

# ENGR 4035 SMART AND LIVEABLE CITIES

**Credit Points** 10

**Legacy Code** 301423

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

**Description** Students will apply smart and sustainability perspectives to design urban centres. Students will use a range of tools to conduct integrated system analysis for smart and liveable cities. Students work on real world projects including green buildings, blue/green space, sustainable transport and infrastructure, sustainable water management. Though these projects, students will achieve significant edge in their employability.

**School** Eng, Design & Built Env

**Discipline** Other Engineering And Related Technologies

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

Check your fees 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 4 subject

**Pre-requisite(s)** CIVL 2002 OR ENGR 1050

**Equivalent Subjects** ENGR 4011 Sustainability and Risk Engineering

## Restrictions

Successful completion of 200 credit points.

## Learning Outcomes

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

1. Integrate engineering and sustainability principles and tools in analysing and designing urban centres.
2. Conduct life cycle assessment and system analyses incorporating risk assessment for sustainability of resources for a given urban centre.
3. Design urban centres using smart cities principles to enhance liveability and wellbeing.
4. Justify smart city designs in terms of sustainability principles.
5. Communicate and collaborate with diverse team members, and key stakeholders in developing innovative designs and recommendations.

## Subject Content

1. Water, energy and materials conservation
2. Design of sustainable and smart urban centres
3. Application of life cycle analysis to urban centres
4. Sustainable solutions incorporating risk assessment
5. Integrated systems engineering
6. Physical and mental wellbeing of inhabitants
7. Smart cities/ IoT/ Data analytics as applied to urban centres

## 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	Mandatory
Quiz	13 x in-class submissions	20	N	Individual	N
Report	5000 words (including tables, figures and pictures)	25	N	Group	N
Report	1000 words (including tables, figures and pictures)	5	N	Group	N
Final Exam	3 hours	50	N	Individual	N

Teaching Periods

## Spring (2025) Penrith (Kingswood)

### Hybrid

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

View timetable ([https://classregistration.westernsydney.edu.au/odd/timetable/?subject\\_code=ENGR4035\\_25-SPR\\_KW\\_3#subjects](https://classregistration.westernsydney.edu.au/odd/timetable/?subject_code=ENGR4035_25-SPR_KW_3#subjects))

## Parramatta City - Macquarie St

### Hybrid

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