

NEW JERSEY INSTITUTE OF TECHNOLOGY
Department of Industrial Engineering
IE 614
Safety Engineering Methods
Spring 2013

Instructor: George Olsen, Ph.D, CSP, PE.
College of Computing Sciences
New Jersey Institute of Technology
University Heights
Newark, NJ 07102

Contact: 973-596-3389 [office]
Office – 4414 GITC Building

E-mail: golsen@njit.edu

Objectives: To apply engineering methods to identify safety hazards and to develop methods to correct and mitigate the identified hazards.

Textbook: Hansen, E.E., Accident Prevention Manual for Business and Industry: Engineering and Technology; 13th Edition, Ed., Chicago. National Safety Council. Note that you can use the 12th edition which you should find less costly. You can also purchase the 13th edition on a CD. For those who will be safety professional, you will find this book a great reference once you become a working safety professional.

Description: The application of selected safety engineering methods to detect, correct and prevent unsafe condition and procedures in future practice are discussed. Methods selected are from safety management and programs; loss prevention; fire protection; systems safety; the design of building and other facilities; products; machines; and equipment. Engineering problems and solutions in designing and constructing hazard-free environment are presented.

Student teams will prepare presentation on class topics. The presentations will be approximately 45 minutes and will cover material not in the textbook to give the class additional perspectives on the engineering and technology subjects.

A project will be given to the class. Teams will be formed but each student will be assigned an individual part of the project. Grades will be determined on the part done and not the project as a whole.

Class discussion on topics for each week will be based on student prepared questions. Students writing questions should be prepared to provide some background to help the discussion move along.

Evaluation: Midterm Exam - 25%
Final Exam - 30%
Project – 20%
Assignments – 15%
Oral Presentation – 10%

**Honor:
Code:** In accordance with the NJIT honor code, students are expected to do their own work. If they use somebody else's work, then that fact should be documented. Individual work is to be done individually and not copied from others and it is expected that you will perform all exams without consulting others and do your own work on any assignments. Consulting with others on general approaches to take in an assignment is considered acceptable, but copying assignments from others or working the majority of the assignment together is not acceptable. Of course group work is done in a group. See <http://www.njit.edu/academics/honorcode.php> for more information on NJIT's honor code.

CLASS SCHEDULE

Week	Topic	Readings
1	Introduction, Background and History of Safety	
2	Regulatory History and Illness Record Keeping	
3	Workers' Compensation	
4	Designing for Safety, Buildings and Facility Layout; Maintenance of Facilities	Chap 1, 2, 4
5	Safeguarding	Chap 6
6	Personal Protective Equipment	Chap 7
7 -8	Electrical Safety	Chap 10
MIDTERM		
9	Fire Prevention/Protection	Chap 11
10	Materials Handling (1)	Chap 15, 16
11	Materials Handling (2)	Chap 17, 18
12	Production Operations; Power Tools; Machinery	Chap 20, 22, 23
13	Automation and Safety, Computers and Safety, Future of Safety	Chap 26, 27
14	Final Reports	
15	Final Exam	