

CIVL 4003 CONSTRUCTION TECHNOLOGY 5 (ENVELOPE)

Credit Points 10

Legacy Code 200471

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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 fees via the 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.

Type	Length	Percent	Threshold	Individual/ Group Task	Mandatory
Short Answer	3 hours	40	N	Individual	N
Report	1500 words as the individual component of a group project	20	N	Group	N
Multiple Choice	2 hours	40	N	Individual	N