

**Ministry of Higher Education and Scientific Research
Scientific Supervision and Scientific Evaluation Apparatus
Directorate of Quality Assurance and Academic Accreditation
Accreditation Department**



Academic Program and Course Description Guide

2024

Introduction:

The educational program is a well-planned set of courses that include procedures and experiences arranged in the form of an academic syllabus. Its main goal is to improve and build graduates' skills so they are ready for the job market. The program is reviewed and evaluated every year through internal or external audit procedures and programs like the External Examiner Program.

The academic program description is a short summary of the main features of the program and its courses. It shows what skills students are working to develop based on the program's goals. This description is very important because it is the main part of getting the program accredited, and it is written by the teaching staff together under the supervision of scientific committees in the scientific departments.

This guide, in its second version, includes a description of the academic program after updating the subjects and paragraphs of the previous guide in light of the updates and developments of the educational system in Iraq, which included the description of the academic program in its traditional form (annual, quarterly), as well as the adoption of the academic program description circulated according to the letter of the Department of Studies T 3/2906 on 3/5/2023 regarding the programs that adopt the Bologna Process as the basis for their work.

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

Concepts and terminology:

Academic Program Description: The academic program description provides a brief summary of its vision, mission and objectives, including an accurate description of the targeted learning outcomes according to specific learning strategies.

Course Description: Provides a brief summary of the most important characteristics of the course and the learning outcomes expected of the students to achieve, proving whether they have made the most of the available learning opportunities. It is derived from the program description.

Program Vision: An ambitious picture for the future of the academic program to be sophisticated, inspiring, stimulating, realistic and applicable.

Program Mission: Briefly outlines the objectives and activities necessary to achieve them and defines the program's development paths and directions.

Program Objectives: They are statements that describe what the academic program intends to achieve within a specific period of time and are measurable and observable.

Curriculum Structure: All courses / subjects included in the academic program according to the approved learning system (quarterly, annual, Bologna Process) whether it is a requirement (ministry, university, college and scientific department) with the number of credit hours.

Learning Outcomes: A compatible set of knowledge, skills and values acquired by students after the successful completion of the academic program and must determine the learning outcomes of each course in a way that achieves the objectives of the program.

Teaching and learning strategies: They are the strategies used by the faculty members to develop students' teaching and learning, and they are plans that are followed to reach the learning goals. They describe all classroom and extra-curricular activities to achieve the learning outcomes of the program.

Academic Program Description
2023–2024

University AL–Furat AL–Awsat Technical University

Faculty/Institute: Al–Mussaib Technical Institute

Scientific Department: Mechanical Techniques Department

Academic or Professional Program Name: Diploma

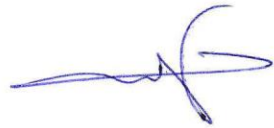
Final Certificate Name: Diploma in mechanical techniques

Academic System: Annual

Description Preparation Date: 2023–2024

File Completion Date: 28/2/2024

Signature:




Head of Department Name:

Dr. Zaid H. Rashid

Date: 28/2/2024

Signature:



Scientific Associate Name:

Dr. Mohammed H. Sabry

Date: 28/2/2024

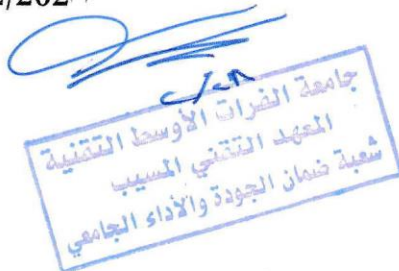
The file is checked by:

Department of Quality Assurance and University Performance

Director of the Quality Assurance and University Performance Department:

Date: 28/2/2024

Signature:



جامعة الفرات الأوسط التقنية
المعهد التقني المسيب
شعبة ضمان الجودة والأداء الجامعي



Approval of the Dean

1. Program Vision

Creating a comprehensive, creative technical education system that is based on market needs, focuses on local needs, bears responsibility for covering the needs of local employers, and serves the changing needs of the market.

2. Program Mission

Providing high-quality technical education makes the return benefiting from the education process more efficient and distinct, expanding its base quantitatively and qualitatively, laying the foundations for sustainable human development and professional ethics, and responding quickly to changing needs by keeping pace with scientific and technical developments, external openness, adopting education for the market, and ensuring confirmation of the quality of the targeted return from the education process. .

3. Program Objectives

1. Use of all mechanical operating machines,
2. Use of measuring and testing devices,
3. Completing various welding and plumbing works and conducting laboratory tests.

4. Program Accreditation

Does the program have program accreditation? And from which agency?
Non

5. Other external influences

Is there a sponsor for the program?
Non

6. Program Structure

Program Structure	Number of Courses	Credit hours	Percentage	Reviews*
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Institution Requirements	20	130		Annual system
College Requirements	20	130		Annual system
Department Requirements	20	130		Annual system
Summer Training	20	130		Fulfillment only
Other				

* This can include notes whether the course is basic or optional.

7. Program Description				
Year/Level	Course Code	Course Name	Credit Hours	
			theoretical	practical
First		Manufacturing Processes(1)	2	2
First		Material Properties	2	-
First		Workshops(1)	-	8
First		Mechanics	2	3
First		Mathematics	2	-
First		Computer application(1)	1	2
First		Engineering drawing	-	3
First		Electrical technology	1	2
First		Democracy and Human rights	1	-
First		English Language	1	-
Second		Machine Parts	3	-
Second		Manufacturing Processes(2)	2	2
Second		Metallurgy	2	2
Second		Workshops(2)	-	8
Second		Project	-	4
Second		Industrial drawing	-	3
Second		Management & occupational safety	2	-
Second		Computer application(2)	1	2
Second		Crimes of the defunct Baath Party	1	-
Second		English Language	1	-

8. Expected learning outcomes of the program

Knowledge

1. The student must be familiar with selecting suitable metals for products and types of heat treatments
2. To be familiar with industrial and engineering drawings of various mechanical installations
3. To be familiar with the various metal manufacturing processes for various products
4. To be familiar with all mechanical and metallurgical testing methods
5. To be able to organize the technological process of production processes

- The student obtains the knowledge and skills necessary to work in the field of materials engineering.
- His ability to work independently in this field.
- Its ability to contribute to the development of the metal industry.

Skills

1. Skill in using all mechanical operating machines
2. Skill in using all measuring and testing devices
3. Skill in performing plumbing and welding work and conducting laboratory tests

- Skill in working on all devices and machines
- The skill of planning and preparing technological paths for machines
- Skill in planning and implementing emergency maintenance work

Ethics

1. Presentation of the design of a product and thinking about developing an integrated program for its production
2. Encouraging the development of thought in memorization and speculation and motivating it towards critical thinking
3. Developing Internet research skills to expand the cognitive horizon
4. Using brainstorming to come up with creative ideas for some gifted students

- Emphasizing the importance of critical thinking and motivating students to analyze information rather than simply memorize it.
- Help them use the Internet as a reliable source of knowledge.
- Encouraging gifted students to use their creative skills to solve problems.

9. Teaching and Learning Strategies

- 1- Scientific lecture (use of data display, blackboard, display of illustrative pictures).
- 2- Discussion among students.
- 3- Preparing reports related to the lecture.

10. Evaluation methods

(Lecture, workshop, laboratory, methodological training, summer training).

11. Faculty

Faculty Members

Academic Rank	Specialization		Special Requirements/Skills (if applicable)		Number of the teaching staff	
	General	Special			Staff	Lecturer
Lecturer	Mechanical engineering	Applied mechanical engineering			2	

Lecturer	Material engineering	Polymers			1	
Assistant Lecturer	Material engineering	Production engineering			1	
Assistant Lecturer	Mechanical engineering	Applied mechanical engineering			1	
Assistant Lecturer	Material engineering	Polymers			1	
Assistant Lecturer	Physics Science	Applied Physics			1	
Assistant Lecturer	Management and economy	Industrial management			1	

Professional Development

Mentoring new faculty members

1. Having local and international courses in general and private specialization to increase on-site skills and develop appropriate solutions.
2. Having research applied to various internal and external sites, which helps him obtain a database of all mechanical parts.

Professional development of faculty members

1. Supporting self-efforts, such as reading and reading, by faculty members and academic leaders.
2. Including engaging and joining scientific meetings directly,
3. Using modern technological means such as training courses, workshops, panel discussions, conferences, and professional degree programs.

12. Acceptance Criterion

Central admission for preparatory school students, direct admission and differentiation for professional studies students.

13. The most important sources of information about the program

Internet websites, public libraries, professional organizations and associations, companies and institutions.

14. Program Development Plan

1. Providing academic support capabilities in organizing field visits.
2. Providing an appropriate classroom environment that enables the teacher to diversify teaching strategies.
3. Providing information technology in the campus library.
4. Hosting experts from outside the institute, or from the work environment for which they are preparing, to benefit from their expertise in developing the course according to the actual need of the labor market.

Program Skills Outline

				Required program Learning outcomes											
Year/Level	Course Code	Course Name	Basic or optional	Knowledge				Skills				Ethics			
				A1	A2	A3	A4	B1	B2	B3	B4	C1	C2	C3	C4
First		Manufacturing Processes(1)	Basic	√	√			√	√	√		√			
		Material Properties	Basic	√	√			√	√	√		√			
		Workshops(1)	Basic	√	√			√	√	√		√			
		Mechanics	Basic	√	√			√	√	√		√			
		Mathematics	Basic	√	√			√	√	√		√			
		Computer application(1)	Basic	√	√			√	√	√		√			
		Engineering drawing	Basic	√	√			√	√	√		√			
		Electrical technology	Optional	√	√			√	√	√		√			
		Democracy and Human rights	Basic	√	√			√	√	√		√			
	English Language	Basic	√	√			√	√	√		√				

Second		Machine Parts	Basic	√	√			√	√	√		√			
		Manufacturing Processes(2)	Basic	√	√			√	√	√		√			
		Metallurgy	Basic	√	√			√	√	√		√			
		Workshops(2)	Basic	√	√			√	√	√		√			
		Project	Basic	√	√			√	√	√		√			
		Industrial drawing	Basic	√	√			√	√	√		√			
		Management & occupational safety	Basic	√	√			√	√	√		√			
		Computer application(2)	Basic	√	√			√	√	√		√			
		Crimes of the defunct Baath Party	Basic	√	√			√	√	√		√			

- Please tick the boxes corresponding to the individual program learning outcomes under evaluation.

Course Description Form

1. Course Name:					
Mathematics					
2. Course Code:					
3. Semester / Year:					
First and second semester / first year					
4. Description Preparation Date:					
19/2/2024					
5. Available Attendance Forms:					
Attend a lecture according to weekly schedule					
6. Number of Credit Hours (Total) / Number of Units (Total):					
2 hours / 4 units					
7. Course administrator's name (mention all, if more than one name)					
Name: Dr. Riyadh A. Sarhan			Email: Sarhan.Riyadh@atu.edu.iq		
8. Course Objectives					
Course Objectives		Introducing the student to the use of mathematics in other scientific topics and increasing his ability to think logically when solving exercises, as well as increasing his ability to develop and how to link data with his information to obtain a solution to the problem.			
9. Teaching and Learning Strategies					
Strategy		<ul style="list-style-type: none"> 1 -Identify mathematical matrices and ways to solve them. 2 -Identify mathematical derivatives. 3 -Identify the integration of mathematical functions. 4 -Learn how to draw mathematical functions. 5- Identify the processes of mathematical statistics 			
10. Course Structure					
Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2	Identify determinants and their properties, solve simultaneous equations using the	Determinants and their properties, solving simultaneous equations using the determinant method (Cramer).	lecture	Written tests Quarterly exams final exams Daily evaluation

		determinant method (Cramer).			
2	2	Identify determinants and their properties, solve simultaneous equations using the determinant method (Cramer).	Determinants and their properties, solving simultaneous equations using the determinant method (Cramer).	lecture	Written tests Quarterly exams final exams Daily evaluation
3	2	Learn about differentiation, algebra of derivatives, and multiple functions.	Differentiation, algebra of derivatives, multiple functions.	lecture	Written tests Quarterly exams final exams Daily evaluation
4	2	Learn about differentiation, algebra of derivatives, and multiple functions.	Differentiation, algebra of derivatives, multiple functions.	lecture	Written tests Quarterly exams final exams Daily evaluation
5	2	Learn about differentiation, algebra of derivatives, and multiple functions.	Differentiation, algebra of derivatives, multiple functions.	lecture	Written tests Quarterly exams final exams Daily evaluation
6	2	Recognizing trigonometric, logarithmic and exponential functions and their derivatives and implicit functions, the chain rule.	Trigonometric, logarithmic and exponential functions and their derivatives and implicit functions, chain rule.	lecture	Written tests Quarterly exams final exams Daily evaluation
7	2	Recognizing trigonometric, logarithmic and exponential functions and their derivatives and implicit functions, the chain rule.	Trigonometric, logarithmic and exponential functions and their derivatives and implicit functions, chain rule.	lecture	Written tests Quarterly exams final exams Daily evaluation
8	2	Recognizing trigonometric, logarithmic and exponential functions and their derivatives and implicit functions, the chain rule.	Trigonometric, logarithmic and exponential functions and their derivatives and implicit functions, chain rule.	lecture	Written tests Quarterly exams final exams Daily evaluation
9	2	Learn about graphing functions, graphing	Drawing functions, drawing trigonometric functions and	lecture	Written tests Quarterly exams final exams

		trigonometric functions, and maximum and minimum limits.	maximum and minimum limits.		Daily evaluation
10	2	Learn about graphing functions, graphing trigonometric functions, and maximum and minimum limits.	Drawing functions, drawing trigonometric functions and maximum and minimum limits.	lecture	Written tests Quarterly exams final exams Daily evaluation
11	2	Learn about graphing functions, graphing trigonometric functions, and maximum and minimum limits.	Drawing functions, drawing trigonometric functions and maximum and minimum limits.	lecture	Written tests Quarterly exams final exams Daily evaluation
12	2	Learn about physical differential applications, velocity and acceleration, and engineering differential applications.	Physical calculus applications, velocity and acceleration and engineering calculus applications.	lecture	Written tests Quarterly exams final exams Daily evaluation
13	2	Learn about physical differential applications, velocity and acceleration, and engineering differential applications.	Physical calculus applications, velocity and acceleration and engineering calculus applications.	lecture	Written tests Quarterly exams final exams Daily evaluation
14	2	Identify integration, its laws, and its relationship to differentiation, definite and indefinite integration.	Integration, laws, and its relationship to differentiation, definite and indefinite integration.	lecture	Written tests Quarterly exams final exams Daily evaluation
15	2	Identify integration, its laws, and its relationship to differentiation, definite and indefinite integration.	Integration, laws, and its relationship to differentiation, definite and indefinite integration.	lecture	Written tests Quarterly exams final exams Daily evaluation
16	2	Learn about implicit integration, geometric (areas and	Implicit integration, geometric (areas and volumes) and physical	lecture	Written tests Quarterly exams final exams

		volumes) and physical applications of integration.	applications of integration.		Daily evaluation
17	2	Learn about implicit integration, geometric (areas and volumes) and physical applications of integration.	Implicit integration, geometric (areas and volumes) and physical applications of integration.	lecture	Written tests Quarterly exams final exams Daily evaluation
18	2	Learn about implicit integration, geometric (areas and volumes) and physical applications of integration.	Implicit integration, geometric (areas and volumes) and physical applications of integration.	lecture	Written tests Quarterly exams final exams Daily evaluation
19	2	Learn about implicit integration, geometric (areas and volumes) and physical applications of integration.	Implicit integration, geometric (areas and volumes) and physical applications of integration.	lecture	Written tests Quarterly exams final exams Daily evaluation
20	2	Learn about general methods of integration, substitution and partial integration, and the use of exponential and logarithmic partial fractions.	General methods of integration include substitution, partial substitution, and the use of exponential and logarithmic partial fractions.	lecture	Written tests Quarterly exams final exams Daily evaluation
21	2	Learn about general methods of integration, substitution and partial integration, and the use of exponential and logarithmic partial fractions.	General methods of integration include substitution, partial substitution, and the use of exponential and logarithmic partial fractions.	lecture	Written tests Quarterly exams final exams Daily evaluation
22	2	Learn about general methods of integration, substitution and partial integration, and the use of exponential and	General methods of integration include substitution, partial substitution, and the use of exponential and logarithmic partial fractions.	lecture	Written tests Quarterly exams final exams Daily evaluation

		logarithmic partial fractions.			
23	2	Learn about discrete, homogeneous, and linear differential equations with their various applications.	Discrete, homogeneous and linear differential equations with their various applications.	lecture	Written tests Quarterly exams final exams Daily evaluation
24	2	Learn about discrete, homogeneous, and linear differential equations with their various applications.	Discrete, homogeneous and linear differential equations with their various applications.	lecture	Written tests Quarterly exams final exams Daily evaluation
25	2	Learn about discrete, homogeneous, and linear differential equations with their various applications.	Discrete, homogeneous and linear differential equations with their various applications.	lecture	Written tests Quarterly exams final exams Daily evaluation
26	2	Learn about discrete, homogeneous, and linear differential equations with their various applications.	Discrete, homogeneous and linear differential equations with their various applications.	lecture	Written tests Quarterly exams final exams Daily evaluation
27	2	Identifying vectors (direct and quantitative multiplication and calculating angles between vectors).	Vectors (direct and quantitative multiplication and calculating angles between vectors).	lecture	Written tests Quarterly exams final exams Daily evaluation
28	2	Identifying vectors (direct and quantitative multiplication and calculating angles between vectors).	Vectors (direct and quantitative multiplication and calculating angles between vectors).	lecture	Written tests Quarterly exams final exams Daily evaluation
29	2	Learn about statistics (principles) and probability theory.	Statistics (principles) and probability theory.	lecture	Written tests Quarterly exams final exams Daily evaluation
30	2	Learn about statistics (principles) and probability theory.	Statistics (principles) and probability theory.	lecture	Written tests Quarterly exams final exams Daily evaluation

11.Course Evaluation

Distributing the score out of 100 according to the tasks assigned to the student such as daily preparation, daily oral, monthly, or written exams, reports etc

12.Learning and Teaching Resources

Required textbooks (curricular books, if any)	Thomas Calculus 13 th Edition
Main references (sources)	Thomas Calculus 13 th Edition
Recommended books and references (scientific journals, reports...)	A collection of books in the field of applied mathematics
Electronic References, Websites	Check out websites in this field

Course Description Form

1. Course Name:					
Computer applications 1					
2. Course Code:					
3. Semester / Year:					
First and second semester / first stage					
4. Description Preparation Date:					
2024/3/1					
5. Available Attendance Forms:					
Weekly and according to schedule					
6. Number of Credit Hours (Total) / Number of Units (Total)					
3 hr./ 6 units					
7. Course administrator's name (mention all, if more than one name)					
Name: Nour Al-Huda Sabah Jassim					
Email:					
8. Course Objectives					
Course Objectives		<ul style="list-style-type: none"> • Explaining the role of the calculator in producing engineering drawings and applying them in public life • Creating an effective relationship between calculator applications and other sciences • Identify calculator applications and use them effectively in organizing office work 			
9. Teaching and Learning Strategies					
Strategy		Explanation on the board - presentation - coordination with students - training - discussion			
10. Course Structure					
Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	3	Introduction to computers: their generations, components: hardware and software (system software and application software).	Computer applications 1	Lecture	Practical tests Quarterly exams final exams Daily evaluation
4 - 2	3	Windows operating system: The concept of the Windows system, its advantages and basic requirements, operating the system, components of the main desktop screen, the concept of the icon, the method of dealing with mouse activities, the importance and components of the Taskbar, making use of Start to enter programs,	Computer applications 1	Lecture	Practical tests Quarterly exams final exams Daily evaluation

		the concept of loaded tasks, exiting the system and turning it off. Calculator Shut Down).			
6 - 5	3	The concept of the window for any program and identifying its main components, dealing with desktop icons such as (My Document; My Computer; Recycle Bin).	Computer applications 1	Lecture	Practical tests Quarterly exams final exams Daily evaluation
8 - 7	3	Getting to know My Computer in terms of disks, folders and files, how to deal with formatting floppy disks, copying folders and files, dealing with the trash, and how to delete and retrieve files through what the trash can provides in this regard.	Computer applications 1	Lecture	Practical tests Quarterly exams final exams Daily evaluation
10 - 9	3	Taking advantage of Control Panel programs such as the Mouse icon, the screen saver control icon, changing the appearance of the desktop background, and Program to add and delete programs.	Computer applications 1	Lecture	Practical tests Quarterly exams final exams Daily evaluation
11	3	Take advantage of the Run option to execute programs appropriately, as well as switch to the system signal (Ms-Dos) and deal with its commands.	Computer applications 1	Lecture	Practical tests Quarterly exams final exams Daily evaluation
12	3	*Use entertainment programs such as (Window Media Player) to play movies.	Computer applications 1	Lecture	Practical tests Quarterly exams final exams Daily evaluation
13	3	*Use of additional programs such as the calculator.	Computer applications 1	Lecture	Practical tests Quarterly exams final exams Daily evaluation
14	3	*Dealing with the drawing program (Paint) in creating, saving and retrieving drawings through the commands it provides.	Computer applications 1	Lecture	Practical tests Quarterly exams final exams Daily evaluation
15	3	Dealing with the Notes window (Notpad; Wordpad) in writing texts,	Computer applications 1	Lecture	Practical tests Quarterly exams final exams

		saving them, retrieving them, printing them, and changing their printing style and formatting.			Daily evaluation
16	3	Learn how to get help and its different methods.	Computer applications 1	Lecture	Practical tests Quarterly exams final exams Daily evaluation
17	3	Introduction to AutoCAD version (2000) and an explanation of the program interface.	Computer applications 1	Lecture	Practical tests Quarterly exams final exams Daily evaluation
18	3	Screen settings (Snap, Limit, Grid, Pan, Zoom,...).	Computer applications 1	Lecture	Practical tests Quarterly exams final exams Daily evaluation
19	3	Draw menu.	Computer applications 1	Lecture	Practical tests Quarterly exams final exams Daily evaluation
20	3	List of revisions (modify).	Computer applications 1	Lecture	Practical tests Quarterly exams final exams Daily evaluation
21	3	Object Snap menu.	Computer applications 1	Lecture	Practical tests Quarterly exams final exams Daily evaluation
22	3	Layers.	Computer applications 1	Lecture	Practical tests Quarterly exams final exams Daily evaluation
23	3	Dimensions.	Computer applications 1	Lecture	Practical tests Quarterly exams final exams Daily evaluation
24	3	Writing .	Computer applications 1	Lecture	Practical tests Quarterly exams final exams Daily evaluation
25	3	Store files, import files from other programs, and export them.	Computer applications 1	Lecture	Practical tests Quarterly exams final exams Daily evaluation
26	3	Make blocks and import parts from other programs.	Computer applications 1	Lecture	Practical tests Quarterly exams final exams Daily evaluation
27	3	Draw a plan for the department's specialization.	Computer applications 1	Lecture	Practical tests Quarterly exams final exams

					Daily evaluation
28	3	Draw a section of that diagram.	Computer applications 1	Lecture	Practical tests Quarterly exams final exams Daily evaluation
30- 29	3	Printing, copying and extracting files on the plotter.	Computer applications 1	Lecture	Practical tests Quarterly exams final exams Daily evaluation

11.Course Evaluation

Distributing the score out of 100 according to the tasks assigned to the student such as daily preparation, daily oral, monthly, or written exams, reports etc

12.Learning and Teaching Resources

Required textbooks (curricular books, if any)	
Main references (sources)	
Recommended books and references (scientific journals, reports...)	
Electronic References, Websites	

Course Description Form

1. Course Name:					
Engineering drawing / (AutoCAD)					
2. Course Code:					
3. Semester / Year:					
First and second semester / first year					
4. Description Preparation Date:					
2024/2/20					
5. Available Attendance Forms:					
Attendance daily according to the weekly schedule					
6. Number of Credit Hours (Total) / Number of Units (Total)					
3 hours: 6 units					
7. Course administrator's name (mention all, if more than one name)					
Name: Ali Awad Ismaeel					
Email: aliawad@atu.edu.iq					
8. Course Objectives					
Course Objectives		Teaching students how to draw using AutoCAD... Drawing at high speed and accuracy...			
9. Teaching and Learning Strategies					
Strategy		Use datashow Use a computer Use a whiteboard			
10. Course Structure					
Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	3	The importance of engineering drawing, the importance of using a computer to implement engineering drawing, standard drawing board sizes, an overview of the AutoCAD program.	Engineering drawing / (AutoCAD)	Use datashow Use a computer Use a whiteboard	Quick exams + class questions
2	3	Preparing for computer drawing Title Block	Engineering drawing / (AutoCAD)	Use datashow Use a computer Use a whiteboard	Quick exams + class questions
3	3	Drawing geometric shapes using the computer	Engineering drawing / (AutoCAD)	Use datashow Use a computer Use a whiteboard	Quick exams + class questions
5+ 4	3	Graphic modifications, computer drawing aids	Engineering drawing / (AutoCAD)	Use datashow Use a computer Use a whiteboard	Quick exams + class questions

8+7+6	3	Types of lines for engineering drawing, engineering operations, and setting dimensions.	Engineering drawing / (AutoCAD)	Use datashow Use a computer Use a whiteboard	Quick exams + class questions
9	3	Perspective drawing, a perspective drawing that contains a circle represented by an oval.	Engineering drawing / (AutoCAD)	Use datashow Use a computer Use a whiteboard	Quick exams + class questions
11+10	3	Projection theory, drawing simplified projections.	Engineering drawing / (AutoCAD)	Use datashow Use a computer Use a whiteboard	Quick exams + class questions
15+14+13+12	3	Main projections, even angles, drawing according to the theory of the first even angle of projection, drawing according to the theory of the third even angle of projection.	Engineering drawing / (AutoCAD)	Use datashow Use a computer Use a whiteboard	Quick exams + class questions
17+16	3	Draw the three main projections at even angles and note the difference between them.	Engineering drawing / (AutoCAD)	Use datashow Use a computer Use a whiteboard	Quick exams + class questions
19+18	3	Deducing the third projection from the two projections.	Engineering drawing / (AutoCAD)	Use datashow Use a computer Use a whiteboard	Quick exams + class questions
21+20	3	Inferring perspective from two or three projections.	Engineering drawing / (AutoCAD)	Use datashow Use a computer Use a whiteboard	Quick exams + class questions
23+22	3	Cutting theory, cutting shapes and lines according to the type of material, drawing cut sections.	Engineering drawing / (AutoCAD)	Use datashow Use a computer Use a whiteboard	Quick exams + class questions
25+24	3	Drawing projections cut from one specific projection	Engineering drawing / (AutoCAD)	Use datashow Use a computer Use a whiteboard	Quick exams + class questions
27+26	3	Partially cropped project drawing	Engineering drawing / (AutoCAD)	Use datashow Use a computer Use a whiteboard	Quick exams + class questions
30+29+28	3	Drawing a half-cut projection, drawing winding sections.	Engineering drawing / (AutoCAD)	Use datashow Use a computer Use a whiteboard	Quick exams + class questions

11.Course Evaluation

Distributing the score out of 100 according to the tasks assigned to the student such as daily preparation, daily oral, monthly, or written exams, reports etc

12.Learning and Teaching Resources

Required textbooks (curricular books, if any)

Main references (sources)

Auto cad + internet lectures

Recommended books and references (scientific journals, reports...)	
Electronic References, Websites	

Course Description Form

1. Course Name:					
Manufacturing processes 1					
2. Course Code:					
3. Semester / Year:					
First and second semester / first year					
4. Description Preparation Date:					
2024/2/19					
5. Available Attendance Forms:					
Daily attendance according to the weekly schedule					
6. Number of Credit Hours (Total) / Number of Units (Total)					
4 hours/8 units					
7. Course administrator's name (mention all, if more than one name)					
Name: Roaa Mohammed Muneer Email: roaa.muneer@atu.edu.iq					
8. Course Objectives					
Course Objectives		<ul style="list-style-type: none"> - Preparing the student to be able to use all measuring devices for mechanical operation processes - Improving the student's ability to conduct tests on plumbing sand and tests concerned with the quality of products manufactured by casting and welding processes. - Providing the student with skills in forming and working metals with plumbing, welding, blacksmithing, and the calculations required to achieve the highest accuracy in production. 			
9. Teaching and Learning Strategies					
Strategy		Explanation on the board - presentation – organization with students - training - discussion			
10. Course Structure					
Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2	Definition of measurement and units of measurement, error and its causes, methods of measuring main dimensions, simple conveyor measuring devices.	Manufacturing processes 1	- lecture -Laboratory experiments	- Daily test -Laboratory experiments
2	2	Measuring feet (probes), their parts, uses, and types.	Manufacturing processes 1	- lecture -Laboratory experiments	- Daily test -Laboratory experiments
3	2	Micrometers, their types, uses, parts, and the idea of how a micrometer works.	Manufacturing processes 1	- lecture -Laboratory experiments	- Daily test -Laboratory experiments
4	2	Measuring molds and their uses, types, and how to use them.	Manufacturing processes 1	- lecture -Laboratory experiments	- Daily test -Laboratory experiments
5	2	Measuring angles and side shapes, tools for measuring angles and measuring cups (dabaa) and their types.	Manufacturing processes 1	- lecture -Laboratory experiments	- Daily test -Laboratory experiments

6	2	Method of measuring screw elements, external and internal diameters, measuring step and step diameter, electronic mechanical comparison devices.	Manufacturing processes 1	- lecture -Laboratory experiments	- Daily test -Laboratory experiments
7	2	Optical device, some modern measurement methods (acoustic frequency measuring devices, digital optical).	Manufacturing processes 1	- lecture -Laboratory experiments	- Daily test -Laboratory experiments
8	2	Files and their role in industrial development, the process of slicing, the tools used and the processes involved in the filing process, files used and their specifications, machines and their types and methods of attaching crafts to them, uses of files, and how to clean files.	Manufacturing processes 1	- lecture -Laboratory experiments	- Daily test -Laboratory experiments
9	2	Cutting with a saw, the conditions that must be met in the sawing process, the saw weapon, the crowns and their types, the teeth, the method of sharpening and maintaining them, the types of manual hammer heads and the method of installing them.	Manufacturing processes 1	- lecture -Laboratory experiments	- Daily test -Laboratory experiments
10	2	Drilling and grinding, types of drills, types of primers, types of primers, how to perform the drilling and grinding process.	Manufacturing processes 1	- lecture -Laboratory experiments	- Daily test -Laboratory experiments
11	2	Models, their types, wood used in their manufacture, and the conditions that must be met in the model.	Manufacturing processes 1	- lecture -Laboratory experiments	- Daily test -Laboratory experiments
12	2	Tools and devices used in making the model, box molds, and how to design a simple model.	Manufacturing processes 1	- lecture -Laboratory experiments	- Daily test -Laboratory experiments
13	2	Plumbing, historical overview, main methods of plumbing (cast casting, sand casting, metal mold casting, other methods of plumbing) Advantages of the plumbing process.	Manufacturing processes 1	- lecture -Laboratory experiments	- Daily test -Laboratory experiments
14	2	Plumbing sand, plumbing sand	Manufacturing processes 1	- lecture	- Daily test

		specifications, components, plumbing sand, devices used and additives to plumbing sand.		-Laboratory experiments	-Laboratory experiments
15	2	Dumps and tools used in preparing sand molds, the process of molding a simple model and the last one, the parasitic molds and the final molds used	Manufacturing processes 1	- lecture -Laboratory experiments	- Daily test -Laboratory experiments
16	2	Pulp, its types, pulp sand, mixture ratios and materials added to it, stages of its work (mixing and preparing sand, making balls, drying it), the benefit of the drying process, ovens or methods of drying balls and their equipment.	Manufacturing processes 1	- lecture -Laboratory experiments	- Daily test -Laboratory experiments
17	2	Casting with metal molds, its types, centrifugal casting, and its types.	Manufacturing processes 1	- lecture -Laboratory experiments	- Daily test -Laboratory experiments
18	2	Lost wax plumbing, continuous plumbing, shell plumbing.	Manufacturing processes 1	- lecture -Laboratory experiments	- Daily test -Laboratory experiments
19	2	Metal smelting and its foundations, types of smelting furnaces, blast furnace, main dimensions and method of operation, blast furnace, electric arc furnace, reflector furnace, rotary furnace.	Manufacturing processes 1	- lecture -Laboratory experiments	- Daily test -Laboratory experiments
20	2	Casting of castings, its equipment and foundations, cleaning of castings, casting defects, inspection of castings.	Manufacturing processes 1	- lecture -Laboratory experiments	- Daily test -Laboratory experiments
21	2	Welding, foundations of metal welding, clarification of the main methods of welding (pressure welding, electric arc fusion welding, other methods of fusion welding, flash welding and caustic welding), types of welding joints.	Manufacturing processes 1	- lecture -Laboratory experiments	- Daily test -Laboratory experiments
22	2	Hot pressure welding, including (electrical resistance welding, including spot and line welding, flash welding), cold pressure welding,	Manufacturing processes 1	- lecture -Laboratory experiments	- Daily test -Laboratory experiments

		pressure welding using explosives, and pressure welding using ultrasonic waves.			
23	2	Fusion welding and gas welding, oxy-hydrogen welding and oxy-acetylene welding, types of flame, right-hand welding and left-hand welding, cutting with oxy-acetylene.	Manufacturing processes 1	- lecture -Laboratory experiments	- Daily test -Laboratory experiments
24	2	Arc welding, welding current, direct and reverse polarity method, types of electrodes, packaging of metal electrodes and their types.	Manufacturing processes 1	- lecture -Laboratory experiments	- Daily test -Laboratory experiments
25	2	Electron movement, methods of isolating electrodes and the welding area, electric arc welding using protective gases (carbon dioxide welding, arcon tig welding, brazing welding)	Manufacturing processes 1	- lecture -Laboratory experiments	- Daily test -Laboratory experiments
26	2	Atomic hydrogen arc welding, atrophy arc welding, fusion welding.	Manufacturing processes 1	- lecture -Laboratory experiments	- Daily test -Laboratory experiments
27	2	Temperature welding, caustic welding (mortar welding, plumbing welding) and some modern types of welding (laser welding, electron beam welding).	Manufacturing processes 1	- lecture -Laboratory experiments	- Daily test -Laboratory experiments
28	2	Welding defects, welding tests.	Manufacturing processes 1	- lecture -Laboratory experiments	- Daily test -Laboratory experiments
29	2	Metal forming, the theory of forming, the foundations of cold and hot forging, blacksmithing, the foundations of blacksmithing and its methods (manual, mechanical), blacksmithing equipment, manual and mechanical, blacksmithing elements.	Manufacturing processes 1	- lecture -Laboratory experiments	- Daily test -Laboratory experiments
30	2	Special blacksmithing methods, blacksmithing molds and their manufacture, effective force, explanation of the different blacksmithing operations (contact,	Manufacturing processes 1	- lecture -Laboratory experiments	- Daily test -Laboratory experiments

		methods of different geometric sections in cutting operations, making simple steps, forming various artifacts).			
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11.Course Evaluation

Distribution of the score from 100 = (25 for the first semester + 25 for the second semester) according to the tasks assigned to the student, such as daily preparation, daily, oral, monthly and written exams, reports, etc. + (50 final)

12.Learning and Teaching Resources

Required textbooks (curricular books, if any)	Metal manufacturing operations (Abdul Khaleq Hassan)
Main references (sources)	Introduction to production engineering Principles of metal casting Principles of precision in design and production
Recommended books and references (scientific journals, reports...)	Manufacturing methods Prof. Dr. Abdul Razzaq Ismai Khadr Production Technology and Workshop Works W. A. Chapmon
Electronic References, Websites	https://esco.ec.europa.eu/

Course Description Form

1. Course Name:					
Material properties					
2. Course Code:					
3. Semester / Year:					
First and second semester / first year					
4. Description Preparation Date:					
20/2/2024					
5. Available Attendance Forms:					
Attend a lecture weekly					
6. Number of Credit Hours (Total) / Number of Units (Total):					
2 hours / 4 units					
7. Course administrator's name (mention all, if more than one name)					
Name: Mohammed Salih Hassan Email: hs.muhamad@atu.edu.iq					
8. Course Objectives					
Course Objectives		Studying the engineering properties of crystalline and amorphous materials and identifying the mechanical properties of metals and alloys.			
9. Teaching and Learning Strategies					
Strategy		1 -Identify engineering materials. 2 -Identify Crystalline and amorphous materials.. 3 -Identify the Mechanical properties of materials 4 -Learn how to Carbon steel, its most important types 5- Identify the Polymers, polymer molecules, types of polymer..			
10. Course Structure					
Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2	Definition of engineering materials.	Definition of engineering materials.	lecture	Written tests Quarterly exams final exams Daily evaluation
2	2	Identify Atom, element, types of bonds in engineering materials.	Atom, element, types of bonds in engineering materials.	lecture	Written tests Quarterly exams final exams Daily evaluation

3	2	Identify Crystalline and amorphous materials.	Crystalline and amorphous materials.	lecture	Written tests Quarterly exams final exams Daily evaluation
4	2	Identify Crystal forms (H.C.P) (F.C.C) (B.C.C)	Crystal forms (H.C.P) (F.C.C) (B.C.C)	lecture	Written tests Quarterly exams final exams Daily evaluation
5	2	Identify Mechanical properties of materials. (Stress, strain, stress-strain curve, ductility, collapse).	Mechanical properties of materials. (Stress, strain, stress-strain curve, ductility, collapse).	lecture	Written tests Quarterly exams final exams Daily evaluation
6	2	Identify Hardness, hardness test.	Hardness, hardness test.	lecture	Written tests Quarterly exams final exams Daily evaluation
7	2	Identify Continuation.	Continuation.	lecture	Written tests Quarterly exams final exams Daily evaluation
8	2	Identify Durability, durability tests.	Durability, durability tests.	lecture	Written tests Quarterly exams final exams Daily evaluation
9	2	Identify Thermal properties of materials. (thermal expansion, thermal conductivity)	Thermal properties of materials. (thermal expansion, thermal conductivity)	lecture	Written tests Quarterly exams final exams Daily evaluation
10	2	Identify Electrical properties of materials (ionic materials, insulating materials, metallic materials, factors affecting conductivity).	Electrical properties of materials (ionic materials, insulating materials, metallic materials, factors affecting conductivity).	lecture	Written tests Quarterly exams final exams Daily evaluation
11	2	Identify Magnetic properties of materials (Ferromagnetic materials, paramagnetic materials, diamagnetic materials, magnetic retardation, factors	Magnetic properties of materials (Ferromagnetic materials, paramagnetic materials, diamagnetic materials, magnetic retardation, factors affecting magnetism).	lecture	Written tests Quarterly exams final exams Daily evaluation

		affecting magnetism).			
12	2	Identify Chemical properties of materials (Corrosion, electrochemical series, oxidation)	Chemical properties of materials (Corrosion, electrochemical series, oxidation)	lecture	Written tests Quarterly exams final exams Daily evaluation
13	2	Identify Iron, its most important ores, extraction, blast furnace, transformers.	Iron, its most important ores, extraction, blast furnace, transformers.	lecture	Written tests Quarterly exams final exams Daily evaluation
14	2	Carbon steel, its most important types, properties, and uses.	Carbon steel, its most important types, properties, and uses.	lecture	Written tests Quarterly exams final exams Daily evaluation
15	2	Alloy steel, its most important types, properties, and uses.	Alloy steel, its most important types, properties, and uses.	lecture	Written tests Quarterly exams final exams Daily evaluation
16	2	Identify Cast iron, its types, properties, and uses.	Cast iron, its types, properties, and uses.	lecture	Written tests Quarterly exams final exams Daily evaluation
17	2	supplement	supplement	lecture	Written tests Quarterly exams final exams Daily evaluation
18	2	Copper, its alloys, properties, and uses.	Copper, its alloys, properties, and uses.	lecture	Written tests Quarterly exams final exams Daily evaluation
19	2	Identify Aluminum, its alloys, properties, and uses.	Aluminum, its alloys, properties, and uses.	lecture	Written tests Quarterly exams final exams Daily evaluation
20	2	Identify Nickel, its alloys, properties, and uses.	Nickel, its alloys, properties, and uses.	lecture	Written tests Quarterly exams final exams Daily evaluation
21	2	Tin, its alloys, properties, and uses. Zinc, its alloys, properties, and uses. Manganese, its alloys, properties, and uses.	Tin, its alloys, properties, and uses. Zinc, its alloys, properties, and uses. Manganese, its alloys, properties, and uses.	lecture	Written tests Quarterly exams final exams Daily evaluation
22	2	Other nonferrous alloys (white metals, bearing alloys)	Other nonferrous alloys (white metals, bearing alloys)	lecture	Written tests Quarterly exams final exams

					Daily evaluation
23	2	Powder metallurgy Identify (Methods of obtaining metal powders, mechanical methods, physical and chemical methods, natural, mechanical and chemical properties of powders.	Powder metallurgy (Methods of obtaining metal powders, mechanical methods, physical and chemical methods, natural, mechanical and chemical properties of powders.	lecture	Written tests Quarterly exams final exams Daily evaluation
24	2	Powder pressing, sintering process.	Powder pressing, sintering process.	lecture	Written tests Quarterly exams final exams Daily evaluation
25	2	Identify Ceramic materials	Ceramic materials	lecture	Written tests Quarterly exams final exams Daily evaluation
26	2	Glass, its types, manufacture, and uses.	Glass, its types, manufacture, and uses.	lecture	Written tests Quarterly exams final exams Daily evaluation
27	2	Identify Concrete, its industrial uses.	Concrete, its industrial uses.	lecture	Written tests Quarterly exams final exams Daily evaluation
28	2	Identify Polymers, polymer molecules, types of polymer.	Polymers, polymer molecules, types of polymer.	lecture	Written tests Quarterly exams final exams Daily evaluation
29	2	Properties and uses of plastics.	Properties and uses of plastics.	lecture	Written tests Quarterly exams final exams Daily evaluation
30	2	Plastics supplement.	Plastics supplement.	lecture	Written tests Quarterly exams final exams Daily evaluation

11.Course Evaluation

Distributing the score out of 100 according to the tasks assigned to the student such as daily preparation, daily oral, monthly, or written exams, reports etc

12.Learning and Teaching Resources

Required textbooks (curricular books, if any)

Metals, Engineering materials

Main references (sources)

Engineering materials

Recommended books and references (scientific journals, reports...)	A collection of books in the field of Engineering materials
Electronic References, Websites	Check out websites in this field

Course Description Form

1. Course Name:

Mechanics

2. Course Code:

3. Semester / Year:

First and second semester / first year

4. Description Preparation Date:

20-2-2023

5. Available Attendance Forms:

Mandatory attendance weekly

6. Number of Credit Hours (Total) / Number of Units (Total)

5 h/10 units

7. Course administrator's name (mention all, if more than one name)

Name: **Noor Abbas Hussein**

Email: noor.hussein.tcm@atu.edu.iq

8. Course Objectives

Course Objectives

The student will be able to:

1. Learn about mechanics and identify its types
2. Recognize the types of forces affecting objects
3. Identify the types of moments
4. Identify the types of balance and determine the centers of gravity of objects
5. Identify the types of stresses and strains that occur as a result of loads.

9. Teaching and Learning Strategies

Strategy

1. Academic lectures.
2. Open discussions.
3. Attempts to solve exercises according to the required equations using the problem-solving method.

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2	The student understands the content and can complete the applicable exercises.	Static, fundamental concepts , Force , Scalars and , Vectors , Units , Force polygon , Cartesian Components .	lecture And solve problems	Exams And Practical report
2	2	The student understands the content and can complete the applicable exercises	Analysis of Forces	lecture And solve problems	Exams And Practical report

3	2	The student understands the content and can complete the applicable exercises	Resultant of Concurrent , Coplanar Force system (2-D)	lecture And solve problems	Exams And Practical report
4	2	The student understands the content and can complete the applicable exercises	Moments	lecture And solve problems	Exams And Practical report
5	2	The student understands the content and can complete the applicable exercises	Couples , transformation of the Couple and the force	lecture And solve problems	Exams And Practical report
6	2	The student understands the content and can complete the applicable exercises	Resultant of non –Concurrent , Coplanar force system (3-D) .	lecture And solve problems	Exams And Practical report
7	2	The student understands the content and can complete the applicable exercises	Equilibrium , free body diagram (F.B.D.)	lecture And solve problems	Exams And Practical report
8	2	The student understands the content and can complete the applicable exercises	Equilibrium Conditions (2-D)	lecture And solve problems	Exams And Practical report
9	2	The student understands the content and can complete the applicable exercises	Equilibrium Conditions (3-D)	lecture And solve problems	Exams And Practical report
10	2	The student understands the content and can complete the applicable exercises	Friction, Dry Friction	lecture And solve problems	Exams And Practical report
11	2	The student understands the content and can complete the applicable exercises	Center of Gravity, Centroid (length, area), Centroid of Simple area	lecture And solve problems	Exams And Practical report
12	2	The student understands the content and can complete the applicable exercises	Centroids of Composite areas.	lecture And solve problems	Exams And Practical report
13	2	The student understands the content and can complete the applicable exercises	Moment of inertia (Simple and Composite areas).	lecture And solve problems	Exams And Practical report
14	2	The student understands the content and can complete the applicable exercises	2-Dynamics type of motion ,Linear motion with constant speed .	lecture And solve problems	Exams And Practical report

15	2	The student understands the content and can complete the applicable exercises	Linear motion with Constant acceleration .	lecture And solve problems	Exams And Practical report
16	2	The student understands the content and can complete the applicable exercises	Newton's Second Law	lecture And solve problems	Exams And Practical report
17	2	The student understands the content and can complete the applicable exercises	Curvilinear motion	lecture And solve problems	Exams And Practical report
18	2	The student understands the content and can complete the applicable exercises	Angular motion , Relative Motion .	lecture And solve problems	Exams And Practical report
19	2	The student understands the content and can complete the applicable exercises	Work , Energy, Power	lecture And solve problems	Exams And Practical report
20	2	The student understands the content and can complete the applicable exercises	3-Strength of material :Fundamental concept,Loads , Stress , Strain , Eelasticity , Plasticity, Deformation .	lecture And solve problems	Exams And Practical report
21	2	The student understands the content and can complete the applicable exercises	Hook's Law , Stress -strain curve, type of stress .	lecture And solve problems	Exams And Practical report
22	2	The student understands the content and can complete the applicable exercises	Normal stress due to an axial load on 1-Uniformam Cross section area 2-Variable cross section area .		
23	2	The student understands the content and can complete the applicable exercises	Shear Stress	lecture And solve problems	Exams And Practical report
24	2	The student understands the content and can complete the applicable exercises	Torsional Stress	lecture And solve problems	Exams And Practical report
25	2	The student understands the content and can complete the applicable exercises	Thermal Stress	lecture And solve problems	Exams And Practical report
26	2	The student understands the content and can complete the applicable exercises	Beams , types of loads , types of beams .	lecture And solve problems	Exams And Practical report

27	2	The student understands the content and can complete the applicable exercises	Shear force (S.F.) & bending moment (B.M.) of Simple supported beam under an –axial load .	lecture And solve problems	Exams And Practical report
28	2	The student understands the content and can complete the applicable exercises	Shear force (S.F.) & bending moment (B.M.) of Simple supported beam under uniform distributed Load .	lecture And solve problems	Exams And Practical report
29	2	The student understands the content and can complete the applicable exercises	Shear force (S.F.) & bending moment (B.M.) of cantilever beam under an –axial load .	lecture And solve problems	Exams And Practical report
30	2	The student understands the content and can complete the applicable exercises	Shear force (S.F.) & bending moment (B.M.) of cantilever beam under uniform distributed Load .	lecture And solve problems	Exams And Practical report

11.Course Evaluation

Evaluation is done through:

1. Daily, monthly and annual examinations.
2. Interaction and group participation in discussing and solving exercises.

12.Learning and Teaching Resources

1. Engineering mechanics Ferdinand L. singer third edition. Haber and P.QW. Publisher Inc.

2. ستاتييك-ديناميك، ميكانيكا الهندسة: تعريب، د. وجيه الخاخي، د.موفق احمد عبد الله.

3.Engineering mechanics static and dynamic Higden

4.Engineering mechanics static and dynamic Merriam

5.Engineering mechanics static and dynamic Nibbler

6. ميكانيكا الموائع، د. نعمة احمد عمارة، الجامعة التكنولوجية-مركز التعريب والنشر

7. الميكانيك (النظرية) ترجمة د. احمد صادق ، دار مير للطباعة والنشر

Course Description Form

Course Name:					
Industrial Drawing					
Course Code:					
Semester / Year:					
First and second semester /second year					
Description Preparation Date:					
19/2/2024					
Available Attendance Forms: Attend a lecture					
Attend in computer lab.					
Number of Credit Hours (Total) / Number of Units (Total):					
3 hours / 6 units					
Course administrator's name (mention all, if more than one name)					
Name: Dr. Zaid H. Rashid			Email: zhr.1986@atu.edu.iq		
Course Objectives					
Course Objectives		Introducing the student to using the AutoCAD program to draw mechanical assemblies and increasing his ability to think in understanding engineering designs and how to link data with his information to obtain a solution to the problem, as well as getting acquainted with the corresponding programs in mechanical design.			
Teaching and Learning Strategies					
Strategy		Identifying projections and partial and total sections. Identify mechanical fastening tools such as screws and rivets. Identify the setting of geometric tolerances on dimensions. Identify the drawing of gears.			
Course Structure					
Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	3	Learn about a general review of first grade topics, geometric lines, projections, sections, and setting	A general review of first grade topics: geometric lines, projections, sections, and setting dimensions	lecture	Practical tests Quarterly exams final exams Daily evaluation

		dimensions using the AutoCAD .program	using the AutoCAD .program		
2	3	Learn about methods of fastening using screws, types of screws, types of nuts, and drawing a picture	Methods of fastening using screws, types of screws, types of nuts, with a drawing	lecture	Practical tests Quarterly exams final exams Daily evaluation
3	3	Learn about methods of fastening using screws, types of screws, types of nuts, and drawing a picture	Fastening using screws, types of screws, types of nuts, with a drawing	lecture	Practical tests Quarterly exams final exams Daily evaluation
4	3	Recognizing the connection using threads, their types, uses, and drawing an assembly drawing	Fastening using threads, their types, uses, drawing an assembly drawing	lecture	Practical tests Quarterly exams final exams Daily evaluation
5	3	Recognizing fastening using threads, their types, uses, and drawing an assembly drawing	Fastening using threads, their types, uses, drawing an assembly drawing	lecture	Practical tests Quarterly exams final exams Daily evaluation
6	3	Recognizing fastening by welding, welding symbols, drawing of an assembly plate with welding symbols	Connection by welding, welding symbols, assembly plate drawing with welding symbols	lecture	Practical tests Quarterly exams final exams Daily evaluation
7	3	Connection by welding, welding symbols, assembly plate drawing with welding symbols	Connection by welding, welding symbols, assembly plate drawing with welding symbols	lecture	Practical tests Quarterly exams final exams Daily evaluation
8	3	Identifying fastening using rivets, shapes of rivet nails, types of fastening with rivets, drawing an assembly plate	Fastening by rivet, shapes of rivet nails, types of fastening by rivet, drawing an assembly plate	lecture	Practical tests Quarterly exams final exams Daily evaluation
9	3	Identifying fastening using rivets, shapes of	Fastening by rivet, shapes of rivet nails, types of fastening by	lecture	Practical tests Quarterly exams final exams

		rivet nails, types of fastening with rivets, drawing an assembly plate	rivet, drawing an assembly plate		Daily evaluation
10	3	Identification plate applied to the segmentation and assembly of a mechanical crane	Application board for segmentation and assembly of mechanical crane	lecture	Practical tests Quarterly exams final exams Daily evaluation
11	3	Identify springs, their types, uses, and draw a picture of a compression . spring	Springs, their types, uses, drawing of a . compression spring	lecture	Practical tests Quarterly exams final exams Daily evaluation
12	3	Recognizing an applied panel drawing for exhaust valve segmentation and assembly	Drawing an applied panel for segmenting and assembling the . exhaust valve	lecture	Practical tests Quarterly exams final exams Daily evaluation
13	3	Identify the types of column connections (couplings), and draw an applied drawing	Column connections (couplings), types, drawing of an applied . plate	lecture	Practical tests Quarterly exams final exams Daily evaluation
14	3	Identify clutches, their types and uses, and draw an applied . drawing	Clutches, their types and uses, with an . applied drawing	lecture	Practical tests Quarterly exams final exams Daily evaluation
15	3	Identify bearings, drawing an assembly plate for a friction bearing	Loading chairs, assembly drawing of a friction loading chair	lecture	Practical tests Quarterly exams final exams Daily evaluation
16	3	Identify pulleys and belts, their types and uses, and draw two drawings to assemble parts containing belt wheels of different .types	Pulleys and belts, their types and uses, with two drawings for assembling parts containing belt wheels of different types	lecture	Practical tests Quarterly exams final exams Daily evaluation
17	3	Identifying the types of gears, gears, basic definitions, drawing of the gear with an assembly plate for .engaging the gear	Types of gears, gears, basic definitions, drawing of the gear with an assembly plate for engaging the gear	lecture	Practical tests Quarterly exams final exams Daily evaluation
18	3	Identifying the types of gears, gears, basic	Types of gears, gears, basic definitions, drawing of the gear	lecture	Practical tests Quarterly exams final exams

		definitions , drawing of the gears with an assembly plate for . engaging the gears	with an assembly plate for engaging the gear		Daily evaluation
19	3	Identify bevel gears, with a drawing of an assembly plate for the bevel gear engagement	Bevel gears, with a drawing of the assembly plate for the bevel gear engagement	lecture	Practical tests Quarterly exams final exams Daily evaluation
20	3	Identify bevel gears, with a drawing of an assembly plate for the bevel gear engagement	Bevel gears, with a drawing of the assembly plate for the bevel gear engagement	lecture	Practical tests Quarterly exams final exams Daily evaluation
21	3	Learn an introduction to the Autodesk Inventor . program	Introduction to . Autodesk Inventor	lecture	Practical tests Quarterly exams final exams Daily evaluation
22	3	Learn an introduction to the Autodesk Inventor . program	Introduction to . Autodesk Inventor	lecture	Practical tests Quarterly exams final exams Daily evaluation
23	3	Getting to know the 2D drawing . environment	2D drawing . environment	lecture	Practical tests Quarterly exams final exams Daily evaluation
24	3	Learn about the assembly . environment	Assembly environment .	lecture	Practical tests Quarterly exams final exams Daily evaluation
25	3	Learn about the assembly . environment	Assembly environment .	lecture	Practical tests Quarterly exams final exams Daily evaluation
26	3	Learn about the dynamic analysis environment and . movement	Dynamic and motion . analysis environment	lecture	Practical tests Quarterly exams final exams Daily evaluation
27	3	Learn about the dynamic analysis environment and . movement	Dynamic and motion . analysis environment	lecture	Practical tests Quarterly exams final exams Daily evaluation
28	3	Identifying vectors direct and) quantitative multiplication and	Vectors (direct and quantitative multiplication and calculating angles .(between vectors	lecture	Practical tests Quarterly exams final exams Daily evaluation

		calculating angles (between vectors)			
29	3	Learn about the additions to the fees	Additions to fees	lecture	Practical tests Quarterly exams final exams Daily evaluation
30	3	Identifying a project within the jurisdiction of the concerned department for part of any practical system	A project within the jurisdiction of the relevant department for part of any practical system	lecture	Practical tests Quarterly exams final exams Daily evaluation

Course Evaluation

Distribution of grades out of 100 for the semester exams, continuous assessment, and final exam

Learning and Teaching Resources

Required textbooks (curricular books, if any)	الرسم الصناعي للمهندس يوسف الراضي
Main references (sources)	
Recommended books and references (scientific journals, reports...)	A collection of books in the field of mechanical drawing
Electronic References, Websites	Check out websites in this field

Course Description Form

1. Course Name:					
English language1					
2. Course Code:					
3. Semester / Year:					
First and second semester / first year					
4. Description Preparation Date:					
20-2-2023					
5. Available Attendance Forms:					
Mandatory attendance weekly					
6. Number of Credit Hours (Total) / Number of Units (Total)					
1h/ 2 units					
7. Course administrator's name (mention all, if more than one name)					
Name: Rafal Salah Noori Email: rafal.noori@atu.edu.iq					
8. Course Objectives					
Course Objectives		The student will be able to: 1. Learn about Understand the basic principles and grammar of the language..			
9. Teaching and Learning Strategies					
Strategy		1. Academic lectures. 2. Open discussions. 3. Attempts to solve exercises according to the required equations using the problem-solving metho			
10. Course Structure					
Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	1	The student understands the content and can complete the applicable exercises.	Hello,(am ,are ,is),How are you? Good Morning,	lecture And solve problems	Exams And Practical report
2	1	The student understands the content and can complete the applicable exercises	What s' this in English, Numbers1__10 This is	lecture And solve problems	Exams And Practical report
3	1	The student understands the content and can complete the applicable exercises	Your world ,countries,(he, she , they ,his ,her) where s' he from.	lecture And solve problems	Exams And Practical report
4	1	The student understands the content and can	Fantastic, awful ,beautiful ,Numbers (11-30)	lecture And solve problems	Exams And Practical report

		complete the applicable exercises			
5	1	The student understands the content and can complete the applicable exercises	All about you ,Jobs ,(am ,are ,is) , Negatives and question ,	lecture And solve problems	Exams And Practical report
6	1	The student understands the content and can complete the applicable exercises	Personal information ,social expressions.	lecture And solve problems	Exams And Practical report
7	1	The student understands the content and can complete the applicable exercises	My family and friends, (our ,their) possessive s'.	lecture And solve problems	Exams And Practical report
8	1	The student understands the content and can complete the applicable exercises	has ,has, The alphabet.	lecture And solve problems	Exams And Practical report
9	1	The student understands the content and can complete the applicable exercises	The way I live, sports ,food, drinks,(present simple- I, you, we, they.).	lecture And solve problems	Exams And Practical report
10	1	The student understands the content and can complete the applicable exercises	Languages and nationalities , (A ,an) , Numbers and prices.	lecture And solve problems	Exams And Practical report
11	1	The student understands the content and can complete the applicable exercises	Every day, the time, (Always , sometimes , Never).	lecture And solve problems	Exams And Practical report
12	1	The student understands the content and can complete the applicable exercises	Words that go together, Day of the week.	lecture And solve problems	Exams And Practical report
13	1	The student understands the content and can complete the applicable exercises	My favourites , Question words ,(me ,him, us, them)	lecture And solve problems	Exams And Practical report
14	1	The student understands the content and can complete the applicable exercises	This ,That , Adjectives , Can I....?	lecture And solve problems	Exams And Practical report
15	1	The student understands the content and can complete the applicable exercises	Where I live, Rooms and Furniture.	lecture And solve problems	Exams And Practical report
16	1	The student understands the content and can	Prepositions , Directions.	lecture And solve problems	Exams And Practical report

		complete the applicable exercises			
17	1	The student understands the content and can complete the applicable exercises	Times past , saying years, Was ,Were ,born .	lecture And solve problems	Exams And Practical report
18	1	The student understands the content and can complete the applicable exercises	Past Simple – irregular Verbs .	lecture And solve problems	Exams And Practical report
19	1	The student understands the content and can complete the applicable exercises	Have , Do, Go, When s' your Birth Day ?	lecture And solve problems	Exams And Practical report
20	1	The student understands the content and can complete the applicable exercises	Negatives and pronunciation.	lecture And solve problems	Exams And Practical report
21	1	The student understands the content and can complete the applicable exercises	We Had a Great time , Past Simple-regular and irregular.	lecture And solve problems	Exams And Practical report
22	1	The student understands the content and can complete the applicable exercises	Question and Negatives ,		
23	1	The student understands the content and can complete the applicable exercises	Sport and leisure, Going Sightseeing.	lecture And solve problems	Exams And Practical report
24	1	The student understands the content and can complete the applicable exercises	I Can doThat ! Can/ Can't	lecture And solve problems	Exams And Practical report
25	1	The student understands the content and can complete the applicable exercises	Adverbs , Adjective and Noun. Every day Poblems.	lecture And solve problems	Exams And Practical report
26	1	The student understands the content and can complete the applicable exercises	The Internet	lecture And solve problems	Exams And Practical report
27	1	The student understands the content and can complete the applicable exercises	Please and Thank you , I'd like – some /any ,in a Restaurant , Signs all around,	lecture And solve problems	Exams And Practical report
28	1	The student understands the content and can	Here and Now ,Colours and Clothes , Present Continuous.	lecture And solve problems	Exams And Practical report

		complete the applicable exercises			
29	1	The student understands the content and can complete the applicable exercises	Opposite verbs, What s' the Matter?	lecture And solve problems	Exams And Practical report
30	1	The student understands the content and can complete the applicable exercises	It s' Time to go ! Future plans , Grammar revision Vocabulary revision ,Social expressions.	lecture And solve problems	Exams And Practical report

11.Course Evaluation

Evaluation is done through:

1. Daily, monthly and annual examinations.
2. Interaction and group participation in discussing and solving exercises.

12.Learning and Teaching Resources

1. John, Liz Soars Mike Sayer , Head way , f “ English Course” , Ox ford University, Fourth edition .

Course Description Form

13.Course Name:					
Human rights and democracy					
14.Course Code:					
15.Semester / Year:					
First and second semester / First year					
16.Description Preparation Date:					
20-2-2023					
17.Available Attendance Forms:					
Mandatory attendance weekly					
18.Number of Credit Hours (Total) / Number of Units (Total)					
2 h/ 4 units					
19.Course administrator's name (mention all, if more than one name)					
Name: Haider Jawad Kazem The email address : hayder.mukhit@atu.edu.iq					
20.Course Objectives					
Course Objectives		The student will be able to: 1 . The student must be able to understand public rights and freedoms 2 .The student should be able to know the types of rights and democratic systems 3. To be able to define democracy and its types			
21.Teaching and Learning Strategies					
Strategy		The style of academic lectures. 2. Open discussions. 3. Short and oral tests .			
22. Course Structure					
Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2	The student understands the content and can complete the applicable exercises.	Human rights, their definition, and goals Human rights in ancient civilizations, especially the Mesopotamian civilization	lecture	Exams And Practical report
2	2	The student understands the content and can complete the applicable exercises	Human rights in divine laws, with a focus on human rights in Islam	lecture	Exams And Practical report
3	2	The student understands the content and can complete the applicable exercises	Human rights in contemporary and modern history: international recognition of human rights since World War I and the League of Nations	lecture	Exams And Practical report
4	2	The student understands the content and can	Regional recognition of human rights: European Convention on Human Rights 1950, American Convention on Human Rights 1969,	lecture	Exams And Practical report

		complete the applicable exercises	African Charter on Human Rights Arab Charter on Human Rights ,1981 1994		
5	2	The student understands the content and can complete the applicable exercises	Non-governmental organizations and human rights (International Committee of the Red Cross, Amnesty International, Human Rights Watch, National Human Rights Organizations)	lecture	Exams And Practical report
6	2	The student understands the content and can complete the applicable exercises	Human rights in Iraqi constitutions between theory and reality	lecture	Exams And Practical report
7	2	The student understands the content and can complete the applicable exercises	The relationship between human rights and public freedoms In the Universal Declaration of Human Rights In regional charters and national constitutions	lecture	Exams And Practical report
8	2	The student understands the content and can complete the applicable exercises	Economic, social, cultural and civil human rights	lecture	Exams And Practical report
9	2	The student understands the content and can complete the applicable exercises	Modern human rights: facts in development, the right to a clean environment, the right to solidarity, the right to religion	lecture	Exams And Practical report
10	2	The student understands the content and can complete the applicable exercises	Guarantees of respect and protection of human rights at the national level, guarantees in the constitution and laws, guarantees in the principle of the rule of law Guarantees in constitutional oversight, guarantees in freedom of the press and public opinion, the role of non-governmental organizations in respecting and protecting human rights	lecture	Exams And Practical report
11	2	The student understands the content and can complete the applicable exercises	Guarantees, respect and protection of human rights at the international level The role of the United Nations and its specialized agencies in providing guarantees The role of regional organizations (the Arab League, the European Union, the African Union, the Organization of American States, the ASEAN Organization) The role of international, regional non-governmental organizations and public opinion in respecting and protecting human rights	lecture	Exams And Practical report

12	2	The student understands the content and can complete the applicable exercises	The general theory of freedoms: the origin of rights and freedoms, the legislator's position on declared rights and freedoms, and the use of .the term public freedoms	lecture	Exams And Practical report
13	2	The student understands the content and can complete the applicable exercises	The legal base of the legal state	lecture	Exams And Practical report
14	2	The student understands the content and can complete the applicable exercises	Regulation of public freedoms by public authority	lecture	Exams And Practical report
15	2	The student understands the content and can complete the applicable exercises	Equality: The historical development of the concept of equality The modern development of the concept of equality gender equality Equality between individuals according to their beliefs and race	lecture	Exams And Practical report
16	2	The student understands the content and can complete the applicable exercises	Democracy, its definition, types	lecture	Exams And Practical report
17	2	The student understands the content and can complete the applicable exercises	Concepts of democracy	lecture	Exams And Practical report
18	2	The student understands the content and can complete the applicable exercises	Democracy in the third year	lecture	Exams And Practical report
19	2	The student understands the content and can complete the applicable exercises	Democratic systems in the world	lecture	Exams And Practical report
20	2	The student understands the content and can complete the applicable exercises	The concept of freedoms, classification of public freedoms	lecture	Exams And Practical report
21	2	The student understands the content and can complete the applicable exercises	Fundamental freedoms, intellectual freedoms, economic and social freedoms	lecture	Exams And Practical report
22	2	The student understands the content and can complete the applicable exercises	Freedom, security and feeling of reassurance Freedom to come and go		
23	2	The student understands the content and can	Freedom of education, freedom of the press, freedom of assembly	lecture	Exams And Practical report

		complete the applicable exercises			
24	2	The student understands the content and can complete the applicable exercises	Freedom of association, freedom of action	lecture	Exams And Practical report
25	2	The student understands the content and can complete the applicable exercises	The right to own property	lecture	Exams And Practical report
26	2	The student understands the content and can complete the applicable exercises	Freedom of trade and industry	lecture	Exams And Practical report
27	2	The student understands the content and can complete the applicable exercises	women freedom	lecture	Exams And Practical report
28	2	The student understands the content and can complete the applicable exercises	Political parties and public freedoms	lecture	Exams And Practical report
29	2	The student understands the content and can complete the applicable exercises	Scientific and technical progress and public freedoms	lecture	Exams And Practical report
30	2	The student understands the content and can complete the applicable exercises	The future of public freedoms	lecture	Exams And Practical report

23.Course Evaluation

Evaluation is done through:

1. Daily, monthly and annual examinations.
2. Interaction and group participation in discussing and solving exercises.

24.Learning and Teaching Resources

Khaled, Hamid Hanoun/Human Rights 2015

Course Description Form

Course Name:					
Metallurgy					
Course Code:					
Semester / Year:					
First and second semester / second year					
Description Preparation Date:					
2024/2/19					
Available Attendance Forms:					
Daily attendance according to the weekly schedule					
Number of Credit Hours (Total) / Number of Units (Total)					
4 hours/8 units					
Course administrator's name (mention all, if more than one name)					
Name: Roaa Mohammed Muneer Email: roaa.muneer@atu.edu.iq					
Course Objectives					
Course Objectives	<p>Providing the student with sufficient knowledge of the types of metals and alloys, their mechanical properties, crystal structure, and the various types of defects that occur during the processing and forming processes.</p> <p>Providing the student with sufficient knowledge and skill in studying heat treatments, how to implement them, and their effect on the properties and structure of metals.</p> <p>Providing the student with sufficient knowledge and skill in identifying material resistance tests and working on their devices to implement them practically and draw their curves.</p> <p>Providing the student with sufficient knowledge and skill in working with various microscopes to examine the composition of minerals</p> <p>- Providing the student with sufficient knowledge and skill in performing surface hardening of metals of all kinds, in addition to knowledge of corrosion and methods of preventing it, and finally metal recycling.</p>				
Teaching and Learning Strategies					
Strategy	Explanation on the board - presentation – organization with students - training - discussion				
Course Structure					
Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2	Introduction to mineralogy, crystallization, chimeric crystallization, and the effect of cooling rate on the structure of minerals.	Metallurgy	lecture - Laboratory experiments	Daily test -Direct questions - Laboratory experiments
2	2	Installation of metal blocks (solidification of castings) Common defects in castings.	Metallurgy	lecture - Laboratory experiments	Daily test -Direct questions - Laboratory experiments
3	2	Atomic crowding coefficient, crystallographic directions, crystallographic levels, the phenomenon of rooting.	Metallurgy	lecture - Laboratory experiments	Daily test -Direct questions

					- Laboratory experiments
4	2	Crystalline, point, linear lattice defects.	Metallurgy	lecture - Laboratory experiments	Daily test -Direct questions - Laboratory experiments
5	2	Flexible forming and plastic forming (sliding, twinning)	Metallurgy	lecture - Laboratory experiments	Daily test -Direct questions - Laboratory experiments
6	2	Strain hardening, cold forming, hot forming.	Metallurgy	lecture - Laboratory experiments	Daily test -Direct questions - Laboratory experiments
7	2	Recovery, recrystallization, crystal growth.	Metallurgy	lecture - Laboratory experiments	Daily test -Direct questions - Laboratory experiments
8	2	Stress and strain curves in bending, stretching, fracture, types of fracture, movement from ductile to brittle fracture.	Metallurgy	lecture - Laboratory experiments	Daily test -Direct questions - Laboratory experiments
9	2	Fatigue, fatigue mechanism, factors affecting the fatigue limit, fatigue-resistant materials.	Metallurgy	lecture - Laboratory experiments	Daily test -Direct questions - Laboratory experiments
10	2	Creep, creep mechanism, creep-resistant materials.	Metallurgy	lecture - Laboratory experiments	Daily test -Direct questions - Laboratory experiments
11	2	Compound, phase, solid solution, system, equilibrium, alloy formation, mechanical mixture, eutectics.	Metallurgy	lecture - Laboratory experiments	Daily test -Direct questions - Laboratory experiments
12	2	Thermal equilibrium diagram for a binary system that is completely dissolved in the liquid and solid states. Thermal equilibrium diagram for a binary system that is completely dissolved in the liquid state and undissolved in the solid state (eutectic).	Metallurgy	lecture - Laboratory experiments	Daily test -Direct questions - Laboratory experiments
13	2	Thermal equilibrium diagram for a binary system with complete	Metallurgy	lecture - Laboratory experiments	Daily test

		solvation in the liquid state and limited solvation in the solid state.			-Direct questions - Laboratory experiments
14	2	Thermal equilibrium diagram for a binary system that is completely dissolved in the liquid state and forms a chemical compound when frozen.	Metallurgy	lecture - Laboratory experiments	Daily test -Direct questions - Laboratory experiments
15	2	Iron, dissolution of carbon in iron, heat equilibrium diagram for the iron/carbon system, the most important reactions included in the diagram.	Metallurgy	lecture - Laboratory experiments	Daily test -Direct questions - Laboratory experiments
16	2	Completion of the heat equilibrium diagram for the iron/carbon system.	Metallurgy	lecture - Laboratory experiments	Daily test -Direct questions - Laboratory experiments
17	2	Austenite formation, mechanism of converting pearlite to austenite.	Metallurgy	lecture - Laboratory experiments	Daily test -Direct questions - Laboratory experiments
18	2	Austenite transformations with constant temperature and transformations by continuous cooling.	Metallurgy	lecture - Laboratory experiments	Daily test -Direct questions - Laboratory experiments
19	2	Thermal treatments (annealing, equalization, tempering)	Metallurgy	lecture - Laboratory experiments	Daily test -Direct questions - Laboratory experiments
20	2	Completion of thermal treatments (hardening and review), sub-zero thermal treatments, and aging.	Metallurgy	lecture - Laboratory experiments	Daily test -Direct questions - Laboratory experiments
21	2	Surface hardening (carburization of all types and the thermal treatments that follow it) Al-Tahwah, Al-Sanida.	Metallurgy	lecture - Laboratory experiments	Daily test -Direct questions - Laboratory experiments
22	2	Alloy steel, the effect of alloying elements on the properties of steel.	Metallurgy	lecture - Laboratory experiments	Daily test -Direct questions - Laboratory experiments
23	2	Stainless steel, tool steel.	Metallurgy	lecture - Laboratory experiments	Daily test

					-Direct questions - Laboratory experiments
24	2	Cast iron production and its heat treatments.	Metallurgy	lecture - Laboratory experiments	Daily test -Direct questions - Laboratory experiments
25	2	Supplementing the production of cast iron and its most important types.	Metallurgy	lecture - Laboratory experiments	Daily test -Direct questions - Laboratory experiments
26	2	Definition of corrosion, direct and indirect economic costs of corrosion, manifestations of corrosion, mechanism of corrosion.	Metallurgy	lecture - Laboratory experiments	Daily test -Direct questions - Laboratory experiments
27	2	Passivity, Faraday's law general corrosion, galvanic corrosion, cavernous corrosion.	Metallurgy	lecture - Laboratory experiments	Daily test -Direct questions - Laboratory experiments
28	2	Soil corrosion, facultative corrosion, intercrystalline corrosion, and stress corrosion.	Metallurgy	lecture - Laboratory experiments	Daily test -Direct questions - Laboratory experiments
29	2	Optimal material selection, contour softening, design and operation.	Metallurgy	lecture - Laboratory experiments	Daily test -Direct questions - Laboratory experiments
30	2	Methods of corrosion prevention.	Metallurgy	lecture - Laboratory experiments	Daily test -Direct questions - Laboratory experiments

Course Evaluation

Distribution of the score from 100 = (25 for the first semester + 25 for the second semester) according to the tasks assigned to the student, such as daily preparation, daily, oral, monthly and written exams, reports, etc. + (50 final)

Learning and Teaching Resources

Required textbooks (curricular books, if any)	Materials Engineering Principles book/Dr. Hussein Baqir
Main references (sources)	Engineering metallurgy (part1), Higgins Metallurgy for engineering /Rollason Engineering physical metallurgy
Recommended books and references (scientific journals, reports...)	Engineering materials and their tests/Dr. Qahtan Al Khazraji Engineering metrology/Dr. Arif Abu Safia Engineering metrology/Dr. Abdul Razzaq Ismail

	- Principles of mineralogy/Dr. Adel Mahmoud Hassan
Electronic References, Websites	http://www.phase-trans.msm.cam.ac.uk/dendrites.html

Course Description Form

1. Course Name:					
Crimes of the defunct Baath Party					
2. Course Code:					
3. Semester / Year:					
First and second semester / second year					
4. Description Preparation Date:					
11/3/2024					
5. Available Attendance Forms:					
Attend a lecture					
6. Number of Credit Hours (Total) / Number of Units (Total):					
1 hr / 2 units					
7. Course administrator's name (mention all, if more than one name)					
Name: Haider Jawad Kazem Email: hayder@atu.edu.iq					
8. Course Objectives					
Course Objectives		Studying the Crimes of the defunct Baath Party			
9. Teaching and Learning Strategies					
Strategy	<ol style="list-style-type: none"> 1. Identify the political regimes that ruled Iraq during the past ten decades 2. Identify and understand the deviant ideas adopted by the Baath in state administration 3. That the student will be able to identify the repressive policies followed by the Baathist regime 4. The student should understand the impact of the deviant behaviors of the Baath Party on the social life of individuals 5. To learn about the crimes committed by the Baath during its time in power 				
10. Course Structure					
Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	1	Identify A brief overview of the political systems in Iraq (1921-2003)	A brief overview of the political systems in Iraq (1921-2003) “The monarchy, the	lecture	Written tests Quarterly exams final exams Daily evaluation

		“The monarchy, the Republican era (1958-1968), the Republican era (Baathist 1968-2003)	Republican era (1958-1968), the Republican era (Baathist 1968-2003)		
2	1	A brief overview of the political systems in Iraq (1921-2003) “The monarchy, the Republican era (1958-1968), the Republican era (Baathist 1968-2003)	A brief overview of the political systems in Iraq (1921-2003) “The monarchy, the Republican era (1958-1968), the Republican era (Baathist 1968-2003)	lecture	Written tests Quarterly exams final exams Daily evaluation
3	1	The Baathist regime’s violations of public rights and freedoms “violation of intellectual rights and public freedoms, violation of intellectual rights, violation of public freedoms, violation of the right to party pluralism.”	The Baathist regime’s violations of public rights and freedoms “violation of intellectual rights and public freedoms, violation of intellectual rights, violation of public freedoms, violation of the right to party pluralism.”	lecture	Written tests Quarterly exams final exams Daily evaluation
4	1	Identify The Baathist regime’s violations of public rights and freedoms “violation of intellectual rights and public freedoms, violation of intellectual rights, violation of public freedoms, violation of the right to party pluralism.”	The Baathist regime’s violations of public rights and freedoms “violation of intellectual rights and public freedoms, violation of intellectual rights, violation of public freedoms, violation of the right to party pluralism.”	lecture	Written tests Quarterly exams final exams Daily evaluation
5	1	Identify The Baathist regime’s violations of public rights and freedoms “violation of intellectual rights and public freedoms, violation of intellectual rights, violation of public freedoms, violation	The Baathist regime’s violations of public rights and freedoms “violation of intellectual rights and public freedoms, violation of intellectual rights, violation of public freedoms, violation of the right to party pluralism.”	lecture	Written tests Quarterly exams final exams Daily evaluation

		of the right to party pluralism.”			
6	1	Violations of social, political and cultural rights, violation of freedom of opinion, revocation of citizenship, other social rights, violation of cultural rights and freedoms, violation of international law, the first and second Gulf wars, the international blockade on Iraq due to the invasion of Kuwait.	Violations of social, political and cultural rights, violation of freedom of opinion, revocation of citizenship, other social rights, violation of cultural rights and freedoms, violation of international law, the first and second Gulf wars, the international blockade on Iraq due to the invasion of Kuwait.	lecture	Written tests Quarterly exams final exams Daily evaluation
7	1	Identify Violations of social, political and cultural rights, violation of freedom of opinion, revocation of citizenship, other social rights, violation of cultural rights and freedoms, violation of international law, the first and second Gulf wars, the international blockade on Iraq due to the invasion of Kuwait.	Violations of social, political and cultural rights, violation of freedom of opinion, revocation of citizenship, other social rights, violation of cultural rights and freedoms, violation of international law, the first and second Gulf wars, the international blockade on Iraq due to the invasion of Kuwait.	lecture	Written tests Quarterly exams final exams Daily evaluation
8	1	Identify Violations of social, political and cultural rights, violation of freedom of opinion, revocation of citizenship, other social rights, violation of cultural rights and freedoms, violation of international law, the first and second Gulf wars, the	Violations of social, political and cultural rights, violation of freedom of opinion, revocation of citizenship, other social rights, violation of cultural rights and freedoms, violation of international law, the first and second Gulf wars, the international blockade on Iraq due to the invasion of Kuwait.	lecture	Written tests Quarterly exams final exams Daily evaluation

		international blockade on Iraq due to the invasion of Kuwait.			
9	1	Identify The impact of the Baathist regime's behavior on society and its control over the state: random arrests, torture of prisoners, and executions, arbitrary arrest of suspects and torture of prisoners, execution of soldiers and civilians.	The impact of the Baathist regime's behavior on society and its control over the state: random arrests, torture of prisoners, and executions, arbitrary arrest of suspects and torture of prisoners, execution of soldiers and civilians. ‘	lecture	Written tests Quarterly exams final exams Daily evaluation
10	1	Identify The impact of the Baathist regime's behavior on society and its control over the state: random arrests, torture of prisoners, and executions, arbitrary arrest of suspects and torture of prisoners, execution of soldiers and civilians.	‘ The impact of the Baathist regime's behavior on society and its control over the state: random arrests, torture of prisoners, and executions, arbitrary arrest of suspects and torture of prisoners, execution of soldiers and civilians.	lecture	Written tests Quarterly exams final exams Daily evaluation
11	1	Limiting the three powers in the hands of the Baathist regime: separation of powers, ruling powers under the system (executive, legislative and judicial), partisan requirements for limiting power, tyranny in corrupting morals and fighting scholars.	Limiting the three powers in the hands of the Baathist regime: separation of powers, ruling powers under the system (executive, legislative and judicial), partisan requirements for limiting power, tyranny in corrupting morals and fighting scholars.	lecture	Written tests Quarterly exams final exams Daily evaluation
12	1	Limiting the three powers in the hands of the Baathist	Limiting the three powers in the hands of the Baathist regime:	lecture	Written tests Quarterly exams final exams

		regime: separation of powers, ruling powers under the system (executive, legislative and judicial), partisan requirements for limiting power, tyranny in corrupting morals and fighting scholars.	separation of powers, ruling powers under the system (executive, legislative and judicial), partisan requirements for limiting power, tyranny in corrupting morals and fighting scholars.		Daily evaluation
13	1	The impact of the transitional period in combating authoritarian politics: The concept of transitional justice and the mechanisms for achieving it. “The concept of transitional justice and its advantages, the goals of transitional justice.”	The impact of the transitional period in combating authoritarian politics: The concept of transitional justice and the mechanisms for achieving it. “The concept of transitional justice and its advantages, the goals of transitional justice.”	lecture	Written tests Quarterly exams final exams Daily evaluation
14	1	The impact of the transitional period in combating authoritarian politics: The concept of transitional justice and the mechanisms for achieving it. “The concept of transitional justice and its advantages, the goals of transitional justice.”	The impact of the transitional period in combating authoritarian politics: The concept of transitional justice and the mechanisms for achieving it. “The concept of transitional justice and its advantages, the goals of transitional justice.”	lecture	Written tests Quarterly exams final exams Daily evaluation
15	1	The psychological field: The psychological and social mechanisms used by the previous regime: the phenomenon of scarcity and scarcity, the phenomenon of	The psychological field: The psychological and social mechanisms used by the previous regime: the phenomenon of scarcity and scarcity, the phenomenon of distraction, the mechanism of terror	lecture	Written tests Quarterly exams final exams Daily evaluation

		distraction, the mechanism of terror and intimidation, the mechanism of psychological pressure and punishment, ethnic cleansing, scientific and cultural impoverishment.	and intimidation, the mechanism of psychological pressure and punishment, ethnic cleansing, scientific and cultural impoverishment.		
16	1	Identify The psychological field: The psychological and social mechanisms used by the previous regime: the phenomenon of scarcity and scarcity, the phenomenon of distraction, the mechanism of terror and intimidation, the mechanism of psychological pressure and punishment, ethnic cleansing, scientific and cultural impoverishment.	The psychological field: The psychological and social mechanisms used by the previous regime: the phenomenon of scarcity and scarcity, the phenomenon of distraction, the mechanism of terror and intimidation, the mechanism of psychological pressure and punishment, ethnic cleansing, scientific and cultural impoverishment.	lecture	Written tests Quarterly exams final exams Daily evaluation
17	1	The psychological field: The psychological and social mechanisms used by the previous regime: the phenomenon of scarcity and scarcity, the phenomenon of distraction, the mechanism of terror and intimidation, the mechanism of psychological pressure and punishment, ethnic cleansing, scientific and cultural impoverishment.	The psychological field: The psychological and social mechanisms used by the previous regime: the phenomenon of scarcity and scarcity, the phenomenon of distraction, the mechanism of terror and intimidation, the mechanism of psychological pressure and punishment, ethnic cleansing, scientific and cultural impoverishment.	lecture	Written tests Quarterly exams final exams Daily evaluation

18	1	Family rule and the reduction of the nation to the personality of the ruler, the dialectic of the ruler and the citizen between hypocrisy and injustice and the promotion of a culture	Family rule and the reduction of the nation to the personality of the ruler, the dialectic of the ruler and the citizen between hypocrisy and injustice and the promotion of a culture	lecture	Written tests Quarterly exams final exams Daily evaluation
19	1	Family rule and the reduction of the nation to the personality of the ruler, the dialectic of the ruler and the citizen between hypocrisy and injustice and the promotion of a culture	Family rule and the reduction of the nation to the personality of the ruler, the dialectic of the ruler and the citizen between hypocrisy and injustice and the promotion of a culture	lecture	Written tests Quarterly exams final exams Daily evaluation
20	1	Religion and the State: Crimes of preventing the dissemination of religious teachings and confiscating science and knowledge. Crimes of preventing the dissemination of religious teachings and confiscating science and knowledge. Crimes of killing scholars and religious youth and banning religious parties. Religious authority and the religious seminary. Banning parties in general and religious parties in particular.	Religion and the State: Crimes of preventing the dissemination of religious teachings and confiscating science and knowledge. Crimes of preventing the dissemination of religious teachings and confiscating science and knowledge. Crimes of killing scholars and religious youth and banning religious parties. Religious authority and the religious seminary. Banning parties in general and religious parties in particular.	lecture	Written tests Quarterly exams final exams Daily evaluation
21	1	Religion and the State: Crimes of preventing the dissemination of religious teachings	Religion and the State: Crimes of preventing the dissemination of religious teachings and confiscating science	lecture	Written tests Quarterly exams final exams Daily evaluation

		and confiscating science and knowledge. Crimes of preventing the dissemination of religious teachings and confiscating science and knowledge. Crimes of killing scholars and religious youth and banning religious parties. Religious authority and the religious seminary. Banning parties in general and religious parties in particular.	and knowledge. Crimes of preventing the dissemination of religious teachings and confiscating science and knowledge. Crimes of killing scholars and religious youth and banning religious parties. Religious authority and the religious seminary. Banning parties in general and religious parties in particular.		
22	1	Religion and the State: Crimes of preventing the dissemination of religious teachings and confiscating science and knowledge. Crimes of preventing the dissemination of religious teachings and confiscating science and knowledge. Crimes of killing scholars and religious youth and banning religious parties. Religious authority and the religious seminary. Banning parties in general and religious parties in particular.	Religion and the State: Crimes of preventing the dissemination of religious teachings and confiscating science and knowledge. Crimes of preventing the dissemination of religious teachings and confiscating science and knowledge. Crimes of killing scholars and religious youth and banning religious parties. Religious authority and the religious seminary. Banning parties in general and religious parties in particular.	lecture	Written tests Quarterly exams final exams Daily evaluation
23	1	Culture, media, and the militarization of society: the militarization of the educational institution, the militarization of media discourse, the	Culture, media, and the militarization of society: the militarization of the educational institution, the militarization of media discourse, the	lecture	Written tests Quarterly exams final exams Daily evaluation

		militarization of literature and art.	militarization of literature and art.		
24	1	Culture, media, and the militarization of society: the militarization of the educational institution, the militarization of media discourse, the militarization of literature and art.	Culture, media, and the militarization of society: the militarization of the educational institution, the militarization of media discourse, the militarization of literature and art.	lecture	Written tests Quarterly exams final exams Daily evaluation
25	1	The impact of oppression and wars on the environment and the population: the use of internationally prohibited weapons and environmental pollution” Halabja - Basra	The impact of oppression and wars on the environment and the population: the use of internationally prohibited weapons and environmental pollution” Halabja - Basra	lecture	Written tests Quarterly exams final exams Daily evaluation
26	1	Scorched Earth Policy: The Battle of the Jassim River and its effects on the environment, burning oil wells, minefields and war remnants, bombing Iraqi cities.	Scorched Earth Policy: The Battle of the Jassim River and its effects on the environment, burning oil wells, minefields and war remnants, bombing Iraqi cities.	lecture	Written tests Quarterly exams final exams Daily evaluation
27	1	Drying the marshes and straw migration: concept and importance, the role of the former regime in drying the marshes, the effects of drying the marshes,	Drying the marshes and straw migration: concept and importance, the role of the former regime in drying the marshes, the effects of drying the marshes,	lecture	Written tests Quarterly exams final exams Daily evaluation
28	1	Destruction of the agricultural and animal environment and radioactive contamination: Dujail, bulldozing palm groves, Basra,	Destruction of the agricultural and animal environment and radioactive contamination: Dujail, bulldozing palm groves, Basra,	lecture	Written tests Quarterly exams final exams Daily evaluation
29	1	Destruction of the agricultural and animal environment and radioactive	Destruction of the agricultural and animal environment and radioactive	lecture	Written tests Quarterly exams final exams Daily evaluation

		contamination: Dujail, bulldozing palm groves, Basra,	contamination: Dujail, bulldozing palm groves, Basra,		
30	1	Mass graves and bombing of places of worship	Mass graves and bombing of places of worship	lecture	Written tests Quarterly exams final exams Daily evaluation
11.Course Evaluation					
Distributing the score out of 100 according to the tasks assigned to the student such as daily preparation, daily oral, monthly, or written exams, reports etc					
12.Learning and Teaching Resources					
Required textbooks (curricular books, if any)			Human rights book		
Main references (sources)			Human rights book		
Recommended books and references (scientific journals, reports...)			A collection of books in the field o Human rights book		
Electronic References, Websites			Check out websites in this field		

Course Description Form

1. Course Name:					
Machine Parts					
2. Course Code:					
3. Semester / Year:					
First and second semester / second year					
4. Description Preparation Date:					
20/2/2024					
5. Available Attendance Forms:					
Attend a lecture					
6. Number of Credit Hours (Total) / Number of Units (Total)					
3 hours / 6 units					
7. Course administrator's name (mention all, if more than one name)					
Name: mohammed salih hassan Email: hs.muhamad@atu.edu.iq					
8. Course Objectives					
Course Objectives	machine parts aims to explain the role of mechanical parts through mach System, the relation links them , how to conduct some calculations to design th parts and to specify all factors that are affected.				
9. Teaching and Learning Strategies					
Strategy	1 -Identify Riveted Joints, Welded Joints and Screwed Joints. 2 -Identify Frictional Clutches. 3 -Identify Types of Springs , Design.				
10. Course Structure					
Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	3	Review of Strength of Materials	Review of Strength of Materials	lecture	Written tests Quarterly exams final exams Daily evaluation
2-3	6	Identify Riveted Joints.Types of Riveted Joints ,Design of Riveted Joints, Efficiency of Riveted Joints .	Riveted Joints.Types of Riveted Joints ,Design of Riveted Joints, Efficiency of Riveted Joints .	lecture	Written tests Quarterly exams final exams Daily evaluation
4-5	6	Identify Welded Joints Types of welding Joints ,Design of welding Joints	Welded Joints Types of welding Joints ,Design of welding Joints	lecture	Written tests Quarterly exams final exams Daily evaluation
6-7	6	Identify Screwed Joints, Design of Bolts for Fastening , Design	Screwed Joints, Design of Bolts for Fastening ,	lecture	Written tests Quarterly exams

		of Bolts for Power Transition .	Design of Bolts for Power Transition .		final exams Daily evaluation
8-9	6	Identify Keyed Joints , Types of Key , Design of Sunk Key .	Keyed Joints , Types of Key , Design of Sunk Key .	lecture	Written tests Quarterly exams final exams Daily evaluation
10-11	6	Frictional Clutches, Type of Frictional Clutches , Design of Frictional Clutches.	Frictional Clutches, Type of Frictional Clutches , Design of Frictional Clutches.	lecture	Written tests Quarterly exams final exams Daily evaluation
12-13	6	Types of Springs , Design of Springs	Types of Springs , Design of Springs	lecture	Written tests Quarterly exams final exams Daily evaluation
14-15	6	Types of Belts , Design of Belts.	Types of Belts , Design of Belts.	lecture	Written tests Quarterly exams final exams Daily evaluation
16-17	6	Design of Shafts	Design of Shafts	lecture	Written tests Quarterly exams final exams Daily evaluation
18-19	6	Design of Journal Bearings	Design of Journal Bearings	lecture	Written tests Quarterly exams final exams Daily evaluation
20	3	Selection of Ball Bearings	Selection of Ball Bearings	lecture	Written tests Quarterly exams final exams Daily evaluation
21-22	6	Design of Gears by Lewis Equation	Design of Gears by Lewis Equation	lecture	Written tests Quarterly exams final exams Daily evaluation
23-24	6	Gears Trains	Gears Trains	lecture	Written tests Quarterly exams final exams

					Daily evaluation
25-26	6	Design of Simple Gears Box	Design of Simple Gears Box	lecture	Written tests Quarterly exams final exams Daily evaluation
27-28	6	Worm Gears	Worm Gears	lecture	Written tests Quarterly exams final exams Daily evaluation
29-30	6	Cams	Cams	lecture	Written tests Quarterly exams final exams Daily evaluation

11.Course Evaluation

Distributing the score out of 100 according to the tasks assigned to the student such as daily preparation, daily oral, monthly, or written exams, reports etc

12.Learning and Teaching Resources

Required textbooks (curricular books, if any)	Machine design R.S. KHURMI
Main references (sources)	Machine design
Recommended books and references (scientific journals, reports...)	A collection of books in the field of Machine design
Electronic References, Websites	Check out websites in this field

Course Description Form

1. Course Name:					
Manufacturing processes 2					
2. Course Code:					
3. Semester / Year:					
First and second semester / second year					
4. Description Preparation Date:					
19/2/2024					
5. Available Attendance Forms:					
Physical attendance according to the weekly schedule					
6. Number of Credit Hours (Total) / Number of Units (Total)					
4 hr./ 8 unites					
7. Course administrator's name (mention all, if more than one name)					
Name: Ali Awad Ismaeel Email: aliawad@atu.edu.iq					
8. Course Objectives					
Course Objectives		Teaching students to work on production machines..... Operations and formation...			
9. Teaching and Learning Strategies					
Strategy		1- Data Show 2- Whiteboard 3- Calculator 4- Milling workshop			
10. Course Structure					
Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1		Geometric tolerances, couplings, coupling systems, ranks of tolerances, coupling units, basic deviations,	Manufacturing processes 2	1- Data Show 2- Whiteboard 3- Calculator 4-Milling workshop	Quick exams, class questions
2		Types of tolerances, hole basic system, column basic system, symbols of duals, tolerances for loose dimensions, detailed duals, selection of duals and their economic advantages.	Manufacturing processes 2	1- Data Show 2- Whiteboard 3- Calculator 4-Milling workshop	Quick exams, class questions
3		Geometric tolerances in shape and position and types of shape and position tolerances.	Manufacturing processes 2	1- Data Show 2- Whiteboard 3- Calculator 4-Milling workshop	Quick exams, class questions
4		Measurement specifiers, design of measurement specifiers, types of measurement specifiers (internal measuring specifiers, external	Manufacturing processes 2	1- Data Show 2- Whiteboard 3- Calculator 4-Milling workshop	Quick exams, class questions

		measuring specifiers, adjustable measuring specifiers, solid measuring specifiers, special measuring specifiers).			
5		Classification of metal fabrication, metal working, introduction to the theory of blade formation and influencing factors, methods of fixing workpieces, including round and non-round, the cutting edges used, and the longitudinal and transverse feed shares.	Manufacturing processes 2	1- Data Show 2- Whiteboard 3- Calculator 4-Milling workshop	Quick exams, class questions
6		Identifying the pens used and how to install them for crafts, shaping lathe pens.	Manufacturing processes 2	1- Data Show 2- Whiteboard 3- Calculator 4-Milling workshop	Quick exams, class questions
7		Identifying the types of turning pen angles, the effect of turning pen angles on the cutting process, types of turning pen metals, cutting conditions, cutting elements, uses of cutting speeds, and the use of tables and speed maps, classification of cutting tools with respect to operating methods and number of cutting edges.	Manufacturing processes 2	1- Data Show 2- Whiteboard 3- Calculator 4-Milling workshop	Quick exams, class questions
8		The cutting edge, the emerging cutting edge and the theory of its formation, the factors that affect it, the factors that lead to reducing its size, cooling and its importance for cutting operations, various cooling liquids.	Manufacturing processes 2	1- Data Show 2- Whiteboard 3- Calculator 4-Milling workshop	Quick exams, class questions
9		How to conduct an operating card for a group of operations, calculate its components, and calculate the cutting time for each operation	Manufacturing processes 2	1- Data Show 2- Whiteboard 3- Calculator 4-Milling workshop	Quick exams, class questions
10		How to take advantage of the sequence card to make a product path through the different units.	Manufacturing processes 2	1- Data Show 2- Whiteboard 3- Calculator 4-Milling workshop	Quick exams, class questions
11		Factors that affect the choice of cutting speed (1- The effect of the	Manufacturing processes 2	1- Data Show 2- Whiteboard 3- Calculator	Quick exams, class questions

		properties of the cutting tool. 2- The effect of the operating elements. 3- The effect of the properties of the metal being worked.		4-Milling workshop	
12		Automatic turret turning machines, studying the processes that can be operated and analyzing the processes on the product, how to prepare operating cards.	Manufacturing processes 2	1- Data Show 2- Whiteboard 3- Calculator 4-Milling workshop	Quick exams, class questions
13		Types of tools used and their arrangement on the front and rear hexagonal and quadrilateral heads.	Manufacturing processes 2	1- Data Show 2- Whiteboard 3- Calculator 4-Milling workshop	Quick exams, class questions
14		Studying how to program automatic programmed lathes and the factors influencing the operating steps.	Manufacturing processes 2	1- Data Show 2- Whiteboard 3- Calculator 4-Milling workshop	Quick exams, class questions
15		Milling, learning about the operations that can be performed on milling machines, parts and components of horizontal and vertical milling machines, and the nature of the work of each part.	Manufacturing processes 2	1- Data Show 2- Whiteboard 3- Calculator 4-Milling workshop	Quick exams, class questions
16		Machine accessories, dividing heads, tools for attaching workpieces, mandrels, and bushings.	Manufacturing processes 2	1- Data Show 2- Whiteboard 3- Calculator 4-Milling workshop	Quick exams, class questions
17		Types of milling knives (disc and finger), gear sharpening knives, angle milling knives.	Manufacturing processes 2	1- Data Show 2- Whiteboard 3- Calculator 4-Milling workshop	Quick exams, class questions
18		Explaining the steps for performing milling operations, choosing the appropriate machine, the initial dimensions of the artifacts, and methods of attaching the artifacts.	Manufacturing processes 2	1- Data Show 2- Whiteboard 3- Calculator 4-Milling workshop	Quick exams, class questions
19		Milling different types of gears (steel, conical, helical, worm gears)	Manufacturing processes 2	1- Data Show 2- Whiteboard 3- Calculator 4-Milling workshop	Quick exams, class questions
20		How to make a ghanfari clutch, a V-block clutch.	Manufacturing processes 2	1- Data Show 2- Whiteboard 3- Calculator 4-Milling workshop	Quick exams, class questions
21		Operating rates, cutting and feeding speeds, and	Manufacturing processes 2	1- Data Show 2- Whiteboard	Quick exams, class questions

		the basis for their selection for the following various milling operations.		3- Calculator 4-Milling workshop	
22		Skimming: Introduction to the types of planers (trolley, hopper, vertical), operations performed on the planing machine, operating capabilities available with each machine, methods of attaching the work.	Manufacturing processes 2	1- Data Show 2- Whiteboard 3- Calculator 4-Milling workshop	Quick exams, class questions
23		Operating rates, including cutting and feeding speeds, planer attachments such as dividing heads or special devices, angles of planer pens, and types of forces affecting them.	Manufacturing processes 2	1- Data Show 2- Whiteboard 3- Calculator 4-Milling workshop	Quick exams, class questions
24		The planer planer, clarification of (the cutting stroke, the return stroke), methods of connection to the planer machine and operating rates, calculating the cutting time for planing, preparing the planer sequence card.	Manufacturing processes 2	1- Data Show 2- Whiteboard 3- Calculator 4-Milling workshop	Quick exams, class questions
25		Grinding: An introduction to the theory of cutting and the shape of the blade in the grinding process, the grinding stones used (circumferential, face, side, cup, external, internal), their specifications and uses, attachment methods and balances.	Manufacturing processes 2	1- Data Show 2- Whiteboard 3- Calculator 4-Milling workshop	Quick exams, class questions
26		Different grinding machines and the operating capabilities of each type (external and internal cylindrical grinding machines, tool sharpening machines).	Manufacturing processes 2	1- Data Show 2- Whiteboard 3- Calculator 4-Milling workshop	Quick exams, class questions
27		Preparing a comprehensive operating card for all cutting operations.	Manufacturing processes 2	1- Data Show 2- Whiteboard 3- Calculator 4-Milling workshop	Quick exams, class questions
28		Metal forming: theory of forming, foundations of cold and hot forming, types of forming.	Manufacturing processes 2	1- Data Show 2- Whiteboard 3- Calculator 4-Milling workshop	Quick exams, class questions

29		Rolling mill:	Manufacturing processes 2	1- Data Show 2- Whiteboard 3- Calculator 4-Milling workshop	Quick exams, class questions
30		The basics of rolling and its methods, rolled products, sequence of operations in rolling, machines used, conditions for completing the rolling process.	Manufacturing processes 2	1- Data Show 2- Whiteboard 3- Calculator 4-Milling workshop	Quick exams, class questions

11.Course Evaluation

Distribution of the grade from 100 = (25 for the first semester + 25 for the second semester) according to the tasks assigned to the student, such as daily preparation, daily, oral, monthly and written exams, reports, etc. + (50 final)

12.Learning and Teaching Resources

Required textbooks (curricular books, if any)	
Main references (sources)	Manufacturing processes, part two
Recommended books and references (scientific journals, reports...)	
Electronic References, Websites	

Course Description Form

13.Course Name:					
Computer application 2					
14.Course Code:					
15.Semester / Year:					
First and second semester / second year					
16.Description Preparation Date:					
19/2/2024					
17.Available Attendance Forms:					
Attend a lecture					
18.Number of Credit Hours (Total) / Number of Units (Total):					
3 hours / 6 units					
19.Course administrator's name (mention all, if more than one name)					
Name: Dr. Zaid H. Rashid			Email: zhr.1986@atu.edu.iq		
20.Course Objectives					
Course Objectives		Introducing the student to the use of AutoCAD and its two-dimensional tools, drawing various geometric shapes, as well as three-dimensional .drawing tools and drawing models.			
21.Teaching and Learning Strategies					
Strategy		1- . Get to know the program environment and the advantages of working in 2- . Recognizing drawing and 2D editing tapes 3- . Recognizing drawing and 3D editing tapes 4- Identify the type of files and convert them to and from corresponding . programs			
22. Course Structure					
Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	3	Introduction to the AutoCAD program , Screen settings(Snap, Limit, Grid, Pan, Zoom,...)	Introduction to the AutoCAD program , Screen settings(Snap, Limit, Grid, Pan, Zoom,...)	lecture	Practical tests Quarterly exams final exams Daily evaluation
2	3	Draw . menu	Draw . menu	lecture	Practical tests Quarterly exams final exams Daily evaluation
3	3	Draw . menu	Draw . menu	lecture	Practical tests Quarterly exams final exams

					Daily evaluation
4	3	Draw . menu	Draw . menu	lecture	Practical tests Quarterly exams final exams Daily evaluation
5	3	List of revisions (modify) .	List of revisions(modify) .	lecture	Practical tests Quarterly exams final exams Daily evaluation
6	3	List of revisions (modify) .	List of revisions(modify) .	lecture	Practical tests Quarterly exams final exams Daily evaluation
7	3	List(Object Snap)	List(Object Snap)	lecture	Practical tests Quarterly exams final exams Daily evaluation
8	3	. Layers_	. Layers_	lecture	Practical tests Quarterly exams final exams Daily evaluation
9	3	_ . Dimensions_	_ . Dimensions_	lecture	Practical tests Quarterly exams final exams Daily evaluation
10	3	Writing, scratching Hatching	Writing, scratching Hatching	lecture	Practical tests Quarterly exams final exams Daily evaluation
11	3	Store files, import files from other programs, and export them	Store files, import files from other programs, and .export them	lecture	Practical tests Quarterly exams final exams Daily evaluation
12	3	Makingblocks and importing parts from other programs, such as dividing an element into equal spaces(Divide) the , distribution of elements along a path (Measure) .	Makingblocks and importing parts from other programs, such as dividing an element into equal spaces(Divide) , the distribution of elements along a path (Measure) .	lecture	Practical tests Quarterly exams final exams Daily evaluation
13	3	Computer drawing applications according to the department's .specialty	Computer drawing applications according to the department's .specialty	lecture	Practical tests Quarterly exams final exams Daily evaluation
14	3	Computer drawing applications according to the department's .specialty	Computer drawing applications according to the department's .specialty	lecture	Practical tests Quarterly exams final exams Daily evaluation
15	3	Printing, copying and extracting files on the .plotter	Printing, copying and extracting files on the .plotter	lecture	Practical tests Quarterly exams final exams

					Daily evaluation
16	3	Principles of drawing .in three dimensions	Principles of drawing in .three dimensions	lecture	Practical tests Quarterly exams final exams Daily evaluation
17	3	List of cortical trigrams(Surface .(	List of cortical trigrams (Surface .(	lecture	Practical tests Quarterly exams final exams Daily evaluation
18	3	List of cortical trigrams(Surface .(	List of cortical trigrams (Surface .(	lecture	Practical tests Quarterly exams final exams Daily evaluation
19	3	List of cortical trigrams(Surface .(	List of cortical trigrams (Surface .(	lecture	Practical tests Quarterly exams final exams Daily evaluation
20	3	List of cortical trigrams(Surface .(	List of cortical trigrams (Surface .(	lecture	Practical tests Quarterly exams final exams Daily evaluation
21	3	List ofSolids .	List ofSolids .	lecture	Practical tests Quarterly exams final exams Daily evaluation
22	3	List ofSolids .	List ofSolids .	lecture	Practical tests Quarterly exams final exams Daily evaluation
23	3	List ofSolids .	List ofSolids .	lecture	Practical tests Quarterly exams final exams Daily evaluation
24	3	Applications on the commandsSlice - Revolve - Extrude	Applications on the commandsSlice - Revolve - Extrude	lecture	Practical tests Quarterly exams final exams Daily evaluation
25	3	Applications on the commandsSlice - Revolve - Extrude	Applications on the commandsSlice - Revolve - Extrude	lecture	Practical tests Quarterly exams final exams Daily evaluation
26	3	Applications on the commandsSlice - Revolve - Extrude	Applications on the commandsSlice - Revolve - Extrude	lecture	Practical tests Quarterly exams final exams Daily evaluation
27	3	Solid Editing drawing revisions	Solid Editing drawing revisions	lecture	Practical tests Quarterly exams final exams Daily evaluation
28	3	Solid Editing drawing revisions	Solid Editing drawing revisions	lecture	Practical tests Quarterly exams final exams Daily evaluation

29	3	Draw an applied example within the department's specialty	Draw an applied example within the department's specialty	lecture	Practical tests Quarterly exams final exams Daily evaluation
30	3	Draw an applied example within the department's specialty	Draw an applied example within the department's specialty	lecture	Practical tests Quarterly exams final exams Daily evaluation

23.Course Evaluation

Distribution of grades out of 100 for the semester exams, continuous assessment, and final exam

24.Learning and Teaching Resources

Required textbooks (curricular books, if any)	
Main references (sources)	Introduction to Auto CAD 2009 2D and 3D design, 1'st edition, 2008, Alf Yarwood
Recommended books and references (scientific journals, reports...)	Educational books for AutoCAD
Electronic References, Websites	Check out websites in this field

Course Description Form

25. Course Name:					
Industrial management					
26. Course Code:					
27. Semester / Year:					
First and second semester / second year					
28. Description Preparation Date:					
20-2-2023					
29. Available Attendance Forms:					
Mandatory attendance weekly					
30. Number of Credit Hours (Total) / Number of Units (Total)					
2 hr/ 4 units					
31. Course administrator's name (mention all, if more than one name)					
Name: Rafal Salah Noori Email: rafal.noori@atu.edu.iq					
32. Course Objectives					
Course Objectives		<p>The student will be able to:</p> <ol style="list-style-type: none"> 1. Learn about industrial management and its functions. 2. Learn about production planning and the objectives and methods of production planning. 3. Learn about linear programming methods 4. Learn about the concept of maintenance, the importance of maintenance, and the concept of the technological system 5. Learn about quality control, quality control methods, and sample inspection characteristics 			
33. Teaching and Learning Strategies					
Strategy		<ol style="list-style-type: none"> 1. Academic lectures. 2. Open discussions. 3. Attempts to solve exercises according to the required equations using the problem-solving method 			
34. Course Structure					
Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2	The student understands the content and can complete the applicable exercises.	Management: Management and its development, stages of management development, basic principles of management, characteristics of management, levels of management.	lecture And solve problems	Exams And Practical report
2	2	The student understands the content and can complete the applicable exercises	Administrative functions, industrial management, its functions, industrial engineering, characteristics of industrial management.	lecture And solve problems	Exams And Practical report

3	2	The student understands the content and can complete the applicable exercises	Industrial unit arrangement: -Location and arrangement of the industrial unit. -The main factors affecting the selection of industrial project sites. -Arrangement of the industrial unit (initial arrangement of the factory.(-Classification of types of industrial unit arrangements. -Advantages, limitations, and cases in which it is applied (commodity, functional, mixed, and combined arrangement).	lecture And solve problems	Exams And Practical report
4	2	The student understands the content and can complete the applicable exercises	Feasibility study for industrial projects: An idea about the feasibility study for industrial projects. Industrial project Stages of feasibility studies The importance of feasibility studies.	lecture And solve problems	Exams And Practical report
5	2	The student understands the content and can complete the applicable exercises	Production planning: Production planning, the concept of production planning, objectives of production planning and control.	lecture And solve problems	Exams And Practical report
6	2	The student understands the content and can complete the applicable exercises	Production planning: Types of production, production planning methods.	lecture And solve problems	Exams And Practical report
7	2	The student understands the content and can complete the applicable exercises	Linear programming methods, graphical method and transportation method	lecture And solve problems	Exams And Practical report
8	2	The student understands the content and can complete the applicable exercises	Study work and standard time: Work study, work study methods, method study, time study, work measurement	lecture And solve problems	Exams And Practical report
9	2	The student understands the content and can complete the applicable exercises	Maintenance: Maintenance, the importance of maintenance, the concept of the technological system	lecture And solve problems	Exams And Practical report
10	2	The student understands the content and can	Maintenance: Types of maintenance, types of holidays.	lecture And solve problems	Exams And Practical report

		complete the applicable exercises			
11	2	The student understands the content and can complete the applicable exercises	Training: Training, the concept of training, the importance of training, training methods.	lecture And solve problems	Exams And Practical report
12	2	The student understands the content and can complete the applicable exercises	Industrial costs and wages: Costs, classification of costs, wages.	lecture And solve problems	Exams And Practical report
13	2	The student understands the content and can complete the applicable exercises	Industrial costs and wages: Methods of calculating wages, incentives, and types of incentives	lecture And solve problems	Exams And Practical report
14	2	The student understands the content and can complete the applicable exercises	purchase management: Purchases, purchasing steps, inventory, types of stored materials and methods of controlling them.	lecture And solve problems	Exams And Practical report
15	2	The student understands the content and can complete the applicable exercises	Industrial safety: Industrial safety, accident, types of accidents, protective equipment and its types.	lecture And solve problems	Exams And Practical report
16	2	The student understands the content and can complete the applicable exercises	Quality control: The meaning of control, the meaning of quality.	lecture And solve problems	Exams And Practical report
17	2	The student understands the content and can complete the applicable exercises	Quality control: Definition of quality, quality specifications, factors controlling quality, development and improvement of quality, design, quality conformity, international and Iraqi standard specifications.	lecture And solve problems	Exams And Practical report
18	2	The student understands the content and can complete the applicable exercises	Quality control methods and sample inspection plans: Quality control methods, examination and inspection methods, quality control steps, sampling methods, sample inspection schedule.	lecture And solve problems	Exams And Practical report
19	2	The student understands the content and can	Quality control methods and sample inspection plans:	lecture And solve problems	Exams And Practical report

		complete the applicable exercises	Operating characteristic curve, quality of design, data collection (type and analysis).		
20	2	The student understands the content and can complete the applicable exercises	Control charts.	lecture And solve problems	Exams And Practical report
21	2	The student understands the content and can complete the applicable exercises	Control charts: Preparing and using a mean chart. Preparing and using a Pareto chart.	lecture And solve problems	Exams And Practical report
22	2	The student understands the content and can complete the applicable exercises	Control charts: Prepare a chart with standard deviation Prepare a defect chart.		
23	2	The student understands the content and can complete the applicable exercises	Control charts: Scatterplot, how to prepare a scatterplot.	lecture And solve problems	Exams And Practical report
24	2	The student understands the content and can complete the applicable exercises	Control charts: Quality control charts for standard deviation and percentage of defective units. Histogram (preparation and use).	lecture And solve problems	Exams And Practical report
25	2	The student understands the content and can complete the applicable exercises	Types of control charts: Control charts for honeycombs (arithmetic mean control chart (X-chart)).	lecture And solve problems	Exams And Practical report
26	2	The student understands the content and can complete the applicable exercises	Types of control charts: Control charts for defects (control chart for range R-Chart and control chart for standard deviation δ -chart).	lecture And solve problems	Exams And Practical report
27	2	The student understands the content and can complete the applicable exercises	Types of control charts: Control charts for defects (control chart for the percentage of defective units P-chart).	lecture And solve problems	Exams And Practical report
28	2	The student understands the content and can complete the	Types of control charts: Control charts for defects (Control chart, number of defects in one unit, C-Chart).	lecture And solve problems	Exams And Practical report

		applicable exercises			
29	2	The student understands the content and can complete the applicable exercises	Types of control charts: Control charts for defects (Control chart for the average number of defects in the set of items (U-chart).	lecture And solve problems	Exams And Practical report
30	2	The student understands the content and can complete the applicable exercises	Summary of quality control panels.	lecture And solve problems	Exams And Practical report

35.Course Evaluation

Evaluation is done through:

1. Daily, monthly and annual examinations.
2. Interaction and group participation in discussing and solving exercises.

36.Learning and Teaching Resources

"Industrial management majors guide "world widelearn ,retrieved .2
industrial manager ;job description , duties" and requirements". Bestaccredited .3
colleges

.3Industrial organization.asp" investopedia retrieved"

.4 Hammdy A. taha "operation research : an introduction " edition prentice -hall

.5. الإدارة الصناعية ، هيئة المعاهد الفنية ، ايسر سوسان , فراس جعبار.

.6. الهندسة الصناعية – دار الكتب للطباعة والنشر – الطبعة الاولى , د. عادل كوربال.

.7. ادارة الجودة الشاملة ومتطلبات الايزو, الطبعة الاولى, مطبعة بغداد , خليل العاني , اسماعيل القزاز.

Course Description Form

25.Course Name:					
New head way English course					
26.Course Code:					
27.Semester / Year:					
First and second semester / second year					
28.Description Preparation Date:					
20/2/2024					
29.Available Attendance Forms:					
Mandatory attendance weekly					
30.Number of Credit Hours (Total) / Number of Units (Total)					
1 h/ 2 units					
31.Course administrator's name (mention all, if more than one name)					
Name: Wassan Jabbar					
Email: Wassan Jabbar @gmail .com					
32.Course Objectives					
Course Objectives		<ul style="list-style-type: none"> • The student will be able to: • 1. Learn about English Basic & Grammar • 2. Identify the construction of sentences ,uses in examples & Short answers • 3. Tenses of Verbs , Irregular Verbs • 4. Uses of Quantity: much and many / some and any - something , anyone, nobody, everywhere / a few, a little, a lot of - Articles 			
33.Teaching and Learning Strategies					
Strategy		<ol style="list-style-type: none"> 1. Academic lectures. 2. Open discussions. 3. Attempts to solve exercises according to the required equations using the problem-solving method. 			
34. Course Structure					
Week	Hou rs	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	1	The student understands the : Tenses: Present, past, future , Questions - Questions words	Getting to know you / Tenses: Present, past, future , Questions - Where were you born? , What do you do? Questions words Who ... ?,Why	lecture	Daily evaluation , Exams And Practical report
2	1	Present tenses Present Simple Present Continuous What's he doing at the moment? Uses have/have got	The way we live Present tenses Present Simple Present Continuous What's he doing at the moment? have/have got	lecture	Daily evaluation , Exams And Practical report

3	1	Past tenses, Past Simple - Past Continuous	It all went wrong Past tenses, Past Simple - What did you do last night ? Past Continuous	lecture	Daily evaluation , Exams And Practical report
4	1	Quantity: much and many / some and any something, anyone, nobody, everywhere a few, a little, a lot of Articles	Let's go shopping! Quantity: much and many / some and any something, anyone, nobody, everywhere a few, a little, a lot of Articles	lecture	Daily evaluation , Exams And Practical report
5	1	Verb patterns 1 want/hope to do, enjoy/like doing Future intentions	What do you want to do? Verb patterns 1 want/hope to do, enjoy/like doing Future intentions going to and will	lecture	Daily evaluation , Exams And Practical report
6	1	What's it like What's it like? Comparative and superlative adjectives	Tell me! What's it like What's it like? Comparative and superlative adjectives	lecture	Daily evaluation , Exams And Practical report
7	1	Present Perfect and Past Simple / for and since Tense revision	Famous couples Present Perfect and Past Simple She has written 20 novels. for and since Tense revision Where do you live ?	lecture	Daily evaluation , Exams And Practical report
8	1	have (got) to / should / must	Do's and don'ts have (got) to You have to pay bills / should You should talk to your boss / must You must go to the dentist.	lecture	Daily evaluation , Exams And Practical report
9	1	Time and conditional clauses - as soon as, when, while, until . What if....?	Going places Time and conditional clauses - as soon as, when, while, until When we're in Australia, we'll.	lecture	Daily evaluation , Exams And Practical report

			What if....? If I pass my exams, I'll...		
10	1	Verb patterns 2 Infinitives - Purpose what, etc. + infinitive something ,etc. + infinitive	Scared to death - Verb patterns 2 manage to do, used to do, go walking Infinitives - Purpose I went to the shops to buy some shoes. what, etc. + infinitive I don't know what to say./ something ,etc. + infinitive I need something to eat	lecture	Daily evaluation , Exams And Practical report
11	1	Things that changed the world - Passives	Things that changed the world - Passives Coca-Cola is enjoyed all over the world. It was Invented In 1886.	lecture	Daily evaluation , Exams And Practical report
12	1	Dreams and reality Second conditional Might	Dreams and reality Second conditional If I were a princess, I'd live In a castle. Might - I might go to America.	lecture	Daily evaluation , Exams And Practical report
13	1	Present Perfect Continuous . Present Perfect Simple versus Continuous	Earning a living Present Perfect Continuous - I've been living on the streets for a year. / How long have you been selling The Big Issue? Present Perfect Simple versus Continuous He's been running.	lecture	Daily evaluation , Exams And Practical report
14	1	Past Perfect . Reported statements	Love you and leave you Past Perfect They had met only one week earlier Reported statements She told me that she loved John.	lecture	Daily evaluation , Exams And Practical report

35.Course Evaluation

Evaluation is done through:

1. Daily, monthly and annual examinations.

2. Interaction and group participation in discussing and solving exercises.

Distributing the score out of 100 according to the tasks assigned to the student such as daily preparation, daily oral, monthly, or written exams, reports etc

36. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Pre - Intermediate -- New head way English course John and Liz Soars / OXFORD UNIVERSITY PRESS
Main references (sources)	
Recommended books and references (scientific journals, reports...)	
Electronic References, Websites	

Course Description Form

37. Course Name: **Electrical Technology**

38. Course Code:

39. Semester / Year:

First and second semester / First year

40. Description Preparation Date:

20/2/2024

41. Available Attendance Forms:

Mandatory attendance weekly

42. Number of Credit Hours (Total) / Number of Units (Total)

3 h/ 6 units

43. Course administrator's name (mention all, if more than one name)

Name: Wassan Jabbar

Email: **Wassan Jabbar @gmail .com**

44. Course Objectives

Course Objectives

- The student will be able to:
- **1. Learn about Electrical Basic Electrical(units, symbols) simple Electric Circuit ,**
- **2. Identify the Electric Circuit .**
- **3. Identify the The Effective Magnetic for Electric current , Application on users**
- **4. Identify the Alternating Current , types , construction , Utilization , Rotation Reversal.**
- **5. Electric Transformers. / 6. Motors Protection**

45. Teaching and Learning Strategies

Strategy

- 1. Academic lectures.**
- 2. Open discussions.**
- 3. Attempts to solve exercises according to the required equations using the problem-solving method.**

46. Course Structure

Week	Hou rs	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2	The student understands the content and can complete the applicable exercises.	First : Electrical Basic Electrical(units, symbols) simple Electric Circuit , Electric Current , Potential) .	lecture And solve problems	Daily evaluation , Exams And Practical report
2	2	The student understands the content and can complete the applicable exercises.	Voltage , Amper , Ohms Law , Power , Resistance , Series & Parallel Circuits .	lecture And solve problems	Daily evaluation , Exams And Practical report
3	2	The student understands the content and can complete the applicable exercises.	Problems for Electric Circuit .	lecture And solve problems	Daily evaluation , Exams And Practical report

4	2	The student understands the content and can complete the applicable exercises.	Second : Alternating Current , Methods of approach Alternating current .	lecture And solve problems	Daily evaluation , Exams And Practical report
5	2	The student understands the content and can complete the applicable exercises.	The Sine wave , General format for the Sinusoidal voltage or current , Effective values {Root mean spare (I r . m . s , V r . m . s)} .	lecture And solve problems	Daily evaluation , Exams And Practical report
6	2	The student understands the content and can complete the applicable exercises.	The Way for Alternating current , types of power plant .	lecture And solve problems	Daily evaluation , Exams And Practical report
7	2	The student understands the content and can complete the applicable exercises.	Third : Electromagnetic :Magnetic Field , Magnetic flux lines , Magnetic flux density	lecture And solve problems	Daily evaluation , Exams And Practical report
8	2	The student understands the content and can complete the applicable exercises.	The Effective Magnetic for Electric current , Application on users Magnetic Motive force.	lecture And solve problems	Daily evaluation , Exams And Practical report
9	2	The student understands the content and can complete the applicable exercises.	4 Th : Alternating Current Single phase , Alternating Current three phase .	lecture And solve problems	Daily evaluation , Exams And Practical report
10	2	The student understands the content and can complete the applicable exercises.	Star Connected for three phase system , phase current & Line current , phase Voltage & line Voltage , Power .	lecture And solve problems	Daily evaluation , Exams And Practical report
11	2	The student understands the content and can complete the applicable exercises.	Delta Connected for three phase system , phase current & Line current , phase Voltage & line Voltage , Power .	lecture And solve problems	Daily evaluation , Exams And Practical report
12	2	The student understands the content and can complete the applicable exercises.	5 Th : Electric Transformers..	lecture And solve problems	Daily evaluation , Exams And Practical report
13	2	The student understands the content and can complete the applicable exercises.	6 Th : A.C motors , motor types , three phase motors (types , Utilization) .	lecture And solve problems	Daily evaluation , Exams And Practical report
14	2	The student understands the content and can complete the applicable exercises.	Construction of three phase motors , Principle to operate motors .	lecture And solve problems	Daily evaluation , Exams And Practical report
15	2	The student understands the content	Methods to start With motion three phase motors .	lecture And solve problems	Daily evaluation , Exams And Practical report

		and can complete the applicable exercises.			
16	2	The student understands the content and can complete the applicable exercises.	Methods to control & specifically change Velocity of three phase motors.	lecture And solve problems	Daily evaluation , Exams And Practical report
17	2	The student understands the content and can complete the applicable exercises.	7 Th Alternating Current Single phase motors , types , construction , Utilization , Rotation Reversal.	lecture And solve problems	Daily evaluation , Exams And Practical report
18	2	The student understands the content and can complete the applicable exercises.	Single phase motors to start with condenser types construction , Utilization.	lecture And solve problems	Daily evaluation , Exams And Practical report
19	2	The student understands the content and can complete the applicable exercises.	8 Th : Motors Protection .	lecture And solve problems	Daily evaluation , Exams And Practical report
20	2	The student understands the content and can complete the applicable exercises.	Circuit Fuse , types , characteristic To be Separated...	lecture And solve problems	Daily evaluation , Exams And Practical report
21	2	The student understands the content and can complete the applicable exercises.	9 Th : Method of specifically devoid in motors .	lecture And solve problems	Daily evaluation , Exams And Practical report
22	2	The student understands the content and can complete the applicable exercises.	High motors temperature during rotation , rotation motors with clamor .	lecture And solve problems	Daily evaluation , Exams And Practical report
23	2	The student understands the content and can complete the applicable exercises.	Reformation Method to break down .	lecture And solve problems	Daily evaluation , Exams And Practical report
24	2	The student understands the content and can complete the applicable exercises.	Circuit to be in control of operation cybernetics motors .. 10 Th: Motors security & perpetuation .	lecture And solve problems	Daily evaluation , Exams And Practical report
25	2	The student understands the content and can complete the applicable exercises.	Method of operation conservation motors ..	lecture And solve problems	Daily evaluation , Exams And Practical report
26	2	The student understands the content and can complete the applicable exercises.	Motors greasing & cleaning .	lecture And solve problems	Daily evaluation , Exams And Practical report
27	2	The student understands the content	Industrial safe or Industrial secure .	Lecture And solve problems	Daily evaluation , Exams And

		and can complete the applicable exercises.			Practical report
28	2		Methods of Generation Power electricity	lecture And solve problems	Daily evaluation , Exams And Practical report
29	2		Generation of Power electricity	lecture And solve problems	Daily evaluation , Exams And Practical report
30	2			lecture And solve problems	Daily evaluation , Exams And Practical report

47.Course Evaluation

Evaluation is done through:

1. Daily, monthly and annual examinations.
2. Interaction and group participation in discussing and solving exercises.

Distributing the score out of 100 according to the tasks assigned to the student such as daily preparation, daily oral, monthly, or written exams, reports etc

48.Learning and Teaching Resources

Required textbooks (curricular books, if any)	علم الهندسة الكهربائية الأساسية تأليف / أي . مكنزي سميث , كي . تي . هوزي ترجمة / الدكتور محمد زكي محمد خضير - الدكتور مظفر أنور النعمة كتاب تحليل الدوائر الكهربائية والالكترونية
Main references (sources)	دوائر والقياسات الكهربائية - تأليف / د. أسعد عبد المجيد الاوسي- د. محمد عيوش - صدقي كريم سعيد - ابراهيم يحيى احمد / 1991
Recommended books and references (scientific journals, reports...)	
Electronic References, Websites	