Course Specifications

Course Title:	Safety Engineering
Course Code:	ME 481
Program:	Mechanical Engineering (UG)
Department:	Mechanical and Industrial Engineering
College:	College of Engineering
Institution:	Majmaah University

Table of Contents

A. Course Identification

1. Credit hours: 3(3,1,0)
2. Course type **a.** University ☐ College ☐ Department ☑ Others ☐ **b.** Required ☐ Elective ☑
3. Level/year at which this course is offered: Level 9/Final Year
4. Pre-requisites for this course (if any)**:GE 101**
5. Co-requisites for this course (if any)**: None**

6. Mode of Instruction (mark all that apply)

No	Mode of Instruction	Contact Hours	Percentage
1	**Traditional classroom**	60	100
2	**Blended**	0	0
3	**E-learning**	0	0
4	**Correspondence**	0	0
5	**Other**	0	0

7. Actual Learning Hours (based on academic semester)

No	Activity	Learning Hours
Contact Hours		
1	**Lecture**	45
2	**Laboratory/Studio**	0
3	**Tutorial**	15
4	**Others** (specify)	0
	Total	60
Other Learning Hours*		
1	**Study**	15
2	**Assignments**	06
3	**Library**	06
4	**Projects/Research Essays/Theses**	10
5	**Others**(specify) Case studies	08
	Total	45

***The length of time that a learner takes to complete learning activities that lead to achievement of course learning outcomes, such as study time, homework assignments, projects, preparing presentations, library times

B. Course Objectives and Learning Outcomes

1. Course Description

Accidents, causes and costs, Appraising safety performance and risk assessment, Analysis of accident causes. Accident reports and records. Job safety analysis, Plant inspection. Accident investigation. Plant layout and arrangement, Plant housekeeping. Maintenance and safety. Material handling and safety, Machine guarding. Explosion and fire prevention. Personal protection, First aid. Planning for emergencies.

2. Course Main Objective

1.An understanding of the definition, necessary background and importance of the subject of Engineering safety.

2. Use the techniques, skills, and modern engineering tools necessary for engineering practice.

3. Students are able to understand engineering safety principle, system, devices and able to work on the systems related to this course.

3. Course Learning Outcomes

	CLOs	Aligned PLOs
1	**Knowledge:**	
1.1		
1.2		
1.3		
1...		
2	**Skills :**	
2.1	To understand the different type of safety used in industry and their analysis.	h
2.2	To analysis of accident and their causes and to make reports and record for it.	h
2.3	To know about the plant inspection to find the causes of accidents and personal protection.	h
2.4	To know accident free plant layout and arrangements.	h
2.5	Maintenance, material handling Firefighting and knowledge about first aid.	k
3	**Competence:**	
3.1		
3.2		
3.3		
3...		

C. Course Content

No	List of Topics	Contact Hours
1	Accident: causes and costs.	08
2	Appraising safety performance and risk assessment	08
3	Analysis of accident causes. Accident reports and records. Job safety analysis.	08
4	Plant inspection. Accident investigation, Plant layout and arrangement.	08
5	Plant housekeeping. Maintenance and safety. Material handling and safety.	08
6	Machine guarding.	04
7	Explosion and fire prevention. Personal protection.	08
8	First aid. Planning for emergencies.	08
Total		60

D. Teaching and Assessment

1. Alignment of Course Learning Outcomes with Teaching Strategies and Assessment Methods

Code	Course Learning Outcomes	Teaching Strategies	Assessment Methods
1.0	**Knowledge**		

Code	Course Learning Outcomes	Teaching Strategies	Assessment Methods
1.1	-------		
1.2	-------		
…			
2.0	**Skills**		
2.1	To understand the different type of safety used in industry and their analysis.	Lecture, debate, small group work, whole group and small group discussion, research activities, projects, debates, role playing, case studies	Standardized exams, Case Study, Micro project, Quizzes and Assignments
2.2	To analysis of accident and their causes and to make reports and record for it.		
2.3	To know about the plant inspection to find the causes of accidents and personal protection.		
2.4	To know accident free plant layout and arrangements.		
2.5	Maintenance, material handling Firefighting and knowledge about first aid.		
3.0	**Competence**		
3.1	-------		
3.2	-------		
…			

2. Assessment Tasks for Students

#	Assessment task*	Week Due	Percentage of Total Assessment Score
1	Homework and Microproject	3rd, 5th, 9th and 12th	10
2	Quizzes,Activities	4th, 7th, 11th and 13th	10
3	Exams	11and 7	each 20
4	Final Exam	15	40

***Assessment task** (i.e., written test, oral test, oral presentation, group project, essay, etc.)

E. Student Academic Counseling and Support

Arrangements for availability of faculty and teaching staff for individual student consultations and academic advice:

2 hour per week

F. Learning Resources and Facilities

1.Learning Resources

Required Textbooks	Industrial Safety and Health Management, C. Ray Asfahl, Prentice Hall, 1998.
Essential References Materials	Safety, Health, and Environmental Protection, Charles, A. Wwntz, McGraw-Hill, 1998.
Electronic Materials	Black Board

Other Learning Materials	Power point Slides.

2. Facilities Required

Item	Resources
Accommodation (Classrooms, laboratories, demonstration rooms/labs, etc.)	Classrooms
Technology Resources (AV, data show, Smart Board, software, etc.)	Smart Board
Other Resources (Specify, e.g. if specific laboratory equipment is required, list requirements or attach a list)	None

G. Course Quality Evaluation

Evaluation Areas/Issues	Evaluators	Evaluation Methods
Course Evaluation Survey	Students	Indirect
Students Participation	Faculty	Direct
Course Learning Outcomes	Faculty	Direct

Evaluation areas (e.g., Effectiveness of teaching and assessment, Extent of achievement of course learning outcomes, Quality of learning resources, etc.)
Evaluators (Students, Faculty, Program Leaders, Peer Reviewer, Others (specify)
Assessment Methods (Direct, Indirect)

H. Specification Approval Data

Council / Committee	Department Council
Reference No.	1/34/9767
Date	25/02/1432 H