

# ENGR 7026 PERFORMANCE SOLUTIONS FOR BUSHFIRE PROTECTION

**Credit Points** 10

**Legacy Code** 301265

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

**Description** This subject describes the processes and techniques available to develop performance outcomes to the planning and building of structures required for bushfire protection in Australia. This subject provides advanced methods to address performance when considering bushfire protection measures. It also introduces the 'bushfire protection guidelines' and processes similar to that used in developing performance solutions under the National Construction Code. These include the use of event tree analysis, verification methods, consideration of climate change and the use of annual exceedance probabilities when developing performance solutions. Students are required to develop suitable measures through a performance solution for bushfire protection of a building.

**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/](https://www.westernsydney.edu.au/currentstudents/current_students/fees/)) page.

**Level** Postgraduate Coursework Level 7 subject

**Pre-requisite(s)** None

**Co-requisite(s)** None

**Equivalent Subjects** ENGR 7003 Alternate Solutions for Bushfire Prone Areas

## Restrictions

Students must be enrolled in 3793 Graduate Diploma in Bushfire Protection or 3708 Master of Bushfire Protection and have completed 40 credit points of study.

## Assumed Knowledge

Students must have prior knowledge of Bushfire behaviour, planning, building, bushfire fighting and emergency management.

## Learning Outcomes

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

1. Examine the principles of performance-based design as it applies to bushfire protection.
2. Apply the bushfire safety protection guideline process and techniques applicable to bushfire.
3. Apply the appropriate bushfire protection systems to the development of suitable bushfire design.
4. Apply appropriate alternate performance approaches to access for bushfire protection.
5. Apply the use of 'measures in combination' for developments in bushfire prone areas.

6. Examine the use and limitations of event tree analysis in bushfire protection design.
7. Communicate assessments and recommendations for performance-based solutions for bushfire protection.

## Subject Content

1. Introduction to performance-based approaches and bushfire protection measures.
2. Bushfire design guidelines and its application to the bushfire event.
3. Bushfire verification method and event/fault tree analysis.
4. Bushfire spray systems and its impact on design bushfires.
5. Bushfire protection measures in combination.
6. Performance planning as a driver of bushfire protection.
7. Tools, techniques and data for bushfire protection analysis.
8. Alternate access arrangements for performance.
9. Landscaping and maintenance to address performance.
10. Reporting and implementation of performance solutions.

## 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	500 words (250 words for each question)	20	N	Individual	Y
Essay	1000 words	20	N	Individual	Y
Report	2000 words	25	N	Individual	Y
Report	2500 words	35	Y	Individual	Y

Teaching Periods

## Spring (2025)

### Online

### Online

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

View timetable ([https://classregistration.westernsydney.edu.au/odd/timetable/?subject\\_code=ENGR7026\\_25-SPR\\_ON\\_2#subjects](https://classregistration.westernsydney.edu.au/odd/timetable/?subject_code=ENGR7026_25-SPR_ON_2#subjects))