Ministry of Higher Education and Scientific Research
Apparatus for Educational and Scientific Supervision
Directorate of Quality Assurance and Academic Accreditation
Accreditation Division

Guide to Academic Program and Course Description

2026

Introduction

The educational program is a coordinated and organized package of courses that includes procedures and experiences organized into curricular units, whose primary purpose is to build and refine graduates' skills so as to qualify them to meet labor-market requirements. It is reviewed and evaluated annually through internal or external audit procedures and programs, such as the external examiner program.

The academic program description provides a concise summary of the program's main features and its courses, showing the skills that students are meant to acquire in line with the academic program's objectives. The importance of this description lies in the fact that it represents the cornerstone for obtaining program accreditation, and it is jointly written by the teaching staff under the supervision of the scientific committees within the academic departments.

This guide, in its second edition, includes a description of the academic program after updating the content and sections of the previous guide in light of recent developments in Iraq's educational system. This edition covers the academic program description in its traditional forms (annual and semester-based systems), as well as the standardized academic program description adopted under Studies Department letter No. 3/2906 dated 3/5/2023, concerning programs that adopt the Bologna Process as the basis for their work.

In this regard, we can only emphasize the importance of writing academic program and course descriptions to ensure the proper functioning of the educational process.

Vision

The General Mechanical Engineering Department aspires to be among the best and most distinguished engineering departments at the Technological University and nationwide, by advancing its teaching staff and laboratories and libraries with their valuable holdings of books, and by developing curricula in line with these requirements, so as to serve as a guiding light for students of knowledge, through preparing a generation of male and female engineers holding a Bachelor's degree in Mechanical Engineering Sciences, specialized in General Mechanics, in line with society's needs, keeping pace with scientific and technical developments across the department's various specializations, and supplying society with engineers holding advanced degrees.

Mission

Developing education quantitatively and qualitatively in line with the department's core objectives, represented in establishing new tracks and channels in preparatory studies for the General Mechanics specialization, in line with recent technological developments, so that the essence of the specialization and its research keeps pace with scientific development and the country's labor-market requirements, in line with successive discoveries and the rapid progress of science and technology in all aspects of life, keeping pace with the developments of the modern era and of contemporary human activity, so that the graduating student is the product of a high-quality academic program, having acquired skills in thinking, analysis, deduction, processing, and evaluation. In addition to attention to quality and academic accreditation

according to the Bologna methodology, so as to achieve employer satisfaction with the department's graduates.

Academic Program Description Form

University Name: University of Misan

College / Institute: College of Engineering

Scientific Department: Department of Mechanical Engineering

Academic or Professional Program Name: Bachelor of Mechanical Engineering

Final Certificate Name: Bachelor's Degree in Mechanical Engineering

Study System: Semester-based

Date of Preparing this Description: July/2026

Signature:
Name of department head:
Date:

Signature:
Name of scientific assistant:
Date:

File Reviewed By

Quality Assurance and University Performance Division

Name of the Director of the Quality Assurance and University Performance Division:

Signature:
Approval of the Dean:
Date:

Program Vision

The Department of Mechanical Engineering aspires to be a leader in providing distinguished education and advanced scientific research in the field of mechanical engineering. We seek to graduate innovative engineers capable of facing modern technical challenges, by providing an inspiring educational environment that encourages critical thinking and creativity.

Program Mission

Providing distinguished education that prepares students to face technical challenges in the fields of engineering. We focus on developing critical and creative thinking skills, while promoting scientific research and partnerships with academic and industrial institutions. We seek to graduate engineers capable of innovation and of contributing to sustainable development, meeting the needs of society and the requirements of the labor market.

Program Objectives

1. Professional Excellence and Industrial Contribution: Applying their expertise in mechanical engineering to meet national development and industrial needs, and contributing to state institutions and the private sector through engineering solutions that are innovative, technically sound, and socially responsible.
2. Research and Technological Advancement: Effectively supporting research and science centers, pursuing graduate studies, and industrial project engineering by working as competent specialists in their fields, and contributing to technological innovation and expanding the scope of applied knowledge.
3. Leadership and Institutional Reputation: Working as distinguished professionals and leaders in the field of mechanical engineering, and enhancing the reputation of the Technological University and the College of Mechanical Engineering as centers of academic, cultural, and scientific excellence rooted in national values.
4. Advancing Graduate Studies and Lifelong Learning: Establishing and strengthening specialized graduate-study programs and lifelong-learning opportunities in mechanical engineering that support advanced professional development, scientific exploration, and knowledge-based solutions.
5. Problem Solving and Community Service: Demonstrating solid foundations in engineering analysis and communication, enabling them to solve complex problems and provide high-quality technical services to society, supporting sustainable development and community well-being while adhering to professional ethics.

Program Accreditation

None

Other External Influences

None

Program Structure

Program Structure	No. of Courses	Credit Units	Percentage	Notes
Institution Requirements				
College Requirements				
Department Requirements	16	75	100	
Summer Training				

** Notes may indicate whether the course is core (required) or elective.*

Program Description

Year / Level	Course Code	Course / Subject Name	Theoretical	Practical
Fourth Stage / First Semester	ME411	Machine Elements Design 1	3	3
Fourth Stage / First Semester	ME412	Control	2	
Fourth Stage / First Semester	ME413	Air Conditioning and Refrigeration 1	2	
Fourth Stage / First Semester	ME414	Engineering Materials	2	
Fourth Stage / First Semester	ME415	Vibration Theory	2	
Fourth Stage / First Semester	ME416	Power Plants 1	2	
Fourth Stage / First Semester	ME417	Industrial Engineering	2	
Fourth Stage / First Semester	ME418	Engineering Project	2	
Fourth Stage / Second Semester	ME421	Machine Elements Design 2	3	
Fourth Stage / Second Semester	ME422	Measurements	2	3
Fourth Stage / Second Semester	ME423	Air Conditioning and Refrigeration 2	2	
Fourth Stage / Second Semester	ME424	Failure of Engineering Materials	2	
Fourth Stage /	ME425	Vibration	2	

Second Semester		Applications		
Fourth Stage / Second Semester	ME426	Power Plants 2	2	3
Fourth Stage / Second Semester	ME427	Project Management	2	
Fourth Stage / Second Semester	ME428	Engineering Project		

Expected Program Learning Outcomes

Knowledge

1. The graduate possesses theoretical and practical knowledge in the core areas of mechanical engineering (fluids, thermodynamics, materials, design, manufacturing)...
2. Understands how to apply scientific, mathematical, and engineering laws in analyzing problems and developing appropriate solutions.
3. Has the ability for scientific thinking and engineering analysis, and can work within regulatory frameworks and professional codes.
4. Has mastered language skills for scientific speaking and writing in both Arabic and English.
5. Has achieved comprehensive scientific competence in the general mechanics specialization.
6. Is committed to the ethics of the engineering profession, professional conduct, and social responsibility.

Skills

1. Using modern engineering techniques and software (ANSYS), such as: CAD/CAM, MATLAB, SolidWorks.
2. Analyzing engineering faults and problems and proposing suitable alternatives.
3. Conducting scientific analysis, investigation, and evaluation.
4. Participating in technical and engineering discussions and expressing scientific opinions.

c. Thinking Skills

Ability to analyze engineering and design problems and propose innovative solutions and improvements.

Developing critical and creative thinking and scientific inference.

Developing scientific-research skills and the use of knowledge sources, including the internet.

Using brainstorming and encouraging gifted students toward innovation and self-development.

d. General and Transferable Skills

1. Possessing communication skills and the ability to employ information technology.
2. Ability to cooperate and work as part of a team in multidisciplinary environments.
3. Mastery of verbal communication skills, the art of listening, and persuasion.
4. Acquiring leadership qualities such as quick thinking, strong memory, and the ability to infer and predict.

Values

Academic theoretical lectures.
Practical laboratories and in-class training.
Scientific discussion sessions and brainstorming.
Classroom and research projects (individual and group).
Field visits to maintenance and production workshops and factories.
Field and cooperative training at industrial institutions.
Applied case studies and real-world problem solving.

Teaching and Learning Strategies

1. Solving Complex Mechanical Problems (SO1)
Identifying, formulating, and solving problems using the principles of mathematics, science, and engineering in areas such as: stress and vibration, dynamics, thermodynamics, and fluids.
2. Engineering Design (SO2)
Designing mechanical systems/components/processes that meet specified requirements while accounting for safety, quality, sustainability, environment, economy, and manufacturability.
3. Experimentation and Data (SO6)
Planning and conducting appropriate experiments, using measurement and simulation tools, and analyzing and interpreting data to draw reliable conclusions.

4. Effective Communication (SO3)
Preparing technical reports and drawings and delivering professional oral presentations in Arabic and English, and communicating clearly and accurately with diverse audiences.
5. Ethics and Professional Responsibility (SO4)
Adhering to professional ethics and safety, evaluating the impact of engineering solutions on society, the environment, and the economy, and making informed judgments.
6. Continuous Learning and Modern Techniques (SO7)
Independently acquiring and applying new knowledge, and employing modern tools and techniques (CAD/CAM/CAE, MATLAB/Simulink, SolidWorks/ANSYS, etc.).

7. Teamwork and Leadership (SO5)
Working effectively within multidisciplinary teams; setting goals, planning tasks, managing time and risk, and contributing through effective leadership and constructive cooperation.

Assessment Methods

• Daily, mid-term, and final examinations to measure knowledge and understanding.
• Homework assignments and applied exercises.
• Classroom and extracurricular projects and technical reports.
• Seminars and presentations.
• Practical evaluation in laboratories and experiments.
• Reports on field visits and practical training.
• Classroom and oral discussions to measure understanding and analysis.
• Evaluation of classroom and homework activities and ongoing performance monitoring.

Teaching Staff

Faculty Members

Academic Rank	General	Specific	Permanent Staff	Visiting Lecturer
Professor	Mechanical Engineering	Thermodynamics	1	
Assistant Professor	Mechanical Engineering	Thermodynamics	1	
Assistant Professor	Mechanical Engineering	Applied	2	
	Materials Engineering	Materials	1	
Lecturer	Mechanical Engineering	Applied	1	
Lecturer	Mechanical Engineering	Thermodynamics	1	
Lecturer	Mechanical Engineering	Thermodynamics	1	
Lecturer	Mechanical Engineering	Applied	2	
Lecturer	Civil		1	
Assistant Lecturer	Electrical		1	
Assistant Lecturer	Mechanical Engineering	Thermodynamics	1	
Assistant Lecturer				
Assistant Lecturer				

Professional Development

Orientation of New Faculty Members

Briefly describes the process used to orient new, visiting, full-time, and part-time faculty members at the institution and department level. The department runs a structured professional mentoring program that pairs the new member with an experienced colleague for two semesters to follow up on course planning and evaluation, including reciprocal classroom visits and constructive feedback. Preparation is complemented by a package of short courses at the Continuing Education Center on active teaching methods and outcome-based assessment, in addition to a practical introduction to the department's laboratories and safety requirements (fluids, thermodynamics, materials, machine dynamics, workshops and manufacturing, and equipment operating procedures). The member is also supported in aligning Course Learning Outcomes (CLOs) with Program Learning Outcomes (PLOs/ABET) and in building assessment matrices and rubrics for lab reports and presentations, with a formal performance review at the end of the first year.

Professional Development of Faculty Members

The department has an annual development plan integrated with the college's plan, which includes regular seminars combining the sub-specializations of mechanical engineering (power and renewable-energy systems, heat transfer and CFD, machine design and vibrations, manufacturing, robotics, and control), as well as pedagogical seminars on problem-based learning and alternative assessment. An annual internal research forum is organized to present laboratory and design projects and discuss student feedback. Faculty members are also encouraged to participate in local, regional, and international conferences, to publish research in indexed databases (ScienceDirect / Scopus), to contribute to university and ministry committees, and to take part in faculty-development programs and networks such as IREX.

Admission Criteria

Students are registered and admitted based on the criteria set by the Ministry of Higher Education and Scientific Research.

Key Sources of Information about the Program

Websites, journals, and books.

Program Development Plan

1. Curriculum Development:

Content update: the curriculum must be updated by adding new subjects that keep pace with recent scientific developments in mechanical engineering, such as Micro-Electro-Mechanical Systems (MEMS), mechatronics, and nanotechnology, while replacing or removing outdated subjects that are no longer relevant.

Meeting labor-market requirements: the new curriculum must reflect changing labor-market requirements, focusing on in-demand specializations such as new and renewable energy conversion and power-generation equipment.

2. Infrastructure and Technical Development:

Equipping laboratories: developing and updating the mechanical engineering department's laboratories and equipping them with modern tools and techniques to keep pace with developments in the field.

Adopting modern engineering software: training students to use modern engineering software such as AutoCAD to create 3D models and design products.

3. Strengthening International and Local Engagement:

Participation in conferences and workshops: encouraging faculty members and students to participate in local and international scientific conferences and workshops to exchange expertise and stay abreast of the latest developments.

Building partnerships: establishing partnerships with international and local universities and research institutions to strengthen scientific and research cooperation.

4. Developing Student Skills:

Research and applied skills: focusing on strengthening students' research and applied skills, enabling them to contribute effectively to mechanical engineering projects.

Required learning outcomes: ensuring that student learning outcomes meet the expected needs of the engineer of the future.

Program Skills Map

Required Program Learning Outcomes

Year / Level	Course Code	Course Name	Core or Elective	A1	A2	A3	A4	B1	B2	B3	B4	C1	C2	C3	C4
Fourth Stage	ME411	Machine Elements Design 1	Specialized												
Fourth Stage	ME412	Control	Specialized												
Fourth Stage	ME413	Air Conditioning and Refrigeration 1	Specialized												
Fourth Stage	ME414	Engineering Materials	Specialized												
Fourth Stage	ME415	Vibration Theory	Specialized												
Fourth Stage	ME416	Power Plants 1	Specialized												
Fourth Stage	ME417	Industrial Engineering	Specialized												
Fourth Stage	ME418	Engineering Project	Specialized												
Fourth Stage	ME421	Machine Elements Design 2	Specialized												
Fourth Stage	ME422	Measurements	Specialized												
Fourth Stage	ME423	Air Conditioning and Refrigeration 2	Specialized												
Fourth Stage	ME424	Failure of Engineering Materials	Specialized												
Fourth Stage	ME425	Vibration Applications	Specialized												
	ME426	Power Plants 2	Specialized												
	ME427	Project Management	Supporting												
	ME428	Engineering Project	Specialized												

Please mark the boxes corresponding to the individual program learning outcomes being assessed.

Course Description Form

1. Course Name
Machine Elements Design 1

2. Course Code
ME411

3. Semester / Year
Fourth Stage / First Semester

4. Date of Preparing this Description
SEP./2025

5. Available Attendance Forms
In-person only

6. Total Study Hours / Total Credit Units
7 hours / 4 units

7. Name of Course Coordinator (list more than one name if applicable)
Name: Asst. Prof. Dr. Jasim Hassan Alak Email:

8. Course Objectives

Course Objectives

Understanding the basic design process, including stresses, strains, and strain energy.
Knowing how to estimate factors of safety, their importance, and their ranges.
Analyzing stresses and strains in curved beams (tension, bending, and combined loading).
Understanding the various elastic-failure theories (maximum-stress theory, maximum normal-stress theory, maximum shear-stress theory, strain-energy theory).
Knowing the different types of springs and the stresses induced in them.
Understanding the properties of helical springs, the spring index, and the stresses induced in them.
Knowing the types and importance of fatigue stresses and how to analyze them.
Understanding the S-N curve, how it is constructed, and analyzing the mean and alternating stresses for fluctuating loads.
Knowing the reliability of designed components.
Understanding the different types of bolts and threads and the stresses induced in them.
Knowing how to design pressure vessels (thin and thick) and analyze the stresses induced in them.
Understanding the basics of Computer-Aided Design (CAD) and its use in mechanical design.

9. Teaching and Learning Strategies

Strategy

• Conventional lecture method using the whiteboard, following a "how and why" approach to the topic in accordance with the course syllabus.

• Lecture method using a data-show device, following a "how and why" approach to the topic in accordance with the course syllabus.

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit / Topic Name	Learning Method	Assessment Method
16 weeks	3 theoretical 3 practical 1 tutorial	1. The graduate possesses theoretical and practical knowledge in the core areas of mechanical engineering (fluids, thermodynamics, materials, design, manufacturing)... 2. Understands how to apply scientific, mathematical, and engineering laws in analyzing problems and developing appropriate solutions. 3. Has the ability for scientific thinking and engineering analysis, and can work within regulatory frameworks and professional codes. 4. Has mastered language skills for scientific speaking and writing in both Arabic and	Week 1: Chapter 1: Introduction to the design process. Fundamentals of the design process, stresses, strains, and strain energy. Week 2: Chapter 1: Introduction to the design process. Estimating factors of safety, their importance and ranges. Week 3: Chapter 2: Stress and strain analysis. Analyzing stresses and strains for curved beams (tension, bending, and combined loading). Week 4: Chapter 2: Stress and strain analysis. Elastic-failure	• Conventional lecture method using the whiteboard, following a "how and why" approach to the topic in accordance with the course syllabus. • Lecture method using a data-show device, following a "how and why" approach to the topic in accordance with the course syllabus.	• In-class interaction. • Homework assignments and reports. • Short quizzes. • Mid-term and final examinations.

		English. 5. Has achieved comprehensive scientific competence in the general mechanics specialization. 6. Is committed to the ethics of the engineering profession, professional conduct, and social responsibility.	theories (maximum normal-stress theory, maximum-stress theory, maximum shear-stress theory, strain-energy theory). Short quiz. Week 5: Chapter 3: Introduction to spring design. Types of springs and the stresses induced in them. Week 6: Chapter 3: Introduction to spring design; helical springs. Spring index. Stresses induced in helical springs. Week 7: Chapter 4: Introduction to fatigue failure. Fatigue stresses, their types and importance. Combined loading modes. Week 8: Chapter 4: Introduction to fatigue failure. Mean and alternating		

			stresses for fluctuating loads. The S-N curve and how it is constructed. Week 9: Chapter 4: Introduction to fatigue failure. Reliability of designed components. Week 10: Chapter 5: Introduction to bolts and fasteners. Types of bolts. Types of fasteners. Week 11: Chapter 5: Introduction to bolts and fasteners. Stresses induced in bolts and their calculation. Week 12: Chapter 5: Introduction to bolts and fasteners. Power screws, types of fasteners, and induced stresses. Week 13: Chapter 6: Introduction to pressure-vessel design. Types of pressure vessels (thin and thick). Balance of		

			external and internal forces. Short quiz. Week 14: Chapter 6: Introduction to pressure vessels. Stresses induced by internal pressure in thin cylinders. Strains and volume change. Week 15: Chapter 7: Introduction to Computer-Aided Design (CAD). Introduction to Computer-Aided Design. Week 16: Preparatory week before the final examination Weekly Laboratory Syllabus Week 1: Lab 1: Coupling of mechanical components. Week 2: Lab 2: Calculating stresses for three components in a mechanism. Week 3: Lab 3: Failure analysis of mechanical components. Week 4: Lab		

			4: Preliminary and microscopic examination of failure in mechanical components. Week 5: Lab 5: Examples of curved-beam analysis (lifting hook and S-type load cell). Week 6: Lab 6: Tensile testing and factors of safety. Week 7: Lab 7: Modeling of mechanical components. Week 8: Lab 8: Springs (leaf, torsion, and helical). Week 9: Lab 9: Fatigue testing "reliability and endurance limit". Week 10: Lab 10: Overview of manufacturing bolts and fasteners. Week 11: Lab 11: Power screws (lever analysis of the screw). Week 12: Lab 12: Computer-Aided Design (CAD) software and the design		

			process. Week 13: Lab 13: Review. Week 14: Lab 14: Test. Week 15: Lab 15: Final examination.		

11. Course Assessment

Marks out of 100 are distributed according to the tasks assigned to the student, such as daily preparation, daily and oral examinations, monthly and written examinations, reports, etc.

12. Learning and Teaching Resources

Required Course Textbooks (curriculum, if any)
Main References (Sources)
Recommended Supporting Books and References (scientific journals, reports, etc.)
Electronic References, Websites

Course Description Form

1. Course Name
Control

2. Course Code
ME412

3. Semester / Year
Fourth Stage / First Semester

4. Date of Preparing this Description
SEP./2025

5. Available Attendance Forms
In-person only

6. Total Study Hours / Total Credit Units
3 hours / 2 units

7. Name of Course Coordinator (list more than one name if applicable)
Name: Lecturer Dr. Mahmoud Shaker Mahmoud Email:

8. Course Objectives

Course Objectives
Students will be able to describe feedback control systems mathematically using differential equations, transfer functions, and state-space models.
Students will be able to analyze whether a given control system is stable or not, and what must be done to make it stable.
Students will be able to define and explain feedback and feed-forward control architectures, and discuss the importance of performance, robustness, and stability in control design.
Students will be able to interpret and apply block-diagram representations of control systems and design PID controllers based on empirical tuning rules.
Students will be able to compute the stability of linear systems using the Routh array test and use it to generate control-design constraints. Students will be able to understand and determine the controllability and observability of control systems.

9. Teaching and Learning Strategies

Strategy
• Conventional lecture method using the whiteboard, following a "how and why" approach to the topic in accordance with the course syllabus.
• Lecture method using a data-show device, following a "how and why" approach to the topic in accordance with the course syllabus.

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit / Topic Name	Learning Method	Assessment Method
16 weeks	2 theoretical 1 tutorial	1. The graduate possesses theoretical and practical knowledge in the core areas of mechanical engineering (fluids, thermodynamics, materials, design, manufacturing)... 2. Understands how to apply scientific, mathematical, and engineering laws in analyzing problems and developing appropriate solutions. 3. Has the ability for scientific thinking and engineering analysis, and can work within regulatory frameworks and professional codes. 4. Has mastered language skills for scientific speaking and writing in both Arabic and English. 5. Has achieved comprehensive scientific competence in the general	Week 1: Introduction and mathematics review (Chapter 1) Week 2: Introduction and mathematics review (Chapter 1) Week 3: Modeling physical systems (Chapter 2) Week 4: Modeling physical systems (Chapter 2) Week 5: System responses (Chapter 4) Week 6: System responses (Chapter 4) Week 7: Control-system properties and stability analysis (Chapters 5 and 6) Week 8: Control-system properties and stability analysis (Chapters 5 and 6)	• Conventional lecture method using the whiteboard, following a "how and why" approach to the topic in accordance with the course syllabus. • Lecture method using a data-show device, following a "how and why" approach to the topic in accordance with the course syllabus.	• Direct "how and why" questions on the topic during the theoretical lecture. • Pop quizzes during the theoretical lecture. • Mid-term examinations covering the theoretical component. • Final examinations covering the theoretical component.

		mechanics specialization. 6. Is committed to the ethics of the engineering profession, professional conduct, and social responsibility.	Week 9: Root locus (Chapter 7) Week 10: Root locus (Chapter 7) Week 11: Frequency-domain analysis (Chapter 8) Week 12: Frequency-domain analysis (Chapter 8) Week 13: Frequency-domain synthesis (Chapter 9) Week 14: Frequency-domain synthesis (Chapter 9) Week 15: Preparatory week before the final examination Week 16: Preparatory week before the final examination		

11. Course Assessment

Marks out of 100 are distributed according to the tasks assigned to the student, such as daily preparation, daily and oral examinations, monthly and written examinations, reports, etc.

12. Learning and Teaching Resources

Required Course Textbooks (curriculum, if any)
Main References (Sources)
Recommended Supporting Books and References (scientific journals, reports, etc.)
Electronic References, Websites

Course Description Form

1. Course Name
Air Conditioning and Refrigeration 1

2. Course Code
ME413

3. Semester / Year
Fourth Stage / First Semester

4. Date of Preparing this Description
SEP./2025

5. Available Attendance Forms
In-person only

6. Total Study Hours / Total Credit Units
6 hours / 3 units

7. Name of Course Coordinator (list more than one name if applicable)
Name: Lecturer Dr. Ali Hussein Jabbar Email:

8. Course Objectives

Course Objectives
Understanding the properties of air and water and the factors affecting air conditioning.
Using the psychrometric chart to analyze the various air-conditioning processes.
Calculating cooling and heating loads based on the various factors affecting human comfort.
Designing air-distribution systems and understanding the various design procedures.

9. Teaching and Learning Strategies

Strategy
• Conventional lecture method using the whiteboard, following a "how and why" approach to the topic in accordance with the course syllabus.
• Lecture method using a data-show device, following a "how and why" approach to the topic in accordance with the course syllabus.

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit / Topic Name	Learning Method	Assessment Method
16 weeks	2 theoretical + 3 practical 1 tutorial	1. The graduate possesses theoretical and practical knowledge in the core areas of mechanical engineering (fluids, thermodynamics, materials, design, manufacturing)... 2. Understands how to apply scientific, mathematical, and engineering laws in analyzing problems and developing appropriate solutions. 3. Has the ability for scientific thinking and engineering analysis, and can work within regulatory frameworks and professional codes. 4. Has mastered language skills for scientific speaking and writing in both Arabic and English. 5. Has achieved comprehensive scientific competence in the general	Week 1: Properties of air and water – definition of air conditioning and ventilation Week 2: Dalton's law of partial pressures – ideal gas law and moisture vapor pressure Week 3: Moist-air terminology: humidity, vapor density, relative humidity, specific volume of moist air, dry- and wet-bulb temperature and dew point – enthalpy of moist air and adiabatic saturation Week 4: Psychrometric chart for air-conditioning processes – air mixing and processes on the chart Week 5: Sensible heating and cooling – evaporation and dehumidification, bypass and contact factors, sensible-heat ratio Week 6: Calculating thermal loads: human comfort	• Conventional lecture method using the whiteboard, following a "how and why" approach to the topic in accordance with the course syllabus. • Lecture method using a data-show device, following a "how and why" approach to the topic in accordance with the course syllabus.	• Direct "how and why" questions on the topic during the theoretical lecture. • Pop quizzes during the theoretical lecture. • Mid-term examinations covering the theoretical component. • Final examinations covering the theoretical component.

		mechanics specialization. 6. Is committed to the ethics of the engineering profession, professional conduct, and social responsibility.	factors, comfort indices, effective temperature – selecting indoor and outdoor design conditions Week 7: Heat transfer through walls and surfaces, design temperature for unconditioned spaces – solar radiation transfer through glass, shading, heat gain from walls and surfaces Week 8: Heat loss from the human body and ventilation requirements – heat loss from infiltration, opening methods, and air exchange Week 9: Lighting loads, miscellaneous heat losses – calculating total thermal loads Week 10: Calculating heating loads – design calculations for heating systems Week 11: Designing air-distribution systems: duct-design procedures, equal-friction method, fans and fan laws, single- and multi-zone fan systems		

			Week 12: Air-distribution outlets, system pressure losses – preparation for practical experiments in air-conditioning and refrigeration systems Week 13: Conducting practical experiments – analyzing the performance of air-conditioning systems Week 14: Practical applications and design models Week 15: Comprehensive course review Week 16: Preparatory week before the final examination Weekly Laboratory Syllabus Week 1: Lab 1: Introduction to the properties of saturated air Week 2: Lab 2: Introduction to the properties of saturated air Week 3: Lab 3: Psychrometric chart processes Week 4: Lab 4: Psychrometric chart processes Week 5: Lab 5: Cooling and dehumidification Week 6: Lab 6: Cooling and		

			dehumidification Week 7: Lab 7: Heating and humidification Week 8: Lab 8: Heating and humidification Week 9: Lab 9: Vapor-compression refrigeration system Week 10: Lab 10: Vapor-compression refrigeration system Week 11: Lab 11: Heat pump Week 12: Lab 12: Heat pump Week 13: Lab 13: Review Week 14: Lab 14: Examination Week 15: Lab 15: Final examination		

11. Course Assessment

Marks out of 100 are distributed according to the tasks assigned to the student, such as daily preparation, daily and oral examinations, monthly and written examinations, reports, etc.

12. Learning and Teaching Resources

Required Course Textbooks (curriculum, if any)
Main References (Sources)
Recommended Supporting Books and References (scientific journals, reports, etc.)
Electronic References, Websites

Course Description Form

1. Course Name
Engineering Materials

2. Course Code
ME414

3. Semester / Year
Fourth Stage / First Semester

4. Date of Preparing this Description
SEP./2025

5. Available Attendance Forms
In-person

6. Total Study Hours / Total Credit Units
2 hours / 2 units

7. Name of Course Coordinator (list more than one name if applicable)
Name: Asst. Prof. Dr. Mohammed Razzaq Mohammed Email:

8. Course Objectives

Course Objectives
Knowing the different types of engineering materials.
Naming the different types of steel and identifying the compositional differences, distinguishing properties, and typical uses of each.
Naming the five types of cast iron and describing the microstructure and identifying the general mechanical properties of each.
Knowing the different types of non-ferrous alloys and identifying their distinguishing physical and mechanical properties.
Explaining the purposes of, and describing the procedures for, the following heat treatments: process annealing, normalizing, and full annealing.
Describing a typical polymer molecule in terms of chain structure and how the molecule is generated from repeating units.
Naming and describing the four general types of polymer molecular structures and the four types of copolymers.
Identifying the differences in behavior and molecular structure between thermoplastic and thermosetting polymers.
Describing the process used to produce glass-ceramics.
Naming types of clay products and forms of carbon.
Identifying three important requirements typically met by refractory ceramics, abrasive ceramics, and cements.
Naming and describing some forming methods used in manufacturing glass pieces.

9. Teaching and Learning Strategies

Strategy
• Conventional lecture method using the whiteboard, following a "how and why"

approach to the topic in accordance with the course syllabus.
• Lecture method using a data-show device, following a "how and why" approach to the topic in accordance with the course syllabus.

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit / Topic Name	Learning Method	Assessment Method
16 weeks	2 theoretical	1. The graduate possesses theoretical and practical knowledge in the core areas of mechanical engineering (fluids, thermodynamics, materials, design, manufacturing)... 2. Understands how to apply scientific, mathematical, and engineering laws in analyzing problems and developing appropriate solutions. 3. Has the ability for scientific thinking and engineering analysis, and can work within regulatory frameworks and professional codes. 4. Has mastered language skills for scientific speaking and writing in both Arabic and English. 5. Has achieved comprehensive	Week 1: Chapter 1: Ferrous metals, carbon steel, low-alloy steel. Week 2: Chapter 1: Ferrous metals, heat treatments of carbon steel, stainless steel, cast iron. Week 3: Chapter 2: Non-ferrous metals, copper, brass, bronze, copper-nickel alloys. Week 4: Chapter 2: Non-ferrous metals, aluminum, wrought aluminum alloys, cast aluminum alloys, precipitation-hardening process. Week 5: Chapter 3: Polymers, molecular structure of polymers, addition and condensation polymerization, degree of polymerization.	• Conventional lecture method using the whiteboard, following a "how and why" approach to the topic in accordance with the course syllabus. • Lecture method using a data-show device, following a "how and why" approach to the topic in accordance with the course syllabus.	• In-class interaction. • Homework assignments and reports. • Short quizzes. • Mid-term and final examinations.

		scientific competence in the general mechanics specialization. 6. Is committed to the ethics of the engineering profession, professional conduct, and social responsibility.	Week 6: Chapter 3: Polymers – thermoplastic and thermosetting polymers, mechanical behavior of polymers. Week 7: Chapter 4: Ceramics, crystal structures, silicate ceramics, carbon, defects in ceramics, diffusion in ionic materials. Week 8: Chapter 4: Ceramics, glass and glass-ceramics, clay products, refractory materials, abrasive materials, cement, advanced ceramics. Week 9: Chapter 5: Composite materials, large-particle composites, dispersion-strengthened composites, effect of fiber length, orientation, and concentration. Week 10: Chapter 5: Composite materials, fiber		

			phase, matrix phase, polymer-matrix composites, metal-matrix composites, ceramic-matrix composites, laminar composites, sandwich panels. Week 11: Chapter 6: Mechanical properties of materials, elastic deformation, stress-strain behavior, elastic properties of materials, tensile properties, true stress and strain, hardness. Week 12: Chapter 6: Fracture, fundamentals of fracture, ductile fracture, brittle fracture, principles of fracture mechanics, impact fracture testing. Week 13: Chapter 7: Fatigue, cyclic stresses, the S-N curve, crack initiation and propagation. Week 14: Chapter 8:		

			Creep, generalized creep behavior, effects of stress and temperature, extrapolation methods (Larson-Miller methods), alloys for use at high temperature. Week 15: Chapter 9: Corrosion, electrochemical considerations, forms of corrosion, corrosion prevention. Week 16: Preparatory week before the final examination		

11. Course Assessment

Marks out of 100 are distributed according to the tasks assigned to the student, such as daily preparation, daily and oral examinations, monthly and written examinations, reports, etc.

12. Learning and Teaching Resources

Required Course Textbooks (curriculum, if any)
Main References (Sources)
Recommended Supporting Books and References (scientific journals, reports, etc.)
Electronic References, Websites

Course Description Form

1. Course Name
Vibration Theory

2. Course Code
ME415

3. Semester / Year
Fourth Stage / First Semester

4. Date of Preparing this Description
SEP./2025

5. Available Attendance Forms
In-person only

6. Total Study Hours / Total Credit Units
3 hours / 2 units

7. Name of Course Coordinator (list more than one name if applicable)
Name: Asst. Lecturer Ali Jasim Mohammed Email:

8. Course Objectives

Course Objectives

Acquiring a fundamental understanding of mechanical vibrations and developing skills in analyzing vibrating systems.
Ability to determine the components of a vibrating system (stiffness, mass or mass moment of inertia, and damping).
Ability to determine the type of motion of mechanical systems (oscillatory or non-oscillatory).
Using the principles of mechanical vibration, such as Newton's second law, Lagrange's formulation, and the principle of energy conservation, in mathematical models to obtain the equations of motion governing vibrating systems.
Ability to analyze the vibration of undamped and damped single-degree-of-freedom systems.
Ability to find the vibration response of undamped single-degree-of-freedom systems subjected to base excitation and rotating unbalance.
Predicting the response of undamped and damped single-degree-of-freedom systems subjected to periodic loading.
Finding the response of undamped and damped single-degree-of-freedom systems subjected to general forcing functions.

9. Teaching and Learning Strategies

Strategy

• Conventional lecture method using the whiteboard, following a "how and why" approach to the topic in accordance with the course syllabus.
• Lecture method using a data-show device, following a "how and why" approach to the topic in accordance with the course syllabus.

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit / Topic Name	Learning Method	Assessment Method
16 weeks	2 theoretical 1 tutorial	1. The graduate possesses theoretical and practical knowledge in the core areas of mechanical engineering (fluids, thermodynamics, materials, design, manufacturing)... 2. Understands how to apply scientific, mathematical, and engineering laws in analyzing problems and developing appropriate solutions. 3. Has the ability for scientific thinking and engineering analysis, and can work within regulatory frameworks and professional codes. 4. Has mastered language skills for scientific speaking and writing in both Arabic and English. 5. Has achieved comprehensive scientific competence in the general mechanics	Week 1: Introduction: fundamentals of vibration, importance of studying vibration, and basic concepts. Week 2: Classification of vibration: classification by degrees of freedom, by nature, and by type of input. Week 3: Free vibration: free vibration of a single-degree-of-freedom system. Week 4: Free vibration: free vibration of undamped torsional systems. Week 5: Free vibration: free vibration of viscously damped systems. Test 1 Week 6: Forced vibration: equation of motion for an undamped system. Week 7: Forced	• Conventional lecture method using the whiteboard, following a "how and why" approach to the topic in accordance with the course syllabus. • Lecture method using a data-show device, following a "how and why" approach to the topic in accordance with the course syllabus.	• In-class interaction. • Homework assignments and reports. • Short quizzes. • Mid-term and final examinations.

		specialization. 6. Is committed to the ethics of the engineering profession, professional conduct, and social responsibility.	vibration: equation of motion for damped systems. Mid-term examination Week 8: Forced vibration: response of a damped system under harmonic base motion. Week 9: Forced vibration: response of a damped system under rotating unbalance. Week 10: Vibration under general forcing conditions: response under a general periodic function. Test 2 Week 11: Vibration under general forcing conditions: response under a non-periodic force. Week 12: Vibration under general forcing conditions: response under an arbitrary		

			force. Report Week 13: Multi-degree-of-freedom systems: derivation of the equation of motion, and influence coefficients. Week 14: Multi-degree-of-freedom systems: Lagrange's equation. Week 15: Multi-degree-of-freedom systems: the eigenvalue problem. Test 3 Week 16: Preparatory week before the final examination		

11. Course Assessment

Marks out of 100 are distributed according to the tasks assigned to the student, such as daily preparation, daily and oral examinations, monthly and written examinations, reports, etc.

12. Learning and Teaching Resources

Required Course Textbooks (curriculum, if any)
Main References (Sources)
Recommended Supporting Books and References (scientific journals, reports, etc.)
Electronic References, Websites

Course Description Form

1. Course Name
Power Plants 1

2. Course Code
ME416

3. Semester / Year
Fourth Stage / First Semester

4. Date of Preparing this Description
SEP./2025

5. Available Attendance Forms
In-person only

6. Total Study Hours / Total Credit Units
3 hours / 2 units

7. Name of Course Coordinator (list more than one name if applicable)
Name: Prof. Dr. Ahmed Kadhim Al-Shara Email:

8. Course Objectives

Course Objectives

Becoming familiar with the general fundamentals of power plants, including the basic principles of thermodynamics, fluid mechanics, and heat transfer.
Understanding the working principles of conventional power plants such as steam, gas, nuclear, and diesel plants, as well as hydroelectric power plants.
Describing the working principles of non-conventional power plants such as fuel cells, solar cells, biomass energy, geothermal energy, marine energy, wind energy, wave energy, and tidal energy.
Analyzing the performance and evaluating power plants using various thermal cycles.

9. Teaching and Learning Strategies

Strategy

• Conventional lecture method using the whiteboard, following a "how and why" approach to the topic in accordance with the course syllabus.
• Lecture method using a data-show device, following a "how and why" approach to the topic in accordance with the course syllabus.

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit / Topic Name	Learning Method	Assessment Method
16 weeks	2 theoretical 1 tutorial	1. The graduate possesses theoretical and practical knowledge in the core areas of mechanical engineering (fluids, thermodynamics, materials, design, manufacturing)... 2. Understands how to apply scientific, mathematical, and engineering laws in analyzing problems and developing appropriate solutions. 3. Has the ability for scientific thinking and engineering analysis, and can work within regulatory frameworks and professional codes. 4. Has mastered language skills for scientific speaking and writing in both Arabic and English. 5. Has achieved comprehensive scientific competence in the general	Week 1: General introduction to power plants – review of the fundamentals of thermodynamics, fluid mechanics, and heat transfer Week 2: Definition of power-plant concepts – classification of power plants Week 3: Working principles of conventional power plants (steam, gas, nuclear, diesel, hydroelectric) Week 4: Working principles of non-conventional power plants (fuel cells, solar cells, biomass energy) Week 5: Working principles of non-conventional power plants (geothermal energy, marine energy, wind energy, wave energy, tidal energy) Week 6: Gas-turbine power plants: types of	• Conventional lecture method using the whiteboard, following a "how and why" approach to the topic in accordance with the course syllabus. • Lecture method using a data-show device, following a "how and why" approach to the topic in accordance with the course syllabus.	• Direct "how and why" questions on the topic during the theoretical lecture. • Pop quizzes during the theoretical lecture. • Mid-term examinations covering the theoretical component. • Final examinations covering the theoretical component.

		mechanics specialization. 6. Is committed to the ethics of the engineering profession, professional conduct, and social responsibility.	gas cycles, working principles – performance analysis of the basic cycle Week 7: Modifications to the basic cycle of gas-turbine power plants (reheating, regeneration, multi-stage compression with intercooling) Week 8: Steam-turbine power plants: steam power cycles (Carnot cycle, ideal Rankine cycle, actual Rankine cycle) Week 9: Performance analysis of the simple steam cycle – modifications to the simple Rankine cycle Week 10: Rankine cycle with superheating – Rankine cycle with reheat Week 11: Rankine cycle with regeneration – combined gas-and-steam power plants Week 12: Comprehensive review of power-plant concepts Week 13:		

			Power-plant performance analysis Week 14: Practical applications and analysis models Week 15: Comprehensive course review Week 16: Preparatory week before the final examination		

11. Course Assessment

Marks out of 100 are distributed according to the tasks assigned to the student, such as daily preparation, daily and oral examinations, monthly and written examinations, reports, etc.

12. Learning and Teaching Resources

Required Course Textbooks (curriculum, if any)
Main References (Sources)
Recommended Supporting Books and References (scientific journals, reports, etc.)
Electronic References, Websites

Course Description Form

1. Course Name
Industrial Engineering

2. Course Code
ME417

3. Semester / Year
Fourth Stage / First Semester

4. Date of Preparing this Description
SEP./2025

5. Available Attendance Forms
In-person only

6. Total Study Hours / Total Credit Units
2 hours / 2 units

7. Name of Course Coordinator (list more than one name if applicable)
Name: Lecturer Firas Latif Hassani Email:

8. Course Objectives

Course Objectives
Understanding the fundamentals of industrial engineering: gaining knowledge of the basic principles, activities, and focus areas of industrial engineering.
Understanding decision-making theories: learning the various decision-making models, including game theory, and their applications in industrial settings.
Becoming familiar with operations research: understanding the role and trends of operations research and engineering economics.
Mastering linear programming: understanding the general form, assumptions, and methods of linear programming, including the simplex method.
Analyzing assignment and transportation problems: learning the mathematical formulations, algorithms, and solution methods for assignment and transportation problems.
Applying priority-sequencing rules: understanding the various priority rules such as FCFS, SPT, EDD, and CR.
Exploring the fundamentals of control and maintenance engineering: learning the basic concepts of inventory management, control, and maintenance policies, including economic considerations.
Conducting break-even analysis: understanding and applying graphical and mathematical methods for break-even analysis.

9. Teaching and Learning Strategies

Strategy
• Conventional lecture method using the whiteboard, following a "how and why" approach to the topic in accordance with the course syllabus.
• Lecture method using a data-show device, following a "how and why" approach to

the topic in accordance with the course syllabus.

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit / Topic Name	Learning Method	Assessment Method
16 weeks	2 theoretical	1. The graduate possesses theoretical and practical knowledge in the core areas of mechanical engineering (fluids, thermodynamics, materials, design, manufacturing)... 2. Understands how to apply scientific, mathematical, and engineering laws in analyzing problems and developing appropriate solutions. 3. Has the ability for scientific thinking and engineering analysis, and can work within regulatory frameworks and professional codes. 4. Has mastered language skills for scientific speaking and writing in both Arabic and English. 5. Has achieved comprehensive scientific	Week 1: Introduction to industrial engineering – fundamentals, activities, and focus areas. Week 2: Decision-making theories – introduction. Week 3: Decision-making theories – game theory. Week 4: Operations research – introduction. Week 5: Trends in engineering economics. Week 6: Linear programming – introduction and general form. Week 7: Linear programming – assumptions, applications, advantages, and disadvantages. Week 8: Linear programming – formulation.	• Conventional lecture method using the whiteboard, following a "how and why" approach to the topic in accordance with the course syllabus. • Lecture method using a data-show device, following a "how and why" approach to the topic in accordance with the course syllabus.	• In-class interaction. • Homework assignments and reports. • Short quizzes. • Mid-term and final examinations.

		competence in the general mechanics specialization. 6. Is committed to the ethics of the engineering profession, professional conduct, and social responsibility.	Week 9: Linear programming – the simplex method. Week 10: The assignment problem – introduction and algorithms. Week 11: The assignment problem – unbalanced assignment and maximal assignment. Week 12: The transportation problem – introduction and mathematical formulation. Week 13: The transportation problem – tabular representation and definitions. Week 14: Priority-sequencing rules – FCFS, SPT, EDD, CR. Week 15: Fundamentals of control – basic concepts, control and maintenance management. Week 16: Preparatory week before the final examination		

11. Course Assessment

Marks out of 100 are distributed according to the tasks assigned to the student, such as daily preparation, daily and oral examinations, monthly and written examinations, reports, etc.

12. Learning and Teaching Resources

Required Course Textbooks (curriculum, if any)
Main References (Sources)
Recommended Supporting Books and References (scientific journals, reports, etc.)
Electronic References, Websites

Course Description Form

1. Course Name
Engineering Project

2. Course Code
ME418

3. Semester / Year
Fourth Stage / First Semester

4. Date of Preparing this Description
SEP./2025

5. Available Attendance Forms
In-person only

6. Total Study Hours / Total Credit Units
5 hours / 3 units

7. Name of Course Coordinator (list more than one name if applicable)
Name: Email:

8. Course Objectives

Course Objectives

9. Teaching and Learning Strategies

Strategy

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit / Topic Name	Learning Method	Assessment Method

11. Course Assessment
Marks out of 100 are distributed according to the tasks assigned to the student, such as daily preparation, daily and oral examinations, monthly and written examinations, reports, etc.

12. Learning and Teaching Resources

Required Course Textbooks (curriculum, if any)
Main References (Sources)
Recommended Supporting Books and References (scientific journals, reports, etc.)
Electronic References, Websites

Course Description Form

1. Course Name
Machine Elements Design 2

2. Course Code
ME421

3. Semester / Year
Fourth Stage / Second Semester

4. Date of Preparing this Description
SEP.2025

5. Available Attendance Forms
In-person only

6. Total Study Hours / Total Credit Units
4 hours / 3 units

7. Name of Course Coordinator (list more than one name if applicable)
Name: Asst. Prof. Dr. Jasim Hassan Alak Email:

8. Course Objectives

Course Objectives
Understanding gear types and the design and analysis of contact forces.
Analyzing and selecting rolling-contact bearings.
Designing and analyzing journal bearings.
Designing and analyzing shafts, and their loading from bending, torsion, and cyclic stress perspectives.
Analyzing various connections (bolted joints and welded joints).

9. Teaching and Learning Strategies

Strategy
• Conventional lecture method using the whiteboard, following a "how and why" approach to the topic in accordance with the course syllabus.
• Lecture method using a data-show device, following a "how and why" approach to the topic in accordance with the course syllabus.

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit / Topic Name	Learning Method	Assessment Method
16 weeks	3 theoretical 1 tutorial	1. The graduate possesses theoretical and practical knowledge in the core areas of mechanical engineering (fluids, thermodynamics, materials, design, manufacturing)... 2. Understands how to apply scientific, mathematical, and engineering laws in analyzing problems and developing appropriate solutions. 3. Has the ability for scientific thinking and engineering analysis, and can work within regulatory frameworks and professional codes. 4. Has mastered language skills for scientific speaking and writing in both Arabic and English. 5. Has achieved comprehensive scientific competence in the general	Week 1 Chapter 1: Introduction to gear design. Background information on the gear design process and stress calculations. Week 2 Chapter 1: Introduction to gear design. Analysis of spur, helical, and worm gears. Week 3 Chapter 1: Introduction to gear design. Gear selection, number of teeth, and module. Week 4 Chapter 1: Introduction to gear design. Bending stresses in gears and introduction to Hertzian contact theory. Week 5 Chapter 2: Introduction to bearing design. Bearing types and their loading, and stresses on the inner and	• Conventional lecture method using the whiteboard, following a "how and why" approach to the topic in accordance with the course syllabus. • Lecture method using a data-show device, following a "how and why" approach to the topic in accordance with the course syllabus.	• Direct "how and why" questions on the topic during the theoretical lecture. • Pop quizzes during the theoretical lecture. • Mid-term examinations covering the theoretical component. • Final examinations covering the theoretical component.

		mechanics specialization. 6. Is committed to the ethics of the engineering profession, professional conduct, and social responsibility.	outer races. Test. Week 6 Chapter 2: Introduction to bearing design. Bearing load classification, dynamic load, and rated life. Bearing reliability and its relation to life prediction. Bearing selection and use of standards. Week 7 Chapter 3: Introduction to journal-bearing design. Hydrodynamic and hydrostatic lubrication systems. Lubricant viscosity and other considerations. Week 8 Chapter 3: Introduction to journal-bearing design. Design and dimensioning of journal bearings. Week 9 Chapter 4: Introduction to shaft design. Shaft types and their support, shaft		

			materials, and bending and torsional stresses on shafts. Week 10 Chapter 4: Introduction to shaft design. Designing shafts from bending, torsion, and cyclic-stress perspectives. Keys and keyways on shafts. Test. Week 11 Chapter 5: Introduction to belt-drive systems. Analysis of flat belts (open and crossed drive systems). Tensions, wrap angles, initial tension for maximum power transmission. Week 12 Chapter 5: Introduction to belt-drive systems. Analysis and selection of V-belts. Week 13 Chapter 6: Introduction to welding and fasteners. Types of welded joints. Analysis of lap and fillet		

			joints. Week 14 Chapter 6: Introduction to welding and fasteners. Analysis of joints with rough levers and cover plates. Week 15 Chapter 7: Introduction to Computer-Aided Design (CAD/CAM). Introduction to computer-aided design. Week 16: Preparatory week before the final examination		

11. Course Assessment

Marks out of 100 are distributed according to the tasks assigned to the student, such as daily preparation, daily and oral examinations, monthly and written examinations, reports, etc.

12. Learning and Teaching Resources

Required Course Textbooks (curriculum, if any)
Main References (Sources)
Recommended Supporting Books and References (scientific journals, reports, etc.)
Electronic References, Websites

Course Description Form

1. Course Name
Measurements

2. Course Code
ME422

3. Semester / Year
Fourth Stage / Second Semester

4. Date of Preparing this Description
SEP./2025

5. Available Attendance Forms
In-person only

6. Total Study Hours / Total Credit Units
6 hours / 3 units

7. Name of Course Coordinator (list more than one name if applicable)
Name: Lecturer Dr. Mahmoud Shaker Mahmoud Email:

8. Course Objectives

Course Objectives
Describing measuring instruments in terms of their mathematical and physical principles.
Understanding how these instruments are used in measurements.
Explaining how transducers are integrated with analog and digital devices.
Understanding the role of software in achieving the required results for a measurement system.
Analyzing how measuring instruments are designed.
Studying how various parameters are measured using these instruments.
Ability to design measuring instruments and multi-purpose electronic systems.
Understanding the various applications of these instruments in diverse fields.

9. Teaching and Learning Strategies

Strategy
• Conventional lecture method using the whiteboard, following a "how and why" approach to the topic in accordance with the course syllabus.
• Lecture method using a data-show device, following a "how and why" approach to the topic in accordance with the course syllabus.

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit / Topic Name	Learning Method	Assessment Method
16 weeks	2 theoretical 3 practical 1 tutorial	1. The graduate possesses theoretical and practical knowledge in the core areas of mechanical engineering (fluids, thermodynamics, materials, design, manufacturing)... 2. Understands how to apply scientific, mathematical, and engineering laws in analyzing problems and developing appropriate solutions. 3. Has the ability for scientific thinking and engineering analysis, and can work within regulatory frameworks and professional codes. 4. Has mastered language skills for scientific speaking and writing in both Arabic and English. 5. Has achieved comprehensive scientific competence in the general	Week 1: Fundamentals of measurement systems, measurement systems, signals, automatic measurement, specification terminology. Week 2: Instrument types and performance characteristics. Week 3: Display, recording, and presentation of measurement data. Week 4: Measurement errors, error sources, random and systematic errors, mean value. Week 5: Measurement errors, value and its error, error accumulation, overall instrument error. Week 6: Modeling of measurement systems, zero-order elements, first-order	• Conventional lecture method using the whiteboard, following a "how and why" approach to the topic in accordance with the course syllabus. • Lecture method using a data-show device, following a "how and why" approach to the topic in accordance with the course syllabus.	• In-class interaction. • Homework assignments and reports. • Short quizzes. • Mid-term and final examinations.

		mechanics specialization. 6. Is committed to the ethics of the engineering profession, professional conduct, and social responsibility.	elements. Week 7: Modeling of measurement systems, second-order elements, transfer function, frequency response. Week 8: Sensors, sensor classification, resistive sensors, capacitive sensors, piezoelectric sensors, optical sensors. Week 9: Sensors, inductive sensors, electromagnetic sensors, thermal sensors, elastic sensors. Week 10: Signal conditioning and processing, resistance-to-voltage conversion, operational amplifiers, noise, filters, modulation, analog-to-digital and digital-to-analog conversion, interfacing. Week 11: Force, torque, and pressure measurement,		

			force measurement, torque measurement, pressure measurement, strain measurement. Week 12: Flow measurement Week 13: Temperature measurement Week 14: Strain measurement Week 15: Position and motion measurement, linear-displacement measurement, angular-displacement measurement, velocity measurement, accelerometers. Week 16: Preparatory week before the final examination Weekly Laboratory Syllabus Week 1: Fundamentals of measurement systems and instrument types Week 2: Lab 1: Measurement uncertainty Week 3: Lab 2: Calibration Week 4: Lab 3: Display,		

			recording, and presentation of measurement data Week 5: Lab 4: Mass, force, and torque measurement Week 6: Lab 5: Mass, force, and torque measurement Week 7: Lab 6: Temperature measurement Week 8: Lab 7: Temperature measurement Week 9: Lab 8: Pressure measurement Week 10: Lab 9: Flow measurement Week 11: Lab 10: Strain gauge Week 12: Lab 11: Strain gauge Week 13: Lab 12: Vibration and shock measurement Week 14: Lab 13: Vibration and shock measurement Week 15: Final examination		

11. Course Assessment

Marks out of 100 are distributed according to the tasks assigned to the student, such as daily preparation, daily and oral examinations, monthly and written examinations, reports, etc.

12. Learning and Teaching Resources

Required Course Textbooks (curriculum, if any)
Main References (Sources)
Recommended Supporting Books and References (scientific journals, reports,

etc.)
Electronic References, Websites

Course Description Form

1. Course Name
Air Conditioning and Refrigeration 2

2. Course Code
ME423

3. Semester / Year
Fourth Stage / Second Semester

4. Date of Preparing this Description
SEP./2025

5. Available Attendance Forms
In-person only

6. Total Study Hours / Total Credit Units
3 hours / 2 units

7. Name of Course Coordinator (list more than one name if applicable)
Name: Lecturer Dr. Ali Hussein Jabbar Email:

8. Course Objectives

Course Objectives
Qualifying engineers to meet labor-market needs in mechanical-engineering sectors by diversifying teaching, learning, and training methods.
Learning about fresh-air systems, return-air systems, and mixed-air systems with or without bypass, in addition to unitary systems.
Learning to design piping networks, the basic system components, pump types, pump selection criteria, open and closed piping systems, design fundamentals, and system pressure loss.
Promoting and developing scientific research in the areas of air conditioning and the thermal performance of buildings.

9. Teaching and Learning Strategies

Strategy
• Conventional lecture method using the whiteboard, following a "how and why" approach to the topic in accordance with the course syllabus.
• Lecture method using a data-show device, following a "how and why" approach to the topic in accordance with the course syllabus.

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit / Topic Name	Learning Method	Assessment Method
16 weeks	2 theoretical 1 tutorial	1. The graduate possesses theoretical and practical knowledge in the core areas of mechanical engineering (fluids, thermodynamics, materials, design, manufacturing)... 2. Understands how to apply scientific, mathematical, and engineering laws in analyzing problems and developing appropriate solutions. 3. Has the ability for scientific thinking and engineering analysis, and can work within regulatory frameworks and professional codes. 4. Has mastered language skills for scientific speaking and writing in both Arabic and English. 5. Has achieved comprehensive scientific competence in the general	Week 2: Piping-system design: the piping network and its basic components. Week 3: Piping-system design: valves and expansion tanks, pump selection. Week 4: Piping-system design: open and closed systems, direct- and reverse-return systems. Week 5: Piping-system design: design method and system pressure loss. Week 6: Refrigeration: refrigeration applications, refrigeration methods, properties and types of refrigerants. Week 7: Vapor-compression refrigeration systems: the ideal cycle, the second law of thermodynamics, the Carnot refrigeration cycle. Week 8: Vapor-compression refrigeration systems: the Carnot heat	• Conventional lecture method using the whiteboard, following a "how and why" approach to the topic in accordance with the course syllabus. • Lecture method using a data-show device, following a "how and why" approach to the topic in accordance with the course syllabus.	• Direct "how and why" questions on the topic during the theoretical lecture. • Pop quizzes during the theoretical lecture. • Mid-term examinations covering the theoretical component. • Final examinations covering the theoretical component.

		mechanics specialization. 6. Is committed to the ethics of the engineering profession, professional conduct, and social responsibility.	pump, maximum coefficient of performance. Week 9: Vapor-compression refrigeration systems: liquid-vapor subcooling and superheating, volumetric efficiency. Week 10: Vapor-compression refrigeration systems: performance of the main components (condensers, evaporators, compressors, expansion devices, cooling towers). Week 11: Absorption refrigeration systems: aqueous-ammonia, lithium-bromide, and Electrolux systems. Week 12: Steam-jet refrigeration: vortex tubes, thermoelectric cooling, simple air liquefaction. Week 13: Air-cycle refrigeration: the closed system, the simple open system, system parameters. Week 14: Cold storage: cold-		

			storage warehouse design, doors and air curtains, types of refrigerating units (gravity, side, direct-expansion). Week 15: Automatic control: refrigeration and air-conditioning control systems, three-way valves, thermostats Week 16: Preparatory week before the final examination		

11. Course Assessment

Marks out of 100 are distributed according to the tasks assigned to the student, such as daily preparation, daily and oral examinations, monthly and written examinations, reports, etc.

12. Learning and Teaching Resources

Required Course Textbooks (curriculum, if any)
Main References (Sources)
Recommended Supporting Books and References (scientific journals, reports, etc.)
Electronic References, Websites

Course Description Form

1. Course Name
Failure of Engineering Materials

2. Course Code
ME424

3. Semester / Year
Fourth Stage / Second Semester

4. Date of Preparing this Description
SEP./2025

5. Available Attendance Forms
In-person only

6. Total Study Hours / Total Credit Units
2 hours / 2 units

7. Name of Course Coordinator (list more than one name if applicable)
Name: Asst. Prof. Dr. Mohammed Razzaq Mohammed Email:

8. Course Objectives

Course Objectives
Understanding the mechanical properties of materials: identifying material behavior under stress, including elastic and plastic deformation, and hardness and stiffness properties.
Understanding the principles of fracture: studying the fundamental principles of fracture, distinguishing between ductile and brittle fracture, and understanding the principles of fracture mechanics and fracture testing.
Understanding fatigue: analyzing cyclic stresses, interpreting the S–N curve, and understanding how cracks initiate and propagate, and the factors affecting fatigue life.
Understanding creep: studying generalized creep behavior, the effects of stress and temperature, graphical extrapolation methods (Larson-Miller methods), and alloys used in high-temperature applications.
Understanding corrosion: analyzing electrochemical considerations, forms of corrosion, methods of corrosion prevention, and understanding corrosion and rust.

9. Teaching and Learning Strategies

Strategy
• Conventional lecture method using the whiteboard, following a "how and why" approach to the topic in accordance with the course syllabus.
• Lecture method using a data-show device, following a "how and why" approach to the topic in accordance with the course syllabus.

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit / Topic Name	Learning Method	Assessment Method
16 weeks	2 theoretical	1. The graduate possesses theoretical and practical knowledge in the core areas of mechanical engineering (fluids, thermodynamics, materials, design, manufacturing)... 2. Understands how to apply scientific, mathematical, and engineering laws in analyzing problems and developing appropriate solutions. 3. Has the ability for scientific thinking and engineering analysis, and can work within regulatory frameworks and professional codes. 4. Has mastered language skills for scientific speaking and writing in both Arabic and English. 5. Has achieved comprehensive scientific competence in the general	Week 1: Mechanical properties: elastic deformation and stress-strain behavior. Week 2: Mechanical properties: elastic and plastic material properties, and hardness. Week 3: Fracture: fundamental principles of fracture, distinguishing between ductile and brittle fracture. Week 4: Fracture: principles of fracture mechanics, fracture testing, and impact effects. Week 5: Fatigue: analysis of cyclic stresses and the S–N curve. Week 6: Fatigue: crack initiation and propagation, factors affecting fatigue life. Week 7: Fatigue:	• Conventional lecture method using the whiteboard, following a "how and why" approach to the topic in accordance with the course syllabus. • Lecture method using a data-show device, following a "how and why" approach to the topic in accordance with the course syllabus.	• Direct "how and why" questions on the topic during the theoretical lecture. • Pop quizzes during the theoretical lecture. • Mid-term examinations covering the theoretical component. • Final examinations covering the theoretical component.

		mechanics specialization. 6. Is committed to the ethics of the engineering profession, professional conduct, and social responsibility.	environmental effects on fatigue life. Week 8: Creep: generalized creep behavior and effects of stress and temperature. Week 9: Creep: methods for extrapolating creep data (Larson-Miller methods). Week 10: Creep: alloys used in high-temperature applications. Week 11: Corrosion and rust: electrochemical considerations. Week 12: Corrosion and rust: forms of corrosion and methods of corrosion prevention. Week 13: Corrosion and rust: definitions and types of corrosion and rust. Week 14: Corrosion and rust: analyzing corrosion and rust, and applying prevention strategies. Week 15: Comprehensive review: reviewing all major topics		

			and case studies and practical applications. Week 16: Preparatory week before the final examination		

11. Course Assessment

Marks out of 100 are distributed according to the tasks assigned to the student, such as daily preparation, daily and oral examinations, monthly and written examinations, reports, etc.

12. Learning and Teaching Resources

Required Course Textbooks (curriculum, if any)
Main References (Sources)
Recommended Supporting Books and References (scientific journals, reports, etc.)
Electronic References, Websites

Course Description Form

1. Course Name
Vibration Applications

2. Course Code
ME425

3. Semester / Year
Fourth Stage / Second Semester

4. Date of Preparing this Description
SEP./2025

5. Available Attendance Forms
In-person only

6. Total Study Hours / Total Credit Units
6 hours / 3 units

7. Name of Course Coordinator (list more than one name if applicable)
Name: Asst. Lecturer Ali Jasim Mohammed Email:

8. Course Objectives

Course Objectives

Applying the fundamental principles gained from understanding vibration theory.
Acquiring skills in dealing with engineering problems and issues related to vibration.
Gaining a basic understanding of how vibrations occur in various industrial applications.

9. Teaching and Learning Strategies

Strategy

• Conventional lecture method using the whiteboard, following a "how and why" approach to the topic in accordance with the course syllabus.
• Lecture method using a data-show device, following a "how and why" approach to the topic in accordance with the course syllabus.

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit / Topic Name	Learning Method	Assessment Method
16 weeks	2 theoretical 3 practical 1 tutorial	1. The graduate possesses theoretical and practical knowledge in the core areas of mechanical engineering (fluids, thermodynamics, materials, design, manufacturing)... 2. Understands how to apply scientific, mathematical, and engineering laws in analyzing problems and developing appropriate solutions. 3. Has the ability for scientific thinking and engineering analysis, and can work within regulatory frameworks and professional codes. 4. Has mastered language skills for scientific speaking and writing in both Arabic and English. 5. Has achieved comprehensive scientific competence in the general	Weeks 1-4: Determining the natural frequency and mode shapes, Dunkerley's formula, Holzer's method, and Rayleigh's method. Week 5: Continuous systems, introduction, and transverse vibration of a string. Short quiz 1 Week 6: Continuous systems, longitudinal vibration of a rod. Weeks 7-8: Continuous systems, torsional vibration of shafts. Mid-term examination Week 9: Vibration control, balancing of rotating machines. Week 10: Vibration control, whirling of rotating	• Conventional lecture method using the whiteboard, following a "how and why" approach to the topic in accordance with the course syllabus. • Lecture method using a data-show device, following a "how and why" approach to the topic in accordance with the course syllabus.	• In-class interaction. • Homework assignments and reports. • Short quizzes. • Mid-term and final examinations.

		mechanics specialization. 6. Is committed to the ethics of the engineering profession, professional conduct, and social responsibility.	shafts. Week 11: Vibration control, vibration isolation. Short quiz 2 Week 12: Vibration control, control of natural frequencies. Week 13: Vibration measurement, vibration sensors. Week 14: Vibration measurement, vibration exciters. Week 15: Vibration measurement, signal analysis, and short quiz 3 Week 16: Preparatory week before the final examination Weekly Laboratory Syllabus Week 1: Lab 1: General laboratory introduction. Weeks 2-3: Lab 2: Single-degree-of-freedom system (simple pendulum). Weeks 4-5: Lab 3:		

			Single-degree-of-freedom system (mass-spring system). Weeks 6-7: Lab 4: Torsional vibration systems. Weeks 8-9: Lab 5: Forced vibration systems. Weeks 10-12: Lab 6: Two-degree-of-freedom torsional vibration system. Weeks 13-15: Lab 7: Whirling of shafts		

11. Course Assessment

Marks out of 100 are distributed according to the tasks assigned to the student, such as daily preparation, daily and oral examinations, monthly and written examinations, reports, etc.

12. Learning and Teaching Resources

Required Course Textbooks (curriculum, if any)
Main References (Sources)
Recommended Supporting Books and References (scientific journals, reports, etc.)
Electronic References, Websites

Course Description Form

1. Course Name
Power Plants 2

2. Course Code
ME426

3. Semester / Year
Fourth Stage / Second Semester

4. Date of Preparing this Description
SEP./2025

5. Available Attendance Forms
In-person only

6. Total Study Hours / Total Credit Units
6 hours / 3 units

7. Name of Course Coordinator (list more than one name if applicable)
Name: Prof. Dr. Ahmed Kadhim Al-Shara Email:

8. Course Objectives

Course Objectives

Understanding steam power-plant components: identifying types of boilers, condensers, and steam turbines and their uses.
Analyzing the performance of power-plant components: studying how to calculate and analyze the performance of boilers, condensers, and turbines.
Understanding hydroelectric power plants: classification of hydroelectric power plants, uses of water turbines, and understanding hydropower calculations.
Analyzing economic aspects: becoming familiar with the economic fundamentals of power plants and estimating costs and returns.

9. Teaching and Learning Strategies

Strategy

• Conventional lecture method using the whiteboard, following a "how and why" approach to the topic in accordance with the course syllabus.
• Lecture method using a data-show device, following a "how and why" approach to the topic in accordance with the course syllabus.

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit / Topic Name	Learning Method	Assessment Method
16 weeks	2 theoretical 3 practical 1 tutorial	1. The graduate possesses theoretical and practical knowledge in the core areas of mechanical engineering (fluids, thermodynamics, materials, design, manufacturing)... 2. Understands how to apply scientific, mathematical, and engineering laws in analyzing problems and developing appropriate solutions. 3. Has the ability for scientific thinking and engineering analysis, and can work within regulatory frameworks and professional codes. 4. Has mastered language skills for scientific speaking and writing in both Arabic and English. 5. Has achieved comprehensive scientific competence in the general	Week 1: Steam power-plant components (boilers): classification of steam generators. Week 2: Steam power-plant components (boilers): boiler tubes and equipment, requirements of a good boiler. Week 3: Steam power-plant components (boilers): working principle of fire-tube and water-tube boilers and heat recovery. Week 4: Steam power-plant components (boilers): boiler performance calculations. Week 5: Steam power-plant components (condensers): types of condensers	• Conventional lecture method using the whiteboard, following a "how and why" approach to the topic in accordance with the course syllabus. • Lecture method using a data-show device, following a "how and why" approach to the topic in accordance with the course syllabus.	• Direct "how and why" questions on the topic during the theoretical lecture. • Pop quizzes during the theoretical lecture. • Mid-term examinations covering the theoretical and practical components. • Final examinations covering the theoretical and practical components.

		mechanics specialization. 6. Is committed to the ethics of the engineering profession, professional conduct, and social responsibility.	and elements of the steam condenser. Week 6: Steam power-plant components (condensers): air ejectors and requirements of an effective condenser. Week 7: Steam power-plant components (condensers): condenser performance analysis. Week 8: Steam power-plant components (steam turbines): velocity diagrams for steam turbines. Week 9: Steam power-plant components (steam turbines): steam turbines compounded for pressure and velocity. Week 10: Steam power-plant components (steam turbines): axial-flow steam		

			turbines, optimum operating conditions. Week 11: Steam power-plant components (steam turbines): design and height of turbine blades. Week 12: Hydroelectric power plants: classification of hydroelectric power plants. Week 13: Hydroelectric power plants: types of water turbines and advantages and disadvantages of hydroelectric power plants. Week 14: Hydroelectric power plants: hydropower calculations. Week 15: Economic feasibility of power plants: economic fundamentals of power plants and estimating costs and returns. Week 16: Preparatory		

			week before the final examination Weekly Laboratory Syllabus Weeks 1-2: Power-plant components. Weeks 3-4: Evaluating and simulating power-plant efficiency using EES software. Weeks 5-6: Evaluating and simulating steam-turbine efficiency using EES software. Weeks 7-8: Evaluating and simulating gas-turbine efficiency using EES software. Week 9: Examination. Week 10: Nozzles. Week 11: Evaluating and simulating condenser efficiency using EES software. Week 12: Evaluating and simulating boiler efficiency		

			using EES software. Week 13: Review. Week 14: Final examination. Week 15: Final examination.		

11. Course Assessment

Marks out of 100 are distributed according to the tasks assigned to the student, such as daily preparation, daily and oral examinations, monthly and written examinations, reports, etc.

12. Learning and Teaching Resources

Required Course Textbooks (curriculum, if any)
Main References (Sources)
Recommended Supporting Books and References (scientific journals, reports, etc.)
Electronic References, Websites

Course Description Form

1. Course Name
Project Management

2. Course Code
ME427

3. Semester / Year
Fourth Stage / Second Semester

4. Date of Preparing this Description
SEP./2025

5. Available Attendance Forms
In-person only

6. Total Study Hours / Total Credit Units
2 hours / 2 units

7. Name of Course Coordinator (list more than one name if applicable)
Name: Lecturer Dr. Ali Abdulzahra Katea Email:

8. Course Objectives

Course Objectives

Understanding the fundamentals of project management: becoming familiar with the concept of project management, its objectives, and the importance of applying it in various contexts.
Project planning: understanding how to use Work Breakdown Structures (WBS) and Gantt charts in project planning.
Network analysis: learning how to estimate project duration using activity networks and Critical Path Method (CPM) and PERT analysis.
Resource analysis: understanding how to analyze resource use using information from the activity network and the work breakdown structure.
Budgets and cost control: learning to estimate project costs, prepare budgets, and conduct cost-benefit analysis.
Net Present Value (NPV): understanding how to apply net present value in cost-benefit analysis.
Risk management: becoming familiar with the concept of risk in software/system projects and learning risk-management techniques.
Project teams: understanding team dynamics, motivation, and role definition.

9. Teaching and Learning Strategies

Strategy

• Conventional lecture method using the whiteboard, following a "how and why" approach to the topic in accordance with the course syllabus.
• Lecture method using a data-show device, following a "how and why" approach to the topic in accordance with the course syllabus.

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit / Topic Name	Learning Method	Assessment Method
16 weeks	2 theoretical	1. The graduate possesses theoretical and practical knowledge in the core areas of mechanical engineering (fluids, thermodynamics, materials, design, manufacturing)... 2. Understands how to apply scientific, mathematical, and engineering laws in analyzing problems and developing appropriate solutions. 3. Has the ability for scientific thinking and engineering analysis, and can work within regulatory frameworks and professional codes. 4. Has mastered language skills for scientific speaking and writing in both Arabic and English. 5. Has achieved comprehensive scientific competence in the general	Week 1: What is project management: introduction to the concept of project management. Week 2: Project planning: introduction to project planning, using Work Breakdown Structures (WBS), and the role of Gantt charts. Week 3: Project planning: continued study of Work Breakdown Structures (WBS) and Gantt charts. Week 4: Activity-network analysis: using activity networks to estimate project duration. Week 5: Activity-network analysis: using Critical Path Method (CPM) and PERT analysis. Week 6: Resource analysis: analyzing	• Conventional lecture method using the whiteboard, following a "how and why" approach to the topic in accordance with the course syllabus. • Lecture method using a data-show device, following a "how and why" approach to the topic in accordance with the course syllabus.	• Direct "how and why" questions on the topic during the theoretical lecture. • Pop quizzes during the theoretical lecture. • Mid-term examinations covering the theoretical component. • Final examinations covering the theoretical component.

		mechanics specialization. 6. Is committed to the ethics of the engineering profession, professional conduct, and social responsibility.	resource use using information from the activity network and the work breakdown structure. Week 7: Resource analysis: continued analysis and planning of resource use. Week 8: Budgets and cost control: estimating project costs and preparing budgets. Week 9: Budgets and cost control: cost-benefit analysis. Week 10: Net Present Value (NPV): applying NPV in cost-benefit analysis. Week 11: Risk management: introduction to risk management in software/system projects. Week 12: Risk management: risk-management techniques and examination of certain specific risks. Week 13: Project teams:		

			team dynamics and motivation. Week 14: Project teams: team roles and managing relationships among team members. Week 15: Comprehensive review: reviewing all major topics and case studies and practical applications. Week 16: Preparatory week before the final examination		

11. Course Assessment

Marks out of 100 are distributed according to the tasks assigned to the student, such as daily preparation, daily and oral examinations, monthly and written examinations, reports, etc.

12. Learning and Teaching Resources

Required Course Textbooks (curriculum, if any)
Main References (Sources)
Recommended Supporting Books and References (scientific journals, reports, etc.)
Electronic References, Websites

Course Description Form

1. Course Name
Engineering Project

2. Course Code
ME428

3. Semester / Year
Fourth Stage / Second Semester

4. Date of Preparing this Description
SEP./2025

5. Available Attendance Forms
In-person only

6. Total Study Hours / Total Credit Units
3 hours / 1 unit

7. Name of Course Coordinator (list more than one name if applicable)
Name: Email:

8. Course Objectives

Course Objectives
…
…
…

9. Teaching and Learning Strategies

Strategy

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit / Topic Name	Learning Method	Assessment Method

11. Course Assessment

Marks out of 100 are distributed according to the tasks assigned to the student, such as daily preparation, daily and oral examinations, monthly and written examinations, reports, etc.

12. Learning and Teaching Resources

Required Course Textbooks (curriculum, if any)
Main References (Sources)
Recommended Supporting Books and References (scientific journals, reports, etc.)
Electronic References, Websites