GRADUATE PROGRAMS IN SUSTAINABILITY SCIENCE

FACULTY OF SCIENCES

PROFESSIONAL MULTI-DISCIPLINARY STUDIES IN SUSTAINABILITY

Want to up-grade your qualifications?

Want to change careers?

Want to study at home, either full-time or part-time?

Want access to qualified and committed educators, well experienced in distance education?

USQ is offering professional postgraduate coursework qualifications completely by external (distance) study in:

- Postgraduate Certificate in Sustainability Science
- Master of Sustainability Science

'towards a sustainable future'

USQ UNIVERSITY OF SOUTHERN QUEENSLAND

fulfilling lives

SUSTAINABILITY SCIENCE

Modern environment and natural resource management requires the integration of social, environmental and economic research within an interdisciplinary planning and policy framework. It also requires a capacity to handle complexity and uncertainty and the application of different methods of analysis and different approaches to governance and community engagement.

Human impacts on natural systems, over-exploitation of resources, global climate change, species extinctions and loss of biodiversity have all drawn attention to the need to better understand, protect and manage the natural and modified world around us.

The coursework **Postgraduate Certificate** and **Masters** in **Sustainability Science** programs address these needs by providing environmental and resource managers and other professionals with appropriate formal instruction to enhance their skills and knowledge in the emerging discipline of sustainability science.

POSTGRADUATE CERTIFICATE IN SUSTAINABILITY SCIENCE (PCSS)

The Postgraduate Certificate in Sustainability Science is a one-year part-time professional program consisting of **four compulsory Level 8 courses of one unit each**. With the approval of the Program Coordinator, students may apply to vary their program on the basis of prior study.

Program Objectives

On completion of the program graduates will be able to:

- understand the principles and approaches of sustainability
- integrate the scientific foundations for sustainable development through environmental, social and economic disciplines
- critically analyse multi-disciplinary information and data to provide informed decision-making in relation to resource management
- critically assess the emerging approaches to policy development and institutional arrangements to support sustainability
- identify and apply effective methods of community engagement
- manage complex decision-making in the face of risk and uncertainty.

Program Structure

To qualify for the award of Postgraduate Certificate in Sustainability Science, a candidate must complete the following Level 8 courses within three years of first admission to the program:

- REN8101 Environment, Society and Sustainability;
- POL8013 Environmental Politics and Policy;
- REN8202 Conservation for Sustainable Futures
- ECO8012 Tools and Techniques for Sustainable Development.

Admission requirements

To be considered for entry, applicants must hold a three-year Bachelor's degree from an Australian University or equivalent.

A formal process of Accreditation of Prior Learning (APL) will be used to assess applicants without Bachelor degrees, who wish to gain entry to the program on the basis of equivalent experience or qualifications. Applicants should contact the Program Coordinator if they wish to be assessed for admission on this basis.

Articulation

Holders of the Postgraduate Certificate in Sustainability Science may articulate to the Master of Sustainability Science with further completion of four courses, as required by that program.

MASTER OF SUSTAINABILITY SCIENCE (MSSC)

This program is a one-year full-time or two-year part-time professional program consisting of 8 units of study. The program consists of **five core studies and three elective studies** that will enhance their skills and knowledge in the emerging discipline of sustainability science.

Program Objectives

On completion of the program graduates will be able to:

- understand and apply the principles and approaches of sustainability
- integrate the scientific foundations for sustainable development through environmental, social and economic disciplines
- critically analyse multi-disciplinary information and data to provide informed decision-making in relation to resource management
- understand global environmental systems and their influence on sustainable practices
- critically assess emerging approaches to policy development and institutional arrangements to support sustainability
- identify and establish strong links between science, effective community engagement and sound policy
- demonstrate, through the breadth of their studies, an advanced understanding of issues, concepts and applications of sustainability science in environment and natural resource management
- manage complex decision-making in the face of risk and uncertainty
- advance their professional standing by incorporating contemporary scientific approaches to sustainable development.

Program Structure

The following five courses are compulsory within the Masters program:

COURSE	SEMESTER
REN8101 Environment, Society and Sustainability	Semester 1
ECO8012 Tools and Techniques for Sustainable Development	Semester 2
POL8013 Environmental Politics and Policy	Semester 1
REN8202 Conservation for Sustainable Futures	Semester 2
CLI8204 Global Environmental Systems	Semester 1

In addition, students may choose three units of study from a range of electives, including:

- CMS3010 Environmental Discourses: Democracy, Science & Economics
- GIS1402 Geographic Information Systems
- GIS3405 Spatial Analysis and Modelling
- LAW2107 Environmental Law
- FIN5003 Decision Support Tools
- MGT8033 Leading Organisational Change
- POL2000 Political and Economic Ideas
- POL2001 Institutions and Governance
- PRL2001 Issues Management and Strategic Planning
- PRL2002 Community Consultation and Development
- ECO8011 Global Issues in Environmental Management
- ECO8010 Corporate Environmental Management
- or other course(s) subject to approval by Program Coordinator

Admission requirements

To be considered for entry, applicants must hold a three-year Bachelor's degree from an Australian University or equivalent.

A formal process of Accreditation of Prior Learning (APL) will be used to assess applicants without Bachelor degrees, who wish to gain entry to the program on the basis of equivalent experience or qualifications. Applicants should contact the Program Coordinator if they wish to be assessed for admission on this basis.

DESCRIPTIONS OF SOME CORE COURSES IN THE GRADUATE PROGRAMS IN SUSTAINABILITY SCIENCE

REN8101 Environment, Society and Sustainability

This course provides a general introduction and overview of the emergence of environmental issues at the global scale and covers such topics as the physical environment, biological diversity, and human impact on the natural environment. Issues examined from a global perspective include food and fibre resources, water resources, energy production and use, mining, fishing and forestry, atmospheric pollution, climate change, urbanisation and waste management. The principles for sustainable development are introduced and possible future management of resources and the environment are discussed.

REN8202 Conservation for Sustainable Futures

Ecology and conservation are closely related scientific disciplines that explore the very nature of life in terms of the distribution and abundance of organisms and interactions between organisms and their environment (ecology), and the diversity, scarcity and conservation of species, communities and ecosystems (conservation). This course provides a comprehensive survey of general ecological concepts and principles relevant to the sustainable management of the environment and an understanding of how ecological systems and processes have been impacted upon by human activities. The concept of biodiversity, mechanisms behind speciation and patterns in biodiversity, key threatening processes, and current issues in the conservation of biodiversity are examined. The course also examines concepts of pattern and processes in human-modified landscapes (including land transformation, habitat fragmentation, patch dynamics, conservation corridors and connectivity), implications for conservation and ecologically sustainable development.

ECO8012 Tools and Techniques for Sustainable Development

This subject introduces managers to tools and techniques (both general and specific) that may be used in best practice environmental management and sustainable development. Topics covered may include environmental impact assessment, environmental auditing, environmental reporting and investor and public relations, management performance tracking and measuring systems. Other areas covered include life cycle analysis and product stewardship, full cost accounting, internal auditing and clean technology financing, process tools pollution prevention and waste minimisation programs, standards and standardisation, voluntary self regulation and beyond compliance, disclosure policy, measuring performance, ISO 14000, entering international markets and capitalising on clean energy markets.

POL8013 Environmental Politics and Policy

Environmental management is about the management of both physical problems and political and policy debates. This course provides students with the means to understand the origin of conflicts over environmental issues and some of the key aspects of current debates about environmental problems. In the first part of this course, students will learn about the development of environmental ideas awareness, and how environmental thinking entered mainstream politics. In the second part of the course there is a discussion of some of the major approaches to dealing with environmental problems. In particular, students will consider the arguments about the type and degree of policy and systemic change that is necessary to achieve an improvement in environmental outcomes. This course will provide students with a broad understanding of the history and politics of environmentalism and current directions in environmental policy, so they have the capacity to be informed participants in debates and decision-making that relate to the environment.

CLI8204 Global Environmental Systems

The course provides an overview of the dynamics of global environmental systems and how they influence and impact on human activities. In particular, the course focuses on the structure of the atmosphere and ocean, and the drivers of global climate that determine the composition of the natural environment. The important global data sets of the physical environment are introduced and key physical processes within the ocean and atmosphere, and the physical processes that link these to human systems are discussed. Models based upon sound scientific understanding of the physical mechanisms are introduced and their development into tools that provide credible scientific guidance in sustainable development and management are reviewed. The course concludes with a brief review of successful policy development and application guided by scientific knowledge.

For more information

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For information on the Higher Education Loan Program FEE-HELP, visit: www.usq.edu.au/fees

Program CRICOS code: ???????

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