



Unit Outline (Higher Education)

Institute / School: Institute of Innovation, Science & Sustainability

Unit Title: Water Resource Management

Unit ID: ENGRG9103

Credit Points: 15.00

Prerequisite(s): (ENGRG2103 and ENGRG2106)

Co-requisite(s): Nil

Exclusion(s): (ENGIN4201)

ASCED: 030999

Description of the Unit:

Introduction to Systems/Holistic thinking to water management. Water quality management options including improved land management, water demand management, planning frameworks, and environmental and social aspects. Environmental and social aspects will be covered.

Grade Scheme: Graded (HD, D, C, P, MF, F, XF)

Work Experience:

No work experience: Student is not undertaking work experience in industry.

Placement Component: No

Supplementary Assessment: Yes

Where supplementary assessment is available a student must have failed overall in the Unit but gained a final mark of 45 per cent or above, has completed all major assessment tasks (including all sub-components where a task has multiple parts) as specified in the Unit Description and is not eligible for any other form of supplementary assessment

Course Level:

Level of Unit in Course	AQF Level of Course					
	5	6	7	8	9	10
Introductory	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Intermediate	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Advanced	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Learning Outcomes:
Knowledge:

- K1.** Describe fundamental elements of water resources management and the terminology used. Discuss different multi-disciplinary aspects of water resource management using case studies.
- K2.** Explain systems thinking and cause-effect analysis methods/frameworks. Explain the integrated water management and its interrelation with pillars of social-, economic-, and environment-sustainability.
- K3.** Discuss different water and environmental management technologies and policies in context of Australia and other countries

Skills:

- S1.** Analyse and evaluate different options for water resource management and decision making
- S2.** Undertake economic analysis for water management projects
- S3.** Design projects in a holistic way using principles of integrated resource management

Application of knowledge and skills:

- A1.** Analyse data on different water management aspects and interpret it for decision making
- A2.** Apply frameworks and methods for analysis, assessment and/or design of water management projects

Unit Content:

Topics may include:

- Introduction to management concepts
- Water, energy and climate change
- Frameworks and cause effect analysis
- Non structural and economic instruments and analysis in water management
- System analysis
- Water and environmental management policies
- Water sensitive urban design technologies
- Integrated urban water management
- Guest lectures
- Field visit and case studies

Learning Task and Assessment:

Learning Outcomes Assessed	Assessment Tasks	Assessment Type	Weighting
K1-K3, S1-S3	Report on baseline water footprint for a household and field visits	Group assessment	10-20%
K2, K3, S3, A1, A2	Presentation on water management issues using a case study	Individual assessment	20-40%
K1-K3, S1-S3, A1, A2	Closed Book Examination: Students are required to achieve at least 45% in the total continuous assessment component (assignments, tests, mid-semester exams, laboratory reports) and at least 45% in the final examination component and an overall mark of 50% to achieve a pass grade in the unit. Students failing to achieve this requirement will be given a maximum of 45% in the unit.	Closed Book Examination (3 hours)	40-60%

Adopted Reference Style:

IEEE

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