, vibrations of coupled systems, Lagrangian mechanics, oscillations of continuous systems, waves, wave packet group velocity.

TEXTBOOKS

French, A. P. *Vibrations and Waves*. Nelson, 1971.
Mandl, F. *Statistical Physics*. Wiley, 1971.
Stephenson, R. J. *Mechanics and Properties of Matter*. Wiley, 1969.

PRINCIPAL REFERENCE BOOKS

Pain, H. G. *Physics of Vibrations and Waves*. Wiley, 1968.
Symon, K. R. *Mechanics*. Addison-Wesley, 1960.
Spiegel, M. R. *Theoretical Mechanics*. Schaum.

1.212 Physics IIT

Any two of the following half-units.

1.212A Geometrical Optics

Prerequisites: 1.001, 10.001.

Reflection, Refraction. Thin and thick lenses and lens systems. Instruments and their aberrations. Photometry.

TEXTBOOK

Fincham, W. *Optics*. Hatton.

1.212B Electronics (Session 1 or Session 2)

Prerequisites: 1.001, 10.001. Students cannot take both 1.212B and 1.133A.

Vacuum tubes and applications. Conduction in solids; solid state diodes, transistors, amplifiers, feed back.

TEXTBOOK

Smith, R. J. *Circuits, Devices and Systems*. 2nd ed. Wiley, 1972.

1.212C Introduction to Solids

Prerequisites: 1.001, 10.001. Students cannot take both 1.212C and 1.112B.

Introductory quantum mechanics and atomic physics; crystal structure; point and line defects; introductory band theory; conductors, semiconductor and insulators; energy level diagrams.

TEXTBOOK

Rudden, M. N. & Wilson, J. *A Simplified Approach to Solid State Physics*. Butterworths, 1971.

NOTE: The level III unit 1.133A may be taken in second year of the course.

Physics Level III Units**1.113A Wave Mechanics and Spectroscopy**

Prerequisite: 1.112B. Co-requisite: 1.112C.

Concepts; harmonic oscillator; uncertainty principle; the free particle; barriers, the hydrogen atom, many electron atoms, removal of degeneracy; spectroscopy; molecules; periodic potentials; band structure; perturbations.

TEXTBOOK

Beiser, A. *Perspectives of Modern Physics*. McGraw-Hill.

1.113B Electromagnetic Fields and Physical Optics

Prerequisites: 1.112A, 10.211A.

Wave equation; propagation in dielectrics and ionized media; reflection and transmission; guided waves; coherence of radiation; interaction of radiation with matter; stimulated emission; laser oscillators; properties of laserlight; interferometry; diffraction; convolution theorem X-ray and neutron diffraction.

TEXTBOOK

Lipson, H. & S. S. *Optical Physics*. C.U.P., 1969.

1.113C Statistical Mechanics and Solid State

Prerequisites: 1.112B. Co-requisites: 1.113A, 1.112C.

Thermodynamic potentials, ensembles and partition functions, lattice vibrations, the grand canonical ensemble, Pauli exclusion principle, Bose-Einstein and Fermi-Dirac distributions.

Structure of crystals, imperfections, specific heat. Band theory of solids, semiconductors.

TEXTBOOKS

Blakemore, J. S. *Solid State Physics*. Saunders, 1969.

Jackson, E. A. *Equilibrium Statistical Mechanics*. Prentice-Hall, 1968.

Mandl, F. *Statistical Physics*. Wiley, 1971.

1.113D Astrophysics and Nuclear Physics

Prerequisites: 1.112B, 1.113A.

The observational environment, optical astronomy, radio astronomy, X-ray astronomy, stellar evolution, radio sources, the sun. Detecting instruments and accelerators for nuclear particles, radioactive processes, nuclear reactions, angular distributions, mesons, baryons, excited nuclear states.

TEXTBOOK

Taylor, R. J. *The Stars, Their Structure and Evolution*. Wyneham Science Series.

1.133A Electronics

Prerequisite: 1.001. Students cannot take both 1.133A and 1.212B.

A.C. circuit analysis, band theory of semiconductors, diode, field effect transistor, rectifier circuits, power supplies, single and multistage amplifiers, positive feedback, oscillators.

TEXTBOOKS

Delaney, C. F. G. *Electronics for the Physicist*. Penguin, 1969.

Russell, G. J. & Mann, K. *Alternating Current Circuit Theory*. N.S.W.U.P. *Transistor Manual*. General Electric Co.

PRINCIPAL REFERENCE BOOK

Brophy, J. J. *Basic Electronics for Scientists*. McGraw-Hill.

1.143A Biophysics

Prerequisite: 1.112C.

Ear and sound, eye and light, impulses by nerves, the brain, hearing, vision muscles, heart-beat, structure of proteins, nucleic acid, radiation effects, enzymes, diffusion and permeability.

TEXTBOOK

Ackerman, E. *Biophysical Science*. Prentice-Hall, 1962.

1.143B Solid State Devices and Electronics (Session 2)

Prerequisites: 1.133A. Syllabus follows on from 1.133A.

Generalized amplifiers, negative feedback, special amplifiers, regulated power supplies, modulation, pulse circuits, silicon-controlled rectifier circuits, instruments.

TEXTBOOKS

Gibbons, J. F. *Semiconductor Electronics*. McGraw-Hill, 1966.

S. C. R. *Handbook*. General Electric Co.

Van der Ziel, A. *Introduction to Electronic Circuits*. Allyn & Bacon, 1969.

1.143D Conceptual Framework of Physics

Prerequisites: 1.112A, 1.112B & 1.112C (this last unit may be taken as a co-requisite in special cases).

Physics and Metaphysics: The place of speculation in theory formation. Space and Time: Systems of coordinates, the nature and arrow of time, parity, micro causality. Fundamental Physical Phenomena: The fundamental phenomena on which physical theories have been based; electrical, gravitational, inertial nuclear and entropy/probability. Field Theory: In particular e.m. and gravitational field theory. Mathematical formalization of physical phenomena, action at a distance, field propagation, field energy, connection to relativity. Relativity: The fundamental postulates, simultaneity, limiting speeds, connection with field theory, mass and energy. Relationship between Micro- and Macro-Cosmos: Divisibility of matter (molecules, atoms, nuclei, nucleon), matter and anti matter, statistical nature of the behaviour of large aggregates or systems, the concept of entropy, the second law of thermodynamics. The place of determinism in physics. Matter and Energy: Conservation laws, inertial mass, equivalence principle, field energy, spatial delimitation of material particles. Theory of Quantum Processes: Granularity effects, uncertainty principle, effects of measurements, virtual processes. Determinism vs. indeterminism in physics, application to nuclear phenomena.

TEXTBOOKS

No set texts.

1.143E Electrical and Optical Properties of Solids (Session 2)

Co-requisite: 1.113C.

Equilibrium properties of semiconductors and insulators, conductivity, excess carriers, flow equations, contact barriers; luminescence, relaxation phenomena.

TEXTBOOKS

Adler, R. B., Smith, A. C. & Longini, L. D. *Introduction to Semiconductor Physics*. Wiley, 1964.

Blakemore, J. S. *Solid State Physics*. Saunders, 1969.

Gray, P. E. et al. *Physical Electronics and Circuit Models of Transistors*. Wiley.

1.113Z Techniques and Design for Experimental Physics

Individual investigation to develop essential practical skills such as electronic assembly and glass-blowing. Individual or small group projects to solve associated practical and theoretical problems. This unit is a preparation for experimental research and is especially aimed to equip prospective physics teachers to devise experiments and design equipment.

TEXTBOOKS

No set texts.

SCHOOL OF CHEMISTRY

2.001 Chemistry I

Classification of matter and theories of the structure of matter. Atomic structure, the periodic table and chemical behaviour. Chemical bonding, molecular structure and stereochemistry. Chemical kinetics and equilibrium; enthalpy, free energy and entropy changes in chemical systems. The structure, nomenclature and properties of organic and inorganic compounds. Reactions of organic and inorganic compounds.

TEXTBOOKS

- Aylward, G. A. & Findlay, T. J. V. *SI Chemical Data*. Wiley, 1974.
Chemistry I—Laboratory Manual. University of N.S.W., 1975.
Kneen, W. R., Rogers, M. J. W. and Simpson, P. *Chemistry—Facts, Patterns and Principles*. Addison-Wesley, London, 1972.
Schaum Outline Series. *Theories and Problems of College Chemistry*. SI (metric) ed. McGraw-Hill.

PRINCIPAL REFERENCE BOOKS

- Barrow, G. M., Kenney, M. E., Lassila, J. D., Little, R. L. & Thompson, W. E. *Understanding Chemistry*. Benjamin, N.Y., 1969.
Brown, G. I. *A New Guide to Modern Valency Theory*. Longman, 1967.
Eastwood, F. W., Swan, J. M. & Yonatt, J. B. *Organic Chemistry. A First University Course in Twelve Programs*. Science Press, 1967.
Gray, H. B. & Haight, G. P. *Basic Principles of Chemistry*. Benjamin, 1967.
Pauling, L. *College Chemistry*. 3rd ed. Freeman, 1964.
Runquist, O., Cresswell, C. J. & Head, J. T. *Chemical Principles. A Programmed Text*. Burgess, 1968.
Sisler, H. H., Van der Werf, C. A. & Davidson, A. W. *College Chemistry*. 3rd ed. Collier-Macmillan, 1967.
Vogel, A. I. *Macro and Semimicro Qualitative Analysis*. 4th ed. Longman, 1954.

Level II Units**2.002A Physical Chemistry**

Prerequisites: 1.001 or 1.011 and 2.001 and 10.001, 10.011 or 10.021.

Thermodynamics: first, second and third laws of thermodynamics; statistical mechanical treatment of thermodynamic properties; applications of thermodynamics: chemical equilibria, phase equilibria, solutions of non-electrolytes and electrolytes, electrochemical cells.

Kinetics: order and molecularity; effect of temperature on reaction rates; elementary reaction rate theory.

Surface chemistry and colloids: adsorption, properties of dispersions; macromolecules and association colloids.

TEXTBOOKS

- Barrow, G. M. *Physical Chemistry*. 3rd ed. McGraw-Hill, 1973.
Shaw, D. J. *Introduction to Colloid and Surface Chemistry*. 2nd ed. Butterworth, 1970.

PRINCIPAL REFERENCE BOOKS

- Adamson, A. W. *Textbook of Physical Chemistry*. Academic, 1973.
Alexander, A. E. & Johnson, P. *Colloid Science*. O.U.P., 1950.
Daniels, F. & Alberty, R. A. *Physical Chemistry*. 3rd ed. Wiley, 1966.
Daniels, F. et al. *Experimental Physical Chemistry*. 7th ed. McGraw-Hill, 1970.
Glasstone, S. *Textbook of Physical Chemistry*, 2nd ed. Van Nostrand, 1948.
Moore, W. J. *Physical Chemistry*. 4th or 5th ed. Longman, 1963 or 1972.
Shoemaker, D. P. & Garland, C. W. *Experiments in Physical Chemistry*, 2nd ed. McGraw-Hill, 1967.

2.042C Inorganic Chemistry

Prerequisite: 2.001.

Chemistry of the non-metals including B, C, Si, N, P, S, Se, Te, halogens, and noble gases. Chemistry of the metals of groups IA, IIA, and Al. Typical ionic, giant-molecule and close-packed structures. Transition metal chemistry, including variable oxidation states, paramagnetism, Werner's theory, isomerism of six- and four-coordinate complexes, chelation, stabilization of valency states. Physical methods of molecular structure determination. Chemistry of Fe, Co, Ni, Cu, Ag, Au.

TEXTBOOKS

1.

- Jolly, W. L. *The Chemistry of the Non-Metals*. Prentice-Hall, 1966.
Larsen, E. M. *Transitional Elements*. Benjamin, 1965.
Quagliano, J. V. & Vallarino, L. M. *Coordination Chemistry*. Heath, Lexington, 1969.

or

2.

- Cotton, F. A. & Wilkinson, G. *Advanced Inorganic Chemistry*. 2nd ed. Wiley, 1966.

PRINCIPAL REFERENCE BOOKS

- Bailar, J. C. *Chemistry of Coordination Compounds*. Reinhold, 1960.
Barnard, A. K. *Theoretical Basis of Inorganic Chemistry*. McGraw-Hill, 1965.
Basolo, F. & Johnson, R. *Introduction to Coordination Chemistry*. Benjamin, 1964.
Graddon, D. P. *An Introduction to Coordination Chemistry*. 2nd ed. Pergamon, 1968.
Huheey, J. E. *Inorganic Chemistry, Principles of Structure and Reactivity*. Harper & Row, 1972.
Jones, M. M. *Elementary Coordination Chemistry*. Prentice-Hall, 1964.
Vogel, A. *A Textbook of Macro & Semi-micro Qualitative Inorganic Analysis*. Longman.
Wells, A. F. *Structural Inorganic Chemistry*. 3rd ed. O.U.P., 1962.

2.002D Analytical Chemistry

Prerequisites: 2.001 and 10.001, 10.011 or 10.021.

Chemical equilibria in analytical chemistry. Acid-base, complex formation, redox systems, solid/solution, and liquid/liquid equilibria with applications to volumetric, gravimetric and complexometric analysis, and to liquid/liquid extractions. Spectrophotometry, basic principles. Chromophores. Fundamentals of precision. Electrochemistry, theory and applications

to electrodeposition and potentiometry; ion selective electrodes. Radioactive tracer techniques. Data evaluation in analytical chemistry. Qualitative analysis.

TEXTBOOKS

- Ewing, G. W. *Instrumental Methods of Chemical Analysis*. McGraw-Hill, 1969.
Fischer, R. B. and Peters, D. G. *Quantitative Chemical Analysis*. Saunders, 1968.

2.002B Organic Chemistry

Prerequisite: 2.001.

Chemistry of the more important functional groups; aliphatic hydrocarbons, monocyclic aromatic hydrocarbons, halides, alcohols, phenols, aldehydes, ketones, ethers, carboxylic acids and their derivatives, nitro compounds, amines and sulphonic acids.

TEXTBOOKS

- Morrison, R. T. & Boyd, R. N. *Organic Chemistry*. 3rd ed. Int. Stud. Ed. Allyn & Bacon, 1973.
Only if proceeding to further study of Organic Chemistry:
Vogel, A. I. *Elementary Practical Organic Chemistry*. Pt. II. Qualitative Organic Analysis. Longman, 1957.

Level II/III Units

2.003H Molecular Spectroscopy and Structure

Prerequisite: 2.001.

Absorption and emission of radiation. Atomic spectra. Molecular spectroscopy: vibrational, including infrared and Raman; UV-visible; instrumentation and sample handling. Magnetic resonance. Mass spectrometry with particular reference to structure determination. Laboratory and tutorial work to illustrate the above, including inspection of major instruments.

TEXTBOOK

- Williams, D. H. & Fleming, I. *Spectroscopic Methods in Organic Chemistry*. 2nd ed. McGraw-Hill, 1973.

PRINCIPAL REFERENCE BOOK

- Brittain, E. F. H., George, W. O. & Wells, C. H. J. *Introduction to Molecular Spectroscopy*. Academic, 1970.

2.003J Fundamentals of Biological Chemistry

Prerequisite: 2.001. Excluded: 41.101A.

An introductory discussion of aspects of the chemical and physical properties of materials important in biological systems. Attention is given to methods of separation purification and estimation and to correlations of structure with reactivity.

Methods of separation and identification, such as gel permeation, discussed as appropriate to each topic.

Significance of isomerism in biological systems, optical and geometrical,

absolute configuration. Amino acids, peptides and introduction to protein structure. Relevant properties, acid/base properties, pK values, zwitterion, isoelectric points. Simple peptide synthesis.

Treatment of carbohydrates, establishment of structures reactivity. Chemistry of monosaccharides, disaccharides and polysaccharides. Methods of analysis chemical and physicochemical.

Fats, correlation of properties with saturated and unsaturated fatty acid composition. Structural chemistry of fatty acids. Reaction of unsaturated fatty acids, urea complexes. Detergents.

Trace elements in biological systems. Chemistry of common heterocyclic systems with emphasis on molecules of biological importance.

TEXTBOOKS

Acheson, R. M. *Introduction to the Chemistry of Heterocyclic Compounds*. Interscience, 1967.

Barker, R. *Organic Chemistry of Biological Compounds*. Prentice-Hall, 1971.

PRINCIPAL REFERENCE BOOK

Gunstone, F. D. *Introduction to the Chemistry and Biochemistry of Fatty Acids and their Glycerides*. Chapman & Hall, 1968.

2.013A Introductory Quantum Chemistry

Prerequisites: 1.001 or 1.011 and 2.001 and 10.001, 10.011 or 10.021.

Quantum mechanical concepts. Particle in a box. Rotational and vibrational motions—spectra. The hydrogen atom. Angular momentum. Many electron atoms; effects of electron spin; atomic spectra. Molecular spectroscopy and valence: electronic structure and spectra of molecules. The Franck-Condon principle. Delocalization; Hückel M.O. theory. Ligand field theory. Photoelectron spectroscopy. Magnetic resonance: basic principles and experimental techniques; spin density effects in ESR spectra; theory of nuclear shielding and spin-spin coupling; relaxation processes.

TEXTBOOKS

Dixon, R. N. *Spectroscopy and Structure*. Methuen, 1969.

Hanna, M. W. *Quantum Mechanics in Chemistry*. 2nd ed. Benjamin, 1969.

PRINCIPAL REFERENCE BOOKS

Barrow, G. M. *Structure of Molecules*. Benjamin, 1964.

Carrington, A. & McLachlan, A. D. *Introduction to Magnetic Resonance*. Harper & Row, 1967.

King, G. W. *Spectroscopy and Molecular Structure*. Holt, Rinehart & Winston, 1964.

Phillips, L. F. *Basic Quantum Chemistry*. Wiley, 1965.

2.003E Nuclear and Radiation Chemistry

Prerequisite: 2.001 and 10.001, 10.011 or 10.021.

Fundamental particles, nuclear structure and properties. Nuclear transformations. Properties of nuclear radiations. Interaction of radiation with matter—gross attenuation, ionization. Detection and measurement of nuclear radiations—ionization, proportional, Geiger-Muller, scintillation, semiconductor counting for alpha, beta and gamma radiation and neutrons. Absolute and coincidence counting. Nuclear pulse spectrometry. Nuclear instrumentation, principles of radiation measuring equipment. Radiation chemistry: primary and secondary processes in the absorption of ionizing radiation in gases, liquids and solids. Free radical detection and reactions.

Technological applications and techniques. Mass spectrometry and electron impact studies. Separation of isotopes by physical and chemical means. Preparation of radionuclides in high energy machines and nuclear reactors. Radiochemical techniques—carriers, ion-exchange solvent extraction. Handling precautions. Chemistry of nuclear transformations. Chemistry of reactor fuel cycles. Applications of radionuclides in chemistry, biology and industry.

TEXTBOOKS

Carswell, D. J. *Introduction to Nuclear Chemistry*. Elsevier, 1967.

or

Friedlander, G., Kennedy, J. & Miller, J. M. *Nuclear and Radiochemistry*. 2nd ed. Wiley, 1964.

or

Harvey, B. *Introduction to Nuclear Physics and Chemistry*. Prentice-Hall, 1962.

PRINCIPAL REFERENCE BOOKS

Ausloos, P. *Fundamental Processes in Radiation Chemistry*. Interscience, 1968.

Denaro, A. R. & Jayson, G. G. *Fundamentals of Radiation Chemistry*. Butterworths, 1972.

Farley, S. *Elements of Pulse Circuits*. Methuen, 1955.

Haissinsky, M. *Nuclear Chemistry and its Applications*. Tuck, D. C., trans. Masson, 1957.

Sharpe, J. *Nuclear Radiation Detectors*. Methuen, 1964.

Spinks, J. W. T. & Woods, R. J. *An Introduction to Radiation Chemistry*. Wiley, 1964.

Taylor, D. *The Measurement of Radioisotopes*. Methuen, 1959.

2.003K Solid State Chemistry

Prerequisites: 2.001 and 10.001 or 10.011.

Use of electron neutron and X-ray diffraction methods in the determination of crystal structures.

Precise measurements of electron density and site symmetries and environments in minerals. Deviations from stoichiometry, lattice defects, intergrowth phases. Correlation between electrical, optical properties and structure. Solid state reactions, surface properties and catalysis. Applications of EPR, NMR and mass spectrometry.

TEXTBOOKS

Bond, G. C. *Catalysis by Metals*. Academic, 1965.

Greenwood, N. N. *Ionic Crystals, Lattice Defects and Non-stoichiometry*. Butterworths, 1969.

Moore, W. J. *Seven Solid States*. Benjamin, 1967.

2.003L Applied Organic Chemistry

Prerequisite: 2.002B. Excluded: 2.013L, 2.033L, 2.043L.

Discussion at advanced level of the chemistry of selected commercially important groups of organic materials. Mechanisms of reaction and physical properties are treated, together with methods of examination, in overall unit approach, correlating structure with behaviour. Emphasis is placed on breakdown to model systems.

Theory of physical techniques, refractometry, polarimetry etc. from basis of additivity. Fatty acids with emphasis on unsaturation, thermal and

oxidative polymerizations, alkyl resins, analysis of mixtures. Waxes and sterols; selected natural and synthetic macromolecules; polymerization processes, including treatment of initiators, chain transfer agents, retarders. Vulcanization and sulphur-olefin reactions. Photochemical processes; electro-organic chemistry. Fine chemicals, soaps and detergents. Aspects of metal catalysis in industry.

TEXTBOOK

No set text.

PRINCIPAL REFERENCE BOOKS

- Heftmann, E. *Chromatography*. 2nd ed. Reinhold, 1967.
Joslyn, M. A. *Methods in Food Analysis*. Academic, 1950.
Karrer, P. & Jucker, E. *Carotenoids*. Elsevier, 1950.
Markley, K. L. *The Fatty Acids*. 2nd ed. Interscience, 1960-67.
Neurath, H. *The Proteins*. Vols. I-IV. 2nd ed. Academic, 1963-68.
Pigman, W. *The Carbohydrates*. Academic, 1957.
Winton, A. L. & Winton, K. B. *Structure and Composition of Foods*. Wiley, 1932.

Subsidiary lists are supplied from the Department.

2.003A Physical Chemistry

Prerequisite: 2.002A.

Thermodynamics, including non-ideal systems; advanced electrochemistry; statistical thermodynamics; applications to gases, liquids and chemical equilibria; states of matter.

TEXTBOOK

Barrow, G. M. *Physical Chemistry*. 3rd ed. McGraw-Hill, 1973.

PRINCIPAL REFERENCE BOOKS

- Andrews, F. C. *Equilibrium Statistical Mechanics*. Wiley, 1963.
Conway, D. E. *Theory and Principles of Electrode Processes*. Ronald, 1965.
Glasstone, S. *Textbook of Physical Chemistry*. 2nd ed. Van Nostrand, 1948.
Hill, T. L. *Introduction to Statistical Thermodynamics*. Addison-Wesley, 1960.
Knox, J. H. *Molecular Thermodynamics*. Wiley, 1971.
Moelwyn-Hughes, E. A. *Physical Chemistry*. 2nd ed. Pergamon, 1961.
Moore, W. J. *Physical Chemistry* 4th or 5th ed. Longman, 1963 or 1972.
Purdon, S. F. & Slater, V. W. *Aqueous Solutions and the Phase Diagram*. Arnold, 1946.
Shoemaker, D. P. & Garland, C. W. *Experiments in Physical Chemistry*. 2nd ed. McGraw-Hill, 1967.
Tabor, D. *Gases, Liquids and Solids*. Penguin, 1969.

2.003C Inorganic Chemistry

Prerequisite: 2.042C.

Coordination chemistry: valence bond and crystal field theory and their application to magnetic and spectral properties of complexes. Factors affecting the stability of complexes; unusual oxidation states of transition metals. Chemistry of the groups IIIA (the lanthanides and actinides), IVA, VA, VIA and VIIA. More advanced chemistry of groups IIIB, IVB, VB, VIB, and VIIB and the noble gases.

TEXTBOOKS

Cotton, F. A. & Wilkinson, G. *Advanced Inorganic Chemistry*. 2nd ed. Wiley, 1966.

PRINCIPAL REFERENCE BOOKS

Bailar, J. C. *Chemistry of Coordination Compounds*. Reinhold, 1960.

Barnard, A. K. *Theoretical Basis of Inorganic Chemistry*, McGraw-Hill, 1965.

Dwyer, F. & Mellor, D. P. *Chelating Agents & Metal Chelates*. Academic, 1964.

Huheey, J. E. *Inorganic Chemistry, Principles of Structure and Reactivity*. Harper & Row, 1972.

Lewis, J. & Wilkins, R. G. *Modern Coordination Chemistry*. Interscience, 1960.

Sienko, M. J. & Plane, R. A. *Physical Inorganic Chemistry*. Benjamin, 1965.

Wells, A. F. *Structural Inorganic Chemistry*. 3rd ed. O.U.P., 1962.

2.003D Instrumental Analysis

Prerequisites: 2.002A and 2.002D.

Selected spectrophotometric methods of analysis: infrared, emission, flame, precision spectroscopy, spectrofluorimetry, X-ray fluorescence, mass spectroscopy. Instrumental chromatography, thermal analysis. Electrochemical and kinetic methods. Introduction to automation and data processing.

TEXTBOOKS

Chalmers, R. A. *Aspects of Analytical Chemistry*. Contemporary Science. Oliver & Boyd, 1968. Paperback.

Eckschlager, K. *Errors and Measurements in Chemical Analysis*. Chalmers, R. A. trans. ed. Van Nostrand, 1969.

Ewing, G. W. *Instrumental Methods of Chemical Analysis*. McGraw-Hill, 1969.

Hamilton, L. F., Simpson, S. & Ellis, D. W. *Calculations of Analytical Chemistry*. 7th ed. McGraw-Hill, 1969.

2.003B Organic Chemistry

Prerequisite: 2.002B.

Alicyclic Chemistry. Stereochemistry of acyclic systems; classical and non-classical strain in cyclic systems; stereochemistry and conformation of monocyclic and polycyclic compounds; synthesis, reactions and rearrangement of monocyclic compounds including stereochemical selectivity; transannular reactions in medium rings. Synthesis and reactions of fused and bridged polycyclic systems.

Heterocyclic Chemistry. Synthesis and reactions of the following hetero-aromatic systems pyridine, quinoline, isoquinoline. Flavones and isoflavones; pyrimidine; pyrrole, furan, thiophen. Indole, imidazole.

TEXTBOOKS

Morrison, R. T. and Boyd, R. N. *Organic Chemistry*. 3rd ed. Allyn and Bacon, 1973. International Student edition.

or

Roberts, J. D. and Caserio, M. C. *Basic Principles of Organic Chemistry*. Benjamin, 1964.

- Tedder, J. M., Nechvatal, A., Murray, A. W. and Carnduff, J. *Basic Organic Chemistry*. Pt. 3. Wiley, 1970.
- Vogel, A. I. *Elementary Practical Organic Chemistry*. Pt. II. Qualitative Organic Analysis. Longman, 1957.

PRINCIPAL REFERENCE BOOKS

- Acheson, R. M. *An Introduction to the Chemistry of Heterocyclic Compounds*. 2nd ed. Wiley, 1967.
- Eliel, E. L. *Stereochemistry of Carbon Compounds*. McGraw-Hill, 1962.
- Eliel, E. L., Allinger, N. L., Angyal, S. J. & Morrison, G. A. *Conformational Analysis*. Interscience, 1965.
- Gould, E. S. *Mechanism and Structure in Organic Chemistry*. Holt, Rinehart & Winston, 1959.
- Hallas, G. *Organic Stereochemistry*. McGraw-Hill, 1965.
- March, J. *Advanced Organic Chemistry: Reactions, Mechanisms and Structure*. McGraw-Hill, 1968.
- Sykes, P. *A Guidebook to Mechanism in Organic Chemistry*. 3rd ed. Longman, 1971.
- Whitham, G. H. *Alicyclic Chemistry*. Oldbourne Press.

2.003M Organometallic Chemistry

Prerequisite: 2.002B.

Synthesis, structure and reactions of metal alkyls and aryls; metal carbonyls, isonitriles and acetylides; compounds of metals with unsaturated hydrocarbons; organic chemistry of boron, silicon, phosphorus and arsenic; application of organometallic compounds in organic synthesis and homogeneous catalysis.

TEXTBOOKS

- Coates, G. E., Powell, P. & Wade, K. *Principles of Organometallic Chemistry*. Methuen, 1968.
- Pauson, P. *Organometallic Chemistry*. Arnold, 1967.

PRINCIPAL REFERENCE BOOKS

- Coates, G. E., Green, M. L. H. & Wade, K. *Organometallic Compounds* 3rd ed. Vols. 1 & 2. Methuen, 1967.
- George, W. O. *Spectroscopic Methods in Organometallic Chemistry*. Butterworth, 1970.

2.033A Physical Chemistry of Macromolecules

Prerequisites: 1.112C or 2.002A and 2.002B or 2.003J or 2.002A.

Macromolecules in solution; determination of molecular size: gel permeation chromatography, diffusion, sedimentation, viscometry, osmometry and light scattering. Spectroscopic properties: circular dichroism and optical rotary dispersion; conformation of macromolecules in solution; helix-random coil transitions. Macromolecules in the solid state; X-ray diffraction; basic structural features.

TEXTBOOK

- Van Holde, K. E. *Physical Biochemistry*. Prentice-Hall, 1971.

PRINCIPAL REFERENCE BOOKS

- Amdur, I. & Hammes, G. C. *Chemical Kinetics*. McGraw-Hill, 1966.
- Caldin, E. F. *Fast Reactions In Solution*. Blackwell, 1964.
- Mahler, H. R. & Cordes, E. H. *Biological Chemistry*. Harper & Row, 1971.

Poland, D. & Sheraga, H. A. *Theory of Helix-Coil Transitions In Biopolymers*. Academic, 1970.

Tanford, C. *Physical Chemistry of Macromolecules*. Wiley, 1961.

2.043A Environmental Chemistry

Prerequisite: 2.002A.

Role of chemist in society, impact of technology. Physico-chemical aspects of atmosphere chemistry: dispersion of colloids and solid matter, photochemical reactions. Hydrological cycle: reactions in the sea, rivers and estuaries; chemical characteristics of surface and sub-surface waters. Simple digital and analogue computer models of ecological systems based on chemical data and physico-chemical properties (for further details see 3.101 and 22.143).

TEXTBOOKS

Hamilton, C. H. *Chemistry in the Environment*. Freeman, 1973.

Schaum Outline Series. *Numerical Analysis*. McGraw-Hill, 1968.

2.023A Chemical Physics

Prerequisites: 2.002A and 10.211A.

Wave mechanics—linear operators; Schrödinger wave equation, applications, methods of solution; variation principle, linear combinations, perturbation theory. Many-electron problems—central field method; electron spin; Fermi-Dirac statistics; angular momentum operators; Coulomb repulsion two-electron operator; spin-orbit coupling; Russell-Saunders and jj coupling; Zeeman effect; vector coupling and Wigner coefficients; allowed transitions. Group theory—symmetry operations; matrix representation; irreducible representation; characters of a group; non-rigid molecules; antisymmetry operators.

TEXTBOOK

Golding, R. M. *Applied Wave Mechanics*. Van Nostrand, 1969.

2.013L Chemistry and Enzymology of Foods

Prerequisite: 2.002B. Excluded: 2.003L, 2.033L, 2.043L.

The chemistry of food constituents at an advanced level, the relationship between the chemistry and enzymology associated with the origin and handling of foodstuffs. Treatment of the stability of constituents, changes in colour and texture occurring during processing and storage. Methods of assessment, chemical and physical.

General classification of constituents, role of free and combined water. Fixed oils and fats, rancidity of enzymic and autoxidative origin antioxidants—natural and synthetic—theories on mechanisms of action, carbohydrates reactivity, role in brewing processes, carbohydrate polymers, starch structure, enzymic susceptibility and mode of action, estimations, enzymic degradation and enzymic browning, reactions and stability of natural pigments, vitamins, preservatives.

PRINCIPAL REFERENCE BOOKS

As for 2.003L Applied Organic Chemistry.

2.053A Chemical Kinetics and Reaction Mechanisms

Prerequisite: 2.002A.

Basic kinetic concepts, mechanisms of elementary processes and fundamental theories of kinetics. Gas-phase systems, unimolecular and free-radical reactions. Reactions involving excited species, pyrolysis, photolysis, mass spectrometry; comparison of flash photolysis and pulse radiolysis. Reactions in solution. Surface kinetics and catalysis. Fast reactions. Applications of the above concepts to inorganic and organic reaction mechanisms.

TEXTBOOK

Laidler, K. J. *Chemical Kinetics*. 2nd ed. McGraw-Hill, 1965.

PRINCIPAL REFERENCE BOOKS

Amdur, I. & Hammes, G. C. *Chemical Kinetics*. McGraw-Hill, 1966.

Benson, S. W. *Thermochemical Kinetics*. Wiley, 1968.

Calvert, J. G. & Pitts, J. N. *Photochemistry*. Wiley, 1966.

Caldin, E. F. *Fast Reactions in Solution*. Blackwell, 1964.

Daniels, F. et al. *Experimental Physical Chemistry*. 6th or 7th ed. McGraw-Hill, 1962 or 1970.

Gardiner, W. C. *Rates and Mechanisms of Chemical Reactions*. Benjamin, 1969.

Glasstone, S., Laidler, K. J. & Eyring, H. *Theory of Rate Processes*. McGraw-Hill, 1941.

Shoemaker, D. P. & Garland, C. W. *Experiments in Physical Chemistry*. 2nd ed. McGraw-Hill, 1967.

Weston, R. E. & Schwarz, H. A. *Chemical Kinetics*. Prentice-Hall, 1972.

2.013M Thermochemistry

Prerequisite: 2.002A.

Thermochemistry of metal complex and organometallic reactions: Dissociation of molecules and bond energies; solvation of ions and molecules; reactions in non-aqueous solution; substitution reactions; Lewis acid-base reactions; formation of inorganic polymers. Energy induced reactions. Mechanism of inorganic substitution, electron-transfer and free-radical reactions; reactions of coordinated ligands; template synthesis; porphyrin complexes.

TEXTBOOK

Benson, D. *Mechanisms of Inorganic Reactions in Solution*. McGraw-Hill, 1968.

PRINCIPAL REFERENCE BOOKS

Cottrell, T. L. *The Strengths of Chemical Bonds*. 2nd ed. Butterworth, 1958.

Hill, H. A. O. & Day, P. *Physical Methods in Advanced Inorganic Chemistry*. Wiley, 1968.

Litzow, M. R. & Spalding, T. R. *Mass spectrometry of Inorganic and Organometallic Compounds*. Elsevier, 1973.

2.023L Biological and Agricultural Chemistry

Prerequisites: 2.002B. Excluded: 2.053L.

Water supplies, bore water, methods of examination and assessment. Origin of plant constituents of importance to food industries. Oxygen and nitrogen heterocyclic chemistry as required for natural pigments, phenolics, tannins, methods of estimation. Photochemical processes. Toxic and non-

toxic constituents, alkaloids, enzyme inhibitions, preparation, assessment and active site concepts.

Animal feeds, fodders, silage formation. Soil and plant nutrients. Fractionations of carbohydrates, proteins. Structure and glyceride fractionation of fats.

Agricultural chemicals, feed additives. Insecticides, pesticides, natural and synthetic. Fungicides, herbicides and plant growth hormones. Synthesis formulation, stability and degradation processes. Extensions in vitamin chemistry. Trace metals in plant and animal metabolites.

TEXTBOOK

No set text.

2.063A Advanced Molecular Spectroscopy

Prerequisite: 2.003H.

Theory: Born-Oppenheimer approximation; theory of transition probabilities; group theory; normal mode analysis.

Spectra: rotational, vibrational and electronic structure in molecular spectra, including microwave, infrared, Raman, UV-visible and photoelectron spectra. Kinetic spectroscopy. Lasers.

TEXTBOOK

No set text.

PRINCIPAL REFERENCE BOOKS

Hanna, M. W. *Quantum Mechanics in Chemistry*. 2nd ed. Benjamin, 1969.

Herzberg, G. *Molecular Spectra and Molecular Structure. I. Spectra of Diatomic Molecules*. Van Nostrand, 1950.

Herzberg, G. *Molecular Spectra and Molecular Structure. II. Infrared and Raman Spectra of Polyatomic Molecules*. Van Nostrand, 1945.

Herzberg, G. *Molecular Spectra and Molecular Structure. III. Electronic Spectra and Electronic Structure of Polyatomic Molecules*. Van Nostrand, 1956.

Herzberg, G. *Spectra and Structures of Simple Free Radicals*. Cornell, 1971.

Phillips, L. F. *Basic Quantum Chemistry*. Wiley, 1965.

Lasers and Light. Readings from Scientific American. Freeman, 1969.

Wilson, E. B., Decius, J. C. & Cross, P. C. *Molecular Vibrations*. McGraw-Hill, 1955.

2.013C Advanced Inorganic Chemistry

Prerequisite: 2.042C. Co-requisite: 2.003C.

Reaction mechanisms involving metal complexes, spectroscopic methods for investigating metal complexes, including infrared, electronic and Mossbauer spectroscopy. Inorganic crystal chemistry; structures and properties of simple compounds, solid electrolytes, semi-conductors, and insulators. π -Complexes, carbonyls, nitrosyls, ethylene complexes and sandwich-type compounds; methods of preparation, reactions, evidence for structures and type of bonding involved.

TEXTBOOK

Cotton, F. A. & Wilkinson, G. *Advanced Inorganic Chemistry*. 2nd ed. Wiley, 1966.

PRINCIPAL REFERENCE BOOKS

- Adams, D. M. & Raynor, J. B. *Advanced Practical Inorganic Chemistry*. Wiley, 1965.
- Basolo, F. & Pearson, R. *Mechanism of Inorganic Reactions*. 2nd ed. Wiley, 1965.
- Chemical Society of London. Special Publication No. 17, 1964. *Stability Constants of Metal Ion Complexes*.
- Cotton, F. A. *Chemical Applications of Group Theory*. Wiley, 1963.
- Dwyer, F. P. & Mellor, D. P. *Chelating Agents & Metal Chelates*. Academic, 1964.
- Edwards, J. O. *Inorganic Reaction Mechanisms*. Benjamin, 1964.
- Hannay, N. B. *Solid State Chemistry*. Prentice-Hall, 1967.
- Huheey, J. E. *Inorganic Chemistry, Principles of Structure and Reactivity*. Harper & Row, 1972.
- Lewis, J. & Wilkins, R. *Modern Coordination Chemistry*. Interscience, 1959.
- Nakamoto, K. *Infrared Spectra of Inorganic and Coordination Compounds*. 2nd ed. Wiley/Interscience, 1970.
- Nakamoto, K. & McCarthy, P. J. *Spectroscopy & Structure of Metal Chelate Compounds*. Wiley, 1968.
- Wells, A. F. *Structural Inorganic Chemistry*. 3rd ed. O.U.P., 1962.

2.013D Advanced Analytical Chemistry

Prerequisite: 2.002D. Co-requisite: 2.003D.

Sampling of biological, environmental and industrial materials. Preparation for analysis. Approaches to analysis of gases, waters, soils and geological materials, plants and biological materials, ceramics, ferrous and non-ferrous metals and alloys.

TEXTBOOKS

- Chalmers, R. A. *Aspects of Analytical Chemistry*. Contemporary Science. Oliver & Boyd, 1968. Paperback.
- Eckschlager, K. *Errors and Measurements in Chemical Analysis*. Chalmers, R. A. trans. ed. Van Nostrand, 1969.
- Ewing, G. W. *Instrumental Methods of Chemical Analysis*. McGraw-Hill, 1969.
- Hamilton, L. F., Simpson, S. & Ellis, D. W. *Calculations of Analytical Chemistry*. 7th ed. McGraw-Hill, 1969.
- Kolthoff, I. M., Sandell, E. B., Meehan, E. J. & Bruchenstein, S. *Quantitative Chemical Analysis*. Macmillan, 1969.
- Schwarzenbach, G. & Flaschka, H. *Complexometric Titrations*. Irving, H. M. trans. 2nd ed. Methuen, 1969.

2.013B Synthesis of Complex Organic Molecules

Prerequisite: 2.002B. Co-requisite: 2.003B.

Introduction, aims, stereochemical and positional problems, recognition of sub-units. Modern functional group transformations with particular reference to positional and stereochemical control. Spectroscopic markers. Electrocyclic reactions, formations, contraction and expansion of rings, Diels-Alder and related cycloadditions, photochemistry, Woodward-Hoffmann rules, protecting groups. Representative syntheses of compounds of theoretical and biological interest, e.g. cubane, Dewar benzene, caryophyllene, reserpine, corrins.

TEXTBOOK

- Carruthers, W. *Some Modern Methods of Organic Syntheses*. C.U.P., 1971.

2.023B Natural Product Chemistry

Prerequisite: 2.002B. Co-requisite: 2.003B.

The isolation, structure determination, synthesis and biosynthesis, and the reactions of selected classes of organic compounds of biological significance. The chemistry of plant and animal products—terrestrial and marine. Examples from carbohydrates, terpenoids and steroids, alkaloids and other naturally-occurring heterocyclic systems. Interdisciplinary aspects of the topic.

TEXTBOOK

Tedder, J. M., Nechevatal, A., Murray, A. W. & Carnduff, J. *Basic Organic Chemistry Part IV*. Wiley, 1972.

2.033L Applied Organic Chemistry

Prerequisite: 2.002B. Excluded: 2.003L, 2.013L, 2.043L.

As for 2.003L but in greater detail and depth.

TEXTBOOK

No set text.

PRINCIPAL REFERENCE BOOKS

- Carney, T. P. *Laboratory Fractional Distillation*. McMillan, 1949.
Flory, P. J. *Principles of Polymer Chemistry*. Cornell, 1953.
Heftmann, E. *Chromatography*. 2nd ed. Reinhold, 1967.
Kan, R. O. *Organic Photochemistry*. McGraw-Hill, 1966.
Kharasch, N. ed. *The Chemistry of Organic Sulphur Compounds*. Vol. 1, Pergamon, 1961.
Lenz, R. W. *Organic Chemistry of Synthetic Polymers*. Interscience, 1967.
Markley, K. L. *The Fatty Acids*. 2nd ed. Interscience, 1960-67.
Pinder, A. R. *Chemistry of the Terpenes*. Chapman & Hall, 1960.
Pryor, W. A. *Mechanisms of Sulphur Reactions*. McGraw-Hill, 1962.
Schwarz, J. C. P. *Physical Methods in Organic Chemistry*. Oliver & Boyd, 1964.
Scott, G. *Atmospheric Oxidation and Antioxidants*. Elsevier, 1965.
Solomon, D. H. *Organic Film Formers*. Wiley, 1967.

2.043L Chemistry and Enzymology of Foods

Prerequisite: 2.002B. Excluded: 2.003L, 2.013L, 2.033L.

As for 2.013L but in greater detail and depth.

TEXTBOOK

No set text.

PRINCIPAL REFERENCE BOOKS

- Gunstone, F. D. *An Introduction to the Chemistry and Biochemistry of the Fatty Acids and their Glycerides*. Chapman & Hall, 1968.
Heftmann, E. *Chromatography*. 2nd ed. Reinhold, 1967.
Karrer, P. & Jucker, E. *Carotenoids*. Elsevier, 1950.
Markley, K. L. *The Fatty Acids*. 2nd ed. Interscience, 1960-67.
Neurath, H. *The Proteins*. Vol. I-IV. 2nd ed. Academic, 1963-68.
Pigman, W. *The Carbohydrates*. Academic, 1957.
Reed, G. *Enzymes in Food Processing*. Academic, 1966.
Schultz, H. W. ed. *Carbohydrates and Their Roles*. Avi. Pub. Co., 1969.
Schwarz, J. C. P. *Physical Methods in Organic Chemistry*. Oliver & Boyd, 1964.

Scott, G. *Atmospheric Oxidation and Antioxidants*. Elsevier, 1965.

Walton, H. F. *Principles and Methods of Chemical Analysis*. 2nd ed. Prentice-Hall, 1964.

Willard, H. H., Merritt, L. L. & Dean, J. A. *Instrumental Methods of Analysis*. 4th ed. Van Nostrand, 1965.

Subsidiary lists are supplied from the Department.

2.053L Biological and Agricultural Chemistry

Prerequisite: 2.002B. Excluded: 2.023L.

As for 2.023L but in more detail and depth.

TEXTBOOK

No set text.

SCHOOL OF METALLURGY

4.911 Materials Science

The atomic structure of metals. The grain structure of metals; origin; modification. Structure of alloys—theory. Structure, properties and heat treatment of commercially important alloys based on aluminium, copper and iron in particular. Corrosion. Control of structure and properties, commercial alloys, materials selection.

TEXTBOOK

Wulff, J., ed. *Structure and Properties of Materials*. Vols. I and III. Wiley.

PRINCIPAL REFERENCE BOOK

Guy, A. G. *Elements of Physical Metallurgy*. Addison-Wesley.

4.951 Materials Technology

Materials selection, based on structure and properties. Equilibrium and kinetics in metallic systems. The structure of ceramics with particular reference to silicates. Structural changes. Electroplating processes considered from a theoretical and practical standpoint. Structure and testing of electro-deposits; electrochemical protection.

The structure, properties and technology of wood.

SCHOOL OF MECHANICAL AND INDUSTRIAL ENGINEERING

5.010 Engineering A

Prerequisite: None.

Engineering Mechanics I: Two and three dimensional force systems, composition and resolution of forces, laws of equilibrium. Statics of rigid bars, pin-jointed frames. Shear force, axial force, bending moment. Simple states of stress. Kinematics of the plane motion of a particle. Kinetics of the plane motion of a particle; equations of motion, dynamic equilibrium, work and energy.

Introduction to Engineering Design: Engineering method, problem identification, creative thinking, mathematical modelling, computer aided design,

materials and processes, communication of ideas, the place of engineering in society.

Introduction to Materials Science: The structure and properties of the main types of engineering materials, with emphasis on the way in which properties may be controlled by controlling structure.

TEXTBOOKS

Gordon, J. E. *The New Science of Strong Materials, or Why You Don't Fall Through the Floor.* Penguin.

Scientific American. *Materials.* Freeman.

Svensson, N. L. *Introduction to Engineering Design.* N.S.W. University Press.

Walshaw, A. C. *SI Units in Worked Examples.* Longman.

PRINCIPAL REFERENCE BOOKS

Beer, F. P. & Johnston, E. R. *Statics and Dynamics.* Vector ed. McGraw-Hill.

Harrisberger, L. *Engineeringmanship.* Wadsworth.

Krick, E. V. *Introduction to Engineering and Engineering Design.* Wiley.

Meriam, J. L. *Statics and Dynamics.* Wiley.

5.030 Engineering C

Engineering Drawing: Fundamental concepts of descriptive geometry, including reference systems, representation of point, line and plane; fundamental problems of position and measurement. Application of descriptive geometry to certain problems arising in engineering practice. Special emphasis on ability to visualize problems and processes involved in their solution. Instruction in the correct use of drawing instruments and the application of drawing standards. Measurements and dimensioning. Orthographic and isometric projections.

Mechanics of Solids I: Concepts of stress, strain. Stress and deformation due to axial force; linear and non-linear problems; compound bars. Concepts of stiffness and flexibility. Bending moment and shear force in simple beams. First and second moments of area. Stress and deformation due to bending; linear and non-linear problems; use of step functions.

TEXTBOOKS

Hall, A. S. *Introduction to the Mechanics of Solids.* Wiley.

Robertson, R. G. *Descriptive Geometry.* Pitman.

Thomson, R. *Exercises in Graphic Communication.* Nelson.

PRINCIPAL REFERENCE BOOKS

Beer, F. P. & Johnston, E. R. *Statics and Dynamics.* Vector ed. McGraw-Hill.

Meriam, J. L. *Statics and Dynamics.* Wiley.

Production Technology: Description and appraisal of the processes classified as: forming from liquid or solid, material removal, material joining. Machines. Analysis of the primary functions of the machine tools and an appraisal of their limitations. Principles of operation of common machine tools and illustrations of their use.

TEXTBOOK

De Garmo, E. P. *Materials and Processes in Manufacturing.* Macmillan.

SCHOOL OF MATHEMATICS

10.001 Mathematics I

Calculus, analysis, analytic geometry, linear algebra, an introduction to abstract algebra, elementary computing.

PRELIMINARY READING LIST

Allendoerfer, C. B. & Oakley, C. O. *Principles of Mathematics*. McGraw-Hill.

Bell, E. T. *Men of Mathematics*. 2 vols. Pelican.

Courant, R. & Robbins, H. *What is Mathematics*. O.U.P.

Polya, G. *How to Solve It*. Doubleday Anchor.

Sawyer, W. W. *A Concrete Approach to Abstract Algebra*. Freeman.

Sawyer, W. W. *Prelude to Mathematics*. Pelican.

TEXTBOOKS

Blatt, J. M. *Basic Fortran IV Programming (Miditran Version)*. Computer Systems (Aust.).

Shields, P. C. *Elementary Linear Algebra*. 2nd ed. Worth.

Thomas, G. B. *Calculus and Analytic Geometry*. 4th ed., Addison-Wesley.

PRINCIPAL REFERENCE BOOKS

Campbell, H. F. *Matrices with Applications*. Appleton-Century-Crofts.

Cohn, P. M. *Solid Geometry*. Routledge.

Kaplan, W. & Lewis, D. J. *Calculus and Linear Algebra*. Vols 1 & 2. Wiley.

Kelly, G. M. *Introduction to Linear Algebra and Vector Geometry*. Reed Education, Sydney, 1971.

Lange, I. H. *Elementary Linear Algebra*. Wiley.

Pedoe, D. *A Geometric Introduction to Linear Algebra*. Wiley.

Purcell, E. J. *Calculus With Analytic Geometry*. Appleton-Century-Crofts.

Smith, W. K. *Limits and Continuity*. Collier-Macmillan.

Tetra, B. C. *Basic Linear Algebra*. Harper and Row.

Zelinsky, D. *A First Course in Linear Algebra*. Academic.

10.011 Higher Mathematics I

Calculus, analytic geometry, linear algebra, an introduction to abstract algebra, elementary computing.

PRELIMINARY READING LIST

As for 10.001 plus:

Arnold, B. H. *Intuitive Concepts in Elementary Topology*. Prentice-Hall.

David, F. N. *Games, Gods and Gambling*. Griffin.

Felix, L. *The Modern Aspect of Mathematics*. Science.

Huff, D. *How to Lie with Statistics*. Gollancz.

Reid, C. *From Zero to Infinity*. Routledge.

TEXTBOOKS

Blatt, J. M. *Basic Fortran IV Programming (Miditran Version)*. Computer Systems (Aust.).

Shields, P. C. *Elementary Linear Algebra*. 2nd ed. Worth.

Spivak, M. *Calculus*. Benjamin.

PRINCIPAL REFERENCE BOOKS

As for 10.001 plus:

Abraham, R. *Linear and Multilinear Algebra*. Benjamin.

Bellman, R. & Cooke, K. L. *Modern Elementary Differential Equations*. 2nd ed. Addison-Wesley.

- Brauer, F. & Nohel, J. *Ordinary Differential Equations*. Benjamin.
 Burkhill, J. C. *A First Course in Mathematical Analysis*. C.U.P.
 Crowell, R. H. & Williamson, R. E. *Calculus of Vector Functions*. Prentice-Hall.
 Hochstadt, H. *Differential Equations*. Holt, Rinehart & Winston.
 Lang, S. *Linear Algebra*. Addison-Wesley.
 Murdoch, D. C. *Linear Algebra for Undergraduates*. Wiley.
 Spivak, M. *Calculus on Manifolds*. Benjamin.

10.021 Mathematics IT

Calculus, analysis, analytic geometry, algebra, probability theory, elementary computing.

TEXTBOOKS

- Blatt, J. M. *Basic Fortran IV Programming (Miditran Version)*. Computer Systems (Aust.).
 Greening, M. G. *First Year General Mathematics*. N.S.W.U.P.
 Youse, B. K. & Stalnaker, A. W. *Calculus for the Social and Natural Sciences*. International Textbook Co.

PRINCIPAL REFERENCE BOOKS

- Burford, R. L. *Introduction to Finite Probability*. Merrill.
 Christian, R. C. *Logic and Sets*. Blaisdell.
 Hoyt, J. P. *A Brief Introduction to Probability Theory*. International Text Book Co.
 Johnson, W. G. & Zaccaro, L. N. *Modern Introductory Mathematics*. McGraw-Hill.

Mathematics II

Consists of 10.111A, 10.111B and 10.211A.

10.111A Pure Mathematics II—Linear Algebra

Vector Spaces: inner products, linear operators, spectral theory, quadratic forms. Linear Programming: convex sets and polyhedra, feasible solutions, optimality, duality.

TEXTBOOKS

SESSION 1

Tropper, A. M. *Linear Algebra*. Nelson. Paperback.

SESSION 2

Gass, H. *Linear Programming*. ISE. McGraw-Hill.
 Tropper, A. M. *Linear Algebra*. Nelson. Paperback.

PRINCIPAL REFERENCE BOOKS

- Lang, S. *Linear Algebra*. Addison-Wesley.
 Hoffman, K. & Kunze, R. *Linear Algebra*. Prentice-Hall.
 Lipschutz, S. *Linear Algebra*. Schaum.

10.111B Pure Mathematics II—Analysis

Real analysis: partial differentiation, multiple integrals. Analysis of real valued functions of one and several variables. Complex analysis: analytic

functions, Taylor and Laurent series, integrals, Cauchy's theorem, residues, evaluation of certain real integrals, maximum modulus principles.

TEXTBOOKS

SESSION 1

Kolman, B. & Trench, W. F. *Elementary Multivariable Calculus*. Academic Press.

SESSION 2

Churchill, R. V. *Complex Variables and Applications*. I.S.E. McGraw-Hill.

PRINCIPAL REFERENCE BOOKS

Hilton, P. J. *Partial Derivatives*. Routledge.

Thomas, G. B. *Calculus and Analytic Geometry*. 4th ed. Addison-Wesley.

10.211A Applied Mathematics II—Mathematical Methods

Review of functions of two and three variables, divergence, gradient, curl; line, surface, and volume integrals; Green's and Stokes' theorems. Special functions, including gamma and Bessel functions. Differential equations and boundary value problems, including vibrating string and vibrating circular membrane; Fourier series.

TEXTBOOKS

Blatt, J. M. *Basic Fortran IV Programming (Miditran Version)*. Computer Systems (Aust.).

Sneddon, I. N. *Fourier Series*. Routledge and Keegan Paul.

Spiegel, M. R. *Theory and Problems of Vector Analysis*. Schaum.

Spiegel, M. R. *Advanced Mathematics for Scientists and Engineers*. Schaum.

PRINCIPAL REFERENCE BOOKS

Betz, H., Burcham, P. B. & Ewing, G. M. *Differential Equations with Applications*. I.S.R. Harper.

Dettman, J. W. *Mathematical Methods in Physics and Engineering*. McGraw-Hill.

Smith, G. D. *Vector Analysis Including the Dynamics of a Rigid Body*. O.U.P.

SCHOOL OF PSYCHOLOGY

12.001 Psychology I

An introduction to the content and methods of psychology as a behavioural science, with special emphasis on (a) the biological and social bases of behaviour, (b) learning, and (c) individual differences.

The course includes training in methods of psychological enquiry, and the use of elementary statistical procedures.

Part A—Theory

TEXTBOOKS

CRM. *Psychology Today*. 2nd ed. C.R.M., 1972.

Kelly, E. L. *Assessment of Human Characteristics*. Brooks-Cole, 1967.

Mednick, S. A., Pollio, H. R. & Loftus, E. F. *Learning*. 2nd ed. Prentice-Hall, 1973.

Selected *Scientific American* reprints, as advised by the School.

The following is recommended as an additional text for intending honours students:—

Hebb, D. O. *Textbook of Psychology*. 3rd ed. Saunders, London, 1972.

Part B—Practical

TEXTBOOK

Lumsden, J. *Elementary Statistical Method*. W.A.U.P., 1969.

Psychology II

The 2nd year of Psychology is comprised of *three* separate units, 12.052, 12.062 and 12.152, as detailed below.

12.052 Basic Psychological Processes II

SESSION 1

Basic phenomena of learning, perception and motivation. Biological bases of behaviour. Students select two areas within this unit for concentration of study.

TEXTBOOKS*

†Cofer, C. N. *Motivation and Emotion*. Scott, Foresman, 1972.

**Haber, R. N. & Hershenon, M. *The Psychology of Visual Perception*. Holt, Rinehart & Winston, 1973.

PRINCIPAL REFERENCE BOOKS†

Rose, S. *The Conscious Brain*. Weidenfeld & Nicolson, 1973.

Van Sommers, P. *The Biology of Behaviour*. Wiley, 1972.

12.062 Complex Psychological Processes II

SESSION 2

Information processing and cognitive functioning. Developmental influences on individual and group behaviour. Social bases of behaviour. Psycholinguistics. Students will select two areas within this unit for concentration of study.

PRINCIPAL REFERENCE BOOKS

Aronson, E. *The Social Animal*. Freeman, 1972.

Higgin, G. *Symptoms of Tomorrow*. Plume/Ward Lock, 1973.

† For students not intending to proceed to further courses in Motivation, Murray, E. J. *Motivation and Emotion*. Prentice-Hall, 1964, could serve as an alternative textbook although it might have to be supplemented by other material.

**For students not intending to proceed to further courses in Perception, alternative textbooks would be:

Hochberg, J. E. *Perception*. Prentice-Hall, 1964.

or,

Weintraub, D. J. & Walker, E. L. *Perception*. Basic Concepts in Psychology Series. Brooks-Cole, 1966.

* For other sections of the course, see Principal Reference Books.

‡ Selected readings in Learning and in Physiological Psychology are announced at the beginning of the course.

- Jorgensen, F. *Biology and Culture in Modern Perspective*. Freeman, 1973.
 Kennedy, W. A. *Child Psychology*. Prentice-Hall, 1971.
 Lindsay, P. H. & Norman, D. A. *Human Information Processing*. Academic, 1972.

12.152 Research Methods II

SESSIONS 1 & 2

General introduction to the design and analysis of experiments; hypothesis testing, estimation, power analysis; general treatment of simple univariate procedures; correlation and regression.

TEXTBOOKS

- Anderson, B. F. *The Psychology Experiment: An Introduction to Scientific Method*. 2nd ed. Brooks/Cole, Belmont, California, 1971.
 Welkowitz, J., Ewen, R. B. & Cohen, J. *Introductory Statistics for the Behavioral Sciences*. Academic, 1971.

REFERENCE BOOKS

- Bachrach, A. J. *Psychological Research: An Introduction*. 3rd ed. Random House, 1972.
 Hays, W. L. *Statistics*. Holt Int. Ed. Holt, Rinehart & Winston, 1969.
 Lumsden, J. *Elementary Statistical Method*. Univ. of W.A. Press, 1969.
 McGuigan, F. J. *Experimental Psychology: A Methodological Approach*. 2nd ed. Prentice-Hall, 1968.
 Underwood, B. J. *Psychological Research*. Appleton-Century-Crofts, 1957.

Psychology III

The third year of Psychology is comprised of *four* separate units selected from the following list in consultation with the School of Psychology: Physiological Psychology, Human Information Processing, Abnormal Psychology, Social Psychology, Developmental Psychology, Learning, Personality, Motivation, Psychological Assessment, Perception, and Research Methods.

Students should consult the School of Psychology for details of subject numbers, course content, textbooks and principal reference books.

SCHOOL OF ACCOUNTANCY

14.001 Introduction to Accounting

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

TEXTBOOK

Thacker, R. J. *Introduction to Modern Accounting. With Student Guide.* 2nd ed. Prentice-Hall, 1974.

14.023 Accounting for Health Administration

Introduction to the fund theory of accounting. The recording of hospital transactions in the various funds and the preparation, analysis and interpretation of historical accounting reports. Internal control, budgeting and cost analysis in the hospital context.

TEXTBOOKS

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

Li, D. H. *Accounting, Computers, Management Information Systems.* McGraw-Hill, 1968.

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

Seawell, L. V. *Hospital Accounting and Financial Management.* Physicians Record, 1964.

Vatter, W. J. *Operating Budgets.* Prentice-Hall, 1969.

SCHOOL OF ECONOMICS

16.501 Economics (Health Administration)

An introductory examination of the working of a modern economic system, with some reference to Australian economic institutions and conditions.

The main topics are: consumer demand, cost analysis, market equilibrium, money and banking, pricing of factors of production, investment decisions, international trade, social accounting, social welfare, population trends and policy; and Australian economic institutions, including trade unions, arbitration system, the Tariff Board, the Reserve Bank. An introduction to the economics of health and social welfare.

TEXTBOOKS

Culyer, A. J. *The Economics of Social Policy.* Martin Robinson, 1973.

Hancock, K., Hughes, B. and Wallace, R. *Applied Economics: Readings for Australian Students.* McGraw-Hill, Sydney, 1972.

Robinson, R., Hughes, B. and Hayles, J. *Study Guide, Economics: An Introductory Analysis.* McGraw-Hill, 1970.

Samuelson, P. A., Hancock, K. and Wallace, R. *Economics: An Introductory Analysis.* Aust. ed., McGraw-Hill, 1970.

SCHOOL OF HEALTH ADMINISTRATION

16.001 Management I

Introduction to the major theories and schools of management. Identification and examination of major organizational variables including relationships between the organization and its environment, the planning process, formal and informal structures, authority relationships, technology, human resources, role performance and theory, coordination and communication, evaluation and control.

TEXTBOOK

Huse, E. F. & Bowditch, J. L. *Behavior in Organizations: A Systems Approach to Managing*. Addison-Wesley, 1973.

PRINCIPAL REFERENCE BOOKS

Kast, F. E. & Rosenzweig, J. E. *Organization and Management: A Systems Approach*. McGraw-Hill, 1970.

Koontz, H. and O'Donnell, C. *Management: A Book of Readings*. 2nd ed. McGraw-Hill, 1968.

16.002 Management II

An introduction to Operations Research including inventory models, queuing theory, simulation, linear programming, PERT. The application of OR to hospitals and health services. Computers and health services.

TEXTBOOKS

Griffith, J. R. *Quantitative Techniques for Hospital Planning and Control*. Heath Lexington Books, 1972.

Grundy, F. & Reinke, W. *Health Practice Research & Formalized Managerial Methods*. WHO, 1973.

PRINCIPAL REFERENCE BOOKS

Luck, G. M., Luckman, J., Smith, B. W. & Stringer, J. *Patients, Hospitals and Operational Research*. Tavistock, 1971.

Stimson, D. H. & Stimson, R. H. *Operations Research in Hospitals: Diagnosis and Prognosis*. Hospital Research and Education Trust, 1972.

Wren, G. *Modern Health Administration*. Georgia U.P., 1974.

16.003 Management III

Extension of the material of Management I and II into the specific operation of health services. Examines concepts of health and discusses ecosystematic and other approaches to the managerial functions in the health service and hospital settings with attention to organization structures and technology, formal and informal relationships, coordination and control.

TEXTBOOKS

Grant, C. *Hospital Management*. Churchill-Livingstone, 1972.

Hetzel, B. S. *Life and Health in Australia*. A.B.C., 1971.

PRINCIPAL REFERENCE BOOKS

Levey, S. & Loomba, N. P. *Health Care Administration*. Lippincott, 1973.

Rhenman, E. *Managing the Community Hospital*. Saxon Lexington, 1973.

Sheldon, A., Baker, F. & McLaughlin, C. P. eds. *Systems and Medical Care*. MIT Press, 1970.

16.101 Comparative Health Care Systems

A comparative study of American, English and other selected health services, using the same bases as 16.801 The Australian Health Care System in relation to: public health services; personal health services; hospital services, comparing the roles of government and private enterprise; health manpower; financing; legislation; regionalisation; organizational developments.

TEXTBOOKS

Fry, J. *Medicine in Three Societies*. MTP, 1969.

Somers, A. R. *Health Care in Transition: Directions for the Future*. Hospital Research and Educational Trust, 1971.

PRINCIPAL REFERENCE BOOK

Lindsay, A. *Socialised Medicine in England and Wales*. Chapel Hill, 1962.

16.201 Law I

Introduction to legal theory and elementary jurisprudence; the rules of statutory interpretation and the doctrine of precedent in theory and practice. This is followed by an introduction to the Australian Constitution, an analysis of section 51, paragraph XXIII A and the implications of section 96 for the relations of the Australian Government and the States. An introduction to the law of contract with emphasis on bailments. An introduction to employers' liability and the law of tort, workers' compensation and the tort of negligent advice.

TEXTBOOKS

Compensation and Rehabilitation in Australia: Report of the National Committee of Inquiry. Aust. Govt. Pub. Serv., July 1974.

Derham, D. P., Maher, F. K. H. and Waller, P. L. *An Introduction to Law*, 2nd ed. Law Book Co., 1971.

Shtein, B. and Lindgren, K. *An Introduction to Business Law*. 2nd ed. Law Book Co., 1972.

16.202 Law II

The Australian tort system; the concept of foreseeability; competing theories of damages apportionment. The problems of informed consent and the tort of trespass to the person. The law in all Australian jurisdictions relating to illegal operations and sterilization operations. The theory and practice of vicarious liability; the control test and the organizational test. The liabilities of the hospital as an occupier of premises, the various duties to persons entering thereupon. A short course on industrial law and the access of health services organizations to the various industrial tribunals. The legal status of trade unions. The law and psychiatry, the McNagten Rules and the defence of automatism. The various Mental Health Acts and their interpretation by the Courts.

TEXTBOOKS

Compensation and Rehabilitation in Australia: Report of the National Committee of Inquiry. Aust. Govt. Pub. Serv., July 1974.

Fleming, J. G. *The Law of Torts*, 4th ed. Law Book Co., 1971.

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

16.301 Political Science

A general introduction to the study of politics, with special reference to Australian political institutions and administrative practices. Topics covered include the following: Concepts and theories of politics; Australian political institutions and the party system. The constitution and intergovernmental financial and legal relations; public administration with special reference to the Commonwealth and New South Wales public services.

TEXTBOOKS

- Blau, P. M. *Bureaucracy in Modern Society*. Random House, N.Y., 1956.
 Dahl, R. A. *Modern Political Analysis*. 2nd ed. Prentice-Hall, 1970.
 Miller, J. D. B. and Jinks, B. *Australian Government and Politics: an Introductory Survey*. 4th ed. 1970.
 Rorke, J. ed. *Politics at State Level*. University of Sydney, 1970.
 Spann, R. N. ed. *Public Administration in Australia*, 3rd ed. Govt. Printer, 1971.

16.302 Social Administration

A historical overview of the pattern of development affecting social welfare policy in Australia. The circumstances of settlement and its influences; convicts and emancipation; immigration and the land question; education; trade unions and the labour movement; charity and government welfare provision; development of social services; the welfare state; universal and selective services; poverty; economic growth and social growth; democratic control of welfare policy.

TEXTBOOKS

- Kewley, T. H. *Australia's Welfare State*. Macmillan, Sydney, 1969.
 Rennison, G. A. *We Live Among Strangers*. M.U.P., 1970.
 Titmuss, R. M. *Commitment to Welfare*. Allen & Unwin, 1968.

PRINCIPAL REFERENCE BOOKS

- Blainey, G. *The Tyranny of Distance*. Sun Books, 1966.
 Donnison, D. V. & Chapman. *Social Policy & Administration*. Allen & Unwin, 1965.
 Kaim-Caudle, P. R. *Comparative Social Policy & Social Security*. C.U.P., 1973.
 Kewley, T. H. *Social Security in Australia*. 2nd ed. S.U.P., 1973.
 Roper, T. *The Myth of Equality*. N.U.A.U.S., 1970.
 Titmuss, R. M. *Essays on the Welfare State*. Allen & Unwin, 1963.
 Ward, R. *The Australian Legend*. O.U.P., 1958.
 Warham, J. *Social Policy in Context*. Batsford, 1970.

16.601 Behavioural Science I

An introduction to the basic concepts of sociology, psychology and anthropology. The emphasis is on an understanding of social processes and how society and the individual interact and affect one another. A section of the course deals with the development of students' skills in communication. The course is directed towards demonstrating that the various sciences dealing with human behaviour are inter-related, and therefore all topics are seen from a multi-disciplinary point of view.

TEXTBOOKS

- Berger, P. L. *Invitation to Sociology*. Penguin, 1960.
 Berger, P. L. & Berger, B. *Sociology: A Biographical Approach*. N.Y. Basic Books, 1972.
 Faraday, Ann. *Dream Power*. Pan, 1973.
 Freedman, J. L., Carlsmith, J. M. & Sears, D. O. *Social Psychology*. Prentice-Hall, 1970.
 Miller, G. A. *Psychology*. Pilgrim, 1962.
 Worsley, P. *Introducing Sociology*. Penguin, 1972.

PRINCIPAL REFERENCE BOOKS

- Bredemeir, H. C. and Stephenson, R. M. *The Analysis of Social Systems*. Holt, Rinehart & Winston, 1962.
 Lupton, T. *Management & the Social Sciences*. Penguin, 1971.
 Toffler, A. *Future Shock*. Pan, 1972.
 Worsley, P. *Problems of Modern Society*. Penguin, 1972.

16.602 Behavioural Science II

A study of one branch of behavioural science, namely the sociology of health. Students will consider the social role of medicine in our society, the nature of patient-healer relationships, the hospital as a social system, the processes of becoming a patient, illness as a social role, aspects of social class and status as they affect relationships in the health care system, social consequences of medical diagnosis and labelling, medical politics, and the place in society and in the health system of such special groups as the physically and mentally handicapped, the aged. Students also examine the implications of behavioural science for management situations.

TEXTBOOKS

- DeBono, E. *Lateral Thinking in Management*. McGraw-Hill, 1972.
 Goffman, E. *Stigma*. Pelican, 1968.
 Leach, G. *The Biocrats*. Penguin, 1972.
 Lupton, T. *Management & the Social Sciences*. Penguin, 1971.
 Mechanic, D. *Medical Sociology: A Selective View*. Free Press, 1968.

PRINCIPAL REFERENCE BOOKS

- Freeman, H. E., Levine, S. & Reeder, L. G. *Handbook of Medical Sociology*. Prentice-Hall, 1963.
 Goffman, E. *Asylums*. Anchor, 1963.
 Malleon, A. *Need your Doctor be so Useless*. Allen & Unwin, 1973.
 Schon, D. *Beyond the Stable State*. Pelican, 1973.

16.701 Statistics

Sources of statistical data; errors and pitfalls in the use of statistics. Measures of central tendency, dispersion and skewness. Elementary treatment of probability. Introduction to statistical inference; estimation and hypothesis testing; elements of sampling and sample survey design. Correlation and regression. Index numbers. Time series analysis. Introduction to demography and vital statistics; measures of mortality, fertility and population replacement. Statistics of the Australian health care system.

TEXTBOOKS

- Kazmier, L. J. *Statistical Analysis for Business and Economics*. McGraw-Hill, 1967.

Kilpatrick, S. J. *Statistical Principles in Health Care Information*. Uni. Park Press, 1973.

Pollard, A. H. *Demography: An Introduction*. Pergamon, 1968.

Yamane, T. *Statistics: An Introductory Analysis*. 3rd ed. Harper & Row, 1973.

PRINCIPAL REFERENCE BOOK

Benjamin, B. *Health & Vital Statistics*. Allen & Unwin, 1968.

16.801 The Australian Health Care System

Historical introduction; the present pattern of health care delivery; environmental health services; institutional care; community health services for special groups; specialised and supporting services; health service personnel; health service finance; critique of the Australian health care system.

TEXTBOOKS

Dewdney, J. C. H. *Australian Health Services*. Wiley, Sydney, 1972.

Sax, S. *Medical Care in the Melting Pot*. A. & R., 1972.

PRINCIPAL REFERENCE BOOKS

Dewdney, J. C. H. and Weil, T. P. *Australian Health Care Bibliography—A Guide Book*. U.N.S.W., Sydney, 1969.

Dewdney, J. C. H. & Williams, C. W. *The Australian and New Zealand Hospitals and Health Services Year Book, 1973*. N.S.W.U.P., 1973.

Hospitals and Health Services Commission. *A Report on Hospitals in Australia*. Aust. Govt. Pub. Serv., 1974.

Scotton, R. B. *Medical Care in Australia: an Economic Diagnosis*. Sun Books, 1974.

Students are provided with an extensive reading guide which includes recent official and other publications relevant to this course.

16.921 Health Care Planning I

The concept, determinants and assessment of community health. Application of the epidemiological approach to the identification and definition of community health problems. The processes of improving community health; problem identification, definition and analysis; determination of priorities; specifications of objectives; development of plans; plan evaluation; plan adoption; implementation of program, evaluation and revision. The planning and evaluation of personal health and environmental control programs. Political and economic considerations in planning health services. Manpower planning. Location, co-ordination and integration of health care services and facilities. Evaluation of community health service agencies and activities. Application of decision theory, systems analysis and operations research techniques to community health planning.

TEXTBOOKS

Donebedian, A. *A Guide to Medical Care Administration—Medical Care Appraisal*. A.P.H.A., 1969.

Grundy, F. & Reinke, W. A. *Health Practice Research*. W.H.O., 1973.

Myers, B. *A Guide to Medical Care Administration—Concepts & Principles*. A.P.H.A., 1969.

Reinke, W. A. ed. *Health Planning: Qualitative Aspects and Quantitative Techniques*. Johns Hopkins University, 1971.

PRINCIPAL REFERENCE BOOKS

Arnold, M. F. *et al. Administering Health Services*. 1971.

Hospitals and Health Services Commission. *A Report on Hospitals in Australia*. Aust. Govt. Pub. Serv., 1974.

A list of additional material is distributed to students enrolled in this subject.

16.922 Health Care Planning II

The planning and design process; composition and responsibilities of planning teams; briefing, proposal and approval of design projects; history of hospital design; planning for change and growth; national, regional and local planning requirements; location and siting of health care facilities; organisational requirements of hospital layout; supply and communication requirements; environmental design and safety; ergonomics of hospital equipment; hospital building structures and engineering services; building and equipment maintenance; modernisation and efficiency; building contract management; cost planning; commissioning, evaluation of buildings in use.

TEXTBOOKS

Baynes, K. ed. *Hospital Research and Briefing Problems*. King Edward's Hospital Fund, London, 1971.

Great Britain, Department of Health & Social Security, *Capricode (Hospital Building Procedure Notes)*, DHSS, 1971.

Holroyd, W. A. H. ed. *Hospital Traffic & Supply Problems*. King Edward's Hospital Fund, 1968.

Llewelyn-Davies, R. and Macauley, H. M. C. *Hospital Planning and Administration*. WHO, 1966.

PRINCIPAL REFERENCE BOOKS

Baynes, K. ed. *Evaluating New Hospital Buildings*. King Edward's Hospital Fund, 1969.

Hopkinson, R. G. *Hospital Lighting*. Heinemann, 1964.

Hudenburg, R. *Planning the Community Hospital*. McGraw-Hill, 1967.

Jefford, R. ed. *Principles of Hospital Planning*. Pitman Medical, 1967.

King Edward's Hospital Fund for London. *Commissioning New Hospital Buildings*. King Edward's Hospital Fund, 1966.

Norton, D. *By Accident or Design?* Livingstone, 1970.

Royal Australian Institute of Architects. *Working with your Architect*. R.A.I.A., 1971.

16.923 Health Care Planning III

Planning, design and evaluation for particular functions in health care facilities; nursing units, patient's room and equipment design; general and special nursing units; diagnostic and treatment facilities; outpatients and emergency services; health centres and G.P. surgeries; administrative, educational and residential accommodation; supply departments and works services.

TEXTBOOKS

Baynes, K. ed. *Hospital Research and Briefing Problems*. King Edward's Hospital Fund, London, 1971.

Holroyd, W. A. H. ed. *Hospital Traffic and Supply Problems*. King Edward's Hospital Fund, 1968.

Llewelyn-Davies, R. and Macauley, H. M. C. *Hospital Planning and Administration*. WHO, 1966.

PRINCIPAL REFERENCE BOOKS

Pütsep, E. *Planning of Surgical Centres*. Lloyd-Luke, 1973.

Scotland, Home & Health Department. *Organization & Design of Outpatient Departments*. Hospital Planning Note No. 6. H.M.S.O., Edinburgh, 1967.

16.901G Health Services Statistics I

Statistical methods and theory: frequency distributions and their description; an introduction to probability; principles of sampling; estimation and hypothesis testing; statistical decision theory; normal, Poisson and binomial distributions; linear regression; index numbers; time series analysis.

TEXTBOOKS

Kazmier, L. J. *Statistical Analysis for Business and Economics*. McGraw-Hill, N.Y., 1967.

Kilpatrick, S. J. *Statistical Principles in Health Care Information*. Uni. Park Press, 1973.

Yamane, T. *Statistics, An Introductory Analysis*. 3rd ed. Harper & Row, 1973.

PRINCIPAL REFERENCE BOOKS

Bradford Hill, A. *Principles of Medical Statistics*. 5th ed. Lancet, 1963.

Hess, I. et al. *Probability Sampling of Hospitals and Patients*. University of Michigan, 1961.

Hoel, P. G. *Elementary Statistics*. 2nd ed. Wiley, 1966.

Hoel, P. G. *Introduction to Mathematical Statistics*. 3rd ed. Wiley, 1962.

Moser, C. A. *Survey Methods in Social Investigation*. Heinemann, 1958.

Palmer, G. R. *A Guide to Australian Economic Statistics*. 2nd ed. Macmillan, 1966.

Yamane, T. *Elementary Sampling Theory*. Prentice-Hall, 1967.

16.902G Health Services Statistics II

The application of statistical methods to problems of management and problems of direct relevance to the health care field. Introduction to operations research (inventory theory, queuing theory, linear programming, PERT and CPM); applications of O.R. to hospital management problems; vital statistics and demography (measures of fertility and mortality, construction and use of life tables); hospital and health statistics; PAS/MAP and other hospital information systems.

TEXTBOOKS

Benjamin, B. *Health and Vital Statistics*. Allen and Unwin, London, 1968.

Griffith, J. R. *Quantitative Techniques for Hospital Planning and Control*. Heath Lexington Books, 1972.

Luck, G. M., Luckman, J., Smith, B. W. and Stringer, J. *Patients, Hospitals and Operational Research*. Tavistock, London, 1971.

Pollard, A. H. *Demography; An Introduction*. Pergamon, Sydney, 1968.

PRINCIPAL REFERENCE BOOKS

- Levin, R. I. and Kirkpatrick, C. A. *Quantitative Approaches to Management*. McGraw-Hill, 1965.
- Goetz, B. E. *Quantitative Methods. A Survey and Guide for Managers*. McGraw-Hill, 1965.
- McMillan, C. and Gonzalez, R. F. *Systems Analysis. A Computer Approach to Decision Models*. Irwin, 1968.

16.903G Health Services Organization

Relates the material presented in Behavioural Science I and Organization Theory I to the hospital and health care environment. Identification of formal and informal structures within the hospital and health services, and analysis of decision-making roles in these services.

PRINCIPAL REFERENCE BOOKS

- Durbin, R. L. and Springall, W. H. *Organisation and Administration of Health Care*. Mosby, 1969.
- Kazmier, L. J. *Principles of Management*. 2nd ed. McGraw-Hill, 1969.
- Koontz, H. & O'Donnell, C. *Principles of Management*. 4th ed. McGraw-Hill, 1968.
- Sheldon, A., Baker, F. & McLaughlin, C. P. eds. *Systems and Medical Care*. M.I.T., 1970.

16.904G Australian Health Care System

The historical, demographic and epidemiological background to the provision of health care in Australia. The role of the Commonwealth, the States, and other instrumentalities in providing health and hospital services. Financial and economic aspects of the provision of health care. Problems currently besetting the Australian health care system.

TEXTBOOKS

- Dewdney, J. C. H. *Australian Health Services*. Wiley, 1972.
- Sax, S. *Health Care in the Melting Pot: An Australian Review*. A. & R., 1972.

PRINCIPAL REFERENCE BOOKS

- Dewdney, J. C. H. and Weil, T. P. *Australian Health Care Bibliography—A Guide Book*. U.N.S.W., 1969.
- Dewdney, J. C. H. & Williams, C. W. *The Australian and New Zealand Hospitals and Health Services Year Book, 1973*. N.S.W.U.P., 1973.
- Hospitals and Health Services Commission. *A Report on Hospitals in Australia*. Aust. Govt. Pub. Serv., 1974.

16.905G Health Services Accounting

This course commences with an examination of basic theory and concept in relation to health service accounting. Particular attention is given to the interrelationship between statistics and accounting; the nature and use of cost data; budget preparation; co-ordination and integration of budgets; accounting for planning and control; cost finding procedures.

16.906G Hospital Organization and Management I

Analysis of the organizational structure of the hospital and its major components in terms of functions, systems, goals, values, professionalism, co-ordination and innovation. The interaction between management and the physical structure. The planning process and the project team, building siting and design, contract administration, cost planning, environmental design, commissioning and evaluation.

TEXTBOOK

Sheldon, A., Baker, F. and McLaughlin, C. P. *Systems and Medical Care*. MIT, 1970.

PRINCIPAL REFERENCE BOOKS

As for 16.916G Health Care Facilities D (see below)

plus

Durbin, R. & Springall, W. *Organization and Administration of Health Care*. Mosby, 1969.

16.907G Hospital Organization and Management II

Further detailed analysis of the subsystems of the hospital in terms of operation, staffing, design and communication. Planning and design for particular clinical and non-clinical functions and departments.

TEXT AND PRINCIPAL REFERENCE BOOKS

As for 16.906G Hospital Organization and Management I.

16.908G Behavioural Science (Health Administration)

General concepts in behavioural science relevant to management situations; the impact of illness on the person, family, social and work groups and the community as a whole. The process of becoming a patient; cultural attitudes to illness and death; stigmatization of certain illnesses; practitioner patient relationships; professionals in the health field; the rights and privileges of consumers of health care; the social implications of biophysics and medical progress.

PRELIMINARY READING

Berger, P. *Invitation to Sociology*. Penguin, 1960.

Jongeward, D. & James, M. *Born to Win*. Addison-Wesley, 1971.

TEXTBOOKS

Bredemeir, H. C. & Stephenson, R. M. *The Analysis of Social Systems*. Holt, Rinehart & Winston, 1962.

Coe, R. *Medical Sociology*. McGraw-Hill, 1970.

DeBono, E. *Lateral Thinking in Management*. McGraw-Hill, 1972.

Jongeward, D. et al. *Everybody Wins: Transactional Analysis Applied to Organizations*. Addison-Wesley, 1973.

Lupton, T. *Management & the Social Sciences*. Penguin, 1971.

Mallesson, A. *Need your Doctor be so Useless*. Allen & Unwin, 1973.

Mechanic, D. *Medical Sociology*. Free Press, 1968.

PRINCIPAL REFERENCE BOOKS

Cohen, P. *Modern Social Theory*. Heinemann, 1968. Paperback.

Freeman, H. E., Levine, S. and Reeder, L. G. *Handbook of Medical Sociology*. Prentice-Hall, 1963.

- Freidson, E. & Lorber, J. *Medical Men & Their Work*. Aldine-Atherton, Chicago, 1972.
- Larson, C. J. *Major Themes in Sociological Theory*. McKay, N.Y., 1973.
- Taylor, C. *In Horizontal Orbit: Hospitals and the Cults of Efficiency*. Holt, Rinehart & Winston, 1970.
- Von Mehring, O. and Kasdan, L. eds. *Anthropology and the Behavioral and Health Sciences*. University of Pittsburgh Press, 1970.

16.909G Community Health Planning

Factors determining planning, provision and integration of community health care: environmental health services, provision for the aged, the physically handicapped and the mentally handicapped; occupational hygiene programmes; maternal and child health clinics; school medical and dental services; preventive and screening services; health centres; health education; ancillary services.

TEXTBOOK

- Grundy, F. & Reinke, W. A. *Health Practice Research*. WHO, 1973.
- Reinke, W. A. *Health Planning: Qualitative Aspects and Quantitative Techniques*. Johns Hopkins University, 1971.

PRINCIPAL REFERENCE BOOKS

- Arnold, M. F. et al. *Administering Health Services*. Aldine Atherton, 1971.
- Donebedian, A. *A Guide to Medical Care Administration: Vol. II: Medical Care Appraisal*. A.P.H.A., 1969.
- Myers, B. A. *A Guide to Medical Care Administration: Vol. I: Concepts and Principles*. A.P.H.A., 1969.

16.910G Comparative Hospitals and Health Services Administration

Systems of hospital and health services in the United Kingdom, the United States of America and other countries; their sources of finance and the media through which it is disbursed; the authority and responsibilities of administrative bodies concerned; the planning of their services; methods of staffing; demographic and other measures of performance; comparisons with the Australian system.

TEXTBOOK

- Somers, A. R. *Health Care in Transition: Directions for the Future*. Hospital Research and Educational Trust, 1971.

PRINCIPAL REFERENCE BOOK

- Fry, J. *Medicine in Three Societies*. MTP, 1969.

16.911G Health Services Administration I

An introduction to the major management theorists and the application of their work to the problems of health service administration. Attention is given to organizational structure, the role of the individual in the organization, systems analysis techniques, and the administrative roles and relationships of health service personnel.

TEXTBOOKS

- Hunt, J. W. *The Restless Organisation*. Wiley, 1972.
 Levey, S. & Loomba, N. P. *Health Care Administration: A Managerial Perspective*. Lippincott, 1973.
 Pugh, D. S. ed. *Organization Theory*. Penguin, 1971.
 Pugh, D. S. et al. *Writers on Organizations*. Penguin, 1971.
 Sheldon, A., Baker, F. & McLaughlin, C. P. *Systems and Medical Care*. M.I.T., 1970.

PRINCIPAL REFERENCE BOOKS

- Durbin, R. L. and Springall, W. H. *Organization and Administration of Health Care*. Mosby, 1969.
 Grant, C. *Hospital Management*. Churchill Livingstone, 1973.
 Kazmier, L. J. *Principles of Management*. 2nd ed. McGraw-Hill, 1969.
 Koontz, H. and O'Donnell, C. *Principles of Management*. 4th ed. McGraw-Hill, 1968.
 Sheldon, A., Baker, F. and McLaughlin, C. P. *Systems and Medical Care*. MIT, 1970.

16.912G Health Services Administration II

Examination of the application of organizational theory to health services management with particular attention to the following topics: concepts of health and their impact on management; systems theory and health care; relationships between urban and health services planning; problems and issues in the interface of government and health services; analytic approaches to hospital management.

PRINCIPAL REFERENCE BOOKS

- Levey, S. & Loomba, N. P. *Health Care Administration*. Lippincott, 1973.
 Sheldon, A., Baker, F. & McLaughlin, C. *Systems and Medical Care*. M.I.T., 1970.

16.913G Health Care Facilities A

The Australian Health Scheme; the role of the Commonwealth, States and other instrumentalities in providing health and hospital services; authority and responsibility of the administrative bodies; legislation; sources and distribution of finance; planning of services; staffing; integration of services.

TEXTBOOK

- Dewdney, J. C. H. *Australian Health Services*. Wiley, 1972.

PRINCIPAL REFERENCE BOOKS

- Dewdney, J. C. H. and Weil, T. P. *Australian Health Care Bibliography—A Guide Book*. U.N.S.W., 1969.
 Dewdney, J. C. H. & Williams, C. W. *The Australian and New Zealand Hospitals and Health Services Year Book, 1973*. N.S.W.U.P., 1973.
 Hospitals and Health Services Commission. *A Report on Hospitals in Australia*. Aust. Govt. Pub. Serv., 1974.
 Sax, S. *Health Care in the Melting Pot: An Australian Review*. A. & R., 1972.

Students are provided with an extensive reading guide which includes recent official and other publications relevant to this course.

16.914G Health Care Facilities B

Comparative study of health services in various advanced and developing countries; major differences in policy and administration examined in relation to medical, social, political and economic patterns.

TEXTBOOK

Somers, A. R. *Health Care in Transition: Directions for the Future*. Hospital Research and Educational Trust, 1971.

PRINCIPAL REFERENCE BOOKS

Babson, J. H. *Health Care Delivery Systems*. Pitman Medical, 1972.

Fry, J. *Medicine in Three Societies*. MTP, 1969.

Fry, J. & Farndale, W. A. J. *International Medical Care*. MTP, 1972.

16.915G Health Care Facilities C

The organization and function of non-institutional health care facilities are examined. These facilities include environmental health services; domiciliary health and welfare services; provisions for the aged, physically and mentally handicapped; preventive and screening services; programmes of occupational hygiene; maternal and child welfare clinics; school medical and dental services; health education; ancillary services. The integration of services is discussed.

TEXTBOOKS

Grundy, F. & Reinke, W. A. *Health Practice Research*. WHO, 1973.

Hobson, W. ed. *The Theory and Practice of Public Health*. O.U.P., 1970.

Reinke, W. A. ed. *Health Planning: Qualitative Aspects and Quantitative Techniques*. Johns Hopkins University 1971.

PRINCIPAL REFERENCE BOOKS

Arnold, M. F. et al. *Administering Health Services*. Aldine Atherton, 1971.

Donehedian, A. *A Guide to Medical Care Administration: Vol. II: Medical Care Appraisal*. A.P.H.A., 1969.

Myers, B. A. *A Guide to Medical Care Administration: Vol. I: Concepts and Principles*. A.P.H.A., 1969.

16.916G Health Care Facilities D

Institutional provision of health care; factors generating content of institutional provision; principles of planning and design as applied to general, special and teaching hospitals and to facilities for community health care and welfare; roles of members of the planning team and methods of communication and co-ordination; the planning process from briefing through planning proposals and construction to contract administration, commissioning, modification and evaluation. Planning and design for particular clinical, administrative and supply functions. Environmental factors in design and operation of buildings.

PRINCIPAL REFERENCE BOOKS

Baynes, K. ed. *Evaluating New Hospital Buildings*. King Edward's Hospital Fund, 1969.

Baynes, K. ed. *Hospital Research and Briefing Problems*. King Edward's Hospital Fund, 1971.

- Great Britain, Department of Health & Social Security, *Capricode (Hospital Building Procedure Notes)*, DHSS, 1971.
- Holroyd, W. A. H. ed. *Hospital Traffic and Supply Problems*. King Edward's Hospital Fund, 1968.
- Hopkinson, R. G. *Hospital Lighting*. Heinemann, 1964.
- Jefford, R. ed. *Principles of Hospital Planning*. Pitman Medical, 1967.
- King Edward's Hospital Fund for London. *Commissioning New Hospital Buildings*. King Edward's Hospital Fund, 1966.
- Llewelyn-Davies, R. and Macauley, H. M. C. *Hospital Planning and Administration*. WHO, 1966.
- Norton, D. *By Accident or Design?* Livingstone, 1970.
- Royal Australian Institute of Architects. *Working with your Architect*. R.A.I.A., 1971.

16.917G Personnel Practice (Health Administration)

Students must do topic (a) and either (b) or (c).

- (a) *Industrial Relations*—A brief introduction to the Australian Arbitration System, Labour History, Conflict, Industrial Relations in the Public Sector. The effect of Technological Change.
- (b) *Personnel Management*—Recruitment and Selection, Interviewing and Counselling, Appraisal Scheme, Inservice Training, Personnel Statistics.
- (c) *Personnel Planning*—Manpower planning, Continuing education programmes, Manpower development.

TEXTBOOKS

To be advised.

PRINCIPAL REFERENCE BOOKS

- Bailey, N. *Hospital Personnel Administration*. Physicians Record Co., 1957.
- Cumings, M. W. *Hospital Staff Management*. Heinemann, 1971.
- Hepner, J. O., Boyer, J. M. and Westerhaus, C. L. *Personnel Administration and Labour Relations in Health Care Facilities*. Mosby, 1969.

16.918G Health Services Law

The Australian legal system; constitutional aspects of health services law; elements of the law of contract and tort; the tort of negligent advice; the vicarious liability of hospitals and medical negligence; industrial law and health services; the Mental Health Acts; the law relating to confidentiality and the right of privacy; the law relating to organ transplantation and experimentation; the Medical Acts.

TEXTBOOKS

- Compensation and Rehabilitation in Australia: Report of the National Committee of Inquiry*. Aust. Govt. Pub. Serv., July 1974.
- Fleming, J. G. *The Law of Torts*. 4th ed. Law Book Co., 1971.
- O'Dea, R. *Industrial Relations in Australia*. 2nd ed. West Publishing Corporation, 1970.

PRINCIPAL REFERENCE BOOKS

- Burton, A. W. *Medical Ethics and the Law*. Australasian Medical, 1971.
- Leahy Taylor, J. *The Doctor and Negligence*. Pitman Medical, 1971.
- Nathan, L. *Medical Negligence*. Butterworths, 1957.

Speller, S. R. *Law Relating to Hospitals and Kindred Institutions*. 5th ed. Lewis, 1971.

Wedderburn, K. W. *The Worker and the Law*. 2nd ed. Penguin, 1971.

BIOLOGICAL SCIENCES

17.011 Biology of Mankind

Mankind evolving—primate evolution; background of early man.

Evolution of technological man—biological problems associated with communication and tool-making; development of man as a hunting predator.

Development of utilisation of natural resources—development of man as a pastoralist and farmer; animal and plant domestication.

Evolution of urban man, culture, society—reproductive biology and genetics of man; population growth, fluctuation, control; natural history of disease, background of medical and industrial microbiology.

Effects of modern society—biology of social stress; effect of society in contemporary environments, planning and control.

TEXTBOOKS

Abercrombie, M., et al. *A Dictionary of Biology*. Penguin, 1967.

Boughey, A. S. *Man and the Environment*. MacMillan, 1971.

Cavalli-Sforza, L. L. *Elements of Human Genetics*. Addison-Wesley, 1973.

17.021 Comparative Functional Biology

Maintenance of the organism—gas exchange systems in plants and animals; transport inside organisms; uptake, digestions, absorption; enzymes structure and function; photosynthesis—process and structural relationships; metabolic systems, energy yields and pathways.

Developing organisms—sexual reproduction in plants and animals, general life cycle patterns; cell development and differentiation in flowering plants and mammals.

Control and co-ordination in organisms—organisms and water, uptake and effects; control mechanisms, urinary systems and kidney structure and function; stimuli and responses—plant hormones, hormones in vertebrate animals, muscle activity and muscle structure, eye structure and vision mechanism; ear structure and hearing mechanism; nerves, central nervous system, nerve action, brain structure and functioning.

TEXTBOOKS

Abercrombie, M., et al. *A Dictionary of Biology*. Penguin, 1967.

Roberts, M. B. V. *Biology: A functional approach*. Nelson, 1971.

REQUIREMENTS FOR PRACTICAL WORK

A list of equipment required for practical work will be posted on the notice board in the ground floor of the Biological Sciences Building. Students must purchase this material before the first practical class.

DEPARTMENT OF INDUSTRIAL ARTS

21.011 Industrial Arts I

The nature of rigorous and structural design. The elements of creative design—design as aesthetic order—its relationship to perception theory and measurement of aesthetic judgment—the notion of value and value keys in design. The theory and nature of colour perception. A brief treatment of the historical background of industrial organization in society—the nature of work and some important psychological, sociological and economic

factors in man-machine relationships. Basic industrial work situations and an analysis of the methods used to classify and describe them. Man-machine relationships as a problem in design—human qualities in opposition to and in co-operation with machines—an introduction to the problems associated with the transfer of information, energy and matter between man and machine.

Laboratory and Studio—The execution of prescribed projects in various media illustrative of the principles of design. The study and practice of the principal techniques used in work measurement.

TEXTBOOKS

Childe, G. *What Happened in History*. Pelican, A108.

Read, H. E. *Art and Industry*. 5th ed. Faber, 1966.

PRINCIPAL REFERENCE BOOKS

Brochmann, O. *Good and Bad Taste*. Eyre & Spottiswoode, 1955.

de Saumarez, M. *Basic Design. The Dynamics of Visual Form*. Studio Vista, 1964.

Leach, B. H. *A Potter's Book*. Faber, 1955.

Mumford, L. *Technics and Civilization*. Harcourt, Brace & World. Harbinger, 1934.

Potter, N. *What is a Designer?* Studio Vista, 1969.

Street, A. and Alexander, W. *Metals in the Service of Man*. 4th ed. Pelican, A125.

21.012 Industrial Arts II

The principles of three-dimensional design and design analysis. Introduction to product design—visual fundamentals and visual presentation in two and three dimensions—functional and psychological aspects of product design. The theories of work factor systems, basic motion-time study, motion-time analysis, and methods-time measurement with particular reference to their human significance.

Laboratory and Studio—The execution of three-dimensional projects in various media. Projects in product design. Experimental work and directed observation involving the various methods of work analysis.

TEXTBOOKS

Jones, J. C. *Design Methods*. Wiley, Interscience, 1970.

* Leach, B. *A Potter's Book*. Faber, 1955.

* McMeekin, I. J. *Notes for Potters in Australia*. Vol. 1. N.S.W.U.P., 1966.

Mumford, L. *Technics and Civilization*. Harbinger Paperback. Harcourt, Brace & World, 1934.

* Parmelee, C. W. *Ceramic Glazes*. Industrial Publications, 1948.

Pye, D. *The Nature and Art of Workmanship*. C.U.P., 1968.

Pye, D. *The Nature of Design*. Studio Vista, 1964.

PRINCIPAL REFERENCE BOOKS

Amaya, M. *Art Nouveau*. Studio Vista/Dutton, 1966.

* Andrews, A. I. *Ceramic Tests and Calculations*. Wiley, 1955.

Bayer, H. and Gropius, W., eds. *Bauhaus 1919-1928*. Branford, 1959.

Brochmann, O. *Good and Bad Taste*. Eyre & Spottiswoode, 1955.

* Cardew, M. *Pioneer Pottery*. Longmans Green, 1969.

Clark, K. *Civilization*. BBC and John Murray (paperback ed.), 1971.

Dreyfuss, H. *The Measure of Man*. Whitney Library of Design, 1967.

* Grim, R. E. *Applied Clay Mineralogy*. McGraw-Hill, New York, 1962.

Gregory, S. A. *The Design Method*. Butterworths, 1966.

*For students specializing in Ceramics.

Jones, J. C. and Thornley, D. G. *Conference on Design Methods*. Pergamon, 1963.

*Leach, B. H. *A Potter's Portfolio*. Lund Humphries, 1961.

Nelson, G. *Problems of Design*. Whitney, 1957.

Pevsner, N. *Pioneers of Modern Design*. Pelican, A497.

Untracht, O. *Enamelling on Metal*. Greenberg, 1957.

21.013 Industrial Arts III

The creative process and the factors influencing it—detailed study of and solutions to the problems associated with product design. The philosophy of comprehensive design and its relationship to work—an integrative overview of the attitudes and viewpoints of the designer and the techniques of analysis, synthesis and evaluation currently used. Industrial organization theory—the principal theories of industrial organization from the eighteenth century to the present day. The nature of management and its various functions and methods or organization in western industrial society.

Laboratory and Studio—The execution of advanced problems in product design in various media—analysis and criticism. Field work in industry involving the analysis and evaluation of methods of industrial organization.

TEXTBOOK

Walker, C. R. *Technology, Industry and Man—the Age of Acceleration*. McGraw-Hill, 1968.

PRINCIPAL REFERENCE BOOKS

Abegglen, J. C. *The Japanese Factory*. Free Press, 1958.

*Cardew, M. *Pioneer Pottery*. Longmans Green, 1969.

Chambers, J. *The Workshop of the World*. OUP, 1968.

Dreyfuss, H. *The Measure of Man*. Whitney Library of Design, 1967.

Drucker, P. F. *The Concept of the Corporation*. Mentor, 1964.

Etzioni, A. *Modern Organisations*. Prentice-Hall, 1964.

Friedmann, G. *Industrial Society*. Free Press, 1955.

*Honey, W. B. *English Pottery and Porcelain*. Black, 1933.

*Honey, W. B. *The Art of the Potter*. Faber, 1946.

*Honey, W. B. *The Ceramic Art of China and other Countries of the Far East*. Faber, 1945.

*Lane, A. *Early Islamic Pottery*. Faber, 1947.

*Lane, A. *Greek Pottery*. Faber, 1948.

*Leach, B. H. *A Potter's Portfolio*. Lund Humphries, 1951.

*Miller, R. A. *Japanese Ceramics*. Toto Shuppan, Tokyo, 1960.

*Norton, F. H. *Ceramics for the Artist Potter*. Addison-Wesley, 1956.

Pevsner, N. *Pioneers of Modern Design*. Pelican, A497.

*Rackham, B. *Early Staffordshire Pottery*. Faber, 1941.

*Rackham, B. *Medieval English Pottery*. Faber, 1948.

*Rose, M. *Artist Potters in England*. Faber, 1950.

Thompson, E. P. *The Making of the English Working Class*. Pelican, 1968.

*Wykes-Joyce, H. *7,000 Years of Pottery and Porcelain*. Peter Owen, 1958.

Whyte, W. H. *The Organisation Man*. Pelican, A538. 1960.

21.201 Freehand Drawing

Teaches the student to see and draw objects as they are, to perceive the structure of natural forms, and to appreciate the causes behind their forma-

* For students specializing in Ceramics.

tion. The practical work in various media, pencil, pen, brush and charcoal, is intended also to develop the ability to express ideas in a visual way. This can later form a basis for the execution of projects in industrial design.

Subjects include: drawing of single objects and groups of objects, figure drawing, drawing from memory, and quick sketching; depiction by line and by light and shade; the principles of free perspective drawing.

TEXTBOOK

Gill, R. W. *Rendering with Pen and Ink* (The Thames and Hudson Manual of). Thames-Hudson, 1973.

PRINCIPAL REFERENCE BOOK

Rule, J. T. & Coons, S. A. *Graphics*. McGraw-Hill, 1961.

21.211 Drawing and Design

Advanced problems in graphics and tectonic design. Assignments to be carried out in the studio, but tutorials will be given where necessary.

TEXTBOOK

Rule, J. T. and Coons, S. A. *Graphics*. McGraw-Hill, 1961.

PRINCIPAL REFERENCE BOOKS

Abbott, W. *Practical Geometry and Engineering Graphics*. Blackie, 1956.

Doblin, J. *Perspective: A New System for Designers*. Whitney, 1956.

Doughtie, J. L. and Vallance, A. *Design of Machine Members*. McGraw-Hill, 1964.

Hoelscher, R. P. and Springer, C. H. *Engineering Drawing & Geometry*. John Wiley, 1956.

Ham, M. E. et al. *Mechanics of Machinery*. McGraw-Hill, 1958.

Levens, A. S. *Graphics*. Wiley, 1968.

21.902 Seminar

21.903 Project

21.501G Industrial Design

This area of the course is drawn from the existing body of knowledge concerning industrial design. In particular, it will emphasise design principles and the main functions, skills and responsibilities of the designer for industry. The subject matter will be communicated through lectures, tutorials and practical assignments, the aims of which will be to give the students a broad view of design in an industrial society, an aesthetic conviction and sensibility and the skills and methods required for the practice of industrial design.

Historical, social and aesthetic bases of industrial design.

Design Methodology.

Design Principles.

Signs, Symbols and Communication.

Ergonomics

Professional, Commercial and Industrial Practice.

Design Media.

TEXTBOOKS

As for 21.511G Design Projects.

21.511G Design Projects

Throughout the course the students will be involved in a continuous series of design exercises and projects, graduated in scale and difficulty and with varying emphasis on particular aspects of design technology.

These projects form the central part of the course. The subjects chosen will relate to the current lecture or case study programmes, so that theory and practice can be integrated. Design projects provide an experience in which technology, design method, aesthetics and social need are synthesized and in which interrelationship must be sought and inconsistencies resolved. The student is brought to face problems involving judgment, choice and decision, some of which can be based on objective, analytical study, whilst others will be more subjective, intuitive and emotive.

The projects will be supervised by the academic staff of the Department with assistance from an appropriate practising designer and, when necessary, academic staff from other sections of the University. Tutorials as well as discussions with individual students will arise from the projects, especially during the design development phase. Opportunity will be given for the student to act as a member of a design team.

At the commencement of each design project the students will be briefed in detail as to the intention, and object of the exercise; this brief will also include basic information, controlling factors, a time schedule and requirements for presentation.

21.501G INDUSTRIAL DESIGN and 21.511G DESIGN PROJECTS**TEXTBOOKS**

- Britt, S. H., ed. *Consumer Behaviour and the Behavioural Sciences*. Wiley, 1966.
Gist, R. R. *Marketing and Society*. Holt, Rinehart & Winston, 1971.
Jones, J. C. *Design Methods*. Wiley, Interscience, 1970.

PRINCIPAL REFERENCE BOOKS

- Doblin, J. *One Hundred Great Product Designs*. Van Nostrand Reinhold, 1971.
Galbraith, J. K. *The New Industrial State*. New American Library, N.Y., 1972.
Schaefer, H. *The Roots of Modern Design*. Studio Vista, 1970.

21.521G Seminar

In general, seminars will be devoted to design theory and philosophy and to the presentation by students of papers on design problems. Seminars will be closely integrated with the other sections of the course work. From time to time, such matters as general design problems, current issues in design, unusual design problems and addresses by visiting designers, will also constitute the topics of seminars.

21.531G Creative Art Elective

SCHOOL OF APPLIED GEOLOGY

Geology: BSc(Ed) Degree Course**25.501 Geology I—BSc(Ed)**

As for 25.111 Geoscience I.

25.111 Geoscience I

Physical Geology—The origins structure and main surface features of the earth; geological cycle—processes of erosion, transportation, sedimentation and lithification. Surface and sub-surface water. Weathering, lakes, rivers, glacial phenomena. Vulcanism, earthquakes, orogenesis and epeirogenesis, integrated theory of plate tectonics and continental drift.

Crystallography and Mineralogy—Introduction to crystal symmetry, systems, forms, habit, twinning. Occurrence, form and physical properties of minerals. Mineral classification. Descriptive mineralogy. Principal rock forming minerals. Basic structures of silicate minerals.

Petrology—Field occurrence, lithological characteristics and structural relationships of igneous, sedimentary and metamorphic rocks. Introduction to coal, oil and ore deposits.

Stratigraphy and Palaeontology—Basic principles of stratigraphy; introductory palaeontology. The geological time scale. The geological history of the Australian continent and more specifically that of New South Wales in introductory outline.

Practical Work—Preparation and interpretation of geological maps and sections. Map reading and use of simple geological instruments. Study of simple crystal forms and symmetry. Identification and description of common minerals and rocks in hand specimen. Recognition and description of examples of important fossil groups. Supplemented by three field tutorials, attendance at which is compulsory.

TEXTBOOKS

Bickford, M. E. *et al. Geology Today*. CRM Books, California, 1973.

Black, R. M. *Elements of Palaeontology*. C.U.P., 1970.

Rutley, F. *Rutley's Elements of Mineralogy*. Read, H. H. ed. Murby, London.

Tyrrell, G. W. *The Principles of Petrology*. Methuen.

PRINCIPAL REFERENCE BOOKS

Bryan, J. H., McElroy, C. T. and Rose, G. *Explanatory Notes to Accompany the Sydney 4-mile Geological Map (with map)*. 3rd ed. Bureau of Mineral Resources, 1966.

Holmes, A. *Principles of Physical Geology*. N.A.P.

or

Longwell, C. R. and Flint, R. F. *Introduction to Physical Geology*. Wiley.

Kostov, I. *Mineralogy*. Oliver & Boyd, 1968.

Packham, G. H., ed. *The Geology of New South Wales. Vol. 16, Part 1, J. Geol. Soc. Aust.* Mercury Press, 1969.

25.502, 25.503, 25.504 Geology II, III, IV—BSc(Ed) Course

The second, third, and fourth years each consist of a compulsory CORE and a number of ELECTIVES which may be chosen from the list below and unless otherwise specified these electives may be taken in any year of study.

To complete each year the numbers of electives required are: one elective in Second Year, three electives in Third Year and two in the Fourth Year.

25.502 Geology II—BSc(Ed) Course

Sedimentary Environments—Sedimentary rock classifications, modes of sediment transport, sedimentary structures and flow regime concepts; fluvial, deltaic and marine environments of deposition, origin and classification of limestones. Evaporite sedimentation.

Australian Stratigraphy—Tectonic and stratigraphic provinces of Australia. Stratigraphic principles, stratigraphy of the Lachlan Geosyncline, New England Geosyncline and the Sydney Basin.

Invertebrate Palaeontology—Principles of palaeontology and its relationship to the other branches of geology. Systematic description and detailed morphological study of the invertebrate phyla and their subdivisions. An introduction to Palaeobotany. *Laboratory*: detailed diagnostic and morphological description of common fossils with reference to their stratigraphic distribution.

Petrology—Hermann-Maugin notation. Chemistry, structure, physical and optical properties of main silicate mineral groups. Reaction series. Silicate metal crystallization. The more common igneous rocks. An introduction to economic mineral deposits. *Practical work*: elements of optical mineralogy; microscopic examination of the major silicate mineral groups.

Field tutorials—Approximately six days will be spent on field activity; attendance is compulsory.

Electives—one elective may be taken from the list below.

TEXTBOOKS

Sedimentary Environments

Blatt, H., Middleton, G. and Murray, R. *Origin of Sedimentary Rocks*. Prentice-Hall, 1972.

Australian Stratigraphy

Brown, D. A., Campbell, K. S. W. and Crook, K. A. W. *Geological Evolution of Australia and New Zealand*. Pergamon, 1968.

Invertebrate Palaeontology

Easton, W. H. *Invertebrate Palaeontology*. Harper & Bros., 1960.

Petrology

Hurlbut, C. S. ed. *Dana's Manual of Mineralogy*. Wiley.

or
Kostove, I. *Mineralogy*. Oliver & Boyd, 1968.

or
Mason, B. and Berry, L. G. *Elements of Mineralogy*. 2nd ed. W. H. Freeman, 1968.

Bayly, B. *Introduction to Petrology*. Prentice-Hall, 1968.

or
Huang, W. T. *Petrology*. McGraw-Hill, 1962.

or
Jackson, K. C. *Textbook of Lithology*. McGraw-Hill, 1970.

PRINCIPAL REFERENCE BOOKS

Australian Stratigraphy

Packham, G. H. ed. *The Geology of New South Wales*. Vol. 16, Pt. 1, *J. Geol. Soc. Aust.*, Mercury Press, 1969.

Palaeontology

Moore, R. C., Lalicker, C. G. and Fisher, A. G. *Invertebrate Fossils*. McGraw-Hill, 1952.

Beerbower, J. *Search for the Past*. 2nd ed. Prentice-Hall, 1968.

Raup, D. M. and Stanley, S. M. *Principles of Palaeontology*. W. H. Freeman & Co., 1971.

Petrology

Deer, W. A., Howie, R. A. and Zussman, J. *An Introduction to the Rock Forming Minerals*. Longmans, 1966.

Heinrich, E. W. *Microscope Identification of Minerals*. McGraw-Hill, 1965.

Phillips, F. C. *An Introduction to Crystallography*. Longmans.

25.503 Geology III—BSc(Ed) Course

Advanced Petrology—Parent magmas and differentiation trends in igneous petrology. Metamorphic grade, zones, and facies, ACF and AKF diagrams. Introduction to space groups. Principles of X-ray diffraction. The major non-silicate mineral groups. *Practical work*: Petrographic examination of representative sedimentary, igneous and metamorphic rocks. *Field work*: at least two one-day field trips to cover aspects of the above course.

Energy Resources—Coal: The formation of coal and the present environment; sedimentary structures associated with coal seams, maceral concept and coal classification, type and rank, coal utilisation and economics. *Practical work*: Microscope study of coal in thin and polished section.

Petroleum: Modes of occurrence, reservoir properties, prospecting and formation evaluation; oil fields of Australia; mechanisms and modes of petroleum accumulation. *Practical work*: Problems in oil field stratigraphic correlation, reserves estimation, structure contouring, map analysis.

Geophysics—An introduction to the physics, shape, structure, constitution and dynamics of the Earth; seismology, gravity, geodesy, geothermy, geomagnetism and palaeomagnetism.

Photogeology—Principles of photogrammetry and photointerpretation. Selected air photographs illustrating geological features will be examined and photogeological map will be produced. Colour and infrared aerial photographs.

Field tutorials—Approximately four days will be spent on field activity; attendance is compulsory.

Electives—Three electives may be taken from the list below:

TEXTBOOKS

Advanced Petrology

Bowen, N. L. *The Evolution of the Igneous Rocks*.

Deer, W. A., Howie, R. A. and Zussman, J. *Rock Forming Minerals*. Longmans, 1962.

Joplin, G. A. *Petrography of Australian Igneous Rocks*. A. & R.

Turner, F. J. *Metamorphic Petrology*. McGraw-Mill, 1968.

Turner, F. J. and Verhoogen, J. *Igneous and Metamorphic Petrology*. McGraw-Hill, 1960.

Williams, H., Turner, F. J. and Gilbert, C. M. *Petrography*. Freeman, 1954.

Geophysics

Howell, B. *Introduction to Geophysics*. McGraw-Hill, 1959.

PRINCIPAL REFERENCE BOOKS

Advanced Petrology—As for 25.502 Petrology

Geophysics

Garland, G. D. *The Earth's Shape and Gravity*. Pergamon, 1964.

Howell, B. *Introduction to Geophysics*. McGraw-Hill, 1959.

Stacey, F. P. *Physics of the Earth*. Wiley, 1969.

25.504 Geology IV—BSc(Ed) Course

Economic Geology—Principles and theories of ore formation. Magmatic, hydrothermal, submarine exhalative deposits. Sedimentary deposits including biogenetic alluvial and residual deposits. Metallic and non-metallic economic minerals. Hand specimen and elementary mineragraphic practical work.

Project—Consists of a laboratory research project dealing with some aspect of geology related to the individual interests.

Electives—Two electives may be taken from the list below.

TEXTBOOKS

Economic Geology

Lindgren, W. *Mineral Deposits*. 4th ed. McGraw-Hill, 1933.

Bateman, A. M. *Economic Mineral Deposits*. 2nd ed. Wiley, 1950.

PRINCIPAL REFERENCE BOOK

Economic Geology

Park, C. F. and MacDiarmid, R. A. *Ore Deposits*. Freeman, 1964.

Electives (to be taken with 25.502, 25.503, 25.504)

The following electives are offered to complete the above requirements:

Oceanography—Dynamic properties of the oceanic water-masses. Physics and chemistry of sea water. Submarine geology and cartography. Recent sedimentation and its correlation with terrestrial stratigraphy. Sediments of organic origin. Ocean materials of economic importance.

**Environmental Geology* (equivalent to two electives)—Geological resource distribution and the relation to urban development. The ecosystem and its geological constraints; conflicts between mining development and conservation, energy sources and their role in pollution. The estuarine and coastal environments, their ecology and the modifications caused by common pollutants. Extensive field activity and laboratory work form an important part of this course.

**Field Mapping*—It consists of a geological survey camp to demonstrate field techniques. It will be of four days' duration during the Second Session.

*†*Australian Igneous and Metamorphic Rocks*—The igneous and metamorphic geology of N.S.W. The igneous and metamorphic evolution of N.S.W. *Practical work*: preparation and petrographic examination of thin sections of rocks of N.S.W. *Field work*: at least one field trip to examine rocks discussed in this course.

**Structural Geology*—Descriptions of structures, fractures, folds and their structural elements. Introduction to tectonics. *Practical work*: introduction to stereographic methods.

†*Geochemistry*—Some modern methods of rock and mineral analysis. Accuracy, precision and quality of geochemical data. The distribution of elements in Terrestrial rocks. Norms.

**Vertebrate Palaeontology*—The rise of the vertebrates and the early amphibia; the reptiles. The flying reptiles and the birds. The early primates and the advent of man.

TEXTBOOKS

Oceanography

Pickard, G. L. *Descriptive Physical Oceanography*. Pergamon, 1964.

* A minimum enrolment of 6 students is necessary for any of these electives to be offered.

† These electives may be taken either in 25.503 or 25.504; all other electives may be taken in 25.502, 25.503 or 25.504.

*Australian Igneous and Metamorphic Rocks*Joplin, G. *A Petrography of Australian Igneous Rocks*. A. & R.Joplin, G. *A Petrography of Australian Metamorphic Rocks*. A. & R., 1968.*Structural Geology*Spencer, E. W. *Introduction to the Structure of the Earth*. McGraw-Hill, 1969.Ragan, D. M. *An Introduction to Geometrical Techniques*. Wiley, 1968.*Geochemistry*Ahrens, L. H. *Distribution of the Elements in our Planet*. McGraw-Hill.Zussman, J. ed. *Physical Methods in Determinative Mineralogy*. Academic, 1967.*Vertebrate Palaeontology*Colbert, E. H. *Evolution of the Vertebrates*. Wiley.Von Koenigswald, G. H. R. *The Evolution of Man*. University of Michigan, 1962.

PRINCIPAL REFERENCE BOOKS

*Oceanography*Menard, H. W. *Marine Geology of the Pacific*. McGraw-Hill, 1964.Shepard, F. P. *Submarine Geology*. 2nd ed. Harper, 1968.*Environmental Geology*Detwyler, T. R. *Man's Impact on the Environment*. McGraw-Hill, 1971.Moore, H. B. *Marine Ecology*. Wiley, 1965.Sinden, J. A., ed. *The Natural Resources of Australia*. A. & R.*Structural Geology*Billings, M. *Structural Geology*. Prentice-Hall, 1954.Hills, E. S. *Elements of Structural Geology*. Wiley, 1963.Whitten, E. H. T. *Structural Geology of Folded Rocks*. Wiley, 1966.*Geochemistry*Wedepohl, K. H. *Handbook of Geochemistry*. Springer, 1969.

SCHOOL OF GEOGRAPHY

FIRST LEVEL UNITS

27.801 Introduction to Physical Geography

An introduction to the mechanism of the physical environment, with particular exemplification within the Sydney region. Geologic controls of landform development; fluvial, slope and coastal processes and landforms; cyclic and equilibrium approaches to landform studies. The global radiation budget and atmospheric circulation; weather and climatic controls in the Sydney region. The hydrologic cycle. Processes and factors of soil formation and the mature soil profile. Controls of vegetation in the Sydney region. The ecosystem.

Laboratory classes include: study and use of geologic and topographic maps and air photographs; use of climatic data and the weather map; soil profile description.

TEXTBOOK

Van Riper, J. E. *Man's Physical World*. McGraw-Hill.

PRINCIPAL REFERENCE BOOKS

Bird, E. F. C. *Coasts*. A.N.U.P.

Branagan, D. & Packham, G. *Field Geology of New South Wales*. Science Press.

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

Gentili, J. *Sun, Climate and Life*. Jacaranda.

Ecological Society of Australia. *The City as a Life System*. Collected papers.

Twidale, C. R. *Geomorphology*. Nelson.

Twidale, C. R. & Foale, M. R. *Landforms Illustrated*. Nelson.

27.802 Introduction to Human Geography

Problems of data, scale, distance, and economic development are the main themes. Development of human geography—traditions, approaches and basic problems, the human and natural environment. Spatial interaction including patterns of movement, gravity concept and diffusion. Pattern and structure of human activity: effect of level of economic development, man/land relationships and social and cultural factors on agriculture, manufacturing and tertiary services. Population—resources problem in context of economic development. Australian and South-East Asian examples are used where relevant.

TEXTBOOKS

Hurst, M. E. *A Geography of Economic Behaviour*. Duxbury Press. Paperback.

Toyne, P. & Newby, P. T. *Techniques in Human Geography*. Macmillan.

PRINCIPAL REFERENCE BOOKS

Abler, R., Adams, J. S. & Gould, P. *Spatial Organisation*. Prentice-Hall.

Cox, K. R. *Man, Location and Behaviour: An Introduction to Human Geography*. Wiley.

Demko, G. J., Rose, H. M. & Schnell, G. A. *Population Geography: A Reader*. McGraw-Hill.

Ehrlich, P. R. & A. H. *Population, Resources, Environment*. Freeman. Paperback.

English, P. W. & Mayfield, R. C. *Man Space, Environment*. O.U.P.

Haggett, P. *Geography: A Modern Synthesis*. Harper International. Paperback.

Lloyd, P. E. & Dicken, P. *Location in Space: A Theoretical Approach to Economic Geography*. Harper International. Paperback.

Logan, M. I. & Missen, G. J. *New Viewpoints in Urban and Industrial Geography*. Reed Education.

McCarty, H. H. & Lindberg, J. B. *A Preface to Economic Geography*. Prentice-Hall.

Morgan, W. B. & Munton, R. J. C. *Agricultural Geography*. Methuen. Paperback.

Morrill, R. L. *The Spatial Organisation of Society*. Wadsworth. 2nd ed.

Powell, J. M. ed. *Urban and Industrial Australia: Readings in Human Geography*. Sorrett.

Powell, J. M. ed. *The Making of Rural Australia: Environment, Society and Economy*. Sorrett.

SCHOOL OF BIOCHEMISTRY

41.101A Chemistry of Biologically Important Molecules

Prerequisites: 17.011, 2.001. Co-requisites: 41.101B.

The chemical properties of amino acids, peptides and proteins, carbohydrates, nucleic acids and lipids, and porphyrins, and the biological roles of these compounds. The nature and function of enzymes. Practical work to amplify the lecture course.

TEXTBOOKS

Montgomery, R. & Swenson, C. A. *Quantitative Problems in the Biological Sciences*. Freeman, 1969.

White, A., Handler, R. and Smith, E. L. *Principles of Biochemistry*. 5th ed. McGraw-Hill, 1973.

41.101B Metabolism

Prerequisites: 17.011, 2.001. Co-requisites: 41.101A.

The intermediary metabolism of carbohydrates, lipids and nitrogenous compounds. The molecular mechanism of gene expression and protein synthesis. Practical work to amplify the lecture course. Photosynthesis.

TEXTBOOKS

As for 41.101A.

plus

McGilvery, R. W. *Biochemistry: A Functional Approach*. 1st ed. Saunders, 1970.

41.101C Control Mechanisms

Prerequisites: 41.101A, 41.101B.

The relation between structure and function of enzymes, hormones, vitamins and membranes. Metabolic networks and control mechanisms. Practical work to amplify the lecture course.

TEXTBOOKS

As for 41.101B.

PRINCIPAL REFERENCE BOOK

Frieden, E. & Lipner, H. *Biochemical Endocrinology of the Vertebrates*. Prentice-Hall, 1971.

41.102A Biochemistry of Macromolecules and Cell Biochemistry

Polysaccharides and glycoproteins including bacterial cell walls. Chemistry and biology of polynucleotides. Methods of amino acid and nucleic acid sequence analysis. Protein structure and synthesis. Active centres of some proteins. Sub-unit organization of proteins. Membrane Structure. Cellular degradation. Practical work to illustrate the lecture course and to provide experience in modern biochemical techniques.

TEXTBOOKS

- Barker, R. *Organic Chemistry of Biological Compounds*. Prentice-Hall, 1971.
- The Chemical Basis of Life*. An Introduction to Molecular and Cell Biology. Readings from Scientific American. Freeman, 1973.
- Frieden, E. & Lipner, H. *Biochemical Endocrinology of the Vertebrates*. Prentice-Hall, 1971.
- White, A., Handler, R. & Smith, E. L. *Principles of Biochemistry*. 5th ed. McGraw-Hill, 1973.
- or
- Lehninger, A. L. *Biochemistry: The Molecular Basis of Cell Structure and Function*. Worth Publishers Inc., 1970.
- Wold, F. *Macromolecules: Structure and Function*. Prentice-Hall, 1971.

PRINCIPAL REFERENCE BOOKS

- Bernhard, S. *The Structure and Function of Enzymes*. Benjamin, 1968.
- Davidson, J. N. *The Biochemistry of the Nucleic Acids*. 7th ed. Methuen, 1972.
- Watson, J. D. *The Molecular Biology of the Gene*. 2nd ed. Benjamin, 1970.

41.102B Metabolic Pathways and Control Mechanisms

Haemoproteins, and electron transport, photosynthesis, photophosphorylation and oxidative phosphorylation. The nature and function of co-enzymes. Interrelationships in mammalian intermediary metabolism. Biochemical control mechanisms including hormones and allosteric interactions. Enzyme kinetics. Selected aspects of differentiation and development in higher organisms. Practical work to illustrate the lecture course and to provide experience in modern biochemical techniques.

TEXTBOOKS

As for 41.102A above.

PRINCIPAL REFERENCE BOOK

- McGilvery, R. W. *Biochemistry: A Functional Approach*. Saunders, 1970.

SCHOOL OF BOTANY†

43.101 Genetics

An introduction to various aspects of molecular, organismal and population genetics, including:—meiotic and non-meiotic recombination, genome variations, mutagens and mutation rates, cytoplasmic inheritance, gene function, genetic code, gene structure, collinearity of polynucleotide and polypeptide, control of gene action, genes and development, population genetics, genetics and improvement of plants and animals.

TEXTBOOK

- Srb, A. M., Owen, R. D. and Edgar, R. S. *General Genetics*. 2nd ed. Freeman, 1965.

43.111 Plant Evolution and Ecology

A study of the evolution of vegetative form and structure of vascular plants; an examination of their organization into terrestrial communities; identification, evolution and distribution of elements of the Australian flora. Students will be required to attend field excursions all of which form an integral part of the course.

TEXTBOOKS

Beadle, N. C. W., Evans, O. E. and Carolin, R. C. *Flora of the Sydney Region*. Reed, 1972.

Fahn, A. *Plant Anatomy*. Pergamon, 1967.

Principal reference book lists for the plant ecology section of this unit are supplied during the course.

43.121 Plant Physiology

A general introduction to the physiology of the whole plant including a consideration of photosynthesis, inorganic nutrition, transport, translocation, physiology of growth and development, and plant growth substances and their application in agriculture.

TEXTBOOKS

Galston, A. W. & Davies, P. J. *Control Mechanisms in Plant Development*. Prentice-Hall, 1970.

Richardson, M. *Translocation in Plants*. Arnold, 1968.

Sutcliffe, J. *Plants and Water*. Arnold, 1968.

Whittingham, C. P. *Photosynthesis*. O.U.P., 1971.

43.102 Advanced Genetics

Cytogenetics and genetic control of chromosome pairing. Evolutionary genetics. Heritability estimates and selection. Some aspects of human genetics.

43.112 Plant Taxonomy

Considers the assessment, analysis and presentation of data for classifying plants both at the specific and supra-specific level. Students are required to attend field excursions all of which form an integral part of the course.

TEXTBOOKS*

Beadle, N. C. W., Evans, O. D. & Carolin, R. C. *Flora of the Sydney Region*. Reed, 1972.

Cronquist, A. *The Evolution and Classification of Flowering Plants*. Nelson, 1968.

Heywood, V. H. *Plant Taxonomy*. The Institute of Biology's Studies in Botany No. 5. Arnold, 1970.

43.122 Advanced Plant Physiology

The physiology of flowering plants. Topics include the growth of cells, roles of growth substances, carbon metabolism in leaves, lipid metabolism and the effects of light on plant development. Laboratory projects may require attendance outside the hours set down in the timetable.

* Students should consult lecturers in the course before purchasing textbooks.

43.132 Mycology

General structure and ultrastructure of the fungal cell. Morphology of members of the major taxonomic groups. Spore liberation, dispersal, deposition and germination. Cytology, genetics and patterns of life cycles. Growth and differentiation of hyphae and fruit bodies. Response to nutritional and environmental conditions for growth and reproduction. Transport processes, metabolism and metabolic products. Ecological considerations of fungi in specialised habitats.

TEXTBOOKS

Alexopoulos, C. J. *Introductory Mycology*. Wiley, 1962.
Burnett, J. H. *Fundamentals of Mycology*. Arnold, 1968.

43.142 Environmental Botany

The marine, soil and atmospheric environments in which plants live and the interaction of plants with their environment. Emphasis is placed on the role of environmental sciences in food production. Students are required to attend up to three full-day Saturday field excursions as part of the practical course.

43.152 Plant Pathology

History of plant pathology; pathogenic organisms; symptoms of disease. Specific diseases caused by fungi, nematodes, bacteria and viruses. Host-pathogen relationships including stages of infection, evolution of host-pathogen relationships, adaptation for successful parasitism, resistance mechanisms and genetics of resistance. Control of diseases by the use of fungicides, nematocides, crop rotation and breeding for resistance.

TEXTBOOKS

Alexopoulos, C. J. *Introductory Mycology*. Wiley, 1962.
Walker, J. C. *Plant Pathology*. 3rd ed. McGraw-Hill, 1968.

SCHOOL OF MICROBIOLOGY

44.101 Introductory Microbiology

Prerequisites: 17.011, 17.021.

The general nature, occurrence and importance of micro-organisms. A systematic review of the major groups of micro-organisms: the eucaryotic protista (micro-algae, protozoa and fungi); procaryotic protista (blue-green algae, "higher" bacteria, typical unicellular bacteria and small bacteria-like forms); plant, animal and bacterial viruses. The relationship between micro-organisms and their environment; ecological considerations. Interactions between micro-organisms and higher organisms.

TEXTBOOK

Brock, T. D. *Biology of Micro-organisms*. Prentice-Hall, 1970.

or

Hawker, L. E. and Linton, A. H. eds. *Micro-organisms: Function, Form and Environment*. Arnold, 1971.

or

Pelczar, M. J. & Reid, R. D. *Microbiology*. 3rd ed. McGraw-Hill.

or

Stanier, R. Y., Doudoroff, M. and Adelberg, E. A. *The Microbial World*. 3rd ed. Prentice-Hall, 1970.
 [Brock, or Pelczar & Reid, is the first choice if no more microbiology is to be taken.]

44.102 General Microbiology

Prerequisites: 44.101, 41.101A, 41.101B.

Double unit, level III. Session 1.

Systems for the isolation, identification and taxonomic description of microorganisms; fine structure, cyto-chemistry, genetics of bacteria and viruses; metabolic requirements of microorganisms; microorganisms and their environment; growth, inhibition and death; energy-yielding and biosynthesizing systems; genotypic and phenotypic control systems.

TEXTBOOKS

As for 44.101 if not taking other Microbiology units. Otherwise:
 Hawker, L. E. & Linton, A. H. eds. *Microorganisms: Function, Form and Environment*. Arnold, 1971.
 Davis, B. D., Dulbecco, R., Eisen, H. N., Ginsberg, H. S. & Wood, W. B. *Microbiology*. Complete ed. Harper & Row, 1968.

44.122 Immunology

Prerequisites: 17.011, 17.021, 41.101A, 41.101B.

Single unit, level III.

Basic immunology and immunological techniques. The interdisciplinary nature of the subject makes this unit suitable for students taking any major sequence in biological science and also for higher degree students who require a background training in immunology. The course includes phylogeny and ontogeny of the immune response; antigen and antibody structure; antigen-antibody reaction; immunochemistry; immunogenetics, clinical immunology; transplantation.

TEXTBOOKS

Roitt, I. *Essential Immunology*. Blackwell Scientific Publications, 1972.

SCHOOL OF ZOOLOGY

45.101 Biometry

Prerequisites: 17.011, 17.021.

An introduction to statistical methods and their application to biological data, including:—Introduction to probability. The binomial, poisson, negative binomial, normal distributions; Student's *t*, χ^2 and variance ratio tests of significance based on the above distributions; the analysis of variance of orthogonal and some non-orthogonal designs. Linear regression and correlation. Introduction to non-linear and multiple regression. Introductory factorial analysis. Introduction non-linear and multiple regression. Introductory factorial analysis. Introduction to experimental design. Non-parametric statistics, including tests based on χ^2 , the Kruskal-Wallis test, Fisher's exact probability test and rank correlation methods.

PRINCIPAL REFERENCE BOOKS

Rohlf, F. J. & Sokal, R. R. *Statistical Tables*. Freeman, 1969.
 Siegel, S. *Nonparametric Statistics*. McGraw-Hill, 1956.
 Sokal, R. R. & Rohlf, F. J. *Biometry*. Freeman, 1969.

45.201 Invertebrate Zoology

Prerequisites: 1.001, or 1.011, or 1.041, 2.001, 10.001, or 10.011 or 10.021, 17.011, 17.021.

A comparative study of the major invertebrate phyla with emphasis on morphology, systematics and phylogeny. Practical work to illustrate the lecture course.

Obligatory field camp.

This unit is offered in Session 2.

TEXTBOOKS

Meglitsch, P. A. *Invertebrate Zoology*. 2nd ed. O.U.P., 1972.

Sherman, I. W. & Sherman, V. G. *The Invertebrates: Function and Form. A Laboratory Guide*. Collier-Macmillan, 1970.

PRINCIPAL REFERENCE BOOKS

Al-Hussaini, A. H. and Demian, E. J. *Practical Animal Morphology*. Macmillan, 1967.

Barnes, R. D. *Invertebrate Zoology*. Saunders, 1968.

Fraenkel, G. S. and Gunn, D. L. *Orientation of Animals*. Dover, 1961.

Hyman, L. *The Invertebrata*. Vol. 1-6. McGraw-Hill.

Imms, A. D. *Textbook of Entomology*. Methuen, 1962.

MacGinitie, G. E. and MacGinitie, N. *Natural History of Marine Animals*. McGraw-Hill, 1968.

Nicol, J. A. C. *The Biology of Marine Animals*. Pitman, 1967.

Prosser, C. L. and Brown, F. A. *Comparative Animal Physiology*. Saunders, 1961.

Wilber, C. and Yonge, C. M. *Physiology of the Molluscs*. Vols. I & II. Wiley, 1967.

45.301 Vertebrate Zoology

Prerequisites: As for 45.201 above.

A comparative study of the Chordata. Morphology, systematics, evolution, natural history, with reference to selected aspects of physiology and reproduction. Practical work to supplement the lecture course. Field excursions as arranged. Obligatory field camp.

This unit is offered in Sessions 1 and 2.

TEXTBOOKS

Hilbdebrand, M. *Analysis of Vertebrate Structure*. Wiley, 1974.

Romer, A. S. *The Vertebrate Body*. 4th ed. University of Chicago Press, 1959. (Sixth impression 1971.)

PRINCIPAL REFERENCE BOOKS

Bellairs, A. *The Life of Reptiles*. Vols. 1 & 2. Weidenfeld & Nicolson Natural History, 1969.

Kurten, B. *The Age of the Dinosaurs*. Weidenfeld and Nicolson, 1968.

Marshall, A. J. *Biology and Comparative Physiology of the Birds*. Vols. 1 & II. Academic Press 1960-61.

Saunders, J. T. and Manton, S. M. *A Manual of Vertebrate Morphology*. 4th ed. O.U.P., 1969.

Walker, E. P. *Mammals of the World*. 2nd ed. Johns Hopkins Press, 1968.

Wessells, N. K. *Vertebrate Structure and Functions*. Readings from Scientific American. Freeman, 1974.

Young, J. Z. *The Life of Mammals*. Clarendon Press, 1957.

Young, J. Z. *The Life of the Vertebrates*. O.U.P., 1958.

45.111 Field Ecology

Prerequisites: 17.011, 17.012, 45.101. *Co-requisites:* 45.201, or 45.301.

Not available in 1975.

A lecture series on the basic principles of ecology followed by an examination and evaluation of the field methods used to measure the environment and the distribution and abundance of organisms.

This unit is offered as a lecture series (two per week) in Session 2 plus a two week camp in November/December at the University's Smith's Lake Field Station.

TEXTBOOK

Southwood, T. R. E. *Ecological Methods*. Methuen, 1966.

45.112 Marine Ecology

Prerequisites: 17.001, 17.021 plus 45.201 or 25.112A and 25.112B. *Co-requisite:* 45.101.

A study of the metabolic, regulatory and reproductive activities of marine organisms with particular reference to the physical, chemical and biological environment in which they occur. Both field and laboratory practical work are included.

This unit is offered in Session 1, and consists of 2 hours' lecture and 4 hours' laboratory time per week.

TEXTBOOK

Tait, R. V. *Elements of Marine Ecology. An Introductory Course*. 2nd ed. Butterworths, 1972.

PRINCIPAL REFERENCE BOOKS

McConnaughey, B. H. *Introduction to Marine Biology*. Mosby, 1970.

Moore, H. B. *Marine Ecology*. Wiley, 1958.

Newell, R. C. *Biology of Intertidal Animals*. Paul Elek, 1970.

Pickard, G. L. *Descriptive Physical Oceanography*. Pergamon, 1963.

Winberg, G. G. *Methods for the Estimation of Production of Aquatic Animals*. Academic Press, 1971.

45.122 Animal Behaviour

Prerequisites: 1.001 or 1.041, 2.001, 10.001 or 10.011 or 10.021, 45.101, 45.201, 45.301.

An introduction to ethology, the biological study of behaviour. Physiological, ecological, developmental and evolutionary aspects of behaviour of vertebrates and invertebrates are examined as important elements of the study of causal factors underlying behaviour. Both field and laboratory work are included.

This unit is offered in Session 2, and consists of 2 hours' lecture and 4 hours' laboratory time per week.

TEXTBOOK

Manning, A. *An Introduction to Animal Behaviour*. 2nd ed. Arnold, 1972.

PRINCIPAL REFERENCE BOOKS

Aronson, L., Tobach, E., Lehrman, D. S. & Rosenblatt, J. S. *Development and Evolution of Behaviour*. Freeman, 1970.

- Crook, J. H. *Social Behaviour in Birds and Mammals*. Academic Press, 1970.
Hinde, R. A. *Animal Behaviour*. McGraw-Hill, 1970.
Hinde, R. A. ed. *Bird Vocalization*. C.U.P., 1970.
Klopfer, P. H. *Habitats and Territories*. Basic Books, 1969.
Marler, P. & Hamilton, W. J. *Mechanisms of Animal Behaviour*. Wiley, 1966.
Sluckin, W. J. *Early Learning in Animals and Man*. Allen & Unwin, 1969.

45.132 Comparative and Environmental Physiology

Prerequisites: 45.301, 41.101A, 41.101B.

A study of the physiology of the various classes of vertebrate animals with particular emphasis on the adaptation of the animal to its environment. Includes: osmotic and ionic regulation, respiration and circulation, temperature regulation, nerve and muscle function, digestion and metabolism.

TEXTBOOKS

- Gordon, M. S. *Animal Function: Principles and Adaptations*. 2nd ed. Macmillan, 1972.
Wessells, N. K. *Vertebrate Structure and Functions*. Readings from Scientific American. Freeman, 1974.

PRINCIPAL REFERENCE BOOKS

- Hoar, W. S. *General and Comparative Physiology*. Prentice-Hall, 1966.
Tyndale-Biscoe, H. *Life of Marsupials*. Arnold, 1973.

45.142 Developmental and Reproductive Biology

Prerequisites: 45.201, 45.301.

A survey of reproductive mechanisms, reproductive histology, reproductive endocrinology, and embryology, with particular reference to the comparative aspects in vertebrate species. A detailed treatment of marsupial and monotreme reproduction.

TEXTBOOKS

- Gilchrist, F. G. *A Survey of Embryology*. McGraw-Hill, 1968.
Nalbandov, A. V. *Reproductive Physiology*. Freeman, 1964.

PRINCIPAL REFERENCE BOOK

- Tyndale-Biscoe, H. *Life of Marsupials*. Arnold, 1973.

45.202 Advanced Invertebrate Zoology

Prerequisite: 45.201.

A comparative approach to the structure and function of invertebrate animals; including the foundations of animal life, its origin, organization, adaptation and evolution. Emphasis is placed on movement, nervous and chemical co-ordination, metabolism and animal associations.

TEXTBOOK

- Barrington, E. J. W. *Invertebrate Structure and Function*. Nelson, 1967.

PRINCIPAL REFERENCE BOOKS

- Florey, E. *An Introduction to General and Comparative Animal Physiology*. Saunders, 1966.
Gardiner, M. S. *The Biology of Invertebrates*. McGraw-Hill, 1972.
Hoar, W. S. *General and Comparative Physiology*. Prentice-Hall, 1966.
Hyman, L. *The Invertebrata*. Vols. 1-6. McGraw-Hill.
Newell, R. C. *Biology of Intertidal Animals*. Elek, 1970.

45.302 Vertebrate Zoogeography

Prerequisite: 45.301.

A geographic approach to the current distribution, abundance and types of vertebrate species in the Australian region. Particular emphasis is placed on the basic principles of speciation, the history of the Australian continent, vertebrate adaptations and changes in the distribution and abundance of the Australian vertebrate fauna under the influence of man.

TEXTBOOK

Cain, A. J. *Animal Species and Their Evolution*. 3rd ed. Hutchinson's U.L., 1971.

PRINCIPAL REFERENCE BOOKS

Darlington, P. J. *Biogeography of the Southern End of the World*. Harvard U.P., 1965.

Darlington, P. J. *Zoogeography: the Geographical Distribution of Animals*. Wiley, 1957.

Keast, A., Erk, F. C. & Glass, B. *Evolution, Mammals and Southern Continents*. N.Y. State U.P., 1972.

Tyndale-Biscoe, H. *Life of Marsupials*. Arnold, 1973.

45.402 Insect Structure and Classification

Prerequisites: 45.201, 45.101.

A comparative study of the internal anatomy and external morphology of insects. Classification and bionomics of major groups and families. A collection of insects is to be made. Practical work to include dissections, a study of mouthparts, wing venations, segmentation, etc. Field excursions as arranged.

This unit is offered in Session 1 and consists of 2 hours' lecture and 4 hours' laboratory time per week.

TEXTBOOK

C.S.I.R.O. *The Insects of Australia*. M.U.P., 1969.

REFERENCE BOOKS

Guthrie, E. M. & Tindall, A. R. *The Cockroach*. Arnold.

Imms, A. D. *Textbook of Entomology*. Methuen.

Ross, H. H. *Textbook of Entomology*. Wiley.

Snodgrass, R. E. *Principles of Insect Morphology*. McGraw-Hill.

45.412 Insect Physiology

Prerequisite: 45.402.

A study of the functions of the various organ systems and of the whole insect. Various aspects of reproduction, growth and metabolism. Experimental work to illustrate the lecture course.

TEXTBOOK

Chapman, P. F. *The Insects, Structure and Function*. E.U.P., 1969.

PRINCIPAL REFERENCE BOOKS

Beck, S. D. *Insect Photoperiodism*. Academic.

Dethier, V. G. *The Physiology of Insect Senses*. Methuen.

Highnam, K. C. & Hill, L. *The Comparative Endocrinology of the Invertebrates*. Arnold.

Roeder, D. K. *Nerve Cells and Insect Behaviour*. Harvard U.P.

Wigglesworth, V. B. *Principles of Insect Physiology*. Methuen.

45.422 Applied Entomology

Prerequisite: 45.412.

Fundamentals of insect control. Pest species and types of damage caused. Control by insecticides, physical and biological means. Insect toxicology. Insecticide resistance. Practical work to illustrate the above and also various aspects of bioassay in Entomology. Field excursions as arranged.

TEXTBOOK

Woods, A. *Pest Control: A Survey*. McGraw-Hill, 1974.

SCHOOL OF SOCIOLOGY

53.101 Sociology 1A

An introduction to sociology, with particular reference to the history and development of social thought. Students are required to read basic texts and to submit related written work.

53.102 Sociology 1B

Introduction to the institutions, processes and belief systems of modern industrial society, with special emphasis on Australia; reading and written work related to basic texts; an introduction to research methods in the social sciences.

SCHOOL OF LIBRARIANSHIP

55.112 Libraries and Information

The role of the library in the total communication system of society, as an agency for the preservation, dissemination and development of knowledge and information. The history of libraries and their involvement in social and technological change. The provision, functions and services of various types of library with particular reference to the Australian environment. The role of the librarian in the library and in the information process; the library profession. Librarianship in relation to information science.

PRINCIPAL REFERENCE BOOKS

Balnaves, J. *Australian Libraries*. Cheshire, 1966.

Gates, J. K. *Introduction to Librarianship*. McGraw-Hill, 1968.

Johnson, E. D. *A History of Libraries in the Western World*. 2nd ed. Scarecrow Press, 1970.

Kochen, M. ed. *The Growth of Knowledge*. Wiley, 1967.

Shera, J. H. *The Foundations of Education for Librarianship*. Becker & Hayes, 1972.

Shera, J. H. *Libraries and the Organization of Knowledge*. Cheshire, 1966.

System Development Corporation. *Technology and Libraries*. 1967.

55.114 Communication and Record

The communication process. The development of various kinds of record to serve communication and to preserve knowledge. The development of printing and the book, and of other forms of record. The effects of recent technical innovations in transmitting and recording information. Reprography in relation to the diffusion of knowledge and to libraries. The mass media and their role in communication. The inter-relationships of the printed word, reading and the mass media.

PRINCIPAL REFERENCE BOOKS

- Fabre, M. *A History of Communications*. Leisure Arts, 1968.
 Harrop, D. *Modern Book Production*. Cheshire, 1968.
 McLuhan, M. *The Gutenberg Galaxy: the Making of Typographic Man*. Routledge, 1962.
 McNally, P. T. *A Guide to the Practice of Non-book Librarianship*. The author, 1972.
 Schramm, W. *Mass Communications: a Book of Readings*. Univ. of Illinois, 1960.

55.122 Library Materials Selection and Organization

The selection and acquisition of library materials in all physical forms. The book trade and other sources of supply. The cataloguing, classification, indexing and circulation of materials in relation to the needs of users. The role of mechanization and automation.

TEXTBOOKS

- Anglo-American Cataloging Rules*. A.L.A., 1967.
 Ford, S. *Acquisition of Library Materials*. A.L.A., 1973.
 Foskett, A. C. *The Subject Approach to Information*. 2nd ed. Bingley, 1971.
 Horner, J. *Cataloguing*. Assoc. of Asst. Librarians, 1970.

PRINCIPAL REFERENCE BOOKS

- Dewey, M. *Decimal Classification and Relative Index*. 3 vols. 18th ed. Forest Press, 1971.
 Dunkin, P. S. *Cataloging U.S.A.* A.L.A., 1969.
 Gaver, M. ed. *Background Readings in Building Library Collections*. 2 vols. Scarecrow Press, 1969.
 George Fry & Associates, Inc. *Study of Circulation Control Systems*. A.L.A., 1961.
 McNally, P. *Non-book Materials*. Sun Books, 1973.
 Marc II Seminar, University of New South Wales, 1971. *Proceedings*. Nelson, J. R. ed. U.N.S.W., 1973.
 Olding, R. K. *Readings in Library Cataloguing*. Crosby Lockwood, 1966.

55.123 Reference Service and Materials

(a) Information sources, especially reference books, and their uses in library processes and reader services. Using publications to provide information at various levels in different library situations. (b) The bibliography as a record of publication in the mass and as a guide to individual items. National, trade and subject bibliography. Indexes and abstracts. (c) Reference books not limited to a particular subject: publication methods, coverage, organization of content, studied in relation to purpose and use. (d) The principles and methods of reference work. Its place in the total information network and in library service. Question analysis, search strategy and presentation of results to the user. The relationship of traditional reference methods to the design of mechanized information retrieval systems.

TEXTBOOK

Barton, M. N. *Reference Books*. 7th ed. Enoch Pratt Free Library, 1970.

PRINCIPAL REFERENCE BOOKS

Katz, W. A. *Introduction to Reference Work*. 2 vols. McGraw-Hill, 1973-4.
Lancaster, F. W. *Information Retrieval Systems*. Wiley, 1968.

Linderman, W. B. *The Present Status and Future Prospects of Reference/Information Service*. A.L.A., 1967.

Walford, A. J. *Guide to Reference Material*. 3 vols. 3rd ed. L.A., 1966-70.

Winchell, C. M. *Guide to Reference Books and Supplements*. 4 vols. 8th ed. A.L.A., 1967-72.

55.124 Library Administration

The principles of administration and their application to libraries. Setting library objectives and measuring library achievement. Tools and methods of administration. The management of library staff and library finance. Administrative implications in the provision of library services and the adoption of techniques including electronic data processing. The authority relationships of libraries; the library in the political process.

TEXTBOOK

Pugh, D. S., Hickson, D. J. & Hinings, C. R. *Writers on Organizations*. 2nd ed. Penguin, 1971.

PRINCIPAL REFERENCE BOOKS

Bowler, R. ed. *Local Public Library Administration*. International City Managers' Assoc., 1964.

Chapman, E. A., St. Pierre, P. L. & Lubans, J. *Library Systems Analysis Guidelines*. Wiley—Interscience, 1970.

Dougherty, R. M. & Heinritz, F. J. *Scientific Management of Library Operations*. Scarecrow Press, 1966.

Metcalf, K. D. *Planning Academic and Research Library Buildings*. McGraw-Hill, 1965.

Morris, J. E. *Principles of Scientific and Technical Writing*. McGraw-Hill, 1966.

Wasserman, P. & Bundy, M. L. eds. *Reader in Library Administration*. NCR Microcard Editions, 1968.

Subject Bibliography: The Humanities; The Social Sciences; Pure and Applied Sciences; Law; Government Publications

The structure of the literature, with special reference to the information and research needs of users. Publications embodying original work, criticism, exposition, popularisation. The major reference works in the field. Important collections in libraries, and other sources of publications and information. Problems of availability of resources.

55.231 Subject Bibliography: The Humanities**PRINCIPAL REFERENCE BOOKS**

Asheim, L. E. *The Humanities and the Library*. A.L.A., 1957.

Bowles, E. A. *Computers in Humanistic Research*. Prentice-Hall, 1967.

British Academy, *Research in the Humanities and the Social Sciences*, O.U.P., 1961.

Commission on the Humanities. *Report*. 1964.

Price, A. G. ed. *The Humanities in Australia*. A. & R., 1959.

Stevens, R. E. *Reference Books in the Social Sciences and Humanities*. 2nd ed. Illini Union Bookstore, 1968.

55.232 Subject Bibliography: The Social Sciences**PRINCIPAL REFERENCE BOOKS**

- Brittain, J. M. *Information and its Users*. Bath University Press, 1970.
 Hale, B. M. *The Subject Bibliography of the Social Sciences and Humanities*. Pergamon, 1970.
 Hoselitz, B. F. *Reader's Guide to the Social Sciences*. rev. ed. Free Press, 1970.
 White, C. M. *Sources of Information in the Social Sciences*. 2nd ed., rev. A.L.A., 1973.

55.233 Subject Bibliography: Pure and Applied Sciences**PRINCIPAL REFERENCE BOOKS**

- Anderla, G. *Information in 1985: A Forecasting Study of Information Needs and Resources*. O.E.C.D., 1973.
 Blake, J. B. & Roos, C. eds. *Medical Reference Works 1679-1966; a selected bibliography*. Medical Library Association, 1967. Supplement 1, by M. V. Clark. Medical Library Association, 1970.
 Bottle, R. T. and Wyatt, H. V. *Use of Biological Literature*. 2nd ed. Butterworth, 1971.
 Hanson, C. W. *Introduction to Science Information Work*. Aslib, 1971.
 Price, D. J. De Solla. *Little Science, Big Science*. Columbia U.P., 1963.
 Thornton, J. L. and Tully, R. I. J. *Scientific Books, Libraries and Collectors: a study of bibliography and the book trade in relation to science*. 3rd ed. Library Assoc., 1971.
 U.S. President's Science Advisory Committee. *Science, Government and Information: the Responsibilities of the Technical Community and the Government Transfer of Information*. 1963. (Weinberg Report.)

55.236 Subject Bibliography: Law**TEXTBOOK**

- Campbell, E. M. and McDougall, D. *Legal Research: Materials and Methods*. Law Book, 1967.

PRINCIPAL REFERENCE BOOKS

- Baalman, J. *Outline of Law in Australia*. 3rd ed. Law Book, 1969.
 Sweet & Maxwell. *Guide to Law Reports and Statutes*. 4th ed. Sweet & Maxwell, 1962.
 Sweet & Maxwell. *Legal Bibliography of the British Commonwealth of Nations. Vol. 6, Australia, New Zealand and their Dependencies*. 2nd ed. Sweet & Maxwell, 1958.
 Way, D. *The Student's Guide to Law Libraries*. Oyez Publications, 1965.

55.238 Subject Bibliography: Government Publications**TEXTBOOK**

- Sawer, G. *Australian Government Today*. rev. ed. M.U.P., 1967.

PRINCIPAL REFERENCE BOOKS

- Australia. Parliament. Committees. *Parliamentary and Government Publications: Report from the (Erwin) Joint Select Committee*. Govt. Printer, 1964.
 Campbell, E. M. & McDougall, D. *Legal Research: Materials and Methods*. Law Book, 1967.

- Cope, R. L. *Government Publications of the Commonwealth and New South Wales. Part 1 Introduction to their Study and Use.* Bullaburra Press, 1969.
- N.S.W. Parliament. Library. *Government Publications in Australia: Papers on their Use and Understanding.* 3rd ed. Govt. Printer, 1973.
- Pemberton, J. E. *British Official Publications.* Pergamon, 1971.
- Schmeckebier, L. F. & Eastin, R. B. *Government Publications and Their Use.* Rev. ed. Brookings Institute, 1969.

55.362 Mechanized Systems for Libraries

Systems analysis and design for libraries. The application of electronic data processing techniques to the control of library systems for acquisitions, serials processing, circulation control and for the production of library catalogues.

Computers and allied hardware. Basic concepts of programming with emphasis on the type of programming problems encountered in library automation and document organization. Programming languages and their suitability for the solution of library problems.

Principles and methods of information indexing, storage and retrieval for machine systems. Automatic indexing.

The state of automation in libraries and the impact on libraries of mechanized information systems such as MARC, MEDLARS, Chemical Abstracts Service, and of experiments in on-line systems.

TEXTBOOKS

- Artandi, S. *An Introduction to Computers in Information Science.* 2nd ed. Scarecrow Press, 1972.
- Smith, G. L. *Library Use of Computers.* Special Libraries Association, 1969.

PRINCIPAL REFERENCE BOOKS

- Cox, N. S. M., Dews, J. D. & Dolby, J. L. *The Computer and the Library.* University of Newcastle-upon-Tyne Library, 1966.
- Dolby, J. L. *Computerized Library Catalogs: Their Growth, Cost and Utility.* M.I.T. Press, 1969.
- Eyre, J. & Tonks, P. *Computers and Systems; an Introduction for Librarians.* Bingley, 1971.
- Hayes, R. M. and Becker, J. *Handbook of Data Processing for Libraries.* Becker & Hayes Inc., 1970.
- Kent, A. *Information Analysis and Retrieval.* Becker & Hayes, 1971.

55.371 Literature for Young People

A survey of printed materials for children and young adults in relation to their needs, interests and abilities. Criteria for evaluation and selection for library collections. Use of materials in reading guidance with children and young adults.

PRINCIPAL REFERENCE BOOKS

- Arbuthnot, M. H. *Children and Books.* Scott, Foresman, 1947.
- Darton, F. J. H. *Children's Books in England.* 2nd ed. C.U.P., 1958.
- Ellis, A. *How to Find Out about Children's Literature.* 3rd ed. Pergamon, 1973.
- Hazard, P. *Books, Children and Men.* Horn Book, 1944.
- Pilgrim, G. M. & McAllister, M. K. *Books, Young People and Reading Guidance.* 2nd ed. Harper & Row, 1968.

- Saxby, H. M. *A History of Australian Children's Literature*, vol. 1, 1841-1941. vol. 2, 1942-1970. Wentworth, 1969-71.
- Smith, L. H. *The Unreluctant Years: A Critical Approach to Children's Literature*. Viking Press, 1967.

55.373 Public Libraries

The purpose of the public library in the community examined through (a) a comparative study of public library services with emphasis on special programmes of service to adults, young adults and children; (b) surveys and plans for the introduction of library service to specific regions.

PRINCIPAL REFERENCE BOOKS

- American Library Association—Public Library Association. *Young Adult Services in the Public Library*. A.L.A., 1960.
- American Library Association—Public Library Association. *A Strategy for Public Library Change*. A.L.A., 1972.
- Broderick, D. M. *An Introduction to Children's Work in Public Libraries*. Wilson, 1965.
- Hill, J. *Children are People: The Librarian in the Community*. Hamish Hamilton, 1973.
- Kronus, C. L. & Crowe, L. *Libraries and Neighbourhood Information Centres*. Graduate School of Library Science. Univ. Illinois, 1972.
- Library Association of Australia. Committee on Standards for Public Libraries. *Interim Minimum Standards for Public Libraries*. L.A.A., 1972.
- Martin, L. A. *Library Response to Urban Change*. A.L.A., 1969.
- Sinclair, D. *Administration of the Small Public Library*. A.L.A., 1965.

55.378 University and College Libraries

Trends and developments in tertiary education in relation to the purposes and functions of university and college libraries.

The library's response to the university environment and to the library user through its resources and services.

PRINCIPAL REFERENCE BOOKS

- Australia—Commonwealth Advisory Committee on Advanced Education. *Report 1*—Govt. Printer, 1966.
- Australian Vice-Chancellors' Committee. *Teaching Methods in Australian Universities*. 1965.
- Bryan, H. *Australian University Libraries Today and Tomorrow*. Bennett, 1965.
- Knapp, P. B. *The Montieth College Library Experiment*. Scarecrow Press, 1966.
- Shores, L. *The Library-college U.S.A.* South Pass Press, 1970.
- Wilson, L. R. & Tauber, M. F. *The University Library*. 2nd ed. Columbia U.P., 1956.

55.381 Special Libraries

The nature of special libraries and the environments in which they operate. The evolution of the special library. The relationships of the special library to its parent organization, to its users and to other sources of information. The functions of the special library and their translation into appropriate services. Systems and techniques relevant to special libraries including mechanized information systems. Staffing, siting, planning special libraries. Measurement of special library effectiveness.

PRINCIPAL REFERENCE BOOKS

- Ashworth, W. ed. *Handbook of Special Librarianship and Information Work*. 3rd ed. Aslib, 1967.
 Burkett, J. ed. *Trends in Special Librarianship*. Bingley, 1968.
 Mount, E. *Planning the Special Library*. S.L.A., 1972.
 Strauss, L. J., Strieby, I. M. & Brown, A. L. *Scientific and Technical Libraries: Their Organization and Administration*. Interscience, 1964.

53.385 School Libraries I

The information environment of educators. Educational issues and their effect on libraries. The development of the role of the library in the school in relation to educational thought and practice.

The provision, administration and organization of school library resources and services on national, state and local levels.

The roles of school and public libraries and the community library concept.

TEXTBOOKS

- Australia. Commonwealth Secondary School Libraries Committee. *Standards for Secondary School Libraries*. 1971.
 Prostan, E. T. & Prostan, J. S. *The School Library Media Center*. Libraries Unlimited, 1971.

PRINCIPAL REFERENCE BOOKS

- American Association of School Librarians. *Standards for School Media Programmes*. A.L.A., 1969.
 Australian UNESCO Seminar. *The Role of Libraries in Secondary Education, August 1970*. Australian National Advisory Committee for UNESCO, 1971.
 Ellsworth, R. E. & Wagener, H. D. *The School Library*. Center for Appl. Res. in Ed., 1965.
 Erickson, C. W. *Administering Instructional Media Programmes*. Macmillan, 1968.
 Rossof, M. *The School Library and Educational Change*. Libraries Unlimited, 1971.
 Sullivan, P. *Problems in School Media Management*. Bowker, 1971.

55.386 School Libraries II

Subject curriculum studies in relation to the selection of materials and library programmes. Materials studies in relation to the range and type of materials and their application to curriculum subjects.

The compilation of subject bibliographies.

Media production and services in relation to subject curriculum studies.

Methods of individual and group reader education and the teaching of library skills.

PRINCIPAL REFERENCE BOOKS

- Brown, J. W., Lewis, R. B. & Harclerod, F. F. A. V. *Instruction; Media and Methods*. 3rd ed. McGraw-Hill, 1969.
 Davies, R. A. *The School Library; a Force for Educational Excellence*. 1969.
 Gerlach, V. S. & Ely, D. P. *Teaching and Media: a Systematic Approach*. Prentice-Hall, 1971.
 Mager, R. *Preparing Instructional Objectives*. Fearnon, 1967.

- Pavlovic, L. & Goodman, E. B. *The Elementary School Library in Action*. Parker Pub., 1968.
- Rufsvold, M. I. & Guss, C. *Guides to Education Media*. 3rd ed. A.L.A., 1971.
- Thompson, J. J. *Instructional Communication*. Van Nostrand-Reinhold, 1969.
- Wofford, A. *Book Selection for School Libraries*. Wilson, 1962.

55.712 Archives Theory and History

Archives theory studied historically. Public administration, administrative history and government records. The history of archives institutions. Archives legislation. Business, institutional and other non-governmental archives. Private papers, local history collections. Uses of archives for information and in research. The development and role of the archives profession. National and international archives associations; constitutions, programmes, publications.

TEXTBOOK

- Jenkinson, H. *Manual of Archive Administration*. 2nd ed. Lund, Humphries, 1966.

PRINCIPAL REFERENCE BOOKS

- Brooks, P. C. *Research in Archives: the Use of Unpublished Primary Sources*. Univ. of Chic. Press, 1969.
- Jones, H. G. *The Records of a Nation: their Management, Preservation and Use*. Atheneum, 1969.
- Lumb, R. D. *The Constitutions of the Australian States*. University of Queensland Press, 1972.
- Posner, E. *Archives and the Public Interest*. Public Affairs Press, 1967.
- Schellenberg, T. R. *Management of Archives*. Columbia U.P., 1965.
- Society of Archivists. *Essays in Memory of Sir Hilary Jenkinson*. 1962.
- Spann, R. N. ed. *Public Administration in Australia*. 2nd ed. N.S.W. Govt. Pr., 1973.

55.713 Archives Administration

(a) Relations between archive-creating bodies and archives institutions. Commercial and legal practice, forms and terminology relevant to the understanding of archives. The elements of records management.

(b) Archives management: acquisition, arrangement and description, the publication of finding aids, the application of automation, microcopying. Conservation of materials. Repository planning.

(c) The principles of administration and their application to archives institutions.

(d) Service to users of archives. including questions of access and copyright. Publication of archives.

TEXTBOOKS

- Schellenberg, T. R. *Management of Archives*. Columbia U.P., 1965.
- Schellenberg, T. R. *Modern Archives, Principles and Techniques*. Univ. of Chic. Press, 1971.

PRINCIPAL REFERENCE BOOKS

- Evans, F. B. *The Administration of Modern Archives: a Select Bibliographic Guide*. U.S. National Archives, 1970.
- Gt. Brit. Committee on Departmental Records (Sir James Grigg, Chairman). *Report*. H.M.S.O., 1954.
- Jenkinson, H. *Manual of Archive Administration*. 2nd ed. Lund, Humphries, 1966.

- Muller, S., Feith, J. A. & Fruin, R. *Manual for the Arrangement and Description of Archives*. 2nd ed. Wilson, 1968.
Perotin, Y. ed. *Manual of Tropical Archivology*. Mouton, 1966.
Wardle, D. B. *Document Repair*. Society of Archivists, 1971.

55.714 Information Environment for Archivists

Information sources which supplement archives: academies, learned societies, institutions including libraries, galleries and museums. Libraries of various types studied in relation to the needs of archivists; acquisition of materials by purchase, gift, exchange and legal deposit; organization of materials for use. Bibliographical description and national and international documentation standards. Documentary materials in non-book form and their use in research. Dissemination of texts and other types of record by reprography and in microform.

PRINCIPAL REFERENCE BOOKS

- Balnaves, J. *Australian Libraries*. Cheshire, 1966.
Commonwealth National Library. *Australian Bibliographical Centre. Australian Bibliography and Bibliographical Services*. A.A.C.O.B.S., 1960.
Kochen, M. ed. *The Growth of Knowledge: Readings on Organization and Retrieval of Information*. Wiley, 1967.
Kujoth, J. S. *Readings in Nonbook Librarianship*. Scarecrow Press, 1968.
Williams, B. J. S. *Miniaturised Communications: a Review of Microforms*. Library Assoc. & National Reprographic Centre for Documentation, 1970.

Master of Librarianship

55.801G Library and Information Services Management A

Legislative and financial aspects of library provision. Libraries in the political process. Authority relationships and the nature of the library as a bureaucracy.

Siting and planning of libraries. Patterns of administrative organization in libraries. Position classification and personnel administration. The management of library finances.

55.803G Library and Information Services Management B

The assessment of information needs of various groups and the design of appropriate services. The integration of libraries in information networks.

Applications of operations research and computer technology in library management and in the dissemination of information by other agencies. Evaluation of libraries and other information services.

55.805G Issues in Librarianship

Contemporary issues in librarianship, including the provision of libraries and information by governments and by private enterprise; automation, information, science and libraries; cataloguing, classification and bibliographical control; problems of publication growth and library size; libraries in the social environment.

55.807G Research Methods in Librarianship

Nature, necessity and techniques of research in librarianship and contributions of information science; the functions and techniques of statistical analysis; preparation of research proposals; state of the art of research in librarianship and the evaluation of some research projects.

SCHOOL OF EDUCATION**58.080 Education A**

A composite subject whose main components are Educational Psychology, Educational Practice, Philosophy and Theory of Education, Sociology of Education and seminars on educational issues.

Educational Psychology

Learning in the classroom. Variables such as growth and development, motivation, personality and group behaviour related to the learning process.

TEXTBOOK

CRM. *Educational Psychology*. C.R.M., 1973.

PRINCIPAL REFERENCE BOOKS

Ausubel, D. P. and Robinson, F. G. *School Learning*. Holt, 1969.

Mathis, B. C., Colton, J. W. & Sochrest, L. *Psychological Foundations of Education*. Academic Press, 1970.

McCandless, B. R. & Evans, E. D. *Children and Youth, Psychosocial Development*. Dryden, Illinois, 1973.

Russell, I. L. *Motivation*. Brown, 1971.

Sperry, L. ed. *Learning Performance and Individual Differences*. Scott, Foresman, 1972.

Stott, L. H. *The Psychology of Human Development*. Holt, Rinehart & Winston, 1974.

Travers, R. M. *Educational Psychology*. Macmillan, 1973.

Travers, R. M. *Essentials of Learning*. Macmillan, 1972.

Wadsworth, B. J. *Piaget's Theory of Cognitive Development*. McKay, 1971.

Weiner, I. B. & Elkind, D. *Child Development, a Core Approach*. Wiley, 1972.

Wilson, J. A. R., Robeck, M. C. & Michael, W. B. *Psychological Foundations of Learning and Teaching*. McGraw-Hill, 1969.

Educational Practice

Classroom organization and practice: individual and group techniques; management; teaching aids (including radio and television). Measurement in education. Curriculum construction and modification. School organization.

PRINCIPAL REFERENCE BOOKS

Brown, D. *Changing Student Behaviour: A New Approach to Discipline*. Brown, 1971.

Clarizio, H. F. et al. *Contemporary Issues in Educational Psychology*. Allyn & Bacon, 1970.

Gronlund, N. E. *Constructing Achievement Tests*. Brown, 1968.

Gronlund, N. E. *Stating Behavioral Objectives for Classroom Instruction*. Macmillan, 1970.

Remmers, H. H., Gage, N. L. & Rummell, J. F. *A Practical Introduction to Measurement and Evaluation*. 2nd ed. Harper, 1965.

- Sulzer, B. and Mayer, G. R. *Behaviour Modification Procedures for School Personnel*. Dryden, 1972.
- Vernon, W. M. *Motivating Children—Behaviour Modification in the Classroom*. Holt, Rinehart & Winston, 1972.

Philosophy of Education

Viewpoints on the purposes of education and their relationship to curriculum theory and development. Conceptual studies, connections between education and general philosophy, and trends in philosophy of education.

PRINCIPAL REFERENCE BOOKS

- Alberty, H. B. *Reorganizing the High School Curriculum*. 3rd ed. Macmillan, 1962.
- Brown, L. M. *Aims of Education*. Teacher's College, Columbia, 1970.
- Brown, L. M. *General Philosophy in Education*. McGraw-Hill, 1966.
- Buber, M. *Between Man and Man*. Fontana Library ed. Collins, 1966.
- Connell, W. F. *The Foundations of Education*. Novak, 1962.
- Dewey, J. *Democracy and Education*. Macmillan, 1916.
- Faunce, R. C. & Bossing, N. L. *Developing the Core Curriculum*. Prentice-Hall, 1958.
- Gribble, J. *Introduction to Philosophy of Education*. Allyn & Bacon, 1969.
- Wynne, J. P. *Theories of Education*. Harper & Row, 1964.

Sociology of Education

An investigation of the role of education in Australian society with particular attention given to Australian education systems, inequality and the role of the Commonwealth. A study of adolescent groups including deviants and cultural deprivation. An analysis of social structures in the secondary school and the school in the local community. A study of teacher groups including role and professionalism.

PRINCIPAL REFERENCE BOOKS

- Dunphy, D. *Cliques, Groups and Crowds*. Cheshire.
- Fensham, P. J. ed. *Rights and Inequality in Australian Education*. Cheshire, 1970.
- Harvard Educational Review. *Equal Educational Opportunity*. Harvard U.P., 1969.
- Karmel, P. Chairman. *Education in South Australia*. Report of the Committee of Enquiry into Education in South Australia 1969-70, S.A. Govt. Printer, Adelaide, 1971.
- Westby-Gibson, D. *Social Perspectives on Education*. Wiley, 1965.

58.081 Education B

Methods of teaching, comprising lecture-seminars and individual discussions with method lecturers. Choice of method components is related individually to students' undergraduate courses. Normally students choose two method areas, although under certain conditions some separate areas such as Mathematics and Science, may count as equivalent to two. The following method areas are offered, and others such as Guidance or Health Education may be added from time to time to meet the changing needs of secondary teaching: Commerce, English, French, Geography, German, History, Library, Mathematics (double), Mathematics (single), Spanish, Slow Learner, Science (double), Science (single).

Method Subjects

Commerce Method

PRINCIPAL REFERENCE BOOKS

- Assistant Masters Association. *The Teaching of Economics in Secondary Schools*. C.U.P., 1971.
- Duffy, D. G. ed. *Teaching About Society*. Rigby, 1970.
- Lee, N. ed. *Teaching Economics*. London English Economics Association, 1968.
- Oliver, J. M. *The Principles of Teaching Economics*. Heinemann, 1973.
- Prehn, E. C. *Teaching High School Economics*. Pitman, 1968.
- Calderwood, J. D., Lawrence, J. D. & Maher, J. E. *Economics in the Curriculum*. Wiley, 1970.

English Method

TEXTBOOKS

- Ashworth, A. & Watson, K. eds. *Towards a New English*. Reed Education, 1972.
- Owens, J. & Marland, M. eds. *The Practice of English Teaching*. Blackie, 1971.

PRINCIPAL REFERENCE BOOKS

- Burton, D. L. & Simmons, J. S. *Teaching English in Today's High Schools*. Holt, Rinehart & Winston, 1965.
- Clegg, A. B. *The Excitement of Writing*. Chatto & Windus, 1970.
- Dixon, J. *Growth through English*. Edgerton, National Assoc. for the Teaching of English, 1969.
- Holbrook, D. *English for Maturity*. C.U.P., 1961.
- Schoenheimer, H. P. ed. *Education Through English*. Cheshire, 1967.
- Whitehead, F. S. *The Disappearing Dais*. Chatto & Windus, 1966.
- N.S.W. Department of Education. *Syllabuses in English for Forms I to IV, (and Notes to the Syllabus)*. Govt. Printer, Sydney, 1971.

French, German and Spanish Methods

TEXTBOOK

- Rivers, W. *Teaching Foreign Language Skills*. Chicago U.P., 1968.

PRINCIPAL REFERENCE BOOKS

- Dutton, B. *Guide to Modern Language Teaching Methods*. Cassell, 1965.
- Huebner, T. *How to Teach Foreign Languages Effectively*. Rev. ed. New York U.P., 1965.
- Huebner, T. *Audio-Visual Techniques in Teaching Foreign Languages*. New York U.P., 1960.
- Rivers, W. M. *The Psychologist and the Foreign Language Teacher*. Uni. of Chicago Press, 1966.
- Wykes, O. & King, M. G. *Teaching of Foreign Languages in Australia*. A.C.E.R., 1968.

Geography/Social Studies Method

TEXTBOOK

- Biddle, D. S. & Shortle, D. *Programming in Geography*. Martindale Press, 1969.

PRINCIPAL REFERENCE BOOKS

- Biddle, D. S. *Readings in Geographical Education*. Whitcombe & Tombs, 1968.
- Biddle, D. S. & Collins, K. J. *Geography in the Senior Forms*. Cheshire, for the Victorian and N.S.W. Geography Teachers' Association.
- Biddle, D. S. & Shortle, D. *Programme Planning in Geography*. Martindale Press, 1969.
- Long, M. *Handbook for Geography Teachers*. Methuen, 1964.
- UNESCO. *Source Book for Geography Teaching*. Longmans, 1965.
- Association of Assistant Masters. *The Teaching of Geography in Secondary Schools*. C.U.P., 1967.

Guidance Method**PRINCIPAL REFERENCE BOOKS**

- Bennet, M. E. *Guidance and Counselling in Groups*. 2nd ed. McGraw-Hill, 1963.
- Downing, L. N. *Guidance and Counselling Services*. McGraw-Hill, 1968.
- Glanz, E. C. & Hayes, R. W. *Groups in Guidance*. Allyn & Bacon, 1967.
- Hansen, J. and Cramer, S. *Group Guidance and Counselling in the Schools*. Appleton, 1971.
- Kowitz, G. T. and Kowitz, N. G. *An Introduction to School Guidance*. Holt, Rinehart & Winston, 1971.
- Lifton, W. M. *Working with Groups*. 2nd ed. Wiley, 1966.
- Super, D. S. *The Psychology of Careers*. Harper & Row, 1957.
- Tyler, L. E. *The Work of the Counsellor*. Appleton, 1969.
- Warters, J. *Group Guidance*. McGraw-Hill, 1960.

History Method**TEXTBOOK**

- Walshe, R. D. & Little, N. A. eds. *Ways We Teach History*. H.T.A. of N.S.W.

PRINCIPAL REFERENCE BOOKS

- Ballard, M. ed. *New Movements in the Study and Teaching of History*. Cheshire, 1970.
- Burston, W. H. *Principles of History Teaching*. Methuen, 1963.
- Fenton, E. ed. *Teaching the New Social Studies in Secondary Schools: An Inductive Approach*. Holt, Rinehart & Winston, 1966.
- U.K. Incorporated Association of Assistant Masters in Secondary Schools. *The Teaching of History*. C.U.P., 1965.

Library Method**PRINCIPAL REFERENCE BOOKS**

- Arbuthnot, M. H. *Children and Books*. 3rd ed. Scott Foreman, 1964.
- Roe, E. *Teachers, Librarians and Children*. 2nd ed. Cheshire, 1972.
- Saxby, H. M. *A History of Australian Children's Literature Vol. 1 1841-1941*. Wentworth, 1969.
- Saxby, H. M. *A History of Australian Children's Literature Vol. 2 1941-1970*. Wentworth, 1971.
- Scott, M. B. & Fennell, D. P. *Cataloguing for School Libraries*. Pergamon, 1970.
- Shores, Louis. *Basic Reference Sources*. A.L.A. Chicago, 1954.
- Smith, L. *The Unreluctant Years*. A.L.A. Chicago, 1953.

Mathematics Method

TEXTBOOK

Johnson, D. and Rising, G. *Guidelines for Teaching Mathematics*. Wadsworth, 1967.

PRINCIPAL REFERENCE BOOKS

A.C.E.R. *Background in Mathematics*. Govt. Printer, 1967.

Butler, C. & Wren, F. *The Teaching of Secondary Mathematics*. McGraw-Hill, 1965.

National Council of Teachers of Mathematics. *The Teaching of Secondary School Mathematics*. 33rd Yearbook, Washington, 1970.

National Council of Teachers of Mathematics. *Historical Topics for the Mathematics Classroom*. 31st Yearbook, Washington, 1969.

National Council of Teachers of Mathematics. *Teaching Slow Learners Mathematics*. 35th Yearbook, Washington, 1972.

N.S.W. Department of Education. *Mathematics Syllabi and Notes*.

Stewart, I. *Making Mathematics Live*. A. & R., 1970.

U.K. Ministry of Education. *Teaching Mathematics in Secondary Schools*. Pamphlet 36. H.M.S.O., London, 1958.

Slow Learner Method

The Slow Learner Method course is designed to prepare secondary teachers of "Activity" classes. These classes are for slow learners with a variety of problems such as mental or scholastic retardation (or a combination of the two). Student teachers taking this course will be prepared as class teachers in English (with special attention to reading), Mathematics and Social Studies, and in addition will study the method of teaching one particular subject (such as History or English) through the full range of secondary school forms. They will have complete promotion possibilities open to them in the secondary school, and will in no way be professionally limited by undertaking work with "Activity" classes in the early stages of their careers.

The Slow Learner Method course has the support of the Department of Education which will be approached to second a part-time lecturer in the subject to the School of Education.

TEXTBOOK

Flesch, R. *Why Johnny Can't Read*. Harper & Row.

PRINCIPAL REFERENCE BOOKS

Bassette, G. W. *Each One is Different*. A.C.E.R. publication.

Bell, P. *Basic Teaching for Slow Learners*. Muller Educational, 1970.

Fernald, G. M. *Remedial Reading Techniques in Basic School Subjects*. McGraw-Hill, 1943.

McLeod, J. *The Slow Learner in Primary School*. Novak.

Roswell F. and Natchez, G. *Reading Disability*. 2nd ed. Basic Books Inc., 1971.

Schonell, F. *Backwardness in the Basic Subjects*. 4th ed. Oliver & Boyd, 1948.

Schonell, F. E. & Schonell, F. J. *Diagnostic and Attainment Testing*. 4th ed. Oliver & Boyd, 1960.

Telford, C. W. & Sawrey, J. M. *The Exceptional Individual*. Prentice-Hall, 1967.

Williams, A. A. *Basic Subjects for the Slow Learner*. Methuen Education, 1970.

Younie, W. J. *Instructional Approaches to Slow Learning*. Teachers College Press, Columbia University, 1969.

Science Method (Double and Single Teaching Subjects)**TEXTBOOK**

Collette, A. T. *Science Teaching in the Secondary School*. Allyn & Bacon, Boston, 1973.

PRINCIPAL REFERENCE BOOKS

Renner, J. W. & Stafford, D. G. *Teaching Science in the Secondary School*. Harper & Row, 1972.

Sund, R. B. & Trowbridge, L. W. *Teaching Science by Inquiry in the Secondary School*, 2nd ed. Merrill, 1973.

Tisher, R. P. et al. *Fundamental Issues in Science Education*. Wiley, 1972.

58.082 Education C

Teaching techniques and practice: micro-teaching, audio-visual instruction, selected activities and both concurrent and block teaching practice.

Selected activities: each student is encouraged to nominate a project, or practical activity, to be completed either in a school or at the University.

Education Subjects in Science Education and Industrial Arts**58.071 Methods of Teaching IA (Industrial Arts Course)**

Concerned with the application of principles dealt with in Philosophy and Theory of Education, and in Educational Psychology, to the particular case of teaching in the Industrial Arts subject area. For example, the aims of industrial arts teaching are analysed and the provision of effective learning experiences are discussed. There is consideration of the use of practical work, demonstrations by the teacher, audiovisual aids, programmed instruction, and the planning of lessons to incorporate such learning experiences effectively. Classroom management and workshop organisation are also dealt with, as is the teaching of various skills.

School Experience Students will begin teaching practice in their third year. The school experience in that year is designed to give them a gradual introduction to teaching and this will be consolidated in their fourth year.

TEXTBOOK

Wilber, O. W. & Pendred, C. P. *Industrial Arts in General Education*. 3rd ed. Int. Text Book Co., 1967.

PRINCIPAL REFERENCE BOOKS

Ericson, E. E. & Seefeld, K. *Teaching the Industrial Arts*. 2nd ed. Bennett, 1960.

Friese, J. F. & Williams, W. A. *Course Making in Industrial Arts*. 3rd ed. Bennett, 1966.

Littrell, J. J. *Guide to Industrial Teaching*. Bennett, 1970.

Silvius, G. H. and Curry, E. H. *Managing Multiple Activities in Industrial Education*. McKnight, 1971.

Silvius, G. and Curry, E. H. *Teaching Successfully Industrial Education*. McKnight, 1967.

58.072 Methods of Teaching IIA (Industrial Arts Course)

This subject deals with curriculum development in Industrial Arts, further discussion of instructional procedures, evaluation of student achievement and the planning and management of facilities. The aims and objectives of Industrial Arts teaching will be considered including reference to the influence of historical, social and technological factors upon them. The selection and sequencing of content will be dealt with as a basis for programming. Principles of evaluation introduced in Educational Psychology will be applied to the case of Industrial Arts and special techniques will be considered. Instructional procedures discussed will include questioning, explanation, exposition, group processes and the use of practical work. The planning and management of facilities will include consideration of the Planning Unit and the Resource Centre in the Integrated Industrial Arts Complex.

TEXTBOOKS

- Friese, J. F. and Williams, W. A. *Course Making in Industrial Arts*. Bennett, Peoria, Ill., 1966.
- Wilber, O. W. & Pendred, C. P. *Industrial Arts in General Education*. Int. Text Book Co., 1967.

PRINCIPAL REFERENCE BOOKS

- Brown, R. D. *Industrial Arts Laboratory Planning and Admin.* Bruce, Milwaukee, 1969.
- Cochran, L. H. *Innovative Programs in Industrial Education*. McKnight's, Bloomington, Ill., 1970.
- Giachino, J. W. and Gallington. *Course Construction in Industrial Arts & Vocational Education*. 2nd ed. American Technical Society, London, 1961.
- Miller, R. and Smally, L. H. *Selected Reading in Industrial Arts*. McKnight's, Bloomington, Ill., 1963.
- Silvius, G. H. and Bohn, R. C. *Organising Course Materials for Industrial Education*. McKnight's, Bloomington, Ill., 1961.

58.512 Introduction to Education

The subject starts with an examination of the view commonly held by prospective teachers that their task in the classroom will be simply to teach specific subject matter. Some of the difficulties encountered in the communication of ideas to pupils are considered and a much broader view of the educational process is developed. Psychological, philosophical and sociological perspectives of the teaching-learning situation are discussed.

The subject serves as a basis for study in greater depth of educational psychology, philosophy and theory of education and sociology of education in succeeding years and shows the contribution of each to the practice of teaching. Lectures and seminars are closely related to a series of school visits extending throughout the year.

PRINCIPAL REFERENCE BOOKS

- Berger, P. L. *Invitations to Sociology*. Penguin, 1963.
- Broom, L. & Selnick, P. *Sociology. A Text with Adapted Readings*. Harper & Row, 1968.
- Chinoy, E. *Society: An Introduction to Sociology*. Random House, 1967.
- Cotgrove, S. *The Science of Sociology*. Allen & Unwin, 1967.

- D'Urso, S. ed. *Counterpoints Critical Writings on Australian Education*. Wiley, 1971.
- Fensham, P. J. ed. *Rights and Inequality in Australian Education*. Cheshire, 1970.
- Gribble, J. *Introduction to Philosophy of Education*. Allyn & Bacon, 1969.
- Hospers, J. *An Introduction to Philosophical Analysis*. 2nd ed. Routledge, 1967.
- Katz, F. M. & Browne, R. K. eds. *Sociology of Education*. Macmillan, Melb., 1969.
- McCandless, B. R. *Children*. 2nd ed. Holt, Rinehart & Winston, 1968.
- Nisbet, R. A. *The Social Bond. An Introduction to the Study of Society*. Knopf, 1970.
- Partridge, P. H. *Society, Schools and Progress in Australia*. Pergamon, 1968.
- Piaget, J. & Inhelder, B. *The Psychology of the Child*. Routledge, 1969.
- Sergeant, G. *A Textbook of Sociology*. Macmillan, London, 1971.
- Taba, H. *Curriculum Development Theory and Practice*. Harcourt Brace and World, 1962.
- Thurber, W. A. & Collette, A. T. *Teaching Science in Today's Secondary Schools*. Allyn & Bacon, 1968.
- Watson, R. I. *Psychology of the Child*. Wiley, 1965.
- Wilson, J. A. R., Robeck, M. C. & Michael, W. B. *Psychological Foundations of Learning & Teaching*. McGraw-Hill, 1969.

58.513 Education IA

Prerequisite: 58.512. Co-requisite: 58.523.

Educational Psychology

Areas considered in this year will be: Learning, motivation, child and adolescent development, group processes, personality and other psychological factors related to learning and instruction.

TEXTBOOK

Le Francois, G. R. *Psychology for Teaching*. Wadsworth, 1972.

PRINCIPAL REFERENCE BOOKS

- Ausubel, D. P. & Robinson, F. G. *School Learning*. Holt, 1969.
- Erikson, E. H. *Identity, Youth & Crisis*. Faber & Faber, London, 1968.
- Gagne, R. M. *The Conditions of Learning*. Holt, 1970.
- Gregg, L. W. *Cognition in Learning and Memory*. Wiley, 1972.
- Mathis, B. K., Cotton, J. W. & Sechrest, L. *Psychological Foundations of Education*. Academic, 1970.
- Mussen, R. H., Conger, J. J. & Kagan, J. *Readings in Child Development and Personality*. 2nd ed. Harper & Row, 1970.
- Smart, M. S. & Smart, R. C. *Adolescents, Developments and Relationships*. Macmillan, N.Y., 1973.
- Wattenberg, W. W. *The Adolescent Years*. Harcourt, Brace, Jovanovich, 1973.
- Wilson, J. A. R., Robeck, M. C. & Michael, W. B. *Psychological Foundations of Learning and Teaching*. McGraw-Hill, 1969.

Philosophy and Theory of Education

This course will deal with curriculum theory and curriculum development, theory in education with reference to educational objectives, and an analysis of values leading to a concept of education. Various concepts will be examined within the context of theory and values, such as: responsibility and punishment, indoctrination, equality, creativity.

PRINCIPAL REFERENCE BOOKS

- Brown, L. M. *Aims of Education*. Teachers' College, Columbia University, N.Y., 1970.
- Dearden, R. F. et al. eds. *Education and the Development of Reason*. Routledge and Kegan Paul, London, 1972.
- Hospers, J. *Human Conduct*. Harcourt, Brace and World, N.Y., 1961.
- Lytton, H. *Creativity and Education*. Routledge and Kegan Paul, London, 1971.
- Snook, I. A. *Indoctrination and Education*. Routledge and Kegan Paul, London, 1972.

Research Methods in Education

Introduction to the theory and practice of research methods in education in both the parametric and non-parametric fields including: measures of central tendency and dispersion, graphical representation of data, normal curve theory reliability of difference between statistics, correlation, tests and examinations, an introduction to analysis of variance, regression and the nature of experiments.

TEXTBOOK

- Guilford, J. P. *Fundamental Statistics in Psychology and Education*. 4th ed. McGraw-Hill, 1965.

PRINCIPAL REFERENCE BOOKS

- Edwards, A. L. *Statistical Methods for the Behavioural Sciences*. Holt, Rinehart & Winston, N.Y., 1957.
- Ferguson, G. A. *Statistical Analysis in Psychology and Education*. McGraw-Hill, N.Y., 1966.
- Lindquist, E. F. *Educational Measurement*. American Council on Education, 1951.
- Lindquist, E. F. *A First Course in Statistics: Their Use and Interpretation in Education and Psychology*. Houghton Mifflin, Boston, 1961.
- Popham, W. S. *Education Statistics*. Harper & Row, N.Y., 1967.
- Siegel, S. *Nonparametric Statistics for the Behavioral Sciences*. McGraw-Hill, N.Y., 1956.

Sociology of Education

An introduction to the sociology of education. An investigation of the role of education in Australian society with particular attention given to inequality, adolescent groups including a study of deviants and cultural deprivation. A sociological analysis of classroom groups including group interaction, reference group theory and role theory. An analysis of social structure in the secondary school and the school in the local community. A study of teacher groups with particular attention given to role and professionalism.

PRINCIPAL REFERENCE BOOKS

- Chinoy, E. *Society: An Introduction to Sociology*. Random House, New York, 1967.
- Clark, B. R. *Educating the Expert Society*. Chandler Pub. Company, Chicago, 1962.
- Dunphy, D. *Cliques, Groups and Crowds*. Cheshire.
- Fensham, P. J. ed. *Rights and Inequality in Australian Education*. Cheshire, Melbourne, 1970.
- Karmel, P. (Chairman). *Education in South Australia*. Report of the Committee of Enquiry into Education in South Australia 1969-70. S.A. Govt. Printer, Adelaide, 1971.
- Nisbet, R. A. *The Social Bond. An Introduction to the Study of Society*. Alfred A. Knopf, New York, 1970.

58.523 Education IB

Prerequisites: 1.011 or 1.001 or 1.041 and 2.001, 17.011, 25.001, 58.512.
Co-requisite: 58.513.

Science Curriculum and Instruction

This course is concerned with the application of principles dealt with in Educational Psychology and Philosophy and Theory of Education to the particular case of science teaching. For example, the curriculum strand deals with aims of science teaching and with planning and programming of course content and the influence of information about cognitive growth and conceptual patterns upon this. Again, the instruction strand deals with learning in science, e.g. teacher demonstrations, pupil practical work, the use of audiovisual aids, individualised instruction and lesson planning. The teaching of selected topics in Biology, Chemistry, Geology and Physics is commenced and this is developed further in the fourth year.

TEXTBOOK

- Collette, A. T. *Science Teaching in the Secondary School*.
- Tisher, R. P. et al. *Fundamental Issues in Science Education*. Wiley, 1972.

PRINCIPAL REFERENCE BOOK

- Sund, R. B. & Trowbridge, L. W. *Teaching Science by Inquiry in the Secondary School*. 2nd ed. Merrill, 1973.

Teaching Practice

Students will be placed in high schools for one half-day per week to obtain a gradual introduction to the teaching process.

58.514 Education IIA

Four options each of which occupy two hours per week of class time for one session. The options may be chosen from those given below. However, whether a given option will be offered will depend on the availability of staff in a given year and other options may be added from time to time.

Options in Educational Psychology

Educational Measurement: The purposes and methods of measurement available to the classroom teacher, including the use of standardized tests. The place of Guidance Counsellors in an evaluation programme is considered.

PRINCIPAL REFERENCE BOOKS

- Anastasi, A. *Psychological Testing*. 3rd ed. Macmillan, 1968.
 Bloom, B. S., Hastings, J. T. & Madaus, G. F. *Handbook on Formative and Summative Evaluation of Student Learning*. McGraw-Hill, 1971.
 Ebel, R. L. *Essentials of Educational Measurement*. Prentice-Hall, 1972.
 Gronlund, N. E. *Readings in Measurement and Evaluation*. Macmillan, 1968.
 Helmstadter, G. C. *Principles of Psychological Measurement*. Methuen, 1966.
 Oppenheim, A. N. *Questionnaire Design and Attitude Measurement*. Heinemann, 1966.
 Remmers, H. H., Gage, N. L. & Rummel, J. F. *Measurement and Evaluation*. 2nd ed. Harper & Row, 1965.

Motivation in the Classroom: Observations of various forms of communication in the classroom suggestive of inner needs. Consideration is given to procedures to facilitate awareness of such motives and possible methods for satisfying or controlling them.

TEXTBOOKS

- Russell, I. L. *Motivation*. Brown, 1971.
 Sperry, L. ed. *Learning Performance and Individual Differences*. Scott, Foresman, 1972.

PRINCIPAL REFERENCE BOOKS

- Berkowitz, L. *Social Psychology*. Scott, Foresman, 1972.
 Evans, K. M. *Attitudes and Interests in Education*. Routledge, 1971.
 Gaudry, E. & Spielberger, C. D. *Anxiety and Educational Achievement*. Wiley, 1973.
 Krumboltz, J. D. & Krumboltz, H. B. *Changing Children's Behaviour*. Prentice-Hall, 1972.
 Nash, R. *Classrooms Observed*. Routledge, 1973.
 Wilson, J. A. R., Robeck, M. G. & Michael, W. B. *Psychological Foundations of Learning and Teaching*. McGraw-Hill, 1969.

Personality: Structure and culture; normal and abnormal behaviour; adjustment and readjustment; attitudes and traits; analysis and measurement; a further look at empathy, role playing, and sensitivity training in the classroom.

PRINCIPAL REFERENCE BOOKS

- Hall, C. S. & Lindzey, G. *Theories of Personality*. Wiley, 1967.
 Hunter, E. *Encounter in the Classroom*. Holt, Rinehart & Winston, 1972.
 Robins, L. N. *Deviant Children Grown Up. A Psychological and Psychiatric Study of Sociopathic Personality*. Williams & Wilkins, Baltimore, 1966.
 Shaffer, L. F. & Shoben, E. J. *The Psychology of Adjustment*. Houghton Mifflin, 1966.
 Weiner, I. B. *Psychological Disturbance in Adolescence*. Wiley, 1970.
Options in Philosophy and Theory of Education

Aesthetics and Education: Discussion at both theoretical and practical levels, considering such questions as objectivity in aesthetics and the place of aesthetics in the curriculum.

PRINCIPAL REFERENCE BOOKS

- Beardsley, M. C. *Aesthetics From Classical Greece to the Present*. Macmillan, N.Y., 1968.
- Hook, S. ed. *Art and Philosophy*. N.Y.U.P., 1966.
- Langer, S. K. *Philosophy in a New Key*. Mentor, 1951.
- Read, H. *Art and Education*. Cheshire, 1964.
- Reid, L. A. *Ways of Knowledge and Experience*. Allen & Unwin, 1961.
- Schiller, F. *On the Aesthetic Education of Man*. Snell, R. trans. Ungar, N.Y., 1968.
- Wollheim, R. *Art and its Objects*. Penguin, 1970.

Ethical Theory and Moral Education: Attempts to bring together philosophy and education by examining the questions raised by major standpoints in ethics and the difficulties faced in justifying them; then by relating these to ideas and practices in moral education.

PRINCIPAL REFERENCE BOOKS

- Baier, K. *The Moral Point of View*, Cornell U.P., 1958.
- Barnsley, J. H. *The Social Reality of Ethics*. Routledge, 1972.
- Bull, N. *Moral Education*. Routledge, 1969.
- Frankena, W. M. *Three Historical Philosophies of Education*. Scott, Foresman, 1965.
- Hare, R. M. *Freedom and Reason*, Clarendon, 1963.
- Hospers, J. *Human Conduct*. Hart-Davis, 1969.
- Kant, I. *The Groundwork of the Metaphysics of Morals*. Various editions.
- Scheffler, I. ed. *Philosophy and Education*. Allyn & Bacon, 1966.
- Singer, M. G. *Generalization in Ethics*. Knoff, 1961.
- Sugarman, B. *The School and Moral Development*. Croom Helm, London, 1973.
- Wilson, J., Williams N. & Sugarman B. *Introduction to Moral Education*. Penguin, 1967.

Justification for Teaching: Examines certain broad aims of education and expectations of teachers in order to see how far they might be justified and how practically possible they might be. The stated aims of the Wyndham Scheme are then put to the theoretical and practical test. Finally students are asked to defend the teaching of certain subjects with special reference to science and industrial arts, by showing what benefits will be brought to their pupils (This option will not duplicate material covered in curriculum and instruction strands.)

PRINCIPAL REFERENCE BOOKS

- Green, T. *The Activities of Teaching*. McGraw-Hill, Tokyo, 1972.
- Hirst, P. H. & Peters, R. S. *The Logic of Education*, Routledge, 1970.
- Hogg, A. C. & Foster, K. *Introducing Teaching Procedures*. Cassell, Sydney, 1973.
- Scheffler, I. *The Language of Education*, Thomas, Boston, 1960.
- The Wyndham Report*. N.S.W. Government Printer, Sydney, 1957.

Methodology for Criticism in Education: The nature of educational theory and the methods and perspectives that might follow for discussion and criticism in education. Some of the issues to be discussed are examinations, discipline and punishment, the organization of secondary schools, compulsory education, motivation, the subject curriculum, equality of opportunity. Students have the opportunity to suggest other issues.

Moral Education in the Schools: Such issues as: What is moral education? How best can it be brought about? Should schools be concerned with moral education? Do schools confuse moral with practical prudential, religious and even aesthetic issues, and what might be the consequences and implications of this?

PRINCIPAL REFERENCE BOOKS

- Baier, K. *The Moral Point of View*. Cornell U.P., 1958.
 Beck, C., Crittenden, B. & Sullivan, E. *Moral Education: Interdisciplinary Approaches*. Newman Press.
 Frankena, W. K. *Towards a Philosophy of Moral Education*. Harvard Educational Review. Fall, 1958, pp. 300-313.
 Graham, D. *Moral Learning and Development: Theory and Research*. A. & R.
 Kohlberg, L. *Moral Education in The Schools*. The School Review, 74, 1, Spring 1966, pp. 1-30.
 Montefiore, A. *A Modern Introduction to Moral Philosophy*. R.K.P., London, 1958.
 Niblett, W. R. *Moral Education in a Changing Society*. Faber, 1963.
 Wallace, G. *The Definition of Morality*. Methuen, 1970.
 Warnock, G. J. *Contemporary Moral Philosophy*. O.U.P., 1967.
 Warnock, M. *Ethics Since 1900*. O.U.P., 1971.
 Wilson, J. et al. *Introduction to Moral Education*. Penguin, 1967.

Social Philosophy and Education: Some of the main themes in social philosophy, including the social principles of democracy, freedom and authority, constraint, the individual and society, equality of opportunity. The social functions of the school, and the problems of the above concepts within the closed society of the school.

PRINCIPAL REFERENCE BOOKS

- Bowyer, C. H. *Philosophical Perspectives for Education*. Scott, Foresman, 1973.
 Dewey, J. *Democracy and Education*. Macmillan, N.Y., 1916.
 Peters, R. S. *Ethics and Education*. Allyn & Unwin, 1966.
 Schofield, H. *The Philosophy of Education*. Allyn & Unwin, 1972.
 Gribble, J. *Introduction to Philosophy of Education*. Allyn & Unwin, Boston, 1969.

Options in Research Methods in Education

Educational Research II: Provides a basis in some depth for applied educational research. It forms a sequence with the research methods strand in 58.513 Education IA.

PRINCIPAL REFERENCE BOOKS

- Gage, N. L. ed. *Handbook of Research on Teaching*. 2nd ed. Rand McNally, 1970.
 Kerlinger, F. N. *Foundations of Behavioural Research*. Holt, Rinehart & Winston, 1973.

Options in Sociology of Education

Australian Education Systems—An Historical and Sociological Analysis: The historical development of Australian education. The sociological perspective is applied to investigate whether Australian education systems are meeting the needs of Australian society.

PRINCIPAL REFERENCE BOOKS

- Australian Schools Commission. *Schools in Australia (The Karmel Report)*. Aust. Govt. Pub. Service, Canberra, 1973.
 Partridge, P. H. *Society, Schools and Progress in Australia*. Pergamon, 1963.

Society Today and Tomorrow: Implications for Education: Some major characteristics of and trends in society, such as urbanization, social change, bureaucratic organization, the counter culture, community vs. association, and work and leisure patterns, with special reference to the ecological

situation and the significance of values and value transfer. Possible curriculum implications and some of the fundamental questions these social issues raise concerning the role education plays in society.

PRINCIPAL REFERENCE BOOKS

- Coser, L. *Continuities in the Study of Social Conflict*. Free Press, 1967.
 Ehrlich, P. & Ehrlich, A. *Population, Resources and Environment*. 2nd ed. Freeman, San Francisco, 1972.
 Green, A. W. *Sociology*. McGraw-Hill, 1964.
 Halsey, A. H. et al. *Economy, Education and Society*. Free Press, 1961.
 Halsey, A. H. *The Sociology of Education*. In Smelser, N. J. *Sociology: An Introduction*. Wiley, 1966.
 Nisbet, R. A. *The Quest for Community*. O.U.P., N.Y., 1953.
 Reimer, E. *School is Dead*. Penguin, Vic., 1971.
 Roszak, T. *The Making of a Counter Culture*. Faber, 1970.

Socio-Cultural Influences on the Education of Adolescents: The application of the sociological perspective to the education of adolescents.

PRINCIPAL REFERENCE BOOK

- Chinoy, E. *Society: An Introduction to Sociology*. Random House, 1967.
The Education of Minority Groups: The education of minority groups in Australia in particular migrants and aborigines.

58.524 Education IIB

An introduction to curriculum theory and applications of the principles involved in curricula for secondary school science in Australia and overseas. The specification of objectives of instruction, the sequencing of content, and evaluation of learning outcomes in science in the secondary school. Study of instructional procedures including group processes and individualized instruction. A survey of recent research in science education. The teaching of chemistry, physics, geology and biology. Teaching experience in the secondary school.

TEXTBOOKS

- Collette, A. T. *Science Teaching in the Secondary School*. Allyn & Bacon, 1973.
 Tisher, R. P. et al. *Fundamental Issues in Science Education*. Wiley, 1972.

PRINCIPAL REFERENCE BOOKS

- Renner, J. W. & Stafford, D. G. *Teaching Science in the Secondary School*. Harper & Row, 1972.
 Sund, R. B. & Trowbridge, L. W. *Teaching Science by Inquiry in the Secondary School*. 2nd ed. Merrill, 1973.

Master of Education

58.201G Comparative Education

Methodology of comparative education, with particular reference to cultural perspectives. A study of selected educational problems in various advanced societies. Problems peculiar to underdeveloped countries.

PRINCIPAL REFERENCE BOOKS

- Bereday, G. L. F. *Comparative Method in Education*. Holt, Rinehart & Winston, 1964.
 Bereday, G. L. F. *Essays on World Education*. O.U.P., 1969.

- Cramer, J. F. & Browne, G. S. *Contemporary Education*. 2nd ed. Harcourt Brace, 1965.
- Dropkin, S., Full, H. & Schwarcz, E. eds. *Contemporary American Education*. Collier-Macmillan, 1965.
- Gezi, K. I. ed. *Education in Comparative and International Perspectives*. Holt, Rinehart & Winston, 1971.
- Grant, N. *Soviet Education*. Pelican, 1963.
- Mallenson, V. *An Introduction to the Study of Comparative Education*. Heinemann, 1960.
- Moehlmann, A. H. *Comparative Educational Systems*. Centre for Applied Research in Education, 1963.

58.202G Educational Planning and Administration

General principles of planning and administration applied to the organization of education. The factors underlying the administration of the Australian educational systems, both government and independent. Politics and economics of education. Aspects of social psychology relevant to educational administration.

PRINCIPAL REFERENCE BOOKS

- Blaug, M. *Introduction to the Economics of Education*. Penguin, 1970.
- Campbell, R. F. & Gregg, R. T. eds. *Administrative Behavior in Education*. Harper, 1957.
- Floud, J., Halsey, A. H. & Anderson, C. A. eds. *Education, Economy and Society*. The Free Press, 1961.
- Getzels, J. B., Lipman, J. M. & Campbell, R. F. *Educational Administration as a Social Process*. Harper & Row, 1968.
- Griffiths, D. E. *Administrative Theory*. Appleton, 1959.
- Gross, N., Mason, W. S. & McEachern, A. W. *Explorations in Role Analysis*. Wiley, 1958.
- Hemphill, J. K., Griffiths, D. E. & Fredericksen, N. *Administrative Performance and Personality*. Teachers' College, Columbia University, 1962.
- Morphet, E. L., Johns, R. L. & Reller, T. L. *Educational Administration*. Prentice-Hall, 1959.

UNESCO. *Economic and Social Aspects of Educational Planning*. UNESCO, 1964.

58.203G Educational Psychology

In this treatment of conceptualizations of instruction in educational settings, important psychological factors influencing the behaviour of teachers and learners will be investigated. In addition recent published studies of aspects of classroom learning will be analysed with regard to their contributions to a theory of teaching in selected skill or subject areas.

PRELIMINARY READING

- De Cecco, J. P. *The Psychology of Learning and Instruction*. Prentice Hall, 1968.
- Lefrançois, G. R. *Psychology for Teaching*. Wadsworth, 1972.
- Morse, W. C. and Wingo, G. M. eds. *Classroom Psychology*. 3rd ed. Scott, Foresman, 1971.
- Wilson, J. A. R., Robeck, M. C. and Michael, W. B. *Psychological Foundations of Learning and Teaching*. McGraw-Hill, 1969.

PRINCIPAL REFERENCE BOOKS

- Anderson, R. C. & Ausubel, D. P. eds. *Readings in the Psychology of Cognition*. Holt, Rinehart & Winston, 1965.
- Anderson, R. C. et al. eds. *Current Research on Instruction*. Prentice-Hall, 1969.
- Gage, N. L. ed. *Handbook of Research on Teaching*. 2nd ed. Rand McNally, 1970.
- Gagne, R. M. & Gephart, W. J. eds. *Learning Research and School Subjects*. Peacock, 1968.
- Gerlach, V. S. and Ely, D. P. *Teaching and Media: A systematic approach*. Prentice Hall, 1971.
- Kerlinger, F. N. ed. *Review of Research in Education*. Peacock, 1973.
- Merrill, M. D. ed. *Instructional Design: Readings*. Prentice-Hall, 1971.
- Morrison, A. and McIntyre, D. eds. *Social Psychology of Teaching*. Penguin Books, 1972.
- Stones, E. and Anderson, D. *Educational Objectives and the Teaching of Educational Psychology*. Methuen, 1972.

58.204G Educational Theory in the Twentieth Century

A critical appraisal of the work of theorists such as: Dewey, Kilpatrick, Childs, Buber, Berdyaev, Sartre, Russel, A. S. Neill, Homer Lane, Nunn, Maritain, Hutchins, Mannheim, Makarenko. Recent educational theories relating to the curriculum, such as those of Bruner and Schwab. An analysis of the concept of theory in relation to educational writing.

PRINCIPAL REFERENCE BOOKS

- Archambault, R. D. ed. *John Dewey on Education. Selected Writings*. Modern Library, 1964.
- Berdyaev, N. *Solitude and Society*. Geoffrey Bles, 1938.
- Brown, L. M. *General Philosophy in Education*. McGraw-Hill, 1966.
- Brown, L. M. *Aims of Education*. Teachers' College, Columbia, 1970.
- Buber, M. *Between Man and Man*. Collins, 1947.
- Dewey, J. *Democracy and Education*. Macmillan, 1916.
- Hutchins, R. M. *The Higher Learning of America*. Yale U.P., 1936.
- Sartre, J. P. *Existentialism and Humanism*. Methuen, 1948.

58.206G History of Education

(i) History of Western Education. (ii) History of Australian Education. In each part there will be both a study of movements and cultures as well as of distinguished thinkers. Part (i) will provide a background for understanding (ii) Australian education will trace the growth of national education, the relationship between denominational and national systems, the impact of various acts and the work and influence of men such as Wilkins, Parkes, Rusden and Board.

PRINCIPAL REFERENCE BOOKS

- Austin, A. G. *Australian Education 1788-1900*. 2nd ed. Pitman, 1965.
- Austin, A. G. *George William Rusden and National Education in Australia, 1849-1862*. M.U.P., 1958.
- Austin, A. G. *Selected Documents in Australian Education*. Pitman, 1963.
- Barclay, W. *Educational Ideals in the Ancient World*. Collins, 1961.
- Brubacher, J. S. *A History of the Problems of Education*. 2nd ed. McGraw-Hill, 1966.

- Curtis, S. J. & Boulwood, M. E. A. *A Short History of Educational Ideals*. University Tutorial Press, 1966.
- Eby, F. & Arrowwood, C. F. *The History and Philosophy of Education: Ancient and Medieval*. Prentice-Hall, 1964.
- Griffiths, D. C. *Documents on the Establishment of Education in New South Wales, 1789-1880*. A.C.E.R., 1957.

58.207G Philosophy in Education

Relationship between philosophy and philosophy of education; aims of education; traditional theories such as idealism, pragmatism, existentialism; the relationship between theory and practice; conceptual studies of instruction, indoctrination, critical thinking, creativity etc.; ethics and moral education; the philosophy of punishment; questions in social philosophy relevant to education.

TEXTBOOKS

- Brown, L. M. *Aims of Education*. Teachers' College Press, Columbia University, 1970.
- Hospers, J. *Human Conduct*. Harcourt, Brace & World, 1961.

PRINCIPAL REFERENCE BOOKS

- Archambault, R. D. *Philosophical Analysis and Education*. Routledge & Kegan Paul, 1965.
- Baier, K. *The Moral Point of View*. Cornell U.P., 1958.
- Brown, L. M. *General Philosophy in Education*. McGraw-Hill, 1966.
- Dearden, R. F. et al. eds. *Education and the Development of Reason*. Routledge & Kegan Paul, 1972.
- Dewey, J. *Democracy and Education*. Macmillan, 1916.
- Frankena, W. K. *Three Historical Philosophies of Education*. Scott, Foresman, 1965.
- Peters, R. S. *Ethics in Education*. Scott Foresman, 1967.
- Scheffler, I. *Conditions of Knowledge*. Scott Foresman, 1965.
- Snook, I. A. *Indoctrination and Education*. Routledge, 1972.

58.208G Child Growth and Development

This is a combined theoretical and practical course which gives a comprehensive coverage of cognitive, personality, social, emotional, moral, language and other aspects of development and individual differences in children. Each aspect is set within the context of contemporary society and education. The concept of development is itself examined, as are the major theories of child study and their basic concepts, assumptions, methodology and research. Course work concentrates on a practical application of research and theory and includes a child study.

PRINCIPAL REFERENCE BOOKS

- Baldwin, A. L. *Theories of Child Development*. Wiley, 1967.
- Erikson, E. H. *Youth and Crisis*. Faber, 1971.
- Hoffman, M. L. and Hoffman, L. W. *Review of Child Development Research*. Vols. I and II. Russell Sage Foundation, 1964.
- Inhelder, B. and Piaget, J. *The Growth of Logical Thinking from Childhood to Adolescence*. Routledge & Kegan Paul, 1968.
- McCandless, B. R. *Children*. 2nd ed. Holt, Rinehart & Winston, 1968.

- McCandles, B. R. *Children and Youth: Psychosocial Development*. Dryden, Illinois, 1973.
- Maier, H. W. *Three Theories of Child Development*. Harper & Row, 1965.
- Piaget, J. *Logic and Psychology*. Manchester Univ. Press, 1953.
- Rowen, B. *The Children We See*. Holt, Rinehart & Winston, 1973.
- Wadsworth, B. S. *Piaget's Theory of Cognitive Development*. Mackay, 1972.
- Watson, R. I. *Psychology of the Child*. Wiley, 1965.
- Weiner, I. B. and Elkind, D. *Child Development a Core Approach*. Wiley, 1972.

58.210G Science Education

A survey of recent research in science education; discussion of recent thinking about aims, theories of cognitive growth, principles of curriculum development and current issues influencing curriculum development in science education; an examination of new science curricula in Australia and overseas in the light of the information thus gained.

PRINCIPAL REFERENCE BOOKS

- Andersen, H. O. *Readings in Science Education for the Secondary School*. Macmillan, 1969.
- Australian Science Teachers Association. *The Australian Science Teachers Journal*. Sydney.
- Gage, N. L. *Handbook of Research on Teaching*. 2nd ed. Rand McNally, 1970.
- Hurd, P. D. *New Directions in Teaching Secondary School Science*. Rand McNally, 1969.
- Martin, M. *Concepts of Science Education*. Scott, Foresman and Co., Illinois, 1972.
- National Association for Research in Science Teaching. *Journal of Research in Science Teaching*. Wiley.
- Tisher, R. P. et al. *Fundamental Issues in Science Education*. Wiley, 1972.

58.211G Sociology of Education

The methodology of social research including subject matter content of sociology of education, scientific method, and research procedures; the relation between education and society with particular attention given to stratification, social change, equality and inequality of educational opportunity, school systems and minority groups; group structures and dynamics, role theory and reference group theory applied to parent, teacher, and student groups.

PRINCIPAL REFERENCE BOOKS

- Berger, P. L. *Invitation to Sociology*. Penguin, 1963.
- Chinoy, E. *Society: An Introduction to Sociology*. Random House, 1967.
- Fensham, P. J. ed. *Rights and Inequality in Australian Education*. Cheshire, 1970.
- Harvard Educational Review. *Equal Educational Opportunity*. Harvard U.P., 1969.
- Kelsall, R. K. et al. *Social Disadvantage and Educational Opportunity*. Holt, Rinehart & Winston, London, 1971.
- Nisbet, R. A. *The Social Bond. An Introduction to the Study of Society*. Knopf, 1970.

58.212G Mathematics Education

An investigation of theories of instruction, theories of cognitive growth and principles of curriculum development; the application of these theories and principles to aspects of a mathematics curriculum; an examination of new mathematics curricula in Australia and overseas in terms of the above theories and principles.

PRINCIPAL REFERENCE BOOKS

- Athley, I. J. & Rubideau. eds. *Educational Implications of Piaget's Theory: A Book of Readings*. Blaisdell, 1970.
- Australian Association of Mathematics Teachers. *The Australian Mathematics Teacher*. Sydney.
- Ausubel, D. P. *Educational Psychology: A Cognitive View*. Holt, Rinehart & Winston, 1968.
- Bruner, J. S. *Towards a Theory of Instruction*. Harvard U.P., 1966.
- Dienes, A. P. & Jeeves, M. A. *Thinking in Structures*. Hutchinson Educ., 1965.
- Gage, N. L. *Handbook of Research on Teaching*. 2nd ed. Rand McNally, 1970.
- Lovell, K. E. *The Growth of Basic Mathematical and Scientific Concepts in Children*. University of London Press, London, 1966.
- National Council of Teachers of Mathematics. *A History of Mathematics Education*. 32nd Yearbook, Washington, 1970.
- National Council of Teachers of Mathematics. *Piagetian Cognitive—Development Research and Mathematical Education*. Washington, 1971.
- National Council of Teachers of Mathematics. *The Teaching of Secondary School Mathematics*. 33rd Yearbook, Washington, 1970.
- National Society for the Study of Education. *Mathematics Education*. 69th Yearbook of NSSE, Part 1, Chicago, 1970.
- Phillips, J. L. *The Origins of Intellect: Piaget's Theory*. Freeman, 1969.

58.213G—Educational Research I

Statistics and experimental design in education research.

PRINCIPAL REFERENCE BOOKS

- Edwards, A. L. *Experimental Design in Psychological Research*. 4th ed. Holt, 1972.
- Gage, N. L. *Handbook of Research on Teaching*. Rand McNally, 1963.
- Guilford, J. P. & Fruchter, B. *Fundamental Statistics in Psychology & Education*. 5th ed. McGraw-Hill, 1973.
- Kerlinger, F. N. *Foundations of Behavioural Research*. Holt, 1973.
- Siegel, S. *Nonparametric Statistics for the Behavioural Sciences*. McGraw-Hill, 1956.
- Wiersma, W. *Research Methods in Education*. Lippincott, 1969.

58.214G—Educational Research II

The course provides a basis in some depth for applied educational research. Particular attention is given to longitudinal survey research, experimental and quasi-experimental designs in research, and the design and conduct of research projects.

Areas to be considered include theories, models and educational research, experimental and quasi-experimental designs, theory and methods of scaling, analysis of variance, analysis of covariance, multiple correlation and multiple regression analysis, non-parametric statistics used in educational research, applications of computers to data analysis with particular reference to the use of package programmes.

In considering appropriate research procedures, stress is placed on the

assumptions underlying the use of each procedure and methods of testing these assumptions.

TEXTBOOKS

Hays, W. L. *Statistics for the Social Sciences*. 2nd ed. Holt, Rinehart & Winston, 1973.

Kerlinger, F. N. *Foundations of Behavioral Research*. Holt, Rinehart & Winston, 1973.

PRINCIPAL REFERENCE BOOKS

Cattell, R. *Handbook of Multivariate Experimental Psychology*. Rand McNally, Chicago, 1965.

Duncan, B. and Featherman, D. and Featherman, O. D., *Socioeconomic Background and Achievement*. Seminar Press, N.Y., 1972.

Gage, N. L. ed. *Handbook of Research on Teaching*. 2nd ed. Rand McNally, Chicago, 1970.

Kerlinger, F. N. *Review of Research in Education*. Vol. I. Peacock, N.Y., 1973.

Siegel, S. *Nonparametric Statistics for the Behavioural Sciences*. McGraw-Hill, N.Y., 1956.

Winer, B. *Statistical Principles in Experimental Design*. McGraw-Hill, N.Y., 1962.

58.215G Social Sciences Education

The place of history and related social science disciplines in secondary education. Topics include philosophical and methodological issues as they relate to education, principles of curriculum development and examination of recent trends in secondary curricula in history and related social sciences in Australia and overseas.

PRINCIPAL REFERENCE BOOKS

Borger, R. & Cioffi, F. eds. *Explanation in the Behavioural Sciences*. C.U.P., 1970.

Brodbeck, M. ed. *Readings in the Philosophy of the Social Sciences*. Macmillan, N.Y., 1968.

Carr, E. H. *What is History?* Penguin, 1964.

Cohen, P. *Modern Social Theory*. Heinemann, 1968.

Cox, C. B. & Massialas, B. G. *Social Studies in the United States: A Critical Appraisal*. Harcourt Brace & World, 1967.

Dray, W. ed. *Philosophical Analysis and History*. Harper & Row, 1966.

Duffy, D. G. et al. *Teaching About Society*. Rigby, 1970.

Emmet, D. & MacIntyre, A. eds. *Sociological Theory and Philosophical Analysis*. Macmillan, London, 1970.

Fenton, E. *The New Social Studies*. Holt, Rinehart & Winston, 1967.

Gardiner, P. ed. *Theories of History*. Free Press, 1959.

Hunt, P. J. *Social Science and the School Curriculum*. A. & R., 1971.

Krug, M. M. *History and the Social Sciences: New Approaches to the Teaching of Social Studies*. Blaisdell, 1967.

Lakatos, I. & Musgrave, A. eds. *Criticism and the Growth of Knowledge*. C.U.P., 1970.

Lawton, D. & Dufour, B. *The New Social Studies*. Heinemann, 1973.

Lawton, D. *Social Change, Educational Theory and Curriculum Planning*. London U.P., 1973.

Morrisett, I. ed. *Concepts and Structure in the New Social Studies Curricula*. Holt, Rinehart & Winston, 1967.

- Morrissett, I. & Stevens, W. W. eds. *Social Science in the Schools. A Search for Rationale*. Holt, Rinehart & Winston, 1971.
- Ryan, A. *The Philosophy of the Social Sciences*. Macmillan, London, 1970.
- Smith, F. R. & Cox, C. B. *New Strategies and Curriculum in Social Studies*. Rand McNally, 1969.
- Taba, H. *Curriculum Development*, Harcourt Brace & World, 1962.
- Winch, P. *The Idea of a Social Science*, Routledge, 1958.

SCHOOL OF HISTORY AND PHILOSOPHY OF SCIENCE

62.001 History and Philosophy of Science I

The Origins of Modern Science

SESSION 1

An Introductory course dealing with the main developments in the history of science between 1300-1800. The main emphasis will be on the seventeenth century Scientific Revolution. The course will examine, among other things, the work of Copernicus, Kepler, Gilbert, Harvey, Galileo, Torricelli, Huygens and Newton. The decline of scholastic philosophy and the rise of a new mentality reflected in the writings of Bacon, Descartes and Galileo, will be discussed in some detail. Cartesian and Newtonian physics and the establishment of a mechanistic world view will also be examined.

TEXTBOOKS

- Butterfield, H. *The Origins of Modern Science 1300-1800*. Bell.
- Hall, A. R. *The Scientific Revolution 1500-1800*. Longmans.

PRINCIPAL REFERENCE BOOKS

- Bacon, F. *The New Organon and Related Writings*. Anderson, F. H. ed. Bobbs-Merrill.
- Cohen, I. B. *The Birth of a New Physics*. Heinemann.
- Dijksterhuis, E. J. *The Mechanization of the World Picture*. O.U.P.
- Galilei, G. *Discoveries and Opinions of Galileo*. Drake, S. trans. Doubleday.
- Kuhn, T. S. *The Copernican Revolution*. Random House.
- Munitz, M. K. ed. *Theories of the Universe*. Free Press of Glencoe.
- Rosen, E. *Three Copernican Treatises*. Dover.

The Social History of Science

SESSION 1

An introduction to the study of the scientific enterprise in its social and cultural context. The course will deal with topics such as: the emergence of the scientific movement in Britain and Western Europe, the relations between the State and the community of science, the nature and functions of scientific societies and academies; the influence of technology on science and of science on technology; science and the State in the twentieth century with special reference to specific problems in the U.S.A., Britain, Soviet Union, Germany, and the developing nations.

TEXTBOOK

- Rose, H. & Rose, S. *Science and Society*. Penguin.

PRINCIPAL REFERENCE BOOKS

- Ashby, E. *Technology and the Academics*. Macmillan.
- Barber, B. *Science and the Social Order*. Collier.

- Lilley, S. *Essays on the Social History of Science*. Centaurus.
 Marsak, L. M. *The Rise of Science in Relation to Society*. Macmillan.
 Mason, S. F. *A History of the Sciences*. Routledge.

62.002 History and Philosophy of Science II

The Principles of the Philosophy of Science

SESSION 1

A general introduction to the philosophy of science. Following a preliminary examination of the nature of some of the common forms of argument employed in natural science and mathematics, several of the more central problems of the philosophy of science will be discussed, such as—the structure of scientific theories; the nature of scientific explanation and prediction; the status of scientific laws; confirmation and falsification; the function of models and analogies; the status of theoretical entities; paradigms; and the dynamics of scientific development and change. Historical case studies taken from the post-Newtonian period will be used to illustrate the philosophical issues.

TEXTBOOKS

- Hanson, N. R. *Observation and Explanation*. Harper.
 Hempel, C. G. *Philosophy of Natural Science*. Prentice-Hall.
 Kuhn, T. S. *The Structure of Scientific Revolutions*. 2nd ed. Chicago U.P.

PRINCIPAL REFERENCE BOOKS

- Cohen, M. R. & Nagel, E. *An Introduction to Logic and Scientific Method*. Harcourt, Brace & World.
 Losee, J. A. *A Historical Introduction to the Philosophy of Science*. O.U.P.
 Madden, E. H. *The Structure of Scientific Thought*. Routledge & Kegan Paul.
 Medawar, P. B. *Induction and Intuition in Scientific Thought*. Methuen.
 Popper, K. R. *The Logic of Scientific Discovery*. Hutchinson.
 Theobald, D. W. *An Introduction to the Philosophy of Science*. Methuen.
 Toulmin, S. E. *The Philosophy of Science*. Arrow Books.

Selected Topics in the Histories of the Sciences

SESSION 2

Students will choose two of the following Histories:

(i) *The History of Biology*

Main themes in the development of biology as a science, with emphasis upon the nineteenth century.

TEXTBOOK

- Coleman, W. *Biology in the Nineteenth Century*. Wiley.

PRINCIPAL REFERENCE BOOKS

- Bernard, C. *An Introduction to the Study of Experimental Medicine*. Collier.
 Darwin, C. *The Origin of Species*. Penguin.
 De Beer, G. *Charles Darwin, Evolution by Natural Selection*. Nelson.
 Dunn, L. C. *A Short History of Genetics*. McGraw-Hill.
 Florkin, M. *A History of Biochemistry. Comprehensive Biochemistry*. Vol. 30. Elsevier.
 Gasking, E. B. *The Rise of Experimental Biology*. Random House.
 Needham, J. *A History of Embryology*. C.U.P.
 Nordenskjöld, E. *The History of Biology*. Tudor.
 Olmsted, J. M. D. *François Magendie*. Schuman.

(ii) *The History of Chemistry*

Not available in 1975.

The establishment of the atomic theory.

The evolution of the atomic theory is traced from the time of Dalton to that of Mendeleef, with a careful examination of the steps leading to the determination of atomic weights, the writing of chemical formulae, the establishment of the valencies of the elements, and the construction of the periodic table.

TEXTBOOK

Mellor, D. P. *The Evolution of the Atomic Theory*. Elsevier.

PRINCIPAL REFERENCE BOOKS

Berry, A. J. *From Classical to Modern Chemistry*. Dover.

Cardwell, D. S. L. ed. *John Dalton and the Progress of Science*. Manchester U.P.

Conant, J. B. ed. *Harvard Case Histories in Experimental Science*. 2 volumes. Harvard U.P.

Dalton, J. *A New System of Chemical Philosophy*. Dawson.

Greenaway, F. *John Dalton and the Atom*. Heinemann.

Ihde, A. *The Development of Modern Chemistry*. Harper & Row.

Knight, D. M. *Atoms and Elements: a Study of Theories of Matter in England in the Nineteenth Century*. Hutchinson.

Leicester, H. M. *The Historical Background to Chemistry*. Wiley.

Leicester, H. M. & Klickstein, H. S. *A Source Book in Chemistry 1400-1900*. McGraw-Hill.

Levere, T. M. *Affinity and Matter—Elements of Chemical Philosophy 1800-1865* O.U.P.

Palmer, W. G. *A History of the Concept Valency to 1930*. Cambridge U.P.

Russell, C. A. *The History of Valency*. Leicester U.P.

Van Melsen, A. G. M. *From Atomos to Atom: The History of the Concept Atom*. Harper.

(iii) *The History of Geology*

Not available in 1975.

The history of geology in outline from antiquity to the present, with more detailed consideration of the following topics: the uniformitarian/catastrophist debate in the early nineteenth century; the birth of glacial geology; Kelvin and the age of the earth; the history of the hypothesis of continental drift from Wegener to the present; paradigmatic geology in the first half of the twentieth century; some new directions—geophysics, geochemistry, oceanography, tectonics, paleoecology, Quaternary geology and the evolution of the hominids, lunar geology, environmental geology.

PRELIMINARY READING

Fenton, C. R. & Fenton, M. A. *Giants of Geology*. Dolphin.

TEXTBOOKS

Adams, F. D. *The Birth and Development of the Geological Sciences*. Dover.

Gillispie, C. C. *Genesis and Geology*. Harper.

PRINCIPAL REFERENCE BOOKS

- Albritton, C. C. ed. *The Fabric of Geology*. Freeman, Cooper & Co.
 Bailey, E. *Charles Lyell*. Doubleday.
 Bailey, E. *James Hutton—the Founder of Modern Geology*. Elsevier.
 Chambers, R. *The Vestiges of the Natural History of Creation*. Leicester U.P.
 Cloud, P. *Adventures in Earth History*. Freeman.
 Darwin, C. *The Voyage of the Beagle*. Everyman.
 Davies, G. L. *The Earth in Decay—A History of British Geomorphology, 1578-1848*. Oldbourne.
 Eiseley, L. *Darwin's Century*. Gollancz.
 Geikie, A. *The Founders of Geology*. Dover.
 Greene, J. C. *The Death of Adam*. Mentor.
 Haber, F. C. *The Age of the World, Moses to Darwin*. Baltimore.
 Hooykaas, R. *The Principle of Uniformity in Geology, Biology and Theology*. Leiden.
 Lyell, C. *The Principles of Geology*. John Murray.
 Mather, K. F. & Mason, S. O. *A Source Book in Geology*. Hafner.
 Schneer, C. J. *Toward a History of Geology*. M.I.T. Press.
 von Zittel, K. A. *History of Geology and Palaeontology*. Scott. Reprinted Cramer.

(iv) *The History of Physics*

A critical study of the origins and development of modern theories of space and time, and matter and radiation. The course will begin with the "two small dark clouds" on the horizon of classical physics, the null result of the Michelson-Morley experiment and the ultra-violet catastrophe highlighted in the Rayleigh-Jeans law, and will go on to consider the empirical and theoretical background to the major revolution in the conceptual evolution of physics, which finally resulted in the theories of relativity and quantum mechanics. The logical structures of these theories will be examined and some famous "paradoxes" will be discussed in order to demonstrate the incomplete nature of some orthodox interpretations of relativistic and quantum phenomena.

Selections from primary sources will be issued by the School.

TEXTBOOKS

- Einstein, A. *Relativity, The Special and General Theory*. University Paperbacks.
 Einstein, A. & Infeld, L. *The Evolution of Physics*. Cambridge.
 Silva, A. & Lochak, G. *Quanta*. World University Library.

PRINCIPAL REFERENCE BOOKS

- Einstein, A. & Lorentz, H. A. *The Principle of Relativity*. Dover.
 Bunge, M. *Foundations of Physics*. Springer-Verlag.
 Hesse, M. *Forces and Fields*. Nelson.
 Hoffman, B. *The Strange Story of the Quantum*. Dover.
 Jammer, M. *The Conceptual Development of Quantum Mechanics*. McGraw-Hill.
 Janch, J. M. *Are Quanta Real?* Indiana U.P.
 Prokhovnik, S. J. *The Logic of Special Relativity*. C.U.P.
 Whittaker, E. *A History of Theories of Aether and Electricity*. Nelson.
 Williams, L. P. *Relativity Theory: Its Origins and Impact*. Wiley.

SCHOOL OF SOCIAL WORK

63.001 Australian Social Organization

After an examination of the demographic characteristics of Australia, a number of major organizational areas of Australian society are studied, for example, its organization with respect to industry and commerce, government, the law, religion, and the institutions of social welfare.

The subject calls for extensive reading, associated with regular classroom exercises.

TEXTBOOKS

Atkins, R. & Graycar, A. *Governing Australia*. Wiley, 1972.

Cox, P. R. *Demography*. Cambridge U.P., 1972.

Downing, R. I. *National Income and Social Accounts: An Australian Study*. M.U.P. Melbourne, 1971.

Downing, R. I. ed. *The Australian Economy*. Weidenfeld & Nicolson, 1973.

Kewley, T. H. *Social Security in Australia*. S.U.P., 1973.

Rennison, G. A. *We Live Among Strangers*. M.U.P., 1970.

Sawer, G. *Australian Government Today*. M.U.P., Melbourne, 1970.

Wrong, D. H. *Population and Society*. Random House, New York, 1967. Paperback.

Commonwealth Legislation

Marriage Act, 1961-1966.

Matrimonial Causes Act, 1971.

National Health Act, 1953-1970.

Social Services Act, 1947-1970 and as amended.

New South Wales State Legislation

Adoption of Children Act, 1965-1966 and as amended.

Child Welfare Act, 1939-1964 and as amended.

Mental Health Act, 1958-1965 and as amended.

PRINCIPAL REFERENCE BOOKS

Borrie, W. D. and Spencer, G. *Australia's Population Structure and Growth*. Committee for Economic Development of Australia. Melbourne, 1965.

Rennison, G. A. *Man on his Own*. M.U.P., 1962.

63.412 Social Philosophy and Policy

Social policy and administration as a developing subject area overseas and in Australia. The relevance of philosophy.

The analysis of social norms and the underlying values which regulate behaviours in the modern welfare state:—

(a) The diverse forms of norms, rules or behavioural prescriptions which exist in this kind of society, and methods of classifying these.

(b) The language and logic of rules.

(c) Societal values and ideologies (social, political, religious), and their relationship to behavioural prescriptions.

(d) The various principles and modes of justification used to support behavioural prescriptions—key social concepts like justice, rights, obligation, equality, democracy, legality, morality.

(e) The need for and limits of rationality.

(f) The values of social welfare.

(g) The values of the social work profession. Professional ethics.

As an exercise in social philosophy and policy analysis, students examine in seminars policy issues under current public discussion in the press, radio, television and parliament.

TEXTBOOKS

- Benn, S. I. and Peters, R. S. *Social Principles and the Democratic State*. Allen & Unwin, London, 1958.
 Howard, D. S. *Social Welfare: Values, Means and Ends*. Random House, New York, 1969.
 Wilson, Paul R. ed. *Australian Social Issues of the 70's*. Butterworth, 1972.

PRINCIPAL REFERENCE BOOKS

- An Intercultural Exploration: Universals and Differences in Social Work Values, Functions and Practice*. Council on Social Work Education, 1967.
 Angell, R. C. *Free Society and Moral Crisis*. Uni. of Michigan Press. Paperback, 1965.
 Bennett, J. *Freedom of Expression in Australia*. Vic. Council for Civil Liberties, 1968.
 Biddle, B. J. & Thomas, E. J. eds. *Role Theory: Concepts and Research*. Wiley, 1966.
 Brandt, R. B. ed. *Social Justice*. Prentice-Hall, 1962.
 Campbell, E. & Whitmore, H. *Freedom in Australia*. Sydney U.P., 1966.
 Cuber, J. F., Harper, R. A. & Kenkel, W. F. *Problems of American Society: Values in Conflict*. Holt.
 de Crespigny, A. and Wertheimer, A. eds. *Contemporary Political Theory*. Nelson, 1971.
 Downie, R. S. *Roles and Values: Introduction to Social Ethics*. Methuen, 1971.
 Emmet, D. *Rules, Roles and Relations*. Macmillan, 1966.
 Friedmann, W. *Law in a Changing Society*. Penguin, 1964.
 Ginsberg, M. *On Justice in Society*. Penguin, 1965.
 Grice, G. R. *The Grounds of Moral Judgement*. C.U.P., 1967.
 Hare, R. M. *Freedom and Person*. O.U.P. Paperback, 1965.
 Hart, H. L. A. *Law, Liberty and Morality*. O.U.P., 1963.
 Hospers, J. *Human Conduct: An Introduction to the Problems of Ethics*. Rupert Hart-Davis, 1969.
 Kluckhohn, F. R. & Strodtbeck, F. L. *Variations in Value Orientations*. Row, Peterson, 1961.
 Odegard, P. H. *Political Power and Social Change*. Rutgers U.P., 1966.
 Partridge, P. H. *Liberty in Australia*. A.I.P.S. Monograph: 2.
 Peters, R. *Authority, Responsibility and Education*. Allen & Unwin, 1968.
 Popper, K. R. *The Open Society and its Enemies*. 5th ed. Routledge & Kegan Paul.
 Pumphrey, M. W. *The Teaching of Values and Ethics in Social Work Education*. Council on Social Work Education, 1969.
 Roper, T. *The Myth of Equality*. N.U.A.U.S., 1970.
 Sawyer, G. *The Australian and the Law*. Pelican, 1968.
 Tawney, A. H. *Equality*. Capricorn Books, 1961.
 Titmuss, R. M. *Commitment to Welfare*. Allen & Unwin, 1968.
 Williams, R. M. *American Society: A Sociological Interpretation*. Knopf, 1965.

63.421 Social Welfare Systems I

The major historical determinants of the pattern of development of social welfare systems in Australia: overseas and local influences.

TEXTBOOKS

Aron, R. *Main Currents of Sociological Thought*. Vol. I. Pelican, 1965.

Aron, R. *German Sociology*. Free Press, 1964.

Mills, C. Wright. *The Sociological Imagination*. Pelican, 1970.

PRINCIPAL REFERENCE BOOKS

Details available on request from school office.

63.422 Social Welfare Systems II

Organizational Analysis of Social Welfare Systems:

The relevance of organization theory for understanding social welfare systems. Five concepts of organizational level—international, national, community, agency, and professional. Dimensions of the system—goals, the objectives, clients and potential clients, the use and availability of resources (personnel, fiscal and technological), auspice or sponsorship, location, external and internal influences, stability and change, the politics of the system. Policy issues inherent in the range of alternatives within and between dimensions.

Social Welfare Sub-Systems:

A comparative study of the main social welfare sub-systems in an urban industrial society, with particular reference to Australia. Categories of sub-system—defined by a common social goal—income security, health, housing, education, civil and political rights. Each sub-system is studied in terms of its major organizational dimensions, as outlined above, and an attempt is made to evaluate the efficiency and effectiveness of each sub-system.

TEXTBOOKS

Kahn, A. J. *Social Policy and Social Services*. Random House, 1973.

Kaim-Caudle, P. R. *Comparative Social Policy and Social Security*. Cambridge U.P., London, 1973.

Kewley, T. H. *Social Security in Australia*. 2nd ed. Sydney U.P., 1973.

PRINCIPAL REFERENCE BOOKS

Burns, E. *Social Security and Public Policy*. McGraw-Hill Book, N.Y., 1956.

George, V. *Social Security and Society*. Routledge, 1973.

Jenkins, S. ed. *Social Security in International Perspective*. Columbia U.P. 1969.

Poverty—The ACOSS Evidence. ACOSS, Syd., 1973.

Titmuss, R. M. *The Gift Relationship*. Pelican, 1973.

Titmuss, R. M. *Income Distribution and Social Change*. Allen & Unwin, London, 1958.

Wilensky, H. L. & Lebeaux, C. N. *Industrial Society and Social Welfare*. Free Press, N.Y., 1958.

Zald, M. N. *Social Welfare Institutions: A Sociological Reader*. Wiley, N.Y., 1965.

63.423 Social Welfare Systems III

Social Welfare Sub-Systems:

A comparative study of the main social welfare sub-systems in an urban industrial society, with particular reference to Australia. Categories of sub-system: Defined by population category—age groups, physical disability, mental disability, sex, ethnicity, war service, religion, socio-legal deviance, geographic location, occupation, economic status.

Each sub-system is studied in terms of its major organizational dimensions. Its efficiency and effectiveness.

Social Welfare Planning:

Different bases of planning and co-ordination:

(a) The relationship between different levels of social organization; functional divisions on the one level of social organization and other linkage questions.

(b) Definition of a social problem as a basis for organization.

Students undertake a project on a selected social problem, studying its definition, incidence, theories of causation, and policies and provision to cope with it.

(c) The role of the social worker and the social work profession in social welfare planning.

The objective in this subject is to develop sound professional judgement in relation to social welfare problems, policies and provision, not to teach social policy practice roles as such.

TEXTBOOKS

Kahn, A. J. *Theory and Practice of Social Planning*. Russell Sage Foundation, N.Y., 1969.

Directory of Social Service Agencies. Council of Social Service of N.S.W., Sydney. Latest edition.

63.511 Human Behaviour I

The processes of "normal" growth and development, using a multi-disciplinary approach. The maturational phases of the life cycle, beginning with the prenatal period, proceeding to birth, new-born, infancy, pre-school, childhood, adolescence, young adulthood, middle years, old age. The various frames of reference—biological, psychological, and sociological—used to define and interpret the phases. The interaction of physical, intellectual, emotional, spiritual, and social influences and attributes in a human being. Individual "careers"—varying conceptions of effective social functioning and well-being. Particular attention is given to the influence of social structures (e.g. families, groups, organizations, communities, and societies) and social processes on the behaviour of individuals; and also on the behaviour of groups and communities. The nature and changing character of these structures in interaction with individuals, groups and communities. The potential for change in the social functioning of individuals, groups and communities.

Classroom learning is reinforced by observation of behaviour, under simulated and actual life conditions.

TEXTBOOKS

Heraud, B. J. *Sociology and Social Work*. Pergamon, 1970.

Hunt, F. J. *Socialization in Australia*. Angus & Robertson, Sydney, 1972.

Krupinski, J. & Stoller, A. *The Family in Australia*. Pergamon, 1974.

Rappoport, L. *Personality Development. The Chronology of Experience*. Scott Foresman, 1972.

PRINCIPAL REFERENCE BOOKS

- Bell, C. & Newby, H. *Community Studies*. Allen & Unwin, 1971.
- Bowlby, J. *Attachment*. Basil Books, 1969.
- Brennan, T. *New Community*. A. & R., 1973.
- Bromley, D. B. *The Psychology of Human Ageing*. Pelican (Paperback), 1971.
- Clark, D. S. *What Freud Really Said*. Schocken Books, New York, 1966.
- Davies, A. F. & Encel, S. *Australian Society: A Sociological Introduction*. 2nd ed. Cheshire, 1970.
- De Beauvoir, S. *Old Age*. Weidenfeld & Nicolson, 1972.
- Dunphy, D. C. *Cliques, Crowds and Gangs: Group Life of Sydney Adolescents*. Cheshire, 1969.
- Erikson, E. *Childhood and Society*. Pelican, 1950.
- Erikson, E. *Identity and the Lifecycle*. International U.P., 1959.
- Frankl, V. E. *Man's Search for Meaning*. Washington Square Press, Inc. (Paperback), New York, 1967.
- Freud, A. *The Ego and the Mechanisms of Defence*. Hogarth, 1937.
- Freiberg, S. *The Magic Years*. Scribner, 1959.
- Jackson, D. D. and Lederer, W. *The Mirages of Marriage*. W. W. Norton, New York, 1968.
- Jackson, D. D. ed. *Communication, Family and Marriage*. Science & Behaviour Books, Palo Alto, Calif., 1968.
- Maier, H. W. *Three Theories of Child Development*. Harper & Row N.Y. and John Weatherill, Tokyo, 1969.
- Mills, T. M. *The Sociology of Small Groups*. Prentice-Hall, 1967.
- Mussen, P. H., Conger, J. J. and Kagan, J. *Child Development and Personality*. 4th ed. Harper & Row, New York, 1973.
- Parkes, C. M. *Bereavement*. Tavistock, 1973.
- Rapoport, R. & R. *Dual Career Families*. Pelican, 1971.
- Saul, L. J. *Emotional Maturity*. 2nd ed. Jib Lippincott Co., 1960.
- Sears, R. R. *Identification and Child Rearing*. Tavistock Pub., London, 1966.
- Smith, A. *The Body*. Pelican, 1971.
- Thomas, E. I. *Behavioural Science for Social Workers*. Free Press, New York, 1967.
- Wild, R. A. *Bradston—A Study of Status, Class & Power in a Small Australian Town*. A. & R., 1974.
- Winnicott, D. W. *The Child, the Family and the Outside World*. Penguin, 1964.
- Winnicott, D. W. *The Family and Individual Development*. Tavistock, 1965.

63.512 Human Behaviour II

An interdisciplinary approach to the development of deviant behaviour at various age stages, in individuals, groups and communities—biological, psychological, and social deviance. Concepts of disease and pathology; of social problems—definition, incidence, aetiology. Differences and similarities. Classroom learning is reinforced by observation of behaviour, under simulated and actual life conditions.

TEXTBOOKS

- Batchelor. *Henderson and Gillespie's Textbook of Psychiatry*. Oxford, 1969.
- Cameron, N. *Personality Development & Psychopathology: A Dynamic Approach*. Houghton Mifflin, 1963.
- Clinard, M. B. *Sociology of Deviant Behaviour*. Holt, Rinehart and Winston, New York, 1968.
- Cohen, A. K. *Deviance and Control*. Prentice-Hall, 1966.
- Eskin, F. *Medical Notes for Social Workers*. John Wright, Bristol, 1971.
- Fischer, W. F. *Theories of Anxiety*. Harper & Row, New York, 1970.
- Goffman, E. *Stigma: Notes on the Management of Spoiled Identity*. Penguin Books, 1968.

PRINCIPAL REFERENCE BOOKS

- Freedman, A. M. & Kaplan, I. H. *Comprehensive Textbook of Psychiatry*. Williams & Wilkins, Baltimore, 1971.
May, R. *The Meaning of Anxiety*. Ronald Press, 1950.
Millon, T. *Modern Psychopathology: A Biosocial Approach to Maladaptive Learning and Functioning*. Saunders, 1969.
Smith, A. *The Body*. Pelican, 1971.

63.611A Social Work Practice IA

The analysis of various forms of interpersonal communication with particular emphasis on its behavioural effects; the principles and techniques of interviewing. Emphasis is placed on experiential learning—through role-playing and skill-practice exercises, video-tapes and tape-recordings, students learn preliminary skills in interpersonal helping.

A general systems model for social work practice is presented; within this framework students begin to develop the analytical, discriminative, and interactional skills necessary for its effective use over a range of intervention situations.

TEXTBOOKS

- Brill, N. I. *Working With People: The Helping Process*. Lippincott, 1973.
Day, P. R. *Communication in Social Work*. Pergamon, 1972.
Kadushin, A. *The Social Work Interview*. Columbia U.P., 1972.
Pincus, A. & Minahan, A. *Social Work Practice: Model and Method*. Peacock, 1973.
Watzlawick, P., Beavin, J. H. & Jackson, D. D. *Pragmatics of Human Communication*. Norton, 1967.

PRINCIPAL REFERENCE BOOKS

- Argyle, M. *Social Encounters*. Penguin, 1973.
Bartlett, M. H. *The Common Base of Social Work Practice*. The National Association of Social Workers, 1970.
Berlo, D. K. *The Process of Communication*. Holt, Rinehart & Winston, 1960.
Carkhuff, R. *Helping and Human Relationships*. Vols. I & II. Holt, Rinehart & Winston, 1970.
Combs, A. W., Avila, D. L. and Purkey, W. W. *Helping Relationships: Basic Concepts for the Helping Professions*. Allyn & Bacon, Boston, 1971.
Kahn, R. L. and Cannell, E. F. *The Dynamics of Interviewing*. Wiley, N.Y., 1957.
Konopka, G. *Social Group Work: A Helping Process*. 2nd ed. Prentice-Hall, 1972.
Meyer, C. H. *Social Work Practice: A Response to the Urban Crisis*. Free Press, 1970.
Pace, R. W. & Boren, R. R. *The Human Transaction*. Scott, Foresman, 1973.
Polansky, N. *Ego-Psychology and Communication: Theory for the Interview*. Allerton Press, 1971.
Satir, V. *Conjoint Family Therapy*. Science & Behaviour Books, 1967.
Schubert, M. *Interviewing in Social Work Practice*. Council on Social Work Education, N.Y., 1971.

Swensen, C. H. *Introduction to Interpersonal Relations*. Scott, Foresman, 1973.

Vinter, R. ed. *Readings in Group Work Practice*. Campus, 1967.

63.611B Social Work Practice IB

Under the supervision of a field instructor of the School, usually in a fairly structured social work agency, a student begins to learn to apply the principles of professional practice. The emphasis is on work with a range of clients and of social problems, rather than on depth of experience. The prime purpose is to begin to acquire, in an actual practice setting, skills and responsibility in interpersonal relations.

The duration of this first field placement is 42 working days (294 hours).

PRINCIPAL REFERENCE BOOKS

Australian Association of Social Workers. Statement of Minimal Educational Requirements.

Jones, B. L. ed. *Current Patterns in Field Instruction*. C.S.W.E., N.Y., 1970. Norma Parker's Record of Service, ed. R. J. Lawrence, Items 50-52 and passim.

Sales, E. & Navarre, E. *Individual and Group Supervision in Field Instruction*. School of Social Work, Michigan Univ., 1970.

Towle, Charlotte. "The Learner in Education for the Professions." (Chicago, U.P., 1954) passim.

Wilson, Doreen. "The Role of the Student Unit in Social Work Education." *Social Work Today*—Journal of the British Association of Social Workers, Volume 2, Number 3, May 1971.

Young, P. *The Student Supervision in Social Work Education*. Routledge & Kegan Paul, London, 1967.

63.612A Social Work Practice IIA

One stream deals in turn with further learning in social casework, social group work, community work, and social welfare administration.

A parallel stream considers: The professions in modern industrial societies. The professionalization of social work. The organization of the social work profession in Australia, the U.S.A. and Britain, and internationally—its educational institutions, employing agencies, and professional associations. The size, characteristics, location, objectives, and values of the profession. Current challenges and growing points of the profession.

TEXTBOOKS

Current Issues in Community Work: A Study by the Community Work Group, The Calouste Gulbenkian Foundation. Routledge, 1973.

Elliott, P. *The Sociology of the Professions*. Macmillan, London, 1972.

Foren, R. and Bailey, R. *Authority in Social Casework*. Pergamon, Oxford, 1968.

Johnson, T. J. *Professions and Power*. Macmillan, London, 1972.

Kramer, R. M. and Specht, H. ed. *Readings in Community Organization Practice*. Prentice-Hall, New Jersey, 1969.

Lees, R. *Politics and Social Work*. Routledge & Kegan Paul, 1972.

Parad, H. J. *Crisis Intervention*. Family Service Association of America, N.Y., 1970.

Perlman, R. & Gurin, A. *Community Organisation and Social Planning*. Wiley, N.Y., 1972.

- Reid, W. J. & Epstein, L. *Task-Centred Casework*. Columbia U.P., 1972.
 Trecker, H. *Social Group Work: Principles and Practice*. 2nd ed. Association Press, N.Y., 1972.

PRINCIPAL REFERENCE BOOKS

- Etzioni, A. *The Semi-Professions and Their Organisation*. Free Press, 1969.
 Freidson, E. *The Professions and Their Prospects*. Sage, 1974.
 Hartford, M. E. *Groups in Social Work*. Columbia U.P., 1972.
 Jackson, J. A. *Professions and Professionalisation*. C.U.P., 1970.
 Moore, W. E. *The Professions: Roles and Rules*. Sage, 1970.
 Northen, H. *Social Work With Groups*. Columbia U.P., 1969.
 Parad, H. J. ed. *Ego-oriented Casework*. Family Service Association of America, N.Y., 1963.
 Roberts, R. W. & Nee, R. *Theories of Social Casework*. Chicago U.P., 1969.
 Streat, H. S. *The Casework Digest*. Scarecrow, 1969.
 Streat, H. S. *Social Casework: Theories in Action*. Scarecrow, 1971.
 Turner, F. *Social Work Treatment*. Free Press, 1973.
 Vollmer, H. V. & Mills, D. L. *Professionalisation*. Prentice-Hall, 1966.

63.612B Social Work Practice IIB

Usually as a member of a student unit located in a social work agency and supervised by a field instructor of the school, student has learning experiences which help him to acquire skills mainly in the casework method but with some introduction to group work and community organisation. Stress is placed on gaining self-awareness, understanding of conscious use of self in interpersonal relationships, and skills in problem definition and interpersonal helping. In the course of this placement the student gains understanding and responsibility in job management.

The duration of this second field work placement is 45 days (315 hours).

63.613A Social Work Practice IIIA

Divided into two major concurrent sections. The first section, taken by all students, deals with social welfare administration, followed by a study of social work practice delineated by field, such as the health field, family and child welfare, corrective services.

The second section, which uses a variety of educational methods, concentrates upon gaining professional competence in the following social work methods—social casework, social group work, community work, or social welfare administration. The last of these methods can only be taken as a major elective with the permission of the lecturer concerned.

Social Welfare Administration (General Stream)

TEXTBOOKS

- Collins, A. K. *The Dynamics of Organisation*. Sun Books, 1968.
 Hunt, J. W. *The Restless Organisation*. Wiley, 1972.
 Schatz, H. A. *Social Work Administration*. Council on Social Work Education, 1970.

PRINCIPAL REFERENCE BOOKS

- Bennis, W. G. *Changing Organisations*. McGraw-Hill, 1966.
 Blau, P. M. *Bureaucracy in Modern Society*. Random House, 1956.
 Dalton, G. W., Lawrence, P. R. & Greiner, L. E. *Organisational Change and Development*. Dorsey, 1970.

- Etzioni, A. *Complex Organisations: A Sociological Reader*. Holt, Rinehart & Winston, 1966.
- Etzioni, A. *Modern Organizations*. Prentice-Hall, 1962.
- Katz, D. & Kahn, R. L. *The Social Psychology of Organisations*. Wiley, 1966.
- March, J. G. ed. *Handbook of Organisations*. Rand McNally, 1965.
- Schatz, H. A. *A Casebook in Social Work Administration*. Council on Social Work Administration, 1970.
- Strauss, A. et al. *Psychiatric Ideologies and Institutions*. Free Press of Glencoe, 1964.
- Street, D., Vinter, R. D. & Perrow, C. *Organisation for Treatment*. The Free Press, 1966.
- Thompson, J. D. *Organisations in Action*. McGraw-Hill, 1967.

Social Welfare Administration Elective

TEXTBOOKS

- Hampton, D. R., Summer, C. E. & Webber, R. A. *Organisational Behaviour and the Practice of Management*. Scott, Foresman, 1973.
- Hunt, J. W. *The Restless Organisation*. Wiley, 1972.
- Schatz, H. A. *Social Work Administration*. Council on Social Work Education, 1970.
- Schatz, H. A. *A Casebook in Social Work Administration*. Council on Social Work Administration, 1970.

PRINCIPAL REFERENCE BOOKS

- Baker, F., McEwan, P. J. M. & Sheldon. eds. *Industrial Organisations and Health*. Tavistock, 1969.
- Byrt, W. J. *People and Organisations*. McGraw-Hill, 1971.
- Davis, L. E. & Taylor, J. C. *Design of Jobs*. Penguin, 1972.
- Emery, F. E. ed. *Systems Thinking*. Penguin, 1969.
- Fanshel, D. ed. *Research in Social Welfare Administration*. National Association of Social Workers, 1962.
- Fiedler, F. E. & Chemers, M. M. *Leadership and Effective Management*. Scott, Foresman, 1974.
- Fiedler, F. E. *A Theory of Leadership Effectiveness*. McGraw-Hill, 1967.
- Filley, A. C. & House, R. J. *Managerial Process and Organisational Behaviour*. Scott, Foresman, 1969.
- Greenblatt, Levinson & Williams. eds. *The Patient and the Mental Hospital*.
- Keith-Lucas, A. *Decisions about People in Need*. University of North Carolina Press, 1957.
- Likert, R. *New Patterns of Management*. McGraw-Hill, 1961.
- Lippitt, G. L. *Organisation Renewal*. Appleton-Century-Crofts, 1969.
- Margulies, N. & Wallace, J. *Organisational Change: Techniques and Applications*. Scott, Foresman, 1973.
- McGregor, D. *Leadership and Motivation*. M.I.T.P., 1969.
- McGregor, D. *The Professional Manager*. McGraw-Hill, 1967.
- McGregor, D. *The Human Side of Enterprise*. McGraw-Hill, 1960.
- Pugh, D. S., Hickson, D. J. & Hinings, C. R. *Writers on Organisations*. Penguin, 1971.
- Schein, E. H. *Organisational Psychology*. Prentice-Hall, 1970.
- Spencer, S. *The Administration Method in Social Work*. Council of Social Work Education, 1959.

Community Work Elective

TEXTBOOKS

- Carter, N. *Perspectives on Planning*. Canadian Council on Social Development, Ottawa, 1973.
- Cox, F. et al. *Strategies of Community Organisation*. Peacock, 1970.

- Current Issues in Community Work*. Community Work Group, Calouste Gulbenkian Foundation. Routledge, 1974.
- Ecklein & Lauffer. *Community Organizers and Social Planners*. (Council on Social Work Education). Wiley, N.Y., 1972.
- Kahn, A. *Social Planning: Theory & Practice*. Russell Sage Foundation, N.Y., 1970.
- Kramer & Specht. eds. *Readings in Community Organization Practice*.
- Leaper, R. *Community Work*. National Council of Social Service, London, 1968.
- Perlman & Gurin. *Community Organization and Social Planning*. (Council on Social Work Education). Wiley, N.Y., 1972.
- Raysmith, H., Rimmer, J. & Wookey, D. *The Geelong Experiment in Social Planning*. Hill Top Press, Geelong, 1973.
- Rothman, J. *Strategies in Community Organization*. 1969.
- Warren, R. L. ed. *Perspective on the American Community: A Book of Readings*. Rand McNally, Chicago, 1966.

PRINCIPAL REFERENCE BOOKS

- Alinsky, S. *Reveille for Radicals*.
- Bennis, Bennis & Chin. eds. *The Planning of Change*. Holt, Rinehart & Winston, 1971.
- Halliwel, L. *People Working Together*. Q.U.P. 1969.
- Lippett & Watson. *Dynamics of Planned Change*. Harcourt, Brace & World, 1967.
- Loewenberg, F. M. & Dolgoff, R. eds. *The Practice of Social Intervention: Roles, Goals & Strategies*. Peacock, 1972.
- Moore, W. *Social Change*. Prentice-Hall, 1963.
- Morris, P. & Rein, N. *Dilemma of Social Reform*. 1969.
- Raysmith, H. *Report on the Community Services of Geelong*. Hilltop Press, Geelong, 1972.
- Ross & Lippin. *Community Organization Casebook*. Harper, 1967.
- Ross & Lippin. *Community Organization*. Harper Bros., 1966.
- Warren, R. L. *The Community in America*. Rand McNally, 1968.

Casework Elective

TEXTBOOKS

- Briar, S. & Miller, M. *Problems and Issues in Social Casework*. Columbia U.P., 1971.
- Roberts, R. W. & Nee, R. H. *Theories of Social Casework*. Chicago U.P.
- Strean, N. S. ed. *Social Casework: Theories in Action*. Scarecrow Press, Metuchen, N.J., 1971.
- Turner, F. *Social Work Treatment*. Free Press, 1974.

PRINCIPAL REFERENCE BOOKS

- Boszormenyi-Nagy, I. & Framo, J. L. eds. *Intensive Family Therapy*. Harper & Row, 1971.
- Goldstein, N. *Social Work Practice: A Unitary Approach*. Sth Carolina U.P., 1973.
- Satir, V. *Conjoint Family Therapy*. Science & Behaviour Books, Palo Alto, 1967.

Group Work Elective

TEXTBOOKS

- Glasser, P., Sarri, R. & Vinter, R. eds. *Individual Change Through Small Groups*. Free Press, 1974.
- Klein, A. F. *Effective Group Work: An Introduction to Principle and Method*. Associated Press, N.Y., 1972.

Trecker, H. *Social Group Work—Principles and Practices*. 2nd ed. Associated Press, 1972.

PRINCIPAL REFERENCE BOOKS

- Bernstein, S. ed. *Further Explorations in Group Work*. Boston Univ., 1970.
 Dunphy, D. *The Primary Group: A Handbook for Analysis and Field Research*. Appleton-Century-Crofts, 1972.
 Fischer, J. ed. *Interpersonal Helping: Emerging Approaches for Social Work Helping*. Thomas, 1973.
 Hartford, M. E. *Groups in Social Work*. Columbia U.P., 1972.
 Johnson, D. *Reaching Out*. Prentice-Hall, 1972.
 Kadushin, A. *The Social Work Interview*. Columbia, 1972.
 Klein, A. *Social Work Through Group Process*. State University of New York—Albany, 1970.
 Klein, J. *Working with Groups*. Hutchinson Univ. Library, 1961.
 Konopka, G. *Social Group Work: A Helping Process*. 2nd ed. Prentice-Hall, 1972.
 Luft, J. *Group Processes: An Introduction to Group Dynamics*. National, Palo Alto, 1970.
 Mann, R. D. *Interpersonal Styles and Group Development*. Wiley, 1967.
 Middleman, R. *The Non-Verbal Method in Working with Groups*. Association Press, 1968.
 Northen, H. *Social Work with Groups*. Columbia, 1969.
 Pace, R. W. & Boren, R. R. *The Human Transaction*. Scott, Foresman, 1973.
 Rose, S. *Treating Children in Groups: A Behavioural Approach*. Jossey-Bass, 1972.
 Sager, C. J. and Kaplan, H. S. *Progress in Group and Family Therapy*. Brunner/Mazel, N.Y., 1972.
 Schwartz, W. and Zalba, S. R. eds. *The Practice of Group Work*. Uni. Columbia, 1971.
 Shulman, L. *A Casebook of Social Work With Groups*. C.S.W.E., N.Y., 1968.
 Smalley, R. *Theory for Social Work Practice*. Columbia, 1967.
 Smith, P. B. ed. *Group Processes*. Penguin, 1970.
 Swenson, C. H. *An Introduction to Interpersonal Relations*. Scott, Foresman, 1973.
 Vinter, R. ed. *Readings in Group Work Practice*. Campus Publications, 1967.
 Whitaker, D. S. & Lieberman, M. *Psychotherapy through the Group Process*. Atherton, 1964.
 Yalom, I. *The Theory and Practice of Group Psychotherapy*. Basic Books, 1971.

63.613B Social Work Practice IIIB

Part 1—This placement is taken in one of a wide variety of agencies, some beyond the metropolitan area. These agencies represent a complete range of social work methods so that students may gain practice skills in one or more of the methods as presented in the preceding practice subject, Social Work Practice IIA. This placement also expects of students an increased level of autonomy in practice, within the authority of their agency service.

The duration of this placement is 40 days (280 hours).

Part 2—Usually as a member of a student unit located in a social work agency and supervised by a field instructor of the School, the student has further learning experiences in the social work method on which he has elected to concentrate in Social Work Practice IIIA.

The duration of this fourth and final placement is 51 days (357 hours).

63.621 Social Work Research Methods I

A general introduction to the philosophical basis of scientific research as an underpinning to the objectives of developing students' knowledge about how social work research is carried out and how completed research is critically evaluated. Examples are presented from the literature to demonstrate the utility and abuse of research methods.

Types of research in social work: historical and cross-cultural; literature review; use of available statistical data; experimental; quantitative-descriptive; exploratory; combinations and other.

Overview of steps in the research process, with particular reference to evaluative research; defining programme and research objectives; involvement of the sponsor.

Research design; defining and operationalizing the independent and dependent variables; problems of reliability and validity.

TEXTBOOKS

Goldstein, H. K. *Research Standards and Methods for Social Workers* (revised edition). Whitehall, 1969.

Suchman, E. A. *Evaluative Research*. Russell Sage, 1967.

Tripodi, T., Fellini, P. & Meyer, H. J. *The Assessment of Social Research*. Peacock, 1969.

63.622 Social Work Research Methods II

A continuation of the analysis of the research process which was begun in 63.621 Social Work Research Methods I.

Types of data collection, emphasizing the advantages and disadvantages of each: questionnaire: closed, open; interview: in-depth, structured; projective tests; content analysis of the literature; observation; census type approaches.

Data analysis: selection and use of appropriate statistical parametric and non-parametric statistics; preparing tables for statistical analysis based on hypotheses; collating the study findings.

Preparation of the research report. Value questions in social research.

TEXTBOOK

Lumsden, J. *Elementary Statistical Method*. W.A. U.P., 1969.

63.801G Advanced Social Work Practice I (Interpersonal Helping)

This course is concerned with existing and established social casework and social group work theory. Various casework and group work models are critically evaluated, particular attention being paid to their local applicability. The notion of interpersonal helping as including both social casework and social group work methods is introduced, emphasis being placed on the integration of the two methods.

63.802G Advanced Social Work Practice II (Interpersonal Helping)

Further detailed analysis of the commonalities of social casework and social group work practice, including the following topics: accountability, sanction and authority, supervision, consultation, teamwork. Interpersonal

helping as part of professional social work practice is compared and contrasted with the related practice of other helping professions. An analysis by fields is made of local social work practice; the current situation in each field is examined, special attention being directed to challenges to growth and development in particular fields.

Current controversial views about interpersonal helping are examined, emphasis being placed on problems of integration.

63.803G Advanced Social Work Practice I (Community Work and Administration)

Different types and aspects of organisational theory and various approaches to community analysis. Dimensions and structure of the Australian community, and the organisational arrangements for the delivery of social welfare services. Forces which bring about change and different methods and strategies of directing change and modifying social policy and organisational structure. Laboratory training and field experience designed to increase skills in management and community work process.

63.804G Advanced Social Work Practice II (Community Work and Administration)

This subject builds upon the work in 63.803G dealing with advanced organisational theory and programming and community work method. Special attention is given to practitioner skills in community work and administration looking at common elements and differences between each. In laboratory training and field experience attention is given not only to the acquisition of skills but also to the development of attitudes and values appropriate to the various tasks.

63.805G Issues for the Social Work Profession

Contemporary issues facing the social work profession—its distribution within social welfare services, by professional methods, and geographically; its sex composition; problems of professional organization; international responsibilities; relationships with client and other population groups; relationships with other professions; relationships with other welfare personnel; the profession's priorities.

63.806G Behavioural Science Seminar

Recent and current developments in the behavioural and social sciences.

63.807G Social Policy Analysis

A comparative examination of the development of social policy and social administration as a subject area in Britain, Australia, the United States, and other countries. Boundary problems, characteristic concerns, social policy and economic policy, social policy and the social sciences, the movement towards more systematic analysis.

63.808G Professional Interpersonal Competence

The various roles of the profession from the perspective of the interpersonal competence required. Various theories with possible application for increasing professional competence in personal interaction.

63.809G Project

A study project will be undertaken by each candidate. The project will be an original but limited investigation into some area of social welfare.

Each candidate will have a project supervisor.

63.811G Practice Theory and Social Welfare Administration

This course will review the contemporary development in all four methods of social work practice—casework, group work, community work and social welfare administration—and the implications of these developments for the structuring of social welfare services.

63.812G Project Seminar

Candidates will be expected to present formally the progress of their projects. This will provide for discussion of projects between candidates and an opportunity to deal collectively with problems encountered.

63.814G Social Planning

An analysis of social planning processes—task definition, policy formulation, programming, and evaluation and feedback. Australian and overseas examples. The location and scope of planning structures. A critical review of the stage of development of social planning theory.

63.815G Social Work Research Methods

Uses and abuses in research in social work; types of research in social work; steps in the research process; defining programme and research objectives; involving the sponsor in the research process; research design; defining and operationalizing the independent and dependent variables; problems of reliability and validity; types of data collection; data analysis; preparing the research report; value questions in social research.

SCHOOL OF PHYSIOLOGY**73.011A Principles of Physiology**

Prerequisites: 17.011, 10.001, or 10.011 or 10.021, 2.001.

An introductory course in physiology. It considers in some detail the basic problems of homeostasis encountered in man and animals. Function is considered at cellular and systemic levels, and examples are drawn from mammalian and invertebrate species.

TEXTBOOK

Vander, A. J., Sherman, J. H. and Luciano, D. S. *Human Physiology*. McGraw-Hill, 1970.

continued from inside front cover

The Deputy Registrar (Student Services), Mr. P. O'Brien, is located on the first floor of the Chancellery. See Mr. O'Brien or Mr. S. Briand for matters relating to *financial problems* (he may be able to arrange a loan). Phone 2482 or 3164.

The Assistant Registrar (Examinations and Student Records), Mr. J. Warr, is located on the ground floor of the Chancellery. For particular enquiries regarding *Student Records* (including matters related to *illness affecting study*) contact Mr B. Newell (Phone 2141), and regarding *Examinations* contact Mr J. Grigg (Phone 2143). This section can also advise on matters relating to *discontinuation of subjects and termination of courses*.

The Assistant Registrar (Admissions and Higher Degrees), Mr. J. Hill, is located on the ground floor of the Chancellery. For particular enquiries regarding *undergraduate courses* phone Mr. J. Beauchamp on 3319. General enquiries should be directed to 2485.

The Assistant Registrar (Student Employment and Scholarships), Mr. J. Foley, is located on the ground floor of the Chancellery. Enquiries should be directed to 2086.

The Housing Officer, Mrs. J. Hay, is located in the Student Amenities and Recreation Unit in Hut B at the foot of Basser Steps. For assistance in obtaining *suitable lodgings* phone 3803.

The Student Health Unit is located in Hut E on College Road. The Director is Dr. M. A. Napthali. For *medical aid* phone 2679.

The Student Counselling and Research Unit is located at the foot of Basser Steps. The Head is Mr. G. Gray. For assistance with educational or vocational problems ring 2600-2605 for an appointment.

The University Librarian is Mr. A. Horton. Library enquiries should be directed to 2649.

The Chaplaincy Centre is located in Hut F at the foot of Basser Steps. For spiritual aid consult Rev. B. W. Wilson (Anglican)—2684; Rev. Father J. King or Rev. Father M. Fallon (Catholic)—2379; Pastor H. Davis (Church of Christ)—2683; Rev. P. Holden (Methodist)—2683; Pastor G. Rollo (Seventh Day Adventist)—2683; Rabbi M. Kantor (Jewish)—3273.

The Students' Union is located on the second floor of Stage 3 of the Union where the SU full-time President or Education Vice-President are available to discuss any educational problems you might have. In addition to dispensing free educational advice the SU offers a diverse range of services including legal advice (full-time solicitor available), clubs and societies services, second-hand bookshop (buy or sell), new records/tapes at discount, food co-op, a professional nursery/kindergarten (House at Pooh Corner), a typesetting service, electronic calculators (bulk purchasing), health insurance and AUS insurance, an information referral centre (the Infakt Bus) and publications such as Tharunka, Speer, Concessions Book and counter-course handbooks. For information about these phone 2929.

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

For fuller details about the University—its organization, staff membership, description of courses and so on, you should consult the University Calendar.

Separate Handbooks are published for the Faculties of Applied Science, Architecture, Arts, Commerce, Engineering, Law, Medicine, Professional Studies, Science (including Biological Sciences) and the Board of General Studies.

The Calendar and Handbooks are available from the Cashier's Office. The Calendar costs \$3 (hard cover) and \$2.50 (soft cover) (plus postage and packing, 90 cents). The Handbooks vary in cost between one dollar and \$1.50 (plus 20 cents postage), with the exception of General Studies, which is available free of charge.