

COURSE NUMBER: IE 5513, 4 credits	COURSE TITLE: Engineering Safety
TERMS OFFERED: Fall	PREREQUISITES: Upper Division IT or graduate student
TEXTBOOKS/REQUIRED MATERIAL: Brauer, R.L., <i>Safety and Health for Engineers</i> , New York: Wiley, 1994	PREPARED BY: Professor Caroline C. Hayes DATE OF PREPARATION: May 22, 2007
COURSE LEADER(S): Professors John Shutske and Johnathan Chaplin	CLASS/LABORATORY SCHEDULE: One 170 minute session per week CONTRIBUTION OF COURSE TO MEETING PROFESSIONAL OBJECTIVES: 100% engineering topics
CATALOG DESCRIPTION: Occupational, health, and product safety. Standards, laws, and regulations. Hazards and their engineering control, including general principles, tools and machines, mechanics and structures, electrical safety, materials handling, fire safety, and chemicals. Human behavior and safety, procedures and training, warnings and instructions.	COURSE TOPICS: Topics vary between student groups, but typically include the following: <ol style="list-style-type: none"> 1. Fundamental concepts and terms. 2. Safety agencies, laws, regulations, standards, and codes. 3. Worker's compensation. 4. Products liability. 5. Record keeping and reporting. 6. General principles of hazard control. 7. Walking and working surfaces. 8. Electrical safety, transportation safety. 9. Safety of tools and machines. 10. Materials handling. 11. Fire protection and prevention. 12. Environment: noise, illumination, chemicals. 13. Personal protective equipment. 14. The human element.

COURSE OBJECTIVES	<ol style="list-style-type: none"> 1. To teach engineering students and professional engineers a comprehensive course in safety engineering. 2. To convey the importance and benefits of safety to engineers. 3. To instruct about the laws, regulations, standards, and codes relevant to safety engineering. 4. To emphasize the ethical aspects of safety engineering. 5. To teach the general principles, tools, and methods of hazard identification and control. 6. To cover safety of workstations, work environment, as well as product design.
COURSE OUTCOMES	<p style="text-align: center;">(Numbers shown in brackets are linked to program outcomes a-k.)</p> <ol style="list-style-type: none"> 1. Obtain an appreciation of the need to consider safety as an important component of engineering practice [c, d, e, f, j, k]. 2. Learn about the technical, legal, ethical, and economic aspects of safety [b, c, d, f, i, k]. 3. Learn how to properly conduct a hazard analysis, utilizing available tools, methods, and guidelines [a, b, e, k]. 4. Learn about specific means of hazard control in a variety of situations [a, c, e].
ASSESSMENT TOOLS:	Exams, final exam, recitation exercises

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Nature of Changes

1. *The course leaders are now Professors John Shutske and Johnathan Chaplin.*
2. *No other changes were made*