هيئة تقويم التعليم والتدريب
Education & Training Evaluation Commission
اعتماد
NCAA
2024
TP-153

Course Specification
(Bachelor)

Course Title:	Safety Systems
Course Code:	INE 5364
Program:	**Bachelor of** Industrial Engineering
Department:	**Industrial Engineering**
College:	**Engineering**
Institution:	**King Khalid University**
Version:	**1**
Last Revision Date:	**19-11-2025**

Table of Contents

A. General information about the course:

1. Course Identification

1. Credit hours: (3)					
2. Course type					
A.	☐University	☐College	☐ Department	☒ Track	☐Others
B.	☐ Required		☒ Elective		
3. Level/year at which this course is offered: (10th level / 5th Year)					
4. Course general Description:					
This course will cover safety management system (SMS) principles and applications. Identification and recognition of potential safety hazards as well as the concept of risk assessment. Techniques covered include Preliminary Hazard and Analysis, Functional Failure Analysis, Fault Tree Analysis, Event Tree Analysis, and Process Safety Analysis techniques. Other system safety methodologies will be explored together with applications to hazard analysis and control. Industrial applications and case studies will be referenced to illustrate the usefulness of various system safety techniques.					
5. Pre-requirements for this course (if any):					
3361 INE					
6. Co-requisites for this course (if any):					
NIL					
7. Course Main Objective(s):					
CLO 1: Design safety system for a given problem CLO 2: Build the safety process using professional ethics and professional responsibility for a safety system operation CLO 3: Discuss reporting process of a safety violation incidents as a team member CLO 4: Develop and analyze a safety system operation for an industrial problem					

2. Teaching mode (mark all that apply)

No	Mode of Instruction	Contact Hours	Percentage
1	Traditional classroom	60	100 %
2	E-learning		
3	Hybrid • Traditional classroom		

No	Mode of Instruction	Contact Hours	Percentage
	• E-learning		
4	Distance learning		

3. Contact Hours (based on the academic semester)

No	Activity	Contact Hours
1.	**Lectures**	30
2.	**Laboratory/Studio**	30
3.	**Field**	
4.	**Tutorial**	
5.	**Others (specify)**	
Total		60

B. Course Learning Outcomes (CLOs), Teaching Strategies and Assessment Methods

Code	Course Learning Outcomes	Code of CLOs aligned with program	Teaching Strategies	Assessment Methods
1.0	**Knowledge and understanding**			
1.1	Design safety system for a given problem.	K1	Lectures and tutorials	Assignments, Quizzes, and Exams
1.2	Build the safety process using professional ethics and professional responsibility for a safety system operation	K2		
1.3	Analyze workplace safety & noise exposure	K3		
2.0	Skills			
2.1	Develop and analyze a safety system operation for an industrial problem	S1	Lectures and tutorials	Assignments, Quizzes, and Exams
2.2	Evaluate the role of Hazard Analysis	S4, S5		
3.0	**Values, autonomy, and responsibility**			
3.1	Discuss reporting process of safety violation	V1	Lectures and tutorials	Assignments, Quizzes, and

Code	Course Learning Outcomes	Code of CLOs aligned with program	Teaching Strategies	Assessment Methods
	incidents as a team member			Exams
3.2	Demonstrate Ethics, Legal issues, Product safety	V3		

C. Course Content

No	List of Topics	Contact Hours
1	Introduction to Safety Management System (SMS)	6
2	Safety Management System (SMS) principles	6
3	Safety Management System (SMS) applications	6
4	Hazard identification and risk analysis	6
5	System life cycle and safety	6
6	Risk assessment techniques	9
7	Process Safety Analysis techniques	6
8	Planning and design of safety system	9
9	Evaluation of Safety system	6
Total		**60**

D. Students Assessment Activities

No	Assessment Activities *	Assessment timing (in week no)	Percentage of Total Assessment Score
1.	Assignments	Every week	10 %
2.	Quiz 1	4	10 %
3.	Quiz 2	8	10 %
4.	Two Mid Term Exams	5, 10	30 %
5.	Final Exam	16	40 %
...			**100 %**

*Assessment Activities (i.e., Written test, oral test, oral presentation, group project, essay, etc.).

E. Learning Resources and Facilities

1. References and Learning Resources

Essential References	System Safety Engineering and Risk Assessment, Bahr, N.J. 2018, 2nd ed., ISBN-13: 978-1466551602, ISBN-10: 9781466551602
Supportive References	Nine Elements of a Successful Safety & Health System, Czerniak, J., National Safety Council, 2005, ISBN-13: 9780879122577, ISBN-10: 0879122579
Electronic Materials	Safety journals
Other Learning Materials	Lecture handouts

2. Required Facilities and equipment

Items	Resources
facilities (Classrooms, laboratories, exhibition rooms, simulation rooms, etc.)	● Lecture room ● Backboard facility for sharing lecture notes, submission of assignments, and attempting quizzes.
Technology equipment (projector, smart board, software)	Projector and smart board
Other equipment (depending on the nature of the specialty)	

F. Assessment of Course Quality

Assessment Areas/Issues	Assessor	Assessment Methods
Effectiveness of teaching	Students	Indirect (Questionnaire)
Effectiveness of Students assessment	Faculty	Direct
Quality of learning resources	Program Leaders	Direct
The extent to which CLOs have been achieved	Faculty	Direct
Other		

Assessors (Students, Faculty, Program Leaders, Peer Reviewer, Others (specify)

Assessment Methods (Direct, Indirect)

G. Specification Approval

COUNCIL /COMMITTEE	Reviewed by Curriculum Committee Approved by Quality Committee
REFERENCE NO.	9-6-47

DATE	25/06/1447