SENG 309/NUEN 309 Radiological Safety
Credits 3. 3 Lecture Hours.
Interactions of nuclear radiations with matter and biological systems; theory and practice of radiation dosimetry as applied to radiation protection; design and application of radiation dosimetry systems for personnel monitoring, area radiation monitoring and accident situation; includes external and internal dosimetry as well as long-term risk analysis.
Prerequisite: NUEN 302.
Cross Listing: NUEN 309/SENG 309.

SENG 310 Industrial Hygiene Engineering
Credits 3. 3 Lecture Hours.
Application of scientific and engineering principles in the selection and design of control systems related to chemical, physical and ergonomic exposures in the process and manufacturing industries; relationships of criteria, analysis and specifications for the assessment and control of occupational related illnesses.
Prerequisites: CHEM 107; MATH 308; PHYS 208; or approval of instructor.

SENG 312 System Safety Engineering
Credits 3. 3 Lecture Hours.
Application of system safety analytical techniques to the design process; emphasis on the management of a system safety or product safety program; relationship with other disciplines such as reliability, maintainability, human factors and product liability applications.
Prerequisite: Junior classification.

SENG 321 Industrial Safety Engineering
Credits 3. 3 Lecture Hours.
Concepts of designing, operating and maintaining optimally safe systems, risk management, economic impact, legislation, performance measurement and accident investigation/analysis; principles and practices in industrial hygiene engineering, fire protection engineering and introduction to systems safety engineering.
Prerequisite: Junior classification.

SENG 422 Fire Protection Engineering - Facilities Design
Credits 3. 3 Lecture Hours.
Design of facilities from a fire protection engineering viewpoint including fire detection and fire control systems; materials, equipment, exposures, occupancies and processes; both public and industrial occupancies studied to determine fire protection design specifications.
Prerequisite: SENG 322 or approval of instructor.

SENG 430/CHEN 430 Risk Analysis in Safety Engineering
Credits 3. 3 Lecture Hours.
Concepts of risk and risk assessment, which uses all available information to provide a foundation for risk-informed and cost-effective engineering practices; examples and exercises are drawn from a variety of engineering areas.
Prerequisite: Junior or senior classification.
Cross Listing: CHEN 430/SENG 430.