DEPARTMENT OF MECHANICAL AND INDUSTRIAL ENGINEERING
INDUSTRIAL ENGINEERING PROGRAM, BSC.

Course Syllabus

1. **Course number and name**
   IE582 Safety Management Systems

2. **Credits and contact hours**
   (3+0) 3 credit hours, 3 contact hours

3. **Course type**
   Blended Learning Course (2+1)

4. **Instructor's or course coordinator's name**
   Dr. Mohammad Mansour

5. **Textbook information**
   Reese, C.D. (2017). Occupational Safety and Health: Fundamental Principles and Philosophies (1st ed.). CRC Press. https://doi.org/10.1201/b21975

   a. **Other supplemental materials**
      Instructor's notes

6. **Specific course information**
   a. **Catalog description**
      This course will explain how to apply concepts, principles, elements, tools of prevention and develop interventions, and initiatives to mitigate occupational injuries, illnesses and deaths. It addresses the philosophical basis for all of the varied components and elements needed to develop and manage a safety and health program

   b. **Prerequisites or co-requisites**
      Prerequisite: IE 457

   c. **The course is:**
      Required in the Industrial engineering programs

7. **Specific goals for the course**
   a. **Course outcomes:**
   After completion of the course, students are expected to be able to:

1. Interpret and apply legislative requirements, industry standards, and best practices in a variety of workplaces.

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2. Apply risk management principles to anticipate, identify, evaluate and control physical, chemical, biological and psychosocial hazards.
3. Collect, manage, and interpret information and data to identify trends and issues in the workplace.
4. Design, support, and evaluate health and safety programs and implement procedures using project management principles and processes appropriate to the task.
5. Affect/manage change by advancing OH&S principles within management systems, cultures, practices, and priorities.
6. Set and achieve work priorities and goals individually and as a team member.
7. Use a range of effective communication skills and methods to clearly and briefly convey regulatory and technical information and data to designated audiences.
8. Practice due diligence and employ ethical standards in all aspects of professional conduct.

b. The following student outcomes are addressed by the course:
SO(a) - ability to apply knowledge of mathematics, science, and engineering.

8. Learning Outcomes and their Alignment with Program Educational Objective (PEO's), Methods of Delivery, and Assessment Methods:

Learning Outcomes	Program PEOs	Method of Delivery	Assessment Method
Course Outcomes			
CO-(1): discuss Introduction, Background and History of Safety	-	Lectures (Example and Problems)	Assignment & Exam
CO-(2): Discuss and apply Regulatory History and Illness Record Keeping	-	Lectures (Example and Problems)	Assignment & Exam
CO-(3): Design, support, and evaluate health and safety programs and implement procedures using project management principles and processes appropriate to the task	-	Lectures (Example and Problems)	Assignment & Exam
CO-(4): Apply risk management principles to anticipate, identify, evaluate and control physical, chemical, biological and psychosocial hazards.	-	Lectures (Example and Problems)	Project

CO-(5):.Affect/manage change by advancing OH&S principles within management systems, cultures, practices, and priorities			Assignment & Exam
CO-(6): Set and achieve work priorities and goals individually and as a team member.			Assignment & Exam
CO-(7): Use a range of effective communication skills and methods to clearly and briefly convey regulatory and technical information and data to designated audiences			Assignment & Exam
CO-(8): Practice due diligence and employ ethical standards in all aspects of professional conduct			Assignment & Exam

9. Weekly Teaching Plan

Week	Lecture	Topic	Method of Delivery
1	Lec_1	Couse Introduction and Syllabus overview	Lecture
1	Lec_2	Chapter 1: Introduction	Lecture
1	Lec_3	Chapter 2: history	Lecture
2	Lec_4	Chapter 3: hazards	Lecture
2	Lec_5	Chapter 4: occupational safety	Lecture
2	Lec_6	Chapter 5: occupational health	Lecture
3	Lec_7	Chapter 6: managing occupational safety and health	Lecture
3	Lec_8	Chapter 6: managing occupational safety and health	Lecture
3	Lec_9	Chapter 7: safety and health program	Lecture
4	Lec_10	Chapter 7: safety and health program	Lecture
4	Lec_11	Chapter 8: special emphasis program	Lecture
4	Lec_12	Chapter 9: accident investigation	Lecture
5	Lec_13	Chapter 9: accident investigation	Lecture
5	Lec_14	Chapter 10: training	Lecture
5	Lec_15	Chapter 10: training	Lecture
6	Lec_16	Chapter 11: safety and health budget	Lecture
6	Lec_17	Chapter 11: safety and health budget	Lecture
6	Lec_18	Chapter 12: statistics and tracking	Lecture
7	Lec_19	Chapter 12: statistics and tracking	Lecture
7	Lec_20	Chapter 13: safety and health ethics	Lecture
7	Lec_21	Chapter 14: employee involvement	Lecture

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8	Lec_22	Chapter 15: Joint Labor/Management Safety and Health Committees	Lecture
8	Lec_23	Chapter 16: Workplace Inspections	Lecture
8	Lec_24	Chapter 16: Workplace Inspections	Lecture
9	Lec_25	Chapter 17: Management's Commitment and Involvement	Lecture
9	Lec_26	Chapter 18: Line Supervisors	Lecture
9	Lec_27	Chapter 19: workers	Lecture
10	Lec_28	Chapter 20: Safety Director or Manager	Lecture
10	Lec_29	Chapter 21: Safety and Health Professional	Lecture
10	Lec_30	Chapter 21: Safety and Health Professional	Lecture
11	Lec_31	Chapter 22: Industrial Hygienist	Lecture
11	Lec_32	Chapter 23: Safety and Health Consultant	Lecture
11	Lec_33	Chapter 23: Safety and Health Consultant	Lecture
12	Lec_34	Chapter 24: Motivating Safety and Health	Lecture
12	Lec_35	Chapter 24: Motivating Safety and Health	Lecture
12	Lec_36	Chapter 25: Behavior-Based Safety	Lecture
13	Lec_37	Chapter 25: Behavior-Based Safety	Lecture
13	Lec_38	Chapter 26: Safety Culture	Lecture
13	Lec_39	Chapter 27: Communicating Safety and Health	Lecture
14	Lec_40	Chapter 27: Communicating Safety and Health	Lecture
14	Lec_41	Chapter 28: Bullying	Lecture

14	Lec_42	Chapter 31: Hazard Identification	Lecture
15	Lec_43	Chapter 32: Hazard Analysis	Lecture
15	Lec_44	Chapter 40: Designing for Prevention	Lecture
15	Lec_45	Chapter 42: Personal Protective Equipment	Lecture

1. **Grade Distribution:**

Assessment	Grade	Week No.
First Exam	20%	5th Week
Second Exam	20%	10th Week
-Assignments (Reports /Quizzes/ Seminar / Tutorials/ Home works ….)	10%	1-16th Week
- Final Examination	50%	16th Week

Note: Make-up exams will be offered for valid reasons. It may be different from regular exams in content and format.