

ENFP411 Risk-Informed Performance Based Design

Credits: Three (3)

Contact hours: Two lectures per week, 75 minutes each.

Table 5-1 category: Engineering topic with significant design component

Instructor: Milke

Textbook: SFPE Engineering Guide to Performance-Based Fire Protection (2007)

Other supplemental materials: N/A

Catalog description:

Appraisal and measurement of fire safety. Application of systems analysis, probability theory, engineering economy and risk management in the identification and synthesis of components of fire protection engineering. Methods for the development of criteria for the design, evaluation and assessment of fire safety or component hazards.

Prerequisites and Corequisites:

Restriction: Senior standing; or permission of ENGR-Fire Protection Engineering department.

Table 5-1 Course Type: Required

Specific outcomes of instruction:

Upon completion of this course the students should be able to perform and present a comprehensive performance-based design of a building in accordance with prevailing professional standards.

Student outcomes assessed: SO2.1, SO3.1, SO3.2, SO5.1

Brief list of topics covered:

Introduction to Course and Performance Based Design
Hazard and Risk
Project Review; Risk Management Approaches
Risk & Hazard Analysis Tools (logic trees, fault trees, etc.)
Engineering Economics
Goals and Objectives – Performance Criteria
Design Fires
Design Briefs
Probability, Reliability and Uncertainty
System Performance Evaluation
Case Study
Studio Session –prepare Design Brief
Design Brief Presentations
Studio Session –prepare Design Reports