

CIVL 2018 WATER SUPPLY SYSTEMS DESIGN

Credit Points 10

Coordinator Dharma Hagare ([https://directory.westernsydney.edu.au/search/name/Dharma Hagare/](https://directory.westernsydney.edu.au/search/name/Dharma%20Hagare/))

Description In this unit students will examine the quality of water and the standards to be met for the supply of water that is fit for its intended use. The design of treatment processes to meet these standards as well as principles underlying the hydraulic design of the treatment systems are examined in the context of both urban and remote rural communities. Students will also explore alternative supply systems and their merits and demerits, including economic viability, in order to gain design and analysis skills with respect to various water supply systems.

School Eng, Design & Built Env

Student Contribution Band HECS Band 2 10cp

Check your HECS Band contribution amount via the Fees (https://www.westernsydney.edu.au/currentstudents/current_students/fees/) page.

Level Undergraduate Level 2 subject

Pre-requisite(s) CIVL 2002 OR ENGR 1050 AND CIVL 2003

Co-requisite(s) CIVL 3011

Equivalent Subjects CIVL 4014 Water and Wastewater Treatment

Learning Outcomes

On successful completion of this subject, students should be able to:

1. Analyse alternate sources of water that can be used to supply water for its intended use.
2. Design unit processes and their sequence to produce water that is fit for its intended use for both urban and remote rural communities.
3. Design associated infrastructure for supplying water for its intended use.
4. Evaluate the sustainability of reuse, recycle and disposal options for the waste generated from treatment processes.
5. Demonstrate communication and collaboration skills in working with others in an ethical and respectful manner to produce professional analyses and reports in designing and evaluating sustainable water supply systems.

Subject Content

1. Sources of water and its quality
2. Fit for the purpose water quality guidelines/ standards
3. Alternative sources of water including, surface water, groundwater, stormwater and recycled water.
4. Conventional Water Treatment Processes
5. Transmission and distribution of water
6. Advanced water treatment processes
7. Impact of changing climate on water sources and water availability
8. Reuse/ recycle/ disposal of water treatment plant sludge/ waste.

Assessment

The following table summarises the standard assessment tasks for this subject. Please note this is a guide only. Assessment tasks are regularly updated, where there is a difference your Learning Guide takes precedence.

| Item | Length | Percent | Threshold | Individual/ Group Task |
|----------------------|---|---------|-----------|------------------------|
| Tutorial submissions | In-class submissions | 20 | N | Individual |
| Project Report | 5000 words including figures, tables and pictures | 25 | N | Group |
| Practical Report | 1000 words including tables, figures and pictures | 5 | N | Group |
| Final Exam | 3 hours | 50 | N | Individual |

Teaching Periods