Arms of the University

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

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

ANNUAL REPORT 1983
Friends of the University of Wollongong

One of the objects of the Friends of the University is to assist the Council of the University to preserve, develop and maintain the standards, position and facilities of the University. Another is to attract and retain continuing interest in financial support . . . And a third is to solicit donations and gifts for the benefit of the University.

During 1983 the Friends carried out these aims with its usual zeal. For examples: Uniadvice became a member of ATICCA (Australian Tertiary Institutions Consulting Companies Association); contact was made with Innovation Centre of NSW Ltd; contact was made with the newly formed branch of the Australian Inventors’ Association; and, from July, Uniadvice and the University’s Computer Centre established co-operative arrangements which include Unadvice being the formal channel for the outside work of the Centre.

Among the Friends’ other activities are the organisation of a Graduates Committee, now having 300 members; and providing the University with expert advice and assistance on some capital works projects at the feasibility study stage.

Contributions of cash and kind, and the dollar value of service given by the Friends, now exceed $226,000.
Dear Minister,

In accordance with section 34 of the University of Wollongong Act 1972, the council of the University has the honour to present to you the Annual Report of the proceedings of the University for the period 1 January to 31 December 1983.

Chancellor

Vice-Chancellor
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While 1983 has been a difficult year for the Illawarra region because of the economic recession and the consequent high levels of unemployment throughout the region, the University has advanced in several positive ways.

The Chairs of Civil Engineering, Chemistry and Economics were filled and staffing advances were made in a number of other departments. The Centre for Multicultural Studies was revitalised by the appointment of a new Head. A number of new courses were offered, including a Bachelor of Environmental Science, an Associate Diploma in Industrial Studies and a Diploma in Computers in Education.

The Summer Session, inaugurated at the beginning of 1983, proved popular with students.

Two new research centres were established: the Technology and Social Change Centre and the Mining Research Centre.

While no new buildings were started, minor works and beautification of the campus consolidated work begun in earlier years, thus contributing to the overall attractiveness of the university.

Most of all, 1983 has been distinguished by a new mood of optimism. The increases in enrolments, substantial research achievements and the growing reputation of the University, both in the Illawarra and in Australia generally, have contributed to the feeling that the University will flower in the next few years. The amalgamation with the Institute of Advanced Education, which occurred in 1982, has helped to generate new creative energy, the full effects of which will be evident in future years.

This Annual Report is presented in a new format which we hope will convey to readers some of the pride and confidence in the future which permeate The University of Wollongong community.

K. R. McKinnon,
Vice-Chancellor
1983
Increases in enrolments
Substantial research achievements

UNIVERSITY OF WOLLONGONG
AUSTRALIAN GOVERNMENT GRANTS

MILLIONS OF DOLLARS

YEAR


CONSTANT PRICES
CURRENT PRICES
TOTAL STUDENT LOAD 1975-1983

Blanks above bars indicate enrolments in the Institute of Education for the three years prior to the amalgamation in 1982.

FACULTY SECTOR
Total enrolments 1983

- Higher Degr 333
- Postgrad Dip 173
- Postgraduate 126
- PIT Bach Deg 1147
- F/T Bach Deg 1647
- Misc. 299

INSTITUTE SECTOR
Total enrolments 1983

- UG3 Assoc Dip 211
- Grad Dip Ed 90
- UG2 Dip Tch 374
- UG1 BEd 552
- UG1 BEd
- UG2 Dip Tch
- UG1 BEd

FACULTY SECTOR
percentages

- Higher Degr 8%
- Postgrad Dip 4.6%
- Postgraduate 3.4%
- PIT Bach Deg 30.8%
- F/T Bach Deg 44.2%
- Misc. 8%

INSTITUTE SECTOR
percentages

- UG3 Assoc Dip 17.2%
- Grad Dip Ed 7.3%
- UG2 Dip Tch 30.5%
- UG1 BEd 45%
a) Degrees and Diplomas totals

- Postgrad Dip: 86
- Undergrad Dip and Associate Dip: 148
- Higher Degr: 41
- Bachelor Deg: 486

b) Degrees and Diplomas percentages

- Postgrad Dip: 11.3%
- Undergrad Dip and Associate Dip: 19.4%
- Higher Degr: 5.4%
- Bachelor Deg: 63.9%

c) Staff numbers

- General services (admin): 174.2
- Academic teaching and research technical and admin: 281.9
- Student services and counselling: 2.0
- Library, computing, printing, teaching and learning centres: 90.9
- Research only, technical and admin: 10.2
- Research only, academic: 12.8

Academic teaching and research technical and admin: 118.0

Academic teaching and research, technical and admin: 13.2%

- Research only, technical and admin: 1.5%

Academic teaching and research, technical and admin: 17.1%
Academic activities

FACULTY OF COMMERCE

ACCOUNTANCY

The success of the undergraduate specialisation in Management Studies and the Diploma in Management and Master of Management, commenced in 1980, led to the formation of a new Department as from 1 March 1984 to be responsible for these programs. Four positions have been made available by the Accountancy Department. With a student load of between 70 and 80 EFTS the new Department is obviously viable. And the strong demand, particularly for the Master of Management, is evidence of the community's acceptance of the qualification.

First year enrolments rose yet again and at April 30 had settled down to 252 for Accounting and Financial Management I and 220 for Introduction to Law. Overall the student load grew from 270 to 325 EFTS.

In an attempt to limit the growth in the Department's student load, the imposition of quotas was approved by Council for the 1983 enrolments. Implementation of Council's quota policy proved unsuccessful owing to a variety of administrative factors, including the lack of experience within the University in respect of quota implementation. It is clear that it is much easier to impose quotas on a particular degree rather than a particular subject, Accounting I or Introduction to Law, for example.

Pass rates appear satisfactory.

The attrition rate of 10.8% (8.7% in 1982) in first year subjects is obviously high, particularly in relation to the overall University rate of 3.7%. We seem to have a disproportionate number of students, whose motivation and preparation might be regarded as 'marginal', attempting degree studies, reflecting in part the pressure to obtain qualifications for employment. A further possibly relevant factor is that neither accounting nor law is taught at secondary schools in NSW.

The number of students majoring in accountancy continues to grow. For the year ended 30 June 1983 55 undergraduate students completed their degrees compared with 42 in the previous year. The first three candidates to graduate with a MMgt completed the course in Second Session 1982.

Nearly all of our graduates, apart from those continuing with study, have obtained employment.

The Department now systematically evaluates all its subjects, lectures and tutorials. Despite initial misgivings, the scheme appears to be a success, mainly through the feedback provided to the teaching staff. Results of the evaluations are confidential to the staff members concerned and the Departmental Chairman.

The Department participated in the University's Introduction to Year 12 Students Day. Copies of a special edition of the Departmental Handbook were made available to students and were later forwarded to school principals and careers advisers.

Research Thesis in Progress

MCom(Hons)


ECONOMICS

Two new members of staff took up their positions during the year: Dr Christine Smith and Professor Dudley Jackson. Discussions were initiated for innovations in teaching and for new courses to enhance the existing strengths of the Department. These plans are likely to come to fruition in 1984.

A new subject, ECON 317 Welfare in Australia was successfully introduced and attracted nine students and has attracted 22 students in 1984. The aim of this subject is to study the empirical measures of the level and distribution of economic welfare in Australia, and the government policies which influence these variables in particular and welfare in general.

During the year, the Department commenced teaching the new subject ECON 954 Industrial Relations in Australia for the Master of Management, and started teaching for the first intake of students for the Associate Diploma in Industrial Studies in the School of Industrial and Administrative Studies.

Much of the organisational theory in ECON 340 Comparative Studies in Industrial Relations was transferred to ECON 242 Trade Unions, Employers and Government preparatory to a restructuring of ECON 340 in the first session of 1984. The subject ECON 342 Research Topics in Industrial Relations was extended in terms of its methodological content.
The Department's pass rates and attrition rates have been better than that for the University as a whole; indeed at all levels the Department enjoyed 'gain rates' rather than attrition, having a total of 1,582 students enrolled at 30 April and 1,647 students at the year's end, a net increase of 65.

Enrolments continued to expand and, using year-end figures, 1983 enrolments were 90 per cent higher than were enrolments in 1980 (1,647 as against 868), and were 27.5 per cent higher than in the preceding year (1,647 as against 1,292).

Graduates from the department have continued to be successful in obtaining employment or positions with the Commonwealth Government; eight graduands of the department received offers of research positions and/or cadetships from the Commonwealth Government in Canberra or from the Reserve Bank in Sydney.

Changes were discussed to teaching methods in ECON 101 Introductory Macroeconomics and ECON 111 Introductory Microeconomics consequent upon Professor Jackson's arrival: these changes involve extensive use by first-year students of the Australian Bureau of Statistics publication, Australian National Accounts National Income and Expenditure.

The Department participated in a Schools Day Symposium jointly organised by the University and the NSW Department of Education. Lectures were given by several members of staff, with a special lecture on the 1984 Federal Government Budget and its associated macroeconomic policy and with a workshop on 'International Influences on the Australian Economy' emphasis being given to interest rates abroad, and inflation and recovery in the United States economy. Eighteen HSC students from the Illawarra Region participated in the workshop.

A brochure entitled 'Industrial Relations at the University of Wollongong', describing and publicising the Department's industrial relations courses was prepared and distributed throughout the Illawarra Region (this seems to have been partly responsible for substantially increased enrolments in Industrial Relations).

Research Thesis Completed

MCom
Ethanol as a liquid fuel source in Australia: an economic analysis.

Research Theses in Progress

PhD
Investment Strategy and Portfolio Analysis.
The Economics of the Building Industry in Australia.
Tax progressivity of Personal Income Taxation in Australia.
Resource productivity in Indian Agriculture.
The choice between car and bus transportation in Australia.
The role of commercial banks in the economic development of Malaysia.

MCom
An econometric model for Sri Lanka and its application to debt service forecasting.
Output, employment and profitability in plantation agriculture in Papua New Guinea.
The structural problems of manufacturing industry in Australia.
Mining and economic development in Botswana.

FACULTY OF ENGINEERING
DEPARTMENT OF CIVIL AND MINING ENGINEERING

There were no major course changes during the year; however, minor changes occurred by the addition of new electives at fourth year and postgraduate level.

Attrition rates are considered satisfactory.

A Summer School subject 'Civil Engineering and The Environment' was offered.

All students graduating with a B.E. from the Department of Civil and Mining Engineering obtained employment in Industry or Government positions.

The Mining Research Centre was established within the Department during 1983 from a special grant from the University. Funding is at the rate of $40,000 per annum for a period of three to five years depending on the progress of the Centre. It is intended that the Centre becomes self-funding by the end of the above period.

At present seven projects are active, three have been completed, and four have been approved for development.

Research Thesis completed

PhD
A Technique to Resolve Road Accident Problems.

ME
Flood Mitigation in an Urban Catchment.
Earthquake Energetic Absorbers.

Research Theses in Progress

PhD
Impact of Immediate Roof on the Caterpillar Pillars in Retreating Long Wall System.
Aspects of Ventilation in Underground Coal Mines.
Road Support in Coal Mines.
Progressive Failure in Slope Stability Analysis.
Foundation and Earthwork Evaluation.
Analysis of Excavated Slopes - Multi-Stage Finite Element Approach.
Hydrodynamic Forces on Off-Shore Structures by Laboratory Study and Numerical Method.
The Development of Physical Models and their Application to the Prediction of Shafts Behaviour near Mine Openings.
Subsidence and Strata Control in the Sydney Coal Basin.
Analysis of Urban Transport System.
Ground Control under Massive Foundations.
Behaviour of Underground Structures.
Nonlinear Analysis of Box Type Structures.

ME
Time Variable Rainfall-Runoff Modelling.
Experimental Determination of Head Losses in Stormwater Drainage Systems.
Comparison of Design Procedures for Single Floor Detention Basins.
Computer Simulation of Detention Basins.
Investigation of the Load Bearing Capacity of Externally Clad and Reinforced Concrete Slabs.
Hydraulics of Multiple Culverts.
A Study of some Structural Vibration Problems.
Computer Aided Economic Analysis of Piles in Foundation Construction.

Facilities and Equipment
A stereometrograph was donated by the consulting engineering firm of Vallentine, Laurie and Davies for use within surveying courses and research in engineering applications.

A grant of $100,000 from the University was made available to the Department of Civil and Mining Engineering and the Department of Metallurgy. A 500kN (Static), ± 250kN (Dynamic) Instron Servo-Controlled testing machine has been purchased and will be installed during 1984.
Other Equipment
Hewlett-Packard 305A Data Acquisition System including
9826S Desk Top Computer.
Cone Penetration Equipment for in situ soil testing.

ELECTRICAL AND COMPUTER ENGINEERING

The relatively disadvantaged position of this Department with respect to the Faculty sector generally, as detailed in the 1982 Report has been reinforced by the 32% increase in student load and the dramatic increase in new enrolments when compared to 1982 figures. However, the provision of funds for the Engineering and Science Project promises some relief with respect to space in late 1985. The most significant event for 1983 as far as this Department was concerned was the likely establishment of an Institute of Materials Handling and Automation on the University campus.

New enrolments increased from approximately 95 in 1982 to 140 in 1983, a level which cannot be supported in subsequent years given the existing equipment and space presently available to the Department, even if staff numbers could be increased to match. Accordingly, the decision was taken to limit the 1984 intake of new first year students to 100 only.

Pass rates in the first-year subjects offered were generally lower than in previous years, and were matched by similarly poor results in subjects offered by other departments and taken by our first year students. In a way this has been a fortunate outcome for the Department if not for the students concerned because the bulge in numbers expected to propagate through the Department will not now occur.

Second-year class sizes of about 80-90 are now the same in 1984 as they were in 1983 and may be expected to remain close to this figure as long as first-year quotas of 100 are applied.

Research Theses Completed
ME
- Glider control and supervisory equipment
- High bit rate microwave data link

Research Theses in Progress
PhD
- Realisation of null steering antenna
- Twin rotor disc type induction machines
- General Purpose Robot Controller

ME
- Power transistor switching devices
- Investigation of microwave holography
- A computer controlled infra-red sensing system
- Design of a special purpose microprocessor for real-time applications
- Electrical characteristics of a pilot scale electrostatic precipitator
- Photographic measurements of stratospheric aerosols

MECHANICAL ENGINEERING

There were no fundamental changes in the direction or structure of the Department’s teaching program. However, the subject, MECH 433 Bearing Design, Friction, Lubrication and Wear, was presented for the first time.

The number of students graduating with the BE (Mechanical Engineering) degree in 1983 was six with Honours, ten with Pass. Four students graduated with Master of Engineering (Honours) degrees.

Research Theses Completed
ME
- Fabric Filters for Air Pollution Control
- A Comparison of Non-Linear and Linear Mathematical Models of a Large Steam Generator
- A Theoretical Study of the Tension Levelling Process
- An Investigation of the Jet Stripping Process

DEPARTMENT OF METALLURGY

During 1983 there was substantial consolidation of research work. The securing of about $53,000 to support projects in 1984, and marked indications of an increase of interest in our graduate programs have placed the Department in a strong position to promote research activities in coming years.

Undergraduate enrolments were low as a result of the industrial recession on recruitment of trainees for industry. Significantly, however, of ten new students, four were self-supporting; our highest-ever such annual enrolment suggests that there may be an increasing awareness of metallurgy among high-school students.

Arising from the Review of the Department (conducted in November simultaneously with the Review of the Department of Mechanical Engineering) the Department is to continue as an independent academic unit with professorial head. It was recommended that the Department...
modify the course offered for the degree of Bachelor of Metallurgy and collaborate with other departments to offer another course leading to a Science or Applied Science degree with major study in the discipline of materials.

Research Theses in Progress

**PhD**
- Segregation in Packed Beds.
- One-line Dynamic Analysis of the Blast Furnace Process.
- Thermomechanical Processing of Titanium Bearing H.S.L.A. Steels.
- Fatigue of Ferrous Alloys.
- Thermomechanical Processing of H.S.L.A. Steels.

**ME**
- Spot Welding.
- Structural Transformations in Niobium Titanium H.S.L.A. Steels.
- Structural and Kinetic Aspects of Phase Transformation in Duplex Stainless Steel.
- Size Segregation in Filling and Discharging of Bins.
- Some Aspects of Metal Forming Operations.
- Shape Memory Effect in Iron Alloys.
- Effect of Bed Height and Suction on Sintering.
- The Mechanical Behaviour of Copper Alloys.

**Diploma**
- The Relationship between the Textural/Structural Properties and the Performance of Australian Blast Furnace Cokes and some Dynamic Aspects of Blast Furnace Burden Distribution.
- Ultra High Speed Annealing of Low-Carbon Steels.

**Facilities and Equipment**

During the year two major developments to the facilities were made. A new servo-hydraulic sheet-bulging apparatus, designed for biaxial stretching tests of higher-strength heavy gauge sheet metals, has been brought into operation with an extended range of operating conditions. The necessary computing functions have been transferred to a directly coupled mini-computer and the data-handling programs have been further developed to suit this upgraded system. This work was supported by a grant of $10,000 from ARCS.

The servo-hydraulic universal testing machine has also been upgraded by replacing the electronic control console with a new custom-built unit, which has improved the response rate of the actuator and offers facilities for conducting more complex testing routines.

New apparatus for hot compression testing has been constructed so that tests may be conducted at higher temperature and greater force than previously possible.

Also in 1983 the compositional analysis and quantitative metallographic capability of the electron microscope facility was upgraded. A non-dedicated microcomputer was linked to the scanning electron microscope to provide fully quantitative compositional analysis by x-ray energy spectroscopy. An appropriate program for the computer provides means for making quantitative analysis of photomicrographs taken using either electron or optical microscopes.

**FACULTY OF HUMANITIES**

**ENGLISH LANGUAGE**

The year was one in which strenuous efforts were made to open the way for rapprochement and the re-unification of the two English Departments required by Council. Accordingly, various proposals for course amalgamation were put from this Department to the Department of English Literature and Drama. Two new courses (Engl. 241 and Engl. 242) were given in 1983. The English Language staff were pleased to be able to offer students an opportunity for further study of the modern language. The Department continued to work hard to improve its student load.

Pass rates in English Language are usually high. The 1983 figures supplied by the Administration indicate that they are higher than the figures for the Faculty of Humanities generally and for the University as a whole. It goes without saying that the language staff are dedicated teachers. Also to be taken into account is the comparatively small size of the language classes, which allows for intensive teaching and guidance from the staff.

The 100 level attrition rate is higher than for 1982. We shall
A Media class in progress in the Department of English Literature and Drama

Seated is Ms Doreen Gillam, Chairman of the Department of English Language, and on her left is a colleague, Mr Rod McConchie, who holds a Romano-Celtic quern stone found during a research project in Suffolk, East Anglia be looking into the matter closely during the course of this year.

Several of our graduates have obtained teaching positions. At least two have become librarians.

In 1983 work continued on the Department's major research project, a joint investigation into the place-names of Suffolk, England, by both members of the English Language staff. The Professor of English, Professor Southall, is also involved in this project in an advisory capacity. The place-names of Suffolk have not so far been the object of a full-scale modern investigation.

In 1983, Mr M. Scott completed a University-funded project (begun in 1982) on the application of personal construct theory to a study of the discrimination systems of adolescent television viewers.

Dr J. Wieland is continuing his research into Australian Literature and New Literatures in English. In 1983 he began work on responses to Ned Kelly and this work will expand to include such topics as Convicts, Gallipoli, Aboriginal, the land in Australian history and literature.

Research Theses in Progress
PhD
Certain Secrets, Sterne's Momus Glass and the Heart of Man Commitment and two modern British Dramatists: Trevor Griffiths and David Hare.

MA
The Literary Development of Humphrey McQueen.
Thea Astley: the Novels
Australian Fiction of the Great Depression
Nineteenth Century Australian Women Writers
The Dichotomy of Body and Soul in the Poetry of George Herbert
Disraeli's Scope as a Novelist.
Literary Texts Set by Benjamin Britten
Australian Girls' Fiction

EUROPEAN LANGUAGES

It is now possible for students to do separately language units and literature/civilization units.

In 1983 one subject in French (20th century France) and one subject in Italian (The Italian Renaissance) without language prerequisites were planned for introduction in 1984.

Enrolments varied little from 1982 figures. The third-year advanced Italian language course was offered for the first time as a course in Interpretation and Translation. The course was designed specifically to meet the Level 2 requirements of the National Accreditation Authority for Translators and Interpreters and was subsequently recognized by the Authority. Students meeting the prescribed requirements are thus eligible to obtain accreditation as translators and/or interpreters.

The 1983 course on Italian opera was completely revised. From a purely socio-historical, literary, chronological exposition of the development of the opera, the new course places the emphasis on actually experiencing — with
sufficient background and preparation — a number of exemplary performances and then examining the genre in terms of being a total art form of universal appeal.

Contact was maintained with school staff and students through the Alliance Française, the Dante Alighieri Society and the Modern Language Teachers’ Association in the Illawarra. Classes and competitions were organised by these groups for schoolchildren in the region.

Research Thesis in Progress
PhD
Aspects of Italo-Australian Literature.

MA
Boethius and Dante.
Recurring themes in the narrative works of Grazia Deledda.

HISTORY

There were no changes to the structure of the teaching program in 1983, beyond the working out of those changes foreshadowed in the 1981 and 1982 reports.

First-year enrolments dropped by 10 per cent, and enrolments in second and third year combined were also down by about the same proportion.

Pass rates in second and third year were very close to their equivalents for the Faculty of Humanities and the University as a whole. In first year, the pass rate was eight per cent lower, compared with two per cent higher in the previous year.

The higher failure rate in first year is connected with an attrition rate that was somewhat above that of the University as a whole. It was however less than half of the equivalent figure for the previous year. Attrition rates in second and third year were negative, and well below rates for the University as a whole.

There was a decline in the number of majors proportionate to the general decline in enrolments.

Research Thesis Completed
PhD
Labour and Politics in New South Wales, 1880-1900.

MA
Redundant Women in the Promised Land: English Middle Class Women’s Migration to Australia, 1861-1881.

Research Theses in Progress
PhD
The First Cavalry Army, 1918-1920.
The Attitude of the Australian Trade Union Movement Towards the Soviet Union, 1930-1990.
The Revolutionary Intellectual as War Leader: V. I. Lenin and Soviet Georgia, 1918-1920.
Technological Change in N.S.W. Coal mining, 1930-1965.
History of Clothing Trades Unionism in Australia.

MA
Nikolai Aleksandrovich Rozhkov, 1868-1927.

HISTORY AND PHILOSOPHY OF SCIENCE
The discipline of history and philosophy of science (HPS) has undergone a considerable transformation in the past fifteen years. This has involved a reformation and revitalisation of the traditional core disciplines of history of science and philosophy of science and in addition, a widening of the scope of the subject to embrace problems about the nature, development and social impact of contemporary science and technology and about science and technology policy. Historical studies of science have been deeply influenced by models developed within the sociology of knowledge and historians of science trained in modern historiography have breathed new life into the history of science. The philosophy of science has moved away from logical reconstructions of scientific knowledge toward an active concern with the dynamics of scientific change and scientific practice, a move which has necessitated closer ties with historical and sociological perspectives on science. A change has occurred in the popular view of scientific knowledge and technological change, such that science and technology are becoming less exemplars of objective truths and sources of social progress and more sources of problems and uncertain troubling knowledge. Here the methods of the historian and philosopher need to be supplemented by those of the economist and political scientist. Similarly, awareness of the relationship between science, technology and the state has necessitated drawing upon the concepts and methods of economics, political science, and policy studies.

As a consequence of these shifts, the new field of HPS, while it continues to pursue and to draw insight from the...
history and philosophy of science, is much broader in scope because its problem domain includes the origin, nature, development, social impact and political control of science and technology. In addition, HPS is now truly interdisciplinary, drawing upon a wider range of new perspectives in the humanities and social sciences. HPS is also now better able to cope with the demands which in fact have always been placed upon the discipline to contribute to the understanding and resolution of contemporary problems which have a scientific or technological component.

Hence, the objective of the HPS teaching program is to develop in students an ability to recognise and dissect complex problems, to draw on the concepts and techniques of other disciplines as appropriate with a full understanding of their strengths and limitations, and to communicate their understanding effectively. Courses have been designed to offer a strong major to students with widely varying interests in science and technology, a range of subjects related to the content and concerns of other disciplines, and an opportunity for those working in areas affected by technology to develop an expertise in dealing with it.

No restructuring of the HPS major teaching program occurred in 1983. However, a comprehensive set of 100, 200, and 300 level subjects was organised for the Power Policy and Technology stream of the Politics specialisation.

In addition, considerable effort was devoted to the development of the Technology strand of the new Bachelor of Information Technology and Communication Degree.

The Department participated in Schools Day, produced a library display, and presented a number of talks to teacher groups and school students. There is evidence that the strong research reputation and community involvement of the Departmental staff are serving to attract students.

Research Thesis Completed
MA
The Politics of Technological Decision Making: the Case of ANAHL.

Research Theses in Progress
PhD
The Plant Variety Rights Issue.
Towards a Philosophy of Technology.
The Role of TAFE in Technological Change.
The Industrial Policy and Industrial Performance.
Australian R and D and Technology.

MA
Computers in Schools.
Evaluation of the 'Offset' Policy.
Big Science Policy Making: The Anglo Australian Observatory.
Computers in Pharmacy.
The Politics of Health Care: the Case of Terminal Care.
The Impact of Computers on the Public Sector.
The Introduction of Computer Technology in the Coal Mining Industry in Australia. Community Attitudes to Technological Change.
Evaluation of the Biomedical and Holistic Models of Disease and Health Care.

PHILOSOPHY

In 1983 major studies in Political Studies have been introduced in this University. The course is taught cooperatively by departments in the Faculties of Humanities and Social Sciences. This Department's most important contribution to the course at present is a first-year subject 'Theories of Democracy' which, together with the History Department's 'An Introduction to Australian Political Institutions', provides an introduction to the course. Enrolments in these two subjects are about 75 students showing that this new course fulfills a previous need.

Enrolments were approximately 40% higher than in 1982, involving an increase at all levels of undergraduate study.

Pass rates did not vary sufficiently from the Faculty of Humanities of the University as a whole to require comment.

Every year our end-of-year enrolments are significantly higher than our end April enrolments while in the University as a whole there is a small decline in enrolments; the main reason for this is that students who fail first-year subjects tend to choose additional second-session subjects in philosophy to a greater extent than in other disciplines. This fact not only makes our attrition rate figures meaningless but it means also that the Department is disadvantaged in resource allocation, which is based on end April enrolments.

As usual only a small number of students majored in philosophy, since we are not training students for a specific career and Philosophy departments have a broad base of 100 level students with only a small number of highly dedicated students majoring in the subject.

Research Theses Completed
PhD
Abnormal Psychobiology.
Luigi Pirandello: Existentialist.

Research Thesis in Progress
PhD
Existence and Reference.

MA
War Crimes and Their Moral Evaluation.
Philosophy Psychology and Aesthetics of Imagination.
The Metaphysics of F. H. Bradley.
The Right to Private Property.
The Possible Limits to Logical Discussion.

FACULTY OF MATHEMATICS

COMPUTING SCIENCE

The first Wollongong Summer School on the Science of Programming was held at Sponar's Chalet, Mt. Kosciusko from January 31 to February 9. Topic of the graduate level state of the art summer school was 'The Science of Programming'. Lecturers were three of the foremost computer scientists in the world: Prof. C.A.R. Hoare, FRS, Oxford University, U.K.; Prof. Dr E. W. Dijkstra, Burroughs Research Fellow, Holland; Prof. D. Gries, Cornell University, U.S.A. A total of 104 participants came in the Computing Science Sky Lab students are working with Apple Macintosh computers.
from England, Holland, U.S.A., Canada, Philippines, Malaysia, Singapore, New Zealand, South Africa and all states of Australia.

The main activity of the summer school was an intensive lecture course in advanced theoretical computer science. This was the first advanced level summer school held in Australia on Computing Science.

All enrolments in computing science increased substantially in 1983 except Computing Science 1A where a quota was applied. Graduate enrolments experienced a strong rise in Diploma and Master of Computing candidates.

Pass rates in Computing Science were somewhat lower than in most other disciplines. Insufficient individual attention due to staff overload is one possible cause.

The number of computing science graduates in 1983 was reasonable. In 1983 the number of Bachelor of Mathematics graduates who majored in Computing Science was 32.

Research Thesis Completed
PhD
Robotics Software for the Mini-Mover 5 Robot Arm.

Diplomas Completed
On-line Recognition of Hand-Printed Characters.
Computerization of the Content Analysis Scale.
A Study of Heapsort Related Sorting Algorithms.

Projects Completed Honours/Postgraduate
A graphical frame editor for the Apple IIe.
Technical Assistance for Sintering.
VPE and PPE on Apple II.
Automatic Income Tax Return System.
Computerization of Content Analyses Scales.
Visible Execution of Pascal Programs.
Implementation of Lispkit Lisp.
A study of Heapsort-related Sorting Algorithms.
Robotics Software for the Mini-Mover 5 Robot Arm.

Research Theses in Progress
PhD
Portability of Operating System Software.
Performance of Portable Operating Systems.
An Intelligent C.A.I. System for Teaching Elementary Geometry.
Empirical Studies of Graph Canonization Algorithms.

MSC
Local Area Network Terminal Multiplexer Node.

Honours/Postgraduate
World To-Joint Coordinate Transforms for a SCARA Robot.

Mathematics

In 1983, for the first time, the Department ran a problem competition for the students in our High School Enrichment Service in Mathematics. We had two tests: one for years 7 and 8 and one for years 9 to 12, with two common questions.

Remarkably, the best marks for the common questions were obtained by year 7 students! Also the top six students from 7 and 8 were from year 7 and the top student from years 9 to 12 was from year 10.

Prizes consisting of books and subscriptions to ‘Parabola’ were handed out by Faculty of Mathematical Science Chairman, Dr Tom Horner, at a final session on December 5. $150 towards these prizes was donated by the Friends of the University, further money for snacks consumed at this session was donated by the Mathematics Department.

Research Theses Completed
PhD
Rate Limiting Mechanisms of Pyritic Oxidation in Overburden Dumps.
Random Walk Models.

Is the computer taking over? Here is yet another in use — this time by a post-graduate Honours student in the Department of Mathematics.
Chairman of Mathematics is Professor John Blake, one of whose current fields of research is cavitation damage to turbo machinery.

Research Theses in Progress

PhD
- Diffusion and Heat Condition Problems with Moving Boundaries.
- Problem in Sequential Analysis.
- Mathematical Models of the Lung.
- Solution of Sparse Matrix Eigenvalue Problems arising in the Applications of the Finite Element Method.
- Mathematics of Moving Boundary Problems in Diffusion.
- Boundary Integral Methods for Problems in Hydrodynamics.
- Mathematical Models in Biology.
- Boundary Effects on Shelf Waves.
- Application of the Finite Element Method to the Design of Gas Slider Bearings.
- Some Problems Associated with Roll Forming.

MSc
- Numerical Computation of Cavity Drivers Flow.

Facilities and Equipment

The following equipment was purchased in 1983:
1 Houston DMP40 Plotter, 1 Calcomp camera System.

FACULTY OF SCIENCE

BIOLOGY

There have been no changes in objectives or structure of the teaching program since the last annual report.

First-year enrolment exceeded that of 1982 by 95% in April and 85% at the year's end. The increase was much greater than that for the University (4%) and might have been attributable to some advertising undertaken by the Department in 1982 (see 1982 Report) and some favourable publicity arising from a substantial award of research grants.

The increase in second year enrolments possibly reflects a response to course restructuring introduced in 1982 while the drop in third year indicates an enrolment trough that had been moving through the system.

Pass rates were down slightly in first year (about 2 percentage points) and up slightly for all years (about 4 percentage points) in relation to 1982. These fluctuations are of doubtful significance but the comparison of Biology pass rates with those of the Faculty of Science is striking. In 1982 first year pass rate for the Faculty and Biology were 81% and 88% respectively. In 1983 they were 69% and 83% respectively. It is possible that the drop in the Faculty pass rate was associated with an increased enrolment of non-science students in servicing courses; Biology does not provide servicing courses.

First year attrition rate was about twice that of 1982, possibly because of increased enrolment and the attendant discomfort in laboratory classes. The negative attrition rate in second year indicates either multiplication during the year or late enrolment in second session subjects.

The drop in students majoring in Biology is another consequence of the enrolment trough mentioned above. This has now passed.

Research Theses in Progress

PhD
- Physiological and Biochemical Studies on Dunaliella.
- Osmoregulation in Eucaryotic Microorganisms.
- Osmoregulation in Cyanobacteria.
- The Influences of Thyroid Hormones on the Sodium-Pump in Vertebrates.
- Insects and the Role of Refuges in Post-Fire Succession in Heathland.
- Physicochemical Factors Affecting Glycerol Production in Saccharomyces cerevisiae.

MSc
- Plant-Pollinator Interactions in South-Eastern N.S.W. Woodlands.
- Numerical Taxonomy of Dermatophyte Yeasts.
- The Ecology of the Yellow-Bellied glider (Petaurus australis).
- The Foraging Ecology of Ground-Feeding Birds in Woodland Areas.
- The Role of Unburnt Refuges in the Maintenance of Small-Mammal Populations After Fire.
- The Effects of European Man on Mammals of the Illawarra Region. Temperature Regulation and Hibernation in Small Marsupials.

Facilities and Equipment

Major items of equipment bought included a gamma radiation counter, a fluorescence detector, a pump for high-performance liquid chromatography and a fermenter. There were various smaller items needed to supplement existing equipment and to increase supplies of class equipment (e.g. microscopes) to meet the needs of higher enrolments.
CHEMISTRY

A bridging course in Chemistry was offered for the first time as part of the Summer School program. The course was designed principally to prepare students with a weak high school background in Chemistry for entry into first-year University Chemistry courses. It occupied the two weeks before the start of the first session and attracted an enrolment of 45.

A Master of Studies in Chemistry program (48 credit points) was introduced in 1983. Its main objective is to provide knowledge and expertise in modern chemical techniques and developments to graduates who are currently employed in industry and education. Two part-time students were enrolled.

Overall EFTS rose sharply from 99 to 127. This was mainly caused by large rises in 100 level, 200 level, and postgraduate enrolments. There was a small decline in 300 level EFTS.

Class rates were above the Faculty of Science and University averages at 100 and 300 level, but lower at 200 level. The overall pass rate of 79% was significantly higher than the Science Faculty average (74%), and marginally lower than the University average.

Attrition rates in first year, including withdrawals during the first few weeks, were slightly higher than in 1982, but still much lower than a few years earlier. Attrition rates in higher years continued to be very low.

There were ten students taking at least 24 credit points of chemistry at 300 level (and 10 taking at least 16 credit points as part-time students).

A group of year 12 pupils from Kanahooka High School visited the Department in September and were given demonstrations in the use of modern chemistry instrumentation. The department also hosted a student from Dapto High School as part of the Work Experience Program. He spent one week under the supervision of various members of the technical staff.

Research Theses Completed

PhD
A Finite Element Approach to Molecular Vibration.
Stereospecific Synthesis of Naphthoindolizidine and Tetrahydrobenzisoquinoline Derivatives.
Gas Chromatographic-Mass Spectrometric Studies of Shale Oil and Oil Shale from the Rundle Deposit, Queensland.

MSc
Investigation of the Cyclization of Dihydroisotryptamine.

Research Theses in Progress

PhD
Studies of Coke Oven Emissions and their Possible Carcinogenicity.
Hydrolysis of Metal Ions.
Chemical Studies of Air Pollution in the Illawarra Region.
Studies in Modelling Electronically Excited States of Molecules.
Profiles of Molecular Markers in Oil Shale as Indicators of Maturation History.
Analytical Studies on Australian Shale Oils.
Analytical Studies on Shale Oil.
Studies in Molecular Interactions.
An Investigation of the Interactions Between Groundwater Uranium and Host Rocks Around Ore Bodies.
An Investigation of the Chemical Composition and Mutagenicity of Welding Fume.
Studies Molecular Aspects of β Decay of T.

MSc
Trace Metal Analysis by X-ray Fluorescence.

Facilities and Equipment

The major new items of equipment purchased by the Department were a Superset Computer ($47,600) and components for a stopped-flow rapid kinetics spectrophotometer ($10,000).

Other Equipment
CHYD Balance, $1195; X-Y Recorder, $2502; Kjeldahl Unit, $1568; Fraction Collector, $2375; Deuterium lamp, $505; 2 Sartorius Balances, $1996; Liquid CO2 Soxhlet $1040; FID Electrometer, $1296; Hard Disc Drive, $2924; Kaga System, $735; Ice Maker, $1785; Graphics Board & Terminal, $1955; Saybrook 6800 Processor, $1600.

Construction of the stopped-flow spectrophotometer will facilitate Professor Kane-Maguire’s proposed studies into the kinetics and mechanisms of organometallic reactions of relevance to industrial processes.

GEOLOGY

The undergraduate teaching program is directed at producing graduates who can be employed as professional geologists. Such an aim was an essential in the depressed job market between 1978 and 1981. It demands a broadly-based course giving at least familiarity with, if not expertise in, all of the major areas of Geology. To give a course with a narrower base would make graduates much less acceptable to industry — both the local coal-oriented industry and the wider spread of the raw materials and development industries — and to other employing organisations. Graduates from this program have found employment in a wide range of companies (coal, oil, mineral and construction materials), government instrumentalties, universities and the teaching profession.

The honours year is of an end-on type. Typically, only 50-60% of students expressing interest in taking the honours
Two pictures from the Department of Geology. At left a class is being taken by Dr Brian Chenhall and, above, by Mr Adrian Hutton.

year are recommended for admission, the recommendations being based upon performance in geology subjects in the first three years of the course.

Some of the local industries have not encouraged part-time students to undertake an honours year because they feel that honours graduates are less ‘stable’ employees.

However, in some American companies the honours degree is viewed as a minimum starting qualification. A problem for the Department of Geology is that the recent excessive demand for geology graduates has resulted in companies' stripping operations extending from staff through potential postgraduate students to potential honours students. This affected both staff and student populations. The present depressed condition of the mining and fuels industry has resulted in different pressures and a further change in the profile of the department. The honours year contains some formal coursework, but is intended primarily to develop a capacity for independent work.

Support for the teaching program of the Department was provided by two major companies during 1983. One of these had continued specifically to recognise deficiencies in the support provided for teaching geology in Australian universities. In 1983, the student : staff ratio rose to 12 : 1. The ratio is dangerously high — the word dangerously being used literally because it is becoming progressively more difficult to provide adequate supervision in the field.

The postgraduate program in geology has historically been oriented towards Ph.D. programs, chiefly full-time students, but with a significant number of part-time students from outside the Wollongong area taking programs which relate to some of the areas of expertise of the academic staff. Even with the downturn of employment in geology, it may be some years before significant numbers of students could be expected to be interested in undertaking full-time postgraduate studies. For these reasons, part-time postgraduate students have become a more significant element in postgraduate teaching. Such students bring advantages in terms of experience and expertise to the university and commonly make available facilities and information which would not otherwise be readily accessible. The lack of a large cadre of post-graduate students ‘on site’ is a disadvantage, but postgraduate students who do not reside in Wollongong nevertheless make a significant contribution to the academic life of the university. They also make heavy demands on some services. Two ADAB-supported students from overseas commenced full-time research during 1983 taking the number of such students in the department to five.

The Masters course in Coal Geology has continued to attract support. Enrolments in the postgraduate coal courses rose to 19. The involvement of persons from outside the university in the teaching, especially practising geologists from the coal and related industries, proved successful. The advisory committee for the course continued, with Mr R. G. Wilson, Superintendent Geologist, BHP, as Chairman.

Research Theses Completed
PhD
Low-grade metamorphism in sedimentary sequences.
The organic petrology of oil shales.

Research Theses in Progress
PhD
Thermal history of the Cooper and Eromanga Basins.
The Permian coal-bearing basins of Western Australia and India — a comparison.
Studies in coal-bearing sequences in New Zealand.

PhD (part-time)
Sedimentation and diagenesis in the Southern Coalfield, NSW.
Igneous rocks of the southern Sydney Basin.
Depositional and post-depositional of some sedimentary rocks, NT.
Geochemistry of recent sediments in Lake Illawarra.
Thermal regimes in Australian sedimentary basins.
Volcanic rocks in central-western NSW.
Sedimentology of the Eastern Carpentaria Basin.
Oil shales.
Relationship between coals and associated source rocks.
Aspects of sedimentology of coal measure sequences.

MSc
A study of the crude oils and source rocks from the Eromanga Basin.
The source rock and reservoir characteristics of the southern Irian Jaya Basins.
Source rock potential of the lower part of the Cooper Basin sequence.
Sedimentological studies of the Whittingham Coal Measures, West Muswellbrook.
Relationships of coal types to associated coal measures.
Aspects of igneous intrusions in the Southern Coalfield.
Studies in micropalaeontology.
Vitrinite reflectance distribution in the Otway Basin.
Palynology of Queensland oil shales.
Temperature effects on the carbonisation of coal for blast furnace coke.
Coal type and quality in the Latrobe Valley coals.
Heat-altered coals in the Collinsville area.
Uranium deposits in NW Australia.
Facilities and Equipment

Equipment purchased:
- Leitz Orthoplan microscope and attachments
- Sony video camera, recorder and 3 monitors
- 3 Leitz Laborlux II-Pol microscopes and accessories
- Vacuum oven
- Polishing machine
- Hydraulic press
- Accessories for Zeiss microscope
- Infrared bolometer detector, $5,000
- Apple II microcomputer with peripherals, $3,955
- Recording Potentiometer, $3,598
- Micom microcomputer with peripherals, $3,242
- Cryostat temperature controller, $2,600
- Babinet-Soleil compensator, $2,439
- Diffraction grating, $2,121
- Simple harmonic motion apparatus, $1,800
- Tool post grinder with accessories, $1,723
- Cathode ray oscilloscopes, $1,620
- Equipment from Department of Chemistry, $1,500
- Electron diffraction tube, $1,473
- Dye laser optics, $1,465
- Photomultiplier tube, $1,182
- Crystal wire saw (balance), $1,181
- Digital plotter, $1,000
- Camera, $771
- Quartz windows for cryostat, $620
- Optics for laser, $603
- Printer and interface, $600
- BMC printer, $596
- Free full apparatus $460
- Digital micrometer, $442

PHYSICS

In order to increase the laboratory content of the course at 300-level three of the subjects offered at this level, PHYS302, 311 and 322 were modified. Also, because of small enrolments, and to reduce the number of subjects offered, PHYS248/348 was offered only at the 300-level and will be available only every alternate year. In addition, a large number of subjects were withdrawn from the Calendar in order to lower substantially the apparent departmental offering; this greatly reduced the flexibility for part-time students and on-physics majors without in any way affecting the teaching load of the department. In order to promote improved study habits a series of quizzes were introduced as part of the assessment in PHYS142, a second session subject.

The EFTS of the department increased by about 15% to 95 in 1983 mainly due to engineering enrolments. Only about 25% of the 100-level physics majors were enrolled in one of the first year physics subjects.

The pass rate in PHYS141 and 142 was one of the lowest on record. This may have been due to the large tutorial classes needed in Session 2 to cope with the large student load in that session and also to general apathy of the students towards these subjects.

There were five physics majors in 1983 at 300-level and two at 200-level.

One physics major was proceeding toward a higher degree, two were P/T students already employed and the other two hoped to enrol in the Honours program.

The Department of Physics presented a very popular Open Day Program in 1983. A number of dramatic and educational demonstrations were given along with a set of physics movies and visits to the research laboratories.

Research Theses Completed

MSc
- Properties of Fission Neutron Spectrum of Californium 252
- An Encoder System for the 18-inch Telescope and uvby Hβ Photometry for Bright UV Stars

Research Thesis in Progress

PhD
- Study of Neutron Capture in the Magic Nuclides at N = 50 and N = 82

MSc
- An Infrared Wavelength Modulation Spectrometer for the Study of Impurity Spectra of Semiconductors
- Scattering of Light by Solids
- A Survey of Infrared Astronomical Objects
- A Study of Some Infrared Detectors

Equipment

The following equipment was purchased (or ordered):
- X-ray apparatus and accessories, $7,286
- Dye circulator for dye laser, $5,884
- Lock-in amplifier, $5,949
- Germanium photomultiplier, $4,165
- Infrared bolometer detector, $5,000
- Apple II microcomputer with peripherals, $3,955
- Recording Potentiometer, $3,598
- Micom microcomputer with peripherals, $3,242
- Cryostat temperature controller, $2,600
- Babinet-Soleil compensator, $2,439
- Diffraction grating, $2,121
- Simple harmonic motion apparatus, $1,800
- Tool post grinder with accessories, $1,723
- Cathode ray oscilloscopes, $1,620
- Equipment from Department of Chemistry, $1,500
- Electron diffraction tube, $1,473
- Dye laser optics, $1,465
- Photomultiplier tube, $1,182
- Crystal wire saw (balance), $1,181
- Digital plotter, $1,000
- Camera, $771
- Quartz windows for cryostat, $620
- Optics for laser, $603
- Printer and interface, $600
- BMC printer, $596
- Free full apparatus $460
- Digital micrometer, $442

FACULTY OF SOCIAL SCIENCES

EDUCATION

This is the final Annual Report from the Department of Education in the form in which it has existed since the establishment of the University. During 1983, the Department worked together with the Institute's School of Education with a view to establishing a Faculty of Education. With the Faculty coming into existence on 1 January, 1984, neither the Department nor the School could remain if the exciting new directions were to be pursued.

The Department nevertheless continued to develop during 1983, with healthy enrolments from 100-level through to
The capacity of the Department to produce research and published work continued to improve steadily, and an effort has been made to ensure that this rate of development will continue as the members of the Department take their places in the new Faculty of Education.

Research Theses Completed

MA
The Impact of the University of Sydney in the Secondary Curriculum in N.S.W. between 1865 and 1890.

Research Theses in Progress

PhD
Physical Education and Sport in the Australian State School System.
Relationships between Psycho-social Variables and Music and Dance Traditions in the Philippines.
Teacher Belief Systems, Attitude Towards Drama and Educational Outcomes.
Diagnosis and Educational Placement of Minimal Mental Retardates.
Social Dialect and Educational Failure.
Educational Policies and Technological Change.
Epistemological Foundations of Educational Innovation.
Learning in Classroom Settings.

MA
Curriculum Development in the Teaching of History in N.S.W. Schools in the Period 1880 to 1920.
Bilingual Education: A Study of Some Attitudes and Expectations in Australia.
The Function of Imaginative Play in Young Children.
Compensatory Education.
The Significance of the Concepts of Motive, Conflict and Relationship to Establishing Empathy in the Teaching of History.
Some Implications of Compensatory Education.

MEd
Retrospective Analysis: A Methodology for Curriculum Development.
Corporate Planning Behaviour in some Tertiary Institutions.
Psychological Factors, Motivation and the Adult Illiterate.

GEOGRAPHY

Although 100 level enrolments continued to climb during 1983, due principally to the presence of the first crop of Environmental Science Degree Students, and while the two second year 'environmental' subjects were well patronized, most other 200 and 300 level subjects attracted smaller enrolments in 1983 than 1982, the significant exceptions being the two 300 level Human Geography subjects. Overall, however, the departmental student load at audit date was up over 1982 by nearly 13 per cent.

All staff were again actively involved in research; publication of their findings took place in journals, books and collections having their origins in the USA, the United Kingdom, West Germany, Singapore, Hong Kong and New Zealand as well as in Australia. Locally, several staff and graduate students were again professionally involved (through the Friends, and privately) in the production of Reports for Government and other bodies.

The first PhD to be gained by a postgraduate student in the Department was awarded to Dr A. R. M. Young for a thesis on a local environmental topic.

The Department's significant role in Australian professional Geographical/Geomorphological organisation affairs reported on last year continued unaltered in 1983.

As a result of funds released by a member of staff taking Long Service Leave on half pay the Department was able to acquire the services of a distinguished English academic for the Second Session. The injection of new ideas and a new personality into the Department was greatly appreciated by staff and students alike.

The Department continued to build up its technical capacity to conduct field and laboratory investigations relating to teaching and research in Physical Geography as a result of continuing support from the University's Equipment Vote. Additionally, substantial financial support was received from an outside agency for the acquisition of specialised computer hardware and software.

In the course of 1983 several issues relating to the Departmental teaching program crystallised. In particular the growing preference among students for environmentally oriented subjects evidenced in the continuing high enrolments for GEOG 261 ('Environmental Impact of Man') and the heavy enrolments for a new subject GEOG 207 ('Environmental Hazards' — with 40 students one of the largest 200 level classes we have had in the past decade) was both a pleasure because it identified a clear vein of student interest that is fully compatible with one of the Department's disciplinary strengths; an embarrassment, however, because, if this situation was to continue, the deployment of adequate teaching resources to this area would require some reduction in other fields which, while less well patronized, are nevertheless, fundamental components of a properly structured major in Geography, particularly on the Human side of the Departmental program.

Research Thesis Completed

PhD
Upland Swamps (Dells) on the Woronora Plateau, N.S.W.

MSc
Edaphic and Other Environmental Conditions Associated with Rainforest Development in the Illawarra District.

Research Theses in Progress

PhD
Aspects of Industrial Change and Regional Development.
Vegetation of Moreton National Park.
Industrial Development in Sri Lanka.
The Composition and Distribution of Rainforests in the Illawarra.

MA

In the Department of Geography, Miss Clarrie Boura, a tutor, takes two students in a practical exercise. The student in the middle is using a stereoscope.
Vegetation Communities of the Budawang Ranges.

Facilities and Equipment
During 1983 the Department purchased six more stereoscopes ($4,869), a rubber boat and outboard motor for surf zone studies ($3,200), a photo-macro-copy system ($920), electronic planimeter ($600), a mobile drilling rig ($5,505), computer hardware ($7,550) to support the graphics computer equipment under order for 1984 on a Marine Science Research Grant to Dr Bryant, and full colour air photo coverage of the Wollongong district.

PSYCHOLOGY
In 1983 400 level students were offered for the first time an alternative path to honours in Psychology. The usual honours year involves a theoretical thesis, an empirical thesis, the course-work of the Psychology Honours Theory Seminar and participation in the Thesis Seminar. The alternative path allows honours students to substitute two post-300 level subjects for the theoretical thesis.

Two graduate diplomas in Psychology were offered for the first time. One, the Diploma in Psychology, is available to graduates with the degree of Bachelor with at least 24 credit points in 300 level Psychology subjects, or their equivalent. This Diploma enables pass students to update or extend their psychological studies into a fourth year. The other, the Diploma in General Psychology, is available to Bachelor degree graduates (or their equivalent) with substantial and coherent study at the 300 level in disciplines other than Psychology. This Diploma enables these students to add knowledge of individual human problems and their solutions to their knowledge and skills in other fields.

Our graduates continue to find employment as psychologists, with government agencies, hospitals, tertiary institutions, schools and industry. As we offer more graduate programs in psychology locally, an increasing number are continuing as our students, several on postgraduate scholarships. Others are taking up postgraduate scholarships at other universities.

During 1983 the staff of the Department were involved in many activities to attract students to the University, participating in Schools' Day; in a 'Careers in Psychology Forum' (sponsored by the Australian Psychological Society); in the University Open Day (when all academic members of the department not on leave, together with two of the support staff, organised a display of psychological equipment and provided psychological activities for interested members of the public. The program involved films, relaxation sessions, perception demonstrations and the monitoring of psychological responses; and it allowed for discussion of these psychological phenomena with the staff on duty); teaching in W.E.A. Courses; teaching in T.A.F.E. courses; and with Dr D. Diespecker giving six day-long public demonstration workshops in the Gestalt approach, and three intensive workshops in the Gestalt approach at Jasmine, Northern N.S.W.

Research Theses Completed
PhD
Gestalt Therapy.
The relationship between mother and infant.

MA
Social skills development in a corrective institution.

Completed and Under Examination
Sports medicine — the psychology of rehearsal.

Research Theses in Progress
PhD
Health psychology.
Transpersonal approaches to healing.
Individual differences in imagery.

SOCIOLGY
The Master of Studies (Sociology and Social Policy) was offered for the first time in 1983.

There was a substantial increase in enrolments. Overall the increase was 28.4%; the subject level breakdown at 30 April 1983 was Sociology 100:39%, Sociology 200:2.9%, Sociology 300:53.4%.

Departmental pass rate has remained constant at 87%. The first year pass rate is marginally higher than the University rate at 78%, and is similar to 1982. Later year pass rates are approximately 7% higher than the University rate, reflecting a continuous assessment system under which some possible failures withdraw during the year.

The first year attrition rate for sociology is higher than for either the Social Science Faculty or the University. This results from the continuous assessment of students. However at 300 level there was a negative attrition rate of 7.1%.

The number of students majoring has remained constant. Interest in the postgraduate Diploma declined, but was replaced by enrolments in the Master of Studies programs.

Postgraduate courses have maintained the same structure in terms of teaching and methods of assessment. The Master of Studies courses have led to an increase in the number of longer research papers.
Departmental activities aimed at attracting students included participation in the University day for year 12 students, and secondment of departmental members to high schools to talk to prospective university students; circulating all schools in the area with pamphlets and posters aimed at publicising university opportunities in general and the offerings of Sociology in particular; letters were sent to students who had made inquiries about courses at this University for an arts degree. The letter contained information concerning courses offered by the Department. On a more general basis, the Department also had links into the community by a way of such activities as talks to service clubs and providing media contacts for the local area as resource persons available for comments on social issues or news items affecting the region.

Research Theses in Progress

PhD
- Scientific Communication in the field of international relations.
- Science in Society. A comparative perspective of alternative knowledge systems from the viewpoint of the sociology of knowledge.
- The historical determination of ideologies.
- The formation of social change movements.
- Culture and ideology in action — Owner Driver Truckies in NSW.
- The organizational structures of intentional communities.

MA
- Women and work.

It is to this enterprise that the Centre will devote itself over the next six years. As the first full-time Head of the Centre (writes Dr Ron Witton) I would like to thank my predecessors who helped keep the Centre alive: Professor R. King, Professor S. Hill, Dr A. Jakubowicz, R. Horne, Professor A. Clarke and R. Stewart. Special appreciation is expressed to Michael Morrissey, the longest-serving staff member of the Centre, who had given unfailing support and done much to link the Centre's research activities to the needs of community groups in the Illawarra.

There was no teaching at the Centre in 1983.

A program for a Master of Studies was approved in 1983 for introduction in 1984. The program has been developed to meet the need for a graduate level course which will provide the student with both understanding and skills to work within a multicultural context.

The Centre publicised its new teaching program through newspaper advertisements, interviews on radio and television and in the newspapers, contacts with and mailings...
to relevant departments in other tertiary institutions, appearances at ethnic groups' meetings, and brochures mailed to final year students at the University.

**Facilities and Equipment**

The Centre moved from Porter Street to 53 Northfields Avenue in March 1983. This has resulted in a reduction in the amount of space available in the Centre which may cause difficulties as the level of research activity increases. However the new location has improved access to University services.

An Apple Word/Data Processor has been installed and is being used for the Centre's staff training program and evaluated for its potential contribution to the research and teaching program. Provision has been made in wiring of the new offices for connecting the Centre to the University Computer Centre.

**GENERAL STUDIES**

The general aim is to provide undergraduate students with a richer and more varied subjects offering than this University could otherwise afford. This is done by means of Interdisciplinary subjects where General Studies co-ordinates and services the presentation of subjects based on a single department but offered also under a General Studies number and aiming to attract students who might not otherwise look under the science schedule, for example, when enrolling or re-enrolling and subjects which larger universities offer but for which there is no departmental establishment at Wollongong. A further important function of General Studies has been the launching and testing out of new subjects, which if successful can then be attached to the appropriate subject department.

Currently there is no Graduate level program, though a Diploma has been discussed in committee.
The year saw the consolidation of the Associate Diploma courses in the Creative Arts, and the first group of students successfully completed their two years of study. The range of offerings in these courses placed a severe strain on the part-time funding, but it was felt that the planning for Bachelor of Creative Arts degree scheme, and the partial phasing out of part-time studies for the Associate Diploma, would help to relieve this situation.

The early part of 1983 was devoted to the creation of the Stage III submission for a new undergraduate degree course in the Creative Arts (BCA) and, by the end of the year, this submission had passed through the various bureaucratic procedures and the final go-ahead was given during the latter part of 1983.

Postgraduate degree programs were initiated, too, and a number of applications for a degree of MA(Hons) Creative Arts were received and processed for commencement in 1984. Further submissions were prepared for the acceptance by the University of a Doctoral program in the Creative Arts which would enable students to obtain a Doctorate in Creative Arts by submission of practical programs. Not unnaturally, demands were made for the presentation to the committees of much more detail as to the modes of assessment and evaluation, and this was set in hand for presentation during 1984.

Some movement was made in the areas of enhancement of building space and this, coupled with an increase in the full-time staff of the School, enabled a steady movement forward to the establishment of the School at diploma, undergraduate, and postgraduate degree levels.

During the early part of 1983, Professor Edward Cowie took up his appointment as Professor and Head of School. He was quick to point out that the main thrust of development of the School was to be in the area of establishing a 'high-powered' staff to attract students of high standard. The following appointments were made during 1983, which have gone a long way to establishing a firm base on which to build up a national and international reputation:

**Bert Flugelman**: was appointed as a Lecturer in the School. He is ranked among the top six sculptors working in the world today. His work is displayed in museums throughout the world and the innovations he created in his teaching work in Adelaide secured for him the University's support for his application.

**Richard Hook**: was also appointed to Lecturer level. He is one of the finest Painter/Printmakers in Australia, and has taken on the role of Head of the Drawing and Printmaking strands in the School.

**Andrew Ford**: has gained a reputation as one of Europe's most promising young Composers and Painters. His unique blend of music and the Fine Arts has helped to establish the School of Creative Arts in its declared will to create a new kind of 'fusion' of the Arts in a tertiary education program. He was appointed to the Lecture scale.

**John Eveleigh**: was appointed as a Visiting Senior Lecturer in the School for a minimum period of three years. His work is famous in Europe. He was described by Lord Clark (Kenneth Clark) as 'the greatest draftsman/artist working in the fields of portraiture and landscape in the United Kingdom'. His place in the School forms the basis for a platform of choice between realism and abstraction.

**Lindsay Duncan**: having begun his professional career in the field of computing, Lindsay Duncan turned to Ceramics. For a number of years, he was a part-time Lecturer in the School of Creative Arts, where his success and rising national reputation as a Creative Artist secured for him the support of the School in pressing for his successful promotion to a full lectureship for a minimum period of one year, beginning in 1984.

During the planning stages for the BCA submission, account was taken of the existing studio and workspace facilities, and various plans were put forward for the enhancement of buildings to enable a full work program to occur by 1984.

Work was initiated in the Music Auditorium to bring that area into line with professional public concert format, and this work was completed by the end of 1983.

Plans were also prepared for the preparation of a new Sculpture Studio, a Printmaking Room, and a new Fine Arts Studio (Painting). These plans were approved and work was to begin in the early part of 1984.
In consultation with the Director of the Institute, the School of Creative Arts proposed the development of an Art Gallery. This plan was also approved and the new Gallery was to be built and equipped for opening by the end of 1984.

Through the generosity of the School of Education, most of the studio space in Building 25 was given over to the School of Creative Arts, and new studios for Textiles, Arts Seminars, and Creative Woodcraft were cleared to come on stream during 1984.

During 1983, plans for the future placement of the Conservatorium within the aegis of the University were submitted and approved by the Council and the political authorities. Subsequent to this development, the School of Creative Arts began to make plans for fusion of interests and Arts activities, and it was decided that a great deal of forward planning would be needed during the early part of 1984 to ensure that this new development would focus upon a unique offering to the world of Arts education in Australia.

Course Units Offered in 1983 — Performing and Visual Arts

Instrumental Performance Studies A
Instrumental Performance Studies B
Composition Studies B
Composition Studies A
Instrumental Performance Studies C
Instrumental Performance Studies D
Instrumental Performance Studies E
Vocal Performance Studies
Musical Direction
Musical Theatre Opera Technique A
Acting Technique B
Acting Technique A
Acting Technique A (Modified)
Theatre Performance A
Film Techniques
Television Techniques
Production Technique A
Production Technique B
Film and Television Production I & II
Dance Technique A
Dance Technique B
Creative Writing
Production Performance A
Drawing and Design
Painting Studio A
Painting Studio B
Textiles Studio A
Textiles Studio B
Ceramics Studio A
Ceramics Studio B
Printmaking Studio A
Jewellery
Sculpture Studio A
Historical and Cultural Studies
Students in the Bachelor of Education (Primary) course, in which an 'internship' program in the sixth session has been introduced; this means that, for ten weeks of session 2, third-year students spent three days each week in schools.

A major innovation in teaching method during 1983 was the introduction of an 'internship' program in the sixth session of the Bachelor of Education (Primary) course. This meant that, for ten weeks of session 2, 1983, third-year students in this course spent three days a week in schools. The other two days were spent in lectures which were designed to introduce knowledge and skills directly related to their three teaching days each week and to follow up ideas gained from, or problems encountered during, this teaching.

Written reports from lecturers, students and teachers indicated a generally favourable reaction to this program. Lecturers and students were the most enthusiastic about it. Some teachers felt that a six-week block of practice teaching would be preferable but they were prepared to co-operate with the internship as planned. Many suggested that the first three rather than the last three days of each week would be preferable for the in-school experience component and this suggestion will be adhered to in 1984.

It is planned to continue with the internship in 1984 since, in the opinion of the staff involved, it provides a means of integrating theory and practice in a highly effective way.

Another innovation in teaching method again involved the Bachelor of Education (Primary) course. In this case it concerned the Language Education strand where students, in addition to attending lectures, visited schools on a regular basis and carried out a diagnostic and remedial program for children with learning difficulties. Again this was very well received by teachers and children and provided for students an excellent opportunity to put into practice and to evaluate in a real and meaningful way, theoretical insights and methodologies gained from lectures.

The School of Education was involved in the usual student attraction activities of the University. It prepared brochures listing and describing courses on offer within the School and these were widely distributed to schools. It also took part in the Open Day program by opening up the Curriculum Resources Centre and providing a series of activities.

The annual visit by pupils in Form 12 was far more successful and films and talks were given on courses available for primary and secondary teachers. Well over 100 pupils attended these talks. They asked a good many questions and showed a good deal of interest in the information provided.

Possibly the most effective means of attracting students was the series of entries describing the School's courses in the U.C.A.C. Handbook for 1984.

CENTRE FOR STUDIES IN LITERACY

During 1983 the Centre serviced courses taught by the School of Education (Institute Sector) and the Department of Education (Faculty Sector). Two distinct kinds of servicing occurred: teaching classes in the Literacy education area at both undergraduate and graduate levels; and consulting with course co-ordinators concerning matters of subject/course and implementation.

A number of courses changed in content and orientation as a consequence of both these activities.

At the undergraduate level, the Centre aims to develop a research based theory of literacy education which will be 'fed' into the various undergraduate Literacy-education courses being offered in the University.

At the graduate level, the aim is as for the undergraduate level, but with the additional aim of designing and offering Masters/Doctoral programs for educators who wish to specialise in literacy education areas. These programs are being offered through the already existing M.Ed. Ph.D. structures within the Faculty of Education.

Undergraduate language education courses are slowly being changed in content and teaching methods. With respect to content recent research findings which relate to the PROCESSES that underly successful and unsuccessful reading, writing, spelling, and other accoutrements of literacy are being introduced. The role of computer technology in the identification, diagnosis, remediation of literacy and the effect of computer technology on learning in these areas is also being introduced to these courses. With respect to teaching, students are being asked to examine their own processing behaviours (how do I read? how do I write?) by using simple analytic techniques developed in the Centre.

Head of the Centre for Studies in Literacy is Dr Brian Cambourne, who takes a highly innovative approach in his teaching.
SCHOOL OF INDUSTRIAL AND ADMINISTRATIVE STUDIES

The School started its teaching programs in 1983, with an intake of part-time students into two Associate Diploma courses (Industrial Studies and Computer Applications) and a Postgraduate Diploma course in School Administration. The teaching priorities of the School have been in the initial offering of subjects within each of the above courses.

Course development aspects of the school were focussed upon development of initial course and subject sequence proposals for the planned profile of development for the School 1983-1987 inclusive.

Detailed development of proposals for the course: Postgraduate Diploma in Industrial Health and Hazard Control, initially scheduled for introduction by 1984. After considerable initial course development, the course was approved in principle but deferred for introduction until 1985, subject to further clarification of staffing and resource requirements.

Detailed development of a subject sequence in computer applications at degree level. This sequence was planned to extend the study options of students studying existing degrees within the University (either Faculty or Institute), by offering a coherent sequence of study in the applications of computer technology to business, industry and training. This subject sequence was approved for commencement in 1984.

The School also developed and offered a series of short courses in computing on a non-credit basis, for the continuing education of interested persons in the Illawarra region. The courses were offered on a direct cost recovery basis during lecture recess times, and proved to be sufficiently attractive that all short courses scheduled were able to proceed.

The School participated in the Open Day held for Year 12 students for regional High school students, and also participated in the University Expo/Open Day held in October. A display of films and microcomputer facilities were staffed by the School for the University Open Day.

EXTERNAL STUDIES DIVISION

The Division moved early in January from the ground floor of the former Library building (now Curriculum Resources Centre) to the lower ground floor of the Administration building, Western side. The new area consists of two adjoining rooms with ready stairway access to the Institute's Main Administration Office.

Of the courses, 801 and 803 had both First and Second Session intakes, 801 being a single session course. The mid-year intake for 803 imposed subject sequence variations because of sessional difference in offerings.

Orientation days were held in both First and Second Sessions and all newly enrolling students were required to attend. Re-enrolling students were reminded of the advantages of meeting their subject lecturers. In First Session Orientation was held over a weekend (Saturday and Sunday 26 and 27 February) and lecturers met with students for 40 different subjects in this period. In Second Session Orientation was held on one day only (Saturday 23 July) with compulsory attendance for newly enrolling students and some subjects requiring face to face contact. Lecturers and students at both Orientation days were addressed by the Director of the Institute, the Head of the School of Education, the Executive Officer of the University Library and the Head of External Studies.

Principal elements in any external studies operation are preparation and distribution of publicity and study materials. Quality of presentation is important in establishing that courses and subject are offered in a comprehensive, worthwhile fashion. The current style of preparing material operated fairly well in 1983 although assessment of study material and its revision were subject to delays.

An important initiative was the introduction of the External Studies Newsletter which appeared five times during the year. It was created to meet occasional communication needs and was used to advise students on developments in External Studies, to keep them informed on specific aspects of the various programs, and to highlight issues arising from servicing student needs.

Total printing expenses in 1983 were extremely high ($17,021.77) or 87.53% of the allocation ($19,447).

The Division operated relatively successfully in 1983. Adjustment to changed circumstances (of location and some staff) was creditable. As an operational unit of the Institute, and hence the University, its effectiveness was maintained.
The University draws its name from the city of Wollongong, which lies some 80 kilometres south of Sydney (the capital of New South Wales). Wollongong is also the seventh-largest city in Australia.

The Illawarra region, which is centred on Wollongong, has a population of almost 300,000.

The University grounds stretch from the lower slopes of the rainforest which covers the nearby escarpment and lie within close reach of the sea. And the beautiful beaches in the region provide recreation facilities for student and staff.

The campus, which is adjacent to the Botanic Gardens, is, too, a pleasant environment for both study and relaxation.
Research interests and publications

FACULTY OF COMMERCE

ACCOUNTANCY

Research Interests and Major Topics of Investigation

- Australian Company Financial Reporting
- New Zealand Company Financial Reporting
- The Australian Corporate Law Data Base Project
- Technology Park Study
- Role of the Temporary Assistance Authority
- Joint and Interacting Effects of Qualified Opinion on Cognitive Style Lending Decisions
- Adaptors and Innovators: An Empirical Study of Academic and Career Preferences of Accounting Undergraduates
- The Joint Effects of Audit Qualifications and Management Consultancy Services on Bankers' Lending Decisions
- Corporate Social Responsibility Accounting in Australia
- An Evaluation of the Financial Effects of Counseling Services for Ill or Injured Patients Who Are Hospitalised

Monographs


Referred articles


Reports


ECONOMICS

Research Interests and Major Topics of Investigation

Labour Economics and Industrial Relations

- The occupational and industrial segregation of women
- Theory and measurement of labour hoarding and the demand for labour
- Wages policy and assistance to industry
- Inflation and unemployment
- The general deterrent effect on crime of longer prison sentences

Regional Economics

- The development of input-output tables for economic analysis of the Wollongong Region
- Methodology for estimating regional input-output tables
- Social accounting for regional multi-regional systems
- The development of an integrated multi-regional model for the Australian States
- Regional development and the management of conflict
- Input-output analysis and planning models

Economics of Developing Countries

- Economic demographic modelling for Papua New Guinea
- Strategies to alleviate absolute poverty among target groups in the Malaysian agricultural sector
- Australian economic activity in the South Pacific

Other Research Areas

- Taxation of expenditure (with special reference to lotteries and wine)
- The progressivity of the Australian tax system
- Transition from non-renewable to renewable sources of energy
- Swedish exports of manufactured goods: lessons for Australia

Monographs

- J. Mangan. 'The Demand for and Supply of Labour', Ch 1 in Mangan and Edwards, above.
- J. Mangan. 'The Intergenerational Flow of Labour Services', Ch. 2 in Mangan and Edwards, above.
- R. Markey. Trade Union Response to Technological Change in Australia. Industrial Relations Research Centre, University of New South Wales, 1983.
Refereed Publications


Conference Papers


R. Markey. 'A comparative analysis of trade union bargaining over technological change in Britain, Sweden, and Australia; at ANZAAES, Perths, November 1983.

R. Markey. 'Technological change and unemployment' at Conference on Political Dimensions of Technological Change, Griffith University (Keynote Address) (October, 1983).

C. Smith. 'Initial explorations into an alternative system for small economy input-output table construction; at Eighth Meeting of Regional Science Association (Australia and New Zealand Section), Armidale, (November 1983).

C. Smith and W. Isard. 'Fusion of the abstract and practical in conflict analysis and management' at Third International Symposium of the Rotterdam Institute for Multi and Inter Disciplinary Research, Rotterdam, Netherlands (February, 1983).

Reports


C. Smith, et al. 'Economic Impact of Mt. Lyell Mining and Railway Company Ltd on the Tasmanian Economy.', Confidential Report to Mt Lyell Mining and Railway Co. Ltd. (December, 1983).

C. Smith, et al. 'Economic Impact of Tioxide Australia Limited on the Tasmanian Economy.', Confidential Report to Tioxide Australia Ltd (December, 1983).


C. Smith, et al. 'Economic Impact of Que River Mining Pty Ltd on the Tasmanian Economy.', Confidential Report to Que River Mining Pty. Ltd. (December, 1983).


C. Smith, et al. 'Economic Impact of Emu Bay Railway Co. Ltd. on the Tasmanian Economy.', Confidential Report to Emu Bay Railway Co. Ltd (December, 1983).


C. Smith, et al. 'Economic Impact of Camalco Aluminium (Bell Bay) Limited on the Tasmanian Economy.', Confidential Report to Camalco Aluminium (Bell Bay) Ltd. (December, 1983).

J. Steinke. 'Economic implications for Leeton of the establishment of Wumbulgal saleyards'. Confidential report to Leeton Shire Council. (January 1983).

FACULTY OF ENGINEERING

CIVIL AND MINING ENGINEERING

Research Interests and Major Topics of Investigation

Water Engineering.

Fluid Mechanics.

Geomechanics.

Structural Analysis and Identification.

Materials.

Mining Engineering.

Environmental Engineering.

New Developments.

Refereed Publications


Reports


M. J. Lowrey, 'Plot Package Examples', Department of Civil & Mining Engineering, Univ. of Wollongong, (1983).


R. W. Upfold, 'Crisis Situations with Time in Coal Mine Ventilation', Department of Civil & Mining Engineering, Univ. of Wollongong, April, (1983).


**ELECTRICAL AND COMPUTER ENGINEERING**

Research Interests and Major Topics of Investigation

- Robot Arm Control Systems Electronic Data Logger.
- Methods of Improving Efficiency of Electrostatic Precipitator at Munnborah Power Station.
- Microwave Imaging Systems.
- Development of a Beamforming Antenna.

Establishment of a Robot and Automation Centre.

Monographs

Refereed Publications

Conference Papers

Reports

Other Publications
MECHANICAL ENGINEERING

Research Interests and Major Topics of Investigation
Bulk Solids Handling. 
Flow Properties of Coal for Storage Bin Design. 
Flow Properties and Handling of Precipitator Dust. 
Pneumatic Conveying of Bulk Solids. 
Computer-aided Design. 
Prediction of Bin Wall Loads. 
Uncertainties in the Determination of Bin Loads. 
Coal Technology. 
Solar Energy. 
Data Capture and Analysis. 
Additionally, the Department continues to use is Cryogenic Frost Simulator to test systems and devices under simulated freezing conditions.

Environmental Engineering. 
Machine Element Design. 
Hydrodynamics. 
Hydrodynamic Lubrication. 
Torsional Vibration. 
Residual Stress Measurements. 
Wind Energy. 
Boundary Value Problems.

Refereed Articles


Other Publications


Reports

A. G. McLean, P. C. Arnold and D. J. Martin. 'Draft Code for the Evaluation of Bin Wall Loads'. Prepared for the Committee on...
Research Interests and Major Topics of Investigation

Biological Stress Testing.
Indentation.
Plastic Anisotropy.
Plastic Strain Hardening.
Ultra-rapid Annealing.
Metalurgy in Antiquity.
Thermomechanical Processing of High Strength Low Alloy Steels.
Fracture at High Temperatures.
Recovery & Recrystallisation under Hot Working Conditions.
Metallic Glasses.
Ternary Eutectic Systems.
Thermal Stability of Eutectics.
Sub-structure Development in Eutectics.
Shape Memory Effect.
Martensitic Transformation.
Metallographic Methods.
Ordering of Iron-Platinum.
Tempering of Martensite.
Transformation Diagrams.
Welding.
Solidification of Stir-cast Alloys.
Filling and Emptying of Bims.
Kinetics of Materials Screening.
Permeability of Blast Furnace Burdens.
Size Segregation in Blast Furnace Charging.

In his research into metallic glass in the Department of Metallurgy, Dr. Gordon Delamore achieves ultra-high-speed cooling by injection of a stream of molten alloy on to the surface of a rapidly rotating copper drum.

Review


Report


ENGLISH LITERATURE AND DRAMA

Research Interests and Major Topics of Investigation

Refereed Publications


Publications: Drama Productions


Conference Papers


J. Wieland. "Winning and Losing: Australian Humour" delivered at the Australian and South Pacific Association for Comparative Literature Studies Conference held at Monash University, November 26-28, 1983.

Conference Papers


Monographs


European Languages

Research Interests and Major Topics of Investigation

The works of Federico De Roberto and their evaluation by Italian literary critics from 1988 to 1983.

De Roberto and his collaboration with Verga and Puccini. Compilation of a 3-level sequence of materials for teaching Italian at university level - aimed primarily at Australian universities.

The nature of eroticism in contemporary French literature.

The writing of history as a form of political propaganda in the Italian Renaissance.

Influence of the French education system on the destruction of regional languages; the politics of such policies.
Conference Papers

A. M. Healy. 'The Crisis in Asian Studies' Vietnam To-day, XXVII, November 1983.


Research Interests and Major Topics of Investigation

HISTORY

Conference Papers


HISTORY AND PHILOSOPHY OF SCIENCE

Research Interests and Major Topics of Investigation

Australian government, public participation and the control of science and technology: the video industry in Australia.

The process of theory discovery.

The meridional revolution.

Recombining DNA eugencics and ethics.

Implications of trends in coal and aluminum demand for Australian Energy Policy.

Sociology and political economy of technological development: the nuclear energy debate.

Public accountability and electricity planning in Victoria.

Australia and the changing arms race.

National policy-making for science and technology.

Science indicators for the higher education sector.

An evaluation of the effectiveness of the Commonwealth Postgraduate Awards Scheme.

Australian technology policy.

Goal direction of life sciences.

Sir John Herschel's philosophy of science.

The sociology of scientific controversy. Vitamin C megatherapy.

The social construction of Darwin's theory of sexual selection.

The scientific revolution and the seventeenth century.

The historical anthropology of activities of modern science - 1660-1650.

The 'Cruikshank' of the seventeenth century and the origins of modern science - 1650-1660.

Monographs


Conference Papers


R. Johnston, 'Do Australian Managers have the right attitude?', National Technology Conference, Canberra, September, 1983.


L. Chipman. 'Private Choice and Public Policy in Education', Annual Conference, Fabian Society of Victoria, Sorrento, April 1983.


L. Chipman. 'Reading, Writing and Microchips.' Opening Address, EDUCARE '83 Exhibition, Royal Hall of Industries, R.A.S. Showground, Sydney, August 8, 1983.

L. Chipman. 'Policing Our Thoughts', Sydney Philosophy Club 1983.


Reports


R. Johnston. Submission to the Industries Assistance Commission on Certain Budgetry Assistance to Industry.


R. Johnston and S. Liyanage. An Evaluation of the Commonwealth's Post-Graduate Award Scheme, 3 volumes, AGPS, Canberra, 1983.


PHILOSOPHY

Research Interests and Major Topics of Investigation

Political Obligation.
Applied Aesthetics.
Philosophy in Education.
Philosophy of Biology.
Psychological Explanation and Biological Methods.
Morality of Killing.
Extra legal Rights.
Existence.
Probability and Induction.
Propositional Attitudes.

Refereed Publications in Specialist Philosophy Serials


J. D. Mackenzie. 'He and She', Australian Logic Teachers Journal, 6 (1982).

Refereed Publications in Other Specialist Serials

H. Beran. 'Must Secession be Rebellion?', Politics, 18 (1983), 49-56.


Conference Papers


Computing Science

Research Interests and Major Topics of Investigation

Computer Vision.
Computer Assisted Structure Elucidation.
Teaching Aids.
PASCAL Interpreter.
Parallel Processing.
Combinatorics.
Performance Evaluation.
Robotics Learning Environment.
Robotics Languages.
Local Area Networks.
Student Performance.

Refereed Publications


Students in Computing Science appear sceptical about the readout from the computer screen.

Conference Papers


Reports


Reports — Preprint Series

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MATHMATICS

Research Interests and Major Topics of Investigation


Mean periodic functions.
Systems of linear functional equations.
Analysis of freight deregulation impacts.
Mathematics as applied to transport systems.
Invariant means on topological groups.
Aspects of Sinusoidal time series models.
Phyllotaxis (the study of the arrangement of leaves on a stem.)
Mathematics of aesthetics.
The effects of southerly 'busters'.

Refereed Publications

B. G. Quinn. 'Testing for the presence of Sinusoidal Components.'
Research Students’ Publications


Conference Papers


‘The costs of New South Wales freight deregulation’, presented at the Fifth Conference of Australian Institutes of Transport Research, University of Queensland.

Departmental Preprint Series


2/83: M. W. Bunder. Overlapping types in Higher Order Predicate Calculus based on Combinatory Logic.


7/83: M. W. Bunder. Conjunction without Conditions in Higher Order Combinatory Logic (Revised Version).


FACULTY OF SCIENCE

BIOLGY

Research Interests and Major Topics of Investigation

Animal Physiology.

Plant Biochemistry.

Seed Chemistry.

Nitro Metabolism of Developing Legumes.

Nutritional Value of Legume Seed Protein.

Microbial Physiology.

Yeast Water Stress Physiology.

Osmoregulation in Dunaliella.

Professor Blake’s Department of Mathematics research into problems of cavitation has highlighted the fact that the damage is caused by the formation and collapse of vapour bubbles, formed as the result of a local lowering of the pressure in the liquid. This picture shows the growth and collapse of a bubble near a free surface.

Ecology.

Behavioural Ecology.

Neurobiology.

Monographs


Refereed Publications


T. R. Grant and P. D. Temple-Smith. 'Size, seasonal weight change and growth in platypuses, Ornithorhynchus anatinus (Monotremata: Ornithorhynchidae) from the rivers and lakes of New South Wales' Australian Mammalogy, 6 (1983), 51-60.


D. R. Murray. 'Changes in free amino acid and amide composition


L. Ingram, J. Ellis, P. A. Crisp and A. C. Cook; 1983: Comparative study of oil shales and shale oils from the Mahogany Zone, Green River Formation (USAI) and Kerosene Creek Seams, Rundle Formation (Australia). *Chem. Geol.*, 38, 185-212.


B. G. Jones; 1983: River sediments and an ancient example, Triassic Hawkesbury Sandstone south of Sydney. *In Clark, I. F. and Cook, B. J. (eds) Geological Science: Perspectives of the Earth, Australian Academy of Science, Canberra*, 210-211.


FACULTY OF SOCIAL SCIENCES

EDUCATION

Research Interests and Major Topics of Investigation


Monographs


Referred Publications


Conference Papers


D. J. Corson, 'Language and Curricular Knowledge', NSW State Disadvantaged Schools Committee, a paper invited by the Director of Special Programs, (1983).


A. J. Fielding, 'Proposals for a Regionally Based Core Curriculum for Inservice Teacher Education', South Coast Regional Directorate of the NSW Department of Education, (August, 1983).

J. M. Jones and L. V. Still, 'Perceptions of Literacy and Numeracy: A Comparison of the Views held by School Teachers and Business Executives', 3rd ANZAAS Conference, University of Western Australia, (May, 1983).


Reports


Geography

Research Interests and Major Topics of Investigation

Physical Environment Process Studies.

Environmental Problem, Impact and Management Studies.


Social Problems and Impact Oriented Research.

Monographs


Referred Publications

E. A. Bryant, 'Regional Sea-level, the Southern Oscillation and Beach Change, NSW, Australia', Nature, 305 (1983), 213-216.


Conference Papers


G. C. Nanson and E. J. Hickin. 'Meanders Bend Migration, a Function of Stream Power and Sediment Entrainment,' Specialty Conference on River Meandering, American Society of Civil Engineers, New Orleans (1983).


Reports


PSYCHOLOGY

Research Interests and Major Topics of Investigation

Changing definitions of social psychology.
Contradictions: Psychology, Feminism and the Psychology of Women.
Ethical problems in psychology.
Philosophical foundations of experimental psychology and its implications.
Training psychotherapists in Gestalt Therapy, a Micro Lab approach.
Using the theatre metaphor.
The application of 'automaticity' to the understanding of dyslexia.
Physiological correlates of stress.
Physiological correlates of perceptual dysfunction.
Content analysis of verbal communications.
Computers in content analysis scales.
A phenomenological study of perceptions of hostility in Parents and Children.
Men in transition.
The development of a sentograph.
Factors affecting success and failure of computing science students.
Project enrichment in early childhood preschool in Bunyeroo.
The process of making a micro library, University of Wollongong.
Organisational communication and problem solving.
Bulli Health Service Development Project.

Monographs


SOCIOLOGY

Research Interests and Areas of Major Investigation

Community and ethnic affairs.
The sociology of knowledge.
Science and technology.
Education; poverty, and social policy.
The Australian Armed Forces.
Studies in underdevelopment.
Study of women workers in the clothing industry.
Steel, coal and transport industries in the local region.
Poverty and the development of social administration.
Social theory and class analysis.

Monographs


Referred Publications

Conference Papers
A. Jakubowicz, 'Multiculturalism — a programme for social control?', Keynote address, Multiculturalism — Reality and Rhetoric Conference, University of New South Wales, (September 1982).
A. Jakubowicz, 'After the Welfare State: some reflections on urban issues in the client state,' Social Theory and the City Workshop, Australian National University, (November 1982).
A. Jakubowicz et al. 'The Politics of Migrant Social Welfare', Australian Political Studies Association Conference, University of Western Australia, (August 1982).

Report
Professor Stephen C. Hill, 'Technology, Development and Inequality', address to the Science Studies Centre and Centre for Development Studies, University of Bath, England, September 1983.

Professor Stephen C. Hill, 'A Theory of Technology', address to the Social Theory and the City Workshop, Australian National University, (November 1982).

T. Jagtenberg, 'Radical Science' invited paper for a conference on 'Critical and Radical Theories of Science' — jointly sponsored by the Departments of Philosophy and Sociology of the University of Wollongong, New South Wales, April 1983.

T. Jagtenberg, 'The Attributes of the School Health Educator According to the Budgeting Training Program'.

The Buddy Scheme: A Normalization Program.
L. Gow and S. Doyle. The Saturday Leisure Club (2 Annual Reports).
J. Patterson. Peer Pressure.

SCHOOL OF EDUCATION

Research Interests and Major Topics of Investigation
The Process Approach to Children's Writing.
A Developmental Study of the Ways in which Children Learn to Express Themselves in Writing.
Writing in Kindergarten.
Operational Aspects of the S.S. Undola (a collier operating in the Illawarra trade from 1909-1918).
The Manufacture of Salt in NSW.
The Ability of Teachers to Understand and use the NSW Syllabus for Physical Education for Years 7-10.

Referred Publications
L. Gow. 'The Drop-in Centre Concept', Bulletin of the Australian Association of Special Education Teachers, (July, 1983).

Determining Content for Support Documents for the NSW Health Education Syllabus for Years 7-10.
The Attributes of the School Health Educator According to the Consumer.
The Development and Implementation of Leisure Skills Training Programmes for Disabled Children and Adults.
Development of Teaching Strategies for Enhancing Generalisation Outcomes.
The Needs of the Intellectually Handicapped Learner in T.A.F.E.

Monographs
L. Gow. Activities Day Training Program for Disabled Adults.
L. Gow et al. Budgeting Training Program.
L. Gow et al. Travel Training Program.
L. Gow and M. Fabar. Telephone Use Program.
L. Gow and V. Starr. Meeting Procedure Training Program.
L. Gow et al. Newsletter Production Training Program.
L. Gow and S. Doyle. Jazzercise Program for Developmentally Disabled Adults.

L. Gow and C. Gillies. The Buddy Scheme: A Normalization Program.
L. Gow and S. Doyle. The Saturday Leisure Club (2 Annual Reports).
J. Patterson. Peer Pressure.

Referred Publications
L. Gow. 'The Drop-in Centre Concept', Bulletin of the Australian Association of Special Education Teachers, (July, 1983).
CENTRE FOR MULTICULTURAL STUDIES

Research Interests and Major Topics of Investigation

Ethnicity, Class and Social Policy.
- The Relationships of Workers' Compensation to Ethnicity.
- Technological Change and Migrant Employment.
- Industrial Re-training for Workers of non-English-speaking Background.

Multicultural/multilingual Pre-school Education.

Multicultural/language Maintenance Programs in T A F E, Colleges.

Research Support in the Areas of Multicultural Curriculum Development and Fijian Language Maintenance.

Language Maintenance Among the German and Macedonian Communities of Shellharbour and Wollongong.

Monographs

W. Cope and M. Kavanaz 'Multiculturalism and Education Policy'.
In G. Bottemley and M. De Lepervanche (eds) 'Ethnicity, Class and Gender in Australia.' (George Allen and Unwin, Sydney, 1984).

Referred Publications

'This evaluation was not it': a political overview. Migration Action, VI 1 (and G. Mitchell Community Welfare Services and Ethnic Minorities, Contracted Research Paper No I. YACS, Sydney.


Conference Papers


M. Morrissey. 'Multilinguality and Services for the Elderly Premature Retirement Conference of the NSW Council for Ageing, Sydney, September, 1983.


Reports


SCHOOL OF INDUSTRIAL AND ADMINISTRATIVE STUDIES

Research Interests and Publications

Staff development programs for professionals at different career stages.
- Trade union responses to technological change.
- Aspects of convergent numbers and their applications.
- Artificial intelligence based computer aided learning programs.

Monographs


R. Markey, Union Response To Technological Change in Australia Industrial Relations Research Centre, University of NSW (Kensington, 1993).

Referred Publications


Conference Papers


M. Hough, 'Universities and Colleges: Federation, Amalgamation or Separation?' Tenth National Conference Australian Council For Educational Administration, Brisbane, August 1983.


R. Markey, 'Technological Change and Unemployment' Conference on Political Dimensions of Technological Change, Griffith University, October 1983.

Reports

K. Tognetti, G. Winley, and T. van Ravenstein. Divide and Conquer, Department of Mathematics, University of Wollongong, Preprint 9/83.


T. van Ravenstein, K. Tognetti, and G. Winley Notes of the Logarithmic Spiral, Department of Mathematics, University of Wollongong, Preprint 12/83.
Student activities

THE UNION

All students and staff of the University are members of the Union which exists to provide a social centre for the campus and to promote a range of activities to complement the mainstream academic work of the University. The affairs of the Union are controlled by a Board of Management and, in day to day matters, by the Secretary-Manager.

The year was marked by a major increase in usage of Union facilities, mainly as a result of the federation of the University with the Institute of Education. In order to alleviate some of the consequent problems of overcrowding in the Union Building, especially in the main dining areas, the Board approved the funding of an improvement to cafeteria service-facilities and an extension to the Dining Room. The Board also commissioned detailed architects plans for the construction of further food-service facilities.

The Union's program of activities was again well supported and events staged during the year included lunchtime and evening concerts; a varied range of arts and crafts exhibitions; a series of recreational classes in subjects such as yoga, jazz fitness, photography, typing, guitar, speed reading and study techniques; a number of public debates on current affairs, as well as regular film shows and social entertainments. Union clubs and societies provided a further range of activities and three new societies — Nuclear Disarmament Association, Simulation Games and Womens Collective — affiliated during the year.

During 1983 the new Union membership arrangements pertaining to the federation of the University and Institute came into effect and considerable progress was made in bringing together the students of the two sectors of the federated university. In addition to the Union taking over responsibility for operating the Institute canteen an Institute Students Association was established within the Union's structure, in order to organise traditional social activities for the Institute sector students.

The year was also marked by further increase in use of the Union's facilities and services by the local community which served to bring many thousands of visitors to the campus and thus strengthen links between 'Town' and 'Gown'. In addition the Union also expanded its involvement in the local area by co-operation with organisations such as Wollongong Arts Council, Musica Viva (Wollongong), the Migrant Heritage Centre Project and by developing a Wage Pause job-creation project concerned with Migrant Health Information.

The Childcare Centre operated by the Parent's Club (Kids Uni) continued to thrive and provide a much needed service on campus, with high standards of childcare and pre-school education. Work commenced towards the end of the year on the much needed Stage II of the Childcare building.

The Sports Association exists to provide a range of sporting and recreational activities for the University and all students and staff are full members of the Association.

The year was highly successful for the Sports Association both in terms of performance three Intervarsity team championship victories and numerous successes in district competition — and in all levels of participation.

In 1983 there were 22 constituents clubs of the Sports Association in which members could participate. These clubs cover most sporting activities as listed below:

- Athletics
- Badminton
- Cricket
- Hockey (Women's)
- Motor Cycle
- Rugby Union
- Skiing
- Softball
- Surf-Riding
- Tae Kwon Do
- Volleyball
- Australian Rules Football
- Basketball
- Hockey (Men's)
- Judo
- Netball
- Sailing
- Soccer
- Squash
- Table Tennis
- Touch Football

The Sports Association also promoted a wide range of infra-mural and social sports programs and during 1983 — the third year of operation of the programs — there was a continued growth in participation rates.

1983 has also seen continued investment by the Sports Association in the development of sporting facilities on campus. The most significant project undertaken during the year was the development of the existing tennis-courts area to create a floodlit multi-usage recreational area.

COUNSELLING CENTRE

There was increased demand for personal counselling in 1983; 446 people used the service, which is an increase of 42% over the previous year. This increase may reflect the relocation of the service to a central and accessible position on campus.

A Preparation for University program was offered to first year students before the commencement of Session 1. Three hundred people took part. Students' evaluation of the program indicated that it had been successful in achieving its aims of establishing social support networks among students and preventing emotional stress within students during their transition to university. Several workshops on stress management were also offered to students throughout the year.

The Counselling Centre continued to administer the Careers Service. Campus interview programs were organised in May for accountancy students, and in August for students from all disciplines. Seminars on writing job applications and preparing for interviews were also offered to students.

The University Medical Service operating from Counselling Centre was well patronised by students.

The number of positions available to students through the part time/casual employment service was less than in other years, making it difficult for students to supplement their incomes by this means.

The Accommodation Service experienced an increase in demand for accommodation at the beginning of the year. With co-operation from the local community, we were able to supply sufficient accommodation to meet this increase.
The Warden, Dr T. S. Ng, completed his four-year term in July and resumed his full-time academic position. The Board of Management is very appreciative of his commitment and contribution to the House.

Prior to the Warden's departure, a Working Party was established to examine the administrative structure. Changes were recommended and endorsed and in July a full time Manager was appointed. A part-time position of Senior House Tutor was established along with five House Tutor positions. Constitutional changes following this restructuring were endorsed by the University Council.

1983 was the University's fourth year of ownership of the

INTERNATIONAL HOUSE

House and it is pleasing to note that the financial position is sound and that upgrading continues on schedule. The majority of residents had satisfactory academic results and the first First Class Honours Degree was conferred on a House resident. The residents accepted full responsibility for running the book collection, the kiosk, special lunches, the dances and the terminal room. The Residents' Committee met every three weeks with the Manager with very worthwhile results.

Occupancy rate was 100% in Session 1 but fell to 96% in Session 2. The very heavy vibrations, noise and dust from the Department of Main Roads construction work in Session 2 caused great discomfort to the residents. Damage to the House structure has been examined by DMR architect. A report is awaited.

BUILDINGS AND SITE DEVELOPMENT

There were no major buildings authorised for construction in 1983. The Commonwealth Tertiary Education Commission has, however, recognised the need for a major building program and an Engineering/Science Building has been approved with construction to begin in 1984. In addition, an Administration Building has been formally listed as being a high priority project.

The Minor Buildings and Site Development Projects in 1983 comprised:

- Extension to Building 3 for Civil & Mining Engineering: $140,000
- Extension to the Union Building to house the Counselling and Medical Centre: $50,000
- Relocation, re-establishment and alteration of the Lecture Theatre Annexe and the A.C.S. Annexe to assist in meeting the needs of the Department of Computing Science: $90,000
- Restoration Work on former Institute of Advanced Education Buildings: $60,000
- Stage 1 of Conversion of former Institute of Advanced Education Library Building for Teacher Education: $95,000
- Installation of New PABX System (and building alterations to allow installation): $490,000

The extension to Building 3 provided much needed high headroom laboratory space not previously available to the Department of Civil and Mining Engineering.

The extension to the Union Building provides a permanent and centralised location for the Counselling Centre, Medical Centre, Chaplaincy, Careers and Accommodation Services. These services had previously been housed in various temporary locations.

The relocation and alterations to the Lecture Theatre Annexe and ACS Annexe provided urgently needed laboratory and office space to meet the needs of increasing student enrolments in the Department of Computing Science. The relocations of these two demountable buildings was also necessary as they were previously located on the site for the proposed Engineer/Science Building.

Restoration work on the former Institute buildings was required to prevent further deterioration and to provide a reasonable starting point for a continuing maintenance program.

The conversion of part of the former Institute Library Building provide space for a Curriculum Resources Laboratory and three teaching areas. Additional work was needed to have the building conform to the requirements of the Local Government Act and the Board of Fire Commissioners.

Alterations to the existing PABX room were required to allow installation of the new computer controlled PABX equipment. Installation of a new PABX was required because the existing PABX had reached its capacity, was obsolete and could not provide a common telephone system with the recently amalgamated Institute of Education.

In addition, in 1983, the University funded from its own reserves the following projects:

- Renovation and refurbishment of space in Building 3 to provide additional offices, laboratory space and a Pump House for the Department of Civil and Mining Engineering: $20,000
- Alterations, external cladding and internal fitting out of Computing Science Annexe 2 to provide laboratory space of the Department of Computing Science: $40,000
- Construction of Stage 2 of 'Kids' Uni' (University Child Minding Centre) to provide much needed additional space: $95,000
- Alterations to Building 22 to provide additional microcomputer laboratory space for the School of Industrial & Administrative Studies: $25,000
- Alterations to Music Auditorium to meet the requirements for licensing under the Theatres and Public Halls Act: $25,000
- Purchase of two cottages adjacent to University to provide low cost usable space for Centre for Multicultural Studies and other short-term space needs: $115,000

Total: $320,000

54
# Faculty Sector Enrolment Summary 1983 — By Degree, Course & Type of Attendance (30th April)

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<tr>
<th></th>
<th>Arts</th>
<th>Commerce</th>
<th>Education</th>
<th>Engineering</th>
<th>Mathematics</th>
<th>Metallurgy</th>
<th>Science</th>
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<td>P</td>
<td>T</td>
<td>F</td>
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<td><strong>Sub-total Postgraduate OTHD</strong></td>
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<td>92</td>
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<td>Comencing</td>
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<td>163</td>
<td>60</td>
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<td>Re-enrolling</td>
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<td>160</td>
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<td>367</td>
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<td><strong>Total Other Than Higher Degree</strong></td>
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<td>1621</td>
<td>3372</td>
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*Miscellaneous* includes double counting for Summer Session students enrolled in other courses at 30th April (Excluding double counting, 106 students were enrolled miscellaneous).
### INSTITUTE SECTOR ENROLMENTS — 1983 SUMMARY

#### COMMENCING STUDENTS

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<tr>
<th>Level/Course</th>
<th>Full-time</th>
<th>Part-Time</th>
<th>External</th>
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<td><strong>PGI — Graduate Diploma in Education</strong></td>
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<td>— Health Education</td>
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<tr>
<td>— Mathematics</td>
<td>2 9 11</td>
<td>2 26 28</td>
<td>4 35</td>
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<tr>
<td>— School Administration</td>
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<td>16 6</td>
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<tr>
<td>— Language</td>
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<tr>
<td>— Computers in Education</td>
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<td><strong>Sub-Total</strong></td>
<td>24 20 44</td>
<td>2 26 28</td>
<td>26 46</td>
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<td><strong>UG1 — Bachelor of Education</strong></td>
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<td>— Primary Conversion and Primary Bridging</td>
<td>25 22 47</td>
<td>39 53 77</td>
<td>140 181</td>
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<td>— Physical and Health Education</td>
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<td>14 71 85</td>
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<td>— Conversion — Physical Health Education</td>
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<td>— Conversion — Secondary — English/History</td>
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<tr>
<td>— Conversion — Secondary — Mathematics</td>
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<td>3 5 6</td>
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<td>— Secondary — English/History</td>
<td>9 5 14</td>
<td>14 14</td>
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<td>— Secondary — Mathematics</td>
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<td>13 13</td>
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<td>2 2 28 32</td>
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<td>— Primary — Conversion</td>
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<td>— Primary</td>
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<tr>
<td>— Physical Education</td>
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<td><strong>Sub-total</strong></td>
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<td>— Industrial Studies</td>
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<td><strong>Sub-total</strong></td>
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<td>98 94 192</td>
<td>38 142 180</td>
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<td>Activity and Grade/level</td>
<td>Full-Time</td>
<td>Full-time Equivalent of Part-Time</td>
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<td><strong>Academic Activities</strong></td>
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<td>— Senior Tutor/Demonstrator/Assistant Lecturer</td>
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<td>— Tutor/Demonstrator/Teaching Fellow</td>
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<td>Sub-Total Academic</td>
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**Total**: 667,864
### FULL-TIME ACADEMIC STAFF BY DEPARTMENT

**Reference Date: 30th April, 1983**

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### INSTITUTE SECTOR

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Grants and donations

Australian Research Grants Scheme
Projects

Assay of Neurotransmitters released from Hippocampal Slices and Evaluation of Neuronal Markers 2000
Changing Definitions of Social Psychology 3500
Devonian Biostratigraphy of the Capertee Geanticline 2400
Dynamics of Cavitation Damage to Turbomachinery 24 243
Experiment Investigation on the Shedding of the Vorticity by Sharp Edges and the Construction of Axisymmetric Vortex Sheets 21 400
Goal Direction in the Life Sciences: Intellectual and Social Factors in the Production of Science and Technology 23 000
Metabolite Levels in the Cytosol and Mitochondria of Plant Leaf Cells 10 900
Microwave Wavefront Reconstruction 1000
Osmoregulation in Halotolerant Algae 27 855
Plastic Properties of Ductile Sheet Metals 10 000
Properties and Applications of Shape Memory Alloys 17 000
Selected Documents on the Australian Labour Movement, 1900-1980 3501
Solid State Spectroscopy, Electronic and Vibrational Spectra of Solids 7000
Studies on the Evolution of Mammalian Endothermy 9100
The Role of Religion in the Regeneration of a Heath Community after Fire 6400
Transitions: A Study of Men Experiencing Change in Retirement 14 000
Vitamin C Megatherapy. The Sociology of Scientific Controversy 8000

National Energy Research Development and Demonstration Council

Coal Storing Bin Design (Mechanical Engineering) 24 302
Electrostatic Precipitators (Electrical Engineering) 20 427
Gas Drainage from Underground Coal Seam (Civil Engineering) 19 087
Low Rank Oil Shales (Geology) 26 627
Mine Ventilation Subsequent to Explosion and Fire (Civil Engineering) 6000
Pneumatic Conveying of Coal (Mechanical Engineering) 17 714
Reflectance of Oriented Vitrinite (Geology) 16 106
Simulation of Explosion Propagation in Coal Mines (Civil Engineering) 2524

Special Purpose Funds (Research)

Australian Atomic Energy Commission and Mathematical Modelling of Pyritic Waste 7500
Aerosol Research Fund (Chemistry) 2682
Amino Acid Research (Biology) 200
Australian Accounting Research Foundation (Accountancy) 4159
Australian Computer Research Board (Computing Sciences) 4000
Australian Iron and Steel Assoc. Prof. N. Standish (Metallurgy) 11 899
Auto Monitor and Forward Feed (Chemistry) 12 307
Biology Special Research (Biology) 1645
Bourke Pre-School Research and Support (Education) 1800
Bulk Solids Handling (Mechanical Engineering) 9382
Coastal Council Research (Mathematics) 2400
Consultancy Account (History & Philosophy of Science) 3146
Department of Health (Australia) Counselling of Patients (Psychology) 20 768
Department of Science and Technology. Prof. R. Johnston (History and Philosophy Science) 5100
Dinosaurs from China (Biology) 500
Analysis of French and Italian Programs 1950
Economics Research Account 5006
Economic and Financial Research Fund, T. Alchin 2780
Economic & Financial Research Fund. R. Markey 4000
Electricity Commission of NSW. Flow Properties of Precipitator Dust 19 280
Electrical Research Board. Transport of Pulverised Coal. Dr P. Arnold and Dr A. G. McLean (Mechanical Engineering) 36 770
Environmental Research Donations (Geography) 2005
Family and Schooling in the Illawarra. Dr W. Mitchell (Education) 2527
Geology Fuel Research 10 991
Geology General Donation 8428
Geology and Petrophysics Research 540
Geotecnical Engineering (Civil Engineering) 1000
Hippocampal Spike Research (Biology) 1860
Industrial Minerals Research (Geology) 924
Lake Illawarra Sediment Study 1065
Learning Environment Research (Education) 896
Mechanical Engineering Research and Development 1804
Ministry of Aboriginal Affairs (Economics) 12 467
NACH Review of Disabled Migrants (Centre of Multicultural Studies) 19 361
Photosynthesis Research (Biology) 85
Postgraduate Scholarships Account Department of Biology 526
Department of Chemistry 3750
Department of Economics 500
Department of Education 1000
Department of English Literature and Drama 500
Department of Geography 1000
Department of History 3000
Department of History and Philosophy of Science 2000
Department of Mathematics 2000
Department of Psychology 2000
Department of Sociology 2000
Population Research (Geography) 1053
Research Account J. Falk (History and Philosophy of Science) 2000
R. J. Whelan (Biology) 350
Research and Development in Mining Engineering (Department of Civil and Mining Engineering) 3963
Research Fund for Community Studies. Rheem Australian Limited 525
Commercial Solar Project (Mechanical Engineering) 19 066
River Resources & Planning Research (Geography) 3250
State Planning and Environment Commission. Air Analysis (Chemistry) 10 812

Sundry Donation for Research

Department of Accountancy 20
Department of Chemistry 400
Department of Electrical and Computer Engineering 3384
Department of Metallurgy 1290
Centre for Multicultural Studies 460
L. L. Viney Research Fund (Psychology) 6938
Water Research Foundation of Australia Flood Mitigation Programmes (Economics) 2000
X-Ray Diffusion Research Fund (Geology) 110
Special Purpose Funds
(Scholarship, Bursaries, Prizes, etc.)

Australian Institute of Nuclear Science and Engineering
Studentships
- Mathematics 2986
- Chemistry 4246

Australasian Institute of Mining and Metallurgy
- Mining Prize 100
- Metallurgy Prize 100
- Geology Prize 100

Australasian Welding Research Association Post Graduate Scholarship 12 648

Australian Society of Accountants Prize
- Accountancy 150

Australian Institute of Management. Scholarship in Management Studies 400

Peter Beckmann Memorial Prize in Physical Chemistry 44
Blue Circle Cement (Maldon) — Metallurgy Prize 25
Marjory Brown Prize 50
Darryl Condon Memorial Prize 22
Clothing & Allied Trades Union Postgraduate Award 22
Commonwealth Banking Corporation Prize 10 037
Commonwealth Banking Corporation Prize 20
Coopers & Lybrand Research Fellowship 2000
Corporate Affairs Commission Prize 100
G. W. Daniels Prize 50
Evan Phillips Memorial Prize 249
Foundation Prize in Geology 95
Bert Halpern Memorial Prize 163
Illawarra County Council Award 2500

Austin Keane Memorial Prize 105
Leisure Coast Triathlon Scholarship 500
John Lysaght Australia Prize — Metallurgy 30
Mathematics Prize Fund 154
Miscellaneous Workers' Union Postgraduate Award — History 6900
NSW Teachers Federation. Postgraduate Award 14 850
Statistical Society of Australia (NSW), Mathematics Prize 50
Toche Ross and Co. Prize in Accountancy 233
A. J. and I. Waters Geology Prize 9498
Western Mining Prizes — Mining 300

Special Purpose Funds ( Others )

Australia Council — Composer in Residence 5000
Australian Institute of Management. Donation for Books 900
AUIDP — Consultancy 6202
— Secondment 13 048
AVCC — Visiting Fellowships 4000
Division of Cultural Activities — Designer in Residence 2569
Sundry Donations
- Geography 5196
- English Literature and Drama 884
- Geology 1307
Theatre South — PDS Appeal 1336
The Illawarra Credit Union. Employment Scholarship 7200
Wollongong University Sundry Donations 100

Wage Pause Program
Training in Support Services for Migrant/Community Research 7942
# Appointments, resignations and promotions

## APPOINTMENTS

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<td>Mr K. W. Vine</td>
<td>Lecturer II</td>
<td>School of Industrial &amp; Administrative Studies</td>
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<td>Mr R. A. Markey</td>
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<tr>
<td>Mr G. Moloterno</td>
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<tr>
<td>Miss J. R. Smith</td>
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<td>Mr J. L. Gerrard</td>
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<td>Mr A. Ford</td>
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## RESIGNATIONS

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PROMOTIONS

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### Study leave and professional experience leave

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<td>Mr. P. L. Shepherd</td>
<td>School of Creative Arts &amp; Community Studies</td>
<td>52</td>
<td>Europe, UK, USA, Australia</td>
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<tr>
<td>Mr. N. Masters</td>
<td>School of Creative Arts &amp; Community Studies</td>
<td>52</td>
<td>Sydney</td>
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<tr>
<td>Mr. R. K. Pretty</td>
<td>School of Education</td>
<td>14</td>
<td>Local</td>
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