

# CIVL 4003 CONSTRUCTION TECHNOLOGY 5 (ENVELOPE)

**Credit Points** 10

**Legacy Code** 200471

**Coordinator** Mohammad Reza Razavi ([https://directory.westernsydney.edu.au/search/name/Mohammad Reza Razavi/](https://directory.westernsydney.edu.au/search/name/Mohammad%20Reza%20Razavi/))

**Description** After undertaking this unit, you should understand the way internal spaces are designed and constructed to optimise thermal, visual and acoustic comfort and for energy efficiency.

**School** Eng, Design & Built Env

**Discipline** Building Services 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 4 subject

**Co-requisite(s)** Students in 2607 Bachelor of Construction Management must enrol in BLDG 4012 Industry Based Learning before enrolling in this unit

## Learning Outcomes

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

1. Relate people's sight, hearing and thermal comfort to the lighting, acoustics and thermal control of buildings.
2. Evaluate how heat is transmitted through and stored within the building envelope.
3. Explain the construction methods used for thermal insulation and thermal storage in a building.
4. Analyse how wind, rain and condensation is excluded from a building envelope.
5. Determine the basic parameters of lighting using practical measurements and mathematical models.
6. Synthesise artificial lighting strategies in simple room configurations.
7. Relate how the intensity and movement of the sun affects daylighting and apply strategies to improve the natural lighting of buildings.
8. Describe the characteristics of sound in a structure and in the air.
9. Determine sound transmission by practical measurements and mathematical calculations.
10. Develop construction techniques to improve the acoustic resistance of partitions.
11. Explain how noise and reverberation can be attenuated within a building.
12. Evaluate a building in terms of energy efficient design.
13. Investigate the relationship between built form and climate.
14. Actively contribute to team research and communication project.

## Subject Content

Fundamentals of Vision  
Artificial Light  
Daylight

Thermal Comfort  
Steady State Heat Flow  
Periodic Heat Flow  
Fire Resistance  
Fundamentals of Human Hearing  
Noise Control  
Room Acoustics  
Effect of Climate on Buildings & Weatherproofing

## 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
Short Answer	3 hours	40	N	Individual
Report	1 500 words as the individual component of a group project	20	N	Group
Multiple Choice	2 hours	40	N	Individual

Teaching Periods

## Autumn

### Penrith (Kingswood)

#### Day

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View timetable ([https://classregistration.westernsydney.edu.au/even/timetable/?subject\\_code=CIVL4003\\_22-AUT\\_KW\\_D#subjects](https://classregistration.westernsydney.edu.au/even/timetable/?subject_code=CIVL4003_22-AUT_KW_D#subjects))

### Parramatta - Victoria Rd

#### Day

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