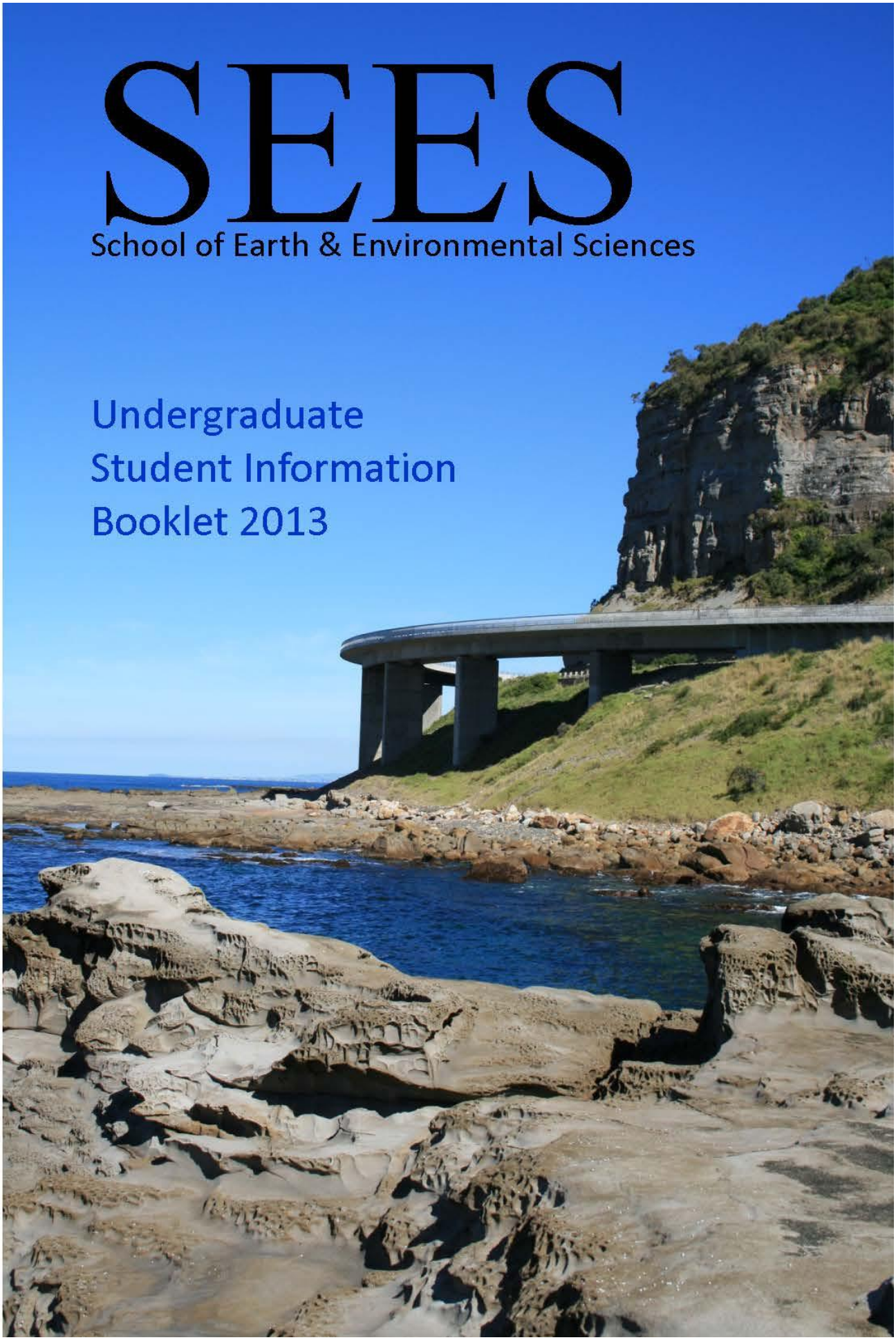
SEES

School of Earth & Environmental Sciences

Undergraduate Student Information Booklet 2013



April 2013

This is a general welcome to the School of Earth & Environmental Sciences (SEES) and a brief introduction to the Bachelor of Science and Bachelor of Environmental Science degree programs offered by this School.

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. 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 3) 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 arise.

We also 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. We wish you every success in your studies.

Colin Murray-Wallace
Professor and Head of School of Earth & Environmental Sciences

Faculty of Science structure

The Faculty of Science consists of the School of Earth & Environmental Sciences, the School of Biological Sciences and the School of Chemistry.

Dean: Professor Will Price Room 41. 260 Phone 4221 3529 wprice@uow.edu.au

Associate Dean (Teaching and Learning):

Associate Professor Paul Carr Room 41.260 Phone 4221 3804 pcarr@uow.edu.au

Student Support Adviser
Michelle Colllis Room 41.260 Phone 4221 5297 mcollis@uow.edu.au

School of Earth & Environmental Sciences

Website: www.uow.edu.au/science/eesc
Head: Professor Colin Murray-Wallace Room 41.154A Phone 4221 4419 cwallace@uow.edu.au

Administrative Office: Room 41.154 Phone 4221 3721
General School and administrative matters.
Wendy Weeks (Mon-Wed) wendyw@uow.edu.au
Denise Alsop (Thurs-Fri) dalsop@uow.edu.au

Student support and course information
Marina McGlinn (Mon-Wed) Room 41.G29 Phone 4221 4396 mmcglinn@uow.edu.au
BEnvSc, BSc (Environment), all Honours programs
Penny Williamson Room 41.158A Phone 4221 4075 pennyw@uow.edu.au
BSc (Geology, Geosciences, Human Geography, Land and Heritage Management, Physical Geography)

Degrees offered by School of Earth & Environmental Sciences:

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

Bachelor of Science (flexible majors)

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

Geology - Coordinator: Chris Fergusson
Geosciences - Coordinator: Allen Nutman
Human Geography - Coordinator: Gordon Waitt
Physical Geography - Coordinator: Gerald Nanson

Bachelor of Science – (prescribed majors)

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.

Environment - Coordinator: Tim Cohen
Land and Heritage Management - Coordinator: Gordon Waitt

Bachelor of Environmental Science - Coordinator: Tim Cohen
Bachelor of Marine Science - Coordinator: Andy Davis
Bachelor of Science Honours - Coordinator: Chris Fergusson
Bachelor of Environmental Science Honours - Coordinator: Tim Cohen

Some Honours programs may be undertaken part-time and/or jointly with other Schools

List of subjects offered by the School in 2013

(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 SCIE103 - Climate Change	
200 Level Subjects		
EESC201- Earth's Inferno 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 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	
Annual: EESC401 - Earth & Environmental Science Honours		
ENVI403 - Research Report (BEnvSc students)		
MARE401 - Marine Science Honours		

Academic Staff	*Subjects Coordinated*	*Research Interests*
Dr Sol Buckman Room 41.163; phone 4221 5950 solomon@uow.edu.au	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 lauriec@uow.edu.au	EESC203 - Biogeography and Environmental Change EESC305 - Remote Sensing of the Environment	Application of remote sensing and GIS technologies to environmental management and resource assessment; hyperspectral remote sensing for discriminating vegetation stress, type and foliar biochemistry; sub-pixel analysis of hyperspectral imagery; integration of radar & optical data.
Professor Allan Chivas Room 41.161B; phone 4221 3263 toschi@uow.edu.au	EESC309 - Dung, Death & Decay: Modern scientific methods in archaeology EESC310 - Water Resources and Management	Earth-surface and shallow marine processes; weathering, lake basins, evaporates; trace-element and isotope geochemistry; atmospheric processes, hydrology; Quaternary dating including radiocarbon and cosmogenic methods; environmental changes.
Dr Tim Cohen Room 41.G32; phone 4239 2375 tcohen@uow.edu.au	ENVI391 - Environmental Science ENVI491 – Environmental Science and Systems EESC303 - Fluvial Geomorphology and Sedimentology	Climate change on the Australian continent and its effects on landscape dynamics and environmental rehabilitation.
Associate Professor Chris Fergusson Room 41.159; phone 4221 3860 cferguss@uow.edu.au	EESC252 - Geology for Engineers 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 in the Nankai trough, south-west Japan.
Dr Leah Gibbs Room 41.G11; phone 4998 1547 leah @uow.edu.au	EESC208 - Environmental Impact of Societies	Cultural geographies of nature, especially water. Water governance. Politics of nature. Environmental knowledge production. Multi-disciplinary research methods.
Dr Nick Gill Room 41.G16; phone 4221 4165 ngill@uow.edu.au	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.
Dr Sarah Hamylton Room 41.G34; phone 4221 3589 shamylto@uow.edu.au	EESC204 - Introductory Spatial Science EESC304 - Geographic Information Science	Tropical coastal systems (Coral reefs, mangroves, seagrasses). Modelling to understand structural and functional aspects of coastlines at the landscape scale. Applying modelling techniques to Australian reef systems.
Associate Professor Brian Jones Standing Acting Head Room 41.168; phone 4221 3803 briangj@uow.edu.au	EESC102 - Earth Environments and Resources EESC216 - Sediments and Fuels EESC250 - Field Geology	Sedimentology of fluvial, fluvio-deltaic and volcaniclastic sequences; basin analysis; petrology of petroleum reservoir rocks; application of mathematical techniques to geological problems; coastal ecology.
Dr Natascha Klocker Room 41.G13; phone 4221 4221 natascha@uow.edu.au	EESC205/EESC212 - Population Studies	Geographies of racism and anti-racism, discourses of asylum and asylum policy, geographies of childhood and youth, and the application of participatory action research methodologies.
Dr Samuel Marx Room 41.G31; phone: 4221 5318 smarx@uow.edu.au	ENVI922 - The Scientific Basis of Environmental Management	Drivers of climate variability, air pollution and impacts of humans on geochemical and sedimentary systems.
Professor John Morrison Room 41.G27; phone 4221 4377 johnm@uow.edu.au	ENVI923 - Environmental Planning	Estuarine science and management; watershed management; soil genesis and management; pollution prevention and waste management; environmental chemistry, particularly coastal marine pollution; and Pacific small islands environments.
Professor Colin Murray-Wallace Head of School Room 41.154A; phone 4221 4419 cwallace@uow.edu.au	EESC202 - Soils, Landscapes and Hydrology	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 gnanson@uow.edu.au	EESC2103 – Landscape Change and Climatology	River channel erosion. Floodplain formation of rivers of arid and tropical regions. Quaternary environmental change. Thermoluminescence dating.
Associate Professor Allen Nutman Room 41.162; phone 42981347 anutman@uow.edu.au	EESC101 - Planet Earth EESC201 - Earth's Inferno	Early Precambrian crustal evolution, terrestrial differentiation and emerging life environments, integrated field studies, geochemistry, zircon U-Pb geochronology.
Associate Professor Gordon Waitt Room 41.G20; phone 4221 3684 gwaitt@uow.edu.au	EESC104 - The Human Environment EESC307 - Spaces, Places and Identities	Social and Cultural Geography; Tourism; Mobility; Cities, Regions and Rurality
Professor Colin Woodroffe Room 41.G06; phone 4221 3359 colin@uow.edu.au	EESC302 - Coastal Environments: Process and Management SCIE103 - Climate Change	Geographic Information Systems; Coastal processes; Estuarine studies; Mangrove ecology; Sea-level change; Coral atolls

SEES Facilities

Earth & Environmental Sciences Research Laboratories

The School has numerous laboratories for the physical and chemical analysis of rocks, 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.

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** contains the School Map and Air Photo Resource Collection and computing facilities for map and poster production and scanning. 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 used for undergraduate study under the permission and guidance of the Laboratory Supervisor. A small number of students are able to work in the Library using the School's Resource material. 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 9.00 am and 5.00 pm.

- **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 Heidi Brown)** 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.

Special Collections

The Howard Worner Collection, donated in 2000 and comprising 1000 minerals, rocks and some fossils, is on permanent display in the main foyer of the first floor of the Sciences Building. Also on permanent display on the southern side of the foyer is the Hobbit, *Homo floresiensis*; Human Evolution; Climate Change; Fossils; Mineral Donations; Mineral Diversity; Books by SEES Staff and the World's Oldest Rocks from Greenland. Illawarra Science on Show display case has been reserved for donations of local Illawarra material to showcase the natural sciences of our region.

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).

School Student Society: Groundswell

Groundswell is the social club within the School. All students doing any SEES subjects are welcome and are invited to join, at $10 per year. Activities range from regular barbeques to weekend excursions to longer trips.

Prizes/Scholarships (Prize Donors can change)

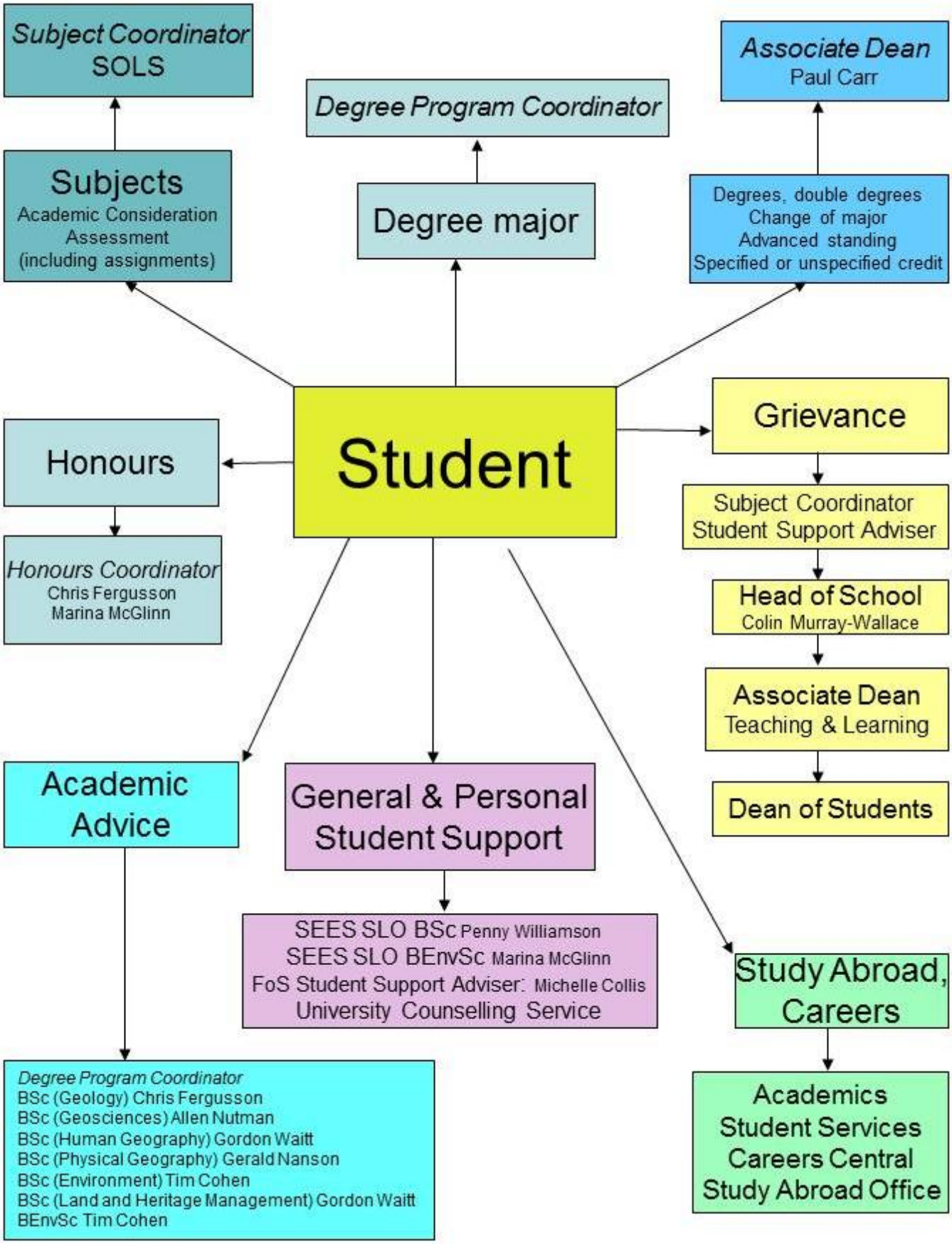
Prizes, based on the following criteria, are presented at the School Prize Night, usually held in Autumn session each year.

- **Australasian Institute of Mining and Metallurgy (AusIMM) (Illawarra Branch) Geology Prize**
  BSc candidate who performed best in EESC101 and EESC102 proceeding to further study in Geology
- **Illawarra Prize in First Year Geography**
  Candidate who achieves the highest WAM in EESC103 and EESC104.
- **Prospectors Earth Sciences Estwing Prize in Earth Sciences**
  BSc student in geology with meritorious performance in EESC101 or EESC102
- **Prospectors Earth Sciences Suunto Prize in Environmental Earth & Environmental Sciences**
  BEnvSc candidate who performs meritoriously at end of 3rd year either in Earth Sciences or Land Resources Strands
- **Illawarra Prize in Second Year Geography**
  Candidate who achieves the highest WAM for 24 credit points of 200-level EESC geography subjects
- **Alan Cook Prize in Geology**
  Best overall performance in EESC201, ESC216, EESC250
- **Ian R. McDonald Prize in Geology**
  Candidate in BSc or BEnvSc who performs best in EESC250
- **Illawarra Prize in Third Year Physical Geography**
  Candidate who achieves the highest WAM for 32 credit points of 300-level EESC subjects including EESC302 and EESC303.
- **A.J. & I. Waters Prize in Geology**
  Candidate for BSc (Hons) in geology for best academic performance in 300 level geology determined by WAM
- **Geological Society of Australia (NSW Division) Prize in Geology**
  BSc candidate in geology who performs best in 300 level geology subjects determined by highest average mark.
- **Geoscience Australia Jubilee Prize**
  Outstanding performance across two strands of Earth & Environmental Sciences in 200 level subjects
- **Evan Phillips Prize in Geology**
  Best performance in practical work geology subjects
- **ESRI Australia Prize for Introductory Spatial Science**
  Best performance in EESC204
- **ESRI Australia Prize for Geographic Information Systems**
  Best performance in EESC304
- **Illawarra Prize in Honours Fourth Year Earth & Environmental Sciences**
  Best candidate achieving first-class honours in Earth & Environmental Sciences
- **Merit Prize in Geology**
  Commendable performance in Geology subjects
- **Murray Wilson Prize for Human Geography**
  Best performance for a Bachelor with a major in Human Geography
- **Howard Worner Ore Deposits Prize**
  BSc or BEnvSc candidate who performs best in EESC306
- **The Howard Worner Prize in Environmental Science**
  Best second year performance in the BEnvSc program
- **AAM Prize for Remote Sensing**
  BSc or BEnvSc to candidate who gains highest average mark for EESC205
- **Toni O'Neill Prize**
  Candidate for innovative project work in the spatial sciences
- **John Head Xian Prize**
  Excellence in post-graduate research demonstrated in an awarded PhD thesis
- **Allan Sefton Memorial Prize**
  Best graduate in the BEnvSc program
- **Environment Institute of Australia & New Zealand (NSW Division)**
  Best performance in ENVI491 Environmental Science and Systems
- **Environmental Science 1st year student Prize**
  Best overall average mark completing first year program in BEnvSc
- **PIMS Endeavour Prize**
  Best performance in field work
- **Crozcare Geological Prize**
  Best performance in EESC202

  Gina Savage Prize
  Best performance for final year woman science student

Need advice? Where to go?

Student Support and Contacts



Key Dates for 2013

Autumn
4 March – 7 June Autumn session
22 April – 26 April Mid-session recess
15 June – 27 June Examinations
31 March – Last day to withdraw without financial penalty

Spring
29 July – 1 November Spring session
30 September – 4 October Mid-session recess
9 November – 21 November Examinations
31 August – Last day to withdraw without financial penalty

University Student Services

* **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 and http://www.uow.edu.au/careers/

* **University Subject Timetables**
University timetables can be accessed at: http://www.uow.edu.au/student/timetables/

* **University Course Handbook**
University Course handbook for each year can be accessed at http://www.uow.edu.au/handbook/

* **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:

Cameras	Video - mini DV, HD mini DVD Still - Digital
Projectors	Desktop video/data
Computers	Macintosh powerbook, PC laptop
Audio	Digital voice recorder/player, small PA system, Microphones

* **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/School and the work is related to their studies are covered by the University's General and Product Liability Protection. The form is available at: http://staff.uow.edu.au/finance/insurance/policy/workexperience/index.html

* **Useful External Links**
Graduate Careers & Employment http://www.gradlink.edu.au/
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/
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/
AusIMM http://www.ausimm.com.au