**Safety Engineering (IE 449)**

2020/21 Second Semester

**Instructor**

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**Objectives**

The aim of the course in Safety Engineering (IE 449) is to train students by providing them the scientific know-how and orientation in theories and practices in the area of Occupational Safety and Health to make them fit into academic and/or managerial positions.

**Topics of the course**

1. Safety and Health Manager (Ch. 1)

2. Development of Safety and Health Function (Ch. 2)

3. Concepts of Hazard Avoidance (Ch. 3)

4. Impact of Federal Regulation (Ch. 4)

5. Process Safety and Disaster Preparedness (Ch. 6)

6. Environmental Control and Noise (Ch. 10) – Lab

7. Personal Protection and First Aid (Ch. 12)

8. Fire Protection (Ch. 13)

9. Electrical Hazards (Ch. 17)

**Materials: Textbook**

Industrial Safety and Health Management; Asfahl, Ray, and Rieske, David,

Pearson Prentice Hall: New Jersey, 2010. ISBN-13-142392-4

**Schedule**

Lecture: Sunday, Tuesday, Thursday (8:00 – 8:50 am)

Tutorial:

Practical:

Office Hour:

\* Please review the two options and select one that you prefer and let me know. OR you can make another option. Thank you.

Option 1 (This option has been adopted during the last two semesters due to online lecture)

**Grading**

Midterm Exam 1: 10% (Date – college schedule),

Midterm Exam 2: 10% (Date – college schedule),

Practical Class: 10%

Homework: 10%

Project: 20% (Report 10% and Presentation 10%)

Final Exam: 40% (Date – May 29, 2021 as shown in the Edugate schedule)

Option 2 (This option was adopted in classroom lecture before covid-19)

**Grading**

Midterm Exam 1: 10% (Date – college schedule),

Midterm Exam 2: 10% (Date – college schedule),

Practical Class: 10%

Class Participation: 10%

Homework: 5%

Project: 15% (Report 5% and Presentation 10%)

Final Exam: 40% (Date – May 29, 2021 as shown in the Edugate schedule)

**Attendance**

Attendance will be taken at the beginning of each class period. In case you are not present when attendance is taken, you will be counted as late; if you are not present during the class, you will be counted as absent if not submitted an acceptable excuse.

Students who absent themselves during a semester for more than 25% of the required number of lectures (including tutorial and lab classes) may not be allowed to continue the course and denied from sitting for the final examination (according to the 9th article of the regulation of the study phase and testing).

Official excuses for the absence should be submitted within one week after the absence day. Medical excuses from King Khalid Hospital and other government hospitals are accepted. Excuses from Clinics are not accepted.

**Semester Project**

Individual project (see details shown below)

Report due date – the final day of the presentation week

Presentation date – the 14th week of the semester

Topic - Industrial Safety and Health in KSA

The first aim of the project is to provide students with a chance to know how the industries in KSA maintain their safety. The second aim is to develop and enhance writing and presentation skills. Unfortunately, we cannot visit the industrial field due to the covid19 situation, so the students will be assigned to study an article already reported via media (journals, newspapers, magazines and so on).

The topics must be related to an industrial safety and health issue in KSA. Any topics (shown in the textbook) are OK such as fire (industrial fire, not residential fire), electric, noise, chemical and so on. Try to search media and pick up at least one article (or you can select two or more topics). You can also select article(s) such as industrial accidents (showing a loss of life and property), health problems, wellness of employees, even regulations and an improvement of working place conditions.

IE 449 Learning Outcomes Mapping Course CLO with ABET & NCAAA Program (SLO)

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Learning Outcomes | Knowledge | | Skills | | | | | Competence | | | |
| NCAAA | SLO1 | | SLO2 | SLO3 | SLO4 | | SLO5 | SLO6 | SLO7 | | |
| ABET | (1) | | (2) | (3) | (4) | | (6) | (5) | (7) | | |
| OLD ABET | (a) | (e) | (c) | (g) | (h) | (f) | (b) | (d) | (i) | (j) | (k) |
| CLO1 | X |  |  |  |  |  |  |  |  |  |  |
| CLO2 |  |  |  |  |  | X |  |  |  |  |  |
| CLO3 |  |  |  |  | X |  |  |  |  |  |  |
| CLO4 |  |  |  |  |  |  |  |  |  |  | X |

**CLO 1**. Identify the source of safety and health hazards in workplaces. [a]

**CLO 2**. Recognize and evaluate the safety and health programs used in industries. [f]

**CLO 3**. Develop occupational safety and health programs with the consideration of the impact of engineering solutions in global, environmental, and societal contexts. [h]

**CLO 4**. Solve the problems of occupational safety and health with the consideration of worker’s safety, health and wellness as well as global, social, and environmental factors. [k]