

ENGR 7008 FIRE ENGINEERING DESIGN AND ASSESSMENT

Credit Points 10

Legacy Code 300718

Coordinator Sameera Wijesiri Pathirana (<https://directory.westernsydney.edu.au/search/name/Sameera Wijesiri Pathirana/>)

Description This subject helps to develop a high level of knowledge of fire safety systems relevant to life protection and the design and assessment of such systems. The subject covers the process of fire safety engineering design and assessment including the fire engineering brief, conceptual design, regulatory objectives, fire safety engineering subsystems, verification methods, timeline analysis, design fires, evaluation of performance of passive and active fire protection systems, risk analysis and fire engineering project reporting.

School Eng, Design & Built Env

Discipline Fire Technology

Student Contribution Band HECS Band 2 10cp

Check your fees via the Fees (https://www.westernsydney.edu.au/currentstudents/current_students/fees/) page.

Level Postgraduate Coursework Level 7 subject

Equivalent Subjects LGYB 5425 - Fire Safety Systems (Life Safety)

Restrictions

Students must be enrolled in a postgraduate program.

Assumed Knowledge

Fire safety engineering principles, building regulations, fire dynamics, building fire services, fire modelling and human behaviour in fires.

Learning Outcomes

1. explain the fundamentals of building fire modelling
2. undertake a range of calculation methods and utilise computational tools to tackle different aspects of fire safety engineering problems;
3. apply computational methods and simple fire modelling tools to predict fire behaviour and smoke movement in buildings and solve fire safety engineering problems.
4. conduct literature reviews to appreciate the range of model application in fire safety engineering and to obtain data for model input and evaluation.

Subject Content

Correlations and dimensional analysis

Fire plume calculations

Fire severity and fire resistance

Building structure and steel, concrete, timber and glazing elements behaviour

Radiation models

Detector and sprinkler activation models

Zone model and its application

Fundamentals of field models

Literature review

Special Requirements

Essential equipment

Calculator, PC or laptop.

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
Report	1000 words	15	N	Individual	Y
Report	1500 words.	20	N	Group	Y
Report	2000 words	25	N	Group	Y
Report	3000 words	40	N	Individual	Y

Prescribed Texts

- ABCB, 2005, International Fire Engineering Guidelines Edition 2005, Australian Building Codes Board, Canberra.
- Drysdale, D., 2011. An Introduction to Fire Dynamics, 3rd edn, John Wiley and Sons, Chichester, UK.

Teaching Periods

Spring (2025)

Online

Online

Subject Contact Sameera Wijesiri Pathirana (<https://directory.westernsydney.edu.au/search/name/Sameera Wijesiri Pathirana/>)

View timetable (https://classregistration.westernsydney.edu.au/odd/timetable/?subject_code=ENGR7008_25-SPR_ON_2#subjects)