

# 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.

**Credit hours:** 1-6

**Contact hours:** Other: 1

**Levels:** Graduate

**Schedule types:** Independent Study

**Department/School:** Engineering Technology

## FSEP 5013 Research Methods

**Prerequisites:** Consent of instructor.

**Description:** Methods and skills required to successfully conduct engineering technology research projects. Maintaining research records, experiment design, data collection and analysis, data validation, result presentation and research ethics. Previously offered as GENT 5013.

**Credit hours:** 3

**Contact hours:** Lecture: 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

**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

**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

**Levels:** Graduate

**Schedule types:** Lecture

**Department/School:** Engineering Technology

## FSEP 5123 Fire and Explosion Detection and Mitigation

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

**Description:** Chemistry and physics of energetic materials and their relationship to their surroundings. The requirements for detection, suppression, and mitigation of energetic materials.

**Credit hours:** 3

**Contact hours:** Lecture: 3

**Levels:** Graduate

**Schedule types:** Lecture

**Department/School:** Engineering Technology

## FSEP 5133 Principles of Process Safety

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

**Description:** Fundamentals of chemical release, dispersion, toxicity, fire, and explosion. Process safety design to mitigate consequences of catastrophic fire and explosion.

**Credit hours:** 3

**Contact hours:** Lecture: 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

**Levels:** Graduate

**Schedule types:** Lecture

**Department/School:** Engineering Technology

## FSEP 5153 Critical Infrastructure Vulnerability and Risk

**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

**Levels:** Graduate

**Schedule types:** Lecture

**Department/School:** Engineering Technology

## FSEP 5163 Principles of Industrial, Physical and Building Security

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

**Description:** Introduction to homeland security and the concept of integrated physical protection. Principles of industrial and building security, security management systems, security standards, and securing against asymmetrical threats.

**Credit hours:** 3

**Contact hours:** Lecture: 3

**Levels:** Graduate

**Schedule types:** Lecture

**Department/School:** Engineering Technology

**FSEP 5383 Fire and Evacuation Modeling**

**Prerequisites:** FSEP 5113.

**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.

**Credit hours:** 3

**Contact hours:** Lecture: 3

**Levels:** Graduate

**Schedule types:** Lecture

**Department/School:** Engineering Technology

**FSEP 5990 Special Topics**

**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. Offered for variable credit, 2-4 credit hours, maximum of 4 credit hours.

**Credit hours:** 2-4

**Contact hours:** Other: 2

**Levels:** Graduate

**Schedule types:** Independent Study

**Department/School:** Engineering Technology