

# SENG - SAFETY ENGINEERING

## SENG 655/CHEN 655 Process Safety Engineering

**Credits 3. 3 Lecture Hours.** Applications of engineering principles to process hazards analysis including source and dispersion modeling, emergency relief systems, fire and explosion prevention and mitigation, hazard identification, risk assessment, process safety management, etc. **Prerequisite:** Graduate classification; approval of instructor. **Cross Listing:** CHEN 655/SENG 655.

## SENG 660 Quantitative Risk Analysis

**Credits 3. 3 Lecture Hours.** Fundamental concepts, techniques, and applications of quantitative risk analysis and risk-informed decision making for all engineering fields; practical uses of probabilistic methods are demonstrated in exercises and case studies from diverse engineering areas. **Prerequisites:** Graduate classification. **Cross Listing:** CHEN 660 and ISEN 660.

## SENG 670 Safety Management Systems

**Credits 3. 3 Lecture Hours.** Fundamentals concepts and principles of safety management; demonstration of practical application of management techniques to ensure safe operation of industrial processes; current safety management system standards and regulations. **Prerequisite:** Graduate classification or approval of instructor.

## SENG 674 System Safety Engineering

**Credits 3. 3 Lecture Hours.** Current system safety engineering analysis techniques; failure mode and effect and fault tree analysis; engineering economic analysis is reviewed to develop skills for the safety engineer in presenting alternate solutions to management.

## SENG 677 Fire Protection Engineering

**Credits 3. 2 Lecture Hours. 3 Lab Hours.** Theory of combustion, characteristics of flammables, fire resistance, fire spread, fire protection principles, public and private fire service organization and equipment; automatic extinguishing systems; fire protection analysis and design projects.

## SENG 680 Fundamentals of Safety

**Credits 3. 3 Lecture Hours.** General concepts and techniques of safety engineering upon which more detailed and advanced applications may be based; applications of safety engineering principles to industrial and commercial systems; the concept of designing optimally safe systems. **Prerequisite:** Graduate classification or approval of instructor.

## SENG 681 Seminar

**Credit 1. 1 Other Hour.** Formal presentations in industrial hygiene and safety engineering by students and professional industrial representatives.

## SENG 684 Professional Internship

**Credits 1 to 6. 1 to 6 Other Hours.** Training under the supervision of practicing engineers in settings appropriate to the student's professional objectives. **Prerequisites:** Approval of chair of student's advisory committee and department head.

## SENG 685 Directed Studies

**Credits 1 to 12. 1 to 12 Other Hours.** Investigation of topics not within the scope of thesis or dissertation research and not covered by other formal courses.

## SENG 689 Special Topics in...

**Credits 1 to 4. 1 to 4 Lecture Hours.** Selected topics in an identified area of safety engineering and industrial hygiene. May be repeated for credit. **Prerequisite:** Approval of instructor.

## SENG 691 Research

**Credits 1 to 23. 1 to 23 Other Hours.** Research in industrial hygiene, safety engineering or related topics for thesis or dissertation.