

MS FIRE PROTECTION ENGINEERING

Program Learning Objectives

1. Identify relevant fire safety codes, standards and regulations, comprehend the fire safety performance objectives and criteria associated with these documents, and apply these fire safety objectives and criteria to a broad range of applications.
2. Analyze the flammability characteristics of different materials, interpret the results of standard and non-standard fire test methods and evaluate the fire hazards associated with different materials in a range of anticipated settings.
3. Analyze the dynamics of fires in and around buildings and other structures through the application of fundamental principles and the use of state-of-the-art computer-based fire simulation models.
4. Understand how people interact with fire conditions in buildings and calculate evacuation times through the application of fundamental principles of people movement and the use of state-of-the-art computer-based evacuation models.
5. Design fire detection and alarm systems, fire suppression systems, smoke management systems, egress systems and structural fire protection to achieve specified performance objectives.
6. Perform comprehensive fire and life safety evaluations of buildings and other structures through application of the knowledge, skills and tools acquired in this program and effectively communicate the results and findings of such evaluations.

Required Courses

FPE 501	Fundamental Thermal Sciences	4
FPE 502	Fire Dynamics	4
FPE 503	Flammability Assessment Methods	4
FPE 504	Fire Modeling	4
FPE 521	Egress Analysis and Design	4
FPE 522	Fire Detection, Alarm and Communication Systems	4
FPE 523	Water-based Fire Suppression	4
FPE 524	Structural Fire Protection	4
FPE 596	Culminating Experience in Fire Protection Engineering ¹	5

Technical Electives

Select from the following:		8
FPE 551	Fire Safety Regulation and Management	
FPE 552	Smoke Management and Special Hazards	
FPE 554	Forensic Fire Analysis	
ME 541	Advanced Thermodynamics	
ME 554	Computational Heat Transfer	

Total units **45**

¹ FPE 599 Design Thesis can substitute for FPE 596 and one technical elective for a total of 9 units.