Course Specification
(Bachelor)

Course Title:	Introduction to Engineering
Course Code:	EE1001
Program:	Bachelor Engineering Programs 1st Year
Department:	Electrical Engineering Department
College:	Engineering and Architecture College
Institution:	Umm Al-Qura University
Version:	1.0
Last Revision Date:	30/01/2025

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A. General information about the course:

1. Course Identification

1. Credit hours: (2 Hours)					
2. Course type					
A.	☐University	☒ College	☐Department	☐Track	☐Others
B.	☒ Required		☐Elective		
3. Level/year at which this course is offered: (1 / 1)					
4. Course General Description:					
This course offers students a broad introduction to various engineering disciplines and the engineering profession. It covers both technical and non-technical skills, including topics such as engineering fields, the profession's essential tools, code of ethics, professional associations, licensing, and registration. Engineering disciplines explored include electrical and electronics engineering, civil and environmental engineering, mechanical and industrial engineering, and mechatronics engineering.					
5. Pre-requirements for this course (if any)**:**					
None					
6. Co-requisites for this course (if any)**:**					
None					
7. Course Main Objective(s):					
The course objectives are 1. Describe how engineering provides technological solutions to address a wide range of societal challenges. 2. Explain the functionality and operation of specific systems in various engineering domains and their basic mathematical and scientific foundations. 3. Understand the importance of and recognize the impact of the engineering profession on the quality of life of all people. 4. Recognize code of ethics and their impact on human life.					

2. Teaching mode (mark all that apply)

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

3. Contact Hours (based on the academic semester)

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

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

Code	Course Learning Outcomes	Code of PLOs aligned with the program	Teaching Strategies	Assessment Methods
1.0	**Knowledge and understanding**			
1.1	Understand the basic concepts of different engineering disciplines.	KLO1, KLO4	Traditional Lecture	Assignment Major/Final Exam
2.0	**Skills**			
2.1	Apply simple engineering concepts to solve engineering problems.	KLO4	Traditional Lecture	Assignment Major/Final Exam
3.0	**Values, autonomy, and responsibility**			
3.1	Identify professional engineering societies, and the application of licensing engineering professions.	KLO6	Traditional Lecture	Assignment Major/Final Exam
3.2	Identify personal ethics and professional ethics and recognize ethical issues in case studies.	KLO6	Traditional Lecture	Assignment Major/Final Exam

C. Course Content

No	List of Topics	Contact Hours
1.	Introduction to Engineering	**2**
2.	What Do Engineers Do? Engineering societies.	**2**
3.	Engineering Profession Engineering Practice, Saudi council for Engineers (SCE), Professional Accreditation (professional exams, certification and licensing). Engineering Chapters.	**4**
4.	Personal ethics, Writing ethics & Plagiarism, Professional ethics, NSPE Engineering Code of Ethics. Case Studies. Ethical Dilemma.	**6**
5.	Discipline Engineering Area #1	**4**

6.	Discipline Engineering Area #2	4
7.	Discipline Engineering Area #3	4
8.	Discipline Engineering Area #4	4
Total		30

D. Students Assessment Activities

No	Assessment Activities *	Assessment timing (in week no)	Percentage of Total Assessment Score
1.	Homework Assignments	Alternate	40%
2.	Major Exam	7th	30%
3.	Final Exam	16th	30%

*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	Exploring Engineering: An Introduction to Engineering and Design, 5th Edition, 2021 Philip Kosky, Robert Balmer, William Keat, George Wise ISBN: 978-0-12-815073-3 Publisher: Elsevier Science & Technology. Saudi Council for Engineers, https://www.saudieng.sa/ . • Regulation & Procedures, Standards, Registration, Chapters, Professional Accreditation and Exams.
Supportive References	• Engineering Fundamentals: An Introduction to Engineering, 6th Edition, 2020 Saeed Moaveni ISBN: 978-0-357-11215-1 Cengage Learning, Inc. • NSPE Code of Ethics for Engineers, https://www.nspe.org/resources/ethics/code-ethics
Electronic Materials	PowerPoint Slides
Other Learning Materials	NIL

2. Required Facilities and equipment

Items	Resources
facilities (Classrooms, laboratories, exhibition rooms, simulation rooms, etc.)	Classroom, Capacity = 40 Students (per group)
Technology equipment (projector, smart board, software)	Classrooms must be equipped with a projector and a computer or a laptop.
Other equipment (depending on the nature of the specialty)	None

F. Assessment of Course Quality

Assessment Areas/Issues	Assessor	Assessment Methods
Effectiveness of teaching	Students	Indirect Assessment via End of Term Student Feedback Survey
Effectiveness of Students assessment	Faculty	Direct Assessment via HW, Major Exam, and Final Exam
Quality of learning resources	Student	Indirect Assessment via End of Term Student Feedback Survey
The extent to which CLOs have been achieved	Student & Faculty	Indirect Assessment via End of Term Student Feedback Survey for CLOS attainment. Direct Assessment via HW, Major Exam, and Final Exam, mapped for CLOS attainment.
Other		

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

Assessment Methods (Direct, Indirect)

G. Specification Approval

COUNCIL /COMMITTEE	**ACADEMIC CURRICULUM AND PLANS COMMITTEE IN COLLEGE OF ENGINEERING AND ARCHITECTURE**
REFERENCE NO.	
DATE	**30/01/2025**

