

# FIRE SAFETY & EXPLOSION PROTECTION (FSEP)

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## FSEP 5000 Master's Thesis

**Prerequisites:** Consent of instructor.

**Description:** Methods used in research and thesis writing. Offered for variable credit, 1-6 credit hours, maximum of 18 credit hours. Same course as MERO 5000.

**Credit hours:** 1-6

**Contact hours:** Contact: 1-6 Other: 1-6

**Levels:** Graduate

**Schedule types:** Independent Study

**Department/School:** Engineering Technology

## FSEP 5013 Research Design & Methodology

**Prerequisites:** Consent of instructor.

**Description:** Overview of research design methods and skills necessary for conducting research projects, including: conceptualization and operationalization, literature review, deductive and inductive theorizing, hypothesis testing, quantitative and qualitative data collection and analysis, maintaining research records, experiment design, data validation, result presentation, and research ethics. Same course as FEMP 5013 and MERO 5013. Previously offered as GENT 5013.

**Credit hours:** 3

**Contact hours:** Lecture: 3 Contact: 3

**Levels:** Graduate

**Schedule types:** Lecture

**Department/School:** Engineering Technology

## FSEP 5023 Project Management

**Prerequisites:** Consent of instructor.

**Description:** Methods and skills needed to successfully improve your employability and advancement in today's dynamic workforce. Understanding of the responsibilities of project leader and become better prepared to apply these knowledge/skills to the project environment. Previously offered as GENT 5023.

**Credit hours:** 3

**Contact hours:** Lecture: 3 Contact: 3

**Levels:** Graduate

**Schedule types:** Lecture

**Department/School:** Engineering Technology

## FSEP 5033 Risk Analysis

**Prerequisites:** Consent of instructor.

**Description:** Identification of various risks and analytical treatment of those risks in various work settings, such as energy, mechanical and construction. Previously offered as GENT 5033.

**Credit hours:** 3

**Contact hours:** Lecture: 3 Contact: 3

**Levels:** Graduate

**Schedule types:** Lecture

**Department/School:** Engineering Technology

## FSEP 5043 Principles and Impacts of Explosions

**Description:** Concepts related to understanding explosion phenomena, analyze and calculate explosion pressures, conceptual design of ventilation, suppression or isolation systems. Approaches of explosion protection and evaluation of structural damage and injury potential of blast waves.

**Credit hours:** 3

**Contact hours:** Lecture: 3 Contact: 3

**Levels:** Graduate

**Schedule types:** Lecture

**Department/School:** Engineering Technology

## FSEP 5060 Emerging Topics in Engineering Technology

**Prerequisites:** Consent of instructor.

**Description:** Advanced and emerging topics normally not included in existing MSET program. Repeat credit may be earned with different course subtitles assigned. Same course as MERO 5060. Offered for fixed credit, 3 credit hours, maximum of 6 credit hours.

**Credit hours:** 3

**Contact hours:** Lecture: 3 Contact: 3

**Levels:** Graduate

**Schedule types:** Lecture

**Department/School:** Engineering Technology

## FSEP 5113 Fire and Explosion Hazard Recognition

**Prerequisites:** 30 credit hours of STEM coursework or instructor consent.

**Description:** Fundamentals principles of combustion, fire and explosion. The thermodynamics and physical phenomena of fire and explosion.

**Credit hours:** 3

**Contact hours:** Lecture: 3 Contact: 3

**Levels:** Graduate

**Schedule types:** Lecture

**Department/School:** Engineering Technology

## FSEP 5123 Advanced Special Hazard Suppression and Detection

**Prerequisites:** 30 credit hours of STEM coursework or instructor consent.

**Description:** Design and analysis of special hazard suppression and detection systems using code requirements. Emphasis is also placed on the ability to select the appropriate system for a given hazard. May not be used with FPST 3113.

**Credit hours:** 3

**Contact hours:** Lecture: 3 Contact: 3

**Levels:** Graduate

**Schedule types:** Lecture

**Department/School:** Engineering Technology

## FSEP 5133 Principles of Industrial and Process Safety

**Prerequisites:** 30 credit hours of STEM coursework or instructor consent.

**Description:** Fundamentals of industrial safety in general, chemical release, dispersion, toxicity, fire, and explosion. Safety design for industrial safety and mitigating consequences of catastrophic fire and explosion. Same course as MERO 5033.

**Credit hours:** 3

**Contact hours:** Lecture: 3 Contact: 3

**Levels:** Graduate

**Schedule types:** Lecture

**Department/School:** Engineering Technology

**FSEP 5143 Structural Design for Fire and Life Safety****Prerequisites:** 30 credit hours of STEM coursework or instructor consent.**Description:** Building construction standards and codes to assure maximum life and property safety from fires, explosions and natural disasters. Egress design specifications, human factors and fire and explosion protection requirements for building construction and materials.**Credit hours:** 3**Contact hours:** Lecture: 3 Contact: 3**Levels:** Graduate**Schedule types:** Lecture**Department/School:** Engineering Technology**FSEP 5153 Advanced Exposure Assessment****Prerequisites:** 30 credit hours of STEM coursework or instructor consent.**Description:** Identification of critical infrastructure and the societal risk caused by its vulnerability. Methods of analyzing the hazards and threats facing critical infrastructure components and the methods of minimizing those risks.**Credit hours:** 3**Contact hours:** Lecture: 3 Contact: 3**Levels:** Graduate**Schedule types:** Lecture**Department/School:** Engineering Technology**FSEP 5163 Building Electrical Systems****Prerequisites:** 30 credit hours of STEM coursework or instructor consent.**Description:** Detail current standards for design, selection and installation of electrical distribution and utilization equipment. Emphasis on personnel safety and fire prevention using current codes and standards. May not be used with FPST 3383.**Credit hours:** 3**Contact hours:** Lecture: 3 Contact: 3**Levels:** Graduate**Schedule types:** Lecture**Department/School:** Engineering Technology**FSEP 5173 Explosion and Fire Impact on Infrastructure****Description:** Concepts related to explosions, Wildland Urban Interface (WUI) fires, and tall buildings in terms of both the identification of hazards and solutions for protecting the building infrastructure. May not be used with FPST 3611, FPST 3621, or FPST 3631.**Credit hours:** 3**Contact hours:** Lecture: 3 Contact: 3**Levels:** Graduate**Schedule types:** Lecture**Department/School:** Engineering Technology**FSEP 5213 Advanced Building Design and Analysis****Description:** Fire protection and life safety concepts and applications in the built environment related to building and fire codes including building height and area, structural fire protection, occupancy classifications, passive fire protection systems, means of egress, active fire protection systems, fire detection systems, and fire department access. May not be used for degree credit with FSEP 4213.**Credit hours:** 3**Contact hours:** Lecture: 3 Contact: 3**Levels:** Graduate**Schedule types:** Lecture**Department/School:** Engineering Technology**FSEP 5383 Fire and Evacuation Modeling****Description:** Fundamentals of fire dynamics and occupant egress and their numerical approaches for computer models. Practical knowledge of how to use fire and evacuation modeling tools: CFAST, FDS, Pyrosim, and Pathfinder, and how to analyze modeling results. May not be used for degree credit with FPST 4383.**Credit hours:** 3**Contact hours:** Lecture: 3 Contact: 3**Levels:** Graduate**Schedule types:** Lecture**Department/School:** Engineering Technology**FSEP 5990 Directed Studies****Prerequisites:** Consent of instructor.**Description:** Individual report topics in fire safety and explosion protection involving processes, equipment, experiments, literature search, theory, computer use or combinations of these. Same course as MERO 5070. Offered for variable credit, 2-4 credit hours, maximum of 4 credit hours.**Credit hours:** 2-4**Contact hours:** Contact: 2-4 Other: 2-4**Levels:** Graduate**Schedule types:** Independent Study**Department/School:** Engineering Technology