Sustainability

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Course Codes:

LC054 Master of Sustainability

LF042 Graduate Diploma in Sustainability

LG025 Graduate Certificate in Sustainability

Graduate Certificate in Sustainability

To qualify for the Graduate Diploma in Sustainability, you must complete a total of 24 credit points of units of study, comprising:

- 12 credit points of core units of study; and
- 12 credit points of units of study selected from the remaining core units of study or elective units of study.

Graduate Diploma in Sustainability

To qualify for the Graduate Diploma in Sustainability, you must complete a total of 48 credit points of units of study, comprising:

- 36 credit points of core units of study; and
- 12 credit points of units of study selected from the remaining core units of study or elective units of study.

Master of Sustainability

To qualify for the Master of Sustainability, you must complete a total of 72 credit points of units of study, comprising:

- 36 credit points of core units of study; and
- 12 credit points of elective units of study from the remaining core units of study or elective units of study; and
- 24 credit points of Capstone experience units of study.

Core Units for Sustainability Program				
Unit code	**Unit name**	**When**	**Mode**	**Unit type**
SUST5001	Introduction to Sustainability	Semester 1, Semester 2	Weekly classes	Core
SUST5002	Food and Water Security	Semester 2	Weekly classes	Optional core
SUST5003	Energy and Resources	Semester 1	Weekly classes	Optional core
SUST5004	Populations and Health	Semester 2	Weekly classes (alternating workshops and online tutorials)	Optional core
SUST5005	Policy and Sustainability	Semester 2	Intensive	Optional core
SUST5006	Sustainability, Society and Change	Semester 1	Weekly classes	Optional core
PHYS5031	Ecological Economics and Sustainability Analysis	Semester 1	Weekly classes	Optional core
SUST5007-9*	Capstone research project	Semester 1, Semester 2	Self-organised meetings with mentor	Core*

Units of study table

Unit of study	*Credit points*	*A: Assumed knowledge P: Prerequisites C: Corequisites N: Prohibition*	*Session*
Core Unit			
All students must complete the core unit.			
SUST5001 Introduction to Sustainability	6	**A** A three years Bachelors (pass) degree from the University of Sydney or equivalent qualifications/learning.	Semester 1 Semester 2
Additional Core Units			
Students in the Graduate Certificate must complete one additional core unit (6 credit points).			
Students in the Graduate Diploma and the Masters must complete five additional core units (30 credit points).			
Students may take additional core units as electives units.			
SUST5002 Food and Water Security	6	**A** A three year Bachelors (pass) degree from the University of Sydney or equivalent qualifications/learning. **C** SUST5001	Semester 2
SUST5003 Energy and Resources	6	**A** A three year Bachelors (pass) degree from the University of Sydney or equivalent qualifications/learning. **C** SUST5001	Semester 1
SUST5004	6	**A** A three year Bachelors (pass) degree from the University of Sydney	Semester

Populations and Health		or equivalent qualifications/learning. **C** SUST5001	2
SUST5005 Policy and Sustainability	6	**A** A three year Bachelors (pass) degree from the University of Sydney or equivalent qualifications/learning. **C** SUST5001	Int Sept
SUST5006 Sustainability, Society and Change	6	**A** A three year Bachelors (pass) degree from the University of Sydney or equivalent qualifications/learning. **C** SUST5001	Semester 1
PHYS5031 Ecological Econ & Sustainable Analysis	6	**A** A three year Bachelor's (pass) degree with some quantitative work, such as economics, science or engineering.	Semester 1

Capstone Experience Units

Students in the Masters must complete 24 credit points of capstone experience.

SUST5007 Research Project A	24	**A** A three year Bachelors (pass) degree from the University of Sydney or equivalent qualifications/learning. **P** Any 36 credit points of the following: SUST5001, SUST5002, SUST5003, SUST5004, SUST5005, SUST5006, PHYS5031 **N** SUST5008, SUST5009	Semester 1 Semester 2
SUST5008 Research Project B	12	**A** A three year Bachelors (pass) degree from the University of Sydney or equivalent qualifications/learning. **P** Any 36 credit points of the following: SUST5001, SUST5002, SUST5003, SUST5004, SUST5005, SUST5006, PHYS5031 **N** SUST5007	Semester 1 Semester 2
SUST5009 Research Project C	12	**A** An undergraduate degree in Science **P** Any 36 credit points of the following: SUST5001, SUST5002, SUST5003, SUST5004, SUST5005, SUST5006, PHYS5031 **N** SUST5007	Semester 1 Semester 2

Elective Units

All students must complete two elective units (12 credit points).

Students may take additional core units as electives units.

AFNR5502 Remote Sensing, GIS and Land Management	6	**P** Consent of the unit coordinator. Recommended units include GEOS2111/GEOS2911 (Natural Hazards: a GIS approach), ENVX3001 (Environmental GIS), SOIL 3004 (The Soil Resource), GEOS3014 (GIS in Coastal Management)	Semester 2
AFNR5511 Soil Processes, Assessment & Management	6		Semester 1
AFNR5512 Water Management and Variable Climate	6	**A** UG Maths or Physics or Hydrology	Semester 2
AFNR5801 Climate Change: Process, History, Issues	6	**A** A basic understanding of climate change processes and issues.	Semester 2
ARCH9080 Urban Ecology, Design and Planning	6	**N** PLAN9048	Semester 2a

BETH5203 Ethics and Public Health	6	**A** A three-year undergraduate degree in science, medicine, nursing, allied health sciences, philosophy/ethics, sociology/anthropology, history, or other relevant field, or by special permission. **N** BETH5206	Semester 2
DESC9145 Sustaining the Built Environment *This unit of study is not available in2014*	6	*Enrolment numbers limited by teaching resources. First preference to Sustainable Design students. If your attempt to enrol online is unsuccessful, please seek permission from the Faculty of Architecture, Design and Planning Student Administration Centre.*	Semester 2a
DESC9146 Climate, Comfort and Sustainable Design *This unit of study is not available in2014*	6	*Enrolment numbers limited by teaching resources. First preference to Sustainable Design students. If your attempt to enrol online is unsuccessful, please seek permission from the Faculty of Architecture, Design and Planning Student Administration Centre.*	Semester 1a
DESC9147 Sustainable Building Design Principles	6	*Enrolment numbers limited by teaching resources. First preference to Sustainable Design students. If your attempt to enrol online is unsuccessful, please seek permission from the Student Administration Centre (SAC).*	Semester 1
DESC9148 Sustainable Building Design Practice	6	*Enrolment numbers limited by teaching resources. First preference to Sustainable Design students. If your attempt to enrol online is unsuccessful, please seek permission from the Student Administration Centre (SAC).*	Semester 2
DVST6904 Rethinking Poverty	6		Semester 1 Semester 2
EDPC5022 Design for Learning	6		Semester 1
EDPC5024 Systems, Change and Learning	6		Semester 2
ENVI5705 Ecological Principles	6		Semester 1
ENVI5708 Introduction to Environmental Chemistry	6	*Note: This is a compulsory course for the Grad Dip and Masters levels of the Applied Science (Environmental Science) program*	Semester 1
ENVI5801 Social Science of Environment	6		Semester 1
ENVI5809 Environmental Simulation Modelling	6		Int June
ENVI5903 Sustainable Development	6	*Note: Department permission required for enrolment*	Int July
GEOG5001 Geographic Information Science A	6		Semester 1

GEOG5003 Environmental Remote Sensing	6	**A** Knowledge or experience equivalent to GEOG5001 (Introduction to GIS)	Semester 1
GEOG5004 Environmental Mapping and Monitoring	6		Semester 2
GOVT6223 Topics in Environmental Politics	6		Semester 1
GOVT6135 Global Environmental Politics	6		Semester 1
GOVT6316 Policy Making, Power and Politics	6		Semester 1 Semester 2
GOVT6331 Public Management and Governance	6		Semester 1 Semester 2
HPOL5000 Introduction to Health Policy	6		Semester 1
HPOL5007 Global Health Policy	6		Semester 2
IBUS5001 Strategy, Innovation and Global Business *This unit of study is not available in2014*	6		Semester 1 Semester 2
IBUS5002 Strategy, Innovation & Entrepreneurship	6	**N** IBUS5001	Semester 1 Semester 2
IBUS6005 Ethical International Business Decisions	6		Semester 1
IBUS6011 New Business Opportunities and Startups	6	**A** IBUS5002, or completion of at least 24 credit points **N** WORK6112, IBUS5011	Semester 1 Semester 2
IBUS6014 Intellectual Property Management	6	**A** IBUS5002, or completion of at least 24 credit points	Semester 1
IBUS6016 Social Entrepreneurship	6	**A** IBUS5002, or completion of at least 24 credit points	Semester 1 Summer Late
INFS5001 Project Management	6	**N** INFS6014	Semester 1 Semester 2 Summer Early

LAWS6061 International Environmental Law	6	*Students seeking further study in international environmental law may undertake LAWS6922 Advanced International Environmental Law.*	Int May
LAWS6252 Legal Reasoning & the Common Law System	6	**N** LAWS6881 *International students who are required to enrol in this unit must undertake classes during the first week of their study. Health Law and Public Health students should enrol in LAWS6881 Introduction to Law for Health Professionals in lieu of LAWS6252, if available. This unit is not available to MLawIntDev students who have been granted a reduced volume of learning. Students must attend all classes on the timetabled dates as prescribed for their enrolled session/group. An Absent Fail grade may be granted to students who fail to attend the correct session/group.*	Int April Int August Int March Int Sept
LAWS6899 Environmentally Sustainable Business *This unit of study is not available in2014*	6	**N** LAWS6082 *This unit replaced LAWS6082 Pollution Law and LAWS6899 Corporate Environmental Responsibility.*	Int November
LAWS6998 Regulating Global Crisis *This unit of study is not available in2014*	6		Int May
MIPH5116 Culture, Health, Illness and Medicine	4		Semester 2
MKTG5001 Marketing Principles	6		Semester 1 Semester 2
NURS5002 Social Contexts of Health	6		Semester 1
PACS6914 Conflict-Resolving Media	6	**N** SCWK6935	Int March
PHYS5032 Techniques for Sustainability Analysis	6	**A** A Bachelor's degree with some quantitative work such as economics, science, engineering. A basic knowledge in mathematics is desirable. *Minimum class size of 5 students.*	Semester 1 Semester 2
PHYS5033 Environmental Footprints and IO Analysis	6	**A** A Bachelor's degree with some quantitative work, such as economics, science or engineering. A basic knowledge in mathematics is desirable. *Minimum class size of 5 students.*	Semester 1 Semester 2
PHYS5034 Life Cycle Analysis	6	**A** A Bachelor's degree with some quantitative work, such as economics, science or engineering. Basic knowledge in mathematics is desirable. *Minimum class size of 5 students.*	Semester 2
RSEC5431 Benefit Cost	6		Semester 1

Analysis			
RSEC5432 Environmental Economics	6		Semester 2
RSEC5433 Economics of Mineral & Energy Industries	6		Semester 2
TPTM6470 Sustainable Transport & Logistic Systems *This unit of study is not available in2014*	6		Semester 1

Unit of study descriptions 2014

SUST5001 Introduction to Sustainability

Credit points: 6 **Session:** Semester 1,Semester 2 **Classes:** One 2 to 2.5 hour interactive lecture per week presented in an intensive format with up to four hours per week spent on a combination of additional (e.g. on-line) learning tasks, small group sessions and consultation with lecturers. **Assumed knowledge:** A three years Bachelors (pass) degree from the University of Sydney or equivalent qualifications/learning. **Assessment:** Essays, oral presentations, short written assignments (100%) **Mode of delivery:** Normal (lecture/lab/tutorial) Day
This unit of study will introduce students to the concepts and multidisciplinary nature of sustainability, starting with the physical basis of climate change and its impact on the environment and human development. This will be followed by several case studies covering Energy, Health, Development and Environment. The case studies will be presented by industry professionals and will illustrate sustainability issues currently before Australia- their origins, impacts and industry responses. The unit of study will provide students with a holistic systems lens through which to view their learning throughout the Master's program. This will underpin understanding of the integrated nature of sustainability and facilitate the challenging of silo-based assumptions- their own and those of others. The intention is to ground understanding of complex systems in the real world through the use of case studies that will demonstrate organisational change and problem solving in a world with competing values and conflicting views of what it means to live sustainably. Students completing the unit of study will have a "sustainability tool kit" to apply to sustainability issues in their professional and community activities.

SUST5002 Food and Water Security

Credit points: 6 **Session:** Semester 2 **Classes:** One 2 to 2.5 hour interactive lecture per week presented in an intensive format with up to four hours per week spent on a combination of additional (e.g. on-line) learning tasks, small group sessions and consultation with lecturers. **Corequisites:** SUST5001 **Assumed knowledge:** A three year Bachelors (pass) degree from the University of Sydney or equivalent qualifications/learning. **Assessment:** Essays, short written assignments (100%) **Mode of delivery:** Normal (lecture/lab/tutorial) Day
This unit explores the imperatives and challenges of ensuring an adequate supply of water and nutritious food in the face of changes in global markets, the environment and human population. These challenges will be examined in the context of access and potential trends in supply and demand. Factors influencing trends in supply include environmental degradation, climate change, energy scarcity, technology, changes in population and the patterns of global prosperity, growing urbanisation, and increased consumption. The unit will consider the underlying policy, economic and market-driven forces that play an important role in affecting both supply and demand. The needs of both developing and developed nations will be compared and the role of international, national and regional mechanisms will be discussed. Placing some emphasis on the relevance to Australia, the unit will explore available actions across a range of organisational levels such as communities, governments and NGOs.

SUST5003 Energy and Resources

Credit points: 6 **Session:** Semester 1 **Classes:** One 2 to 2.5 hour interactive lecture per week presented in an intensive format with up to four hours per week spent on a combination of additional (e.g. on-line) learning tasks, small group sessions and consultation with lecturers. **Corequisites:** SUST5001 **Assumed knowledge:** A three year Bachelors (pass) degree from the University of Sydney or equivalent qualifications/learning. **Assessment:** Essays, classroom presentations, short written assignments (100%) **Mode of delivery:** Normal (lecture/lab/tutorial) Day
This unit will examine the critical roles that energy and resource usage play in global, national and local sustainability. The need for developed economies to decarbonise their energy supply and for developing countries to have access to clean energy and sustainable resources will require major changes in technology, policy and business systems. This unit of study will cover the fundamentals of energy and resource supply; sustainable supply and use of energy for industry, business and consumers; life cycle analysis; energy security and alternative energy systems. Students will gain an understanding of: different sources of energy and their uses; the economic, environmental and societal contexts of energy and resource use; the need and scope for a transition from conventional energy sources; sound principles for analysing different resource and energy supply options; the role of international agreements and federal policy in influencing resource and energy use.

SUST5004 Populations and Health

Credit points: 6 **Session:** Semester 2 **Classes:** Alternate lecture/tutorial on Thursdays Aug 7, 14, 21, 28 Sept 11, 18, 25 and Oct 9. **Corequisites:** SUST5001 **Assumed knowledge:** A three year Bachelors (pass) degree from the University of Sydney or equivalent qualifications/learning. **Assessment:** Essays, short written assignments (100%) **Mode of delivery:** Normal (lecture/lab/tutorial) Day
This unit explores the extent to which environmental changes influence population demographics and health, and the extent to which demographic and secular changes impact on the physical environment. The influence of migration, conflict, food insecurity, scarce resources, droughts, flooding, heat stress, emerging and re-emerging infections and chronic health problems on poverty, ageing and dependency, physical, mental and social health and economic sustainability will be analysed alongside the elements needed to preserve the diversity and functioning of the ecosystem for future human survival. International models and policies for mitigating and/or adapting to the negative consequences of globalisation, urbanisation, overconsumption, and resource depletion will be analysed for their potential benefits and harms to sustainable population growth, optimal health and equitable distribution of essential resources.

SUST5005 Policy and Sustainability

Credit points: 6 **Session:** Int Sept **Classes:** Intensive classes for 4 full days beginning in September 2014 **Corequisites:** SUST5001 **Assumed knowledge:** A three year Bachelors (pass) degree from the University of Sydney or equivalent qualifications/learning. **Assessment:** Essays, short written assignments (100%) **Mode of delivery:** Normal (lecture/lab/tutorial) Day
Climate change, ecological sustainability, food security, resource scarcity, green technology and innovation, rising ocean levels, climate refugees, drought and 'water wars', are just some of the complex topics that now confront policy makers at all levels of government. This unit of study aims to provide students with an understanding of the issues surrounding the development and implementation of policies for sustainability. At all levels there are a range of stakeholders- policy makers, regulators, non-government organisations, industry, citizens and community groups- confronted by a complex ethical environment in their pursuit of different and sometimes competing agendas. As a result, policy and particular policy instruments may reflect conflict and compromise rather than consensus. Students will be introduced to: the role of analysis (scientific, economic, social and political etc) in providing an evidence base; the variety of instruments and institutions available for policy delivery; the lobbying process in influencing policy determination; and effectiveness of policy design and implementation including identification of 'winners' and 'losers'.

SUST5006 Sustainability, Society and Change

Credit points: 6 **Teacher/Coordinator:** Dr Richard Seymour **Session:** Semester 1 **Classes:** One 2 to 2.5 hour interactive lecture per week presented in an intensive format with up to four hours per week spent on a combination of additional (e.g. on-line) learning tasks, small group sessions and consultation with lecturers. **Corequisites:** SUST5001 **Assumed knowledge:** A three year Bachelors (pass) degree from the University of Sydney or equivalent qualifications/learning. **Assessment:** Essays, short written assignments (100%) **Mode of delivery:** Normal (lecture/lab/tutorial) Day
This unit of study will help build your understanding of the knowledge, skills and activities required to lead sustainability and change in, and with, businesses and organisations. The unit presents the relevance and importance of business mission and strategy, and will introduce the roles of corporate

social responsibility, social entrepreneurship and impact measurement. It will also explore stakeholders associated with business (including shareholders, consumers and government) and how they can both motivate and impede change in the context of sustainability. Flexible and inclusive models of leadership will be introduced as we seek an appreciation of systems theory and its crucial place in understanding the complex nature of sustainability. Building on an understanding of distributed leadership and the nature of systems, action research and action learning are introduced as ideal frameworks to affect societal and organisational change. Learning will be facilitated through seminars, readings, as well as individual and group projects.

PHYS5031 Ecological Econ & Sustainable Analysis

Credit points: 6 **Session:** Semester 1 **Classes:** 2-hour lecture and 1-hour tutorial per week. **Assumed knowledge:** A three year Bachelor's (pass) degree with some quantitative work, such as economics, science or engineering. **Assessment:** Major essay, tutorial summary, and course compilation diary (100%). **Mode of delivery:** Normal (lecture/lab/tutorial) Day
This unit will introduce selected recent topics from Ecological Economics, such as concepts of sustainability (definitions); comparisons with environmental economics, intergenerational discounting; time and equity in the climate change debate; valuing the environment; links between theories of well-being, consumerism and environmental impact; and cost benefit analysis. The unit sets the scene for the more detailed and specific units PHYS 5032, PHYS 5033, and PHYS 5034.

SUST5007 Research Project A

Credit points: 24 **Session:** Semester 1, Semester 2 **Classes:** Regular meetings at times by agreement with mentor **Prerequisites:** Any 36 credit points of the following: SUST5001, SUST5002, SUST5003, SUST5004, SUST5005, SUST5006, PHYS5031 **Prohibitions:** SUST5008, SUST5009 **Assumed knowledge:** A three year Bachelors (pass) degree from the University of Sydney or equivalent qualifications/learning. **Assessment:** Combination of 3 written reports, 3 presentations. Diary/Log, meeting attendance (100%) **Mode of delivery:** Normal (lecture/lab/tutorial) Day
Students in teams of 2-4 members propose a research enquiry (possibly based on their employment). Ideally, students work in teams (although this may depend on any IP constraints of their employers). The project is multidisciplinary and should cover at least 2 sustainability theme areas (such as energy, health, development, environment) and be approved by the Unit Coordinator. The Unit Coordinator will appoint an academic mentor for each group from among the relevant researchers in the University. Students will keep a diary/log of their activities, to be submitted for assessment at the end of semester.

SUST5008 Research Project B

Credit points: 12 **Session:** Semester 1, Semester 2 **Classes:** Regular meetings at times by agreement with mentor **Prerequisites:** Any 36 credit points of the following: SUST5001, SUST5002, SUST5003, SUST5004, SUST5005, SUST5006, PHYS5031 **Prohibitions:** SUST5007 **Assumed knowledge:** A three year Bachelors (pass) degree from the University of Sydney or equivalent qualifications/learning. **Assessment:** Combination of 3 written reports, 3 presentations. Diary/Log, meeting attendance (100%) **Mode of delivery:** Normal (lecture/lab/tutorial) Day
Students in teams of 2-4 members propose a research enquiry (possibly based on their employment). Ideally, students work in teams (although this may depend on any IP constraints of their employers). The project is multidisciplinary and should cover at least 2 sustainability theme areas (such as energy, health, development, environment) and be approved by the Unit Coordinator. The Unit Coordinator will appoint an academic mentor for each group from among the relevant researchers in the University. Students will keep a diary/log of their activities, to be submitted for assessment at the end of semester.

SUST5009 Research Project C

Credit points: 12 **Session:** Semester 1, Semester 2 **Classes:** Regular meetings at times by agreement with mentor **Prerequisites:** Any 36 credit points of the following: SUST5001, SUST5002, SUST5003, SUST5004, SUST5005, SUST5006, PHYS5031 **Prohibitions:** SUST5007 **Assumed knowledge:** An undergraduate degree in Science **Assessment:** Combination of 3 written reports, 3 presentations. Diary/Log, meeting attendance (100%) **Mode of delivery:** Normal (lecture/lab/tutorial) Day
Students in teams of 2-4 members propose a research enquiry (possibly based on their employment). Ideally, students work in teams (although this may depend on any IP constraints of their employers). The project is multidisciplinary and should cover at least 2 sustainability theme areas (such as energy, health, development, environment) and be approved by the Unit Coordinator.

The Unit Coordinator will appoint an academic mentor for each group from among the relevant researchers in the University. Students will keep a diary/log of their activities, to be submitted for assessment at the end of semester.

AFNR5502 Remote Sensing, GIS and Land Management

Credit points: 6 **Session:** Semester 2 **Classes:** 3x1-hr lectures/week weeks 1-6, 1x1 project weeks 7-11, 1x1-½ hour presentation scheduled for week s12 and 13, 1x3-hr practical weeks 1-6 **Prerequisites:** Consent of the unit coordinator. Recommended units include GEOS2111/GEOS2911 (Natural Hazards: a GIS approach), ENVX3001 (Environmental GIS), SOIL 3004 (The Soil Resource), GEOS3014 (GIS in Coastal Management) **Assessment:** 1x 20 min presentation (10%), laboratory work reports (30%), Group assignment (10%), 1x3000w project report (50%) **Mode of delivery:** Normal (lecture/lab/tutorial) Day
This unit of study is aimed at advanced techniques in Remote Sensing (RS), linked with Geographical Information Systems (GIS), as applied to land management problems. We will review the basic principles of GIS and then focus on advanced RS principles and techniques used for land resource assessment and management. This will be followed by practical training in RS techniques, augmented by land management project development and implementation based on integration of GIS and RS tools. The unit thus consists of three separate but overlapping parts: 1) a short theoretical part which focuses on the concepts of RS; 2) a practical part which aims at developing hands-on skills in using RS tools, and 3) an application-focused module in which students will learn the skills of how to design a land management project and actualise it using integrated GIS and RS techniques.
Syllabus summary: Lectures will cover: Overview of the basic principles of Geographical Information Science (GISc), Advanced principles of remote sensing, Land resource information and data capture using RS, Digital elevation modelling and terrain analysis using remote sensing; Image enhancement and visualization; Image classification and interpretation; RS data interpretation for land resource inventory; RS and GIS for land use and land cover change analysis; Coupling of models of land resource assessment with GIS and RS. Fifty percent of learning time will be devoted to the design and implementation of projects, which can be selected from GIS and RS applications in: agricultural land management, vegetation studies, water and catchment (hydrological) studies; land-cover and land-use change modelling, pesticide and herbicide environmental risk assessment, environmental impact analysis, land degradation modelling including soil salinity, soil erosion, etc.
Textbooks
Van Dijk, A. and Bos, M.G. 2001. GIS and remote sensing techniques in land- and water-management. Kluwer Academic Publisher, Dordrecht.

AFNR5511 Soil Processes, Assessment & Management

Credit points: 6 **Session:** Semester 1 **Classes:** 1 Lec, 2 tutorials/wk, case study & on-line discussions. **Assessment:** Key soil processes essay (20%), On-line discussions (10%), Case study report (50%), Group presentation (20%) **Mode of delivery:** Normal (lecture/lab/tutorial) Day
Soils support agricultural and natural ecosystem s and regulate environmental interactions between the hydrosphere and atmosphere. It is the quality of our soils that affect productivity, the environment, health and ultimately sustainability. However, challenges such as those presented by lack of plant nutrient supply, soil acidification, physical degradation, soil contamination, and loss of soil biodiversity are problems at a global scale that threaten the sustainability of the environment and society. As well as the threats the importance of maintaining a quality soil that regulates environmental interactions will be explored, such as soil as a sink for carbon affecting climate interactions or understanding how a rich soil biodiversity can contribute to food production affecting food security. To do this, this unit of study is concerned with exploring the key pedology, soil chemistry, soil physical and soil biological processes that drive these challenges to soil quality. Time will be spent investigating how the quality of the soil can be assessed, using the indicators of the mentioned soil processes, and how the resulting data can be aggregated and communicated in a meaningful way. Working with case studies, the students will identify problems that are assessed using soil quality or function analysis with the aim of identifying management options. The management options will be evaluated to determine their adoptability and implement ability. By investigating the case studies using soil quality or function analysis students will develop their research and enquiry skills. Assessing and developing adoptable management strategies the students will develop their skills in synthesising material from multiple sources and enhance their intellectual autonomy. By producing reports and presenting seminars the students will develop their communication skills.
Textbooks
D. Hillel, 2004. Introduction to Environmental Soil Physics, Elsevier Science, San Diego, CA USA.

AFNR5512 Water Management and Variable Climate

Credit points: 6 **Session:** Semester 2 **Classes:** 1hr workshop/week, online practical work, project work **Assumed knowledge:** UG Maths or Physics or Hydrology **Assessment:** Online quizzes (20%), project report (30%), 2 hr exam (50%) **Mode of delivery:** Normal (lecture/lab/tutorial) Day
This unit builds on knowledge gained in undergraduate soil science and crop science units to develop an understanding of field level management. Particular focus will be on the effect of climate variability and change on water management decisions at the field and farm scale in relation to farm output and externalities (Salinity, nutrient losses). At the completion of this unit student would be able to: Identify which climate variables will be most affected by climate change and variability; Evaluate which field and farm scale outputs will be most affected by climate change and variability; Develop scenarios based on distributions of climate variability; and Calculate the likely impacts of climate variability and change on crop production and externalities in irrigated systems using Monte Carlo techniques. The open source software package R (www.r-project.org) will be used for most analysis and other open source software will be used for crop modelling.
Textbooks
Beven, K.J. Rainfall-Runoff modeling, The Primer, John Wiley and Sons, Chichester, 2001Kumagai. M. and Warwick, W. F. 2003. Freshwater management: Global versus local perspectives, Springer-Verlag, Tokyo.

AFNR5801 Climate Change: Process, History, Issues

Credit points: 6 **Session:** Semester 2 **Classes:** 18 hrs lecture/tutorial, 12 hrs practical/field classes, 9 hrs field trip preparation **Assumed knowledge:** A basic understanding of climate change processes and issues. **Assessment:** 2hr exam (40%), tutorials (20%), practical report from field exercise (manuscript format) (40%), **Mode of delivery:** Normal (lecture/lab/tutorial) Day
This unit provides students with an overview of current debates and approaches to understanding and quantifying interactions between the biosphere, oceans and atmosphere, as used around the world, and the consequences of those interactions for climate. The unit considers climate change on a variety of timescales. This unit will include a weekend field trip to Snowy Mountains field sites managed by the University of Sydney where students will be introduced to cutting edge, ongoing climate change research.
Textbooks
A reading list will be provided consisting of selected book chapters, journal articles and other publications

ARCH9080 Urban Ecology, Design and Planning

Credit points: 6 **Session:** Semester 2a **Classes:** Intensive block mode: Lectures 3 hrs/wk for 7 weeks, plus self-directed preparation and assingments, for a minimum total student commitment of approximately 35 hours **Prohibitions:** PLAN9048 **Assessment:** Assignment (25%), Presentation (25%), Design-related report (50%) **Mode of delivery:** Block Mode
This unit will introduce the conceptual bases for sustainable development and explore how principles of sustainability can be introduced into land use planning and urban design, including environmental management and multi-criteria evaluation methodologies in three modules: Module 1 will examine the evolution of urban areas in relation to their biophysical setting using the Sydney metropolitan area as a case study. This will lead to an understanding and appreciation of the urban ecology of the city in terms of the flows of materials, resources and energy, and the challenges presented by climate change and peak oil. Module 2 will introduce principles of sustainability and the history and development of concepts of urban sustainability. Module 3 will introduce methods and frameworks for evaluating and measuring sustainability.

BETH5203 Ethics and Public Health

Credit points: 6 **Session:** Semester 2 **Classes:** 5x8hr Intensives; or Distance Education (online). Attendance is compulsory if enrolled in face-to-face block mode. **Prohibitions:** BETH5206 **Assumed knowledge:** A three-year undergraduate degree in science, medicine, nursing, allied health sciences, philosophy/ethics, sociology/anthropology, history, or other relevant field, or by special permission. **Assessment:** Continuous assessment (short weekly tasks) (20%); 1x1000wd essay (30%); 1x2500wd essay (50%) **Mode of delivery:** Block Mode or On-line
This unit of study provides students with an overview of the broader philosophical, ethical, socio-political and cultural issues that underlie public health and public health research. Students will first review the history of public health and examine the values that underpin health promotion and disease prevention. The second part of the unit examines the place of facts and values in public health and the construction and use of information, with particular reference to evidence-based-medicine. The third part of the unit examines the cultural, moral and social context of public health

including the social determinants of health, the construction of health services, the determination of research priorities and issues relating to human rights and global health.
All assessments must be completed to pass this Unit.
Textbooks
Students are provided with a book of readings (in digital format).

DESC9145 Sustaining the Built Environment

This unit of study is not available in 2014

Credit points: 6 **Session:** Semester 2a **Classes:** 6 day intensive (9am-5pm) **Assessment:** 2 assignments (100%) **Mode of delivery:** Block Mode
Note: Enrolment numbers limited by teaching resources. First preference to Sustainable Design students. If your attempt to enrol online is unsuccessful, please seek permission from the Faculty of Architecture, Design and Planning Student Administration Centre.
The unit will aim to heighten student's awareness of the major environmental and resource issues facing the planners and designers of the built environment; introduce and explore concepts of ecological sustainable development as they apply to the built environment and debate the roles that designers and planners should play in the development of a sustainable future.
Unit content: an environmental history of 20th century urban growth and development; the impact of climate change and environmental degradation upon the planning and design of the built environment; energy and resource flows in the built environment; the dimensions of ecological sustainable development; urban and regional planning perspectives on a sustainable built environment; the roles of governments, industries and professions in creating a sustainable built environment; the role of architects in creating a sustainable built environment.
Students will be expected to take part in structured discussions relating to the design and planning of a sustainable built environment and prepare a personal response to the issues raised in these discussions and other unit material. The unit will broaden students understanding of the significance of sustainable architectural practice and planning upon creating a sustainable future built environment.

DESC9146 Climate, Comfort and Sustainable Design

This unit of study is not available in 2014

Credit points: 6 **Session:** Semester 1a **Classes:** 5 day intensive (9am-5pm) **Assessment:** Written assignment and project (100%) **Mode of delivery:** Block Mode
Note: Enrolment numbers limited by teaching resources. First preference to Sustainable Design students. If your attempt to enrol online is unsuccessful, please seek permission from the Faculty of Architecture, Design and Planning Student Administration Centre.
The unit will broaden students understanding of the significance of considering climate and thermal comfort as essential design criteria for creating a more sustainable building environment. The aims of this unit are to establish the importance of climate and human thermal comfort as external and internal influences upon the form and substance of sustainable buildings; introduce a basic understanding of the thermal and other processes which create climate and influence human thermal interactions with their environment; introduce techniques for analysing and interpreting climates and specifying appropriate thermal dimensions for the spaces within sustainable buildings. Unit content: (1) Climate: the meaning of the concept of climate; the elements of climate: solar energy, the atmosphere, longwave radiation, the carbon cycle, the water cycle, winds, the earth's energy balance; the causes and likely impacts of global climate change; the influence of climate upon built form; the consequences of climate change upon building design practice; climate data and its interpretation. (2) Thermal Comfort: energy balance of the human body and its thermal environment; thermal spatial dimensions and their impact upon human thermal sensations; traditional methods for defining and measuring thermal comfort; cultural and climatic influences upon thermal comfort; the Adaptive Model of thermal comfort and its application to sustainable design of buildings. (4) Buildings as environmental filter. At the conclusion of this unit students will be expected to demonstrate competence in understanding the operation of climates at global and local scales and competence in interpreting and analysing climate data for building design purposes. Students should also be able to define appropriate thermal dimensions for buildings and their ability to apply this knowledge and these skills to a simple design exercise. The aims of this unit are to establish the importance of climate and human thermal comfort as external and internal influences upon the form and substance of sustainable buildings.

DESC9147 Sustainable Building Design Principles

Credit points: 6 **Session:** Semester 1 **Classes:** 5 day intensive (9am-5pm) **Assessment:** 1 x assignment and 1 x project (100%) **Mode of delivery:** Block Mode
Note: Enrolment numbers limited by teaching resources. First preference to Sustainable Design students. If your attempt to enrol online is unsuccessful, please seek permission from the Student Administration Centre (SAC).
The aims of this unit are to develop an understanding and knowledge of the principles underlying sustainable building design practice, in particular those principles which relate to the environmental attributes of the building fabric, the creation of healthy and comfortable interior environments, the selection of appropriate building materials and the minimisation of embodied and operational energy consumption. Unit content: environmental and health impacts of building materials; embodied energy of building materials; understanding energy flows between buildings and their environment; the principles of passive solar heating strategies in cold and temperate climates; strategies for controlling solar and other loads on the building fabric; principles of cooling by natural ventilation; low energy mechanical cooling strategies; hybrid and mixed-mode cooling strategies. By the completion of the unit students will be expected to demonstrate their knowledge of the relevant properties of building materials and construction elements which impact upon the environmental performance of buildings and to demonstrate their competence at applying this knowledge to the formulation of appropriate sustainable design strategies.

DESC9148 Sustainable Building Design Practice

Credit points: 6 **Session:** Semester 2 **Classes:** 5 day intensive (9am-5pm) **Assessment:** Individual Sustainable Design Case Study (40%); Individual Schematic Sustainable Design (60%) **Mode of delivery:** Block Mode
Note: Enrolment numbers limited by teaching resources. First preference to Sustainable Design students. If your attempt to enrol online is unsuccessful, please seek permission from the Student Administration Centre (SAC).
The aims of this unit are to explore the implications of applying sustainable building design principles on design practice; to evaluate and critique the sustainability of current design practice through an examination of current theory and professional ethics and the exploration of case studies; to explore the development of new sustainable design paradigms. Unit content: the response of architectural practice to the rise of environmentalism in the 20th century; the emergence of passive solar architecture; ecologically sustainable design [ESD] and its impact upon current design practice; real and perceived barriers to a more sustainable design practice; impact of education and theory on practice; expressing the values of sustainability in built form; towards a new sustainable design paradigm.
By the completion of the unit students are expected to demonstrate an ability to critique current building design practice in relation to sustainable design principles; to demonstrate their knowledge of key recent buildings which their designers claim to be sustainable and their ability to evaluate these claims; to enunciate a personal position on the impact of applying sustainable design principles on future design practice. The unit will broaden students understanding of the principles of sustainable building design and their impact upon future design practice.

DVST6904 Rethinking Poverty

Credit points: 6 (S2) **Session:** Semester 1, Semester 2 **Classes:** 1x2-hr seminar/week **Assessment:** 2000wd essay (40%) and 2000wd take-home exercise (35%) and 1hr exam (15%) and 1000wd reading notes (10%) **Mode of delivery:** Normal (lecture/lab/tutorial) Day
Poverty reduction has always been a central development goal. Major international programs such as the UN's Millennium Goals place poverty at their centre. New explanatory concepts such as social exclusion, capability, social capital and sustainability have considerably expanded our thinking about its nature. Students will examine cases from many parts of the world of the way discourses, policies and development practices operate together, enabling an evaluation of contemporary approaches to poverty and their effects on those most vulnerable.

EDPC5022 Design for Learning

Credit points: 6 **Session:** Semester 1 **Classes:** 1x2hr seminar/week - evening **Assessment:** 2x1500wd short assignments (2x25%) and 1x3000wd final paper (50%) **Mode of delivery:** Normal (lecture/lab/tutorial) Evening

This course provides a framework for considering many of the core problems facing those who carry out the work of educational design. It offers a model of the architecture of learning situations and focuses on three main design components that influence the character and outcomes of learning: the design of good learning tasks, the design of physical and digital resources and spaces for learning, and design intended to evoke convivial learning relationships. The course does not aim to teach specific design techniques - for example, the steps in Instructional Systems Design (ISD). Rather, it suggests ways of identifying which tools and techniques, from the many now available, are most likely to be appropriate for a specific design challenge. The course therefore offers an overview of selected, contemporary approaches, techniques and tools of relevance to designing for other people's learning. It also provides an opportunity to review empirical research on how designers design and what knowledge they draw upon in design work.

EDPC5024 Systems, Change and Learning

Credit points: 6 **Session:** Semester 2 **Classes:** 1x2hr seminar/week - evening **Assessment:** 2x1500wd short assignments (2x25%) and 1x3000wd group project and presentation (50%) **Mode of delivery:** Normal (lecture/lab/tutorial) Evening
In this core unit we will use 'systems inquiry' as a conceptual framework to explore change and learning processes, on the individual, group and organisational level. We focus on a theory-based approach to change management and organisational learning, so that students can come to appreciate the complexity and non-linearity of bringing about change in schools, corporations and other organisations. Drawing on contemporary research in the learning sciences, we will explore group and individual learning and conceptual change processes. Students will apply modern conceptual change approaches to investigate their own learning process, and will gain hands-on experience as they apply systems inquiry concepts and methods to analyse change problems in their own professional environment.

ENVI5705 Ecological Principles

Credit points: 6 **Session:** Semester 1 **Classes:** One 3-hour lecture per week. **Assessment:** Case study, assignment, critical review, presentation (100%) **Mode of delivery:** Normal (lecture/lab/tutorial) Day
This unit of study introduces fundamental concepts of modern ecology for environmental scientists through a series of modules focussing on applied questions. Using case studies from Australia, students are exposed to the challenges of doing ecology and how cutting edge research is being applied to environmental management using evidence-based approaches. Meetings and discussions with people working in the field give students an insight into the ways that ecologists address ecological problems and how way they generate an understanding of natural systems. Students have the opportunity to consider different ways of doing science and ways of dealing with different kinds of data, including qualitative, quantitative, anecdotal and experimental approaches

ENVI5708 Introduction to Environmental Chemistry

Credit points: 6 **Session:** Semester 1 **Classes:** One 2-hour lecture and one practical per week; one field trip **Assessment:** Presentation (20%), Report (80%). **Mode of delivery:** Normal (lecture/lab/tutorial) Day
Note: Note: This is a compulsory course for the Grad Dip and Masters levels of the Applied Science (Environmental Science) program
The aim of the course is to introduce students to the major physical and chemical processes that control the concentration and dispersion of chemical pollutants in natural and impacted environments. The course will demonstrate how to use contaminant data effectively and how to judge the quality of chemical data. This knowledge will be used to design and to assess environmental projects, and to judge the magnitude of impact by human activity on environments and the risk posed by contaminants to ecosystem functioning. The course aims to provide present and future managers employed in environmental professions with the skills to use data with confidence and to make management decisions knowing the risks inherent in variable data quality. A field trip will be undertaken early in the semester.

ENVI5801 Social Science of Environment

Credit points: 6 **Session:** Semester 1 **Classes:** One hour lecture and one hour seminar per week plus directed reading. **Assessment:** Essays and seminar participation (100%) **Mode of delivery:** Normal (lecture/lab/tutorial) Day

This unit provides both a conceptual and an empirical foundation for the analysis of relationships between society, the environment and natural resources. In our recent past the rapid rate of global environmental change has necessitated a breakdown of traditional disciplinary boundaries in research and social scientists are increasingly called upon to work alongside natural scientists in unraveling the complexities of the human-environmental nexus. Students will examine a number of environmental issues and consider a variety of social science academic perspectives about environmental management.

ENVI5809 Environmental Simulation Modelling

Credit points: 6 **Session:** Int June **Classes:** Six sessions **Assessment:** Report (100%) **Mode of delivery:** Normal (lecture/lab/tutorial) Day
This unit of study introduces participants to the power of simulation modelling in understanding and predicting behaviour of natural systems. It covers fundamental concepts, logic, and techniques (including sensitivity analysis), and develops skills in application to environmental problems such as catchment management and population dynamics.

ENVI5903 Sustainable Development

Credit points: 6 **Session:** Int July **Classes:** Two pre-departure lectures, 14-day field intensive. **Assessment:** Essay (100%) **Mode of delivery:** Field Experience
Note: Department permission required for enrolment
This unit of study constitutes an international field-based experience held in Indonesia during the July semester break. It explores the contested notions of sustainable development and sustainability through exposure to real world development dilemmas in one of Asia's most dynamic countries. We explore fundamental issues such as urbanization, resource scarcity and economic globalization. The unit of study involves lectures, in-situ readings and discussion groups, introduction to field methods, stakeholder meetings and experiential learning. Students interested in this unit should confirm their interest to the Unit Coordinator by the end of March of the year the field school will be held. There will be additional costs associated with this unit to cover food, accommodation, local transport and field assistance of about $1200 Students will also be required to arrange their own international travel to the starting point (either Bangkok or Jakarta).

GEOG5001 Geographic Information Science A

Credit points: 6 **Session:** Semester 1 **Classes:** Six lectures plus six workshops. **Assessment:** Report (100%) **Mode of delivery:** Normal (lecture/lab/tutorial) Day
This unit of study gives an overview of basic spatial data models, and enables students to understand the use of data from a variety of sources within a geographical information system (GIS). The analysis of spatial data, and its manipulation to address questions appropriate to planning or locational applications, will be addressed, as will the development of thematic maps from diverse data layers.

GEOG5003 Environmental Remote Sensing

Credit points: 6 **Session:** Semester 1 **Classes:** 2 one hour lectures and a 4 hour practical per week **Assumed knowledge:** Knowledge or experience equivalent to GEOG5001 (Introduction to GIS) **Assessment:** Assignments, practicals (100%) **Mode of delivery:** Normal (lecture/lab/tutorial) Day
The unit of study explores how remote sensing has enabled the science of Earth Observation to become the most valuable and widely-used tool for characterising and quantifying Earths vegetation, geology and marine ecosystems. The study introduces the physical processes that influence how light interacts with materials of the Earth's surface, which is the basis for Earth Observation. The course uses state-of-the-art, industry-standard software to introduce many different techniques in the analysis and interpretation of remotely sensed data. We will explore different kinds of remotely sensed data, starting from a simple colour photograph to multispectral and hyperspectral data gathered from satellites and aircraft. Earth Observation is becoming an essential skill for anyone interested in the natural environment - skills which are applicable across a wide range of science and environmental disciplines. Starting off simply, you will acquire the skills and knowledge to enable you to map and quantify vegetation and geology using image data acquired in different parts of the world. The objective of this course is to 'demystify' the use of satellite data and to provide the essential theoretical and practical skills to enable students to process data acquired by Earth Observation satellites and aircraft.

GEOG5004 Environmental Mapping and Monitoring

Credit points: 6 **Session:** Semester 2 **Classes:** 2 hours of lectures and one three hour practical per week. **Assessment:** Assignments (100%) **Mode of delivery:** Normal (lecture/lab/tutorial) Day
The unit introduces methods associated with acquiring data in the field and examines issues associated with application of spatial data to environmental monitoring, terrain mapping and geo computing. Students will learn both theoretically and practically how environmental data is collected using different remote sensing techniques, (pre)processing methods of integrating data in a GIS environment and the role of spatial data in understanding landscape processes and quantifying environmental change.

GOVT6135 Global Environmental Politics

Credit points: 6 **Session:** Semester 1 **Classes:** 1x2-hr seminar/week **Assessment:** 2000wd essay (30%) and 4000wd essay (50%) and participation (20%) **Mode of delivery:** Normal (lecture/lab/tutorial) Day
This unit examines the environment as a political and policy issue. Although relatively recent, the environment has become a full-fledged public policy issue exerting influence in local, national and international arenas. The unit will first focus on the specific features of the policy that influences the capability of contemporary societies to enhance the management of environmental resources and of public goods in general. Second, it discusses the development of environmental policy in Western countries, with a particular emphasis on the European Union. Third, a grid for the analysis of environmental policy will be presented, with a discussion of the main actors (political, institutional and socio-economic) involved in it and of the factors (interests and ideas) influencing their positions. Fourth, the unit briefly discusses environmental conflicts and consensual approaches used for tackling them.

GOVT6223 Topics in Environmental Politics

Credit points: 6 **Session:** Semester 1 **Classes:** 1x2-hr seminar/week **Assessment:** 1000wd seminar papers (2x15%), 3000wd research paper (50%) and seminar preparation and participation (20%) **Mode of delivery:** Normal (lecture/lab/tutorial) Day
This unit will offer a broad overview of a key contemporary issue in environmental politics. Topics could include climate change policy, environmental justice, food security and politics, sustainable cities, or timely issues in the Australian or global context. The goal will be to ground these issues in the relevant literatures of politics and environmental studies. Check with the unit coordinator or Department for the particular topic to be addressed in any given semester.

GOVT6316 Policy Making, Power and Politics

Credit points: 6 **Session:** Semester 1, Semester 2 **Classes:** 1x2-hr seminar/week **Assessment:** 1800wd essay (30%) and 4000wd essay (50%) and seminar participation (20%) **Mode of delivery:** Normal (lecture/lab/tutorial) Day
This unit focuses on the nature of public policy and the processes by which it is produced. Relevant issues are common to all nation states, although they take specific forms in each individual country. First, the unit takes an overview of public policy - dealing with basic themes such as 'What is policy?' through to different approaches to understanding the policy process. These include policy cycles, rationality, interest groups, institutions, and socio-economic interests. Second, it maps out and examines the main components of public policy making: actors, institutions and policy instruments. Third, it focuses on aspects of policy-making processes which often attract a high level of attention from analysts. These include problem definition, agenda setting, decision-taking, policy implementation, policy evaluation and crisis policy-making. Fourth, it examines wider issues in terms of the state and who ultimately holds power over the making and shaping of public policy. Finally, it examines the 'bigger pictures' of long term policy trends, and the extent to which national policy making capacities and processes have been affected by globalisation. Assessments offer a large element of flexibility, allowing students to concentrate on areas of particular interest.

GOVT6331 Public Management and Governance

Credit points: 6 **Session:** Semester 1, Semester 2 **Classes:** 1x1-hr lecture/week, 1x1-hr in-class group work/week **Assessment:** 3500wd case study (45%) and 500wd case study outline (15%) and 1.5hr exam (30%) and group work participation (10%) **Mode of delivery:** Normal (lecture/lab/tutorial) Day
This unit outlines some of the most important developments in contemporary public management and governance and how these relate to the everyday practices of those working in the public sector. It uses examples drawn from a number of OECD countries to: critically analyse the forces that have driven the move towards 'public management'; examine the theory and practice of 'public

governance'; evaluate the merits of these developments; and apply this knowledge to better understand specific developments across different contexts.

HPOL5000 Introduction to Health Policy

Credit points: 6 **Session:** Semester 1 **Classes:** Distance Education with compulsory Intensive workshops on Campus. 2 x 2-day workshops, online lectures and discussions **Assessment:** 1 x 1500wd written assignment (30%); 1 x 3000wd written assignment (50%); Online learning quiz (5%); online problem based learning exercise (15%) **Mode of delivery:** Distance Education/Intensive on Campus
To develop a critical and comparative understanding of the history, theory and practice of health policy. To give an overview of the political choices and frameworks - national and global - that shape policymaking.
Learning objectives:
- acquire a critical understanding of the basic history and features of the Australian health system
- understand the main frameworks used to analyse and make policy
- understand the main issues in the translation of policy into practice
- demonstrate the capacity to apply these understandings in particular settings through case studies.
Content:
This unit explores the main structures and institutions that make health policy. The unit examines debates over policy frameworks, and the evidence and advocacy in setting priorities. Conflicts over health policy will be placed in broader contexts - comparing different health systems and assessing global influences. Case studies will be used to examine the relationships between policy and practice.
Textbooks
Buse K, Mays N, Walt G (2012). Making health policy. Second edition. Open University Press: London. Other recommended reading materials will be available on the unit's eLearning site

HPOL5007 Global Health Policy

Credit points: 6 **Session:** Semester 2 **Classes:** Distance Education with compulsory Intensive workshops on Campus or online. 2 x 2 day workshops plus 4 tutorials (tutorials offered face-to-face or online) **Assessment:** 1 x 2000 word essay (35%), Tutorial discussion papers or online discussion (15%), 1 x 3000 word essay (50%) **Mode of delivery:** Distance Education/Intensive on Campus or On-line
This unit explores the impact of globalization the health of populations and policy making processes. It also investigates the potential to improve health outcomes globally through policy. The aim of this course is to equip students with the knowledge and skills to identify and articulate political and policy processes at the global level, become familiar with institutions and actors involved in global health policy and utilize strategies for influencing policy making at the global level. The unit will explore global health threats that transcend national boundaries; especially those whose causes or results transcend the capacity of individual states to influence. We analyse the influence and power of institutions and actors in the development and implementation of global health policy, including the World Health Organisation, UNICEF, the World Bank, the WTO, the Gates Foundation and NGOs. We will also investigate the governance of global health policy responses. Teaching will make extensive use of current case studies from recognised experts in the field.
Textbooks
Buse K, Mays N, Walt G (2012). Making health policy. Second edition. Open University Press: London.

IBUS5001 Strategy, Innovation and Global Business

This unit of study is not available in 2014

Credit points: 6 **Session:** Semester 1, Semester 2 **Classes:** 1x 3hr seminar per week **Assessment:** Individual assignment (20%); Group assignment (35%); Final 2hr exam (45%) **Mode of delivery:** Normal (lecture/lab/tutorial) Day
This unit focuses on the application of strategic thinking in key business contexts with a particular focus on the global nature of business. Specific attention is given to: (i) the identification and managing of new business opportunities both for entrepreneurial start-ups and for new ventures that emerge within a corporate setting; (ii) business model innovation as a basis for new ventures and business growth; (iii) the identification and managing of the specific challenges and risks presented by operating in a global business environment.

IBUS5002 Strategy, Innovation & Entrepreneurship

Credit points: 6 **Session:** Semester 1, Semester 2 **Classes:** 1x 3hr seminar per week **Prohibitions:** IBUS5001 **Assessment:** individual assignments (40%), group assignment (30%), and final exam (30%) **Mode of delivery:** Normal (lecture/lab/tutorial) Day
This foundation unit will provide an introduction to the essential concepts and frameworks relevant to the fields of strategy, innovation and entrepreneurship. Topics covered will include the key elements of business strategy, including developing a business mission, understanding the external environment, reviewing internal resources and capabilities, and business and corporate strategy. The importance of entrepreneurial activity and the challenges faced by startup ventures, as well as examples of successful and unsuccessful business innovations, will be highlighted. The emphasis of the unit will be on understanding the strategic activity of both startup and established businesses and will focus on issues relevant to entrepreneurs as well as business managers.

IBUS6005 Ethical International Business Decisions

Credit points: 6 **Session:** Semester 1 **Classes:** 1x 3 hour seminar per week from week 1 to week 13 **Assessment:** Group assignments (40%), final exam (30%), and individual assignments (30%) **Mode of delivery:** Normal (lecture/lab/tutorial) Day
In order to succeed in international business, both corporations and individuals need broad decision-making abilities. Business decision-making tools yield more coherent and justifiable results when used with an understanding of the ethical, social and environmental aspects of the process. This applies to various situations in the international business setting including business relations with government, customers, employees, and NGOs. This unit is designed to look at these non-financial elements in the decisions made within the international business context. Following the completion of this unit, students will have enhanced skills and knowledge relevant to the understanding of ethical issues and ethical decisions making in international business organisations.

IBUS6011 New Business Opportunities and Startups

Credit points: 6 **Session:** Semester 1, Semester 2 **Classes:** 1x 3 hr lecture/seminar per week **Prohibitions:** WORK6112, IBUS5011 **Assumed knowledge:** IBUS5002, or completion of at least 24 credit points **Assessment:** Individual assessment (70%), group assignment (10%), and group presentation (20%) **Mode of delivery:** Normal (lecture/lab/tutorial) Day
For small open economies such as Australia's, new business opportunity identification and exploitation are often critical to firms' long-term growth and survival. Identifying new markets, developing new products and implementing new business models are highly-regarded and valuable skills for entrepreneurs and business managers alike. In addition to exploring the special problems (and advantages) associated with entrepreneurial start-ups, the unit will explore commercialisation and corporate venturing. Topics include opportunity recognition, strategy development, business planning and investor documentation, venture capital and other funding sources, as well as entrepreneurial and creative leadership. The unit is structured around your learning from engaged practice, and requires you to work with startup and early stage businesses.

IBUS6014 Intellectual Property Management

Credit points: 6 **Session:** Semester 1 **Classes:** 1x 2hr lecture and 1x 1hr seminar/wk **Assumed knowledge:** IBUS5002, or completion of at least 24 credit points **Assessment:** Individual assessment (30%), group assignment (15%), group presentation (15%), and final exam (40%) **Mode of delivery:** Normal (lecture/lab/tutorial) Day
Intellectual property (IP) represents the property of your mind, intellect, and proprietary knowledge. There are a number of means of protecting your IP, including patents, copyright and trademarks. Creating IP does not necessarily mean you own the rights to use it, as most forms require you to take formal steps to register your IP and obtain the legal rights of ownership (both in Australia and internationally). This unit of study will cover aspects including the concept of IP, how to identify and protect it in a local and international context, creating the conditions to encourage and leverage IP in a commercial context, how to manage a portfolio of IP, and enforcement scenarios. The unit concentrates on how to utilise IP to create, control and exchange value, with particular attention paid to the practice of open innovation.

IBUS6016 Social Entrepreneurship

Credit points: 6 **Session:** Semester 1, Summer Late **Classes:** 1x 2hr lecture per week and 1x 1hr reading and/or case per week for 12 weeks **Assumed knowledge:** IBUS5002, or completion of at

least 24 credit points **Assessment:** individual assignments (55%), group assignment (30%) and group presentation (15%) **Mode of delivery:** Normal (lecture/lab/tutorial) Day
Social entrepreneurs are committed to furthering a social mission through enterprises that rank social, environmental or cultural impact on a par with, or even above, profit. Intersecting the business and not-for profit worlds, social entrepreneurship addresses many complex local and global problems. This unit will critically introduce the concept and develop frameworks for understanding social entrepreneurship (also referred to as social enterprise and social innovation). Teaching and learning will utilise case studies, and include the opportunity to apply real-world experiences. Topics will include creating innovative social enterprises, sustainable business models, philanthropy and funding, impact assessment, and leadership. The unit is structured around your learning from engaged practice, and requires you to work with social enterprises.

INFS5001 Project Management

Credit points: 6 **Session:** Semester 1, Semester 2, Summer Early **Classes:** 1 x 3hr seminar per week **Prohibitions:** INFS6014 **Assessment:** group assignment (25%), individual assignment (30%), and final exam (45%) **Mode of delivery:** Normal (lecture/lab/tutorial) Evening or Normal (lecture/lab/tutorial) Day
Based on the Project Management Body of Knowledge (PMBOK) this unit will introduce you to the end-to-end project management lifecycle. You will learn how to select appropriate projects based on their alignment with an organisation's strategy and then how to manage those projects successfully from initiation through execution to completion. You will learn the essential components of effective project management and how to apply them in an integrated manner. You will be exposed to both the technical and behavioural aspects of project management - including Microsoft Project - and will gain experience in critically analysing the application of concepts in specific project contexts. As organisations increasingly structure their activities on a project basis, the unit will be of value to a range of discipline specialisations. The unit can also contribute to you achieving internationally recognised accreditation from the Project Management Institute (PMI).

LAWS6061 International Environmental Law

Credit points: 6 **Session:** Int May **Classes:** May 7-10 (9-5) **Assessment:** 2500wd problem-based assignment (30%) and 5500wd essay (70%) **Mode of delivery:** Block Mode
Note: Students seeking further study in international environmental law may undertake LAWS6922 Advanced International Environmental Law.
This unit aims to provide students with an overview of the development of international environmental law throughout the twentieth century. Attention will primarily be devoted to the international law and policy responses to global and regional environmental and resource management issues. Basic principles will be discussed prior to taking a sectoral approach in looking at the application of international environmental law in specific issue areas. The unit includes material on implementation of international environmental law in the Asia Pacific region. Relevant Australian laws and initiatives will be referred to from time to time. The focus is on law and policy that has been applied to deal with environmental problems in an international and transboundary context.

LAWS6252 Legal Reasoning & the Common Law System

Credit points: 6 **Session:** Int April,Int August,Int March,Int Sept **Classes:** S103 (Group A): Mar 4-7 (9-5), S104 (Group B): Mar 21, 22 & Apr 11, 12 (9-5), S108 (Group C): Jul 29-31 & Aug 1 (9-5), S109 (Group D): Sep 5, 6 & 19, 20 (9-5) **Prohibitions:** LAWS6881 **Assessment:** in-class test (25%) and take-home exam (75%) **Mode of delivery:** Block Mode
Note: International students who are required to enrol in this unit must undertake classes during the first week of their study. Health Law and Public Health students should enrol in LAWS6881 Introduction to Law for Health Professionals in lieu of LAWS6252, if available. This unit is not available to MLawIntDev students who have been granted a reduced volume of learning. Students must attend all classes on the timetabled dates as prescribed for their enrolled session/group. An Absent Fail grade may be granted to students who fail to attend the correct session/group.
This is a compulsory unit for all postgraduate students who do not hold a law degree or equivalent from a common law jurisdiction entering the: Master of Administrative Law and Policy; Master of Business Law; Master of Environmental Law; Master of Environmental Science and Law; Master of Global Law; Master of Health Law; Master of International Business and Law; Master of Labour Law and Relations; Master of Law & International Development as well as Graduate Diplomas offered in these programs. The unit has been designed to equip students with the necessary legal skills and legal knowledge to competently apply themselves in their chosen area of law. Instruction will cover the legislative process; the judiciary and specialist tribunals; precedent; court hierarchies; legal

reasoning; constitutional law; administrative law; contracts; and torts. Some elements of the unit will be tailored in accordance with the requirements of the particular specialist programs.

LAWS6899 Environmentally Sustainable Business

This unit of study is not available in 2014

Credit points: 6 **Session:** Int November **Classes:** Nov 1, 2 & 8, 9 (9-5) **Prohibitions:** LAWS6082 **Assessment:** Either class participation (10%) and 7000wd essay (90%) or 2000wd assignment (30%) and 5000wd essay (60%) **Mode of delivery:** Block Mode
Note: This unit replaced LAWS6082 Pollution Law and LAWS6899 Corporate Environmental Responsibility.
The aim of this unit is to provide a framework for understanding contemporary approaches to the environmental regulation of corporations and relevant implications for corporate managers. The unit examines the evolution of corporate environmental regulation from 'command and control' to the adoption of a diverse range of instruments including market-based strategies (price-based and rights-based), information strategies (such as emissions inventories and corporate reporting), environmental auditing, environment management systems (including ISO14001). A number of areas fundamental to corporate environmental strategy (including risk management, financing issues, contracting/procurement) are considered in the context of specific environmental topics, including climate change, biodiversity and natural resource exploitation. An important theme of the unit is the role of corporate social responsibility in driving changes in corporate attitudes towards the environment that promote the corporate benefits of managers going beyond compliance with the letter of environmental laws.

LAWS6998 Regulating Global Crisis

This unit of study is not available in 2014

Credit points: 6 **Session:** Int May **Classes:** May 4, 5 & 11, 12 (9-5) **Assessment:** presentation (15%), group-work problem solving (15%), take-home exam (30%) and essay (40%) **Mode of delivery:** Block Mode
Regulation is an essential purpose and a critical challenge for law in the modern age. Global crisis is the context in which regulation is being reconsidered in a supra-national setting. Notions of regulation are embedded within the traditional disciplines of substantive law. That said, new approaches to regulation are constantly emerging outside the limitations of these disciplines. As we have seen with reactions to the recent Libyan conflict, in contemporary global governance, international criminal justice is emerging as a significant regulatory force. This unit will address the role of law, and in particular its enforcement, control and punishment functions, in local and global regulatory regimes and examines law's place in the development of pluralistic and contemporary regulatory policy. Students will be introduced to the foundations of regulatory theory and how these can be adapted to problem solving requiring law's authority and impact. The unit will chart the interaction between law and policy in both public and private sector regulatory regimes. The 'real-life' or applied scope of the unit will centre on identified regulatory demands and crises that anticipate a legal dimension in their resolution. The student will be exposed to cutting-edge regulatory thinking and will be skilled to confront the demands of regional and international regulatory practice.

MIPH5116 Culture, Health, Illness and Medicine

Credit points: 4 **Session:** Semester 2 **Classes:** 1 x 2 day workshop; 1 x 2hr seminar per week for 7 weeks; also offered fully online. **Assessment:** 1x3000word essay (75%) and 1x1hr class facilitation (25%) **Mode of delivery:** Normal (lecture/lab/tutorial) Day or On-line
This unit aims to provide an integrated and interpretive approach to an understanding of health-related behaviours of populations in international settings, by synthesizing anthropological knowledge and methodology, and the interactions of culture, biology, psychology and environment. The teaching process is by student-led, lecturer-guided, discussion based review and critical analysis of relevant topics. During the unit, students will explore a range of issues in global and multicultural health from an anthropological perspective. Methodological approaches will encompass ethnography and other anthropological data collection methods. The issues covered will include cultural influences on health, illness and healing, such as indigenous and traditional beliefs and systems, gender and cultural change and the impact of modernization and development on illness and healing. The impact examines disease and illness patterns - their distribution and persistence, mental illness and culture

and attitudes towards the use of medications; and the provision of culturally sensitive and appropriate services. The emphasis will be on covering a range of topic areas relevant to the students enrolled, and those of particular importance in contemporary international and multicultural health contexts.
Textbooks
Readings are available on the unit's eLearning site.

MKTG5001 Marketing Principles

Credit points: 6 **Session:** Semester 1, Semester 2 **Classes:** 1x 3 hr seminar per week **Assessment:** case analysis presentation (10%), in-class discussion (8%), mid-term exam (20%), team presentation (15%), team marketing plan (25%), final exam (20%), and research participation (2%) **Mode of delivery:** Normal (lecture/lab/tutorial) Day
This unit introduces students to the basic principles and language of marketing theory and practice. Marketing principles are examined in relation to a wide variety of products and services, in both commercial and non-commercial domains. A strong emphasis is placed on strategy planning and the marketing decision process. Students learn via the analysis of case studies drawn from the Asia-Pacific region, as well as the USA. The unit is presented in four sections. These are: (a) introduction to marketing and the marketing management process, (b) strategic issues in marketing - focusing on the preliminary analyses that are required before a marketing decision can be made, (c) the marketing mix - a detailed look at the components that make up a marketing plan, and (d) marketing planning, implementation and control processes. Students gain practical experience in analysing marketing situations and developing a comprehensive marketing plan.

NURS5002 Social Contexts of Health

Credit points: 6 **Session:** Semester 1 **Classes:** 13x2-hr lectures, 5x2-hr tutorials **Assessment:** essay (40%), and group work (10%) and exam (50%) **Mode of delivery:** Normal (lecture/lab/tutorial) Day
Ideas and beliefs about health, illness and care are intrinsically connected to particular social and historical contexts. This unit of study explores a range of such ideas and beliefs that are relevant within Australia today. A focus on social, cultural and philosophical theories of embodiment will help students to understand how proper relations to bodily products are a part of ordering of society and relevant for critical analyses of beliefs and ideas about health, illness, wellbeing and care. A major component of this unit is Indigenous Australian people's health and history, including their understandings of health and wellbeing. The unit also explores theories about health, illness and care from western and non-western perspectives. Drawing on such theories, a major component of the unit is a critical analysis of the relationships between social factors (for example ethnicity, gender, class, employment) and patterns of health and illness across the lifespan in contemporary Australia.

PACS6914 Conflict-Resolving Media

Credit points: 6 **Session:** Int March **Classes:** Intensive delivery over 5 days (total 30hrs)
Prohibitions: SCWK6935 **Assessment:** 2500wd commentaries (2x40%) and seminar participation (20%) **Mode of delivery:** Block Mode
This unit examines media representations of conflict and their influence on the behaviour of those involved. It introduces creative ways for journalists, media development workers and media activists to apply principles of conflict resolution. Students diagnose 'war journalism' and 'peace journalism', and analyse conflict in a journalism context. Theories of news and concepts of objectivity and responsibility are critically explored. Students gain practical skills in peace journalism and media activism as well as devising peace journalism interventions in conflict-affected areas.

PHYS5032 Techniques for Sustainability Analysis

Credit points: 6 **Session:** Semester 1, Semester 2 **Classes:** 2-hour lecture interspersed with hands-on exercises per week **Assumed knowledge:** A Bachelor's degree with some quantitative work such as economics, science, engineering. A basic knowledge in mathematics is desirable. **Assessment:** Comprehensive diary/notes from lectures (100%) **Mode of delivery:** Normal (lecture/lab/tutorial) Day
Note: Minimum class size of 5 students.
This unit of study offers an introduction to quantitative analysis techniques including multivariate regression, uncertainty analysis, climate modelling, structural decomposition, and dynamic systems modelling, with a strong emphasis on demonstrating their usefulness for environmental problem-solving. This unit will show how mathematics can be brought to life when utilised in powerful

applications to deal with environmental issues. Throughout the unit of study, example applications will be described, including studies on ecosystem trophic chains, mapping of household consumption and environmental impact, wind turbine assessment, and the effect of land use patterns on threats to species.

PHYS5033 Environmental Footprints and IO Analysis

Credit points: 6 **Session:** Semester 1, Semester 2 **Classes:** 2-hour lecture interspersed with hands-on exercises per week **Assumed knowledge:** A Bachelor's degree with some quantitative work, such as economics, science or engineering. A basic knowledge in mathematics is desirable. **Assessment:** Comprehensive diary/notes from lectures, including a quantitative example (100%) **Mode of delivery:** Normal (lecture/lab/tutorial) Day
Note: Minimum class size of 5 students.
This unit of study will provide an introduction to economic input-output theory and input-output analysis, with a focus on environmental applications such as carbon footprints and life-cycle analysis. The unit first explores national and global economic and environmental accounting systems and their relationships to organisational accounting. Second, it will present variants of the basic accounts, such as global multi-regional input-output systems and social accounting systems. Third, it will introduce the basic input-output calculus conceived by Nobel Prize Laureate Wassily Leontief, and provide concrete examples for how to apply this calculus to data published by statistical offices. The unit will then show how to integrate economic and environmental accounts, and generate boundary-free environmental footprint assessments. Students will walk away from this unit equipped with all skills needed to calculate footprints, and prepare sustainability reports for any organisation, city, region, or nation, using organisational data, economic input-output tables and environmental accounts.

PHYS5034 Life Cycle Analysis

Credit points: 6 **Session:** Semester 2 **Classes:** 2-hour lecture and 1-hour tutorial per week **Assumed knowledge:** A Bachelor's degree with some quantitative work, such as economics, science or engineering. Basic knowledge in mathematics is desirable. **Assessment:** Major essay, seminar presentation and course diary compilation (100%) **Mode of delivery:** Normal (lecture/lab/tutorial) Day
Note: Minimum class size of 5 students.
This unit of study will cover the areas of the philosophy, techniques, applications and standards of Life-Cycle Assessment (LCA). It will include Process Analysis, Input-Output Analysis and Hybrid Analysis. Current LCA tools will be discussed. Case studies and business applications as well as global standards such as the GHG Protocol for accounting for scopes 1, 2 and 3 emissions and ISO standards will provide a context. Students will also benefit from also enrolling in PHYS5033 for a sound understanding of input-output based Hybrid LCA methods.

RSEC5431 Benefit Cost Analysis

Credit points: 6 **Session:** Semester 1 **Classes:** 1x2 hr lecture/wk, commencing week 1, 1x1hr tutorial/wk, commencing week 2 **Assessment:** 1 x oral presentation (5%), 1 x written individual essay (20%), 1 x 1hr mid-semester exam (25%), 1 x 2hr final examination (50%) **Mode of delivery:** Normal (lecture/lab/tutorial) Day
This unit provides a detailed treatment of benefit-cost analysis and its use in public sector decision making and project evaluation. The underpinning concepts in welfare economics are analysed in detail, such as economic efficiency, criteria for assessing social welfare improvements, and economic surplus measures. Procedures of undertaking a benefit-cost analysis are presented, and tools of non-market valuation for environmental assets are covered in detail. These techniques include both stated and revealed preference techniques, including contingent valuation, choice modeling, hedonic pricing and travel cost methods.

RSEC5432 Environmental Economics

Credit points: 6 **Session:** Semester 2 **Classes:** 2x1-hr lectures/week commencing week 1, 1x1-hr tutorial/week commencing week 2 **Assessment:** Report and presentation from the practical experience in environmental economics (20%), one (1 hr.) mid-term exam (30%), and two hour (2 hr.) final exam (50%) **Mode of delivery:** Normal (lecture/lab/tutorial) Day
The unit provides theoretical and empirical background necessary for a resource economist to be able to successfully function when faced with various environmental problems. The unit investigates economic aspects of a range of environmental issues. The studied concepts are exemplified with environmental problems related to agriculture (soil salinity, algal blooms, overgrazing etc.) as well as with environmental problems typical to Australia. The guiding economic themes are: competing uses

of the environment / externalities, market failure, the importance of property rights, optimal allocation of pollution abatement, and the processes for making choices relating to non-market goods. Some social issues with environmental impacts are studied through exploration of the problems of population size and distribution, economic growth, and environmental regulation.
Textbooks
Perman, R., Y. Ma, J. McGilvray and M. Common. Natural Resource and Environmental Economics. Pearson, 3rd Ed. 2003

RSEC5433 Economics of Mineral & Energy Industries

Credit points: 6 **Session:** Semester 2 **Classes:** (2 lec, 1 tut)/wk **Assessment:** excursion attendance and report (25%); one (1 hr.) mid-term exam (30%) and one (2 hr.); two hour (2 hr.) final exam (45%) **Mode of delivery:** Normal (lecture/lab/tutorial) Day
The unit provides theoretical and empirical background on the economics of minerals exploration, extraction and marketing and on the economics of energy generation, distribution and use. The economics of minerals and energy commodity markets will be discussed and analysed. The interactions of mineral extraction and energy generation activities with other natural resources and the environment will be of particular interest (e.g. mine site remediation, land use conflicts). Sustainability and prospects for long term efficient use of these resources, as well as the development and use of alternative technologies will also be discussed. In addition, institutional and policy issues (e.g. regulatory reform), will be analysed. The unit will discuss the main aspects of the markets for minerals and energy, market structure, business environment and price movements. The unit will also provide an introductory discussion on the markets for derivatives (options, futures, forward, swaps) on minerals and energy commodities.
Textbooks
T. J. Brennan, L. K. Palmer, and A. S. Martinez, Alternating Currents: Electricity Markets and Public Policy, Resources for the Future Press, Washington D.C., 2002.

TPTM6470 Sustainable Transport & Logistic Systems

This unit of study is not available in 2014

Credit points: 6 **Session:** Semester 1 **Classes:** 2 x 3 hour lectures (same day) every other week. Refer to timetable for further details. **Assessment:** Individual homework exercise (25%), pop quizzes (2) (20%), team project with group and individual component (40%), team presentation with group and individual component (15%) **Mode of delivery:** Normal (lecture/lab/tutorial) Day
How can we accommodate the rapidly expanding movement of passengers and freight in a way that is environmentally and socially sustainable into the future? This unit introduces students to the major environmental issues that must be considered in contemporary transport and logistics operations including climate change, regional and local air pollution, noise pollution and safety. The focus then turns to specific modes, focusing initially on passenger transport, where we identify the major trends working against sustainability and the range of regulatory, behavioural, pricing, and voluntary strategies available to try to reverse these trends. We then introduce the notion of 'green' logistics and what regulators and companies can/should be doing to facilitate more sustainable practices in the shipment of freight. We then consider the issues/challenges around sustainable aviation and international shipping practice. Finally, we consider the critical issue of safety and what strategies have/could be employed to mitigate the impacts. Throughout the unit, we focus on what is going on in both the developed and emerging world nations, where the challenges are potentially on a different order of magnitude. The unit is of particular value to students majoring in transport, logistics, environmental planning, and urban planning.