

# CIVL 7014 SUSTAINABLE SYSTEMS

**Credit Points** 10

**Legacy Code** 301003

**Coordinator** Sathaa Arumugam Sathasivan ([https://directory.westernsydney.edu.au/search/name/Sathaa Arumugam Sathasivan/](https://directory.westernsydney.edu.au/search/name/Sathaa%20Arumugam%20Sathasivan/))

**Description** This subject teaches students the essential tools available to achieve environmental sustainability in various engineering/construction/industrial design professional settings. The focus of the subject is on the application of the tools and exploration of Australian regulatory and sustainable development practices.

**School** Eng, Design & Built Env

**Discipline** Water and Sanitary Engineering

**Student Contribution Band** HECS Band 2 10cp

**Level** Postgraduate Coursework Level 7 subject

## Restrictions

Students must be enrolled in a postgraduate program

## Learning Outcomes

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

1. Successfully select the tools available for achieving sustainable development.
2. Demonstrate via the chosen project the basic social, cultural, environmental, and global considerations required for sustainable development.
3. Perform Life Cycle Assessment using GaBi for a chosen project.
4. Perform Environmental/Social/Economic Impact Assessment for a chosen project.
5. Analyse energy efficiency and suggest possible improvements.
6. Apply various Australian environmental regulations.

## Subject Content

1. Introduction to sustainable development.
2. Introduction to medium related environmental problems.
3. Material and energy flow in the environment and processes.
4. Ecosystems, Ecology.
5. Social aspects of environment and Environmental ethics.
6. Past policies and consequences on technological innovations and challenges they posed & Concept of sustainability.
7. Tools applied in achieving sustainability and case studies;
  - (1) Technical tools:
    - a. Environmental Impact Assessment
    - b. Cleaner Production
    - c. Life Cycle Assessment
    - d. Industrial Ecology
    - e. Energy efficiency
    - f. Social Impact Assessment
    - g. Cumulative Impact Assessment
  - (2) Non-technical tools:
    - Regulatory, economic, and policy tools

## 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.

| Type       | Length               | Percent | Threshold | Individual/Group Task |
|------------|----------------------|---------|-----------|-----------------------|
| Report     | 2,000 to 3,000 words | 35      | N         | Individual            |
| Report     | 2,000 to 3,000 words | 35      | N         | Individual            |
| Final Exam | 2 hours              | 30      | Y         | Individual            |

Prescribed Texts

- NULL

Teaching Periods

## Summer A (2022)

### Parramatta City - Macquarie St

#### Day

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## Spring (2022)

### Parramatta City - Macquarie St

#### Day

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## Summer (2022)

### Online

#### Online

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### Parramatta City - Macquarie St

#### On-site

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#### On-site

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#### Online

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