Program DescriptionAcademicWith its decisions Date of update: February 2025

Program DescriptionAcademic

A brief summary of the main features of the program and its courses, indicating the skills that are being worked on to provide students with, based on the objectives of the academic program and according to the learning outcomes expected of the student, proving whether he has achievednoMake the most of the opportunities available. It is accompanied by a description of each course within the program..

University of Maysan	1. **Educational institution**
Department of Mechanical Engineering	2. **Scientific Department/Center**
Mechanical Engineering Department CurriculaFor the first and second stages	3. **Program namenoAcademic or professional**
Bachelor of Mechanical Engineering	4. **Final Certificate Name**
Bologna Process	5. **Academic system**
ABET	6. **Accredited Certification Program**
Field and scientific visits	7. **Other external influences**
February2025	8. **Description preparation date**
9. **GoalsThe programAcademic**	
1- PreparationEngineers MechanicsHighly educated, qualified and distinguished to supportPublic and private labor marketsAnd cover its needs of cadresEngineering And train themTo apply acquired knowledge and skills to solve real-world problems..	

2- Providing distinguished academic programs in the field of engineering.MechanicsIn its theoretical and practical aspects, in line with international quality standards.unlessAcademic and meets the needs of the labor market.

3- Moving towards e-learning and blended learningand encourage self-education.

4- Contributing to refining the student's personality and preparing him in a distinguished and appropriate manner by providing a teaching environment that relies on simulating traditional teaching by following modern educational methods and means..

5- Contributing to the dissemination of scientific culture through cooperation with local institutions and various ministries and holding seminars, lectures and courses (in-person and online).toElectronic).

6- Encouraging faculty members in the department to produce innovative scientific research and participate in local and international scientific conferences and specialized and general seminars.

7- Keeping pace with scientific developments in the field ofMechanical Engineering.

8- Creating a stimulating environment to enhance the knowledge and skills of faculty members in the educational and research fields.

9- Establishing and strengthening effective partnerships with governmental and civil sectors and all community institutions.

10. Required program outcomes, teaching, learning and assessment methods

Program DescriptionAcademicWith its decisions Date of update: February 2025

أ- Anocognitive scorer

أ1- Know and understand the basicsmechanical engineering

أ2- The ability to apply knowledge in mathematics, science, and engineering.

أ3- Developing students' mental abilities by expanding their cognitive horizons in all disciplines.mechanical engineering.

أ4- Develop the ability toDetermine andProblem analysisEngineering.

أ5- Application of theoretical concepts, rules and lawsEngineering andUse of techniques and skillsnoModern toolsFor the crisisTo practice engineering.

أ6- Ability to understand the applicable regulations and professional standards of the profession.

ب- Program Skill Objectives

B1- Ability to detect and solve problems in modern ways

B2- Ability to supervise or execute various mechanical engineering works efficiently..

B3- Use real-life examples and match them with theoretical study..

B4- Ability to think critically and solve problems that arise during project implementation.

B5- Ability to prepare scientific reports accurately and read engineering drawings effectively..

B6- Ability to keep up with the latest developments in engineering materials and implementation methods

Teaching and learning methods

1- TOld explanation and clarification through lecturesAnd discussions.

2- Use of projectors to present scientific materials, such as data shows, smart boards, and plasma screens.
3- Promote self-learning through homework and mini-projects integrated into lectures.
4- E-learning within the university.
5- Conducting experiments and training in laboratoriesAnd preparing reports for experiments.
6- Completion of graduation projects as comprehensive field learning projects..
7- Organizing scientific visits to enrich practical experiences.
8- Holding seminars within the department.
9- Implementation of summer training programs.
10- Engineering workshops

Evaluation methods

1- Daily exams.
2- Midterm exams.
3- Reports and small projects within the lesson.
4- DiscussionsAnd interaction within the lecture.
5- Surprise written and oral tests.
6- Ask questions during lectures and mark students..
7- Homework.
8- Final exams.

ج- theAEmotional and value scorer

C-1 AnoAttention: To attract students' attentionNoAnoQuestions during the lecture.

C-2AnoAnswer: Monitor the student's interaction with the material displayed on the screen..

C-3AnoAttention: Follow up on the interest of the student who interacted the most with the presented material..

C-4 Formation AnoTowards: meaning that the student should be sympathetic.He is with the show and may have an opinion on the subject.

Displayed and defended.

C-5 Formation of value-based behavior: meaning that the student reaches the top of the emotional ladder and has a stable level in

The lesson is not lazy or fidgety.

Evaluation methods

1- Active participation in the classroom is evidence of the student's commitment and responsibility..
2- unlessCommitment to the deadline for submitting assignments and research required of the student.
3- TaforR ANoQuarterly and final exams aboutNoCommitment to cognitive and skill achievement.

٥- General and transferable skills(Other skills related to employability and personal development).

D1- Developing the student's ability to deal with technical means.

D2- Developing the student's ability to deal with the Internet.

D3- Developing the student's ability to deal with multiple media.

D4- Developing the student's ability to dialogue and discuss

11. Planning for personal development

1- Developing students' self-learning skills through the nature of the study materials, curricula and approved teaching methods.

2- Encouraging students to work in teams on practical projects that reflect the reality of society and address its problems..

3- Motivating students to participate in competitions, seminars and conferences to enhance their research skills and increase their confidence in their ability to learn independently.

12. Admission Criteria (Setting regulations for admission to a college or institute)

The Department of Mechanical Engineering is subject to the mechanism of the Ministry of Higher Education and Scientific Research - Central Admissions Department, where graduates of preparatory studies (scientific branch) are nominated for admission to the department based on their graduation rates. In addition, students are accepted into the parallel morning study. Some students are also accepted from the

top ten graduates of technical institutes, as well as from the top five percent of graduates of vocational studies, and some distinguished employees from state ministries.

13. **The most important sources of information about the program**

1. Websites of Iraqi and international universities.
2. Academic and scientific libraries.
3. Workshops organized by the Ministry of Higher Education, as well as the Ministry's standards.
4. American Academic Accreditation Program (ABET).

14. **structure The program:Includes program Bachelor Engineering Mechanical Courses Next:**

Number of hours					Name of the course	The symbol	Stage	No.
exercises	Pr (hr/w)	laboratory	theoretical	college				
			4	4	mathematicsI	ENG122	The first SemesterAAnd	1
1			4	5	Static engineering mechanics	ME112		2
	4		2	6	Principles of production engineering	ME113		3
			2	2	Chemistry	ENG126		4
	4		2	6	Engineering drawing	ENG128		5
				2	English language	UOM120		6
			2	2	Democracy and human rights	UOM121		7
1			3	4	mathematicsII	ENG124	The first Semestersecond	1
2			6	8	Mechanical Engineering	ME122		2

	2			2	Engineering workshops	ENG123		3
			2	2	Physics	ENG125		4
1		2	2	5	Electrical Engineering	ME125		5
	4		4	8	Computer and Programming Basics	ENG127		6
1			3	4	mathematicsIII	ENG201	Second/First Semester	1
1			2	3	Static fluid mechanics	ME212		2
1			2	3	ThermodynamicsI	ME213		3
1		2	2	5	Mechanics of materials	ME214		4
1		4	2	6	Mechanical drawing	ME215		5
		3	4	7	Computer programming	ME216		6
1			3	4	mathematicsIV	ENG202	Second/Second Semester	1
1		2	2	5	Fluid mechanics	ME222		2
1		2	2	5	ThermodynamicsII	ME223		3
			2	2	material resistance	ME224		4
1		3	2	5	Engineering Metals	ME225		5
	2		2	4	ComputerII	UOM201		6
		2	2	4	English language II	UOM202		7
			2	2	Crimes of the Baath regime in Iraq	MNS120		8

Curriculum Skills Chart

Please tick the boxes corresponding to the individual learning outcomes of the programme being assessed.Required learning outcomes of the program Year/Level Course code Course name Basic Or my choice?noCognitive goal scornoProgram Skills Top ScornoConsciousness scorer Values of general and transferable qualification skills(Skills ANoEmployability and development issuesPersonalAs in Table 1

table 1. Outputs Learning Required from all Scheduled Therefore from The program Academic

Required learning outcomes of the program						
General skills And rehabilitationMovable(Skills ANoirrigationRelated to employability and personal development)	Emotional and value goals	Program specific skill objectives	Cognitive objectives	Course Type	The material	Stage
D1 D2 D3 D4	Part 1 Part 2 Part 3 Part 4 Part 5	B1 B2 B3 B4	A1 A2 A3 A4			

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✓✓✓✓	✓✓✓✓✓	✓✓✓✓	✓✓✓✓	essential	mathematicsI	The first
✓✓✓✓	✓✓✓✓✓	✓✓✓✓	✓✓✓✓	My specialty	Static engineering mechanics	
✓✓✓✓	✓✓✓✓✓	✓✓✓✓	✓✓✓✓	My specialty	Principles of production engineering	
✓✓✓✓	✓✓✓✓✓	✓✓✓✓	✓✓✓✓	essential	Chemistry	
✓✓✓✓	✓✓✓✓✓	✓✓✓✓	✓✓✓✓	essential	Engineering drawing	
✓✓✓✓	✓✓✓✓✓	✓✓✓✓	✓✓✓✓	essential	English language	
✓✓✓✓	✓✓✓✓✓	✓✓✓✓	✓✓✓✓	essential	mathematicsII	
✓✓✓✓	✓✓✓✓✓	✓✓✓✓	✓✓✓✓	My specialty	Mechanical Engineering	
✓✓✓✓	✓✓✓✓✓	✓✓✓✓	✓✓✓✓	My specialty	Engineering workshops	
✓✓✓✓	✓✓✓✓✓	✓✓✓✓	✓✓✓✓	essential	Physics	
✓✓✓✓	✓✓✓✓✓	✓✓✓✓	✓✓✓✓	Support	Electrical Engineering	

2025 Program DescriptionAcademicWith its decisions Date of update: February

✓✓✓✓	✓✓✓✓✓	✓✓✓✓	✓✓✓✓	essential	Computer basics and programming	
✓✓✓✓	✓✓✓✓✓	✓✓✓✓	✓✓✓✓	essential	mathematicsIII	Second
✓✓✓✓	✓✓✓✓✓	✓✓✓✓	✓✓✓✓	My specialty	Static fluid mechanics	
✓✓✓✓	✓✓✓✓✓	✓✓✓✓	✓✓✓✓	My specialty	ThermodynamicsI	
✓✓✓✓	✓✓✓✓✓	✓✓✓✓	✓✓✓✓	My specialty	Mechanics of materials	
✓✓✓✓	✓✓✓✓✓	✓✓✓✓	✓✓✓✓	My specialty	Mechanical drawing	
✓✓✓✓	✓✓✓✓✓	✓✓✓✓	✓✓✓✓	My specialty	Computer programming	
✓✓✓✓	✓✓✓✓✓	✓✓✓✓	✓✓✓✓	essential	mathematicsIV	
✓✓✓✓	✓✓✓✓✓	✓✓✓✓	✓✓✓✓	essential	Fluid mechanics	
✓✓✓✓	✓✓✓✓✓	✓✓✓✓	✓✓✓✓	My specialty	ThermodynamicsII	

2025 Program DescriptionAcademicWith its decisions Date of update: February

✓✓✓✓	✓✓✓✓✓	✓✓✓✓	✓✓✓✓	My specialty	material resistance	
✓✓✓✓	✓✓✓✓✓	✓✓✓✓	✓✓✓✓	My specialty	Engineering Metals	
✓✓✓✓	✓✓✓✓✓	✓✓✓✓	✓✓✓✓	My specialty	ComputerII	
✓✓✓✓	✓✓✓✓✓	✓✓✓✓	✓✓✓✓	Support	English language II	

2025 Program DescriptionAcademicWith its decisions Date of update:

Description of the headquartersR

This description provides a brief overview of the main elements of the course and the academic outcomes that the ideal student is expected to achieve when taking advantage of the educational opportunities provided. This description should be compared with the academic program description to determine alignment and compliance.

1. **Educational Institution: University of Maysan**
2. **Scientific Department /Center:Department of EngineeringMechanics**
3. **Course Name/Code:mathematicsI/ Symbol ofSchedule: ENG122**
4. **Available forms of attendance: in-person or online**
5. **Chapter / Year Chapterthe first/stageThe first**
6. **Number of study hoursCollege (120) hour**
7. **Date this description was preparedFebruary2025**
8. **Course objectives:**

Mathematics contributes to the essence of engineering and serves as a source of knowledge that engineering students can benefit from. Therefore, engineering students must have the ability to advance Mathematical knowledge and skills for problem solving Engineering design tasks. Just having a mathematical or Engineering knowledge without understanding how to apply it can limit Strategies gained from the student's ability to provide correct information The answer.

9. **Course outcomes, teaching, learning and assessment methods:**

2025 Program DescriptionAcademicWith its decisions Date of update:

After passing the exam, students will be able to:This courseFrom understanding basic mathematical principles and being able to handle many derivative problems which qualifies him to understand new, more complex topics.

أ- Anocognitive scorer

أ1- Study of Cartesian axes and the basics of geometryAndAnalyticalAnd

أ2- Learn a set of ways to draw functions using different techniques.Fatah.

أ3- Use the conceptThe purposeAndFatRap and approximation in establishing and understanding the concept of mathematical differentiation.

أ4- Use the conceptThe purposeTo explain the concept of differentiationAnd derivatives.

ب- AnoCourse specific skills scorer.

ب1- Application of quantitative methodsAnd the numericalFor the purpose of solving problemsEngineering.

ب2- Use knowledgenoPolitical research on new technologies.

ب3- Derivation and evaluation of informationNecessaryTo apply engineering analysis methods to non-linear problems.Familiar.

Teaching and learning methods

- Scientific and research skills are developed through teaching and learning activities. Analytical and problem-solving skills areDevelop it further by a set of questions prepared by the lecturers through study groups.small And it is doneEvaluation and response to all submitted works.

Evaluation methods

•Interaction within the lecture.

•Homework and reports.

•Short tests (quizzes)

•ExamsQuarterlyAnd the final.

ج- **AnoConsciousness scorerAnd the value.**

ج1-Attention:Attracting students' attention by implementing one of the application programs on the display screen.The hall.

ج2-Response: Monitor the student's interaction with the material displayed on the screen..

ج3-interest: Follow up on the interest of the student who interacted more with the presented material, by increasing this interaction by requestingOther programs and applications to display.

ج4-formationDirectionMeaning that the student is sympathetic to the show and may have an opinion towards it.the topic On displayAnd defends it.

ج5-Formation of value-based behavior: meaning that the student reaches the top of the emotional ladder and has a stable level in the lesson.andnoHe is lazy andnofidget.

Teaching and learning methods

•Theoretical presentation methodnoRegularUsingWriting board andunlessDepends on style(How and why)

According to the subject and the curriculum of the subject.

•Theoretical presentation methodUsingdevice(show data)noDepends on style(How and why)To the topic

According to the curriculum of the subject.

Evaluation methods

•AnoDirect questions in a way(How and why)For the topic during the theoretical lecture.

•ALamSurprise exams during the theoretical lecture.

•ALamQuarterly exams for the sideTheoretical.

•ALamFinal exams for the theoretical side.

د- General and transferable skills(SkillsANoEmployability and personal development issues(.

د1- Develop student abilityTo performAssignments and submit them on time.

د2- Logical and programming thinkingFor EgaDSoftware solutions for various issues.

د3- Developing the student's ability to dialogue and discuss.

د4- Developing the student's ability to deal with modern technology, especiallyunlessInternet.

10. Course structure

Week 1 The definition of functions, Domains, and Ranges

Week 2 Sums, differences, products, quotients composition of functions

Week 3 The absolute value function

Week 4 The graph of functions

Week 5 The trigonometric functions. The graph of the functions

Week 6 The inverse of trigonometric functions

Week 7 The Limits and Continuity

Week 8 Limit involving infinity

Week 9 Continuous functions

Week 10 Differentiation

Week 11 Implicit Differentiation and the higher derivatives

Week 12 Derivatives of trigonometric functions

Week 13 The chain rule

Week 14 Hyperbolic functions, Exponential Functions, Rules and Properties of the Exponential Functions, The Derivative and Integration of Exponential Function, The Exponential Function for Bases other Than (e) (ax andlogax), Derivative and Integration of the Exponential Function.

Week 15 Integration

Basic integration rules, integration of trigonometric functions, area under a curve, natural logarithmic function, derivative and integral of natural logarithmic function.

Week 16 Preparatory week before the final exam

11. AInfrastructure

أ- Required Textbooks: ResourcesHome References

1- Thomas' Calculus, G B. Thomas, RLFinney, MD Weir, Addison-Wesley; 12th Edition, 2010

2- Any other Calculus and analytic geometry textbook

أ- ReferencesNoElectronic, websites, reliable websites.

ب- Library locations in some international universities.

12. Curriculum Development Plan

There is no intention to develop the course currently.BecauseThe materials adopted by this course are considered basic and advanced.And MustFrom it For different stagesAndandnoMany of the lessons and development of the curriculum depend onunlessSAS on developing curricula of stagesSuffix For some subjectsAndEngineeringAnd.

Course Description

This description provides a brief overview of the main elements of the course and the academic outcomes that the ideal student is expected to achieve when taking advantage of the educational opportunities provided. This description should be compared with the academic program description to determine alignment and compliance between them..

1. **Educational Institution: University of Maysan**
2. **Academic Department/Center: Department of Mechanical Engineering**
3. **Course Name/Code:Static engineering mechanics /Course code: ME112**
4. **Available forms of attendance: in-person or online**
5. **Chapter/Year First Semester/First Stage**
6. **Total number of study hours (125) hour**
7. **This description was prepared in February 2025.**
8. **Course objectives:**

Preparing and qualifying specialized engineers to meet the requirements The labor market in the private and public sectors in fixed mechanics through Diversify learning, teaching and training methods for students Apply acquired knowledge and skills to solve real problems.. Providing distinguished academic programs in the field of static mechanics, Both theoretically and practically, to comply with international standards. Academic quality and meeting the needs of the labor market. Encouraging and developing scientific research in the fields of stability

Mechanics in general, and the study and analysis of loads (such as forces, In physical systems in a state of constant equilibrium. Creating a stimulating environment for faculty members to develop Educational and research knowledge and skills. Building and developing partnerships with the public and private sectors

9. Course outcomes, teaching, learning and assessment methods

A-knowledge and understanding

أ1- Practice basic skills for analyzing simple mechanical systems..

أ2- Gain skills in the analysis of static mechanical systems. equilibrium state

أ3- Gain basic skills in focusing on the free body diagram and Choosing an appropriate formatting system

أ- Subject-specific skills

ب1- Ability to analyze mechanical systems.

ب2- The ability to think about how to address a particular problem or issue..

ب3- Mechanical troubleshooting.

ب4- Ability to gain experience in dealing with mechanical systems

Teaching and learning methods

- Scientific and research skills are developed fromduringTeaching and learning activities. Analytical and problem solving skills areDevelop it further by a set of questions prepared by the lecturers fromNoStudy groupssmall And it is doneEvaluation andunlessRespond to allnoFront workers.

Evaluation methods

•Interaction within the lecture.

•Homework and reports.

•Short tests (quizzes)

•ExamsQuarterlyAnd the final.

ج- **AnoConsciousness scorerAnd the value**.

ج1- Attention:Attracting students' attention by implementing one of the application programs on the display screen in the hall.

ج2- Response: Monitor the student's interaction with the material displayed on the screen..

ج3- interest: Follow up on the interest of the student who interacted more with the presented material, by increasing this interaction by requestingOther programs and applications to display.

ج4- formationDirectionMeaning that the student is sympathetic to the presentation and may have an opinion about the topic.Displayed and defended.

ج5- Formation of value-based behavior: meaning that the student reaches the top of the emotional ladder and has a stable level in the lesson.andnoHe is lazy andnofidget.

Teaching and learning methods

•Theoretical presentation methodnoRegularUsingWriting board andunlessDepends on style(How and why)

According to the subject and the curriculum of the subject.

•Theoretical presentation methodUsingdevice(show data)noDepends on style(How and why)To the topic

According to the curriculum of the subject.

Evaluation methods

•AnoDirect questions in a way(How and why)For the topic during the theoretical lecture.

•ALamSurprise exams during the theoretical lecture.

•ALamQuarterly exams for the sideTheoretical and practical.

•ALamFinal exams for the theoretical side.And practical

د- General and transferable skills(Other skills related to employability and personal development(.

د5- Develop student abilitynoDoing homework and delivering it on time.

د6- Logical and programming thinking to find programming solutions to different problems.

د7- Developing the student's ability to dialogue and discuss.

د8- Developing the student's ability to deal with modern technology, especiallyunlessInternet.

10. Course structure

Week 1 Fundamental Concepts of static

Week 2 Resolution of forces in space

Week 3	Couple and moment
Week 4	Resultant of Forces system
Week 5	Resultant of a Concurrent Non-Coplanar Force
Week 6	Free Body Diagrams (FBD)
Week 7	equilibrium
Week 8	Trusses
Week 9	Friction part 1
Week 10	Friction part 2
Week 11	Centroids and Centers of Gravity by Integration
Week 12	Centroids and Centers of Gravity of Composite Area and Bodies
Week 13	Second Moments or Moments of Inertia
Week 14	Second moments of Areas by Integration
Week 15	Moments of Inertia of Composite Area.
Week 16	Preparatory week before the final exam

11. AInfrastructure:

1- Required Textbooks

Higdon -1

Meriam -2

2- Main References(Sources)

A- Recommended books and references(Fields Scientific,Reports,Sites aNoElectronic Sober. Library sites Some international universities. B-ReferencesElectronic,SitesunlessInternet.

Course Description

This description provides a brief overview of the main elements of the course and the academic outcomes that the ideal student is expected to achieve when taking advantage of the educational opportunities provided. This description should be compared with the academic program description to determine alignment and compliance between them..

1. **Educational Institution: University of Maysan**
2. **Academic Department/Center: Department of Mechanical Engineering**
3. **Course Name/Code:Principles of production engineering /Course code: ME113**
4. **Available forms of attendance: in-person or online**
5. **Chapter/Year First Semester/First Stage**
6. **Total number of study hours (150) hour**
7. **Date this description was preparedFebruary2025**
8. **Course objectives:**

Main objective heThe graduate mechanical engineer is able to deal with methods, applications, problems, calculations and designs related to engineering materials, manufacturing processes and welding techniques.

9. **Course outcomes, teaching, learning and assessment methods**

أ- Cognitive objectives

أ1- Citing engineering materials sources.

أ2- Explain the principles of production processes, how to choose the type of engineering material and the procedure used to manufacture a particular product..

أ3- Definition of engineering stress and engineering strain.

أ4- Definition of mechanical properties of materials such as tensile strength, ductility, toughness and hardness

أ5- Naming and description of hardness testing techniques

أ6- Nomenclature and description of shock fracture testing techniques

أ7- Explain the different types of metal production processes and their performance.

أ8- Description of recrystallization in terms of change in microstructure and mechanical properties of the material

أ9- Name and brief description of some important types of welding operations.

أ10- Name and describe the forming processes used to form polymers and ceramics.

ب- Course specific skill objectives

ب1- Perform some calculations related to finding the force and energy for metal forming processes such as rolling and extrusion..

ب2- Identify different manufacturing processes.

Teaching and learning methods

- Scientific and research skills are developed fromduringTeaching and learning activities. Analytical and problem solving skills areDevelop it further by a set of questions prepared by the lecturers.duringSmall study groupsAnd the evaluation is doneResponseFor allBusinessthe introduction.

Evaluation methods

•Interaction within the lecture.

•Homework and reports.

•Short tests (quizzes)

•ExamsQuarterly and final.

ج- **AnoEmotional and value scorer**.

ج1- Attention:Attracting students' attention by implementing one of the application programs on the display screen in the hall.

ج2- Response: Monitor the student's interaction with the material displayed on the screen..

ج3- interest: Follow up on the interest of the student who interacted more with the presented material, by increasing this interaction by requestingOther programs and applications to display.

ج4- formationDirectionMeaning that the student is sympathetic to the presentation and may have an opinion about the topic.Displayed and defended.

ج5- Formation of value-based behavior: meaning that the student reaches the top of the emotional ladder and has a stable level in the lesson.andnoHe is lazy andnofidget.

Teaching and learning methods

•Theoretical presentation methodnoRegularUsingWriting board andunlessDepends on style(How and why)

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•Theoretical presentation methodUsingdevice(show data)noDepends on style(How and why)To the topic

According to the curriculum of the subject.

Evaluation methods

•AnoDirect questions in a way(How and why)For the topic during the theoretical lecture.

•ALamSurprise exams during the theoretical lecture.

•ALamQuarterly exams for the sideTheoretical and practical.

•ALamFinal exams for the theoretical side.And practical

د- **General skillsAnd rehabilitationMovable(Other skills related to employability and personal development)**

د1- Enhance the student's ability to analyze and think critically by evaluating different engineering processes..

د2- Develop teamwork and cooperation skills in practical projects.

د3- Develop effective communication skills through project discussions and presentations..

د4- Gain the ability to research and investigate information from various sources.

10. Course structure

Week 1 Engineering Materials, Mechanical Properties of Materials

Week 2 Extraction and Production of Ferrous Metals: Production of iron and steel

Week 3 Extraction and Production of Non-Ferrous Metals: Production of Aluminum, Copper and Zinc

Week 4 Metal Forming Processes

Week 5 Hot and Cold Working Processes

Week 6 Rolling/Types of Rolling Mills

Week 7 Flat Rolling and Its Analysis

Week 8 Extrusion Processes, Analysis of Extrusion

Week 9 Wire and Tube Drawing

Week 10 Deep Drawing

Week 11 Welding Processes/ Fusion Welding and Pressure Welding

Week 12 Gas Welding Process, Arc Weldingand Electric Resistance Welding

Week 13 Polymer Forming Techniques

Week 14 Plastic Forming Techniques

Week 15 Ceramic Forming Techniques.

Week 16 Preparatory week before the final exam

Weekly lab syllabus

Week 1 Lab 1: Mechanical Properties of Materials

Week 2 Lab 2: Tension Test

Week 3 Lab 3: Hardness Test

Week 4 Lab 4: Impact test

Week 5 Lab 5: Metal Forming Processes: Rolling

Week 6 Lab 6: Extrusion Processes

Week 7 Lab 7: Drawing Processes

Week 8 Lab 8: Wire Drawing

Week 9 Lab 9: Tube Drawing

Week 10 Lab 10: Deep Drawing

Week 11 Lab 11: Welding Processes - Fusion welding

Week 12 Lab 12: Welding Processes - Pressure welding

Week 13 Lab 13: Plastic Forming Techniques

Week 14 Lab 14: Ceramic Forming Techniques

Week 15 Lab 15: Final examination

11. AInfrastructure:

1- Required Textbooks

1. Materials Science and Engineering an Introduction, William D. Callister, JR. and David G. Rethwisch.
2. Fundamentals of Modern Manufacturing: Materials, Processes, and Systems, Mikell P. Groover.

2- Main References(Sources)

A- Recommended books and references(Fields Scientific,Reports...., sitesNoElectronic Sober.

Library locations in some international universities. B-ReferencesElectronic,SitesunlessInternet

12. Curriculum Development Plan

Study Material Review: Study materials are updated periodically to include the latest theories and techniques in production engineering..andInclusion of new topics such as digital manufacturing, Industry 4.0, and advanced production technologies.:

Use of Technology: Integrating technological tools such as simulation, virtual reality, and engineering software into teaching..

2025 Program DescriptionAcademicWith its decisions Date of update:

Blended Learning: Using a combination of traditional and e-learning to enhance the learning experience..

Increase practical workshops: Organize intensive practical workshops to enhance students' practical experience..

Applied projects: Encouraging students to implement applied projects that reflect real-world challenges in the field of production engineering..

Research Skills: Enhancing research and investigation skills by assigning students research projects and scientific reports..

Critical Thinking: Organize discussions and case studies to enhance critical and analytical thinking skills..

Partnerships with institutions: Building partnerships with industrial institutions to provide training opportunities and joint projects.

Field visits: Organizing field visits to factories and production sites to enhance students' practical understanding..

Continuous Training: Providing continuous training programs for faculty members to update their knowledge and skills..

Supporting scientific research: Encouraging faculty members to conduct and publish scientific research in the fields of production engineering..

Modern Facilities: Upgrading and developing laboratory and practical facilities to provide a modern learning environment..

Academic Support: Providing academic and psychological support to students through specialized support centers..

Surveys: Collect students' opinions on the course and teaching methods periodically to identify areas for improvement..

Active Participation: Encourage students to actively participate in the development and improvement of the course..

Course Description

This description provides a brief overview of the main elements of the course and the academic outcomes that the ideal student is expected to achieve when taking advantage of the educational opportunities provided. This description should be compared with the academic program description to determine alignment and compliance between them..

1- **Educational Institution: University of Maysan**
2- **Academic Department/Center: Department of Mechanical Engineering**
3- **Course Name/Code:chemistry /Course code: ENG126**
4- **Available forms of attendance: in-person or online**
5- **Chapter/Year First Semester/First Stage**
6- **Total number of study hours (75) hour**
7- **This description was prepared in February 2025.**
8- **Course objectives:**

Understand the basic principles and concepts of chemistry, including atomic structure, chemical bonding, and chemical reactions.. Apply chemical knowledge to analyze and predict the properties and behavior of materials used in mechanical engineering, such as metals and composites. Demonstrate an understanding of the relationship between chemical processes and mechanical engineering applications, such as corrosion, combustion, and heat transfer.. Awareness of ethical and safety considerations in handling and working with chemicals.

9- **Course outcomes, teaching, learning and assessment methods**

أ- Cognitive objectives

أ1- Knowledge of atomic structure and chemical bonding: Understanding the structure of atoms, electronic configurations, chemical bonding, and hybridization, which form the basis for understanding the behavior of chemicals.

أ2- Understanding Radioactivity and Nuclear Chemistry: Explore the principles of radioactivity, nuclear stability, radioactive decay, and applications of nuclear chemistry in tracers, history, and energy sources.

أ3- Knowledge of Cement Chemistry: Study of cement chemistry, including electrochemical corrosion, acidification reactions, and the effect of weathering on cement.

أ4- Understanding Thermochemistry and Chemical Kinetics: Learn about exothermic and endothermic reactions, heat of formation, gas and water fuels,

rocket propulsion, energy, and collisions. Study the kinetics of chemical reactions and the factors that affect reaction rates.

أ5- Knowledge of Acids and Bases: Gain an understanding of the chemistry of acids and bases, including water treatment, dissociation constants, strength of acids and bases, pH scale, sterilization, clarification, and boiler feedwater.

أ6- Understanding Petroleum Refining: Explore the chemistry involved in petroleum refining, including boiling point charts and hydrocarbon separation and processing processes.

أ7- Knowledge of hydrocarbons and aromatic compounds: study of the structure of benzene, benzene analogues, reactions involving benzene substitution, as well as alcohol synthesis, ester formation, and phenol reactions.

أ8- In general, these units aim to provide students with a comprehensive understanding of the key concepts and principles in chemistry relevant to mechanical engineering. This knowledge will enable students to apply chemical principles to the analysis and solution of engineering problems, understand materials and their properties, and make informed decisions regarding chemical processes and reactions in mechanical engineering applications.

ب- Course specific skill objectives

ب1- Apply chemical knowledge to solve engineering problems.

ب2- Use chemical methods to analyze and predict the behavior of materials.

ب3- Evaluation of environmental and health impacts of chemical processes.

ب4- Develop research and analysis skills in the field of engineering chemistry.

ب5- Effective interaction with multiple teams in engineering industries.

Teaching and learning methods

- Scientific and research skills are developed fromNoTeaching and learning activities. Analytical and problem solving skills areDevelop it further by a set of questions prepared by the lecturers.duringSmall study groupsAnd the evaluation is doneResponseFor allBusinessthe introduction.

Evaluation methods

•Interaction within the lecture.

•Homework and reports.

•Short tests (quizzes)

•ExamsQuarterly and final.

ج- **AnoEmotional and value scorer**.

ج1- Attention:Attracting students' attention by implementing one of the application programs on the display screen in the hall

ج2- Response: Monitor the student's interaction with the material displayed on the screen..

ج3- interest: Follow up on the interest of the student who interacted more with the presented material, by increasing this interaction by requestingOther programs and applications to display.

ج4- formationDirectionMeaning that the student is sympathetic to the presentation and may have an opinion about the topic.Displayed and defended.

ج5- Formation of value-based behavior: meaning that the student reaches the top of the emotional ladder and has a stable level in the lesson.andnoHe is lazy andnofidget.

Teaching and learning methods

•Theoretical presentation methodnoRegularUsingWriting board andunlessDepends on style(How and why)

According to the subject and the curriculum of the subject.

•Theoretical presentation methodUsingdevice(show data)noDepends on style(How and why)To the topic

According to the curriculum of the subject.

Evaluation methods

•AnoDirect questions in a way(How and why)For the topic during the theoretical lecture.

•ALamSurprise exams during the theoretical lecture.

•ALamQuarterly exams for the sideTheoretical.

•ALamFinal exams for the theoretical side.

د- General skillsAnd rehabilitationMovable(Other skills related to employability and personal development)

د1- Develop effective communication skills with colleagues and clients in the field of engineering chemistry.

د2- Dealing with challenges and changes in the chemical industry in a professional manner.

د3- Ability to self-learn and continuously develop in the field of engineering chemistry.

د4- Ability to manage time and resources effectively in chemical processes.

د5- Interact constructively with the chemical engineering community and its participating engineers.

10. Course structure

Week 1 Atomic Structure and Bonding, Atomic Theory, the nuclear Atoms

Week 2Electronic Structures Chemical Bonding, Hybridization,

Week 3 Radioactivity, Periodic Tables, Material State

Week 4Nuclear Stability, Radioactive Decay, Tracers, Dating, Power Sources

Week 5Cement, Electrochemical Corrosion, Hydration Reaction, Weathering of Cement, quiz

Week 6 Thermal Chemistry, Chemical Kinetics, Exothermic And Endothermic Reaction

Week 7 heat of formation, fuel and water gas, rocket propulsions, energy and collision

Week 8 Chemistry of acids and bases, Water Treatments, Dissociation Constants

Week 9 The Strength of Acid and Bases, The PH Scale, Known Acid and Base

Week 10 Sterilization, Clarification, Boiler feed Water, Boiling point Diagram Petroleum Refining, Quiz.

Week 11 Hydrocarbons, Aromatic Compounds

Week 12 Benzene Structure, Substitution of Benzene.

Week 13 Homologues of Benzene, substitution in benzene ring

Week 14 Alcohol synthesis of Alcohol,

Week 15 Ester Formation, reaction of Phenol

Week 16 Preparatory week before the final exam

10-AInfrastructure:

1- Required Textbooks

"General Chemistry: Principles and Modern Applications" by Ralph H. .1
Petrucci, F. Geoffrey Herring, Jeffry D. Madura, and Carey Bissonnette.

"Principles of Modern Chemistry" by Oxtoby, Gillis, and Campion. .2

2- Main References(Sources)

A- Recommended books and references(The fieldAScientific, reports...., websitesNoElectronic sober.

Library locations in some international universities.

B - ReferencesNoElectronic, WebsitesunlessInternet

12. Curriculum Development Plan

Expanding the study of the chemical composition of materials used in mechanical engineering such as metals, alloys, composites and polymers..orAdd advanced topics such as nanomaterials chemistry, composite materials chemistry, and electrochemical reactions.. Implementing a blended learning system that combines traditional education and e-learning to enhance students' understanding and interaction with the subject matter..

Course Description

The course provides a comprehensive introduction to the use of tools and understanding the basics of engineering drawing, including explaining the types of drawing lines and how to use them, drawing geometric shapes and determining dimensions in an accurate manner. The course also helps in reading engineering drawings and extracting the necessary details and measurements to work from them using paper drawings.

1- **The institutionEducational:University of Maysan**
2- **Academic Department/Center: Department of Mechanical Engineering**
3- **Course Name/Code:Engineering drawing/Course code: ENG128**
4- **Available forms of attendance: in-person or online**
5- **Chapter/Year First Semester/First Stage**
6- **Total number of study hours (175) hour**
7- **This description was prepared in February 2025.**
8- **Course objectives:**

The course aims to:To learn the rules and basics of engineering drawingKnowing engineering drawing tools and how to use them.

Learn to read and write notes on engineering drawings.. To learn how to create 2D projections from 3D graphics. To be able to read and write drawing measurements. Ability to draw 3D shapes. Ability to draw engineering sections.

9- **Course outcomes, teaching, learning and assessment methods**

أ- Cognitive objectives

أ1- Understand the characteristics and functions of the various tools used in engineering drawing.

أ2- Learn how to use each tool correctly and accurately.

أ3- Study the basic principles of engineering drawing.

أ4- Learn the rules and standards governing engineering drawing.

أ5- Analyze geometric shapes and understand their different parts.

أ6- Learn how to draw projections and intersecting sections of geometric shapes.

ب- Course specific skill objectives

ب1- Practice using different tools to draw geometric shapes accurately.

ب2- Improve speed and accuracy in using tools.

ب3- Aziz is able to imagine geometric shapes in their different dimensions.

ب4- Apply projections and cross sections to achieve accurate geometric dimensions.

Teaching and learning methods

- Scientific and research skills are developed fromNoTeaching and learning activities. Analytical and problem solving skills areDevelop it further by a set of questions prepared by the lecturers.duringSmall study groupsAnd the evaluation is doneAnd the responseFor allBusinessthe introduction.

Evaluation methods

•Interaction within the lecture.

•Homework and reports.

•Short tests (quizzes)

•ExamsQuarterly and final.

ج- **AnoEmotional and value scorer**.

ج1- Instill a sense of attention to precision and detail in engineering work.

ج2- To enhance the sense of responsibility towards producing accurate and detailed engineering drawings..

ج3- Encourage students to think creatively and critically in solving engineering problems.

ج4- Enhance the ability to think independently and deduce solutions.

ج5- Formation of value-based behavior: meaning that the student reaches the top of the emotional ladder and has a stable level in the lesson.andnoHe is lazy andnofidget.

Teaching and learning methods

•Theoretical presentation methodnoRegularUsingWriting board andunlessDepends on style(How and why)

According to the subject and the curriculum of the subject.

•Theoretical presentation methodUsingdevice(show data)noDepends on style(How and why)To the topic

According to the curriculum of the subject.

Evaluation methods

•AnoDirect questions in a way(How and why)For the topic during the theoretical lecture.

•ALamSurprise exams during the theoretical lecture.

•ALamQuarterly exams for the sideTheoretical and practical.

•ALamFinal exams for the theoretical side.And practical

د- **General skillsAnd rehabilitationMovable(Other skills related to employability and personal development)**

د1- Improve online research skills to access up-to-date engineering information.

د2- Learn how to use the Internet as a source of engineering information and ideas.

د3- Improving communication skills between students and faculty.

د4- Promote teamwork and collaboration among students in engineering projects.

10-Course structure

2025 Program DescriptionAcademicWith its decisions Date of update:

Week 1 Introduction to engineering drawing, drawing tools.

Week 2 Types of lines, notes on line drawings, straight line operations.

Week 3 Circle and arc operations.

Week 4 Operationspolygon, practicaloval. Test 1

Week 5 Transverse lines.

Week 6 Parallel projection, orthogonal projection

Week 7 Projection of the first and third angles, conclusion of the third presentation, notes on the projections.

Midterm examthe chapter

Week 8 Section lines,Full clips,Section levels,semi-sections,curvy sections

Week 9 Partial sections,Uncut parts,Notes on sections

Short Test 2

Week 10 Dimensional theory, dimensional elements, diagonal dimensions, dimensional symbols.

Week 11 Dimensions of Leadership,Circle dimensions and angles

Week 12 Notes on dimensions.

a testshort3

Week 13 Metric drawing.

Week 14 Oblique drawing.

Week 15 perspective drawing.

a testshort4

Week 16 Preparatory week before the final exam

11-AInfrastructure:

1- Required Textbooks

Systematic engineering drawing book, author Jaafar Al-Khafaf .1

2- Main References(Sources)

A- Recommended books and references(Fields Scientific,Reports...., sitesNoElectronicSober.

Library locations in some international universities.

B- ReferencesElectronic,SitesunlessInternet

12. Curriculum Development Plan

MReview and update study materials: Periodically review and update study materials to include the latest developments in engineering drawing.. Add advanced topics: Include topics such as 3D drawing, computer-aided drawing (CAD), and advanced engineering sections. Cooperating with engineering companies and institutions to provide training opportunities and applied projects for students.. Field visits: Organizing field visits to factories and laboratories to familiarize students with the practical environment and real-life applications of engineering drawing.

Course Description

The model description provides a brief description of the main features of the course.The scientific outcomes that the typical student is expected to achieve in the event ofExploit itLearning opportunities available for the course. Must be compared with the program description..

1. **Educational Institution: University of Maysan**
2. **Academic Department/Center: Department of Mechanical Engineering**
3. **Course Name/Code:English language/Course code: UOM120**
4. **Available forms of attendance: in-person or online**
5. **Chapter/Year First Semester/First Stage**
6. **Total number of study hours (50) Hour**
7. **This description was prepared in February 2025.**
8. **Course objectives:**

Developing Language Skills: The main aim of English lessons is to help students develop their English speaking, listening, reading and writing skills. This includes improving vocabulary, grammar, pronunciation and comprehension skills..

Enhancing Communication Skills: English lessons aim to improve students' ability to communicate effectively in English. This includes developing fluency, accuracy and confidence in oral and written communication..

Building reading and comprehension skills. Develop writing skills.

9. **Course outcomes, teaching, learning and assessment methods**

أ- Cognitive objectives

أ1- Improve listening comprehension in a variety of contexts such as lectures, conversations, and audio recordings.

أ2- - Read and understand a variety of texts, including literary works, articles, and informational materials.

ب- Course specific skill objectives

ب1- To communicate effectively in English in both formal and informal situations.

ب2- Produce well-organized, coherent, and grammatically error-free written texts.

Teaching and learning methods

AFor audio activities: Play lectures, conversations, or various audio recordings and discuss the content with students.

Graded practice: starting from easier texts to more complex ones to ensure gradual progress.

Auditory tests: Use short auditory tests periodically to measure and improve comprehension.

Reading and understanding texts:

Guided reading: presenting texts with questions that guide comprehension and analysis.

Class discussion: Organize discussion groups around the texts read to promote shared understanding.

Summarizing texts: Training students to summarize the content of the texts they read.

Evaluation methods

•Interaction within the lecture.

•Homework and reports.

•Short tests (quizzes)

•ExamsQuarterly and final.

ج- **AnoEmotional and value scorer**.

ج1- Take responsibility for your ongoing language learning and self-improvement.

ج2- Encourage the use of language learning apps and self-study programs.

ج3- Help students set their own learning goals and track their personal progress.

ج4- Encourage students to reflect on their learning process and identify areas for improvement.

ج5- Formation of value-based behavior: meaning that the student reaches the top of the emotional ladder and has a stable level in the lesson.andnoHe is lazy andnofidget.

Teaching and learning methods

•Theoretical presentation methodnoRegularUsingWriting board andunlessDepends on style(How and why)

According to the subject and the curriculum of the subject.

•Theoretical presentation methodUsingdevice(show data)noDepends on style(How and why)To the topic

According to the curriculum of the subject.

Evaluation methods

•AnoDirect questions in a way(How and why)For the topic during the theoretical lecture.

•ALamSurprise exams during the theoretical lecture.

•ALamQuarterly exams for the sideTheoretical and practical.

•ALamFinal exams for the theoretical side.And practical

د- **General skillsAnd rehabilitationMovable(Other skills related to employability and personal development)**

د1-TDevelop different listening comprehension skills.

د2- Effective oral communication, whether in formal or informal contexts.

د3-- Reading and understanding of diverse texts.

د4-- Writing structured, coherent and grammatically correct texts.

د5-- Promote linguistic independence and take responsibility for continuous self-improvement.

10. Course structure

Week 1	Reading and comprehension.
Week 2	Present simple and present continuous
Week 3	past simple and past continuous
Week 4	Simple future
Week 5	Future Continuous and Short Test
Week 6	simple sentences
Week 7	Conditional Statements (Type I, II, III)
Week 8	Indirect questions
Week 9	Definite and indefinite articles
Week 10	Idioms and Quiz
Week 11	Past perfect
Week 12	past perfect
Week 13	Passive voice.
Week 14	Complex and compound sentences

Week 15 Prepositions

Week 16 Preparatory week before the final exam

11-AInfrastructure:

1- Required Textbooks

Headway plus, John and Liz Soars -1

2- Main References(Sources)

A- Recommended books and references(The fieldAScientific T,Reports...., sitesNoElectronic sober.

Library locations in some international universities.

B- ReferencesElectronic,SitesunlessInternet

12. Curriculum Development Plan

This plan aims to improve students' understanding and use of English in different mechanical engineering contexts. The plan will include the following::

Update the study content: Providing up-to-date study materials related to mechanical engineering..andInclude topics related to technology and innovation in the engineering field..

Diversify teaching and learning methods: Use modern educational techniques such as interactive activities and project-based learning..

Integrate problem-based learning and engineering conversations into lessons.

Course Description

2025 Program DescriptionAcademicWith its decisions Date of update:

Definition of human rightsbecauseSan and the democratic system and intellectual positions on it, with an explanation of the different models of it and its relationship

Civil society in it

1. **Educational Institution: University of Maysan**
2. **Academic Department/Center: Department of Mechanical Engineering**
3. **Course Name/Code:Democracy and human rightsCourse code:UOM121**
4. **Available forms of attendance: in-person or online**
5. **Chapter / Year Chapter AFirst/ First stage**
6. **Total number of study hours (67) Hour**
7. **Date this description was preparedFebruary2025**
8. **Course objectives:**

The overall objectives of the Human Rights and Democracy course are to give students a solid foundation in the fundamentals of human rights.And democracy,and problem solving skillsproblems,Practical knowledge, and a mindset for further learning and use of human rights and democracy in diverse societal customs.

9. **Course outcomes, teaching, learning and assessment methods**

أ- Cognitive objectives

أ1- Anocognitive scorer

أ2- A-1 Historical introduction to democracy.

أ3- A-2 Different models of democracy

أ4- A-3 Rights and Responsibilities

أ5- A-4 Civil Liberties

ب- Course specific skill objectives

ب1- Applying quantitative methods to explain and interpret the concept of rights.And democracy.

ب2- AUse of knowledgeBasicTo discuss the historical development of the concept of freedom..

ب3- Information evaluationNecessaryTo understand anoDifferent perspectives on a common theme.

Teaching and learning methods

Scientific and research skills are developed through teaching and learning activities. Analytical and problem-solving skills

They are further developed by a set of problems prepared by the lecturers through study groups.

Small and all submitted works are evaluated and responded to.

Evaluation methods

•Interaction within the lecture.

•Homework and reports.

•Short tests (quizzes)

• Midterm and final exams.

ج- **AnoEmotional and value scorer.**

ج1- Attention: attracting students' attention by implementing one of the application programs on the display screen in the hall.

ج2- Response: Monitoring the student's interaction with the material displayed on the screen.

ج3- Interest: Follow up on the interest of the student who interacted more with the displayed material, by increasing this interaction by requesting other programs and applications to display it.

ج4- formationDirectionMeaning that the student is sympathetic to the presentation and may have an opinion regarding the topic presented and defend it.

ج5- Formation of value-based behavior: meaning that the student reaches the top of the emotional ladder, has a stable level in the lesson, and does not become lazy or restless.

Teaching and learning methods

•Theoretical presentation methodnoRegularUsingWriting board andunlessDepends on style(How and why)

According to the subject and the curriculum of the subject.

•Theoretical presentation methodUsingdevice(show data)noDepends on style(How and why)To the topic

According to the curriculum of the subject.

Evaluation methods

•AnoDirect questions in a way(How and why)For the topic during the theoretical lecture.

•ALamSurprise exams during the theoretical lecture.

•ALamQuarterly exams for the sideTheoretical.

•ALamFinal exams for the theoretical side.

د- **General skillsAnd rehabilitationMovable(SkillsOther related to employability and personal development)**

د1- Developing the student's ability to do homework and submit it on time.

د2- Logical and programming thinkingTo findSoftware solutions for various problems.

د3- Developing the student's ability to dialogue and discuss.

د4- Developing the student's ability to deal with modern technology, especiallyInternet.

10. Course structure

Week 1 The Basics of Freedom

Week 2 intellectual and cultural freedom

Week 3 Political freedom, economic and social freedom

Week 4 Political freedom, economic and social freedom

Week 5 The future of public freedoms

Week 6 Universal Declaration of Human Rights and Freedoms

Week 7 Universal Declaration of Human Rights and Freedoms

Week 8 Freedom in Islam

Week 9 Brief explanation of the types of democracy

Week 10 Democracy and an introduction to it.

Week 11 Democracy Applications

Week 12 Administrative and financial corruption

Week 13 Administrative and financial corruption

Week 14 Democracy in Islam

Week 15 Preparing for the final exam

Week 16 Preparatory week before the final exam

11-AInfrastructure:

1- Required Textbooks

1. Human Rights and Democracy.

2. Main References(Sources)

A- Recommended books and references(The fieldAScientific, reports...., websitesNoElectronic sober.

Library locations in some international universities.

B- ReferencesElectronic,SitesunlessInternet

Course Description

The model description provides a brief description of the main features of the course.And the scientific outputs that are expected to be achieved The model student in case of exploitationNoLearning opportunities available for the course. Must be compared with the program description.

1. **The institutionEducational:University of Maysan**
2. **Academic Department/Center: Department of Mechanical Engineering**
3. **Course Name/Code:mathematicsII/Course code: ENG124**
4. **Available forms of attendance: in-person or online**
5. **Chapter / Year Chaptersecond/ First stage**
6. **Total number of study hours (125) Hours**
7. **Date this description was preparedFebruary2024**
8. **Course objectives:**

Mathematics contributes to the core of engineering and serves as a source of knowledge that engineering students can benefit from. Therefore, engineering students must have the ability to apply mathematical knowledge and skills to solve problems and engineering design tasks. Having mathematical or engineering knowledge without understanding how to apply the strategies learned can limit a student's ability to provide the correct answer.

9. **Course outcomes, teaching, learning and assessment methods**

أ- **Cognitive objectives**

أ1- Understand basic mathematical principles.

أ2- Ability to solve various derivation problems.

أ3- Applying mathematical concepts to solve practical problems.

ب- **Course specific skill objectives**

ب1- Developing mathematical problem solving skills.

ب2- Use sports equipment effectively.

ب3- Critical and analytical thinking in solving mathematical problems.

Teaching and learning methods

The main strategy that will be adopted in delivering this unit is to encourage students' participation in the exercises, while at the same time improving and expanding their critical thinking skills. This will be achieved through interactive lessons and workshops and by considering the types of simple experiments that include some experimental and sampling activities that are interesting to students.

Evaluation methods

- Interaction within the lecture.
- Homework and reports.
- Short tests (quizzes)
- ExamsQuarterly and final.

ج- **AnoEmotional and value scorer**.

ج1- Attention: attracting students' attention by implementing one of the application programs on the display screen in the hall.

ج2- Response: Monitoring the student's interaction with the material displayed on the screen.

ج3- Interest: Follow up on the interest of the student who interacted more with the displayed material, by increasing this interaction by requesting other programs and applications to display it.

ج4- formationDirectionMeaning that the student is sympathetic to the presentation and may have an opinion regarding the topic presented and defend it.

ج5- Formation of value-based behavior: meaning that the student reaches the top of the emotional ladder, has a stable level in the lesson, and does not become lazy or restless.

Teaching and learning methods

•Theoretical presentation methodnoRegularUsingWriting board andunlessDepends on style(How and why)

According to the subject and the curriculum of the subject.

•Theoretical presentation methodUsingdevice(show data)noDepends on style(How and why)To the topic

According to the curriculum of the subject.

Evaluation methods

•AnoDirect questions in a way(How and why)For the topic during the theoretical lecture.

•ALamSurprise exams during the theoretical lecture.

•ALamQuarterly exams for the sideTheoretical.

•ALamFinal exams for the theoretical side.

د- **General skillsAnd rehabilitationMovable(Other skills related to employability and personal development)**

د1- Dealing with challenges with a positive and persistent spirit.

د2- Self-learning and developing the ability to achieve personal goals.

د3- Effective communication and working within multiple teams to solve mathematical problems.

10. Course structure

Week 1 Application ofintegration: Area between curves and under curves

Week 2 Application of integration: The volume of solids (Disk and Washer methods)

Week 3 Application ofintegration: The cylindrical shell method

Week 4 Application of integration: Lengths of curves in the plane

Week 5 Application of integration: Areas of Surfaces of Revolution

Week 6 Techniques of integration: Integration by Parts, Trigonometric Integrals, Trigonometric Substitutions.

Week 7 Substitution and long division integrals

Week 8 Integration of Rational Functions by Partial Fractions.

Week 9 Integrals of tan x and cot x

Week 10 Integration of Logarithmic Functions

Week 11 Numerical Integration: The Trapezoidal Rule

Week 12 Numerical Integration: The Simpson's Rule.

Week 13 Polar Coordinate, Areas and Lengths in Polar Coordinate

Week 14 Graphing in Polar Coordinates

Week 15 Matrices

Week 16 Preparatory week before the final exam

11-AInfrastructure:

1- Required Textbooks

Thomas' Calculus, G B. Thomas, RLFinney, MD Weir, Addison-Wesley; 12th .1
Edition, 2010

2- Main References(Sources)

A- Recommended books and references(The fieldAScientific, reports...., websitesNoElectronic sober.

Library locations in some international universities.

B - ReferencesNoElectronic, WebsitesunlessInternet

Course Description

The model description provides a brief description of the main features of the course.The scientific outcomes that the typical student is expected to achieve if he usesNoLearning opportunities available for the course. Must be compared with the program description.

1. **Educational Institution: University of Maysan**
2. **Academic Department/Center: Department of Mechanical Engineering**
3. **Course Name/Code:Mechanical engineering mechanicsCourse code: ME122**
4. **Available forms of attendance: in-person or online**
5. **Chapter / Year Chaptersecond/ First stage**
6. **Total number of study hours (225) Hours**
7. **Date this description was preparedFebruary 2025**
8. **Course objectives:**

The theoretical foundations of dynamics in mechanical engineering have been greatly expanded in recent years. The aim of thisScheduledThis course introduces students to this fundamental area of dynamics in mechanical engineering, with an initial focus on particle kinematics. The course covers concepts such as position, velocity, and acceleration, and includes the determination of single particle motion, multiparticle motion, and dependent motion. In addition, the course introduces Newton's second law in rectangular,

tangent, and perpendicular components, as well as methods of energy and momentum, the work-energy principle, potential energy, and the conservation of energy principle. Upon completion of the course, students are expected to be proficient in dynamics in mechanical engineering, and to have the opportunity to explore current topics in the field.

9. **Course outcomes, teaching, learning and assessment methods**

أ- Cognitive objectives

أ1- Understand how to calculate velocity and acceleration.

أ2- Study the effect of trajectory on velocity and acceleration calculations.

أ3- Effect of straight and curved path on speed and acceleration

أ4- Study of speed and acceleration in a circular path

أ5- relative motion

أ6- Effect of forces on velocities and accelerations

ب- Course specific skill objectives

ب1- Apply the concepts of velocity and acceleration to solve various problems.

ب2- Analyze the effect of different trajectories on velocity and acceleration calculations.

ب3- Explain the differences in velocity and acceleration between straight and curved paths.

ب4- Use mathematics and physics to study circular motion and calculate velocity and acceleration in it.

ب5- Analysis of the relative motion of objects in the case of changing the motion frame.

ب6- Evaluate the effect of different forces on velocities and accelerations in different scenarios.

Teaching and learning methods

Interactive lectures: Deliver lectures that encourage student interaction, incorporating practical and applied examples..

Group discussions: Organize discussions that help students gain a deeper understanding of concepts and share ideas and experiences..

Active learning: Encouraging students to participate in problem solving and actively interact with content, helping them build deeper, more applied understanding.

Evaluation methods

•Interaction within the lecture.

•Homework and reports.

•Short tests (quizzes)

•ExamsQuarterly and final.

ج- **AnoEmotional and value scorer**.

ج1-Attention: attracting students' attention by implementing one of the application programs on the display screen in the hall.

ج2-Response: Monitoring the student's interaction with the material displayed on the screen.

ج3- Interest: Follow up on the interest of the student who interacted more with the displayed material, by increasing this interaction by requesting other programs and applications to display it.

ج4- formationDirectionMeaning that the student is sympathetic to the presentation and may have an opinion regarding the topic presented and defend it.

ج5- Formation of value-based behavior: meaning that the student reaches the top of the emotional ladder, has a stable level in the lesson, and does not become lazy or restless.

Teaching and learning methods

•Theoretical presentation methodnoRegularUsingWriting board andunlessDepends on style(How and why)

According to the subject and the curriculum of the subject.

•Theoretical presentation methodUsingdevice(show data)noDepends on style(How and why)To the topic

According to the curriculum of the subject.

Evaluation methods

•AnoDirect questions in a way(How and why)For the topic during the theoretical lecture.

•ALamSurprise exams during the theoretical lecture.

•ALamQuarterly exams for the sideTheoretical.

•ALamFinal exams for the theoretical side.

د- **General skillsAnd rehabilitationMovable(Other skills related to employability and personal development)**

د1- Critical Thinking: Develop students' critical thinking skills in analyzing motion, forces, and accelerations and understanding their effects.

د2- Self-learning: Enhancing students' self-learning skills and ability to independently comprehend and understand mathematical and physical concepts.

د3- Effective Communication: Develop students' oral and written communication skills, including the ability to explain technical ideas and calculations in a clear and accurate manner.

د4- Teamwork: Enhancing students' ability to work within multiple teams and coordinate efforts to solve complex engineering problems.

د5- Creative Thinking: Encourage students to innovate and use engineering imagination to develop new solutions to engineering challenges.

10. Course structure

Week 1 Rectilinear Kinematics: Continuous Motion

Week 2 Rectilinear Kinematics: Erratic Motion

Week 3 General Curvilinear Motion

Week 4 Curvilinear Motion: Motion of a projectile

Week 5 Curvilinear Motion: Normal & Tangential Components

Week 6 Curvilinear Motion: Cylindrical Components.

Week 7 Absolute Dependent Motion: Analysis of two particles

Week 8 Relative Motion: Analysis of two particles using Translating axes

Week 9 Equation of Motion: Rectangular Coordinates

Week 10 Equation of Motion: Normal and Tangential Coordinates

Week 11 Equation of Motion: Cylindrical Coordinates

Week 12 Work and Energy

Week 13 Conservative Forces and Potential Energy

Week 14 Principles of Linear Impulse and Momentum

Week 15Principle of Linear Impulse and Momentum for a System of Particles

Week 16 Preparatory week before the final exam

11-AInfrastructure:

1- Required Textbooks

Higdon. .1

Meriam .2

2- Main References(Sources)

A- Recommended books and references(Fields Scientific,Reports....,
sitesNoElectronic Sober.

Library locations in some international universities.

B- ReferencesElectronic,SitesunlessInternet

12. Curriculum Development Plan

Develop a comprehensive curriculum that covers the concepts of dynamics from the beginning to a deep understanding of the laws of physics.. Include interactive and applied activities such as hands-on experiments, projects, and discussion groups to promote active learning and practical application.. Use a variety of teaching methods such as interactive lectures, educational videos, and computer simulations to clarify difficult concepts.

Course Description

The model description provides a brief description of the main features of the course. And the scientific outputs that are expected to be achievedThe model student in case of exploitationNoLearning opportunities available for the course. Must be compared with the program description.

1. **Educational Institution: University of Maysan**
2. **Academic Department/Center: Department of Mechanical Engineering**
3. **Course Name/Code:Workshop technologyCourse code: ENG123**
4. **Available forms of attendance: in-person or online**
5. **Chapter / Year Chaptersecond/ First stage**
6. **Total number of study hours (50) Hour**
7. **Date this description was preparedFebruary 2025**

8. **Course objectives:**

Students will be able to work on different pieces of equipment and machines in different workshops such as turning, milling and grinding.Students will also be able to manufacture products using some manufacturing processes such as casting and forging, and join metal materials using welding, brazing and soldering processes.

9. **Course outcomes, teaching, learning and assessment methods**

أ- **Cognitive objectives**

أ1- Identify some of the reasons why machining is commercially and technically important.

أ2- List the three most common manufacturing processes.

أ3- Cite the two basic categories of cutting tools in manufacturing processes.

أ4- List the different operations that can be performed on a center lathe.

أ5- Describes some methods of forming twins on a center lathe.

أ6- Description of different types of drilling machines.

أ7- Description of horizontal milling machine.

أ8- Explain the difference between end milling and face milling.

أ9- Describe the cylindrical grinding process, giving an idea of the grinding wheel speeds and recommended operating speeds for this process.

أ10- Description of surface grinding processes using disc type wheel and cup type wheel.

أ11- Citation of necessary properties in good casting sand.

أ12- Describe the procedure for making a two-piece split pattern mold.

أ13- List some common casting defects and explain the causes that cause these defects.

أ14- Explain the difference between open and closed hammer forming techniques.

ب- Course specific skill objectives

ب1- Describe various manufacturing processes accurately and comprehensively.

ب2- Differentiate between different types of machines and cutting tools.

ب3- Effective application of forming and grinding techniques.

ب4- Use manufacturing tools accurately and efficiently.

ب5- Distinguish between different welding processes and use them successfully.

Teaching and learning methods

Interactive lectures: Presenting theoretical content with an emphasis on interacting with students by asking questions and encouraging discussions..

Group Discussions: Organize discussions on advanced topics in manufacturing and welding to promote critical thinking and exchange of ideas among students..

Critical Lessons: Provide opportunities for students to critically evaluate manufacturing and welding processes and continuously improve..

Presentations: Students were asked to prepare presentations on manufacturing and welding processes and present them to the class to increase interaction and participation..

Individual Tutoring: Provide individual assistance to students to enhance their understanding of difficult concepts in fabrication and welding..

Use of modern technologies: Use of multimedia educational media such as educational videos and interactive programs to explain various manufacturing processes.

Evaluation methods

- Interaction within the lecture.
- Homework and reports.
- Short tests (quizzes)
- ExamsQuarterly and final.

ج- **AnoEmotional and value scorer**.

ج1-Attention: attracting students' attention by implementing one of the application programs on the display screen in the hall.

ج2-Response: Monitoring the student's interaction with the material displayed on the screen.

ج3-Interest: Follow up on the interest of the student who interacted more with the displayed material, by increasing this interaction by requesting other programs and applications to display it.

ج4-Forming an attitude: meaning that the student is sympathetic to the presentation and may have an opinion about the topic presented and defend it.

ج5- Formation of value-based behavior: meaning that the student reaches the top of the emotional ladder, has a stable level in the lesson, and does not become lazy or restless.

Teaching and learning methods

•Theoretical presentation methodnoRegularUsingWriting board andunlessDepends on style(How and why)

According to the subject and the curriculum of the subject.

•Theoretical presentation methodUsingdevice(show data)noDepends on style(How and why)To the topic

According to the curriculum of the subject.

Evaluation methods

•AnoDirect questions in a way(How and why)For the topic during the theoretical lecture.

•ALamSurprise exams during the theoretical lecture.

•ALamQuarterly exams for the sideTheoretical.

•ALamFinal exams for the theoretical side.

د- **General skillsAnd rehabilitationMovable(Other skills related to employability and personal development)**

د1- Critical Thinking: Develop students' critical thinking skills in analyzing motion, forces, and accelerations and understanding their effects.

د2- Self-learning: Enhancing students' self-learning skills and ability to independently comprehend and understand mathematical and physical concepts.

د3- Effective Communication: Develop students' oral and written communication skills, including the ability to explain technical ideas and calculations in a clear and accurate manner.

د4- Teamwork: Enhancing students' ability to work within multiple teams and coordinate efforts to solve complex engineering problems.

د5- Creative Thinking: Encourage students to innovate and use engineering imagination to develop new solutions to engineering challenges.

10. Course structure

Week 1 Carpentry: Carpentry tools, cutting tools, flat tools

Week 2 Drills, Reciprocating Saws, Power Planers, Circular Saws, Router Bits, Orbital Sanders

Week 3 Installation: Installation tools, striking tools, cutting tools

Week 4 Measurement, Marketing and Testing Tools, Impact Driver, Chainsaw, Angle Grinder

Week 5 Drilling machine, nail gun, impact wrench, cutting machine

Week 6 Welding: Arc Welding Equipment

Week 7 Gas Welding: Oxy-Acetylene Welding Equipment

Week 8 Tin welding equipment,brazing equipment

Week 9 Lathe: Lathe machine (lathe)

Week 10 slicer

Week 11 The machinehole

Week 12 Milling machine

Week 13 Plumbing: Ovens

Week 14 sand casting, casting box

Week 15 Formability

Week 16 Preparatory week before the final exam

11-AInfrastructure:

1- Required Textbooks

Fundamentals of Modern Manufacturing: Materials, Processes, and Systems, .1
Mikell P. Groover.

2. Main References(Sources)

A- Recommended books and references(The fieldAScientific T,Reports...., sitesNoElectronic Sober.

Library locations in some international universities.

B - ReferencesNoElectronic,SitesunlessInternet

Course Description

2025 Program DescriptionAcademicWith its decisions Date of update:

AThe course provides a comprehensive overview of various branches of physics such as mechanics, thermodynamics, electricity and magnetism, quantum mechanics, and relativity. It is worth mentioning that some basic laws such as Newton's laws of motion and the law of conservation of energy will be covered comprehensively.

1. **The institutionEducational:University of Maysan**
2. **Academic Department/Center: Department of Mechanical Engineering**
3. **Course Name/Code:Physics/Course code: ENG125**
4. **Available forms of attendance: in-person or online**
5. **Chapter / Year Chaptersecond/ First stage**
6. **Total number of study hours (75) hour**
7. **Date this description was preparedFebruary 2025**
8. **Course objectives:**

This course aims to:To provide an understanding of the behavior of fluids at rest, including topics such as fluid pressure, pressure measurement, surface tension, Bernoulli's equation, viscosity, and the effects of turbulence. Students will learn how to apply these concepts in practical engineering applications..To provide students with a comprehensive overview of the properties of solids, including crystal structures, stress-strain analysis, elasticity and plasticity, and the behavior of materials under various loading conditions. Students will learn about concepts such as the modulus of elasticity, Poisson's ratio, and energy stored in stressed bodies. Gain knowledge and skills in measuring and analyzing physical quantities, including the use of appropriate devices and units.andTo introduce students to temperature measurement techniques and the thermal properties of

materials. Topics measured may include different types of thermometers, thermal expansion of materials, thermal resistance, and phase transitions in materials due to temperature changes. Focuses on the study of motion, including equations of motion, simple harmonic motion (such as pendulums), damped motion, forced motion, and wave motion. Students will learn how to analyze and solve problems involving these types of motion.. To provide an understanding of sound waves, including their power and intensity, the relationship between sound and temperature, and the Doppler effect. Students will learn about the properties and behavior of sound waves in various media.

9. **Course outcomes, teaching, learning and assessment methods**

أ- Cognitive objectives

أ1- Understand the principles of fluid pressure and methods of measuring it.

أ2- Apply Bernoulli's equation to analyze fluid flow under various conditions.

أ3- Explain the concept of surface tension and its practical applications.

أ4- Understanding the behavior of fluids under turbulent conditions.

أ5- Analyze and solve problems related to fluid viscosity and flow.

أ6- Describe different types of crystalline materials and their structures.

أ7- Analysis of stress and strain in materials and understanding their behaviour under different loading conditions.

أ8- Calculate the modulus of elasticity and Poisson's ratio of materials.

أ9- Evaluate the energy stored in stressed bodies and understand their elastic and plastic behavior.

أ10- Explain the working principles of different types of thermometers.

أ11- Understand the concept of thermal expansion and methods of measuring it.

أ12- Analysis of phase transitions in materials due to temperature changes.

أ13- Evaluation of thermal properties of materials and their effects in engineering applications.

أ14- Apply equations of motion to analyze and solve problems involving motion.

أ15- Understand the behavior of simple harmonic motion, such as pendulums.

أ16- Analysis of damped and forced motion and their practical implications.

أ17- Understand the nature of wave motion and analyze longitudinal waves in pipes.

أ18- Understanding the power and intensity of sound waves.

أ19- Analyze the relationship between sound and temperature.

أ20- Explain the Doppler effect and its applications.

أ21- Analyze and solve problems related to the behavior of sound waves in various media.

ب- Course specific skill objectives

ب1- Ability to analyze mechanical effects on materials including stress and strain.

ب2- Ability to interpret the behaviour of materials under different loading conditions.

ب3- Ability to calculate modulus of elasticity and Poisson's ratio using given data and appropriate equations.

ب4- The ability to explain the importance of these properties in the behavior of materials and their engineering applications.

ب5- The ability to use equations of motion to understand and analyze the motion of objects under different conditions.

ب6- Ability to apply mechanical theories to solve practical problems related to motion.

ب7- The ability to interpret the properties of sound waves including their power, intensity, and the effect of temperature on them.

Teaching and learning methods

Active and interactive learning: Encourage students to engage in live discussions about key concepts such as fluid pressure and Bernoulli's equation..andUse active learning techniques such as group discussions and project-based learning to enhance students' understanding and application of concepts to practical situations..

Problem-based learning: Present realistic problems related to fluid statics and properties of materials to motivate students to use the concepts learned to solve them.. Encourage students to think critically and use available information to derive appropriate solutions..

Use of interactive technologies: Use multimedia such as illustrations and digital simulations to illustrate phenomena such as surface tension and its effects..andProviding interactive online tools to facilitate the understanding of complex concepts such as motion analysis and sound waves..

Collaborative learning: Encourage students to work in small groups to solve problems involving materials and liquids..

Enhancing communication and teamwork skills by discussing ideas and sharing different experiences among students.

Evaluation methods

•Interaction within the lecture.

•Homework and reports.

•Short tests (quizzes)

•ExamsQuarterly and final.

ج- **AnoEmotional and value scorer**.

ج1- Attention: attracting students' attention by implementing one of the application programs on the display screen in the hall.

ج2- Response: Monitoring the student's interaction with the material displayed on the screen.

ج3- Interest: Follow up on the interest of the student who interacted more with the displayed material, by increasing this interaction by requesting other programs and applications to display it.

ج4- formationDirectionMeaning that the student is sympathetic to the presentation and may have an opinion regarding the topic presented and defend it.

ج5- Formation of value-based behavior: meaning that the student reaches the top of the emotional ladder, has a stable level in the lesson, and does not become lazy or restless.

Teaching and learning methods

•Theoretical presentation methodnoRegularUsingWriting board andunlessDepends on style(How and why)

According to the subject and the curriculum of the subject.

•Theoretical presentation methodUsingdevice(show data)noDepends on style(How and why)To the topic

According to the curriculum of the subject.

Evaluation methods

•AnoDirect questions in a way(How and why)For the topic during the theoretical lecture.

•ALamSurprise exams during the theoretical lecture.

•ALamQuarterly exams for the sideTheoretical.

•ALamFinal exams for the theoretical side.

د- **General skillsAnd rehabilitationMovable(Other skills related to employability and personal development)**

د1- Apply equations of motion to analyze and solve problems involving motion.

د2- Understand the behavior of simple harmonic motion, such as pendulums.

د3- Analysis of damped and forced motion and their practical implications.

د4- Understand the nature of wave motion and analyze longitudinal waves in pipes.

د5- Analyze and solve problems related to the behavior of sound waves in various media.

10. Course structure

Week 1 Static fluids

Week 2 Pressure measuring devices, surface tension

Week 3 Capillary effect,Bernoulli equation applications

Week 4 For husbandAnd,Poisson's law,Turbulence and Reynolds number

Week 5 Properties of solids, crystalline materials, short test

Week 6 Crystal structure, stress, ductility

Week 7 elasticity and plasticity, modulus of elasticity

Week 8 Poisson's ratio, the energy stored in a body in tension

Week 9 temperature measurement

Week 10 Phase transformation, thermal properties of materials, short test

Week 11 Movement

Week 12 damped motion, forced motion

Week 13 Wave motion, longitudinal wave in pipes

Week 14 Sound waves

Week 15 Doppler effect

Week 16 Preparatory week before the final exam

11-AInfrastructure:

1- Required Textbooks

PHYSICS FOR SCIENTISTS AND ENGINEERS, Sixth Edition .1

2. Main References(Sources)

A- Recommended books and references(Fields Scientific,Reports...., sitesNoElectronic Sober.

Library locations in some international universities.

B- ReferencesElectronic,SitesunlessInternet

12. Curriculum Development Plan

Use multiple teaching methods such as videos, graphics, and interactive simulations. Integrating e-learning and distance learning sessions.ABike issues and challenges that require critical thinking and analysis.. Encourage students to provide their own explanations and innovative solutions.

Course Description

The model description provides a brief description of the main features of the course. The academic outcomes that the typical student is expected to achieve if he exploits the learning opportunities available in the course. It must be compared with the program description.

1. **The institutionEducational:University of Maysan**
2. **Academic Department/Center: Department of Mechanical Engineering**
3. **Course Name/Code:Electrical Engineering/Course code: ME125**
4. **Available forms of attendance: in-person or online**
5. **Chapter / Year Chaptersecond/ First stage**
6. **Total number of study hours (125) hour**
7. **Date this description was preparedFebruary 125**
8. **Course objectives:**

Understanding and knowing DC circuitsR.Learn DC circuit symbols.andDeveloping the student's skills in using analysis methodsAnd theoriesNetworks.andDevelop abstract, logical and critical thinking and the ability to think critically about their own work and the work of others..

9. **Course outcomes, teaching, learning and assessment methods**

أ- Cognitive objectives

أ1- Learn basic symbols and terminology in electrical engineering.

أ2- - Learn the basics of DC electrical circuits (DC).

أ3- - Knowing how to use analysis methods.

أ4- - Knowledge of electrical network theories.

أ5- - Learn to solve electrical circuits using analysis techniques and network theories.

ب- Course specific skill objectives

ب1- TThe science of solving problems related to electrical circuits.

ب2- Learn how to use advanced scientific computers.

ب3- Learn how to use shortest solutions in electrical engineering.

ب4- Learn how to find solutions to engineering problems using analytical techniques.

Teaching and learning methods

RRaising students' scientific and cognitive levels through the use of automated technology, dialogic style, and active method..

- The dialogical method

- Active method (depends on the student's activity)

Evaluation methods

•Interaction within the lecture.

•Homework and reports.

•Short tests (quizzes)

•ExamsQuarterly and final.

ج- **AnoEmotional and value scorer**.

ج1-Attention: Attracting students' attention by implementing one of the application programs on the display screen in the hall.

ج2-Response: Monitoring the student's interaction with the material displayed on the screen.

ج3-Interest: Follow up on the interest of the student who interacted more with the displayed material, by increasing this interaction by requesting other programs and applications to display it.

ج4-formationDirectionMeaning that the student is sympathetic to the presentation and may have an opinion regarding the topic presented and defend it.

ج5-Formation of value-based behavior: meaning that the student reaches the top of the emotional ladder, has a stable level in the lesson, and does not become lazy or restless.

Teaching and learning methods

•Theoretical presentation methodnoRegularUsingWriting board andunlessDepends on style(How and why)

According to the subject and the curriculum of the subject.

•Theoretical presentation methodUsingdevice(show data)noDepends on style(How and why)To the topic

According to the curriculum of the subject.

Evaluation methods

•AnoDirect questions in a way(How and why)For the topic during the theoretical lecture.

•ALamSurprise exams during the theoretical lecture.

•ALamQuarterly exams for the sideTheoretical and practical.

•ALamFinal exams for the theoretical sideAnd blindness.

د- **General skillsAnd rehabilitationMovable(Other skills related to employability and personal development)**

د1- Problem Solving: The ability to analyze technical problems and find innovative and appropriate solutions to them.

د2- Critical and Analytical Thinking: The ability to think logically and critically to analyze data and problems and make effective decisions.

د3- Project Management: Skills in planning, organizing and managing engineering projects to ensure they are completed on time and within budget.

٢4- Effective Communication: Ability to clearly express technical ideas and results, both verbally and in writing, and collaborate with technical and non-technical teams.

٢5- Teamwork: Working effectively within a team to achieve common goals and solve complex challenges.

٢6- Time management: The ability to organize time and set priorities to achieve goals and tasks within a specified time frame.

10. Course structure

Week 1 Introduction to DC CircuitsRElectrical quantitiesAnd:Charge: Electric Force

Week 2 Conductors and insulatorsCurrent, potential electricity and voltage,Energy andcapacity

Week 3 Basics of Electrical Circuits,Resistance and resistance

Week 4 theConductivityAnd continue,Effect of temperature on resistance,Sources (voltage and current sources))

Week 5 Ohm's law, Kirchhoff's law

Week 6 Principles of electrical engineering, series and parallel connection

Week 7 voltage divider rule, current divider rule

Week 8 Analysis method, branch stream method

Week 9 Network analysis

Week 10 Star-Delta, Star-Delta Conversion

Week 11 Network theory, superposition theory

Week 12 Convert source

Week 13 Thevenin's Theorem

Week 14 Norton's theory

Week 15 Maximum power transfer theory.

Week 16 Preparatory week before the final exam

Weekly lab schedule:

Week 1 Lab 1:introduction

Week 2 Lab 2: Kirchhoff's Laws of Voltage and Current Experiment

Week 3 :Lab3 Ohm's Law

Week 4 Lab 4: Opening and closing the circuit

Week 5 :Lab 5 Overlay

Week 6 :Lab6 Thévenin's Theorem and Kirchhoff's Laws

Week 7 :Lab7 Norton's Theorem and Kirchhoff's Laws

11-AInfrastructure:

1- Required Textbooks

Introductory Circuit Analysis, Boylestad .1

2. Main References(Sources)

A- Recommended books and references(The fieldAScientific, reports...., websitesNoElectronic sober.

Library locations in some international universities.

B - ReferencesNoElectronic, WebsitesunlessInternet

12. Curriculum Development Plan

Use multiple teaching methods such as videos, graphics, and interactive simulations. Integrating e-learning and distance learning sessions.ABike issues and challenges that require critical thinking and analysis.. Encourage students to provide their own explanations and innovative solutions.

Course Description

The model description provides a brief description of the main features.For the rapporteur and the directorTThe scientific knowledge that the typical student is expected to achieve if he exploits the learning opportunities available in the course. It should be compared with the program description.

1. **Educational Institution: University of Maysan**
2. **Academic Department/Center: Department of Mechanical Engineering**
3. **Course Name/Code:Computer and Programming BasicsCourse code: ENG127**
4. **Available forms of attendance: in-person or online**
5. **Chapter / Year Chaptersecond/ First stage**

6. **Total number of study hours (175) hour**
7. **Date this description was preparedFebruary 2025**
8. **Course objectives:**

This course introduces students to the principles of programming language using theC++ by learning about C++ features, parts of a C++ program, C++ contents, symbols, reserved words, identifiers, library functions, constants, arithmetic operators, logical tools, priority of arithmetic and logical operations, and other expressions in C++, in addition to exercises and solved problemsAndStudents will also understand the concept of data types, variables, assignments, input and output instructions, conditional statements and loops, arrays, and functions. This course provides students with a basic background in computer programming that they can use to solve problems they encounter in their disciplines. Create programs using a programming languageC++.

9. **Course outcomes, teaching, learning and assessment methods**

أ- Cognitive objectives

أ1- Introducing the student to the principles of programming language usingC++.

أ2- Understand how input and output instructions are used in programming.

أ3- Knowing how to work with arrays.

أ4- Learn about types of matrices.

أ5- Know how to read and print matrices.

أ6- Learn about arithmetic operations on matrices.

أ7- Explain the benefits of using functions, the main function, and returning values.

أ8- Learn where to write functions in the program, call the function, operators and information, define functions, with examples.

ب- Course specific skill objectives

ب1- Students' ability to use and deal with conditional statements and repetition cycles such as:

- The phraseif.
- The phraseelse-if.
- The vehicleif.
- The phraseswitch-case.
- Triple conditional operator.

ب2- Developing students' programming skills by using repetition statements while writing programs such as:

- The phraseFor.
- The phraseDo-While.
- The phraseWhile.
- Nested repetitive expressions.

ب3- Know how to use commandsbreak and continue in program code.

ب4- Create programs using arrays in a programming languageC++.

ب5- Create programs using functions in a programming languageC++.

Teaching and learning methods

The main strategies that will be adopted in implementing this unit are::

1- Encourage students to participate in exercises. This is achieved through classrooms and interactive learning programmers.
2- Improve and expand critical thinking skills at the same time and think about the type of simple experiments that include some sampling activities that interest students..
3- to liftThe scientific and cognitive levels of students through the use of automatic technology, conversational approach and active method.
4- Problem solving.
5- Independent study

Evaluation methods

•Interaction within the lecture.

•Homework and reports.

•Short tests (quizzes)

•ExamsQuarterly and final.

ج- **AnoEmotional and value scorer**.

ج1- Attention: attracting students' attention by implementing one of the application programs on the display screen in the hall.

ج2- Response: Monitoring the student's interaction with the material displayed on the screen.

ج3- Interest: Follow up on the interest of the student who interacted more with the displayed material, by increasing this interaction by requesting other programs and applications to display it.

ج4- formationDirectionMeaning that the student is sympathetic to the presentation and may have an opinion regarding the topic presented and defend it.

ج5- Formation of value-based behavior: meaning that the student reaches the top of the emotional ladder, has a stable level in the lesson, and does not become lazy or restless.

Teaching and learning methods

•Theoretical presentation methodnoRegularUsingWriting board andunlessDepends on style(How and why)

According to the subject and the curriculum of the subject.

•Theoretical presentation methodUsingdevice(show data)noDepends on style(How and why)To the topic

According to the curriculum of the subject.

Evaluation methods

•AnoDirect questions in a way(How and why)For the topic during the theoretical lecture.

•ALamSurprise exams during the theoretical lecture.

•ALamQuarterly exams for the sideTheoretical.

•ALamFinal exams for the theoretical side.

د- **General skillsAnd rehabilitationMovable(Other skills related to employability and personal development)**

د1- Problem Solving: The ability to analyze technical problems and find innovative and appropriate solutions to them.

د2- Critical and Analytical Thinking: The ability to think logically and critically to analyze data and problems and make effective decisions.

د3- Project Management: Skills in planning, organizing and managing engineering projects to ensure they are completed on time and within budget.

د4- Effective Communication: Ability to clearly express technical ideas and results, both verbally and in writing, and collaborate with technical and non-technical teams.

د5- Teamwork: Working effectively within a team to achieve common goals and solve complex challenges.

د6- Time management: The ability to organize time and set priorities to achieve goals and tasks within a specified time frame.

10. Course structure

Week 1 Chapter 1: Introduction to the C++ Programming Environment

Week 2 Symbols, reserved words, identifiers, library functions, constants, arithmetic operators, logical tools, priority of arithmetic and logical operations, other expressions inC++, exercises and solved problems.

Week 3 Chapter Two: Input and Output Instructions

Week 4 Character routing. Coordinated Input/Output Controller

Week 5 Chapter Three: Conditional Statements and Repetition Statements

Week 6 Switch statement, ternary conditional operator

Week 7 Episode phrases: a) To state. b) To state what you do while working. c) During the statement.

Midterm Exam

Week 8 Episode phrasesd) Nested loop statements. e) Break and continue commands. f) Notes on loop statements

Week 9 Chapter Three: Review,Exercises and discussion

Week 10 Chapter Four: Matrices,introduction,Types of arrays: One-dimensional arrays. Two-dimensional arrays.Short test.

Week 11 Chapter Four: Matrices,Reading and printing matrices. Arithmetic operations on matrices. Notes on matrices.

Week 12 Chapter Four: Matrices,Solved questions.

Week 13 Chapter Five: Jobs,introduction,Benefits of using functions,Main function, return values,where function is written in the program,Report due.

Week 14 Chapter Five: Jobs,Communication function, factors, media and job advertisement

Week 15 Chapter Five: Jobs,Examples,review

Week 16 Preparatory week before the final exam

Weekly lab schedule:

Week 1 : Lab 1 Introduction to C++, Features of C++, Parts of a C++ Program, Contents of C++,

Week 2 Lab 2: Input and Output Instructions

Week 3 Lab 3: Conditional statements: a) if. b) else-if

Week 4 Lab 4: Conditional Statements: c) Compound if: d) Statement of the switching condition.

Week 5 Lab 5 Conditional Statements: e) The conditional ternary operator.

Week 5 Lab 6 Loop statements: a) for statement. b) do-while statement.

Week 7 Lab 7: Loop Statements: c) while statement. d)Nested loop statements.

Week 7 Lab 8: break & continue orders.

Week 9 Lab 9: One-Dimensional arrays programs.

Week 10 Lab 10: Two-dimensional arrays programmes.

week11 Lab 11: Review and Solved Questions.

Week 12 Lab 12: Main function, returning values,

Week 13 Lab 13: Calling function, factors & media, declaration of functions

Week 14 Lab 14: Examples

Week 15 Lab 15: Final examination

11-AInfrastructure:

1- Required Textbooks

1. Fundamentals of C++ Programming, Richard L. Halterman, School of Computing, Southern Adventist University, 2018.

2. Main References(Sources)

A- Recommended books and references(The fieldAScientific, reports...., websitesNoElectronic sober.

Library locations in some international universities.

B - ReferencesNoElectronic,SitesunlessInternet

12. Curriculum Development Plan

Use multiple teaching methods such as videos, graphics, and interactive simulations. Integrating e-learning and distance learning sessions.ABike issues and challenges that require critical thinking and analysis.. Encourage students to provide their own explanations and innovative solutions.

Course Description

The model description provides a brief description of the main features of the course. And the scientific outputs that are expected to be achievedThe model

student in case of exploitationNoLearning opportunities available for the course. Must be compared with the program description.

1. **Educational Institution: University of Maysan**
2. **Academic Department/Center: Department of Mechanical Engineering**
3. **Course Name/Code:mathematics I am sorry/Course code: ENG201**
4. **Available forms of attendance: In-person attendance**
5. **Chapter / Year Chapterfirst/Stagesecond**
6. **Total number of study hours (100) hours**
7. **Date this description was preparedFebruary 2025**
8. **Course objectives:**

This course aims to teach the student:Math methods.andLearn how to do calculations.

Develop students' understanding of useful mathematical methods in engineering calculations.. Study and solve applications using mathematics.

9. **Course outcomes, teaching, learning and assessment methods**

أ- Cognitive objectives

أ1- The student acquires knowledge of useful mathematical methods that enable him to deal with problems, applications and calculations in the various branches of science in mechanical engineering.

أ2- Understand basic mathematical theories and their applications in mechanical engineering.

أ3- Know how to use mathematical methods to solve engineering problems.

أ4- Gain the ability to apply mathematical calculations in areas such as thermodynamics, fluid mechanics, and stress analysis.

ب- Course specific skill objectives

ب1- Develop the ability to solve complex problems using appropriate mathematical methods.

ب2- Enhance analytical skills and critical thinking in applying mathematics to mechanical engineering problems.

ب3- Gain proficiency in using technological tools and software to perform mathematical calculations.

Teaching and learning methods

Scientific and research skills are developed through teaching and learning activities. Analytical and problem-solving skills

They are further developed by a set of problems prepared by the lecturers through study groups.

Small and ratedunlessRespond to all submitted works

Evaluation methods

•Interaction within the lecture.

•Homework and reports.

•Short tests (quizzes)

• Midterm and final exams.

ج- **AnoEmotional and value scorer.**

ج1-Attention: attracting students' attention by implementing one of the application programs on the display screen in the hall.

ج2-Response: Monitoring the student's interaction with the material displayed on the screen.

ج3-Interest: Follow up on the interest of the student who interacted more with the displayed material, by increasing this interaction by requesting other programs and applications to display it.

ج4-formationDirectionMeaning that the student is sympathetic to the presentation and may have an opinion regarding the topic presented and defend it.

ج5-Formation of value-based behavior: meaning that the student reaches the top of the emotional ladder, has a stable level in the lesson, and does not become lazy or restless.

Teaching and learning methods

•Theoretical presentation methodnoRegularUsingWriting board andunlessDepends on style(How and why)

According to the subject and the curriculum of the subject.

•Theoretical presentation methodUsingdevice(show data)noDepends on style(How and why)To the topic

According to the curriculum of the subject.

Evaluation methods

•AnoDirect questions in a way(How and why)For the topic during the theoretical lecture.

•ALamSurprise exams during the theoretical lecture.

•ALamQuarterly exams for the sideTheoretical.

•ALamFinal exams for the theoretical side.

د- **General skillsAnd rehabilitationMovable(Other skills related to employability and personal development)**

د1- Developing the student's ability to do homework and submit it on time.

د2- Logical and programming thinking to find programming solutions to various problems.

د3- Developing the student's ability to dialogue and discuss.

د4- Developing the student's ability to deal with modern technology, especially the Internet.

د5- Develop teamwork and cooperation skills in solving mathematical and engineering problems.

د6- Enhance the ability to communicate effectively and present mathematical solutions in a clear and convincing manner.

د7- Gain time management and project management skills while working on complex engineering problems.

10. Course structure

2025 Program DescriptionAcademicWith its decisions Date of update:

Week 1 Chapter One: Matrices,Properties of arrays,Types of arrays

Week 2 Chapter One: Matrices,Operations on matrices,Determinants,homework

Week 3 Chapter One: Matrices,Inverse matrix (inverse matrix),a testshort.

Week 4 Chapter One: Matrices,Solving simultaneous linear equations,Appointment

Week 5 Chapter Two: AccountVectors,Quantities and vectors, vector component, Rules of arithmeticVectors,a testshort.

Week 6 Chapter Two: AccountVectors,Base ofVectors, vertical vectors

Week 7 Chapter Two: AccountVectors, multiplicationPoint,ATo hitCross,to hitthreeVectorsor more

Week 8 Chapter Two: Calculus,Equations of lines in spacelevelsIn an area of 3,Midterm examseason

Week 9 Chapter 3: Vector Functions,Limits and continuity, derivatives, forms of curve equations in space, parametric representation, tangent and normal unit vectors,homework

Week 10 Chapter 3: Vector Functions,Curvature, radius of curvature, motion along a curve, velocity, acceleration and speed, normal and tangential components of acceleration,Short test.

Week 11 Chapter Four: Multiple Integrations,Double integration, areas and volumes

Week 12 Chapter Four: Multiple Integrations,Double integral in polar coordinates,the duty

Week 13 Chapter Four: Multiple Integrations,Parametric surfaces, surface area, surface integrals

Week 14 Chapter Four: Multiple Integrations,Surface integrations,Volume and triple integration evaluation

Week 15 Chapter Four: Multiple Integrations,Volume and triple integration evaluation

Week 16 Preparatory week before the final exam

11-AInfrastructure:

1- Required Textbooks

1. George B. Thomas, Maurice D. Weir, Joel Hass, Frank R. Giordano - Thomas's calculus.

2- Main References(Sources)

A- Recommended books and references(The fieldAScientific, reports...., websitesNoElectronic sober.

Library locations in some international universities.

B - ReferencesNoElectronic, WebsitesunlessInternet

12. Curriculum Development Plan

Adding the latest research and techniques in the field of engineering mathematics. Use textbooks, scholarly articles, educational videos, and interactive programs.. Include case studies and applied projects that link theory and practice in engineering.. Encourage discussions, group work, and active learning through workshops and practical activities.. Provide resources such as educational videos, e-books, and interactive software tools to enhance understanding.

Course Description

The model description provides a brief description of the main features of the course. And the scientific outputs that are expected to be achieved

The model student in case of exploitationNoLearning opportunities available for the course. Must be compared with the program description.

1. **Educational Institution: University of Maysan**
2. **Academic Department/Center: Department of Mechanical Engineering**
3. **Course Name/Code:Static fluid mechanicsCourse code: ME212**
4. **Available forms of attendance: In-person attendance**
5. **Chapter / Year Chapterfirst/Stagesecond**
6. **Total number of study hours (125) hour**
7. **Date this description was preparedFebruary 2025**
8. **Course objectives:**

The overall objectives of the Fluid Mechanics course are to provide students with a solid foundation in the fundamentals of fluid mechanics, develop problem solving skills, impart practical knowledge, and develop the intellect for further learning and use of fluid mechanics in a variety of engineering situations.

9. **Course outcomes, teaching, learning and assessment methods**

أ- Cognitive objectives

أ1- Understand the concepts and definitions of unit systems, fluids, and their physical properties.

أ2- Study of types of fluids and work on the principle of continuity in fluids.

أ3- Understand the concept of pressure and the differences between relative and absolute pressure.

أ4- Study the effect of pressure with change in altitude.

ب- Course specific skill objectives

ب1- Develop the ability to solve complex problems using appropriate mathematical methods.

ب2- Apply physical laws and principles to solve problems involving fluids.

ب3- Calculate the forces acting on submerged bodies and divide them into their horizontal and vertical components.

ب4- Use the concept of buoyancy force and apply it to calculate the stability of floating objects.

Teaching and learning methods

Scientific and research skills are developed through teaching and learning activities. Analysis and problem solving skillsIssues It is doneDevelop it further by a set of questions prepared by the lecturers fromNoStudy groupsSmall and ratedunlessRespond to allunlessFront workers,The course objectives will be delivered through a variety of teaching methods. Presentations will be givenPowerPoint with chapter titles, definitions, charts, and several useful images, plus a summary at the end of each chapter. Offers are offered byPPT details on completely new topics and unsolved examples, which will be solved on a whiteboard and displayed for students to review.

Evaluation methods

- Interaction within the lecture.
- Homework and reports.
- Short tests (quizzes)
- Midterm and final exams.

ج- **AnoEmotional and value scorer**.

ج1- Attention: Attracting students' attention by implementing one of the application programs on the display screen in the hall.

ج2- Response: Monitoring the student's interaction with the material displayed on the screen.

ج3- Interest: Follow up on the interest of the student who interacted more with the displayed material, by increasing this interaction by requesting other programs and applications to display it.

ج4- formationDirectionMeaning that the student is sympathetic to the presentation and may have an opinion regarding the topic presented and defend it.

ج5- Formation of value-based behavior: meaning that the student reaches the top of the emotional ladder, has a stable level in the lesson, and does not become lazy or restless.

Teaching and learning methods

•Theoretical presentation methodnoRegularUsingWriting board andunlessDepends on style(How and why)

According to the subject and the curriculum of the subject.

•Theoretical presentation methodUsingdevice(show data)noDepends on style(How and why)To the topic

According to the curriculum of the subject.

Evaluation methods

•AnoDirect questions in a way(How and why)For the topic during the theoretical lecture.

•ALamSurprise exams during the theoretical lecture.

•ALamQuarterly exams for the sideTheoretical.

•ALamFinal exams for the theoretical side.

د- **General skillsAnd rehabilitationMovable(Other skills related to employability and personal development)**

د1- Developing the student's ability to do homework and submit it on time.

د2- Logical and programming thinkingFor EgaDSoftware solutions for various problems.

د3- Developing the student's ability to dialogue and discuss.

د4- Developing the student's ability to deal with modern technology, especiallyunlessInternet.

د5- Develop teamwork and cooperation skills in solving mathematical and engineering problems.

د6- Enhance the ability to communicate effectively and present mathematical solutions in a clear and convincing manner.

د7- Gain time management and project management skills while working on complex engineering problems.

10. Course structure

Week 1 the introduction,Definition of unit systemsT

Week 2 Definition of fluids and their physical properties

Week 3 Types of fluids, law of continuity

Week 4 Pressure and its applications, definition of relative pressure and absolute pressure, change in pressure with altitude

Week 5 Definition of absolute pressure and relative pressure

Week 6 Pressure changes with altitude

Week 7 Midterm exam

Week 8 Forces on submerged bodies

Week 9 Calculate the force on a submerged flat surface and its vertical and horizontal components on a submerged curved body.

Week 10 Floating objects and their instability

Week 11 Definition of buoyancy force and its applications to floating objects

Week 12 Determining the stability of floating objects using metacenter

Week 13 Accelerated fluids: The effect of fluid motion at constant acceleration on pressure distribution is studied, with both linear and rotational acceleration being studied.

Week 14 Dimensional analysis: The most important unweighted dimensional numbers are defined.

Week 15 Methods for combining multiple variables into a single dimensional relationship are presented.

Week 16 Preparatory week before the final exam

11-AInfrastructure:

1- Required Textbooks

1. Fuel Mechanics. C. Hibbeler

2.Fuel Mechanics. Frank M. WHITE

3. Fundamental of fluid mechanics. munson, okllohi

2-Main References(Sources)

A- Recommended books and references(The fieldAScientific T,Reports...., sitesNoElectronic Sober.

Library locations in some international universities.

B - ReferencesNoElectronic,SitesunlessInternet

12. Curriculum Development Plan

Adding the latest research and technologies in the fieldFluids. Use textbooks, scholarly articles, educational videos, and interactive programs.. Include case studies and applied projects that link theory and practice in engineering.. Encourage discussions, group work, and active learning through workshops and practical activities.. Provide resources such as educational videos, e-books, and interactive software tools to enhance understanding.

Course Description

The model description provides a brief description of the main features of the course. And the scientific outputs that are expected to be achieved

2025 Program DescriptionAcademicWith its decisions Date of update:

The model student in case of exploitationNoLearning opportunities available for the course. Must be compared with the program description.

1. **Educational Institution: University of Maysan**
2. **Academic Department/Center: Department of Mechanical Engineering**
3. **Course Name/Code:Thermodynamics I/Course code: ME213**
4. **Available forms of attendance: in-person or online**
5. **Chapter / Year Chapterfirst/Stagesecond**
6. **Total number of study hours (100) hour**
7. **Date this description was preparedFebruary 2025**
8. **Course objectives:**

To provide students with the ability to integrate classical heat and fluid mechanics principles to build a foundation for the subsequent analysis of industrial plant equipment and processes.. Ensure that all students are able to analytically approach thermal systems in a logical and systematic manner.. Understand the basics, concepts and terminology associated with heat.. Understanding the laws of heat and appreciating their consequences. Develop some basic analytical skills using the first and second laws of heat.

9. **Course outcomes, teaching, learning and assessment methods**

أ- Cognitive objectives

أ1- Introducing the basics, concepts and definitions of the properties of heat.

أ2- Explain the independent and dependent, intensive and extensive properties.

أ3- Learn the first law of heat in conceptNFEE and SFEE.

أ4- Definition of steam, system and two-phase process using steam.

أ5- Knowing the second law of heat.

ب- Course specific skill objectives

ب1- Understand state diagrams, path functions, thermal equilibrium, and thermodynamic processes.

ب2- Identify reversible and irreversible processes.

ب3- Definition of the concept of heat.

ب4- Identify real gases and ideal gases.

ب5- Explain the differences between Boyle's, Charles', and Gay-Lussac's laws.

Teaching and learning methods

Scientific and research skills are developed through teaching and learning activities. Analytical and problem-solving skillsIt is further developed by a set of problems prepared by lecturers fromNoStudy groupsSmall and ratedunlessRespond to allunlessFront workers,The course objectives will be delivered through a variety of teaching methods. Presentations will be givenPowerPoint with chapter titles, definitions, charts, and several useful images, plus a summary at the end of each chapter. Offers are offered byPPT details on completely new topics and unsolved examples, which will be solved on a whiteboard and displayed for students to review.

Evaluation methods

•Interaction within the lecture.

•Homework and reports.

•Short tests (quizzes)

• Midterm and final exams.

ج- **AnoEmotional and value scorer**.

ج1- Attention: Attracting students' attention by implementing one of the application programs on the display screen in the hall.

ج2- Response: Monitoring the student's interaction with the material displayed on the screen.

ج3- Interest: Follow up on the interest of the student who interacted more with the displayed material, by increasing this interaction by requesting other programs and applications to display it.

ج4- formationDirectionMeaning that the student is sympathetic to the presentation and may have an opinion regarding the topic presented and defend it.

ج5- Formation of value-based behavior: meaning that the student reaches the top of the emotional ladder, has a stable level in the lesson, and does not become lazy or restless.

Teaching and learning methods

•Theoretical presentation methodnoRegularUsingWriting board andunlessDepends on style(How and why)

According to the subject and the curriculum of the subject.

•Theoretical presentation methodUsingdevice(show data)noDepends on style(How and why)To the topic

According to the curriculum of the subject.

Evaluation methods

•AnoDirect questions in a way(How and why)For the topic during the theoretical lecture.

•ALamSurprise exams during the theoretical lecture.

•ALamQuarterly exams for the sideTheoretical.

•ALamFinal exams for the theoretical side.

د- **General skillsAnd rehabilitationMovable(Other skills related to employability and personal development)**

د1- Develop student abilityAPerforming duties and delivering them on time.

د2- Logical and programming thinkingTo findSoftware solutions for various problems.

د3- Developing the student's ability to dialogue and discuss.

د4- Developing the student's ability to deal with modern technology, especiallyunlessInternet.

د5- Develop teamwork and cooperation skills in solving mathematical and engineering problems.

د6- Enhance the ability to communicate effectively and present mathematical solutions in a clear and convincing manner.

ر7- Gain time management and project management skills while working on complex engineering problems.

10. Course structure

Week 1 Chapter One: Basics of Thermodynamics,Definition of terms

Week 2 Chapter One: Basics of Thermodynamics,Heat, work, and order

Week 3 Chapter One: Basics of Thermodynamics,Reverse and reverse work

Week 4 Chapter One: Basics of Thermodynamics,Zeroth law of thermodynamics

Week 5 Chapter Two: Energy and the First Law of Thermodynamics,Non-flowing energy equation

Week 6 Chapter Two: Energy and the First Law of Thermodynamics,Energy equation in steady flow

Week 7 Chapter Three: Ideal Gas and Specific Heat,ideal gas equation,The relationship between specific heat. Boyle's, Charles' and Gay-Lussac's laws.

Week 8 Chapter Three: Ideal Gas and Specific Heat,Process using ideal gas. Closed and open systems - reversible.

Week 9 Chapter Three: Ideal Gas and Specific Heat,Ideal Gas Systems Applications

Week 10 Chapter Four: Steam and the Two-Phase System,Properties of vapor and liquid. Steam table.

Week 11 Chapter Four: Steam and the Two-Phase System,Steam operations

Week 12 Chapter Four: Steam and the Two-Phase System,Open system - irreversible process

Week 13 Chapter Five: The Second Law of Thermodynamics,Heat engine and heat pump,Efficiency and performance factor

Week 14 Chapter Five: The Second Law of Thermodynamics,Entropy. Entropy and processes.

Week 15 Chapter Five: The Second Law of Thermodynamics,Principles of entropy increase

Week 16 Preparatory week before the final exam

11-AInfrastructure:

1- Required Textbooks

Rajput, R. K., 2005. A textbook of engineering thermodynamics. Laxmi 1. Publications.

2. Borgnakke, C. and Sonntag, R.E., 2022. Fundamentals of thermodynamics. John Wiley & Sons.

2-Main References(Sources)

A- Recommended books and references(The fieldAScientific, reports...., websitesNoElectronic sober.

Library locations in some international universities.

B - ReferencesNoElectronic,SitesunlessInternet

12. Curriculum Development Plan

Adding the latest research and technologies in the fieldThermodynamics. Use textbooks, scholarly articles, educational videos, and interactive programs.. Include case studies and applied projects that link theory and practice in engineering.. Encourage discussions, group work, and active learning through workshops and practical activities.. Provide resources such as educational videos, e-books, and interactive software tools to enhance understanding.

1. **Educational Institution: University of Maysan**
2. **Academic Department/Center: Department of Mechanical Engineering**
3. **Course Name/Code:Mechanics of materialsCourse code: ME214**
4. **Available forms of attendance: In-person attendance**
5. **Chapter / Year Chapterfirst/Stagesecond**
6. **Total number of study hours (125) hour**
7. **Date this description was preparedFebruary 2025**
8. **Course objectives:**

The main objective of studying mechanics of materials is to provide the engineer with the means to analyze and design various machines and structures that bear loads.. Explain how materials react to different types of stress under a variety of conditions.. Since the engineering design of various components and structures used in the work is done using different types of materials, it is necessary to understand the basic behavior of these materials.

9. **Course outcomes, teaching, learning and assessment methods**

أ- Cognitive objectives

أ1- TIntroduce students to the concept of load-bearing, its consequences, and how different types of loadings are tolerated by different types of organs using specific materials.

ب- Course specific skill objectives

ب1- Apply understanding of the tolerance of different types of organs under different types of loadings.

Teaching and learning methods

Scientific and research skills are developed throughNoTeaching and learning activities. Analytical and problem solving skills It is further developed by a set of problems prepared by lecturers fromNoStudy groups Small and ratedunlessRespond to allunlessFront workers,The course objectives will be delivered through a variety of teaching methods. Presentations will be givenPowerPoint with chapter titles, definitions, charts, and several useful images, plus a summary at the end of each chapter. Offers are offered byPPT details on completely new topics and unsolved examples, which will be solved on a whiteboard and displayed for students to review.

Evaluation methods

- Interaction within the lecture.
- Homework and reports.

•Short tests (quizzes)

• Midterm and final exams.

ج- **AnoEmotional and value scorer**.

ج1- Attention: Attracting students' attention by implementing one of the application programs on the display screen in the hall.

ج2- Response: Monitoring the student's interaction with the material displayed on the screen.

ج3- Interest: Follow up on the interest of the student who interacted more with the displayed material, by increasing this interaction by requesting other programs and applications to display it.

ج4- formationDirectionMeaning that the student is sympathetic to the presentation and may have an opinion regarding the topic presented and defend it.

ج5- Formation of value-based behavior: meaning that the student reaches the top of the emotional ladder, has a stable level in the lesson, and does not become lazy or restless.

Teaching and learning methods

•Theoretical presentation methodnoRegularUsingWriting board andunlessDepends on style(How and why)

According to the subject and the curriculum of the subject.

•Theoretical presentation methodUsingdevice(show data)noDepends on style(How and why)To the topic

According to the curriculum of the subject.

Evaluation methods

•AnoDirect questions in a way(How and why)For the topic during the theoretical lecture.

•ALamSurprise exams during the theoretical lecture.

•ALamQuarterly exams for the sideTheoretical and practical.

•ALamFinal exams for the theoretical sideAnd practical.

د- **General skillsAnd rehabilitationMovable(Other skills related to employability and personal development)**

د1- Develop student abilityAPerforming duties and delivering them on time.

د2- Logical and programming thinkingFor EgaDSoftware solutions for various problems.

د3- Developing the student's ability to dialogue and discuss.

د4- Developing the student's ability to deal with modern technology, especiallyunlessInternet.

د5- Develop teamwork and cooperation skills in solving mathematical and engineering problems.

د6- Enhance the ability to communicate effectively and present mathematical solutions in a clear and convincing manner.

٥7- Gain time management and project management skills while working on complex engineering problems.

10. Course structure

Week 1 Chapter 1: Introduction to Simple Stress and Stress,Types of loads,Mechanical properties,stress and bending

Week 2 Chapter 1: Introduction to Stress and Simple Bending,Direct or normal stress and bending,Stress-strain curve

Week 3 Chapter 1: Introduction to Stress and Simple Bending,Poisson's ratio,shear stress,Contact stress of composite bars

Week 4 Chapter Two: Introduction to Shear Forces and Bending Moments,Download Types,Definition of types of support,Sign convention for shear forces and bending moments

Week 5 Chapter Two: Introduction to Shear Forces and Bending Moments,Shear forces, Bending moment for different cases

Week 6 Chapter Two: Introduction to Shear Force and Bending Moment Curves,The relationship between shear force (Q), bending moment (M), and load intensity (W).

Week 7 Chapter 3: Introduction to Bending Stress of Beam,Simple theory of curvature, neutral axis and sector modulus.

Week 8 Chapter 3: Introduction to Bending Stress of Beam,Compound bending and direct stress - eccentric loading

Week 9 Chapter 4: Introduction to Shear Stress Distribution,Distribution of shear stress due to bending, applications to different sections.

Week 10 Chapter Five: Introduction to Slope and Curvature of Thresholds

Week 11 AChapter Five: Introduction to Slope and Curvature of Thresholds,Mohr's "Space Moments" Method

Week 12 Chapter Five: Introduction to Slope and Curvature of Thresholds,Continuous Thresholds - Chapron's "Three Moments" Equation,Fixed threshold (fixed at both ends).

Week 13 Student Offers

Week 14 Student Presentations

Week 15 Student Presentationsand a short test

Week 16 Preparatory week before the final exam

Weekly lab schedule:

Week 1, Lab 1: Tensile Testing

Week 2, Lab 2: Tensile Testing

Week 3, Lab 3: Compression Testing

Week 4, Lab 4: Compression Testing

Week 5, Lab 5: Shear Test

Week 6, Lab 6: Shear Test

Week 7, Lab 7: Shock Test

Week 8, Lab 8: Shock Test

Week 9, Lab 9: Hardness Test

Week 10, Lab 10: Hardness Test

Week 11, Lab 11: Torsion Test

Week 12, Lab 12: Torsion Test

Week 13, Lab 13: Review

Week 14, Lab 14: Exam

Week 15, Lab 15: Final Exam

11-AInfrastructure:

1- Required Textbooks

-1 Mechanics of Materials I 3rd Edition

-2 Mechanics of Materials 6th Edition

-3 Mechanics of Materials 8th edition

2-Main References(Sources)

A- Recommended books and references(The fieldAScientific, reports...., websitesNoElectronic sober.

Library locations in some international universities.

B - ReferencesNoElectronic, WebsitesunlessInternet

12. Curriculum Development Plan

Adding the latest research and technologies in the fieldEngineering materials. Use textbooks, scholarly articles, educational videos, and interactive programs.. Include case studies and applied projects that link theory and practice in engineering.. Encourage discussions, group work, and active learning through workshops and practical activities.. Provide resources such as educational videos, e-books, and interactive software tools to enhance understanding.

Course Description

The model description provides a brief description of the main features of the course. And the scientific outputs that are expected to be achieved

The model student in case of exploitationNoLearning opportunities available for the course. Must be compared with the program description.

1. **Educational Institution: University of Maysan**
2. **Academic Department/Center: Department of Mechanical Engineering**
3. **Course Name/Code:Mechanical drawing /Course code: ME215**
4. **Available forms of attendance: In-person attendance**
5. **Chapter / Year Chapterfirst/Stagesecond**
6. **Total number of study hours (150) hour**
7. **Date this description was preparedFebruary 2025**
8. **Course objectives:**

This course aims to:Education to understand and appreciate technical drawing in an industrial society; Discover and develop their talents in the fields of technical drawing and related techniques; Develop technical problem solving skills in technical drawing related to materials and processes;Develop sound and acceptable technical drawing skills as required by the industry; Raise awareness of career opportunities in technical drawing and related fields; Possess practical knowledge and understanding of computer graphics applications; Develop skills to use drawing in the design process.

9. **Course outcomes, teaching, learning and assessment methods**

أ- Cognitive objectives

أ1- Gain information about the important tools of engineering drawing. This will provide the student with basic knowledge of technical drawing professions and means of communication with others.

أ2- Understand the main idea of using dimensions in engineering drawing.

أ3- Explain the principle of projection and dissection.

أ4- Understanding intersection and development of body surface and stabilizers.

ب- Course specific skill objectives

ب1- Learn how to draw shapes, angles, lines, etc., which is essential for an engineer.

ب2- Familiarization with different drawing equipment, technical standards and procedures for creating geometric shapes. This will provide students with the ability to draw three-dimensional objects on paper and create pictorial drawings.

Teaching and learning methods

Encourage students to participate in the exercises. This is achieved through interactive tutorials and programmers..

Improve and expand critical thinking skills at the same time by considering the type of simple physical examples (prototypes) that include some activities that interest students.. Raising the scientific and cognitive levels of students by employing technology, the dialogical method, and the active method. Scientific and research skills are developed throughNoTeaching and learning activities. Analytical and problem solving skillsIt is further developed by a set of problems prepared by lecturers fromNoStudy groupsSmall and ratedunlessRespond to allunlessFront workers,The course objectives will be delivered through a variety of teaching methods. Presentations will be givenPowerPoint with chapter titles, definitions, charts, and several useful images, plus a summary at the end of each chapter. Offers are offered byPPT details on completely new topics and unsolved examples, which will be solved on a whiteboard and displayed for students to review.

Evaluation methods

•Interaction within the lecture.

•Homework and reports.

•Short tests (quizzes)

• Midterm and final exams.

ج- **AnoEmotional and value scorer.**

ج1-Attention: Attracting students' attention by implementing one of the application programs on the display screen in the hall.

ج2-Response: Monitoring the student's interaction with the material displayed on the screen.

ج3-Interest: Follow up on the interest of the student who interacted more with the displayed material, by increasing this interaction by requesting other programs and applications to display it.

ج4-formationDirectionMeaning that the student is sympathetic to the presentation and may have an opinion regarding the topic presented and defend it.

ج5-Formation of value-based behavior: meaning that the student reaches the top of the emotional ladder, has a stable level in the lesson, and does not become lazy or restless.

Teaching and learning methods

•Theoretical presentation methodnoRegularUsingWriting board andunlessDepends on style(How and why)

According to the subject and the curriculum of the subject.

•Theoretical presentation methodUsingdevice(show data)noDepends on style(How and why)To the topic

According to the curriculum of the subject.

Evaluation methods

•AnoDirect questions in a way(How and why)For the topic during the theoretical lecture.

•ALamSurprise exams during the theoretical lecture.

•ALamQuarterly exams for the sideTheoretical.

•ALamFinal exams for the theoretical side.

د- **General skillsAnd rehabilitationMovable(Other skills related to employability and personal development)**

د1- Develop student abilityAPerforming duties and delivering them on time.

د2- Logical and programming thinkingFor EgaDSoftware solutions for various problems.

د3- Developing the student's ability to dialogue and discuss.

د4- Developing the student's ability to deal with modern technology, especiallyunlessInternet.

د5- Develop teamwork and cooperation skills in solving mathematical and engineering problems.

د6- Enhance the ability to communicate effectively and present mathematical solutions in a clear and convincing manner.

د7- Gain time management and project management skills while working on complex engineering problems.

10. Course structure

2025 Program DescriptionAcademicWith its decisions Date of update:

Week 1 Introduction - General review of line types, projection, sections, dimensions using hand and softwareAutoCAD

Week 2 Bolts and Nuts Fixing Types of bolts and nuts, assembly drawing of fastening system.

Week 3 Key and groove connections, types of keys and their uses, assembly drawing of key system.

Week 4 Welding joints, welding symbols, assembly drawing of welding system with welding symbols explained.

Week 5 Nails and screw connections, types of nails and screw connections, a testshort

Week 6 Assembly drawing of the screw system

Week 7 Midterm exam

Week 8 Springs, types of springs and their uses

Week 9 Assembly drawing of a compressed spring.

Week 10 Assembly drawing. a testshort.

Week 11 Types of gears, straight gear definitions, straight gear drawing, and straight gear box system assembly drawing.

Week 12 Principle of inequalities

Week 13 principle of convenience

Week 14 Assembly drawing

Week 15 Disassembly drawing

Week 16 Preparatory week before the final exam

11-AInfrastructure:

1- Required Textbooks

- Systematic engineering drawing book, author Jaafar Al-Khafaf

2-Main References(Sources)

A- Recommended books and references(The fieldAScientific T,Reports...., sitesNoElectronic Sober.

Library locations in some international universities.

B - ReferencesNoElectronic,SitesunlessInternet

12. Curriculum Development Plan

Adding the latest research and technologies in the fieldEngineering materials. Use textbooks, scholarly articles, educational videos, and interactive programs.. Include case studies and applied projects that link theory and practice in engineering.. Encourage discussions, group work, and active learning through workshops and practical activities.. Provide resources such as educational videos, e-books, and interactive software tools to enhance understanding.

Course Description

2025 Program DescriptionAcademicWith its decisions Date of update:

The model description provides a brief description of the main features of the course. And the scientific outputs that are expected to be achieved

The model student in case of exploitationNoLearning opportunities available for the course. Must be compared with the program description.

1. **Educational Institution: University of Maysan**
2. **Academic Department/Center: Department of Mechanical Engineering**
3. **Course Name/Code:Computer programming /Course code: ME216**
4. **Available forms of attendance: In-person attendance**
5. **Chapter / Year Chapterfirst/Stagesecond**
6. **Total number of study hours (150) hour**
7. **Date this description was preparedFebruary 2025**
8. **Course objectives:**

The course provides a smooth introduction to the computing environment.MATLAB, aimed at beginners and those looking for a refresher. It is designed to give students a basic understanding of MATLAB, including common tools. The course consists of interactive lectures and typical MATLAB problems that are given as assignments and discussed in class. No previous programming experience or knowledge of MATLAB is assumed. Concepts covered include basic usage, graphical representations, and tips for designing and implementing MATLAB code.

9. **Course outcomes, teaching, learning and assessment methods**

- **Cognitive objectives**

أ1- Explaining the basic concepts of programming in the languageMATLAB through a set of code.

أ2- Gain skills in dealing with programming problems and issues.

أ3- Gain basic skills as an introduction to building large, applied programs.

أ4- A basic understanding of how programmed systems work in various industrial applications.

ب- Course specific skill objectives

ب1- Ability to program and design application programs.

ب2- The ability to think about how to address a particular problem or issue.

ب3- Writing scientific reports.

ب4- Ability to gain experience in dealing with programmed systems.

Teaching and learning methods

Encourage students to participate in the exercises. This is achieved through interactive tutorials and programmers..

Improve and expand critical thinking skills at the same time by considering the type of simple physical examples (prototypes) that include some activities that interest students.. Raising the scientific and cognitive levels of students by employing technology, the dialogical method, and the active method. Scientific and research skills are developed throughNoTeaching and learning activities. Analytical and problem solving skillsIt is further developed by a set of problems prepared by lecturers fromNoStudy groupsSmall and ratedunlessRespond to allunlessFront workers,The course objectives will be delivered through a variety of teaching

methods. Presentations will be givenPowerPoint with chapter titles, definitions, charts, and several useful images, plus a summary at the end of each chapter. Offers are offered byPPT details on completely new topics and unsolved examples, which will be solved on a whiteboard and displayed for students to review.

Evaluation methods

•Interaction within the lecture.

•Homework and reports.

•Short tests (quizzes)

• Midterm and final exams.

ج- **AnoEmotional and value scorer**.

ج1-Attention: Attracting students' attention by implementing one of the application programs on the display screen in the hall.

ج2-Response: Monitoring the student's interaction with the material displayed on the screen.

ج3-Interest: Follow up on the interest of the student who interacted more with the displayed material, by increasing this interaction by requesting other programs and applications to display it.

ج4-formationDirectionMeaning that the student is sympathetic to the presentation and may have an opinion regarding the topic presented and defend it.

ج5- Formation of value-based behavior: meaning that the student reaches the top of the emotional ladder, has a stable level in the lesson, and does not become lazy or restless.

ج6- To enhance awareness of the importance of energy and its various forms such as potential energy, kinetic energy, internal energy, and flow or anatomical energy.

Teaching and learning methods

•Theoretical presentation methodnoRegularUsingWriting board andunlessDepends on style(How and why)

According to the subject and the curriculum of the subject.

•Theoretical presentation methodUsingdevice(show data)noDepends on style(How and why)To the topic

According to the curriculum of the subject.

Evaluation methods

•AnoDirect questions in a way(How and why)For the topic during the theoretical lecture.

•ALamSurprise exams during the theoretical lecture.

•ALamQuarterly exams for the sideTheoretical and practical.

•ALamFinal exams for the theoretical sideAnd practical.

د- **General skillsAnd rehabilitationMovable(Other skills related to employability and personal development)**

د1- Develop student abilityAPerforming duties and delivering them on time.

د2- Logical and programming thinkingNoJad provides software solutions for various issues.

د3- Developing the student's ability to dialogue and discuss.

د4- Developing the student's ability to deal with modern technology, especiallyunlessInternet.

د5- Develop teamwork and cooperation skills in solving mathematical and engineering problems.

د6- Enhance the ability to communicate effectively and present mathematical solutions in a clear and convincing manner.

د7- Gain time management and project management skills while working on complex engineering problems.

10. Course structure

Week 1 Introduction to LanguageMATLAB and writing codes using it

Week 2 Types of constants, variables, and arithmetic expressions.

Week 3 Write a simple array and how to use the address to find any element in it.

Week 4 Write a regular array and how to use indexing to find any element in it.

Week 5 Standard matrices: identity matrix, zero matrix, and identity matrix.

Week 6 Operations on matrices

Week 7 Arithmetic operations between a matrix and an odd number or between matrices

Week 8 Search a part of an array and use code to find the sum of the array elements or the largest or smallest element in it.

Week 9 Perform and evaluate relational and logical operations.

Week 10 Standard and logical operators, if-else-end, switch-case-else

Week 11 Rotational and recurring data

Week 12 A format for storing variables and loading them from a file.

Week 13 Handling files

Week 14 Orient the chart and draw parts of the charts.

Week 15 A great function that takes one or more variables as inputs and one variable as output.

Week 16 Preparatory week before the final exam

Weekly lab schedule

Week 1-2: Lab 1 - Steps to create, compile, and execute a program using the languageMATLAB.

Week 3-4: Lab 2 - Implementing Programs for Arrays (One and Two Dimensions).

Week 5-6: Lab 3 - Implementing Conditional Programs(if statement).

Week 7-8: Lab 4 - Implementing Conditional Statement Programs(switch statement).

Week 9-10: Lab 5 - Implementing Programs for Recursive Expressions(for statement).

Week 11-12: Lab 6 - Implementing programs for drawing graphs and their parts.

Week 13-14: Lab 7 - Solving Differential Equations.

Week 15: Lab 8 - Implementing programs for drawing 2D and 3D graphs.

11-AInfrastructure:

2-Main References(Sources)

A- Recommended books and references(The fieldAScientific TAnd,Reports...., sitesNoElectronic Sober.

Library locations in some international universities.

B- ReferencesElectronic,SitesunlessInternet

12. Curriculum Development Plan

Adding the latest research and technologies in the fieldProgrammingUse textbooks, scholarly articles, educational videos, and interactive programs.. Include case studies and applied projects that link theory and practice in engineering.. Encourage discussions, group work, and active learning through workshops and practical

activities.. Provide resources such as educational videos, e-books, and interactive software tools to enhance understanding.

Course Description

The model description provides a brief description of the main features of the course. And the scientific outputs that are expected to be achieved

The model student in case of exploitationNoLearning opportunities available for the course. Must be compared with the program description.

1. **Educational Institution: University of Maysan**
2. **Academic Department/Center: Department of Mechanical Engineering**
3. **Course Name/Code:mathematicsIV/Course code: ENG202**
4. **Available forms of attendance: In-person attendance**
5. **Chapter / Year Chapter AFor the second/Stagesecond**
6. **Total number of study hours (100) hours**
7. **Date this description was preparedFebruary 2025**
8. **Course objectives:**

The course aims to:Education about mathematical methodsT. Knowledge of accounting procedures. Develop students' understanding of useful mathematical methods in engineering calculations.. Study and solve applications using mathematics.

9. **Course outcomes, teaching, learning and assessment methods**

- **Cognitive objectives**

أ1- Gain a broad knowledge of mathematical methods useful in mechanical engineering.

أ2- Develop the ability to apply mathematics to solve engineering problems and applications.

أ3- To enhance the student's understanding of the practical applications of mathematics in the field of mechanical engineering.

أ4- Enabling the student to use mathematics effectively in engineering calculations and analyses.

ب- Course specific skill objectives

ب1- Gain the ability to apply mathematical methods to solve mechanical engineering problems.

ب2- Develop skills in using mathematics in engineering analysis and design.

ب3- Learn how to use effective mathematical techniques to handle a variety of calculations and applications in mechanical engineering.

ب4- Enhance the ability to think critically and analytically in using mathematics to solve engineering problems.

Teaching and learning methods

Encourage students to participate in the exercises. This is achieved through interactive tutorials and programmers..

Improve and expand critical thinking skills at the same time by considering the type of simple physical examples (prototypes) that include some activities that interest students.. Raising the scientific and cognitive levels of students by employing

technology, the dialogical method, and the active method. Scientific and research skills are developed throughNoTeaching and learning activities. Analytical and problem solving skillsIt is further developed by a set of problems prepared by lecturers fromNoStudy groups Small and ratedunlessRespond to allunlessFront workers,The course objectives will be delivered through a variety of teaching methods. Presentations will be givenPowerPoint with chapter titles, definitions, charts, and several useful images, plus a summary at the end of each chapter. Offers are offered byPPT details on completely new topics and unsolved examples, which will be solved on a whiteboard and displayed for students to review.

Evaluation methods

•Interaction within the lecture.

•Homework and reports.

•Short tests (quizzes)

•theExamsQuarterly and final.

ج- **AnoEmotional and value scorer**.

ج1-Attention: Attracting students' attention by implementing one of the application programs on the display screen in the hall.

ج2-Response: Monitoring the student's interaction with the material displayed on the screen.

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ج4- formationDirectionMeaning that the student is sympathetic to the presentation and may have an opinion regarding the topic presented and defend it.

ج5- Formation of value-based behavior: meaning that the student reaches the top of the emotional ladder, has a stable level in the lesson, and does not become lazy or restless.

Teaching and learning methods

•Theoretical presentation methodnoRegularUsingWriting board andunlessDepends on style(How and why)

According to the subject and the curriculum of the subject.

•Theoretical presentation methodUsingdevice(show data)noDepends on style(How and why)To the topic

According to the curriculum of the subject.

Evaluation methods

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•ALamFinal exams for the theoretical side.

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10. Course structure

Week 1 Chapter One: Differential Equations,Basic Definitions,Solutions of equations of the first order: separable of variables,Solutions of first order equations: minute

Week 2 Chapter One: Differential Equations,Solutions of equations of the first order: linear,Solutions of equations of the first order: Bernoulli

Week 3 Chapter One: Differential Equations,Solutions of equations of the second order and higher orders: Linear equations withظFixed roof, linear equations must be consistent with theظFixed roof,Short test

Week 4 Chapter One: Differential Equations,Non-exponential equations, solving non-exponential equations, changing parameters,Assignment

Week 5 Chapter One: Differential Equations,Higher order linear equations withظFixed roof, operatorD, Cauchy's equation. a test

Week 6 Chapter Two: Laplace Transform,Definition of Laplace Transform,Basic properties of Laplace transform

Week 7 Chapter Two: Laplace Transform,Laplace transform of elementary functions

Week 8 Chapter Two: Laplace Transform,Laplace transform ofe^(at) f(t), Laplace transform of t^nf(t)

• Midterm exam

Week 9 Chapter Two: Laplace Transform,Inverse Laplace transform.

Week 10 Chapter Two: Laplace Transform,Solving differential equations using Laplace transform,Short test

Week 11 Chapter 3: Infinite Sequences and Series,Introduction, Convergence and Divergence Test

Week 12 Chapter 3: Infinite Sequences and Series,Geometric series and partial sums,Assignment

Week 13 Chapter 3: Infinite Sequences and Series,Integration, comparison, ratio and root test

Week 14 Chapter 3: Infinite Sequences and Series,Alternating series, exponential series

Week 15 Chapter 3: Infinite Sequences and Series,Taylor and Maclaurin series, applications of exponential series

Week 16 Preparatory week before the final exam

11-AInfrastructure:

1- Required Textbooks

- George B. Thomas, Maurice D. Weir, Joel Hass, Frank R. Giordano - Thomas's calculus

2-Main References(Sources)

A- Recommended books and references(The fieldAScientific T,Reports...., sitesNoElectronic Sober.

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12. Curriculum Development Plan

Adding the latest research and technologies in the fieldEngineering mathematicsUse textbooks, scholarly articles, educational videos, and interactive programs.. Include case studies and applied projects that link theory and practice in engineering.. Encourage discussions, group work, and active learning through workshops and practical activities.. Provide resources such as educational videos, e-books, and interactive software tools to enhance understanding.

Course Description

The model description provides a brief description of the main features of the course. And the scientific outputs that are expected to be achieved

The model student in case of exploitationNoLearning opportunities available for the course. Must be compared with the program description.

1. **Educational Institution: University of Maysan**
2. **Academic Department/Center: Department of Mechanical Engineering**
3. **Course Name/Code:Fluid mechanicsCourse code: ME222**
4. **Available forms of attendance: In-person attendance**
5. **Chapter / Year Chapter AFor the second/Stagesecond**
6. **Total number of study hours (125) hour**
7. **Date this description was preparedFebruary 2025**
8. **Course objectives:**

The overall objectives of the Fluid Dynamics course are to provide students with a solid foundation in the fundamentals of fluid dynamics, problem solving skills,

practical knowledge, and a mindset for continuous learning and application of fluid mechanics in various engineering situations.

9. **Course outcomes, teaching, learning and assessment methods**

أ- Cognitive objectives

أ1- Understanding the basics of fluid flow and kinematics: Basic definitions of parameters and terms such as acceleration field, rotational and irrotational flow, cycle, and flow lines.

أ2- Understanding the control volume relationship for fluid analysis: Definition of control volume, basic derivatives of conservation equations (mass, momentum and energy), and applications of Euler and Bernoulli equations.

أ3- Understanding Viscous Internal Flow: Fully developed turbulent and quiescent flow, coefficient of friction and its relationship with Reynolds number, and Darcy-Weisbach relation.

أ4- Identify secondary losses in installations: Study the losses in installations such as valves, reducers, expanders, filters, elbows and determine the total losses.

أ5- Understanding the Boundary Layer: Definition of boundary layer flow, boundary layer thickness, displacement thickness, momentum thickness, calm and turbulent boundary layer, von Karman theory.

أ6- Understanding flow measurements: Principles of electromagnetic, ultrasonic, hot wire, and differential pressure flow meters.

ب- Course specific skill objectives

ب1- TApplication of fluid flow analysis methods:Apply basic definitions and equations to analyze and solve fluid flow problems.

ب2- Solving viscous internal flow problems: Use the Darcy-Weisbach relationship to calculate the coefficient of friction and determine the major and minor losses in systems.

ب3- Apply border layer:Analyze boundary layer flow and apply relevant theories to determine boundary thickness and flow behavior.

ب4- Measurement and analysis of fluid flow:Use various measuring devices to determine and process fluid flow data.

Teaching and learning methods

Encourage students to participate in the exercises. This is achieved through interactive tutorials and programmers..

Improve and expand critical thinking skills at the same time by considering the type of simple physical examples (prototypes) that include some activities that interest students.. Raising the scientific and cognitive levels of students by employing technology, the dialogical method, and the active method. Scientific and research skills are developed throughNoTeaching and learning activities. Analytical and problem solving skillsIt is further developed by a set of problems prepared by lecturers fromNoStudy groups Small and ratedunlessRespond to allunlessFront workers,The course objectives will be delivered through a variety of teaching methods. Presentations will be givenPowerPoint with chapter titles, definitions, charts, and several useful images, plus a summary at the end of each chapter. Offers

are offered byPPT details on completely new topics and unsolved examples, which will be solved on a whiteboard and displayed for students to review.

Evaluation methods

- Interaction within the lecture.
- Homework and reports.
- Short tests (quizzes)
- theExamsQuarterly and final.

ج- **AnoEmotional and value scorer**.

ج1- Attention: Attracting students' attention by implementing one of the application programs on the display screen in the hall.

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Teaching and learning methods

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•Theoretical presentation methodUsingdevice(show data)noDepends on style(How and why)To the topic

According to the curriculum of the subject.

Evaluation methods

•AnoDirect questions in a way(How and why)For the topic during the theoretical lecture.

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•ALamQuarterly exams for the sideTheoretical and practical.

•ALamFinal exams for the theoretical sideAnd practical.

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د2- Logical and programming thinkingFor meJad provides software solutions for various issues.

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٤6- Enhance the ability to communicate effectively and present mathematical solutions in a clear and convincing manner.

٤7- Gain time management and project management skills while working on complex engineering problems.

10. Course structure

Week 1 Flow and Kinematics Basics: Basic definitions of parameters and terms governing fluid flow, such as: acceleration field, rotational and irrotational flow, etc..

Week 2 Fundamentals of Flow and Kinematics: Basic definitions of parameters and terms governing fluid flow, such as: circulation, flow lines: path line, streamline, trace line. Flow visualization, etc..

Week 3 Control volume relationship for fluid analysis:Definition of control volume and basic derivatives of conservation equations (conservation of mass and momentum).

Week 4 Control volume relationship for fluid analysis: Definition of control volume and basic derivatives of energy equations (energy conservation), Euler and Bernoulli equations.

Week 5 Control volume relationship for fluid analysis: Applications of Bernoulli's equations and applications of the momentum equation for fixed and moving blades.

Week 6 Control volume relationship for fluid analysis: More applications of the momentum equation for fixed and moving blades.

Week 7 viscous internal flow: Fully developed turbulent and calm flow between parallel plates and inside tubes..

Week 8 viscous internal flow: Coefficient of friction and its relationship with Reynolds number (in quiescent flow) and with pipe roughness in addition.

Week 9 Viscous internal flow: Explain the Darcy-Weisbach relationship and its use to calculate the coefficient of friction (main losses)..

The week10 Viscous internal flow: Secondary losses in fittings such as valves, reducers, expanders, filters, elbows are considered and must be included in the determination of total losses.

Week 11 Internal Viscous Flow: Further secondary losses in fittings such as valves, reducers, expanders, filters, elbows are studied and should be included in the determination of total losses. Multiple piping systems are analyzed.

Week 12 Boundary Layer: Definition of boundary layer flow, boundary layer thickness, displacement thickness, and momentum thickness.

Week 13 Boundary layer: The calm and turbulent boundary layer above a flat plate, von Kármán theory.

Week 14 Flow measurements: Measuring devices such as: electromagnetic flowmeter, ultrasonic flowmeter, hot wire flowmeter, etc.

Week 15 Flow measurements: Principles of differential pressure flow meters. Other types of flow meters.

Week 16 Preparatory week before the final exam

Weekly lab schedule

Week 1: Properties of Liquids.

Week 2: Dead Weight Calibration.

Week 3: Blood Pressure Monitors.

Week 4: Visualizing Flow in Channels.

Week 5: Visualizing Flow in Channels.

Week 6: Static Pitot Tube.

Week 7: Static Pitot Tube.

Week 8: Presentation of Bernoulli's Theorem.

Week 9: Presentation of Bernoulli's Theorem.

Week 10: Reynolds Number.

Week 11: Reynolds Number.

Week 12: Flow Meter Measurement.

Week 13: Flow Meter Measurement.

Week 14: Erosion.

Week 15: Erosion.

11-AInfrastructure:

1- Required Textbooks

- Fluid Mechanics. C. Hibbeler
- Fluid Mechanics. Frank M. WHITE
- Fundamental of fluid mechanics. Munson, okllohi

2-Main References(Sources)

A- Recommended books and references(The fieldATScientific,Reports...., sitesNoElectronic Sober.

Library locations in some international universities.

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12. Curriculum Development Plan

Adding the latest research and technologies in the fieldFluid mechanicsUse textbooks, scholarly articles, educational videos, and interactive programs.. Include case studies and applied projects that link theory and practice in engineering.. Encourage discussions, group work, and active learning through workshops and practical activities.. Provide resources such as educational videos, e-books, and interactive software tools to enhance understanding.

Course Description

2025 Program DescriptionAcademicWith its decisions Date of update:

The model description provides a brief description of the main features of the course. And the scientific outputs that are expected to be achieved

The model student in case of exploitationNoLearning opportunities available for the course. Must be compared with the program description.

1. **The institutionEducational:University of Maysan**
2. **Academic Department/Center: Department of Mechanical Engineering**
3. **Course Name/Code:ThermodynamicsII/Course code: ME223**
4. **Available forms of attendance: In-person attendance**
5. **Chapter / Year Chapter AFor the second/Stagesecond**
6. **Total number of study hours (125) hour**
7. **Date this description was preparedFebruary 2025**
8. **Course objectives:**

To provide students with the ability to integrate the principles of classical thermodynamics and fluid mechanics in order to provide a basis for subsequent analysis of industrial plant equipment and processes.. Ensure that all students are able to approach the thermodynamic analysis of systems in a logical and systematic manner.AndUnderstand the laws of thermodynamics and appreciate their consequences. Develop some basic skills in analysis using the second law of thermodynamics. In-depth knowledge of thermal engineering systems.

9. **Course outcomes, teaching, learning and assessment methods**

أ- Cognitive objectives

أ1- Introducing the basics of the heat engine.

أ2- Review the basic concepts of thermodynamics.

أ3- Use thermodynamic relationships, graphs, and tables to calculate different entities of state.

أ4- Explain how the most common thermodynamic machines work, such as Otto, Diesel, Clausius-Rankeine and Brayton.

أ5- Explain the principles of the steam cycle process (Clausius-Ranken), the gas turbine process (Brayton) and the internal combustion engine (Otto and Diesel) and solve problems related to these processes and the principles applied to increase efficiency.

أ6- Determine the coefficient of performance of refrigerators and heat pumps and compare it with refrigerators and heat pumps operating on the reverse Carnot cycle.

أ7- Explain the behavior of gas mixtures in a thermodynamic system.

أ8- They apply the basic principles of thermodynamics to various thermal processes.

أ9- Develop skills in solving and analyzing problems related to thermal processes.

أ10- Effectively use thermodynamic graphs and tables to interpret data and analyze systems.

ب- Course specific skill objectives

ب1- Plot the operations on each of the graphs.PV and T-S.

ب2- Analyze air conditioning processes by applying the laws of thermodynamics.

ب3- Apply the first and second laws to determine the transfer of heat, work, and changes in properties during processes occurring in closed and open systems.

Teaching and learning methods

Encourage students to participate in the exercises. This is achieved through interactive tutorials and programmers..

Improve and expand critical thinking skills at the same time by considering the type of simple physical examples (prototypes) that include some activities that interest students.. Raising the scientific and cognitive levels of students by employing technology, the dialogical method, and the active method. Scientific and research skills are developed throughNoTeaching and learning activities. Analytical and problem solving skillsIt is further developed by a set of problems prepared by lecturers fromNoStudy groupsSmall and ratedunlessRespond to allunlessFront workers,The course objectives will be delivered through a variety of teaching methods. Presentations will be givenPowerPoint with chapter titles, definitions, charts, and several useful images, plus a summary at the end of each chapter. Offers are offered byPPT details on completely new topics and unsolved examples, which will be solved on a whiteboard and displayed for students to review.

Evaluation methods

•Interaction within the lecture.

•Homework and reports.

•Short tests (quizzes)

•theExamsQuarterly and final.

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Teaching and learning methods

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According to the subject and the curriculum of the subject.

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د5- Develop teamwork and cooperation skills in solving mathematical and engineering problems.

د6- Enhance the ability to communicate effectively and present mathematical solutions in a clear and convincing manner.

57- Gain time management and project management skills while working on complex engineering problems.

10. Course structure

Week 1 Chapter One: Heat Engine Cycle-Heat Engine Cycle - Carnot Cycle and Ideal Gas.

Week 2 Chapter One: Heat Engine Cycle-Heat Engine Cycle - Brayton Cycle.

Week 3 Chapter Two: Separated Air Cycle-Separated air cycle - Otto cycle.

Week 4 Chapter Two: Separated Air Cycle-Air Separated Cycle - Diesel Cycle.

Week 5 Chapter Two: Separated Air Cycle-Separated air cycle - dual combustion cycle.

Week 6 Chapter 3: Reverse Carnot Cycle-Reverse Carnot Cycle Air Cooler.

Week 7 Chapter 3: Reverse Carnot Cycle-Cooling cycles.

Week 8 Chapter Four: Steam Power Plant-Simple Rankine Cycle.

Week 9 Chapter Four: Steam Power Plant-Rankine cycle with superheating.

Week 10 Chapter Five: Positive Displacement Compressors-Reciprocating machines.

Week 11 Chapter Five: Positive Displacement Compressors-Minimum work conditions, isothermal efficiency and volumetric efficiency.

Week 12 Chapter Five: Positive Displacement Compressors-multistage compression.

Week 13 Chapter 6: Gas Mixture-Dalton's law, Gibbs-Dalton's law and volumetric analysis of gas mixtures.

Week 14 Chapter 6: Gas Mixture-Molecular weight, gas constant and specific heat of gas mixture.

Week 15 Chapter 6: Gas Mixture Adiabatic mixing of gas mixture.

Week 16 Preparatory week before the final exam

Weekly lab schedule

Week 1 Lab 1: Identifying different measuring tools.

Week 2 Lab 2: Identifying different measuring tools.

Week 3 Lab 3: Determining the Specific Heat Capacity of Liquids.

Week 4 Lab 4: Determining the Specific Heat Capacity of Liquids.

Week 5 Lab 5: Determining the specific heat capacity of solids.

Week 6 Lab 6: Determining the specific heat capacity of solids.

Week 7 Lab 7: Experimental Investigation of Boyle's Law and Atmospheric Pressure.

Week 8 Lab 8: Experimental Investigation of Boyle's Law and Atmospheric Pressure.

Week 9 Lab 9: Coefficient of Linear Expansion of Metals.

Week 10 Lab 10: Coefficient of Linear Expansion of Metals.

Week 11 Lab 11: Thermocouple Voltageyourbut rather.

Week 12 Lab 12: Thermocouple Voltageyourbut rather.

Week 13 Lab 13: Review.

Week 14 Lab 14: Test.

Week 15 Lab 15: Final Exam.

11-AInfrastructure:

1- Required Textbooks

- Rajput, R. K., 2005. A textbook of engineering thermodynamics. Laxmi Publications.
- Borgnakke, C. and Sonntag, R.E., 2022. Fundamentals of thermodynamics. John Wiley & Sons.

2-Main References(Sources)

A- Recommended books and references(The fieldAScientific T,Reports...., sitesNoElectronic Sober.

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12. Curriculum Development Plan

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Course Description

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1. **Educational Institution: University of Maysan**
2. **Academic Department/Center: Department of Mechanical Engineering**
3. **Course Name/Code:Material resistance /Course code: ME224**
4. **Available forms of attendance: In-person attendance**
5. **Chapter / Year Chapter AFor the second/Stagesecond**
6. **Total number of study hours (100) hour**
7. **Date this description was preparedFebruary 2025**
8. **Course objectives:**

Since the engineering design of various components and structures used in the application is done using different types of materials, it is essential to understand the basic behavior of these materials.

9. **Course outcomes, teaching, learning and assessment methods**

أ- Cognitive objectives

أ1- Understand the theoretical basics of simple torsion and the second polar moment of the region.

أ2- Knowledge of complex stress systems and how to deal with complex stresses, bending and torsion.

أ3- Understanding of stress and strain analysis and ability to analyze stresses on inclined planes.

أ4- Learn how to analyze stresses and strains in materials subjected to pure shear and compound stresses.

أ5- Gain knowledge in strain energy analysis under different types of loading.

ب- Course specific skill objectives

ب1- ATo be able to apply simple torsion theory in the analysis of composite columns.

ب2- Use the graphical solution and Mohr's stress circle to analyze stresses.

ب3- Analysis of complex systems such as thin and thick cylinders under the influence of internal pressure.

ب4- Applying Castigliano's theorem to calculate displacement.

ب5- Ability to use the relationship between Mohr's stress-strain circuits in stress and strain analysis.

Teaching and learning methods

Encourage students to participate in the exercises. This is achieved through interactive tutorials and programmers..

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د7- Gain time management and project management skills while working on complex engineering problems.

10. Course structure

2025 Program DescriptionAcademicWith its decisions Date of update:

Week 1 Chapter One: Introduction to Torsion,Simple torsion theory,The second polar momentum of the region,Polar cutoff factor for composite columns

Week 2 Chapter One: Introduction to Torsion,Composite stress systems,Compound bending and torsion,compound curvature

Week 3 Chapter One: Introduction to Torsion,Twist and direct drive,Bolted columns

Torsion in non-circular shapes

Week 4 Chapter Two: Introduction to Stress and Strain Analysis,Stress analysis,Stresses on inclined planes,direct stress,a testshort

Week 5 Chapter Two: Introduction to Stress and Strain Analysis,pure shear material,Material subjected to mutual perpendicular direct stresses,Material subjected to direct and compound shear stresses,a testshort

Week 6 Chapter Two: Introduction to Stress and Strain Analysis,The inclination of the main plane in terms of the associated principal stress,Graphical Solution - Mohr's Stress Circle,Emotion analysis,Linear strain for biaxial and triaxial stress

Week 7 Chapter 3: Introduction to Stress and Strain Analysis,Average temperature,Laminar and turbulent flow in pipes

Week 8 Chapter 3: Introduction to Stress and Strain Analysis,Principal stresses in terms of stresses, bulk modulusK and volumetric strain, relationship between elastic constants E, G, K and v,Stresses on an inclined plane (direct and shear)

Week 9 Chapter 3: Introduction to Stress and Strain Analysis,Main Emotion - Mohr's Emotion Circle

The relationship between Mohr's stress and strain circuits,a testshort

Week 10 Chapter Four: Introduction to Strain Energy,Strain energy for different types of loading,sudden applied loads,a testshort

Week 11 Chapter Four: Introduction to Strain Energy,Castigliano's first displacement theorem

Week 12 Chapter Four: Introduction to the Thin Cylinder,Thin cylinders under internal pressure

Circumferential stress,longitudinal stress,Dimensional changes

Week 13 Chapter Five: Introduction to the Thin Cylinder,Thin spherical shell under internal pressure

change in internal volume,Vessels subject to fluid pressure,cylindrical vessel with spherical ends,Wire wrapped thin cylinders

Week 14 Chapter 5: Introduction to Thick Cylinders,Development of Lamy's theory,Thick cylinder - internal pressure only,longitudinal stress,Cylinder dimensions change,Composite cylinders

Week 15 Chapter Five: Introduction to Columns,Euler's Theorem,Euler's "Expiration Date",Rankine or Rankine-Gordon formula

Week 16 Preparatory week before the final exam

11-AInfrastructure:

1- Required Textbooks

- Strength of Materials 3rd Edition.
- Mechanics of Materials, Ninth Edition, 2014, Published by Pearson Prentice Hall R. C. Hibbeler

2-Main References(Sources)

A- Recommended books and references(The fieldAScientific, reports...., websitesNoElectronic Sober.

Library locations in some international universities.

B - ReferencesNoElectronic,SitesunlessInternet

12. Curriculum Development Plan

Adding the latest research and technologies in the fieldEngineering materialsUse textbooks, scholarly articles, educational videos, and interactive programs.. Include case studies and applied projects that link theory and practice in engineering.. Encourage discussions, group work, and active learning through workshops and practical activities.. Provide resources such as educational videos, e-books, and interactive software tools to enhance understanding.

Course Description

The model description provides a brief description of the main features of the course. And the scientific outputs that are expected to be achieved

2025 Program DescriptionAcademicWith its decisions Date of update:

The model student in case of exploitationNoLearning opportunities available for the course. Must be compared with the program description.

1. **Educational Institution: University of Maysan**
2. **Academic Department/Center: Department of Mechanical Engineering**
3. **Course Name/Code:Engineering Metals /Course code: ME225**
4. **Available forms of attendance: in-person or online**
5. **Chapter / Year Chapterfirst/Stagesecond**
6. **Total number of study hours (125) Hours**
7. **This description was prepared July 2024.**
8. **Course objectives:**

The course aims to:To provide students with a basic and comprehensive understanding of the properties and classification of metals and metallic materials used in engineering. The course also aims to expand students' knowledge of metal transformation and alloy processing processes, and to understand the effect of various factors such as chemical composition and temperature on the properties of metals, enabling them to apply this knowledge in designing and selecting appropriate materials for various engineering applications effectively and safely.

9. **Course outcomes, teaching, learning and assessment methods**

أ- Cognitive objectives

أ1- Learn the scientific fundamentals of the structural components of minerals, including crystal structure and atomic bonding.

أ2- The ability to classify metals into different types (ferrous, non-ferrous, alloys) and understand the properties of each.

أ3- To understand the concepts of phase transformations in metallic materials, including the interaction with different temperatures and their effect on metallic structures.

أ4- Enable students to perform microscopic examination, understand and analyze microscopic images to extract information about the microscopic structure of minerals.

أ5- Understand the different manufacturing processes and their effect on the final properties of metal materials, such as thermoforming and mechanical forming.

أ6- Study of how metallic materials behave under the influence of various forces and stresses, including concepts such as stress and strain, elasticity and ductility.

ب- Course specific skill objectives

ب1- Train students on how to conduct practical experiments and analyze results related to the properties of metals, such as tensile, compression and hardness tests.

ب2- Teach students how to use optical and electron microscopes to examine the internal structure of minerals and interpret microscopic images.

ب3- Enable students to perform thermal changes of metals, and understand how processes such as annealing and rapid cooling can be applied to improve the properties of metals.

ب4- Develop students' skills in metal fabrication processes including forming, smelting, casting, and applying thermal and mechanical treatments.

ب5- Teach students how to evaluate and determine corrosion rates in metals, and apply appropriate preventive measures to increase corrosion resistance.

Teaching and learning methods

Scientific and research skills are developed through teaching and learning activities. Analytical and problem-solving skills It is further developed by a set of problems prepared by lecturers fromNoStudy groups Small and ratedunlessRespond to allunlessFront workers,The course objectives will be delivered through a variety of teaching methods. Presentations will be givenPowerPoint with chapter titles, definitions, charts, and several useful images, plus a summary at the end of each chapter. Offers are offered byPPT details on completely new topics and unsolved examples, which will be solved on a whiteboard and displayed for students to review.

Evaluation methods

•Interaction within the lecture.

•Homework and reports.

•Short tests (quizzes)

• Midterm and final exams.

ج- **AnoEmotional and value scorer**.

ج1- Attention: Attracting students' attention by implementing one of the application programs on the display screen in the hall.

ج2- Response: Monitoring the student's interaction with the material displayed on the screen.

ج3- Interest: Follow up on the interest of the student who interacted more with the displayed material, by increasing this interaction by requesting other programs and applications to display it.

ج4- formationDirectionMeaning that the student is sympathetic to the presentation and may have an opinion regarding the topic presented and defend it.

ج5- Formation of value-based behavior: meaning that the student reaches the top of the emotional ladder, has a stable level in the lesson, and does not become lazy or restless.

Teaching and learning methods

•Theoretical presentation methodnoRegularUsingWriting board andunlessDepends on style(How and why)

According to the subject and the curriculum of the subject.

•Theoretical presentation methodUsingdevice(show data)noDepends on style(How and why)To the topic

According to the curriculum of the subject.

Evaluation methods

•AnoDirect questions in a way(How and why)For the topic during the theoretical lecture.

•ALamSurprise exams during the theoretical lecture.

•ALamQuarterly exams for the sideTheoretical.

•ALamFinal exams for the theoretical side.

د- **General skillsAnd rehabilitationMovable(Other skills related to employability and personal development)**

د1- Develop student abilityAPerforming duties and delivering them on time.

د2- Logical and programming thinkingnoFinding software solutions to various problems.

د3- Developing the student's ability to dialogue and discuss.

د4- Developing the student's ability to deal with modern technology, especiallyunlessInternet.

د5- Develop teamwork and cooperation skills in solving mathematical and engineering problems.

د6- Enhance the ability to communicate effectively and present mathematical solutions in a clear and convincing manner.

د7- Gain time management and project management skills while working on complex engineering problems.

10. Course structure

Week 1 Introduction to the course and its importance- Atomic structure - Bonding in materials

Week 2 Crystal structure - Macro and micro structure - Crystal structure of cast and die cast alloys

Week 3 Mechanical properties of metals - tensile and hardness testing

Week 4 Mechanism of elastic and plastic deformation - Slip theory of deformation

Week 5 Twinning Deformity - Cold Work and Its Effects

Week 6 -Annealing of cold working metals - hot working processes

Week 7 - Alloy formation - Casting reinforcement - Solid solutions

Week 8 -Intermetallic and alloyed compounds - Eutectic and Eutectic transformations

Week 9 -Basic types of thermodynamic diagrams:Solid solution type - Synthetic type

Week 10 - Types of equilibrium thermograms: - Pretectonic type - Pearlitic type

Week 11 -Iron-carbon diagram - pearlite and cementite particles

Week 12 -Stages of thermal transformations in metal alloys - Annealing process and tandem hardening method

Week 13 Electrical and magnetic properties of metals - effect of temperature and chemical composition

Week 14 Effect of fibers and composites on the properties of metals

Week 15 - Engineering applications of metal materials

Week 16 Preparatory week before the final exam

Weekly lab schedule

Week 1: Lab 1: Introduction to the Lab and Equipment.

Week 2: Lab 2: Preparing specimens for microscopic investigation (cutting, mounting, grinding, and polishing).

Week 3: Lab 3: Microscopic Tests of Different Steel Structures.

Week 4: Lab 4: Preparing specimens for tensile and flexural tests.

Week 5: Lab 5: Microscopic Investigation of Alloy Structures.

Week 6: Lab 6: Tensile Testing and Mechanical Properties.

Week 7: Lab 7: Study the effect of heat treatment on the structure of materials.

Week 8: Lab 8: Testing thetorsionFor materials.

Week 9: Lab 9: Vickers and Rockwell hardness measurements of different materials.

Week 10: Lab 10: Brinell Hardness and Relationships Between Hardness Measurements.

Week 11: Lab 11: Longitudinal Thermal Expansion of Different Materials.

Week 12: Lab 12: Microscopic Investigation of Cast Iron.

Week 13: Lab 13: Review.

Week 14: Lab 14: Preparing for the Exam.

Week 15: Lab 15: Final Exam.

11-AInfrastructure:

1- Required Textbooks

- Physical Metallurgy Principles, by Reza Abbaschian, Robert E. Reed-Hill, and Richard E. Smallman

2-Main References(Sources)

A- Recommended books and references(The fieldAScientific, reports...., websitesNoElectronic sober.

Library locations in some international universities.

B- ReferencesElectronic,SitesunlessInternet

12. Curriculum Development Plan

Adding the latest research and technologies in the fieldEngineering MetalsUse textbooks, scholarly articles, educational videos, and interactive programs.. Include case studies and applied projects that link theory and practice in engineering.. Encourage discussions, group work, and active learning through workshops and practical activities.. Provide resources such as educational videos, e-books, and interactive software tools to enhance understanding.

Course Description

The model description provides a brief description of the main features of the course. The scientific outcomes that the typical student is expected to achieve if he usesNoLearning opportunities available for the course. Must be compared with the program description.

1. **Educational Institution: University of Maysan**
2. **Academic Department/Center: Department of Mechanical Engineering**
3. **Course Name/Code:ComputerII/Course code: UOM201**
4. **Available forms of attendance: In-person attendance**
5. **Chapter / Year Chaptersecond/ Stage AFor a second**
6. **Total number of study hours (80) hour**
7. **Date this description was preparedFebruary 2025**
8. **Course objectives:**

the goalfromArtificial intelligence improves performance in many areas, by providing effective, fast and accurate solutions to various problems.. Artificial intelligence seeks to improve efficiency in various processes, by analyzing data and patterns and improving predictions, design and control of processes.. Artificial intelligence aims to save time and effort in many fields, by reducing the time spent on operations, improving accuracy, and reducing errors..

Artificial intelligence seeks to improve the services provided to users and customers, by improving the user experience and improving medical, educational and other services.. Artificial intelligence aims to improve security and safety in many areas, by analyzing data, recognizing unusual patterns, improving early warning systems, and controlling automated systems.

9. **Course outcomes, teaching, learning and assessment methods**

أ- Cognitive objectives

أ1- The student is able to understand the basic principles of the computer and how to use it in daily tasks.

أ2- The student can identify the hardware and software parts of a computer and understand their function.

أ3- The student learns how to create documents using a word processor and design presentations in a professional manner.

أ4- The student acquires skills in searching for information on the Internet and analyzing it to benefit from it in academic projects.

أ5- The student gains an initial knowledge of the concepts of artificial intelligence and its importance in modern technology.

ب- Course specific skill objectives

ب1- The student develops skills in performing basic tasks using the computer, such as writing, editing texts, and managing files.

ب2- The student acquires the skill of identifying and examining the components of the devices (Hardware and software for the computer and use them correctly.

ب3- The student masters the skill of creating text documents and designing professional presentations using word processing and presentation programs such as:PowerPoint.

ب4-The student develops the skill of searching for information on the Internet effectively, while evaluating the quality and reliability of sources.

ب5- The student begins to acquire the skill of understanding how artificial intelligence works and using its basic applications in various tasks.

ب6- Develop the ability to benefit from modern tools such as smart boards and presentation programs to improve educational efficiency.

Teaching and learning methods

Scientific and research skills are developed through teaching and learning activities. Analytical and problem-solving skills

They are further developed by a set of problems prepared by the lecturers through study groups.

Small and all submitted works are evaluated and responded to.

Evaluation methods

•Interaction within the lecture.

•Homework and reports.

•Short tests (quizzes)

• Midterm and final exams.

ج- **AnoEmotional and value scorer**.

ج6- Attention: attracting students' attention by implementing one of the application programs on the display screen in the hall.

ج7- Response: Monitoring the student's interaction with the material displayed on the screen.

ج8- Interest: Follow up on the interest of the student who interacted more with the displayed material, by increasing this interaction by requesting other programs and applications to display it.

ج9- formationDirectionMeaning that the student is sympathetic to the presentation and may have an opinion regarding the topic presented and defend it.

ج10- Formation of value-based behavior: meaning that the student reaches the top of the emotional ladder, has a stable level in the lesson, and does not become lazy or restless.

Teaching and learning methods

•Theoretical presentation methodnoRegularUsingWriting board andunlessDepends on style(How and why)

According to the subject and the curriculum of the subject.

•Theoretical presentation methodUsingdevice(show data)noDepends on style(How and why)To the topic

According to the curriculum of the subject.

Evaluation methods

•AnoDirect questions in a way(How and why)For the topic during the theoretical lecture.

•ALamSurprise exams during the theoretical lecture.

•ALamQuarterly exams for the sideTheoretical.

•ALamFinal exams for the theoretical side.

د- **General skillsAnd rehabilitationMovable(Other skills related to employability and personal development)**

د1- Developing the student's ability to do homework and submit it on time.

د2- Logical and programming thinkingtoSoftware solutions for various problems.

د3- Developing the student's ability to dialogue and discuss.

د4- Developing the student's ability to deal with modern technology, especiallyInternet.

10. Course structure

First week: Introduction to Computer: Hardware and software concepts and components. Concept of computing, data and information.

ICT Applications(IECT). Connect external devices and input/output units to the CPU.

Second week: Computer components: Computer parts. physical parts(Hardware).

Input/Output Units, Computer Memory, Basic Components of CPU.

Computer and PC Ports (Features and Types).

The third week: Operating Systems and GUI: Basics of Common Operating Systems. User Interface. Mouse usage techniques. Using icons and menus. The concept of folders and directories, opening and closing windows, and creating shortcuts.

Week 4: Word processing: Word Processing Basics. Open and close documents. Create and format texts. Working with tables, spell checking, setting up language and dictionaries, and printing documents.

Week 5: Spreadsheets(Spreadsheet): Spreadsheet Basics. Manipulating cells, using formulas and functions. Edit and print spreadsheets.

Week 6: Presentation software: Presentation Software Basics. Create and deliver presentations.

Prepare and print slides.

Week 7: Introduction to the Internet and Web Browsers: Computer Networking Basics(LAN, WAN).

Internet concept and its applications. Internet connection, World Wide Web(WWW). Browsing software, search engines, and URL understandingURLs, domain names, and IP addresses.

Week 8: Communications and Email: Email Basics. Create an email account.

Send and receive emails. Access sent messages. Use email and collaborate on documents.

Week 9: Computer troubleshooting: Identify and solve common hardware and software problems faced by computer users.. Essential techniques and tools for diagnosing and solving problems.

Week 10: Security and Networking: Network Definition. Types of networks. Basic components of the network.

Network Security Basics. Understanding Network Threats. Network troubleshooting.

Week eleven: Introduction to Artificial Intelligence: Definition of artificial intelligence. History of Artificial Intelligence.

Artificial Intelligence Techniques and Methodologies. Challenges and ethical considerations.

Week 12: Artificial intelligence in our daily lives: The use of artificial intelligence in smartphones and virtual assistants such asSiri and Google Assistant. AI applications:

In education, healthcare, finance, transportation, marketing, and advertising.

thirteenth week: Artificial Intelligence and Society: The impact of artificial intelligence on social and international relations and the future of humanity.

Ethical Challenges in Artificial Intelligence: Ethics related to artificial intelligence, privacy, surveillance, and the impact of artificial intelligence on the labor market

Week Fourteen: The future of artificial intelligence: Future trends, recent research, and emerging technologies.

Week 15: General review of the material Comprehensive summary and review,Open discussion and final analysis

Week 16 Preparatory week before the final exam

11-AInfrastructure:

1- Required Textbooks.

2- Main References(Sources)

A- Recommended books and references(Fields Scientific,Reports...., sitesNoElectronic Sober.

Library locations in some international universities.

B- ReferencesElectronic,SitesunlessInternet

Course Description

The model description provides a brief description of the main features of the course. The scientific outcomes that the typical student is expected to achieve if he usesNoLearning opportunities available for the course. Must be compared with the program description.

11. Educational Institution: University of Maysan

2025 Program DescriptionAcademicWith its decisions Date of update:

12. Academic Department/Center: Department of Mechanical Engineering

13. Course Name/Code:English language techniquesCourse code: UOM202

14. Available forms of attendance: In-person attendance

15. Chapter / Year Chaptersecond/ Stage AFor a second

16. Total number of study hours (50) hour

17. Date this description was preparedFebruary 2025

18. **Course objectives:**

The goal ofThis courseIt is to improve the technical skills of English language for students in the field ofmechanical engineeringThe primary focus will be on developing proficiency in reading, writing, speaking and listening to technical content related tomechanical engineeringThis module will also provide an understanding of the specific language used in the field and how to communicate effectively with other professionals.

19. **Course outcomes, teaching, learning and assessment methods**

ث- Cognitive objectives

أ1- Understand and use technical vocabulary related tomechanical engineering.

أ2- Read and understand technical texts related to:mechanical engineering.

أ3- Writing technical reports and documents in a clear and concise manner.

أ4- Speak confidently about technical topics related tomechanical engineering.

أ5- Listen and understand technical discussions related tomechanical engineering.

ث- Course specific skill objectives

ب1- reading and understandingTechnical English.

ب2- Research and documentation skills

ب3- Using primary and secondary sources in research.

Teaching and learning methods

Scientific and research skills are developed through teaching and learning activities. Analytical and problem-solving skills

They are further developed by a set of problems prepared by the lecturers through study groups.

Small and all submitted works are evaluated and responded to.

Evaluation methods

•Interaction within the lecture.

•Homework and reports.

•Short tests (quizzes)

• Midterm and final exams.

خ- **AnoEmotional and value scorer**.

ج1- Attention: attracting students' attention by implementing one of the application programs on the display screen in the hall.

ج2- Response: Monitoring the student's interaction with the material displayed on the screen.

ج3- Interest: Follow up on the interest of the student who interacted more with the displayed material, by increasing this interaction by requesting other programs and applications to display it.

ج4- formationDirectionMeaning that the student is sympathetic to the presentation and may have an opinion regarding the topic presented and defend it.

ج5- Formation of value-based behavior: meaning that the student reaches the top of the emotional ladder, has a stable level in the lesson, and does not become lazy or restless.

Teaching and learning methods

•Theoretical presentation methodnoRegularUsingWriting board andunlessDepends on style(How and why)

According to the subject and the curriculum of the subject.

•Theoretical presentation methodUsingdevice(show data)noDepends on style(How and why)To the topic

According to the curriculum of the subject.

Evaluation methods

•AnoDirect questions in a way(How and why)For the topic during the theoretical lecture.

•ALamSurprise exams during the theoretical lecture.

•ALamQuarterly exams for the sideTheoretical.

•ALamFinal exams for the theoretical side.

ئ- **General skillsAnd rehabilitationMovable(Other skills related to employability and personal development)**

د5- Developing the student's ability to do homework and submit it on time.

د6- Logical and programming thinkingFor EgaDSoftware solutions for various problems.

د7- Developing the student's ability to dialogue and discuss.

د8- Developing the student's ability to deal with modern technology, especiallyInternet.

20. Course structure

First week: Introduction to Mechanical Engineering

Definition of mechanical engineering and its applications.

Components of mechanical systems (basic parts, machines, and equipment).

Technical Vocabulary: Tools and Machines.

The importance of analyzing mechanical systems.

Second week: Technical sentence analysis

Linguistic analysis of technical sentences used in engineering reports.

Writing and describing mechanical components (such as axles, gears, and motors).

Practical examples of writing geometric sentences.

The third week: Global mechanical industry Read: International Mechanical Engineering Companies.

Language study: use"a", "an", and "the" in engineering contexts.

Vocabulary: mechanical tools and industrial equipment.

Applications on the correct pronunciation of mechanical terms.

Week 4: Fluid mechanics(Upstream)

Basic Concepts in Fluid Mechanics.

Talk about jobs related to fluid mechanics.

Spelling: Common vocabulary in this field.

Formulating questionswh" to illustrate operations.

Week 5: Mechanics of materials

Read: Properties of materials used in the mechanical industry.

Calculations: Stress and strain analysis.

Language Study: Present Continuous in Describing Processes.

Vocabulary: materials and alloys.

Week 6: Safety in Mechanical Engineering

Read: Safety signs in workshops and factories.

Calculations: Weights and Dimensions.

Language Study: Auxiliary Verbs(can and must) in safety instructions.

Vocabulary: safety procedures.

Week 7: Midterm exam

Week 8: Power Systems

Read: Introduction to Mechanical Power Systems.

Writing: Describe the mechanisms of energy transfer..

Vocabulary: Internal combustion engines and turbines.

Calculations: Energy efficiency analysis.

Week 9: Mechanical production systems

Read: Manufacturing and Production Technologies.

Language Study: Forms of Adjectives in Describing Tools.

Vocabulary: Understanding Manufacturing Instructions.

Speaking: Offering tips to improve production.

Week 10: Marine Operation

Calculations: measuring and controlling variables (such as pressure and temperature).

Read: Marine Operations (eg Marine Pumps).

Language Study: Countable and Uncountable Nouns.

Vocabulary: Electricity and circuits in marine machinery.

Week eleven: Environmental Engineering

Writing: Writing reports on environmental incidents.

Language Study: Simple Past(was/were).

Vocabulary: Environmental Hazard Prevention and Treatment.

Read: Preventing environmental damage in industry.

Week 12: Writing technical reports

Writing technical reports for laboratories:

Fluid Mechanics Lab.

Materials resistance laboratory.

Thermal Systems Laboratory.

Refrigeration and air conditioning laboratory.

thirteenth week: Graphical analysis

Reading graphs (such as bars and lines).

Applications to mechanical data analysis.

Week Fourteen: Natural gas systems

Read: Natural Gas Production and Distribution.

Vocabulary: Gas valves and control equipment.

Calculations: Analysis of natural gas data.

Week 15Mechanical refining systems

Read: Fractional distillation in refineries.

Writing: Explaining mechanical processes.

Calculations: Temperature and pressure in refineries.

Week 16 Preparatory week before the final exam

12-AInfrastructure:

3- Required Textbooks.

4- Main References(Sources)

A- Recommended books and references(The fieldAScientific T,Reports...., sitesNoElectronic Sober.

Library locations in some international universities.

B - ReferencesNoElectronic,SitesunlessInternet

Course Description

The model description provides a brief description of the main features of the course. The scientific outcomes that the typical student is expected to achieve if he usesNoLearning opportunities available for the course. Must be compared with the program description.

2025 Program DescriptionAcademicWith its decisions Date of update:

21. **Educational Institution: University of Maysan**
22. **Academic Department/Center: Department of Mechanical Engineering**
23. **Course Name/Code:Crimes of the Baath regimeCourse code: MNS120**
24. **Available forms of attendance: In-person attendance**
25. **Chapter / Year Chaptersecond/ Stage AFor a second**
26. **Total number of study hours (50) Hour**
27. **Date this description was preparedFebruary 2025**
28. **Course objectives:**

This course aims to provide a comprehensive understanding of the crimes of the Baath Party regime in Iraq by analyzing the Iraqi High Criminal Court Law of 2005, and clarifying the types of crimes and human rights violations committed by the regime. The focus will be on the psychological and social dimensions of these crimes and their effects on society and the individual, in addition to reviewing environmental, military and political violations.

29. **Course outcomes, teaching, learning and assessment methods**

ج- **Cognitive objectives**

أ6- Understanding the historical and political context of the Baath Party regime in Iraq

أ7- Learn about the history and development of the Baath Party.

أ8- Analysis of the political conditions that led to the rise of the party.

أ9- Knowing the types of crimes and classifying them

أ10- Definition of crime in language and terminology.

أ11- Classification of crimes into criminal, political, economic, etc.

أ12- Understanding the concept of international crimes

أ13- Understand the different types of international crimes (genocide, war crimes, crimes against humanity).

أ14- Analysis of real-life examples of these crimes.

أ15- Learn about the laws and decisions related to the crimes of the Baath regime

أ16- Study of the texts of the Iraqi Supreme Criminal Court Law of 2005.

أ17- Review of court decisions.

ج- Course specific skill objectives

ب4- Read and understand the Iraqi High Criminal Court Law.

ب5- Analysis of legal texts and their application to real-life cases.

ب6- Research and documentation skills

ب7- Accurately document crimes and violations.

ب8- Using primary and secondary sources in research.

Teaching and learning methods

Scientific and research skills are developed through teaching and learning activities. Analytical and problem-solving skills

They are further developed by a set of problems prepared by the lecturers through study groups.

Small and all submitted works are evaluated and responded to.

Evaluation methods

•Interaction within the lecture.

•Homework and reports.

•Short tests (quizzes)

• Midterm and final exams.

د- **AnoEmotional and value scorer**.

ج6- Attention: attracting students' attention by implementing one of the application programs on the display screen in the hall.

ج7- Response: Monitoring the student's interaction with the material displayed on the screen.

ج8- Interest: Follow up on the interest of the student who interacted more with the displayed material, by increasing this interaction by requesting other programs and applications to display it.

ج9- formationDirectionMeaning that the student is sympathetic to the presentation and may have an opinion regarding the topic presented and defend it.

ج10- Formation of value-based behavior: meaning that the student reaches the top of the emotional ladder, has a stable level in the lesson, and does not become lazy or restless.

Teaching and learning methods

•Theoretical presentation methodnoRegular using the writing board andunlessDepends on style(How and why)

2025 Program DescriptionAcademicWith its decisions Date of update:

According to the subject and the curriculum of the subject.

•Theoretical presentation method using the (show data) device andnoDepends on style(How and why)To the topic

According to the curriculum of the subject.

Evaluation methods

•AnoDirect questions in a way(How and why)For the topic during the theoretical lecture.

•ALamSurprise exams during the theoretical lecture.

•ALamQuarterly exams for the sideTheoretical.

•ALamFinal exams for the theoretical side.

ر- **General skillsAnd rehabilitationMovable(Other skills related to employability and personal development)**

د9- Developing the student's ability to do homework and submit it on time.

د10- Logical and programming thinkingThe IgaDSoftware solutions for various problems.

د11- Developing the student's ability to dialogue and discuss.

د12- Developing the student's ability to deal with modern technology, especiallyInternet.

30. Course structure

2025 Program DescriptionAcademicWith its decisions Date of update:

First week: Introduction to the topic,An Overview of the Baath Party System in Iraq,Historical and political context of the regime Crimes of the Baath regime according to the Iraqi Supreme Criminal Court Law of 2005

Introduction to the Iraqi High Criminal Court Law Legal texts related to Baath Party crimes

The concept of crimes and their types Definition of crime in language and terminology

Crimes Sections (Criminal, Political, Economic, etc.)

Second week:

Crimes of the Baath regime according to the documentation of the Iraqi Supreme Criminal Court Law of 2005

Documenting crimes and evidence,Notable cases handled by the court,Types of international crimes

Definition of international crimes,Examples of international crimes (genocide, war crimes, crimes against humanity)

Decisions issued by the Supreme Criminal Court,Most important decisions and rulings,Its impact on justice and society

The third week: Psychological and social crimes and their effects,Analysis of the psychological impact of crimes on individuals and society,The most prominent violations of the Baathist regime in Iraq

Week 4: Psychological crimes,Types of psychological crimes,Case study

Week 5: Mechanisms of psychological crimes,How to carry out psychological crimes,Tactics used

Psychological effects of crimes,Short and long term effects,Social crimes,Types of social crimes and their impact

Week 6: Militarization of society,The impact of militarization of society on daily life,The Baath regime's position on religion

Regime policies towards religion and religious practices,Violations of Iraqi laws,Various violations of national laws

Week 7: Pictures of human rights violations and crimes of power,Examples of human rights violations

Some decisions of the political and military violations of the Baath regime,Review of notable decisions

Week 8:IBaath regime prisons and detention centers,A look at detention centers

Environmental crimes of the Baath regime,Analysis of environmental crimes and their impact

Week 9: War pollution, radioactivity and mine explosions in Basra Case Study

War pollution, radiation and mine explosions (Halabja city),Another case study

Week 10: Destruction of cities and villages (scorched earth policy),Policy analysis and its implications

Week eleven: draining the marshes,Study of the effects of draining marshes on the environment and society

Week 12: Destruction of palm groves, trees and crops,Impact of agricultural policies of the regime

Mass grave crimes,Introduction to Mass Grave Crimes

thirteenth week: Events of the genocidal graves committed by the Baathist regime in Iraq,Case study

Chronological classification of genocide graves in Iraq for the period 1963-2003,Classification and analysis

Week Fourteen: Genocide graves of the victims of the 1991 Shaaban uprising,Case study and analysis

Week 15: General review of the material Comprehensive summary and review,Open discussion and final analysis

Week 16 Preparatory week before the final exam

13-AInfrastructure:

5- Required Textbooks.

6- Main References(Sources)

2025 Program DescriptionAcademicWith its decisions Date of update:

A- Recommended books and references(FieldsScientific,Reports...., sitesNoElectronic Sober.

Library locations in some international universities.

B- ReferencesElectronic,SitesunlessInternet