

# ENGR 2032 SUSTAINABILITY ANALYSIS AND DESIGN

**Credit Points** 10

**Legacy Code** 301419

**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** In this unit, students will learn and appropriately apply technical and socio-economic approaches of achieving sustainability, such as life cycle assessment, environmental impact assessment, environmental auditing, circular economy, design for the environment and cleaner production to real world problems. The students will be taught about policy, financial and social approaches to achieving sustainability through real life problems/cases.

**School** Eng, Design & Built Env

**Discipline** Environmental Engineering

**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/](https://www.westernsydney.edu.au/currentstudents/current_students/fees/)) page.

**Level** Undergraduate Level 2 subject

## Learning Outcomes

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

1. Perform Systems Analysis including Environmental Auditing for simple systems or products.
2. Explain the implication of Circular Economy to Sustainable Development.
3. Perform Life Cycle Assessment for a given case.
4. Perform Environmental Impact Assessment for a given project.
5. Explain the term Cleaner Production or Industrial Ecology with examples of applications.
6. Modify a system or product design and perform option analysis considering multiple aspects such as environmental, social, cultural, political, economic, and regulatory factors.
7. Communicate solutions to specialist and non-specialist audiences.

## Subject Content

1. Systems analysis and auditing
2. Circular economy
3. Environmental auditing
4. Technical approaches to sustainability such as life cycle assessment; environmental impact assessment
5. Non-technical approaches to sustainability such as tax, policy, marketing.

## 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	3000 words	35	N	Individual
Intra-session Exam	1 hour	30	N	Individual
Report	2000-3000 words and 15 minutes	35	N	Both (Individual & Group)

Teaching Periods

## Spring (2023) Penrith (Kingswood)

**Hybrid**

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View timetable ([https://classregistration.westernsydney.edu.au/odd/timetable/?subject\\_code=ENGR2032\\_23-SPR\\_KW\\_3#subjects](https://classregistration.westernsydney.edu.au/odd/timetable/?subject_code=ENGR2032_23-SPR_KW_3#subjects))

## Parramatta City - Macquarie St

**Hybrid**

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