

School of Earth & Environmental Sciences

UNDERGRADUATE STUDENT INFORMATION BOOKLET

School of Earth & Environmental Sciences
University of Wollongong
NSW 2522
Australia

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Welcome to the School of Earth & Environmental Sciences

Welcome to the School of Earth & Environmental Sciences, whether you are new to the University or have been here a while and are just trying us out. We are a multidisciplinary school, spanning human and physical geography, geology and environmental science. This diversity gives you opportunities for both breadth and depth in your subject selection, and a strong basis for future employment. Please take some time to examine the list of our subjects (page 2) to get some ideas about your future pathway.

The School is particularly strong in research and all members of the academic staff have extensive research experience in their subject areas. You will have a number of opportunities to be involved in research throughout your degree, starting with research projects in individual subjects. Subject to good academic performance, you should also consider taking the Science Internship subject (SCIE292/392), which gives you experience in working on a staff research project. Academic staff are often looking to offer casual employment on their projects to strong students – make your interests known and you never know what opportunities will open up.

We would also like to encourage you to consider undertaking a fourth year honours program in the Bachelor of Science degree. You will spend the whole year on a research project leading to the production of a thesis. Many important research and generic learning skills are developed and consolidated in the honours year, beyond what is possible in the three year programs. Please feel free to meet with members of the School featured in this document to discuss your future career options and aspirations.

Professor Lesley Head
Head of the School of Earth & Environmental Sciences.
(Room 41.G14* Phone 4221 3124) Email: lhead@uow.edu.au

Student Liaison Office: Room 41.G15*. Phone 4221 4396

Student support and course information.

Marina McGlinn, (Mon-Wed) Email: mmcglinn@uow.edu.au

Administrative Office: Room 41.G12* Phone 4221 3721

General School and administrative matters.

Wendy Weeks, (Mon-Wed) Email: wendyw@uow.edu.au

Denise Alsop, (Thurs-Fri) Email: dalsop@uow.edu.au

**These rooms are located along the north western corridor of the ground floor of Building 41.*

This document serves as a general welcome to the School of Earth & Environmental Sciences and a brief introduction to the Bachelor of Science degree programs offered through this School. The School is part of the Faculty of Science, along with the School of Biological Sciences and School of Chemistry.

The Dean of the Faculty of Science is Professor Will Price and the Sub-Dean of the Faculty is Associate Professor Paul Carr.

Degrees offered:

The School of Earth and Environmental Sciences comprises the disciplines of **Geography, Geology and Environmental Science**. Studies may be undertaken in the following degrees:

Bachelor of Science (See below -- **flexible*** and **prescribed#** major programs)

Bachelor of Environmental Science Honours -- **Coordinator: Colin Murray Wallace**

Bachelor of Marine Science -- **Coordinator: John Morrison**

* Bachelor of Science (flexible majors)

Students may elect to complete one of the following majors or combined majors.

Geology - Acting Coordinator: Sol Buckman

Geosciences - Coordinator: Marji Puotinen

Human Geography - Coordinator: Gordon Waitt

Physical Geography - Coordinator: Marji Puotinen

Bachelor of Science – (Prescribed majors)

The following degree programs are available in the Earth and Environmental Sciences. Entry to one of these programs must be approved by the Faculty of Science Dean or Associate Dean. (Details of these programs are given in the Faculty of Science Student Guide under section “**Bachelor of Science Prescribed Programs**”).

Land and Heritage Management - Coordinator: Gordon Waitt

Ecology (jointly with the School of Biological Sciences)

Environment - Coordinator: Colin Murray-Wallace

List of subjects offered by the School in 2009 (Full subject details at www.uow.edu.au/handbook/)

Autumn Session	Spring Session	Summer Session
100 Level Subjects		
EESC101—Planet Earth EESC103—Landscape Change and Climatology	EESC102—Earth Environments and Resources EESC104—The Human Environment: Problems and Change	
200 Level Subjects		
EESC201—Earth’s Infernos EESC203—Biogeography and Environmental Change EESC204—Introductory Spatial Science EESC205—Population Studies MARE200—Introduction to Oceanography	EESC202—Soils, Landscapes and Hydrology EESC204—Introductory Spatial Science EESC206—Discovering Downunder: A Geography of Australia EESC208—Environmental Impact of Societies EESC210—Social Spaces: Rural and Urban EESC216 – Sediments and Fuels	EESC250—Field Geology
300 Level Subjects		
EESC301---Plate Tectonics, Macrotopography and Earth History EESC303—Fluvial Geomorphology and Sedimentology EESC305—Remote Sensing of the Environment EESC307—Spaces, Places and Identities EESC309 – Dung, Death & Decay: Modern Scientific Methods in Archaeology EESC300 – Directed Studies in Earth & Environmental Sciences A	EESC302—Coastal Environments: Process and Management EESC304—Geographic Information Science EESC306—Resources and Environments EESC308—Environmental and Heritage Management EESC310—Water Resources and Management EESC350 – Directed Studies in Earth & Environmental Sciences B ENVI391—Environmental Science	
400 Level Subjects		
	ENVI491—Environmental Science and Systems	
400 Level Subjects (Annual)		
EESC401 - Earth & Environmental Science Honours		
ENVI403 – Research Report (BEnvSc students)		

Academic Staff	Subjects Coordinated	Research Interests
Professor Lesley Head Head of School Room 41.G14 Phone: 4221 3124	EESC206—Discovering Downunder: A Geography of Australia EESC208—Environmental Impact of Societies	Australian prehistory and environmental change; cultural landscapes; past and present Aboriginal land use; cultures of nature; urban environmental issues.
Dr Sol Buckman Room: 41.163 Phone: 4221 5950	EESC252 – Geology for Engineers EESC306—Resources and Environments	Ore deposit geology Tectonics (China and Central Asia, Eastern Australia); □□ Paleofire records and sedimentation; □□ Geological application of remote sensing
Dr Laurie Chisholm Room: 41.G25 Phone: 4221 3765	EESC203—Biogeography and Environmental Change EESC305—Remote Sensing of the Environment	Application of remote sensing and GIS technologies to environmental management and resource assessment in general. Specific interests in hyperspectral remote sensing for discriminating vegetation stress, type and foliar biochemistry; sub-pixel analysis of hyperspectral imagery; integration of radar and optical data.
Professor Allan Chivas Room: 41.161B Phone: 4221 3263	EESC310—Water Resources and Management	Low-temperature geochemistry - Chemical, C-14, C1-36 and stable-isotope studies of the formation and evolution of modern and ancient lake basins, coral reefs, near-shore and deep-sea sediments, weathering profiles and laterites. Chemical hydrology, palaeoceanography and atmospheric chemistry. Chemical and isotopic studies of ore deposits.
Dr Anthony (Tony) Dosseto Room: 41.160 Phone: 4221 4805	EESC101—Planet Earth EESC201—Earth's Infernos	Catchment erosion response to climate change during the last galacial cycle. Soil production and erosion. Sediment production and transport. The production of silic magnas..
Associate Professor Chris Fergusson Room: 41.159 Phone: 4221 3860	MARE200—Introduction to Oceanography EESC301—Plate Tectonics, Macrotopography and Earth History	Regional geology and tectonics of the Tasmanides of eastern Australia; tectonic studies in the Appalachians of western Newfoundland and the Zagros mountain belt of western Iran; sedimentology of deep-marine sediments.
Associate Professor Chris Gibson Standing Acting Head Room: 41.G08 Phone: 4221 3448	EESC205—Population Studies	Impact of festivals; non-metropolitan futures; cultural research network; Asia-Pacific Cultural Economy.
Dr Nick Gill Room: 41.G16 Phone: 4221 4165	EESC210—Social Spaces: Rural and Urban EESC308—Environmental and Heritage Management	Rural social and cultural change; cultural and historical aspects of arid zone pastoralism; Aboriginal land use; cultural geography and environment; environmental policy.
Associate Professor Brian Jones Room: 41.168 Phone: 4221 3803	EESC102—Earth Environments and Resources EESC216—Sediments and Fuels EESC250—Field Geology	Sedimentology of fluvial, fluvio-deltaic and volcanoclastic sequences; basin analysis; petrology of petroleum reservoir rocks; application of mathematical techniques to geological problems; coastal ecology.
Professor John Morrison Room: 19.G012 Phone: 4221 4377	ENVI391—Environmental Science ENVI491—Environmental Science and Systems	Estuarine science and management, especially nutrient budgeting; watershed management; soil genesis and management; pollution prevention and waste management; environmental chemistry, particularly in the area of coastal marine pollution; and Pacific small island environments.
Professor Colin Murray-Wallace Room: 41.G31 Phone: 4221 4419	EESC202—Soils, Landscapes and Hydrology EESC302—Coastal Environments: Process and Management	Quaternary studies and global environmental change; sedimentology and stratigraphy; amino acid racemisation, electron spin resonance and radiocarbon dating; coastal evolution and sea-level change; neotectonics.
Professor Gerald Nanson Room: 41.G33 Phone: 4221 3631	EESC103—Landscape Change and Climatology EESC303—Fluvial Geomorphology and Sedimentology	River channel erosion. Floodplain formation of rivers of arid and tropical regions. Quaternary environmental change. Thermoluminescence dating.
Dr Marji Puotinen Room: 41.G34 Phone: 4221 3589	EESC204—Introductory Spatial Science EESC304—Geographic Information Science	Geographical Information Systems; Coral Reef geomorphology; Hazard Analysis; Recent environmental change.
Professor Bert Roberts Room: 41.G29 Phone: 4221 5319	EESC309 – Dung, Death & Decay: Modern scientific methods in archaeology	Optically stimulated luminescence. Application of luminescence dating to archaeological and geological science. Australian archaeology and rock art. Quaternary landscape evolution.
Associate Professor Gordon Waitt Room: 41.G20 Phone: 4221 3684	EESC104—The Human Environment EESC307—Spaces, Places and Identities	Economic restructuring; international trade and tourism, marketing places.

Facilities

SPATIAL ANALYSIS LABORATORIES (SAL)

The SAL facilities (41/G03 and 41/G21)) comprise the Spatial Data Laboratory (SDL), The Toni O'Neill Spatial Research Laboratory (TOL) and The Spatial Teaching Laboratory (STL). Access to all SAL Facilities is restricted and computer users of the facilities need to complete an induction. All users of SAL must obey the rules – see

<http://www.uow.edu.au/science/eesc/facilities/UOW002893.html>

The Spatial Data Laboratory – 41.G03B (Supervisor Richard Miller) contains the School Map and Air Photo Resource Collection and computing facilities for map and poster production, scanning and slide copying. Most of the hardcopy material held in the Resource Collection, approximately 30,000 maps, is of Australia, NSW and the Illawarra together with teaching support material. The air photos are mostly of the Wollongong Region and date back to the late 1930's. This material may be referenced for undergraduate study under the permission and guidance of the Laboratory Supervisor and a small number of students are able to work in the Library using the School's Resource material. A B/W photocopier using charged uni student cards is available in the foyer for copying or material may be temporarily borrowed for photocopying when identification is left with the map curator. The computers in this Laboratory are not available to undergraduate students. Honours year students have access to the facilities and may borrow maps for extended periods in support of their projects. The SDL is usually accessible between 9.00am and 5.00pm.

The Spatial Teaching Laboratory – 41.G21 (Supervisor Heidi Brown) has 26 computers. These may only be accessed outside of classroom bookings by undergraduate students enrolled in STL subjects, for the continuation of their subject assignments. The Lab can be opened from 9am and will be closed when the supervisor leaves usually around 4pm

The Toni O'Neill Spatial Research Laboratory – 41.G03F (Supervisor John Marthick) is an advanced computing facility, for the School of Earth & Environmental Sciences, dedicated to research using GIS, Remote Sensing, Spatial Statistics and other Spatial Analysis Techniques. The Laboratory is primarily used for research by staff, postgraduate students and honours students. It has computer facilities for image processing, spatial information analysis, data analysis and mapping. Undergraduate students do not have access to these facilities and would only be allowed to use the facilities with the express permission of the Lab supervisor. The Lab is usually accessible between 8.30 and 4.30pm.

EARTH & ENVIRONMENTAL SCIENCE RESEARCH LABORATORIES

The School has numerous laboratories for the physical and chemical analysis of sediments, soils and other materials. A dedicated Sedimentology Laboratory (41.G22) is available for sediment particle size analysis using an automated particle size analyzer, as well as macroscopic description of sediments. Facilities are also available for the preparation of thin sections of soils and rocks, X-ray diffraction and X-ray fluorescence to determine mineralogy and elemental composition of materials as well as access to a scanning electron microscope. The School also has a series of petrological microscopes as well as several geochemical laboratories for undertaking fundamental analyses in applied geochemistry. In addition, the School has dedicated research laboratories for amino acid racemization, and optical dating and stable isotope analyses for palaeoenvironmental studies.

SCHOOL NOTICEBOARDS

There are a number of noticeboards around the School. Notices such as, printouts of electronic job lists, current vacancies, upcoming seminar notices and some scholarship information are placed on the boards outside 41.153.

There is a "Student Noticeboard" opposite 41.153 for students to post information relevant to life on campus, e.g., clubs or societies, seminars, accommodation, etc.

Prizes/Scholarships (Prize Donors can change)

The School awards a number of prizes each year based on the following criteria.

Prizes are presented at the School Prize Night usually held in May each year.

- **Australasian Institute of Mining and Metallurgy (Illawarra Branch) Geology Prize** Awarded to candidate for a degree of BSc who performed best in Planet Earth and Earth Environments & Resources proceeding to further study in Geology
- **Illawarra Prize in First Year Earth & Environmental Sciences** Awarded to candidate for a degree of BSc best overall performance in 100 level Geography strands
- **Prospectors Earth Sciences Estwing Prize in Earth Sciences** BSc student in geology with meritorious performance in 100-level Geology subjects
- **Prospectors Earth Sciences Suunto Prize in Environmental Earth & Environmental Sciences** Awarded to candidate for degree of Bach Env Science who performs meritoriously at end of 3rd year either in Earth Sciences or Land Resources Strands
- **Illawarra Prize in Second Year Earth & Environmental Sciences** Awarded to candidate for a degree of BSc - Best Overall performance in 200-level Geography strands
- **Foundation Prize in Geology** Best Overall performance in 200-level Geology subjects
- **Ian R. McDonald Prize in Geology** Awarded to degree of BSc or Bach Env Sc to candidate who performs best in geological mapping
- **Illawarra Prize in Third Year Earth & Environmental Sciences** Best Overall performance in 300-level Geography strands
- **A.J. & I. Waters Prize in Geology** Awarded to candidates for the honours degree of BSc in geology best academic performance in 300 level geology determined by weighted average mark
- **Geological Society of Australia (NSW Division) Prize in Geology** Awarded to candidate for a degree of BSc in geology to candidate who performs best in 300 level geology subjects determined by highest average mark.
- **Geoscience Australia Jubilee Prize** Awarded to candidate for outstanding performance across two strands of Earth & Env in 200 level subjects
- **Evan Phillips Prize in Geology** Best performance in practical work Geology subjects
- **ESRI Australia Prize for Geographic Information Systems** Best performance in GIS
- **ESRI Australia Prize for Introductory Spatial Science** Best performance in EESC204 Introductory Spatial Science
- **Illawarra Prize in Honours Fourth Year Earth & Environmental Sciences** Awarded to candidate achieving first-class honours in Earth & Environmental Sciences
- **Merit Prize in Geology** Commendable performance in Earth & Environmental Sciences and Geology strand
- **Murray Wilson Prize for Human Geography** Best performance for a Bachelor with a major in Human Geography
- **Howard Worner Ore Deposits Prize** Awarded to BSc or Bach of Env Science to candidate who performs best in EESC subjects relating to ore deposits
- **AAMHatch Associates Prize for Remote Sensing** Awarded to BSc or Bach Env Science to candidate who gains highest average mark for Remote Sensing
- **Toni O'Neill Prize** Awarded to candidate for innovative project work in the spatial sciences
- **John Head Prize** Excellence in post-graduate research demonstrated in a in an Awarded PhD thesis

The following prizes are awarded at the Allan Sefton Memorial Lecture held at the University in September each year.

- **Allan Sefton Memorial Prize** Top graduating student in the Bachelor of Environmental Science program
- **The Howard Worner Prize** Best second year performance in the Bachelor of Environmental Science program
- **Environment Institute of Australia & New Zealand (NSW Division)** Awarded for the best performance in ENVI491 Environmental Science
- **Professor R. John Morrison Environmental Science 1st year student Prize** Top student completing first year program in Bachelor of Environmental Science

* **University Library:** <http://www-library.uow.edu.au/index.html>

* **Student Services**

Student Services provides a range of programs and services which assists students including Careers Service, workshops and counselling services. Full information is available at:

<http://www.uow.edu.au/student/services/about/index.html>

* **University Timetables**

University timetables can be accessed at: <http://www.uow.edu.au/student/timetables/>

* **Audio Visual Equipment** Location: Bldg 20 Room G15. Phone: (02) 42213993

Audiovisual Services provide a range of AV equipment (see below) that may be booked by currently enrolled students for use in lectures, tutorials, presentations. Students must produce a valid identification card.

Equipment available:

Video Recorders:	VHS
Video Playback:	VHS/Monitor on trolley
Cameras:	Video - mini DV Still - Digital
Projectors:	Desktop video/data, Overhead projector
Computers:	Macintosh powerbook. PC laptop
Audio:	Minidisk recorder, Cassette recorder/player Small PA system, Microphones

* **Careers**

A degree in the many disciplines within Earth & Environmental Sciences will offer you a broad range of career options. The resources available through the University's Careers Service will assist you in your search. Early in your studies you should visit the Careers Service website at <http://www.uow.edu.au/careers/> and make an appointment with the Careers Counsellors to ensure you do not miss any opportunities. You can begin building your resume while still completing your studies. Volunteering, paid and unpaid work experience and summer scholarships are some of the activities that will assist you in finding work.

* **Work Experience**

Students should pursue as much paid or unpaid work experience as their time permits as this has been shown to be a vital step towards obtaining future employment.

Students undertaking unpaid work experience which is approved by the Faculty/Department and the work is related to their studies (but not necessarily a compulsory component of their studies) are covered by the University's General and Product Liability Protection. This protection provides cover for the University's legal liability to pay compensation in respect of personal injury to non staff members and damage to a third party's property. The policy also covers the legal liability of any person acting on instruction from or on behalf of the University e.g. staff, students, volunteer workers. The Policy does not cover the student for personal injury. The Work Experience Placement Application/Insurance Form must be completed by the student to be covered under the University's Public Liability policy. The form is available at:

<http://staff.uow.edu.au/finance/insurance/policy/workexperience/index.html>

* **Useful External Links**

Geological Society of Australia <http://vic.gsa.org.au/careers.htm>

Geoscience Australia <http://www.ga.gov.au/>

Spatial Sciences <http://www.gisjobs.com.au/>

Commonwealth Scientific & Industrial Research Organisation <http://www.csiro.au/>

Australian Nuclear Science & Technology Organisation <http://www.ansto.gov.au/>

Graduate Careers & Employment <http://www.gradlink.edu.au/>

Rio Tinto <http://www.riotinto.com/>

NRMjobs <http://www.nrmjobs.com.au/>

Environmental Jobs Network <http://www.environmentaljobs.com.au/>

Local Government Jobs <http://www.lgjobs.com.au>

Conservation Volunteers <http://conservationvolunteers.com.au/>