

WATR7400 - Water supply, sanitation and hygiene (WASH) (2 units)

Integration module (Specialisation stream #1: WASH and development)

Module description

This specialist module is part of the 'WASH and development' stream and provides participants with an understanding of social, environmental, financial and technical principles and approaches to meeting the water supply, sanitation and hygiene needs of people in impoverished communities. These principles and approaches apply to impoverished people and communities in developing and emerging economic country contexts.

Key topics of the module include: understanding the environmental health and wellbeing basis for work in this sector; understanding WASH inequalities and principles for WASH development; key principles, approaches and technologies for sanitation in different settings (urban, rural, informal settlements, schools), including the social dimensions of participation, shifting behaviours and management; principles and approaches to water supply including access, water quality, quantity, affordability, local management and sustainability; and hygiene promotion and behaviour change in different settings.

Module introduction

This module provides participants with an understanding of technical engineering and socio-economic principles and tools for designing and operating domestic water supply and sanitation systems that are sustainable, appropriate and affordable for poor communities in developing countries.

Module delivery

- **Full-time** (on-campus) students, including international students, are required to enrol in the internal offering in Semester 2.
- **Part-time** (external) students are required to enrol in this module in Semester 2 or Semester 4. These semesters begin with an intensive face-to-face session and field trip and the remainder of the module is taught externally on-line.



Assumed background

The following modules are prerequisites for this module: 'New perspectives on project management', 'Science of water', 'Water, sustainability and development', 'Water governance and policy'.

Learning objectives

After successfully completing this module participants are able to:

- Demonstrate understanding of the wide range of health and wellbeing issues related to water, sanitation and hygiene, how WASH diseases are transmitted and can be prevented through improvements in the use of sanitation, hygiene and water systems;
- Explain the inequalities that presently exist in access and use of WASH, and the political, socio-economic and technical principles underlying the development of appropriate, sustainable water supply and sanitation services in low-income contexts;
- Demonstrate understanding of the elements of sanitation service chains, including systems for sanitary collection, storage, treatment and disposal of human waste, both on-site and off-site, their function, design and modes of operation, and suitability in different settings (urban, informal, rural and schools);
- Discuss the need for and fundamental principles involved in establishing a hygiene behaviour change program alongside other components of WASH improvements;
- Explain the principles involved in designing simple water supply systems which aim to provide sustainable and safe water for health and wellbeing outcomes;
- Show knowledge of the range of suitable technologies and management approaches for domestic water supply in low- and middle-income countries, considering risk management and resilience for disasters;
- Show knowledge of the range of suitable technologies and management approaches for domestic water supply in low- and middle-income countries, considering risk management and resilience for disasters;
- Show how relevant theories, integration tools and approaches presented in this course can inform the analysis of case studies and help to identify practical, integrated solutions to water planning and management problems.

Teaching staff

Lead Lecturer: [Dr Regina Souter, International WaterCentre](#)

Lecturer: [Mr Ben Fawcett](#) (School of Chemical Engineering, The University of Queensland), [Dr Cara Beal](#) (Smart Water Research Centre, Griffith University).

Problem-Based Learning (PBL) projects

Parallel PBL projects and field trips run through the semester, comprising roughly 50% of the assessment weight. Full-time students complete two PBL projects per semester, while part-time students complete one PBL per semester.

PBL projects for the Integration semester comprise:

- **PBL3:** Integrated catchment management – developing strategies for change (*Individual project*)
- **PBL4:** Learning lessons from integrated water management in practice (*Individual project*)

Field trips

As part of this module (Water supply, sanitation and hygiene), full-time participants undertake a two day field experience in well digging, emergency water tank construction, concrete sanitation platform construction and water quality testing (Pinjarra Hills, Queensland).

For a complete list of field trips that participants undertake during the program, please refer back to "Field trips" on page 7 of this syllabus or visit the [IWC website](#).

