ENGR 7012 FIRE TECHNOLOGY AND ENGINEERING PRINCIPLES

Credit Points 10

Legacy Code 300948

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

Description The subject introduces students to the basic principles of fire behaviour and fire safety design so that they can appreciate fire safety systems and interpret fire safety engineering design concepts. The subject covers the basics of combustion, building fire characteristics, smoke movement, responses of fire safety devices, building fire resistance, response of building occupants, fire safety engineering design and assessment methodology. The subject provides the basis for understanding fire safety engineering and the techniques and tools used in fire safety engineering.

School Eng, Design & Built Env

Discipline Fire Technology

Student Contribution Band HECS Band 2 10cp

Level Postgraduate Coursework Level 7 subject

Incompatible Subjects ENGR 7011 - Fire Technology Principles ENGR 7009 - Fire Engineering Principles

Restrictions

Students must be enrolled in a postgraduate program.

Assumed Knowledge

Undergraduate study in building surveying, planning or related areas or has gained the equivalent building construction knowledge by working in the construction industry in an appropriate capacity for at least four years.

Learning Outcomes

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

1. Describe the basic principles of the fire phenomenon including the nature of fire, heat transfer, and initiation and propagation
2. Identify enclosure fire hazards and be able to determine fire loads, fire growth rates and flashover
3. Describe the principles used in fire engineering design and assessment
4. Describe the functions of various fire safety subsystems, such as suppression systems, smoke and heat control, detection, warning and egress provision, which are used in the development of a fire safety engineering solutions;
5. Interpret fire safety engineering reports.

Subject Content

The nature of fire and heat transfer processes
Fire initiation and propagation
Enclosure fires
Fire suppression
Smoke and heat control
Detection and warning
Introduction to International Fire Engineering Guidelines
The Fire Engineering Brief
Overview of fire engineering methodology
Fire safety subsystems A, B, C and D
Fire safety sub-systems E and F
Analysis and preparing report
Assessment of Fire engineering report

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
Assignment 1	Analytical, 2000 words equivalent, individual	25	N	Individual
Assignment 2	Analytical, 2000 words equivalent, individual	25	N	Individual
Final exam	2 hour exam	50	N	Individual

Prescribed Texts

- Drysdale, D. D. 2011, An Introduction to Fire Dynamics, 3rd Edition, John Wiley and Sons, Chichester, UK.
- ABCB, 2005, International Fire Engineering Guidelines Edition 2005. Australian Building Codes Board, Canberra. (Available from ABCB online shop: http://www.abcb.gov.au/index.cfm?fuseaction=ProductList)

Teaching Periods

Autumn (2022)

Online

Online

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

View timetable (https://classregistration.westernsydney.edu.au/even/timetable/?subject_code=ENGR7012_22-AUT_ON_O#subjects)