Ministry of Higher Education and Scientific Research Scientific Supervision and Scientific Evaluation Apparatus Directorate of Quality Assurance and Academic Accreditation Accreditation Department Al-Furat Al-Awsat Technical University Karbala Technical Institute/ Mechanical Technologies Department



Academic Program and Course Description Guide

2025

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:

Description of the academic program: 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.

<u>**Course description**</u>: It provides a necessary summary of the most important characteristics of the course and the learning outcomes that the student is expected to achieve, demonstrating whether he has made the most of the learning opportunities available. It is derived from the program description.

<u>Program vision</u>: An ambitious picture for the future of the academic program to be an advanced, inspiring, motivating, realistic and applicable programme.

<u>Program message</u>: It briefly explains the objectives and activities necessary to achieve them, and also identifies the program's development paths and directions.

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

<u>Curriculum structure</u>: All courses/study subjects included in the academic program are in accordance with the approved learning system (semester, annual, Bologna track), whether it is a requirement (ministry, university, college, or scientific department), along with the number of study units.

Learning Outcomes: A compatible set of knowledge, skills, and values that the student has acquired after the successful completion of the academic program. The learning outcomes for each course must be determined in a way that achieves the program objectives.

<u>**Teaching and learning strategies**</u>: They are the strategies used by the faculty member to develop the student's teaching and learning, and they are plans that are followed to reach the learning goals. That is, it describes all curricular and extracurricular activities to achieve the learning outcomes of the programme.

Academic program description form

University Name: Al-Furat Al-Awsat Technical University the college/Institute: Technical Karbala scientific department: Department of Mechanical Technologies Name of the academic or professional program: Mechanical techniques/production Name of the final certificate: Technical Diploma School system: annual Date the description was prepared:15/2/2025 File filling date:3/3/2025

signature: Head of Department Name: Lec. Dr. Mohammad A. Naser Date:10/3/2025

signature: scientific Associate Name: Assit. pro. Dr. Mohammed. Al-yassery Date: 17/312025

Check the file before Division of Quality Assurance and University Performance Director of the Quality Assurance and University Performance Department :

YIEN DA

Signature: Assit. pro. Ali Neamah Hasan Date: /3/2025

Fidhillelir Signature: 27-3-2025

Approval of the Dean Prof. Dr. Fadil M. Dahir

1. See the program

The Department of Mechanical Technology is one of the main technological departments that aims to create a technical system in the field of mechanics / production and metals branch to be a pioneer in providing reliable technical services with a solid scientific basis in service to society. Creating a sustainable environment by relying on artificial intelligence.

2. Program message

The Department of Mechanical Technology adopts a general mission based on providing advanced technical education that combines theoretical knowledge with practical application, to qualify specialized cadres capable of keeping pace with modern industrial developments and solving technical problems using innovative and sustainable methods, with a focus on meeting the needs of the local and global market.

The special message includes the following:

- Using computer and Internet technologies in education and training
- Activating the relationship with the private sector in the areas of training
- Follow up on the development of training plan curricula and then update laboratories and workshops.
- Interaction with the labor market and community needs for qualification and training.

3. Program Goals

The Mechanical Technology Department/Production Branch aims to achieve a number of objectives, including:

• Providing a curriculum that keeps pace with the latest developments in mechanical technology.

• Providing an educational environment that integrates practical training in workshops and laboratories with real-life projects.

• Instilling the values of sustainability and social responsibility in the design and implementation of engineering projects.

• Enhance communication and presentation skills to enable effective presentation of ideas and solutions.

• Encourage students to conduct graduation projects that serve various industrial sectors.

• Graduate technical personnel qualified to operate various mechanical processing machines and conduct laboratory tests on metals and alloys to determine their

physical and mechanical properties.

4. Program accreditation

No, the program does not have program accreditation

5. Other external influences

No/ There is no external party sponsoring the program A government program affiliated with the Karbala Technical Institute - one of the formations of the Al-Furat Al-Awsat Technical University?

6. Program structure											
Program structure	Number of courses	Study unit	percentage	comments *							
Enterprise requirements											
College requirements											
Department requirements	22	122	100%								
summer training											
Other											

* Notes may include whether the course is core or elective.

7. Program description												
Year/level	Course or	Name of the course or	Credit hours									
	course code	course	theoretical	practical								
	METE139	Human Rights & Democracy	1									
	METE1310	English Language 1	1									
First ye	METE126	Computer Application 1	1									
ar I	METE125	Mathematics	2									
	METE127	Engineering Drawing		3								
	METE113	Workshops 1		8								

1				
	METE124	Mechanics	2	3
	METE111	Manufacturing Processes 1	2	2
	METE112	Material Properties	2	
	METE128	Electrical Technique	1	2
	-	Arabic Language 1	1	
	METE211	Technique Machine Parts	3	
	METE212	Manufacturing Processes 2	2	2
	METE213	Metallurgy	2	2
	METE214	Workshops 2		8
See	METE215	Project		2
cond Ye	METE216	Industrial Drawing		3
ŝ	METE227	Management & Occupational Safety	2	
	METE228	Computer Application 2	1	
	METE239	English Language 2	1	
	/	Arabic Language2	1	
	/	The crimes of the Baath regime in Iraq	1	

8. Expected learning outcomes of the programme								
Knowledge								
1- To be familiar with choosing the appropriate metals	Learning Outcomes1							
for products and types of heat treatments.								

 2- To be familiar with the industrial drawing 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 become familiar with all types of measuring devices and surface quality devices. 6- To be able to organize the technological path of production processes 	
Skills	
 Skill in using all mechanical operating machines Skill in using all measuring and testing devices Skill in performing various welding and plumbing works and conducting microscopic examinations. 	Learning Outcomes2
 Skill in working on all machines. The skill of planning and preparing a technological path for production processes. The skill of planning and implementing emergency and periodic maintenance of machines and machines. The skill of preparing a training lecture and delivering it to the trainees. 	Learning Outcomes3
Value	
 Offering a product design and asking to think about developing an integrated program for its production Encouraging the development of thought in memorization and speculation and stimulating it towards critical thinking. Developing Internet research skills to expand the cognitive horizon. Using brainstorming to produce creative ideas for some gifted students. 	Learning Outcomes4

9. Teaching and learning strategies	
Participatory education	
Student-centered education	
Using PowerPoint	

Show scientific films Use an oil board Divide students into groups Using deadlock-breaking methods through a set of intellectual exercises and games Lecture, professional training, laboratory, project Field visits

10. Evaluation methods

- Daily exams
- Quarterly exams
- final exams
- Laboratory reports
- Scientific projects

11.education institution

Facu	Faculty members												
Prepar	ing the teaching staff			Special requirements/s kills (if any)	Specialization	Scientific rank							
		lecturer	Permanent teaching		private	general							
1)	Dr. Mahir Hameed Majeed		√		Applied mechanics	Mechanical Engineering							
2)	Dr. Sanaa Ali Hamza		√		Industrial engineering	Production and metallurgy engineering							
3)	Dr.Mohammad Abdul Kadhim Naser		√		Applied mechanics	Mechanical Engineering							
4)	Hussein younus razzaq		V		Machine design	Mechanical Engineering							
5)	Dr. Ahmed Abdulameer Subeh		v		Polymer engineering	Materials engineering							
6)	Rania Ali Hamoody	عقد			Metal	Materials							

			engineering	engineering	
7)	Hamzah Kadhim Hassan	~	Machine design	Mechanical Engineering	
8)	Intisar Rasheed Saleh	✓	capacity	Mechanical Engineering	
9)	Zainab Abdul Rahem Abdul Hassan Nasser	√	Polymers and composite materials	Materials engineering	
10)	SATTAR JABBAR METTIB	~	Machine design	Mechanical Engineering	
11)	Hussein Mohammed Sadeq Jafar	✓	Materials engineering	Materials engineering	
12)H	ussein Mohammed Ali Hammood	✓	Electrical engineering	Electrical engineering	

12) Professional development Orienting new faculty members

- Seminars on administrative work

- Seminars on examination instructions

(Briefly describes the process used to orient new, visiting, full-time, and part-time faculty at the institution and department levels.)

Professional development for faculty members

- Teaching methods courses

- Specialized courses

(Briefly describes the academic and professional development plan and arrangements for faculty members such as teaching and learning strategies, assessment of learning outcomes, professional development, etc.)

13.Acceptance criterion

(Developing regulations related to admission to the college or institute, whether central admission or others mentioned)

Chapter One: Conditions and controls for central admission to Iraqi universities:

1-1 - General conditions for admission A student who is accepted into universities is required to be:

- **1.** Iraqi nationality.
- **2.** Possessor of an Iraqi preparatory school certificate supported by certification from the General Directorate of Education in the governorate or an equivalent certificate.
- **3.** The student must be born1999 onwards.
- **4.** Successful in the medical examination according to the conditions specific to each study, and students accepted into colleges and institutes are required to examine (CBC) or (Hb-Electrophoreis) in the relevant examination centers, provided that the blind student who meets the conditions for applying for appropriate humanitarian studies must submit it through central admission.
- **5.** Full-time study, and it is not permissible to combine work and study (at the same time in colleges and morning institutes. This includes employees of all government institutions. In order for them to continue studying, they must obtain a study leave from their departments, starting in accordance with the instructions in force. It is not permissible to combine two studies either, and if it is proven otherwise, write To the Ministry to cancel his admission. As for students who have two different admissions for the same year, the student has the option of canceling one of them.
- 6. Of our graduates:

a. Current academic year.

B. The previous academic year is not accepted centrally into any college or institute, and they are accepted within the channel of accepting students from graduates of the previous academic year according to the minimum limits for their year of graduation, provided that they do not enroll in one of the private evening studies, private government morning education, one of the colleges affiliated with the two endowments, or affiliated institutes. to other ministries).

7. International students for the academic year (202/2023) have the right to apply through the electronic portal of the Department of Studies, Planning and Follow-up and through their electronic form. The electronic application is approved after submitting a temporary equivalence certificate from the Ministry of Education, Directorate of Equivalency and Certificates. As for graduates of the previous year, the application is For admission through the Central Admissions Department, Expatriates Division.

8. Non-Iraqi students who hold an Iraqi preparatory certificate and are accepted centrally will be notified

In writing, review the Central Admissions Department, Expatriates Division, stating their exemption or request for tuition fees in foreign currency in accordance with the controls contained in Chapter Seven of the Student Affairs Procedures Manual and admission controls and conditions.

a-2- The general principles adopted by the central admission system: Nomination of students for admission to colleges and institutes shall be done according to the central admission system implemented electronically According to

The following foundations:

1. The student is accepted according to the choices stated in the application form through the electronic portal of the Department of Studies, Planning and Follow-up and on the basis of competition in the aggregate.

2. Students must:

a. Graduates of the biological and applied branches: fill out (50) choices in the electronic form, provided that the number of institutes is not less than (10).

B. Graduates of the literary branch: fill out at least (25) choices and up to (50) choices in the electronic form, provided that the number of institutes is not less than (10).

C Graduates of the Arts Branch: fill out (<u>10</u>) Choices in the electronic form, provided that the number of institutes is not less than (<u>2</u>).

3. The student submitting the admission form is not obligated to accept him according to the choices presented by him once and for all, as his acceptance depends on his competition with the rest of the students according to the established principles.

4. Application to the College of Law (Law) is limited to residents of the governorate exclusively, and the student is not entitled to apply to the aforementioned college in universities located outside his governorate.

5. Application to engineering colleges is through the electronic form according to the departments.

6. Application to the English Language Department in the Colleges of Education and Human Sciences is through the electronic form according to the department.7. For the purposes of differentiation in admission:

a. The percentage is calculated (8) of the added foreign languages degree and is added to the student's total

B. An additional mark is calculated on top of the average for first-year graduates (except for students included in the system).

attempts).

requester.

8. The principle of differentiation lessons does not apply except in the case of competition for the last seats in the admission plan Approved.

14. The most important sources of information about the program

- Similar programs locally and regionally
- Labor market need
- Modern methodological books

15.Program development plan

- Studies on curriculum development
- Seminars with employers
- Labor market opinion questionnaires on school curricula
- Increasing practical training in workshops and laboratories using modern equipment.
- Cooperating with industrial companies to provide field training opportunities for students.
- Implementing applied projects that simulate the real work environment.
- A proposal to teach (engineering project management) to ensure students' readiness for the labor market

				0	utp	uts	5 Lea	arni	ng re	equi	red	from	the p	rogra	am
the year	Code The	name The decision	decision type	Kn	owl	edg	ge	Skills				Valu	e		
level M	decisio n	1ec1s10 n	(major or assistant)	a 1	a 2	a 3	a 4	B 1	B 2	B 3	B 4	C1	C2	C3	C4
	METE1 39	Human Rights & Democrac y	Genera 1	•	~			•	•	✓		•			
The Fir:	METE1 310	English Language 1	Genera l	•	~			✓	~	~		✓			
st year	METE1 26	Computer Applicatio n 1	assista nt	•	•			✓	~	~		✓			
	METE1 25	Mathemat ics	assista nt	✓	•			✓	✓	~		•			
	METE1	Engineeri	major	✓	✓			✓	✓	✓		✓			

	27	ng Drawing										
	METE1 13	Workshop s 1	major	~	•	√	~	~	•			
	METE1 24	Mechanics	major	•	~	~	~	~	~	/		
	METE1 11	Manufactu ring Processes 1	major	 ✓ 	~	•	•	×	•			
	METE1 12	Material Properties	major	✓	•	~	✓	✓	•			
	METE1 28	Electrical Technique	assistan t	✓ ✓	✓	~	✓	✓	•			
	-	Arabic Language 1	General	•	•	~	✓	~	•			
the S	METE2 11	Technique Machine Parts	major	 ✓ 	 ✓ 	•	•	~	V			
econd year	METE2 12	Manufactu ring Processes 2	major	•	•	~	•	×	•			
	METE2 13	Metallurg y	major	 ✓ 	•	•	~	~	•			
	METE2 14	Workshop s 2	major	•	•	~	✓	~	•			
	METE2 15	The project	major	√	√	~	✓	 ✓ 	•			
	METE2 16	Industrial Drawing	major	√	•	√	•	 ✓ 	×			
	METE2 27	Managem ent & Occupatio	assistan t	 ✓ 	✓	•	✓	✓	•			

	nal Safety										
METE2 28	Computer Applicatio n 2	assistan t	•	•		✓	•	•	•		
METE2 39	English Language 2	General	•	•		•	•	•	•		
-	Arabic Language 2	General	√	•		✓	•	~	✓		
-	The crimes of the Baath regime in Irag	General	 ✓ 	~		✓	•	✓	•		

 Please situation Signal in Squares the interview For outputs Learning Individuality from the program Submissive For evaluation

1. Co	ourse l	Name:								
		"Prope	erties of Materials							
2. Co	ourse	Code:								
			METE112							
3. Se	emeste	er / Year:								
			quarterly							
4. De	escrip	tion Preparation Date	:							
	2/3/2025									
5. Available Attendance Forms:										
	"Daily	y attendance accordin	ig to the weekly at	tendance sch	edule."					
6. Ni	umber	of Credit Hours (Total) / Number of Unit	s (Total)						
		30 hC	ours each course							
7. C	ourse	administrator's name	e (mention all, if n	nore than one	e name)					
Na	ame: N	Iahir Hameed Majeed	l		,					
Email: dr.mahir@atu.edu.iq										
8. 00	ourse	Objectives								
Course		"Study of the geometric p	properties of crystalline	e and non-crysta	alline materials,					
Objectives		engineering materials, mag	netic properties of mea	gineering material	s, and study of					
		general properties and chara	acteristics of ceramic an	d polymer materia	ls."					
9. Te	eachin	g and Learning Strateg	lies							
Strategy		1. Inductive Methods (L	ecture Delivery Style)						
		2. Dialogical Methods (D	ialogue Style/Questi	on and Answer) A Topic to Fos					
		Creativity)	s (Summaring Tueas	Related to the	e ropic to ros					
		4. Activity Methods (Hor	nework Activity Styl	e)						
10. Cou	irse St	ructure								
			First course							
Week H	Hours	Required Learning	Unit or subject	Learning	Evaluation					
		Outcomes	name	method	method					
1 st 2	2	"The Concept of Engineering Materials	Definition of Engineering Materials	Presentation	Written and					
		G G	6 · · · · · · · · · · · · · · · · · · ·	and	oral exam					
				discussion						

2 nd	2	Describing what atoms and elements are	Atom, Element, Types	Presentation and	Written and oral exam
				discussion	
3 rd	2	Understanding bonds	Bonds in Engineering	Presentation	Written and
			Wateriais	and	oral exam
				discussion	
4 th	2	Distinguishing between	Crystalline and Non- crystalline Materials	Presentation	Written and
		crystalline materials	crystalline Waterlars	and	oral exam
				discussion	
5 th	2	"Understanding the mechanical properties of	Crystalline Shapes	Presentation	Written and
		materials		and	oral exam
				discussion	
6 th	2	Identifying hardness and its tests	(H.C.P) (F.C.C.)	Presentation	Written and
				and	oral exam
				discussion	
7 th	2	Understanding toughness concept and its tests	(B.C.C.)	Presentation	Written and
		I I I I I I I I I I I I I I I I I I I		and	oral exam
				discussion	
8 th	2	Understanding thermal properties and measurements	Mechanical Properties of Materials (Stress,	Presentation	Written and
		properties and measurements	Strain, Stress-Strain	and	oral exam
			Curve, Ductinity)	discussion	
9 th	2	Understanding electrical properties of materials and	Hardness and Hardness Testing	Presentation	Written and
		influencing factors	6	and	oral exam
				discussion	
10 th	2	Understanding magnetic properties of materials and	Continuation	Presentation	Written and
		influencing factors		and	oral exam
				discussion	
11 th	2	Identifying chemical properties of materials and	Durability and Durability Tests	Presentation	Written and
		influencing factors		and	oral exam
				discussion	
12 th	2	Understanding properties of iron and its extractions	Thermal Properties of Materials	Presentation	Written and
				and	oral exam
				discussion	
13 th	2	Understanding carbon steel and its applications	Electrical Properties of Materials	Presentation	Written and
		rr ·····		and	oral exam

					discussion	
14 th	2	Identifying various types of	Magn	etic Properties of		
14	2	alloy steel, their properties, and applications"		ials	Presentation	written and
		and applications			and	oral exam
					discussion	
15 th	2	"Understanding the mechanical properties of	Chem Mater	ical Properties of	Presentation	Written and
		materials	Whater	1415	and	oral exam
					discussion	
		S	econo	d course		
Week	Hours	Required Learning		Unit or	Learning	Evaluation
		Outcomes		subject	method	method
				name		
1 st	2	Identifying Cast Iron, its Type Properties and Uses	s,	Gray cast iron,	Presentation	Written and
		Toperties, and Uses.		properties, and	and	oral exam
				uses.	discussion	
2 nd	2	Continuing		Copper, its	Presentation	Written and
				properties, and	and	oral exam
				uses.	discussion	
3 rd	2	Understanding Copper, its Alle Properties and Uses	oys,	Aluminum, its	Presentation	Written and
		roperties, and Uses.		properties, and	and	oral exam
				uses.	discussion	
4 th	2	Understanding Aluminum, its		Nickel, its	Presentation	Written and
		Anoys, Properties, and Oses.		properties, and	and	oral exam
				uses.	discussion	
5 th	2	Understanding Nickel, its Allo Properties, and Uses	oys,	Tin, its alloys,	Presentation	Written and
		rioperties, and Uses.		soldering, and	and	oral exam
				uses.	discussion	
6 th	2	Understanding Tin, its Alloys, Properties Soldering and Use		Non-ferrous	Presentation	Written and
		rioperues, soluering, and Use	5.	anoys	and	oral exam
					discussion	
7 th	2	Identifying Non-Ferrous Alloy	/8.	Metallurgy	Presentation	Written and
					and	oral exam
					discussion	
8 th	2	Understanding Metallurgy and	1	Powders	Presentation	Written and
		Powders.			and	oral exam
					discussion	

9 th	2 2 2	Understanding the Compression of Powders, Sintering Process. Identifying Ceramic Materials.	Powder compaction, sintering process Ceramic materials	Presentation and discussion Presentation and	Written and oral exam Written and oral exam
11 th	2	Understanding Glass, its Types, Manufacturing, and Uses.	Glass, its types, manufacturing, and uses	discussion Presentation and discussion	Written and oral exam
12 th	2	Identifying Concrete, Industrial Uses.	Concrete, industrial uses	Presentation and discussion	Written and oral exam
13 th	2	Understanding Polymers, Polymer Particles, Types.	Polymers, polymer particles, types, properties, and uses	Presentation and discussion	Written and oral exam
14 th	2	Understanding the Applications and Properties of Rubbers.	Plastics	Presentation and discussion	Written and oral exam
15 th	2	Understanding the Applications and Properties of Plastics.	Gray cast iron, its types, properties, and uses.	Presentation and discussion	

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

5	
Required textbooks (curricular books, if any)	"The prescribed curriculum (Materi
	Properties book) authored by Engineer Ma
	Yahya Al-Hamdani and Engineer Hash
	Kazem Al-Jawahiri. Second Edition - 2000 Al
Main references (sources)	"The prescribed curriculum (Materi
	Properties book) authored by Engineer Ma
	Yahya Al-Hamdani and Engineer Hash
	Kazem Al-Jawahiri. Second Edition - 2000 AI
Recommended books and references (scientific	"Books and specialized research in the field
journals, reports)	engineering materials properties."
Electronic References, Websites	"Arabic articles issued by academic a professional entities."

1.Course Name:

Manufacturing Processing 1

2.Course Code:

 3. Seme 4. Desc 5. Avail 6. Numl 7. Cour 8. Cours 8. Cours Course Objective Course Objective 9. Teack Strategy 	ester / ription able A ber of se ad e: assi l: zain se Obj ves	Year: Ser n Preparation Date: 1 Attendance Forms: Daily attendance a Credit Hours (Total) / N 60 hour ministrator's name (m stant teacher/ Zainab / .ab_abdulraheem@atu.	WETE111 mester/ First 4/2/2025 according to the lumber of Units rs per semester ention all, if m Abdulrahem A .edu.iq Preparing the st measuring device operation operation conduct tests fo concerned with in the molding a also aims to pro-	tudent to be able to be addition to be addition to be addition to the quality of process ovide the student to the student to	dule name) to work on all mechanical to his ability to and tests that are ducts manufactured sses. The course with skills in the			
 3. Seme 4. Desc. 5. Avail 6. Numl 7. Cour 8. Cours 8. Cours Course Objective Course Objective 9. Teack Strategy 	ester / ription lable A ber of se ad e: assi l: zain se Obj ves	Year: Ser n Preparation Date: 1 Attendance Forms: Daily attendance a Credit Hours (Total) / N 60 hou: ministrator's name (m stant teacher/ Zainab / .ab_abdulraheem@atu.	mester/ First 4/2/2025 according to th lumber of Units rs per semeste ention all, if m Abdulrahem A edu.iq Preparing the st measuring devic operation operat conduct tests fo concerned with in the molding a also aims to pro	tudent to be able to the quality of process the quality of process to welding process	dule name) to work on all mechanical to his ability to and tests that are ducts manufactured sses. The course with skills in the			
4. Desc. 5. Avail 6. Numl 7. Cour Name Emai 8. Cours Course Objectiv 9. Teacl Strategy	ription lable A ber of se ad e: assi l: zain se Obj ves	Ser n Preparation Date: 1 Attendance Forms: Daily attendance a Credit Hours (Total) / N 60 hour ministrator's name (m stant teacher/ Zainab A ab_abdulraheem@atu. ectives	mester/ First	tudent to be able to tools and tools for r tions, in addition to the quality of process ovide the student to	dule name) to work on all mechanical to his ability to and tests that are ducts manufactured sses. The course with skills in the			
4. Desc 5. Avail 6. Numl 7. Cour Name Emai 8. Course Course Objectiv 9. Teacl Strategy	ription lable A ber of se ad e: assi l: zain se Obj ves	n Preparation Date: 1 Attendance Forms: Daily attendance a Credit Hours (Total) / N 60 hou: ministrator's name (m stant teacher/ Zainab A ab_abdulraheem@atu. ectives	Additional and or formation and or forma	ne weekly scher s (Total)/ er hore than one bdulhasan tudent to be able to ces and tools for r tions, in addition to r plumbing sand a the quality of process wide the student w	dule name) to work on all mechanical to his ability to and tests that are ducts manufactured sses. The course with skills in the			
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9. Teach Strategy			formation and or		also aims to provide the student with skills in the			
9. Teacl Strategy			formation and operation of metals by plumbing,					
9. Teacl Strategy			welding. blacksr	mithing and calcul	lations required to			
9. Teacl Strategy				st accuracy in pro	nduction			
9. Teacl Strategy								
Strategy	hing a	nd Learning Strategies	1					
	1) Le	cture presentation me	thods					
۱ I	2) Discussion and dialogue							
	3) Practical teaching in the							
10. Course	Struc	ture						
		Firs	st Course					
Week Hou	rs Re	quired Learning	Unit or	Learning	Evaluation			
	Οι	itcomes	subject name	method	method			
1 2	De	finition of measurement	Measurement	1) Giving the	1)Daily test			

		and units of measurement, error and its causes, main dimension measurement Measuring devices	and methods of measuring dimensions	lecture 2)Laboratory experiments	2)Discussions 3) Conduct an experiment
2	2	Measurement Introductions (Varnies) Its parts and uses, Types.	Measurement Footers	 Giving the lecture Laboratory experiments 	 1)Daily test 2)Discussions 3) Conduct an experiment
3	2	macrometers, their types, Its uses, parts, business idea Micrometer .	Micrometer	 1) Giving the lecture 2) Laboratory experiments 3) View videos about the measurement method 	 1)Daily test 2)Discussions 3) Conduct an experiment
4	2	Measurement molds, their uses, types, How to use it .	Measurement Templates	 Giving the lecture Laboratory experiments View educational videos for using measurement templates 	1)Daily test 2) Conduct an experiment
5	2	Measuring angles and side shapes, tools measurement Angles & Scales Measurement (hyenas) types.	Angle measuring instruments	 Giving the lecture Laboratory experiments 	 Daily test Conduct an experiment
6		Method of measuring screw elements, diameters external, internal, step gauge and step diameter, Electronic mechanical comparators .	Mechanical Comparator	 Giving the lecture Laboratory experiments Presentation of videos of the way the device works 	1)Daily test 2) Conduct an experiment
7		Photovoltaic device, some measurement methods Modern) acoustic frequency measuring devices -Digital photonic).	Photovoltaic device	 Giving the lecture Laboratory experiments 	 Daily test Conduct an experiment
8		Barrada and its role in development industrial, shankara process, The tools used and the processes involved in the cold process Used files and their specifications, Machines and	Chips	 Giving the lecture Laboratory experiments 	1)Daily test 2) Discussion

th a saw, the that must be met ng process, the on, the crowns and , the blades, the sharpening and g them, the types hammer heads thod of installing nding, types of s of primers, form a piercing gery, types of s and their angles	sawing process Drilling Crown	 Presentation of the lecture View sample exercises Presentation of the lecture View sample exercises Presentation of the lecture View sample View sample 	 1)Daily test 2) Discussion 1)Daily test 2) 1)Daily test 2) Discussion
nding, types of s of primers, form a piercing	Drilling Crown	 Presentation of the lecture View sample exercises Presentation of the lecture View sample 	 1)Daily test 2) 1)Daily test 2) Discussion
gery, types of s and their angles	Crown	 Presentation of the lecture View sample 	 1)Daily test 2) Discussion
		exercises	
ces and uses, and their uses, nachinery, model types of models	Carpentry	 Presentation Presentation Practical Presentation 	 Daily test Discussion
history , methods bing) Casting and Plumbing - Vith metal molds, For plumbing ges of plumbing	Plumbing	 Presentation of the lecture Practical experiences 	1)Daily test 2) Discussion
ing, sands pecifications, onents, plumbing ppliances Used es on plumbing	Plumbing	1) Presentation of the lecture 2)Practical experiences	 1)Daily test 2) Discussion
id tools used in ing of molds ag, process	Plumbing	1) Presentation of the lecture 2)Practical experiences	1)Daily test 2) Discussion
	es on plumbing d tools used in ing of molds ig, process del and last seat, a and the molds	es on plumbing d tools used in ing of molds ag, process del and last seat, a and the molds	es on plumbing d tools used in ing of molds g, process del and last seat, a and the molds d tools used in Plumbing Plumbing 1) Presentation of the lecture 2)Practical experiences

Week	Hours	Required Learning	Unit or	Learning	Evaluation
week	Hours	Required Learning		Learning	Evaluation
		Outcomes	subject name	method	method
1	2	Pulp, its types, pulp sand, mixture ratios and materials added to it, stages of its work (mixing and preparing sand, making ball mills, drying it) The benefit of the oven drying process or methods of drying balls and their equipment	Plumbing	 Presentation of the lecture Practical experiences 	1)Daily test 2) Discussion
2	2	metal mold plumbing, Its types, centrifugal plumbing, and its types.	Plumbing	 Presentation of the lecture Practical experiences 	 Daily test Discussion
3	2	lost wax plumbing, Continuous plumbing, plumbing Corticosteroids.	Plumbing	 Presentation Presentation Presentation	 Daily test Discussion
4	2	Metal smelting and its foundations, types of smelting furnaces, blast furnace, main dimensions and method of operation, blast furnace, arc furnace Electric furnace, reverberatory furnace, rotary furnace	Plumbing	 Lecture presentation Explanatory videos 	 Daily test Discussion
5	2	Casting castings, their equipment and its foundations, cleaning castings, casting defects – Examination Castings.	Plumbing	 Presentation Presentation the lecture View sample exercises 	 1)Daily test 2) Discussion
6	2	welding, metal welding foundations, Clarification of the main method of welding and which) welding pressure arc smelting welding, knock .Others for smelting welding, welding Tabrs and caustic welding (types of welding joints) .	weld	 Presentation Presentation the lecture View sample exercises Presentation explanatory videos 	1)Daily test 2) Discussion
7	2	Hot pressure welding Including resistance welding Electrical, including spot welding In-line welding, flash welding (cold pressure	welding		

	welding, explosive pressure			
	welding, ultrasonic pressure			
	welding			
8	Fusion welding and gas	welding		
	welding, oxy-hydrogen			
	welding and oxy-acetylene			
	welding, types of flame,			
	right-hand welding and left-			
	hand welding, cutting with			
-	oxy-acetylene.			
9	Arc welding, welding	welding		
	current, direct and reverse			
	polarity method, types of			
	electrodes, packaging of			
	metal electrodes and men			
10	Flectrode movement	welding		
10	isolation methods	weiung		
	Electrodes and welding area.			
	electric arc welding using			
	shielding gases (CO2			
	welding, pallacon welding,)			
	(TIG) and (MIG) welding			
11	Electric arc welding	welding		
	Atomic hydrogen, arc			
	welding, fusion welding.	1.11		
12	Tempering and caustic	welding		
	welding (mortar welding and			
	plumbing weiging (and some			
	laser welding welding			
	with electron beam).			
13	Welding defects, welding	welding		
10	tests			
14	Metal forming, the theory of	welding		
	forming, the foundations of	_		
	cold and hot forging,			
	blacksmithing, the			
	foundations of			
	blacksmithing and its			
	methods (manual,			
	mechanical), blacksmithing			
	equipment, manual and			
	Recksmithing stables			
15	Special blacksmithing	welding		
1.5	methods, blacksmithing	weiding		
	molds and their			
	manufacture, effective force,			
	explanation of the different			
	blacksmithing operations			
	ondeksinitining operations			

(contact, methods of different geometric sections in cutting operations, making simple grades, shaping artifacts miscellaneous).			
11. Course Evaluation			
Distributing the score out of 100 according preparation, daily oral, monthly, or written of the score of the	g to the tasks assigned to the student such as daily exams, reports etc		
12. Learning and Teaching Resource	s		
Required textbooks (curricular books, if any)	 Metal operations of the past: About the Abdel Hassan Down to the metal: Dhia Issa Kazem 		
Main references (sources)	Introduction to production engineering Introduction to production engineering Principles of metal casting Principles of precision in design a production		
Recommended books and references			
(scientific journals, reports)			
Electronic References, Websites	 Methods of manufacturing plumbi and welding for: By Dr. Arif Abba Safiya And Dr. Abdul Razzaq Ismail Khadr Forming mechanics/forming technolo Department of Productive Efficier and Vocational Training 		

	Practical vocabulary
the	Vocabulary details
week	
1	The student is familiar with the various measurement tools
	and devices in the laboratory, and the precautions that must
	be followed In work, the conditions that must be met in
	measurement laboratories.
2	Measurement Using a caliper foot, identify the types of feet
	in terms of accuracy and use And how much Measurement,
	how to measure using feet, measuring procedures for differ-
	ent models.
3	Measurement using a micrometer, learning about the types
	of micrometers in terms of accuracy, use, and scope of
	measurement, measuring using micrometers for different
	models.
4	Measuring templates, learning about the different groups of
	measuring templates, how to group them to obtain a specific
	dimension, how to check the accuracy of a micrometer using
	measuring templates.
5	Comparison devices: Identify the different comparison de-
	vices (mechanical, electronic, and optical) and perform dif-
	ferent measurements on each of them.
6	Measuring angles, identifying the devices and tools used to
	measure angles, using them to make different measurements
	of specific angles.
7	Manual projection device, identifying the parts of the device
	and their uses, measuring longitudinal dimensions, measur-
	ing angles for different models.
8	The electronic projection device, identifying the parts of the

	device and their uses, measuring the longitudinal dimen-
0	sions, and measuring the angles of different models.
9	Measuring tubes, identifying different measuring tubes, us-
	ing them to make measurements.
10	Measuring screws (threads), identifying the devices and
	tools used, making measurements of the various screw ele-
	ments (external diameter, inside diameter, step diameter,
	tooth pitch).
11	Getting to know sand laboratory equipment, standard sand
	sample conditions, and using a standard sand sample prepa-
	ration device to prepare samples for various tests (compres-
	sion, tension, bending).
12	Measuring the moisture content of sand (by drying method,
	by chemical reaction method)
13	Testing the degree of permeability of plumbing sand and
	comparing the results calculated by experiment with the re-
	sults calculated from the tables.
14	Testing the proportion of binder (clay) with sand.
15	Testing the degree of fineness in relation to the size of sand
	particles, calculating the fineness number
	Chapter two
	Vocabulary details
1	Testing sand grains in relation to the shape of the grain:
	magnifying and examining the shapes of the grains and cal-
	culating the percentage of each shape.
2	Tests Durability of sand to withstand stress, resistance of
	sand (green and dry) to pressure And the cut.
3	a test Sand resistance to tensile and bending Y.
4	a test Sand resistance to shocks.
5	a test TaThiR Adding other additives to the specifications of
	plumbing sand Yserious relationship bYN degree Enforce-
	ment YHAnd additives.
6	Identify Learn about different types of welding and welding
	devices YBWelding some crafts.
7	Welding line tests (external examinations): checking the
	width and height of the welding line in terms of the shape
	and consistency of the weld
	- Matching the welding joint with its specified standards us-
	ing special measuring sticks.
	- Detection of nicks, pits, pores and cracks.
	- The welding line runs to the opposite side
8	Testing the tightness of welded joints - penetration of liquids
	and gases (use of kerosene, use of water or air pressure)
	and gases (use of kerosene, use of water of all pressure).

9	Mechanical durability tests (tensile, bending, shock tests)
10	Testing for internal defects in the weld joint (making a sec-
	tion through the weld joint and examining the section).
	Testing for internal defects using one of the other available
	methods or observing them during scientific visits.
11,12,1	Identify the number of models produced, the method of mak-
3	ing them, the materials from which they are made, and the
	machines
	Used in making the model, making a simple model and a
	simple core box
14,15	Identifying the types of drills and the tools used in the drill-
	ing process, the technical principles in the drilling processes
	and the types of holes, performing integrated exercises in
	terms of drilling, reamer and countersink.

Sources:

-1 Introduction to Production Engineering

Authorship – Hassan HbadNFahMiJalal Shawq((1966)

2-Principles of metal casting

translation- Dr. Salah DYNMuhammad Al-MahanY

3-Ch methodsin order totoMetals

Authorship - Dr. Anwar Abdul Wahid((1963)

4-Manufacturing methods

Authorship - Dr. Arif Abu Safia Dr A

Dr Abdul Razzaq Ismail Khadr

5-Metalworking - technological foundations

Authorship - Abdel Moneim Akef ((1977)

6-Business principles translation :Mohamed Abdel Rahim Al-Rifai

1. Course Name:				
Mathematics				
2. Course Code:				
	METE125			
3. Semester / Y	ear:			
	First/annual			
4. Description F	Preparation Date:			
	2025/02/15			
5. Available Atte	endance Forms:			
	Theoretical lectures			
6. Number of Credit Hours (Total) / Number of Units (Total)				
60 / 2				
7. Course administrator's name (mention all, if more than one name)				
Name: Mohammed Abdul Kadhim Naser				
Email: Muhamad.alrakkabi@atu.edu.iq				
8. Course Objectives				
	• Understand the concept of determinants and the concept of			
Course Obiostives	functions (algebraic, trigonometric, exponential, logarithmic,			
Course Objectives	implicit differentiation, and the chain rule)			
	 Learn how to graph functions and critical points. 			

• Learn about definite and indefinite integration, integration methods, and their applications in finding length, area under a curve, and volumes. • Identify discrete, homogeneous and linear differential equations and how to solve them. • Learn about vectors and how to multiply them. • Learn about vectors and how to multiply them. • How to analyze, conclude, tabulate and organize data into frequency tables and how to display them in graphical charts, in addition to studying probability to reach the best decision. 9. Teaching and Learning Strategies • Interactive lectures. Simulations and practical demonstrations. • Brainstorming. Training the student how to derive ideas and definitions. • Dialogue and discussion. Asking questions at the beginning of each lecture in order to link the previous lecture with the current lecture. 10. Course structure Week Hour Required Unit or subject name institutions in the backboard is simultaneous equations using the determinant is method (Cramer). First 2 Second 2 10: Learn the differentiation functions. First 2 Second 2 10: Learn the differentiation functions. 10: 1							
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link the previous lecture with the current lecture. 10. Course Evaluation Week Hour Required Unit or subject name Learning Evaluation s Learning Determinants and their method Method First 2 Learn the Determinants and their the Homework First 2 Learn the differentiation, algebra of the Homework Firth 2 Learn the differentiation, sugebra of the Homework Sixth 2 Learn the Trigonometric, Homework			Asking qu	uestions at the beginning o	of each lecture	e in order to	
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Fifth2differentiationfunctions.Image: Constraint of the sector	Fourth and	2	laws of	derivatives, multiple	blackboard		
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Eighth2differentiationregulationregulationregulationEighth2differentiationexponential functions and their derivatives and implicit functions, the chain rule.surprise examsNinth2drawing of functions, 	Sixui Seventh	2	laws of	logarithmic and	blackboard	And	
their derivatives and implicit functions, the chain rule.their derivatives and implicit functions, the 	Eighth	2	differentiation	exponential functions and		surprise exams	
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Ninth2chain rule.HomeworkTenth and2drawing of functions, drawing of thetheHomeworkEleventh2trigonometric function,surprise exams				implicit functions, the			
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Eleventh 2 drawing of the blackboard And surprise exams	NINTH Tenth and	2		drawing of the	ne blackboard	Homework	
		2		trigonometric function		surprise exams	

			1 ·	1	I	1
			and maximum	and		
T 101	2		minimum lim	its.	.1	I
Twelfth	2		Physical diffe	rential	the	Homework
Thirteenth	2 applications, velocity and		velocity and	blackboard		
			acceleration, a	ind		
			geometric diff	erential		
			applications.			
Fourteenth	2		Integration, la	ws, and its		Homework
Fifteenth	2		relationship to)		And
			differentiation	, definite		surprise exams
			and indefinite	integration.		
Sixth	2		Implicit integr	ration,		Homework
Seventh	2		geometric app	lications of		And
Eighth and	2		integration (L	ength of arc,		surprise exams
Nineteenth	2		areas and volu	imes) and		
			physics.			
Twenty	2		general metho	ods of		Homework
and	2		integration, su	Ibstitution		
Twenty-			and partial int	egration,		
first			and the use of	exponential		
			and logarithm	ic partial		
			fractions.			
Third,			discrete, home	ogeneous,	the	Homework
Fourth,			and linear diff	erential	blackboard	
Fifth, and			equations with	n their		
Twenty-			various applic	ations.		
sixth			11			
Twenty-	2		Vectors (direc	t and	the	Homework
seventh	2		quantitative m	ultiplication	blackboard	
Twenty-			and calculatin	g angles		
eighth			between vecto	ors.		
Twenty-	2		Statistics (prin	nciples) and	the	Homework
nine	2		probability the	eory.	blackboard	And
Thirty			1 5	5		surprise exams
	e Evalu	ation				
I ne degre	e is dis	tributed				
1- 20 mar	'ks for t	he first semes	ter for pract	ical.		
2-20 mar	ks for t	he second sen	nester for pr	actical		
3 - 10 mai	rks for s	student activit	ties			
4 - 50 max	rks final	l evam				
4 - 50 mai						
12. Learn	ing and	Teaching Res	ources			
Required textbooks (curricular books, if any) 1. Calculus by (Thomas)					s)	
2. Engineering Mathematics					atics	
3.			3. Enginee	ering Mathem	atics ad-	
				vanced	0	
				, anood		
Main refere	nces (se					
	1000 (30					

Recommended	books	and	references
(scientific journals	, reports.)	
Electronic Referen	ices, Web	osites	

1. Course Name:

English Language

2. Course Code:

METE1310

3. Semester / Year:

First-year

4. Description Preparation Date:

	25/2/2025				
5. Avail	5 Available Attendance Forms:				
	Direct				
6 Numl	ber of Credit Hours (Total) / Number of Units (Total)				
	30 Hr /2 U				
7 Cours	se administrator's name (mention all if more than one name)				
7. Court	Name: Hamzah kadhim hasan				
	Email: inkr hamz@atu edu iq				
8 Co	urse Objectives				
Course Objec	tives				
9. Teach	ing and Learning Strategies				
Strategy					

10.	Course St	ructure			
Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	
1& 2	2	Cognitive	Hello	Lecture and discussion	
3&4	2	Cognitive	Your word	Lecture and discussion	
5&6	2	Emotional and cognitive	Personal information	Lecture and discussion	
7&8	2	Emotional and cognitive	Family and friends	Lecture and discussion	
9&10	2	Emotional and cognitive	It's my life	Lecture and discussion	
11&12	2	Emotional and cognitive	every day	Lecture and discussion	
13&14	2	Emotional and	Places I like	Lecture and discussion	
15&16	2	Emotional and	Where I live	Lecture and discussion	
17&18	2	Emotional and	Happy birthday	Lecture and discussion	
19&20	2	Emotional and	We had a good time	Lecture and discussion	
21&22	2	Emotional and cognitive	We can do it	Lecture and discussion	
23&24	2	Emotional and cognitive	Thank you verv much	Lecture and discussion	
25&26	2	Emotional and cognitive	Here and now	Lecture and discussion	
27&28	2	cognitive	It's time to go	Lecture and discussion	
29&30	2	Emotional and cognitive	Grammar) present simple, past simple, present continuous, present continuous for future)	Lecture and discussion	

The first and second-semester exams are evaluated of 20 points and 10 points for the work of the year including the daily exams, the attendance, and the assignments. For the final exam, the evaluation is of 50 points.

12. Learning and Teaching Resources				
Required textbooks (curricular books, if	New Headway Beginner Student book			
any)				
Main references (sources)	New Headway Beginner Student book			
Recommended books and references				
(scientific journals, reports)				
Electronic References, Websites	https://elt.oup.com/student/headway/beg/?cc			
	lobal&selLanguage=en			
Course Description Form

1. Course Name:				
Comput	ter engineering drawing			
2. Course Code:	2. Course Code:			
	METE127			
3. Semester / Year:				
	Semester			
4. /Description Preparation Da	ate:			
	2/3/2025			
5. Available Attendance Forms				
	Live (in person)			
6. Number of Credit Hours (Tot	tal) / Number of Units (Total)			
	45 (per semester)			
7. Course administrator's nar	me (mention all, if more than one name)			
Name: Rania Ali Hamoody				
Email: rania.hamoody.ikr10	@atu.edu.iq			
8. Course Objectives				
Course Objectives	Learn how to draw using AutoCAD			
	 Learn about drawing and editing tools in AutoCAD 			
	• Learn two- and three-dimensional drawing in AutoCAD			
	Acquire the necessary skill to implement and read technical			
	drawings, know engineering symbols and terms, standard			
	specifications, and draw simple and complex assembled			
	mechanical parts.			
9. Teaching and Learning Strate	egies			
Strategy Drawing metho some ideas theo practically via t listening to stud After that, the e	Ids are explained using AutoCAD by explaining oretically and then applying the subject the computer by drawing a specific exercise an dents' questions and inquiries about the subje exercise is applied by all students.			
10. Course Structure				

Week	Hours	Required Learning	Unit or subject	Learning	Evaluation
		Outcomes	name	method	method
1-	3	Learn about AutoCAD for computer drawing and learn about engineering lines, projections, and sections.	General review of engineering drawing topics, engineering lines, projections, and setting dimensions using AutoCAD.	Continuous guidance of students by the professor during daily lectures.	By drawing a daily painting
2-	3	Using the computer to learn how to draw types of lines and geometric operations.	Methods of drawing different engineering operations and types of lines, with drawing a board.	Continuous guidance of students by the professor during daily lectures.	By drawing a daily painting
3-	3	Learn how to draw lines using the draw command in AutoCAD	Drawing a drawing using AutoCAD that shows the types of lines and engineering operations.	Continuous guidance of students by the professor during daily lectures.	By drawing a daily painting
4-	3	Learn about the types of auxiliary commands in AutoCAD using a computer	Drawing a board using drawing and editing commands in AutoCAD	Continuous guidance of students by the professor during daily lectures.	By drawing a daily painting
5-	3	Learn about the types of paper measurements and sizes. Layout the board using the computer.	Draw a board, frame it, and provide all the information using AutoCAD	Continuous guidance of students by the professor during daily lectures.	By drawing a daily painting
6-	3	Learn the commands for drawing circles and arcs and drawing a board on the computer	 1- An application board for a mechanical geometric shape containing circles 2- Drawing a board for a shape containing arcs. 	Continuous guidance of students by the professor during daily lectures.	By drawing a daily painting
7-	3	Learn the drawing commands for rectangles and squares and draw a board on the computer	Drawing an application board	Continuous guidance of students by the professor during daily lectures.	By drawing a daily painting
8-	3	Learn about the Offset,	Drawing an	Continuous	By drawing a

		Mirror and Move commands in AutoCAD	application board	guidance of students by the professor during daily lectures.	daily painting
9-	3	Learn how to draw isometrically using AutoCAD	Drawing an application board	Continuous guidance of students by the professor during daily lectures.	By drawing a daily painting
10	3	Drawing simple isometric shapes	Drawing an application board	Continuous guidance of students by the professor during daily lectures.	By drawing a daily painting
11-	3	Advanced isometric drawing	Drawing an application board	Continuous guidance of students by the professor during daily lectures.	By drawing a daily painting
12-	3	Learn how to put dimensions on different drawings.	Drawing an application board	Continuous guidance of students by the professor during daily lectures.	By drawing a daily painting
13-	3	Learn how to draw different projections using AutoCAD	Drawing an application board	Continuous guidance of students by the professor during daily lectures.	By drawing a daily painting
14-	3	Learn how to draw sections and plots on the computer.	Drawing an application board	Continuous guidance of students by the professor during daily lectures.	By drawing a daily painting
15-	3	Explanation of a complete board containing perspective, projections, front sections, and dimensioning	Drawing an application board	Continuous guidance of students by the professor during daily lectures.	By drawing a daily painting
16-	3	Draw the three main projections with even angles and note the difference between them.	Draw the three main projections with even angles and note the	Continuous guidance of students by the professor	By drawing a daily painting

			difference	during daily	
17-	3	Draw the three main projections at even angles and note the difference between them	Draw the three main projections with even angles and note the	Continuous guidance of students by the professor	By drawing a daily painting
			difference between them.	during daily lectures.	
18-	3	The third projection conclusion from the two projections	The third projection conclusion from the two projections	Continuous guidance of students by the professor during daily lectures.	By drawing a daily painting
19-	3	The third projection conclusion from the two projections	The third projection conclusion from the two projections	Continuous guidance of students by the professor during daily lectures.	By drawing a daily painting
20-	3	Perspective deduction from t or three projections	Perspective deduction from two or three projections	Continuous guidance of students by the professor during daily lectures.	By drawing a daily painting
21-	3	Perspective deduction from t or three projections	Perspective deduction from two or three projections	Continuous guidance of students by the professor during daily lectures.	By drawing a daily painting
22-	3	Section theory, shapes and li of sections according to the type of material, drawing sectional projections.	Section theory, shap and lines of sections according to the type of material, drawing sectional projections	Continuous guidance of students by the professor during daily lectures.	By drawing a daily painting
23-	3	Section theory, shapes and li of sections according to the type of material, drawing sectional projections.	Section theory, shap and lines of sections according to the type of material, drawing sectional projections	Continuous guidance of students by the professor during daily lectures.	By drawing a daily painting
24-	3	Drawing cut-off projections from a single specified projection	Drawing cut-off projections from a single specified projection	Continuous guidance of students by the professor during daily lectures.	By drawing a daily painting
25-	3	Drawing cut-off projections	Drawing cut-off	Continuous	By drawing a

		from a single specified projection	projections from a single specified projection	guidance of students by the professor during daily lectures.	daily painting	
26-	3	Drawing cut-off projections from a single specified projection	Drawing cut-off projections from a single specified projection	Continuous guidance of students by the professor during daily lectures.	By drawing a daily painting	
27-	3	Partially cut Muscat drawing	Partially cut Muscat drawing	Continuous guidance of students by the professor during daily lectures.	By drawing a daily painting	
28-	3	Partially cut Muscat drawing	Partially cut Muscat drawing	Continuous guidance of students by the professor during daily lectures.	By drawing a daily painting	
29-	3	Half-cut drawing, zigzag drawing	Half-cut drawing, zigzag drawing	Continuous guidance of students by the professor during daily lectures.	By drawing a daily painting	
30-	3	Half-cut drawing, zigzag drawing	Half-cut drawing, zigzag drawing	Continuous guidance of students by the professor during daily lectures.	By drawing a daily painting	
11. The gra 1- Daily 2- Sem 3- Fina	Course ade is dis y exam b ester exa l exams.	Evaluation stributed out of 100 accordin by drawing exercises ams	ng to the tasks assig	ned to the stud	lent, such as:	
12.	Learnin	g and Teaching Resource	es			
Required textbooks (curricular books, if any)			Curriculum			
Main references (sources)			Engineering dra subject teacher	Engineering drawing book + lectures of subject teacher		
Recommended books and references (scientific journals, reports)			s Engineering I Operations by Rasoul Al-Khafa	Drawing Boo the author af	ok Engineer Professor Ab	
Electror	nic Refer	ences, Websites	Electronic refere	ences, websites	5	

Course Description Form

1. Course Name:	1. Course Name:			
	Mechanic			
2. Course Code:				
	METE124			
3. Semester / Year:2	2023-2024			
	First Year			
4. Description Prepa	aration Date:			
	2/3/2025			
5. Available Attenda	nce Forms:			
	Quarterly			
6. Number of Credit	Hours (Total) / Number of Units (Total)			
	150 hour 10 unit			
7. Course administr	rator's name (mention all, if more than one name)			
Name: Hussein M	ohammed Sadeq			
Email: hussein.sa	deq@atu.edu.iq			
8. Course Objectives				
Course Objectives	The student will learn about mechanics and its types			
	The student will be required to identify the types of forces acting			
	on objects.			
	The student will learn about the types of moments.			

9. Teaching and Lear	It will attract the student to learn about the types of balance and enhance muscle strength. The student will learn about the types of stresses and strains that occur as a result of loads rning Strategies
Strategy	Explain the idea of the topic orally, taking some examples from our daily lives to clarify and simplify the topic, and then begin practicing the topic through drawings and diagrams that are written on the board. After all students understand, scien- tific and mathematical examples are taken for each topic.

10. Course Structure

Week	Hours	Required Learn-	Unit or sub-	Learning method	Evaluation method
		ing Outcomes	ject name		
1	2	Definition of mechanics and its divisions - statics - meas- urement sys- tems – units	Mechanical	The lecture presented examples of exercises	General discussion questions
2	2	Scald quanti- ties and vec- tors Add and subtract vec- tors	Mechanical	The lecture presented examples of exercises	General discussion questions
3	2	Forces, force systems, force representation, force analysis	Mechanical	The lecture presented examples of exercises	General discussion questions
4	2	Resultant forc- es	Mechanical	The lecture presented examples of exercises	General discussion questions
5	2	The resultant	Mechanical	The lecture presented	General discussion

			1		r
		of several con- verging		examples of exercises	questions
6	2	moment	Mechanical	The lecture presented examples of exercises	General discussion questions
7	2	Coupling mo- ment - transfer of moments	Mechanical	The lecture presented examples of exercises	General discussion questions
8	2	Resolution of a force into a force and a couple	Mechanical	The lecture presented examples of exercises	General discussion questions
9	2	Resultant of a non-concurrent, coplanar force system	Mechanical	The lecture presented examples of exercises	General discussion questions
10	2	Free body dia- grams	Mechanical	The lecture presented examples of exercises	General discussion questions
11	2	Equilibrium	Mechanical	The lecture presented examples of exercises	General discussion questions
12	2	Friction	Mechanical	The lecture presented examples of exercises	General discussion questions
13	2	Center of gravi center of area	Mechanical	The lecture presented examples of exercises	General discussion questions
14	2	Moment of inertia	Mechanical	The lecture presented	General discussion

				examples of exercises	
				examples of exercises	questions
15	2	Moment of inertia for composite area	Mechanical	The lecture presented examples of exercises	General discussion questions
16	2	Newton's second law	Mechanical	The lecture presented examples of exercises	General discussion questions
17	2	Linear motion with constant ac- celeration	Mechanical	The lecture presented examples of exercises	General discussion questions
18	2	Angular motion Angular velocity	Mechanical	The lecture presented examples of exercises	General discussion questions
19	2	Work-Power- Energy	Mechanical	The lecture presented examples of exercises	General discussion questions
20	2	Hooke's Law Stress-Strain Curve Types of Stresses Vertical Stresses on the Cross-Sectional Area and on Dif- ferent Areas	Mechanical	The lecture presented examples of exercises	General discussion questions
21	2	Vertical stresses	Mechanical	The lecture presented examples of exercises	General discussion questions
22		Shear stress	Mechanical	The lecture presented examples of exercises	General discussion questions
23		Tensile stress	Mechanical	The lecture presented	General discussion

		1		1 0 1	
				examples of exercises	questions
24		Thermal stresses	Mechanical	The lecture presented examples of exercises	General discussion questions
25	2	Thresholds and types of applied loads	Mechanical	The lecture presented examples of exercises	General discussion questions
26	2	Shear stress on beams	Mechanical	The lecture presented examples of exercises	General discussion questions
27	2	Shear stress on the lintel	Mechanical	The lecture presented examples of exercises	General discussion questions
28	2	Bending moment for axial loads	Mechanical	The lecture presented examples of exercises	General discussion questions
28	2	Torsional shearing stress	Mechanical	The lecture presented examples of exercises	General discussion questions
30	2	Bending moment for distributed loads	Mechanical	The lecture presented examples of exercises	General discussion questions
11.	Course	Evaluation		1	1
Distrik prepai 12.	outing the ration, dat Learning	e score out of 100 a ily oral, monthly, or v g and Teaching Re	ccording to th written exams, esources	e tasks assigned to the reports etc	student such as daily
Requir	ed te	xt-			
books	(curricu	ılar			
hooks	if any)				

Main references (sources)	Engineering Mechanics Stats Abdel Karim M.B.AL - Shamaa Dynamics - new issues in linear motion / Nashed Muhammad Ahmed Schaum summaries
Recommended books and refer- ences (scientific journals, re- ports)	Static Hibler Engineering Mechanics Engineering Mechanics Miriam Hepler materials Nelson engineering mechanics
Electronic Refer- ences, Websites	https://www.youtube.com/watch?v=XbCdh7h-Nx0 https://www.youtube.com/watch?v=gZF2wdhj https://www.youtube.com/watch?v=Ug818THEVE0 https://www.youtube.com/watch?v=XkQM3z3

Course Description Form

1. Course Name:
Computer applications 1
2. Course Code:
METE126
3. Semester / Year:
QUARTERLY / FIREST SEMESTER
4. Description Preparation Date:
2/3/2025
5. Available Attendance Forms:
46

	DRESENCE(1 HOUR)						
6.	6. Number of Credit Hours (Total) / Number of Units (Total)						
			30 HOUR				
7.	Course	administrator's	name (mention all, if	more than one na	ime)		
-	Name: H	Iussein younus i	razzaq				
0	Email: 11	hkr.hus.@atu.ed	u.iqs				
٥.	Course	Objectives					
Course	Objectives	s Teachin	ng the student to be fam	uiliar with the rules t	o be able to use		
		the com	puter and its circuit to	help him complete h	pasic projects		
					usie projects,		
		printing	, matters, preparing gra	pine statistics, creat	ing presenta-		
0	Teeehin	tions an	d designs for engineeri	ng models, etc.			
9.	reaching	g and Learning S	strategies				
		in order to at and the pract computer ar throughout th	ttract the student's atter tical method, which is nd conduct written an he year.	ntion and help him n to apply what was p nd oral exams dai	ot to feel bored, presented on the ly and weekly		
10. Co	ourse St	ructure					
Week	Hours	Required	Unit or subject name	Learning method	Evaluation		
		Learning Out-			method		
		comes	Introduction to computer .	The lecture presented			
1	1	computer: the con- cept of hardware	concept of hardware and so	theoretical	General discussion		
		and its components ware with their components questions					
2	1	Understand the concept of compu- ting, data and in- formation, applica- tion of communi- cating information to input/output de- vice, and periph- arely of the control	Introduction to comput- er: concept of compu- ting ,data and infor- mation ,application of information connection input/output device ,and peripherals to cpu.	The lecture presented theoretical	General discussion questions		

				1	
		processing unit			
3	1	Computer Compo- nents Knowledge: Computer Parts, Hardware Parts, 1/0	Computer component :computer portions ,hardware parts,1/o units.	The lecture presented theoretical	General discussion
		Units.			questions
4	1	Learn about: Types	Computer component	The lecture presented	
		memory, non-	:memory types: volatile	theoretical	General discussion
		volatile memory,	memory secondary		questions
		secondary storage	storage.		questions
5	1	Identify the compo-	Computer component	The lecture presented	
		er: CPU compo-	:cpu component ; con-	theoretical	General discussion
		nent; Control Unit	trol unit(cu), arithmetic		questions
		(CU), Arithmetic	isters		questions
		and Registers.	150015.		
6	1	Computer Ports,	Computer component:	The lecture presented	
		PC (Features	computer ports, person-	theoretical	General discussion
		and Types)	and types)		questions
			und types)		questions
7	1	Familiarization	Operation system and	The lecture presented	
		tem and GUI: Op-	graphical user interface	theoretical	General discussion
		erating System;	;basics of common opera-		questions
		Common Operating System Basics: Us-	tion system ; the user in-		questions
		er Interface, Using	terface ,using mouse		
0	-	Mouse Techniques.	Operation system and	The lecture presented	
8	1	self with the op-	graphical user interface	theoretical	General discussion
		erating system	gui :		
		and the graphical	Use of common icons		questions
		Using common	bar, using menu and		
		icons, status bar,	menu-selection.		
		usage bar, using			
		menu selection			
9	1	Knowledge of	Operation system and	The lecture presented	
		operating system	graphical user interface	theoretical	General discussion
		concept and ori-	gui: concept of folder		
		entation, opening	and direction ,opening		questions
		and closing dif-	windows :creating short		
		terent windows;	cuts.		
10	1	Understanding	Operation system and	The lecture presented	
10		Operating System	graphical user interface	theoretical	General discussion
		and GUI: Cus-	gui :customization and		
		sonalizing GUIs.	accessibility feature in		questions
		Accessibility in	guis, user experience(ux)		
		GUIs, and User			

		Experience (UX)			
11	1	Learn the basics of word pro- cessing; the basic feature of word processors, open- ing and closing a document	Word processing: word processing basic; basic feature of word proces- sors, opening and closing of document.	The lecture presented theoretical	General discussion questions
12	1	Learn to create and manipulate text; format text and paragraphs, and use templates to create docu- ments.	Word processing : text creation and manipula- tion; formatting text and paragraph ,using tem- plates for document crea- tion .	The lecture presented theoretical	General discussion questions
13	1	Learn how to cre- ate and manage tables, and use styles.	Word processing: creating and managing tables, uti- lizing styles and themes.	The lecture presented theoretical	General discussion questions
14	1	Learn about spelling and grammar check- ing tools, using headers and foot- ers.	Word processing : spell check and grammar tools ,using, headers and foot- ers .	The lecture presented theoretical	General discussion questions
15	1	Introduction to spreadsheet pro- grams, creating and formatting worksheets.	Spread sheet: introduction to spreadsheet software ,creating and formatting worksheets.	The lecture presented theoretical	General discussion questions
16	1	How to sort and filter data using formulas and functions.	Spread sheet: sorting and filtering data, using formulas and functions.	The lecture presented theoretical	General discussion questions
17	1	Learn how to use formulas and functions, and use pivot tables to analyze data.	Spread sheet: using formulas and functions ,using pivot tables for data analysis.	The lecture presented theoretical	General discussion questions
18	1	Data validation and error check- ing. Visualization	Spread sheet: data valida- tion and error checking data visualization: creat- ing charts and graphs.	The lecture presented theoretical	General discussion questions
19	1	Getting to Know Presentation Software: Intro- duction to Presen- tation Software, Overview of Common Presen- tation Tools, Cre-	Presentation software: introduction to presen- tation software, over- view of popular presen- tation tools, creating a new presentation .	The lecture presented theoretical	General discussion questions

		ating a New			
		Presentation			
20	1	Learn about	Presentation software:	The lecture presented	
		presentation soft-	using templates and	theoretical	General discussion
		ware: using tem-	themes, inserting and		
		plates and themes,	formatting text and imag-		questions
		inserting and for-	es, transition and anima-		
		matting text and	tion effects.		
		images, transition			
		tions			
	1	Learn how to use	Procentation software:	The lecture presented	
21	1	speaker notes and	using speaker potes and	theoretical	Concept discussion
		timers advanced	timers advanced feature	uleorencai	General discussion
		features: hyper-	timers, advanced reature		quastions
		linking and action	buttons		questions
		buttons.	buttons.		
22	1	Troubleshoot	Presentation software:	The lecture presented	
		common presen-	troubleshooting common	theoretical	General discussion
		tation problems,	presentation issues, fu-		
		and future trends	ture trends in presenta-		questions
		in presentation	tion technology.		
		technology.		TT1 1 1	
23	1	Introduction to	Introduction to internet and	The lecture presented	
		the Internet and	web browsers: computer	theoretical	General discussion
		Computer Net	network basic , lan, wan.		
		working Basics			questions
		LAN, WAN.			
24	1	Thermal stresses	Introduction to internet	The lecture presented	
			and web browsers:	theoretical	General discussion
			concept of internet and		
			applications, connect-		questions
			ing to internet.		
25	1	Thresholds and	Introduction to internet	The lecture presented	
		types of applied	and web browsers: world	theoretical	
		loads	wide web; web browsing		
			software's, search en-		
	1	Introduction to	gines.	The lecture presented	
26		the Internet and	and web browsers: under	theoretical	0
		Web Browsers	standing url: domain	theoretical	General discussion
		Understanding	name: ip address.		
		URL; Domain	, - F		questions
		Name; IP Ad-			
		dress.			
27	1	Communications	Communication and	The lecture presented	
- '		and Email: Send	emails : basics of elec-	theoretical	General discussion
		and receive email;	tronic mail ; getting an		
		access sent email;	email account ;sending		questions
		use email; collab-	and receiving emails; ac-		-
		orate on docu-	cessing sent emails; using		
		ments.	emails; document collabo-		
			ration.		

28	1	Communications	Communication and	The lecture presented	
20		and Email: Send and receive email; access sent email; use email; collab- orate on docu- ments.	emails: sending and re- ceiving emails; access- ing sent emails; using emails; document col- laboration.	theoretical	General discussion questions
2٩	1	Introduction to Cloud Computing Services: Cloud Computing Definition and Concept - Cloud- Based Office Suite (Office 365 and Google Workspace).	Introduction to could computing services: Definition of cloud computing and its con- cept cloud –based of- fice suites (office 365 and google workspace).	The lecture presented theoretical	General discussion questions
30	1	Introduction to Cloud Computing Services: Google Workspace: Google Docs, Google Sheets, Google Drive, Google Meet.	Introduction to could computing services: google workspace : google docs, google sheets, google drive ,google meet.	The lecture presented theoretical	General discussion 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	الخضر علي الخضر بحاث , اساسيات الحاسوب ٢٠١٦
any)	
Main references (sources)	الدكتور عادل عبد النور , مدخل الى عالم الذكاء الاصطناعي ٢٠٠٥
Recommended books and references	Ahmed banafa introduction to artificial intelligence 2024
(scientific journals, reports)	Microsoft office 2019 step by step 1 st edition by Curtis frye &joan lambert
Electronic References, Websites	

Course description form.

1. Course name:
Electrical Technology.
2. Course code
METE128.
3. Semester/year/semester.

			First year			
4. The d	4. The date this description was prepared is					
			27/2/2025			
5. Atten	dance f	orms available o	directly.			
6 Numb	onofa	tudu hauna (tata)	1)/number of uni	ta (total)		
O. INUIIIC	ber of s	ludy nours (lota	i)/number of um			
7. Name	e of the	e course admir	nistrator (if mor	e than one nam	e is mentioned).	
Name	e: Huss	ein Mohammed	d Ali Hammood	Alwakeel		
<u>nussa</u>	<u>in.aiw</u>	<u>akeel@atu.edu</u>	<u>.10</u>			
8. Cours						
Objectives o	t the	Electricity Te	echnology We a	im to: study the	basic laws of elec-	
study subject	•	tricity techn	ology Electricity	is the study	of electromagnetic	
		properties ar	nd its foundation	s Various electric	c motors and trans-	
		formers, thei	r theory of operative	ation and operati	on Operating it and	
		repairing ele	ctrical faults and	performing mair	ntenance on it .	
9. Teach	ning an	d learning strate	egies.			
The strategy		0	5			
		1. Theoretical le	ectures and practica	l experiments.		
		2. Presentations				
		3. Assessing stu	idents individually	by giving them an	opportunity to partici-	
		pate in the cla	ass by answering qu	uestions		
		4. Students are	evaluated collective	ely through daily ex	ams with practical and	
		theoretical qu	estions.			
		5. Exams for th	e first and second	semesters and final	exams for the first and	
		second semes	sters.			
	 Using modern means to present the theoretical and practical aspects, such as various electronic display devices. To attract the attention of students so that the idea reaches the student better. 					
10.	Course	e structure				
The week	The	Required	Name of the	Learning meth-	Evaluation method.	
	hours	learning out-	unit or topic.	od.		
		comes.				

First.	3	Recognizing electrical symbols, re- alizing Ohm's law, and finding the equiva- lent re- sistance of resistors and their con- nection characteris- tics (mixed parallel se- ries)	Electrical units and symbols, simple elec- trical circuit, electromo- tive force current, po- tential dif- ference	Lectures pre- sented in PowerPoint format	Lectures presented in PowerPoint format
Second.	3		Ohm's law, methods of connecting resistors (Mixed paral- lel series Ways to ob- tain alternat- ing current, types of elec- trical power plants	Lectures of- fered In the form of a PowerPoint format Con- tinuous guid- ance of stu- dents by the professor dur- ing the daily lecture	Daily exams And monthly And annual exams general ques- tions And discussions
Third.	3	Learn about the methods of generat- ing alternat- ing current, its wave form, and the laws re- lated to (cur- rent, fre- quency, wave time, alternating voltage)	Ohm's law, methods of connecting resistors (Mixed paral- lel series Ways to ob- tain alternat- ing current, types of elec- trical power plants	Lectures of- fered In the form of a PowerPoint format Con- tinuous guid- ance of stu- dents by the professor dur- ing the daily lecture	Daily exams And monthly And annual exams general ques- tions And discussions
Forth.	3		The sine wave, the	Lectures pre- sented in	Exams Evening diary Annual

I					I	
			waveform of	PowerPoint		
			the current	format		
			with time and			
			frequency,			
			defining the			
			effective val-			
			ue of alternat-			
			ing current			
			and voltage			
			Ways to ob-	Lectures in the	general	questions
			tain alternat-	form Power-	And	exams
Fifth	3		ing current	Point	monthly	And an-
1 11 111.	5		types of elec	1 Ont	nuolly	Alla all-
			types of elec-		nuany	
			nlanta			
				T	1	
Sixth.			Sine wave,	Lectures on	general	questions
	3		the waveform	PowerPoint	And	exams
			of current	format	monthly	And an-
			with time and		nually	
			frequency,			
			definition of			
			the effective			
			value of al-			
			ternating cur-			
			rent and volt-			
			age			
			Knowledge of	Lectures on	general	questions
Seventh	3		power factors	PowerPoint	And	exams
		Identify the	and factors.	format	monthly	And an-
		effect of	applications		nually	
		power factor	and examples			
		in alternat-	of the use of			
		ing current	alternating			
		ing current	current in			
			practical life			
		Explain how	Magnetic	Loctures are	ganaral	questions
loight	2	the mean of the	field field	Lectures pre-	general	questions
[,] eighth	3	field magnetic		sentea in	Allu	
		neid, mag-	properties,	PowerPoint	monthly	And an-
		netic flux,	properties of	format	nually	
		and the	magnetism,			
		magnetic ef-	types of mag-			
		fect of elec-	netic materi-			
		tric current	als, defini-			
		are generat-	tions (field			

		ed	intensity, field intensi- ty, driving force		
Ninth	3	Identify al- ternating quantities	The magnetic effect of elec- tric current. Applications on the use of the property of the mag- netic force of attraction	Lectures pre- sented in PowerPoint format	general questions And exams monthly And an- nually
Tenth	3	Identify the types of al- ternating current and ways to dis- tinguish be- tween them	Single-phase alternating current, three- phase alter- nating cur- rent, three- phase alter- nating current	Lectures pre- sented in PowerPoint format	general questions And exams monthly And an- nually
eleventh	3		How to dis- tinguish the faces, the sys- tem for con- necting the wires to the external parts	Lectures pre- sented in PowerPoint format	general questions And exams monthly And an- nually
twelveth	3	Learn about connection methods in motors	Star (Y) con- nection meth- od, face cur- rent and line current from the star, face voltage and line voltage from the star, power in the case of a three-phase system	Lectures pre- sented in PowerPoint format	general questions And exams monthly And an- nually
Thirteen	3		How to con- nect electrical loads	Lectures pre- sented in Pow- erPoint format	generalquestionsAndexamsmonthlyAnd

					nually
fourteen	3	Learn about connection methods for motors	How to con- nect face cur- rent and line current in In the case of delta	Lectures pre- sented in Pow- erPoint format	general questions And exams monthly And an- nually
Fifteen			Applications and examples of conduction of current and voltage, star and delta, and line current in the case of Delta	Lectures pre- sented in Pow- erPoint format	general questions And exams monthly And an- nually
sixteen	3	Learn about the types of engines, their parts, how to in- stall the en- gines, and how to start the move- ment	Types of mo- tors, three- phase induc- tion motors, their types and uses	Lectures presen ed in PowerPoir format	general questions And exams monthly And an- nually
seven- teenth	3		Installation of impact motors (three-phase induction mo- tors) and methods of starting movement in three-phase induction mo- tors, principle of rotating magnet theo- ry, principle of motor op-	Lectures pre- sented in PowerPoint format	general questions And exams monthly And an- nually

r		I	1	ſ	Γ
eighteen		How to con-	Methods of	Continuous	general questions
	3	trol and	starting	guidance of	And exams
		change the	movement in	students by the	monthly And an-
		speed of in-	three-phase	professor dur-	nually
		duction mo-	induction mo-	ing the daily	
		tors	tors and	lecture	
			methods of		
			control and		
			control in		
			changing the		
			speed of		
			three-phase		
			induction mo-		
			tors (changing		
			poles, chang-		
			ing source		
			voltage,		
			changing os-		
			cillation and		
			change the		
			direction of		
			rotation)		
_		Learn how	Impact mo-	Lectures pre-	general questions
nineth	3	to reverse	tors are one-	sented in	And exams
		rotation for	sided, their	PowerPoint	monthly And an-
		single- and	types, instal-	format	nually
		three-phase	lation, use,		
		induction	and reverse		
		motors	cycle	T	
	2		Single-phase	Lectures pre-	1
twenty	3		capacitor-	sented in	general questions
			starting mo-	PowerPoint	And exams
			tors, their in-	format	monthly And an-
			stallation, and		nually
	2		uses.	Track	1
Twenty	3		Single-face	Lectures pre-	general questions
one			split-face mo-	sented in	And exams
			tors, their in-	PowerPoint	monthly And an-
			stallation and	iormat	nuany
T	2		uses Single for	T 4	
Iwenty	3		Single-face	Lectures pre-	general questions
two			spiit-face mo-	sented in Pow-	And exams
			tors, their in-	erPoint format	monthly And an-
			stallation and		nually

			11000		
Twenty three	3		Uses Cycle break- ers, thermal monitor against over-	Lectures pre- sented in Pow- erPoint format	general questions And exams monthly And an-
Twenty four	3	How to identify en- gine mal- functions and what are their causes	load Methods used to identify malfunctions: The engine is unable to ro- tate. The en- gine is rotat- ing at a speed less than its ideal speed.	Lectures pre- sented in Pow- erPoint format	nually general questions And exams monthly And an- nually
twenty five	3	How to identify en- gine mal- functions and what are their causes	Engine tem- perature rises during rota- tion Engine is noisy	Lectures pre- sented in PowerPoint format	general questions And exams monthly And an- nually
Twenty six	3		How to treat and repair each of the previous mal- functions	Lectures pre- sented in PowerPoint format	general questions And exams monthly And an- nually
Twenty seven	3	Learn about control cir- cuits and control of motors, both manual and automatic	Command and control circuits En- gine mainte- nance meth- ods, types of engines	Lectures pre- sented in PowerPoint format	general questions And exams monthly And an- nually
Twenty eight	3	How to maintain and lubricate en- gines	Working methods Maintenance For engines	Lectures pre- sented in PowerPoint format	general questions And exams monthly And an- nually
Twenty nine	3		Lubrication lubrication Cleaning Hub chairs	Lectures pre- sented in PowerPoint format	general questions And exams monthly And an- nually
thirty		Learn about	Industrial	Lectures pre-	general questions

	professional	Safety During	sented in	And exams
	safety meth-	operation	PowerPoint	monthly And an-
	ods and	Maintenance	format	nually
	maintenance			
	of engines			
11. Cou	irse evaluation			
Distribution of the	he grade out of 10	0 according to th	ne tasks assigned	l to the student, such
as daily preparat	ion, daily, oral, m	onthly, written ex	xams, reports, etc	с.
First semester ex	ams 10 marks			
theoretical 10 m	arks			
Practical 5 mark	XS			
Daily evaluation	Second semester	exams 10 marks		
theoretical 10 ma	arks			
Practical 5 mark	KS			
Daily evaluation	final exam 40 de	grees		
theoretical 10 m	arks			
Practical				
12. Lea	rning and teachin	g resources		
Required text	books Methodic	al books/electrica	al technology	
(methodology, if	fany)			
Main references	Main refe	rences (sources)	Electrical techno	ology + lectures by
(sources) Electri	cal subject te	acher / Lecturer I	Fatima Kazem A	bd
technology + lec	tures			
by subject teache	er /			
Lecturer Fatima				
Kazem Abd				
Recommended s	up- Recomme	ended supporting	books and refere	ences (scientific
porting books an	d ref- iournals.	reports) Books	and magazines r	elated to the subject
erences (scientif	ic of electric	city technology a	nd its types	J
journals, reports)	,	······································	
Books and maga	zines			
related to the sub	piect			
of electricity tech	hnol-			
ogy and its types	3			
Electronic refere	nces. Electronic	references Inter	rnet sites Al-Ma	hd website various
Internet sites Al	- Internet s	ources		
Mahd website v	ari-			
ous Internet sour	ces			
Sub momento sour				

Course description form.

1. Course name:	the surgetized all strigged to shu all sur			
	the practical electrical technology			
2. Course code				
	METE128.			
3. Semester/year/s	semester.			
	First year			
4. The date this des	scription was prepared is			
	27/2/2025.			
5. Available forms of	f attendance weekly attendance			
6. Number of hours	(total)] \ number of units (total)			
7. Name of the cou	Irse administrator (if there more then one name.			
write).				
Name: Hussein M	Iohammed Ali Hammood Alwakeel			
hussain.alwakee	l@atu.edu.iq			
8. Course objectives				
Objectives of the study	Electrical technology aims to: study the basic laws of electr			
subject.	technology, study electromagnetic properties, study the found			
	tions of various electric motors and transformers, the theory			
	their operation, methods of operation, and how to repair elec			
	cal faults and perform maintenance on them			
9. Teaching and lea	rning strategies			
The straegy.	1. Theoretical lectures and practical experiments 2. Presentations			
	3. Assessing students individually by giving them and			
	portunity to participate in the class by answering qu			
	tions			
	4Students are evaluated collectively through daily (
	5 Exams for the first and second semesters and final			
	ams for the first and second semesters.			
	6 .Using modern means to present the theoretical a			
	practical aspects, such as various electronic display			
	vices.			
	To attract the attention of students so that the lo			

		reaches	the student better.		
10. Structu	re of the pr	actical cou	rse.		
The week.	The hours.	Required learning out	Name of the unit or topic.	Learning method.	Evaluation method.
First.	2		Getting to know the la- boratory and electrical power sources, studying the ohmmeter (AVO) and how to use it to measure electric current, potential difference and resistance.		
second	2		Learn about the termi- nology of the color re- sistance system.		
Third.	2		Realizing Ohm's law in practice		
Forth.	2		Connect the resistors in series Parallelism and finding resistance Reward		
Fifth.	2		Different electrical cir- cuits (series, parallel) and studying their properties, finding resistance.		
Sixth.	2		Study the effect of high temperature on resistance		
Seventh.	2		Measuring electrical power from direct current circuits		
Eighth	2		Measuring electrical power from direct cur- rent circuits		
Ninth	2		Using an electric iron and training on welding methods and making electrical connections.		

		Training in establishing	
Tenth.	2	an electrician and doing	
		exercises to establish a	
		light bulb and a switch in	
		a simple electrical circuit.	
Eleventh.	2	Create an inspection and	
		operation panel that con-	
		tains a socket and a series	
		lamp, a socket and a par-	
		allel lamp.	
	2	Starting and operating	
		three-phase induction	
Twelveth.		motors using a manual	
		Star Delta switch	
	2	Starting motion and au-	
Thirteenth.	2	tomatic operation of	
		three-phase squirrel-cage	
		motors using Star Delta,	
		with an analysis of the	
.	2	starting idea.	
Fourteen.	2	Changing the direction of	
		rotation in motors using a	
		manual switch	
Fiftaanth	າ	Establish a lamp in two	
Filleenth.	2	Establish a famp in two	
		Check the triple impact	
Sivtoon	2	motor	
Sixteen.	2	Faces and identifying	
		their parts dismontling	
		them and reassambling	
		them	
		Triple impact motor on	
Coventaenth	2	anation	
Seventeentii.	2	Squirmel cogo diela	
Fightoon	2	The operation of the	
Eighteen.	2	antrol circuita usod	
		In operating angines us	
		in operating engines us-	
		The property of mag	
		ne property of mag-	
		netic attraction	
		Starting and operating	

Nineteen.	2	three-phase induction
	-	motors using
		Star delta switch manu-
		al operation
	2	Automatic start and on-
	2	aration
Twonty		Eration For triple engines
I wenty.		For triple engines
		Squiffer cage dalta swith
		Using star delta with
		Start-up Idea
т., с.,	2	Changing the direction
Twenty first.	2	of rotation in motors
		Using a manual switch
Twenty two.	2	Changing the direction
		of rotation in motors
		Automatically using a
		contour detector
		Emergency stopping of
Twenty	2	engines
third.		Three-phase inductance
Twenty	2	Single-sided induction
fourth.		motor inspection
		Identify its parts and
		operate it without load
Twenty	2	Inspection of engine
fifth.		protection devices
		electrical
	2	Maintenance work for
Twenty		electric motors is de-
sixth.		termined
		Maintenance intervals
		(lubrication lubrication
		And clean the axle
		seats)
Twenty s	2	Reconditioning of en-
enth.		gine faults in general
		And methods of repair
		(high temperature /
		Dawn when turn-
		ing/lower speed)
Twenty	2	Complete everything
i wenty	4	

eighth.	t	hat came in the week			
Twenty	2	7th			
ninth.					
Thirty.					
11. E	Evaluation of the pract	cal course for electrical te	chnology		
Distribution of the grade out of 100 according to the tasks assigned to the student, such as daily preparation, daily, oral, monthly, written exams, reports, etc.					
Exam for the se Final exam	econd semester 10 m 10 marks	arks			
12. L	earning and teaching	resources			
Required textbo	ooks (methodology, if any)	Methodical books			
Main references	s (sources)	Electrical technology books	s + subject teacher's lectur		
Recommended	supporting books and	Books and magazines relate	ed to the subject of electri		
references (scie	entific journals, reports)	technology and its types			
Electronic refere	ences, Internet sites	Specialized website	S		

نموذج وصف المقرر	
	۱ . اسم المقرر
حقوق الانسان والديمقراطية	
ر	۲. رمز المقر
METE139	
سنة	٣. الفصل / ال
سنوي المرحلة الاولى	
د هذا الوصف	٤. تاريخ إعدا
7.70/8/7	
ضور المتاحة	 أشكال الحد
اسبو عي	
ات الدر اسية (الكلي)/ عدد الوحدات (الكلي):	٦. عدد الساع
(۳۰) ساعة / (2) وحدة	
ل المقرر الدراسي (اذا اكثر من اسم يذكر)	۷. اسم مسؤوا
طلال مظفر غازي الايميل : talal.almasuode@atu.edu.iq	الأسم: م.م
رر	 ٨. اهداف المق
معرفة حقوق الانسان وهي التي اقرتما القوانين والحضارات القديمة والشرائع السماوية ومن ثم معرفة القوانين الوضعية	اهداف المادة الدراسية
على كافة مستوياتها الدولي والاقليمية والوطنية .ومعرفة الحريات العامة ومعرفة الانظمة الديمقراطية التي تحكم العالم وايضا	
التعرف على النظام الديمقراطي الذي تمارسه اغلب دول العالم والذي يعد ضمانه للحقوق والحريات.	
ت التعليم والتعلم	٩. استراتيجيان
استراتيجية القاء المحاضرات	الاستراتيجية
	1

- استر اتيجية المجاميع الطلابية
 استر اتيجية التقارير والدر اسات
 استر اتيجية استخدام وسائل الايضاح وأجهزة العرض الرقمية للمواضيع التي تتطلب ذلك.

				المقرر	۱۰. بنية
طريقة التقييم	طريقة التعلم	اسم الوحدة او الموضوع	مخرجات	الساعات	الأسبوع
			التعلم		
			المطلوبة		
١ -الامتحانات بمختلف أنواعها ٢ - التغذية المرتجعة من الطلاب	۱ ـ طريقة القاء المحاضر ات ۲ ـ المجاميع	حقوق الانسان : تعريفها , اهدافها	إضافة مخرجات التعلم	١	٠ ٤٠,
٣-طريقة التعبير بالوجوه ٤- التقارير والدراسات	الطلابية ٣- التقارير والدر اسات	حقوق الانسان في الحضارات القديمة و خصوصا حضارة وادي الرافدين	,		الاول
 ١-الأمتحانات بمختلف انواعها ٢- التغذية المرتجعة من ١- الطلاب ٣-طريقة التعبير بالوجوه ٤- التقارير والدراسات 	 ١ - طريقة القاء المحاضرات ٢ - المجاميع ١لطلابية ٣ - التقارير والدر اسات 	حقوق الانسان في الشرائع السماوية مع التركيز على حقوق الانسان في الاسلام	إضافة مخرجات التعلم	,	الثاني
١ - الامتحانات بمختلف انواعها ٢ - التغذية المرتجعة من ١لطلاب ٣ - طريقة التعبير بالوجوه ٤ - التقارير والدراسات	١ - طريفة الفاء المحاضر ات ٢ - المجاميع ١لطلابية ٣ - التقارير والدر اسات	حقوق الانسان في التاريخ المعاصر و الحديث : الاعتراف الدولي بحقوق الانسان منذ الحرب العالمية الأولى و عصبة الامم المتحدة	إضافه مخرجات التعلم	,	الثالث
۱ -الامتحانات بمختلف أنواعها ۲ - التغذية المرتجعة من الطلاب ۳ - طريقة التعبير بالوجوه ٤ - التقارير والدراسات	۱ - طريقة القاء المحاضرات ۲ - المجاميع الطلابية ۳ - التقارير والدراسات	الاعتراف الاقليمي بحقوق الانسان : الاتفاقية الاوربية لحقوق الانسان ١٩٥٠ , الاتفاقية الامريكية لحقوق الانسان ١٩٦٩ , الميثاق الافريقي لحقوق الانسان الانسان الانسان	إضافة مخرجات التعلم	`	الرابع
١ -الامتحانات بمختلف أنواعها ٢ - التغذية المرتجعة من الطلاب ٣ - طريقة التعبير بالوجوه ٤ - التقارير والدراسات	 أ - طريقة القاء المحاضرات ٢ - المجاميع ١طلابية ٣ - التقارير والدر اسات 	المنظمات غير الحكومية و حقوق الانسان (اللجنة الدولية للصليب الاحمر , منظمة العفو الدولية , منظمة مر اقبة حقوق الانسان , المنظمات الوطنية لحقوق الانسان)	إضافة مخرجات التعلم	,	الخامس
١-الامتحانات بمختلف أنواعها ٢- التغذية المرتجعة من الطلاب ٣-طريقة التعبير بالوجوه ٤- التقارير والدراسات	 ١ - طريقة القاء المحاضرات ٢ - المجاميع ١لطلابية ٣ - التقارير والدر اسات 	حقوق الانسان في الدساتير العراقية بين النظرية و الواقع	إضافة مخر جات التعلم	,	السادس
۱-الامتحانات بمختلف أنواعها ۲- التغذية المرتجعة من	١ ـ طريقة القاء المحاضر ات	العلاقة بين حقوق الانسان و الحريات العامة	إضافة مخرجات	1	السابع

الطلاب	٢- المجاميع	 ١- في الاعلان العالمي 	التعلم		
٣-طريقة التعبير بالوجوه	الطلابية	لحقوق الانسان			
٤ - التقارير والدراسات	٣- التقارير	 ٢- في المواثبق الاقليمية و 			
	والدراسات	الدساتير الوطنية			
١-الامتحانات بمختلف أنواعها	١ ـ طريقة القاء		إضافة	١	
٢ - التغذية المر تجعة من	المحاضرات	بر بر افغار و افغاند.	مخرجات		
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٣-طريقة التعبير بالوجوم	الطلابية	الاجتماعية و التقافية و حقوق	1		التامن
ع - التقاديد والدر إساري	٣_ التقارير	الانسان المدنية و السياسية			
(چر و (جر ک	مالد اسات				
الدينية التقارير والتام تركيل	والدراسات		تا فا	1	
	ا - طريفة الفاء		إصباقه	1	
۱ - التعدية المرتجعة من	المحاصر آت	حقوق الانسان الحديثة : الحق	محرجات		
الطلاب	۱ - المجاميع	في التنمية , الحق في البيبة	الدعلم		التاسع
٢-طريقة التعبير بالوجوه	الطلابية	النظيفة والحق في التضامن و			C
٤ - التقارير والدراسات	۳- التقارير	الحق في الدين			
	والدراسات				
١ -الامتحانات بمختلف أنواعها	١ ـ طريقة القاء	ضمانات احترام و حماية حقوق	إضافة	١	
٢ - التغذية المرتجعة من	المحاضرات	الانسان على الصعبد الوطني	مخرجات		
الطلاب	٢ - المجاميع	الضمانات في الدستور و	التعلم		
٣-طريقة التعيير بالوجوه	الطلابية	القو انين الضمانات في مبدأ	N N		
٤ - التقارير والدر اسات	٣_ التقارير	سيادة القانون			
	والدراسات	الضمازات في الرقارة			العاشر
	و، در ، د د	الديبة بدية الخبيرانية			
		مدية المحملة في مالياً ما المار			
		حرية الصحافة و الراي العام.			
		دور المنظمات غير الحكومية			
		في احدرام و حمايه حقوق			
		الانسان			
١-الامتحانات بمختلف انواعها	١ - طريقة القاء	ضمانات و احترام و حماية	إضبافة)	
٢ - التغذية المرتجعة من	المحاضرات	حقوق الانسان على الصعيد	مخرجات		
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٣-طريقة التعبير بالوجوه	الطلابية	 دور الامم المتحدة و 			
٤ ـ التقارير والدراسات	٣- التقارير	وكالاتها المتخصصة			
	و الدر اسات	في توفير الضمانات			
		- دور المنضمات			
		الاقليمية (الحامعة			الحادي
		العديبة الاتحاد			ي عشد
		الأفرية منظمة			
		الدايالاب كية			
		اللون الأمريكية			
		منظمه اسیان)			
		دور المنظمات الاقليمية عير			
		الحكومية و الراي العام في			
		احترام و حماية حقوق الانسان			
١-الامتحانات بمختلف انواعها	١ - طريقة القاء	النظريات العامة للحرية : اصل	إضافة)	
٢ - التغذية المرتجعة من	المحاضرات	الحقوق و الحريات , موقف	مخرجات		
الطلاب	٢ - المجاميع	المشروع من الحقوق و	التعلم		الثاني
٣-طريقة التعبير بالوجوه	الطلابية	الحريات المعلنة , استخدام			عشر
٤ ـ التقارير والدر اسات	٣- التقارير	مصطلح الحريات العامة			
	و الدر اسات				
١-الامتحانات بمختلف أنو إعها	١- طريقة القاء	القاعدة الشرعية لدولة القانون	اضافة)	الثالث
٢_ التغذية المرتجعة من	المحاضد ات	, <u> </u>	مذر حات		عشد
· · · · · · · · · · · · · · · · · · ·		1		1	

Nit ti	1 ti 🖬	[، الجمير ال		
الطلاب	۲ - المجاميع		التعلم		
٢-طريفه التعبير بالوجوه	الطلابيه				
٤ - الثقارير والدراسات	۲ ـ النفارير				
· · · · · · · · · · · · · · · · · · ·	والدراسات	م به د م مر و			
١-الامتحانات بمختلف انواعها	١ - طريقة القاء	تنظيم الحريات العامة من قبل	إضافة	١	
٢ - التغذية المرتجعة من	المحاضرات	السلطات المعلنة	مخرجات		الد ارج
الطلاب	٢- المجاميع		التعلم		مر بے عشر
٣-طريقة التعبير بالوجوه	الطلابية				
٤ - التقارير والدراسات	٣- التقارير				
	والدراسات				
١-الامتحانات بمختلف أنواعها	١ ـ طريقة القاء	المساواة : التطور التاريخي	إضافة	١	
٢ - التغذية المرتجعة من	المحاضرات	لمفهوم المساواة	مخرجات		
الطلاب	٢- المجاميع	التطور الحديث لفكرة المساواة	التعلم		الخامس
٣-طريقة التعبير بالوجوه	الطلابية	 المساواة بين الجنسين 			عشر
٤ ـ التقارير والدراسات	۳- التقارير	المساواة بين الافراد حسب			
	والدراسات	معتقداتهم و عنصىر هم			
١ -الامتحانات بمختلف أنواعها	١ ـ طريقة القاء	الديمقراطية , تعريفها , انواعها	إضافة	١	
٢- التغذية المرتجعة من	المحاضرات		مخرجات		
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٤ ـ التقارير والدراسات	۳۔ التقارير				
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١ -الامتحانات بمختلف أنواعها	١ ـ طريقة القاء	مفاهيم الديمقر اطية	إضافة	١	
٢ - التغذية المر تجعة من	المحاضرات		مخرجات		
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٤ - التقارير والدر أسات	٣- التقارير				
	والدر اسات				
١ -الامتحانات بمختلف أنو اعها	١ - طربقة القاء		إضافة	١	
٢- التغذية المرتجعة من	المحاضر ات		مخرجات		
الطلاب	٢ - المحاميع		التعلم		الثامن
	الطلابية		ſ		عشر
٤ - التقارير والدر اسات	٣_ التقارير				
	، الدر اسات	الديمة اطبة في العالم الثالث			
١-الامتحانات بمختلف أنه إعها	<u>ا - طريقة القاء</u>		اضافة	١	
٢- التغذية المرتجعة من	المحاضد ات		<u>ہے۔</u> مخر حات		
الطلاب	٢- المحاميع		مسرــــــــــــــــــــــــــــــــــــ		التاسع
٣_طريقة التعيير باله حوه	الطلابية		, <u> </u>		عشد
٤ - التقارير ، الدر إسبات	۳_ التقارير				
• - ، سعاریس و ، عسر	، الدر اسات	الانظمة الريمقر اطبة في العالم			
۱ الامتحاذات بمختلف أنه اعما	<u>ر المربقة القاء</u>	، <u>م</u> ست ، <u>تيتر ، بب</u> ي	اجرافة	١	
۲ التخذية المرتجعة من	المحاضد ات		ر <u>ا</u> مخد حات	,	
۱ - التعلية المرتب من	۲_ المحامدة	مفهمه الحريات تصنيف	التعام		
٣ طريقة التعديد بالمحمدة	الملارية	الحدرات الوامة	التعلم		عشرون
، تصریفه، شعبیر بسوجود ۲ التقارید م الدر اسات	، ۳ التقارير	العريات العالم			
۲ - اللغارين و الدر اللات	، الد اسات				
المرابعة المراجع والمراجع المراجع المراج	والدراسات		ابن اذ	١	
	۱ - طریفه العاء ۱۱ - ۱ - ۱۱	(*11) 3 . 1 (N) (*1. 1)	إصباقة ۱۰۰۰	1	
۱ - التعدية المرتجعة من	المحاصر آب	الحريات الاساسية, الحريات	محرجات		واحد
	۱ - المجاميع	الفكرية, الحريات الاقلصادية	الدعلم		وعشرون
الطريفة التعبير بالوجوه	الطلابيه س ٢٠٠٠	و الاجتماعية			
٤ - التفارير والدر أسات	۲۔ النفارير				

	م الدر اسان				
الدينية التوسيع المالية المرام	والدراسات		ان إذ	``	
ا - الامتحادات بمخلف الواعها	ا - طريفة القاء	حرية الأمن و السعوب	إصافة	1	
۱ - التعدية المرتجعة من	المحاصر آب	بالاطمليان	محرجات		-1*ti
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٢-طريفة النعبير بالوجوه	الطلابيه				والعشرون
٤ - التقارير والدراسات	۳ - التقارير				
	والدراسات				
١-الامتحانات بمختلف أنواعها	١ ـ طريقة القاء	حرية التعليم - حرية الصحافة -	إضافة	١	
٢ - التغذية المرتجعة من	المحاضرات	حرية التجمع.	مخرجات		
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٣-طريقة التعبير بالوجوه	الطلابية				والعشرون
٤ - التقارير والدر اسات	٣- التقارير				
	والدراسات				
١ -الامتحانات بمختلف أنو اعها	١ ـ طريقة القاء	حرية الجمعيات - حرية العمل	إضافة	١	
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٣_ط بقة التعبير بالوجوه	الطلابية		(— — ,		م العشد ون
٤ - التقارير ، الدر اسات	۳_ التقارير				
	م الدر اسات				
الامتحاذات ومختلف أزواعوا	الطريقة القاء	حقر التملك	اجز إفي أ	١	
۲ التخذية المرتجعة من	المحاضد ات	لحق التسب	م <u>ند حات</u>	,	
۲ = ۱ المعنية - ۱۱ الدارين	المحاصر ال		التعار		المفاوين
	۱ - المجاميع الدللانية		التعلم		الحامس
۲ - طريفة التعبير بالوجوه ۲ التتاريخ الديارية	الطربية				والعسرون
2 - اللقارين والدر اسات	۱ - اللقارير				
1 1 25 250	والدر اسات	en dia dalam di ante en	* •1 • 1	•	
ا -الأمنحانات بمختلف أنواعها	١ ـ طريفة القاء	حرية النجارة و الصناعة	إضافه	1	
٢- التغدية المرتجعة من	المحاضرات		مخرجات		
الطلاب	۲ - المجاميع		النعلم		السادس
٣-طريقة التعبير بالوجوه	الطلابية				والعتىرون
٤ ـ التقارير والدراسات	۳ - التقارير				
	والدراسات				
١-الامتحانات بمختلف أنواعها	١ ـ طريقة القاء	حرية المرأة	إضافة	١	
٢ - التغذية المرتجعة من	المحاضرات		مخرجات		
الطلاب	٢ - المجاميع		التعلم		السابع
٣-طريقة التعبير بالوجوه	الطلابية				والعشرون
٤ ـ التقارير والدر اسات	۳- التقارير				
	والدراسات				
١ -الامتحانات بمختلف أنواعها	١ ـ طريقة القاء	الاحزاب السياسية و الحريات	إضافة	١	
٢- التغذية المرتجعة من	المحاضرات	العامة	مخرجات		
الطلاب	٢ ـ المجاميع		التعلم		الثامن
٣-طربقة التعبير بالوجوه	الطلابية		``		و العشر و ن
٤ - التقارير والدر اسات	٣_ التقار بر				
	و الدر اسات				
١ -الامتحانات بمختلف أنو اعها	 ١ - طريقة القاء 	التقدم العلمي و التقني و	اضافة	١	
٢- التغذية المرتجعة من	المحاضر ات	الحربات العامة	مخرجات		
الطلاب	٢ - المجاميع	~	التعلم		التاسع
٣_ط بقة التعبير بالوجوه	الطلابية		1		والعشدون
٤ - التقاريد و الدر اسات	٣_ التقارير				
	م الدر اسات				
۱_الامتحاذات بمختلف أنه اعها	<u>را جريعة</u> القاء	مستقدل الحديات العامة	اخدافة	١	
	المحاضد ات	المسبق السريات المعدد	<u>ہ</u> ۔۔۔ مخرحات	,	الثلاثون

الطلاب	۲ ـ المجاميع			التعلم			
٣_طريقة التعبير بالوجوه	الطلابية			,			
ع التقاريد والدر إسات	٣_ التقارير						
	، = , <u></u>						
	والدراسات						
	اا. تقييم المقرر						
انات اليومية والشفوية والشهرية	توزيع الدرجة من ١٠٠ على وفق المهام المكلف بها الطالب مثل التحضير اليومي والامتحانات اليومية والشفوية والشهرية والتحريرية والتقارير الخ					توزيع الدرج والتحريرية	
١٢. مصادر التعلم والتدريس							
			الكتب المقررة المطلوبة (المنهجية أن وجدت)				
د. رياض عزيز هادي, حقوق الانسان تطور ها, مضامينها, حمايتها.				ار)	سة (المصاد	المراجع الرئي	
د حافظ علو إن الدليمي حقوق الإنسان.							
ب ماهر صدري كاظم حقوق الإنسان والدرمقد اطريق والحديدات							
العامة.							
الكتب القانونية والسياسية في اختصاص حقوق الانسان. الاتفاقدات الدرارة			الكتب والمراجع الساندة التي يوصى بها (المجلات العلمية،				
	الكولية.	الا تقانيات			(التقارير	
المواقع الالكترونية المتخصصة. وموقع الامم المتحدة				قع الانترنيت	ئترونية ، موا	المراجع الإلك	

نموذج وصف المقرر

	 اسم المقرر 					
ربية ١	اللغة الع					
	۲. رمز المقر					
	/					
	٣. الفصل / السنة سنوي					
۲.۲٥,	1 7 . 7 £					
	٤. تاريخ إعداد هذا الوصف					
۲.۲	0/7/2					
	 أشكال الحضور المتاحة 					
يضوري						
الوحدات (الكلي) /	٦. عدد الساعات الدراسية (الكلي) في السنة / عدد					
(٣٠) نظري/١ ساعة في الاسبوع						
یذکر)	 ٧. اسم مسؤول المقرر الدراسي (اذا اكثر من اسم 					
athmar.turki.4@atu.edu.iq : a	الاسم: م.م اثمار حمزة تركي الآيميل					
	۸. اهداف المقرر					
يكون الطالب بعد انتهاء المحاضرة قادرا على ان:	اهداف المادة الدراسية					
 . يميز بين التاء المربوطة والتاء المفتوحة. 						

 ۲. يذكر بعض الكلمات التي تنتهي بتاء مربوطة . 		
۳. يفرق بين الالف الممدودة والألف المقصورة.		
 ٤. يميز بين اللام القمرية والشمسية. 		
 و. يفرق بين كتابة حرفي الضاد والظاء. 		
 يعرف همزة القطع. 		
 ٧. يعرف همزة الوصل. 		
۸. يحدد مواضع همزة القطع في الاسماء		
٩. يحدد مواضع همزة الوصل في الافعال		
١٠.يعرف كتابة المهمزة المتوسطة		
 ا. يعرف كتابة الهمزة المتطرفة. 		
١٢. يذكر سبب رسم الهمزة المتوسطة على الالف		
١٣. يستخدم علامات الترقيم.		
١٤. يعرف تقسيم الكلمة.		
٥١. يحدد علامات الاسم.		
١٦. يحدد علامات الفعل.		
١٧. يفرق بين الاسم والفعل والحرف.		
١٨. يستخرج المفاعيل من الجمل.		
١٩. يشرح انواع المفعول المطلق.		
٢٠ يعرف معنى المفعول به.		
۲۱. يعرف أنواع العدد.		
۲۲. يذكر تميز العدد		
٢٣. يعرف أنواع العدد.		
٢٤. يعرف أهميه لغه الخطاب الإداري.		
٢٥. يعرف معاني حروف الجر.		
٢٦. يذكر مواضع كتابه الألف الفارقه.		
٢٧. يفرق بين النون والتنوين.		
٢٨. يتعرف على الجملة الأسمية.		
۲۹. يفرق بين المبتدا والخبر.		
٣٠ يعرف كيفيه كتابه الصيغ الادارية		
	يجيات التعليم والتعلم	۹. استرات
	طريقة القاء المحاضرة.	الاستراتيجية
	طريقة المناقشة.	
	طريقة اكتشف الخطاء	
ببات البو مية و الاختبار ات.	تخصيص نسبة من الدرجة للواج	

			:	بنية المقرر	.1•
طريقة التقييم	طريقة التعليم	اسم الوحدة / أو الموضوع	مخرجات التعلم المطلوبة	الساعات	الأسبوع
اختبارات يومية واسئلة شفهية	محاضرة نظرية	الاخطاء اللغوية/التاء المفتوحة والتاء المربوطة	الفهم المعرفي	۲	الاول والثاني
اختبار ات يومية واسئلة	محاضرة نظرية	الضاد والظاء	الفهم المعرفي	١	الثالث
7.1.1					
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شفهيه					
اختبارات واسئلة شفهية	محاضرة نظرية	الالف القائمة والالف الممدودة	الفهم المعرفي	١	الرابع
اختبارات يومية واسئلة شفهية	محاضرة نظرية	الحروف الشمسية والقمرية	الفهم المعرفي	۲	الخامس
اختبارات يومية واسئلة شفهية	محاضرة نظرية	الهمزة والمتوسطة والهمزة المتطرفة	الفهم المعرفي	٣	السادس والسابع والثامن
اختبارات يومية واسئلة شفهية	محاضرة نظرية	علامات الترقيم	الفهم المعرفي	١	التاسع
اختبارات يومية واسئلة شفهية	محاضرة نظرية	الاسم والفعل والتفريق بينهما	الفهم المعرفي	۲	العاشر- الحادي عشر
اختبارات يومية واسئلة شفهية	محاضرة نظرية	الافعال من حيث البناء والاعراب	الفهم المعرفي	۲	الثاني عشر عشر - الثالث عشر
اختبارات يومية واسئلة شفهية	محاضرة نظرية	المفاعيل: المفعول المطلق, المفعول به	الفهم المعرفي	۲	الرابع عشر۔ الخامس عشر
اختبارات يومية واسئلة شفهية	محاضرة نظري	المفعول لا جله, المفعول فيه	الفهم المعرفي	۲	السادس عشر - السابع عشر
اختبارات يومية واسئلة شفهية	محاضرة نظرية	الاعداد وتميزها	الفهم المعرفي	۲	السادس عشر والسابع عشر الثامن عشر
اختبارات يومية واسئلة شفهية	محاضرة نظرية	تطبيقات الاخطاء اللغوية	الفهم المعرفي	۲	التاسع عشر

اختبارات يومية واسئلة شفهية	محاضر ة نظرية	معاني حروف الجر	الفهم المعرفي	١	العشرون
اختبارات يومية واسئلة شفهية	محاضر ة نظرية	قاعدة الالف الفارقة, قاعدة النون والتنوين	الفهم المعرفي	۲	الحادي والعشرون- الثاني والعشرون
اختبارات يومية واسئلة شفهية	محاضر ة نظرية	المبتدأ والخبر	الفهم المعرفي	۲	الثالث والعشرون۔ الرابع والعشرون
اختبارات يومية واسئلة شفهية	محاضرة نظرية	لغة الخطاب الاداري	الفهم المعرفي	۲	الخامس والعشرون- السادس والعشرون
اختبارات يومية واسئلة شفهية	محاضرة نظرية	الجوانب الشكلية للخطاب الاداري	الفهم المعرفي	۲	السابع والعشرون- الثامن والعشرون

	١١. تقييم المقرر
الطالب مثل التحضير اليومي والامتحانات اليومية	توزيع الدرجة من ١٠٠ على وفق المهام المكلف به
ريرية والتقارير الخ	والشفوية والشهرية والتم
	١٢. مصادر التعلم والتدريس
مقرر منهجي	الكتب المقررة المطلوبة (المنهجية أن وجدت)
النحو التطبيقي: خالد عبد العزيز	المراجع الرئيسة (المصادر)
بط٨١٠٦ ٢٠١٩.	
ألاملاء الواضح : عبد المجيد النعيمي, بغدادط،	
.19.47	
اللغة العربية للصف الثاني متوسط: فاطمة ناظم	
,ط۸۱،۲۰	
من وحي الادب العربي : هفال محد , مطبعة	
السعدون, بغداد	
-	الكتب والمراجع الساندة التي يوصى بها (المجلات
	العلمية، التقارير)
المواقع الالكترونية المتخصصة	المراجع الإلكترونية ، مواقع الانترنيت



			-	-	عث العلمي	ة التعليم العالي والب
						النامليم التقنى
					3	سمات / التكنولوجي
			(مستمر)	الفرع / الانتاج		/ لميكانيك
			()			
ſ		bu at t		1		
	په	ساعات الأسبوع	11			
	المجموع	عملي	نظري	السنه الدر اسيه	اده	اسم الم
	~	~	-	الاولى	e)	المعامل ا
، القدار	الدوية وأدوات	ام مختلف العدد	مندع باستخد	ة لتنفيذ عمليات التشغيل والتم	المهار ة البدوية	ف المادة · اكتساب
، ليوس		اجي الأمثل .	يع . الأسلوب الإنت	لتشغيل بالأسلوب التشغيل با	تشغيل مكانن ا	ما رة على العمل و
1.18			ملية	المفردات الع		
		ۍ	يدل المغد جاد	مانة		E alury
a for the set			میں اصر دار			، د سبو ح
		اسبوع)	ة النماذج ("	۱ - نجار		
أنواع	اذج ، تعريف الراكة	في نجارة النم الماستخداماتما ف	دئ الأساسية الأحدث مارته	المباد منابق الاتم مأنيا عالن	-1	الأول
	ي السباكة .	ا واستحداماتها و	دج ونجارته ال	لب واستعمالاته ، الواع اللم	الحت	
ها في بسيطة	لواجب توافر. تنفیذی لنماذج	، السروط ال ن على الرسم ال	ييح اللمودج ماش ، تمريز	يصد ديح النموذج ، معامل الانک	۲-	
	C		دوق .	حد فاصل واحد وبدون صند	ذات	
لمعدات	اليدوية واا	يدمة والعدد	ات المستخ	المعد	-٣	
،ماكنة	نشار الشريط	ار الصينية ،ما	الثخانة، منشر ات	انيكية المستخدمة ،ماكنة ا	الميك	
			. ~	وه ، ماكنة الصنفرة ، المحوا	الر ابر	
تشغيلي	سب الرسم ال	لكرة لاجزاء ح	ب عملي لشا	تدريد اا-لامات	-£	
	3.4		1			1151:
		مه ، ابعاده اللها	وطرق نجميا	 ۲ سطیب اجراء اسمودج ا 	الحمان التدريد.	الثاني

النماذج المركبة : شرح الحدود الفاصلة المتعددة ، الفراغات الداخلية .	الثالث
المفردات العملية	
تفاصيل المفردات	الأسبوع
٢ - سباكة المعادن (٦ أسبوع)	الاول
سباكة المعادن وأهميتها ، الغرض من استعمال المسبوكات في الصناعة ، محتويات وحدة السباكة احتياطات الأمن الصناعي بالسبك ، تشكيل قالب رملي لنموذج قطعة واحدة أمام الطلاب ، رمال القوالب والقلوب أنواعها ومصادرها وخواص مواد الإضافة وعمليات الخلط وضبط المقادير ، استعمال خلاط الرمل ، معالجة الرمال .	
تشكيل القوالب الرملية بالطرق اليدوية لنموذج قطعة واحدة لتشكيل قالب رملي .	-
قالب رملي لنموذج من قطعة واحدة مع تحديد المصبات والمصاعد ، صهر المعادن وصبه في قالب ، استخراج وتنظيف المسبوكات .	الثاني
تشكيل قالب رملي مثل السابق مع صهر المعدن وصبه في قالب وإخراج المسبوك وتنظيفه .	الثالث
سباكة قوالب رملية بطريقة إنتاجية ، تدريب على استخدام لوحات السباكة التي تحوي أكثر من قطعة في القالب الواحد وبها قلوب ، طرق تنظيف المسبوكات بالفرش ، المبارد ، أحجار التجليخ ، كرات الصلب ، الهواء المضغوط ، المكانن الدوارة ، مراجعة وفحص المسبوكات ، تحديد العيوب الظاهرة ومسبباتها ، مراجعة أبعاد المسبوكات ، والتأكد من مطابقتها للأبعاد المطلوبة .	الرابع
سباكة قوالب رملية لنماذج مترجة ومركب لها قلب تكون هذه التمارين ضمن التمارين التي سيقوم بها الطالب باستكمال تشغيلها في المعامل الأخرى .	الخامس
أفران صهر المعادن ، أنواعها ، صفاتها ، استخداماتها ، الفرن الدوار ، القلاب، الثابت.	السادس

أنفر ادات مخروط و مخروط ناقص .	الثالث
تدريب على حساب انفر اد المشغو لات المتقاطعة ، عمل تمرين لاسطو انتين متقاطعتين .	الثاني
حساب انفراد المشغلات المقطوعة والناقصة .	
تقويس البليت يدويا ، الدسرة اعتيادية ، القائمة وطريقة الرسم ، الانفرادات البسيطة ،	
معدات قطع البليت الثني ، ماكنة الدرفلة ،ماكنة الحزوز والعدد اليدوية ،استعمال و	الاول
٥-السمكرة والحدادة (٣ أسبوع)	
تدريبات تجميعية باستخدام مختلف عمليات القطع واللحام المختلفة .	السادس
تدريب على عمليات اللحام بالقوس الكهرباني المحمي بالغاز (Tig,mig) .	الخامس
عمل تمارين على اللحام مشغولات باستخدام غاز CO2	
الواجب توافرها	الرابع
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، المعدات المستخدمة ، الأقطاب وطريقة تركيبها ، تدريب عملي .	
تجهيزات اللحام ، تدريب عملى على استخدام القوس الكهربائي في لحام الأسطح المختلفة	الثالث
لحام سطوح متقابلة ، سطوح متعامدة ، سطوح مائلة ، لحام دانرة ، قطع طولي وعرضي	الثاني
تدريبات عملية :	
إشعال وضبط اللهب المطلوب ، المشغولات شطف وتنظيف الحواف المطلوب لحامها .	
وضبطها العدد الأخرى المساعدة والغازات المستخدمة ومواصفاتها ، اسلاك اللحام مأنها عما مقباساتها ، المعاد المساعدة الأخرم ، تحمد ات اللحام ، أنها عالما معاد يقة	الاول
السلامة المهنية واحتياطات الأمن : لحام الغاز ، المعدات المستخدمة وكيفية تركيبها	
٤-اللحام (٦ أسبوع)	
٢-الواع المحابس وطرق عملها والحشف عليها وإصدحها.	السادس
۱-الواع الحسي وموالع اللسرب واستخداماتها وطرى تنبيتها وترعها ومراجعة عمتها تواريد الدارية المراجعة الاسراب واستخداماتها وطرى تنبيتها وترعها ومراجعة عمتها المراجعة ا المراجعة المراجعة ا المراجعة المراجعة المراجع المراجعة المراجعة ال المراجعة المراجعة المرا المراجعة المراجعة المراجعة المراجعة المراجعة المراجعة المراجع المراجع المرجة المراجعة المرجعة المراجعة المرجعة المرجعة ا	
أعداد تقارير الصيانة .	الخامير
أهمية الصيانة للمكانن والمعدات ، توضيح عمليات الصيانة الدورية والشاملة ، كيفية	

٦-الخراطة (٦ أسبوع)	
المخرطة ومواصفتها واستخداماتها وملحقاتها وطرق تركيبها ، تشغيل المخرطة ، أنواع أقلام المخرطة باستخدام كل منها .	الاول
عمليات الخراطة :	
خراطة مستوية ، عدلة ، عمل السنتر ، عمل تمرين مدرج بسيط ، استخدام أدوات القياس.	الثاني
خراطة المسلوب الخارجي بالطرق المختلفة مع شرح القوانين الخاصة بكل طريقة ، عمل تمرين خاص بالمسلوب الخارجي .	الثالث
 ١-عمل الأسنان المختلفة خارجيا (المثلث) عمل تمرين يشمل سن المثلث ٢-عمل السن مربع خارجي و عمل تمرين . 	الرابع
سر عات القطع واختيار ها واستعمال الجداول الخاصة بها .	الخامس
تنفيذ التدريب على الخراطة اللامركزية واستخدام العينة الرباعية .	السادس i

ملاحظات: بالنسبة للطلبة الذين يتم قبولهم بعد بداية العام الدراسي يتم تعويض مافاتهم من تمارين وذلك خلال
 العطلة الربيعية حصريا وباوامر ادارية من القسم العلمي مؤشرا فيها تاريخ مباشرتهم في المعهد.
 بالنسبة للطلبة الذين يرسبون باقل من نصف الوحدات يحق لهم التعويض في الاسبوع الذي يسبق الامتحانات النظرية لنهاية العام حصريا.
 مادة المعامل تقييم مستمر لاوجود لدور ثان فيها وبالتالي فلا احقية للاقسام العلمي فو المعين في الاسبوع الذي يسبق الامتحانات النظرية لنهاية العام حصريا.
 مادة المعامل تقييم مستمر لاوجود لدور ثان فيها وبالتالي فلا احقية للاقسام العلمية ولا لوحدات المعامل الامتحانات النظرية لنهاية العام حصريا.
 مادة المعامل تقييم مستمر لاوجود لدور ثان فيها وبالتالي فلا احقية للاقسام العلمية ولا لوحدات المعامل بان تقيم دورات تعويضية في العطلة الصيفية خوفا من انحدار المستوى العلمي في هذه المادة .
 مادة المعامل تقييم مستمر لاوجود لدور ثان فيها وبالتالي فلا احقية للاقسام العلمية ولا لوحدات المعامل بان تقيم دورات تعويضية في العطلة الصيفية خوفا من انحدار المستوى العلمي في هذه المادة .
 يتم ابلاغ القسم العلمي بغيابات الطلبة اسبوعيا لغرض التمكن من تنفيذ المادة (9) من التعليمات الامتحانية والتي تنص (يعتبر الطالب راسبا في اي موضوع اذا تجاوزت غياباته (١٠٠%) عشرة من المندة من المائة من المائة من المائة بعنر من المائة والتي تنص (يعتبر الطالب راسبا في اي موضوع اذا تجاوزت غياباته (١٠٠%) عشرة من المائة من الساعات المقررة لذلك الموضوع بدون عذر مشروع او (١٥%) خمس عشر من المائة بعذر مشروع يقره مجلس الكلية او المعهد) .

تتولى الاقسام العلمية ووحدات المعامل تبليغ الطلبة بممضمون الفقرات اعلاه منذ بداية العام الدراسي .

Course Description Form					
1. Cou	se Name:				
		Mach	nine parts techno	ology	
2. Cou	rse Code:				
			METE211		
3. Sem	ester / Yea	ar:			
			2023-2024		
4. Des	ription Pr	eparation Date:			
			25/2/2025		
5. Ava	lable Atten	dance Forms:			
6 Nun	bar of Cra	lit Hours (Total)	<u>Direct</u>	its (Total)	
O. INUI		int Hours (Total)	90	its (10tal)	
7. Cou	rse admin	istrator's name	(mention all, if	more than one na	ame)
Nan	e: Intisar l	Rasheed Saleh			
Ema	il: intisark	hursan@atu.edu	u.iq		
8. Cou	se Objectiv	/es	· · · · ·		
Course Objec	ives	Machine parts teo	chnology aims to:	parts in the machine syst	tem (machine)
		• There is	a relationship betwee	n them (i.e. the parts of	the machines and the
		system)		· · ·	
		Finding o	alculations for design	ning these parts and det	ermining the factors a
		fecting th	nem		
9. Tea	hing and L	earning Strategie	es		
Strategy		A- Cognitive	e objectives		
		conducting	g students to he calculations of s	ow to design mach	ine parts by saffecting them
		B - The skill	s objectives of t	he course.	s ance the the the
		The student	s proficiency ir	n using a scientific	calculator and
		using the be	est, fastest and r	nost accurate met	hods in
		engineering	calculations to	design machine p	arts
10. Cours	e Structure				
Week	Hours	Required	Unit or subject	Learning method	Evaluation
		Learning	name		method
		Outcomes			
1	3	Use lecture	Review of	Continuous	By solving

		view software	Strength of Materials	guidance of students by the professor during the daily lecture	exercises
2&3	6	Use lecture view software	Riveted Joints. Types of Riveted Joints, Design of Riveted Joints, Efficiency of Riveted Joints.	Continuous guidance of students by the professor during the daily lecture	By solving exercises
4&5	6	Use lecture view software	Welded Joints, Types of Welding Joints, Design of Welding Joints	Continuous guidance of students by the professor during the daily lecture	By solving exercises
6&7	6	Use lecture view software	Screwed Joints, Design of Bolts for Fastening, Design of Bolts for Power Transition	Continuous guidance of students by the professor during the daily lecture	By solving exercises
8&9	6	Use lecture view software	Keyed Joints, Types of Keys, Design of Sunk Key.	Continuous guidance of students by the professor during the daily lecture	By solving exercises
10&11	6	Use lecture view software	Frictional Clutches, Types of Frictional Clutches, Design of Frictional Clutches.	Continuous guidance of students by the professor during the daily lecture	By solving exercises
12&13	6	Use lecture view software	Types of Springs, Design of Springs.	Continuous guidance of students by the professor during the daily lecture	By solving exercises
14&15	6	Use lecture view software	Types of Belts, Design of Belts.	Continuous guidance of students by the professor during the daily lecture	By solving exercises
16&17	6	Use lecture view software	Design of Shafts	Continuous guidance of students by the professor during the daily lecture	By solving exercises
18&19	6	Use lecture view software	Design of Journal Bearings	Continuous guidance of students by the professor during the daily lecture	By solving exercises
20	3	Use lecture view software	Selection of Ball Bearings	Continuous guidance of students by the professor during the daily lecture	By solving exercises
21&22	6	Use lecture view software	Design of Gears by Lewis Equation	Continuous guidance of students by the professor during the daily lecture	By solving exercises
23&24	6	Use lecture view software	Gears Trains	Continuous guidance of students by the professor during the daily lecture	By solving exercises
25&26	6	Use lecture view software	Design of Simple Gears Box	Continuous guidance of students by the	By solving exercises

				professor during the daily lecture	
27&28	6	Use lecture view software	Worm Gears	Continuous guidance of students by the professor during the daily lecture	By solving exercises
29&30	6	Use lecture view software	Cams	Continuous guidance of students by the professor during the daily lecture	By solving exercises
11.	Course e	evaluation			
Distributing the preparation, d	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. Learnii	ng and To	eaching Resourc	ces		
Required textbo	ooks (curri	cular books, if any)	Metho	dological decision	
Main references (sources)1-Strength of Material by Ferdinal L.Sir 2-Strength of Material by R. S. Khurmi. 3-Machine Design by R. S. Khurmi, J.K. Gupta. 4-Machine Design by Paul H. Black. 5-Schaums Outline Series of Machine Desi Hall, Holowenko ,Laughin				inal L.Singer . Khurmi. urmi, J.K. Black. Iachine Design b	
Recommended	books	and references			
(scientific journ	als, report	s)			
Electronic Refe	erences, W	ebsites	Specia	lized websites	

13. Program Development Plan

Machine Parts Technology Program Development Plan

This program provides students with the technical skills needed for machining, CNC programming, toolmaking, and mechanical maintenance. It combines theoretical knowledge with hands-on training to prepare students for careers in advanced manufacturing.

The curriculum covers core topics such as machine parts and manufacturing basics, materials and metal lurgy, machining processes (lathe, milling, grinding), CAD and CNC programming, precision measurement, quality control, and workplace safety. Advanced modules include CNC automation, tool and die making, hydraulics, and Industry 4.0 applications.

Training methods include hands-on workshops with CNC and manual machines, simulation-based learn ing using CAD/CAM software, and industry internships. Resources such as CNC machines, lathes, mill equipment, measurement tools, and safety gear will be used to ensure practical learning.

Graduates can earn certifications like NIMS and OSHA Safety and pursue careers as machinists, CNC programmers, toolmakers, and maintenance technicians. Implementation will follow a phased approach: curriculum development and industry partnerships (3-6 months), pilot courses (6-12 months), and full-scale program expansion (1-3 years).

Course Description Form

1. Course N	ame:
	Metallurgy
2. Course Co	ode:
	METE213
3. Semester	/ Year:
	2024-2025
4. Descripti	on Preparation Date:
	February, 2025
5. Available	Attendance Forms:
6. Number of	of Credit Hours (Total) / Number of Units (Total)
	120 Hours /240 Units
7. Course a	Idministrator's name (mention all, if more than one name)
Name: Sa	anaa Ali Hamza
Email: in	kr.san@atu.edu.iq
8. Course O	bjectives
Course Objectives	• Providing the student with sufficient knowledge of the types
	of metals and alloys, their mechanical properties, their crystal
	structure, and the different types of defects that occur in them
	during the processing and forming processes.
	• Providing the student with sufficient knowledge and skill in
	studying heat treatments, how to implement them practically,
	and their effects on the properties and structure of metals.
	• Providing the student with sufficient knowledge and skill in
	identifying material resistance tests, working on their equip-

		ment to implement them practically, and drawing the curves						
			related to them.					
		•	• Providing the student with sufficient knowledge and skill in					
			working with mid	croscopes to exam	nine and draw	the internal		
			structures of meta	als and alloys.				
		•	Providing the stud	dent with knowled	ge and skill i	n performing		
			all types of surface	ce hardening of m	etals: Knowi	ng corrosion		
			its types the me	chanism of its occ	urrence and	how to con-		
			duct correction or		urrence, and	now to con-		
			duct corrosion ex	periments				
9. Teachi	9. Teaching and Learning Strategies							
Strategy		1- Participatory education						
	2 Student centered education							
	2. Using Descer Deint							
		J- C		C1				
		4- 5	nowing scientific	films				
		5- L	Jsing an oil board					
		6- D	Dividing the studen	ts into groups				
		7- U	Jsing deadlock-bre	aking methods thr	rough a set of	intellectual		
		exei	rcises and games					
10. Course S	Struct	ure:	Metallurgy (Theo	oretical)				
Week	Hour	s	Required	Unit or subject	Learning	Evaluation		
			Learning	name	method	method		
		Outcomes						
First week	2		Distinguishing the	Definition of	PowerPoint,	Daily exams,		
			types of	mineralogy;	blackboard,	direct		
			crystallization -	crystallization;	scientific	questions and		
			knowing the	dendritic	films,	discussion		

	•				
		conditions of the	crystallization;	participatory	
		plumbing process	The effect of	education	
			cooling rate on the		
			structure of metals		
Second week	2	Know the defects	Installation of	PowerPoint, blackboard,	Daily exams, direct questions
		of castings	billets (casting	scientific films,	and discussion
			solidification)	participatory education	
			Common defects		
			in castings		
Third week	2	How to derive the	Atomic crowding	PowerPoint, blackboard.	Daily exams, direct questions
		crowding factor;	coefficient;	scientific films,	and discussion
		Determine the	crystallographic	participatory education	
		coordinates of the	directions; crystal		
		atom and the	levels; The		
		coordinates of the	phenomenon of		
		atomic planes	interconnection		
Forth week	2	Identify and	Crystal lattice	PowerPoint, blackboard,	Daily exams,
		distinguish the	defects; Raster;	scientific films,	direct
		types of defects in	Sin	participatory education	questions and
		crystal lattices			discussion
Fifth week	2			PowerPoint,	
		Know the basic	Flexible forming	blackboard, scientific	Daily exams,
		methods of plastic	and plastic	films,	direct
		formation and how	forming (slipping;	education	questions and
		they occur	twinning)		discussion

sixth week	2	Know the difference between hot and cold formation and the circumstances in which each occurs	Emotional toughness; cold forming; Hot forming	PowerPoint, blackboard, scientific films, participatory education	Daily exams, direct questions and discussion
seventh week	2	Learn about the processing of high-hardness metals by the recovery procedure; recrystallization; Crystal growth	restoration; recrystallization; Crystal growth	PowerPoint, blackboard, scientific films, participatory education	Daily exams, direct questions and discussion
eighth week	2	Study the stress- strain curve, know its importance, and determine its basic points	Stress-strain curves in bending; Extension; fracture; Types of fracture; Transition from ductile to brittle fracture	PowerPoint, blackboard, scientific films, participatory education	Daily exams, direct questions and discussion
ninth week	2	Study of fatigue as	fatigue; Fatigue	PowerPoint, blackboard, scientific	Daily exams,

		r	r		
		a model for	mechanism;	films, participatory education	direct
		repeated tests and	Factors affecting	education	questions and
		study of the	fatigue limit;		discussion
		fatigue curve and	Fatigue resistant		
		fatigue fracture	materials		
tenth week	2	Familiarize	Creep; The	PowerPoint, blackboard,	Daily exams,
		yourself with the	mechanism of	films,	direct
		creep test and	creep; Creep	education	questions and
		creep curve	resistant materials		discussion
eleventh week	2	Study and become	compound; phase;	PowerPoint, blackboard, scientific	Daily exams,
		familiar with a	solid solution; the	films, participatory	direct
		group of	system; poise;	education	questions and
		vocabulary related	alloy composition;		discussion
		to drawing a heat	mechanical		
		balance diagram	mixture; Eutectic		
twelfth week	2	Learn how to	Thermal	PowerPoint, blackboard,	Daily exams,
		create and draw	equilibrium	films,	direct
		heat equilibrium	diagram for a	education	questions and
		diagrams for solid-	completely		discussion
		solution and	dissolved binary		
		eutectic alloys	system in the		
			liquid and solid		
			states. Thermal		
			equilibrium		

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			diagram for a		
			binary system that		
			is completely		
			dissolved in the		
			liquid state and		
			insoluble in the		
			solid state		
			(eutectic)		
thirteenth	2	Learn how to	Thermal	PowerPoint, blackboard,	Daily exams,
week		create and draw	equilibrium	films,	direct
		heat equilibrium	diagram for a	education	questions and
		diagrams for	binary system that		discussion
		alloys with limited	has complete		
		melting	solvation in the		
			liquid state and		
			limited solvation		
			in the solid state		
fourteenth	2	Learn how to	Thermal	PowerPoint, blackboard,	Daily exams,
week		create a heat	equilibrium	films,	direct
		equilibrium	diagram for a	participatory education	questions and
		diagram for alloys	binary system that		discussion
		that form chemical	is completely		
		compounds	dissolved in the		
			liquid state and		
			forms a chemical		

			compound when frozen		
fifteenth week	2	Identify the iron- carbon diagram and the important phase transitions in it	Iron; Dissolution of carbon in iron; Heat equilibrium diagram for the iron-carbon system; The most important interactions included in the diagram	PowerPoint, blackboard, scientific films, participatory education	Daily exams, direct questions and discussion
sixteenth week	2	Identify the iron- carbon diagram and the important phase transitions in it	Completion of the heat equilibrium diagram for the iron-carbon system	PowerPoint, blackboard, scientific films, participatory education	Daily exams, direct questions and discussion
seventeenth week	2	Identify the important phase transitions in the eutectoid part	Austenite formation; Mechanism of transforming perlite into austenite	PowerPoint, blackboard, scientific films, participatory education	Daily exams, direct questions and discussion

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eighteenth	2	Identify the	Austenite	PowerPoint, blackboard,	Daily exams,
week		(T.T.T) cooling	transformations by	films,	direct
		curve at constant	constant	participatory education	questions and
		temperatures and	temperature and		discussion
		the (C.C) cooling	transformations by		
		curve continuously	continuous		
			cooling		
nineteenth	2	Identify the basic	Thermal	PowerPoint, blackboard,	Daily exams,
week		and important heat	treatments	scientific films,	direct
		treatments for	(annealing;	participatory education	questions and
		carbon steel	normalizing;		discussion
			hardening)		
twentieth	2	Continue learning	Completion of	PowerPoint, blackboard,	Daily exams,
week		about the basic	thermal treatments	films,	direct
		and important heat	(hardening and	participatory education	questions and
		treatments for	reviewing); Sub-		discussion
		carbon steel	zero thermal		
			coefficients;		
			Aging		
Twenty-first	2	Study and	Surface hardening	PowerPoint, blackboard,	Daily exams,
week		understand surface	(carburization of	films,	direct
		hardening methods	all types and the	participatory education	questions and
		for carbon steel	heat treatments		discussion
		(carburizing,	that follow it),		

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		nitrating, annealing)	nitrating; Sindah		
twenty- second week	2	Study the need to use alloy steel; Its importance; Classification: The effect of adding alloying elements on the properties of steel	alloy steel; The effect of alloying elements on the properties of steel	PowerPoint, blackboard, scientific films, participatory education	Daily exams, direct questions and discussion
twenty-third week	2	Study and learn about stainless steel and tool steel; Types; Importance and use	stainless steel; Tools steel	PowerPoint, blackboard, scientific films, participatory education	Daily exams, direct questions and discussion
twenty-fourth week	2	Identifying cast iron; types; Its thermal treatment; The form of carbon and the factors affecting it	Cast iron production and its heat treatments	PowerPoint, blackboard, scientific films, participatory education	Daily exams, direct questions and discussion
twenty-fifth week	2	Identifying cast iron; types; Its	Supplementing the production of cast	PowerPoint, blackboard, scientific films,	Daily exams, direct

		thermal treatment.	iron and its most	participatory	questions and
		thermal treatment,	non and its most	cudeation	questions and
		The form of	important types		discussion
		carbon and the			
		factors affecting it			
Twenty-sixth	2	Corrosion study;	Definition of	PowerPoint, blackboard,	Daily exams,
week		The mechanism of	corrosion; Direct	films,	direct
		its occurrence;	and indirect	participatory education	questions and
		The costs	economic costs of		discussion
		associated with its	corrosion;		
		occurrence	manifestations of		
			corrosion;		
			Mechanism of		
			corrosion		
twenty-	2	negative study;	negativity;	PowerPoint, blackboard,	Daily exams,
seventh week		Faraday's law;	Faraday's law;	scientific films,	direct
		Some types of	General corrosion;	participatory education	questions and
		corrosion	galvanic		discussion
			corrosion;		
			Cavernous erosion		
twenty-eighth	2	Complementary to	Soil erosion;	PowerPoint, blackboard,	Daily exams,
week		other types of	Voluntary	scientific films,	direct
		corrosion	corrosion;	participatory education	questions and
			Corrosion between		discussion
			crystals; Stress		

			corrosion		
twenty-ninth week	2	Learn the correct way to choose	The optimal choice of material;	PowerPoint, blackboard, scientific films, participatory	Daily exams, direct
		materials to avoid corrosion	Ocean softening; Design and operation	education	questions and discussion
thirtieth week	2	Study and classify methods of corrosion prevention	Corrosion prevention methods	PowerPoint, blackboard, scientific films, participatory education	Daily exams, direct questions and discussion

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
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Required textbooks (curricular books, if any)	كتاب مبادئ هندسة المود – د. حسين باقر رحمة الله
	ملزمة المعادن النظري المنهجية
Main references (sources)	Engineering Metalluragy, (part 1), Higgins, (Capright 1973, R.A.H) Metallurgy for Engineering-Rollason, (Third Eddi. 1961) Engineering Physical Metallurgy, Prof. Y. Lnthin
Recommended books and references (scientific journals, reports)	المواد الهندسية واختباراتما– د. قحطان الخزرجي الميتالورجيا الهندسية– د. عارف ابو صفية الميتالورجيا الهندسية – د. عبد الرزاق اسماعيل

	مبادئ علم المعادن- د. عادل محمود حسن
Electronic References, Websites	البحوث المنشورة عبر مواقع الانترنت حسب مواضيع المقرر

13.	13. Course Structure: Metallurgy (Practical)						
Week	Hours	Required	Unit or subject	Learning	Evaluation		
		Learning	name	method	method		
		Outcomes					
First week	2	Visit existing metal	Introduction to the	View	-		
		laboratories and	metallurgy	existing			
		learn about the	laboratory	laboratories			
		equipment in them	(resistance				
			laboratory, heat				
			treatment				
			laboratory,				
			microscopic				
			examination and				
			sample preparation				
			laboratory)				
Second week	2	Learn how to	Simple tension	PowerPoint;	- Laboratory		
		conduct a tensile	experiment;	oil board;	reports		
		test on steel	elongation curve;	science films;	- Student		
		samples. gecko;	Stress-strain curve;	Conduct the	performance		
		Copper and	Flexible and plastic	experiment	examination		
		drawing the stress-	forming; Modulus	on the device	forms		
		strain curve	of elasticity;	in the	- Gradual		
			Maximum tensile	laboratory	evaluation		

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			strength (U.T.S.); relative elongation; Decrease in cross- sectional area		form
Third week	2	Learn about conducting a pressure experiment on steel samples. Aluminum	pressure experience; load curve; elongation; Stress-strain curve; The relationship of length to cross- sectional area; Factors affecting the experience of stress	PowerPoint; oil board; science films; Conduct the experiment on the device in the laboratory	 Laboratory reports Student performance examination forms Gradual evaluation form
Forth week	2	Acquire sufficient skill in conducting the Brinell hardness test	Hardness test (Brinnell method)	PowerPoint; oil board; science films; Conduct the experiment on the device in the laboratory	 Laboratory reports Student performance examination forms Gradual evaluation form
Fifth week	2	Acquire sufficient	Hardness test	PowerPoint;	- Laboratory

				1	
		skill in conducting	(Vickers method)	oil board;	reports
		the Vickers		science films;	- Student
		hardness test		Conduct the	performance
				experiment	examination
				on the device	forms
				in the	- Gradual
				laboratory	evaluation
					form
sixth week	2	Acquire sufficient	Hardness test	PowerPoint;	- Laboratory
		skill in conducting	(Rockwell-B)	oil board;	reports
		the Rockwell-B		science films;	- Student
		hardness test		Conduct the	performance
				experiment	examination
				on the device	forms
				in the	- Gradual
				laboratory	evaluation
					form
seventh	2	Gain sufficient skill	Hardness test	PowerPoint;	- Laboratory
week		in conducting the	(Rockwell-C)	oil board;	reports
		Rockwell-C		science films;	- Student
		hardness test		Conduct the	performance
				experiment	examination
				on the device	forms
				in the	- Gradual
				laboratory	evaluation

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					form
eighth	2	Acquire sufficient	Fatigue test	PowerPoint;	- Laboratory
week		skill in performing		oil board;	reports
		fatigue using the		science films;	- Student
		rotary bending		Conduct the	performance
		method and		experiment	examination
		drawing the fatigue		on the device	forms
		curve		in the	- Gradual
				laboratory	evaluation
					form
	2				
ninth week	2	Gain sufficient skill	Creep test	PowerPoint;	- Laboratory
		in conducting the		oil board;	reports
		creep test at room		science films;	- Student
		temperature and		Conduct the	performance
		drawing the creep		experiment	examination
		curve		on the device	forms
				in the	- Gradual
				laboratory	evaluation
					form
tonth weak	2	A aquire sufficient	Import tost (Irod	Dower Doint:	Laboratory
tentil week		Acquire sufficient	Charmer)	rowerrollit;	
		skill in performing	Cnarpy)	oll board;	reports
		Impact using the		science films;	- Student
		Izod and Charpy		Conduct the	performance
		methods and		experiment	examination

	1		l		
		distinguishing the		on the device	forms
		type of sample		in the	- Gradual
		crusher		laboratory	evaluation
					form
	2				
eleventh	Ζ	Acquire sufficient	Acquire sufficient	PowerPoint;	- Laboratory
week		skill in performing	skill in performing	oil board;	reports
		sample preparation	sample preparation	science films;	- Student
		for the purpose of	operations for the	Conduct the	performance
		microscopic	purpose of	experiment	examination
		examination	microscopic	on the device	forms
			examination.	in the	- Gradual
			Preparing samples	laboratory	evaluation
			for microscopic	ý	form
			examination		
			(smoothing		
			(shiobunng,		
			ponsning,		
			exposure,		
			examination under		
			a microscope)		
twelfth	2	Acquire sufficient	Establishing a heat	PowerPoint;	- Laboratory
week		skill in creating a	equilibrium curve	oil board:	reports
		heat equilibrium	for a fully melted	science films:	- Student
		diagram for a solid	hinary alloy in the	Conduct the	performance
			liquid end est'		performance
		solution	liquid and solid	experiment	examination
			states	on the device	forms

		I			,
				in the	- Gradual
				laboratory	evaluation
					form
thirteenth	2	Gain sufficient skill	Establishing a heat	PowerPoint;	- Laboratory
week		in creating a heat	equilibrium curve	oil board;	reports
		balance diagram	for a binary alloy	science films;	- Student
		for the eutectic	that is completely	Conduct the	performance
			melted in the liquid	experiment	examination
			state and insoluble	on the device	forms
			in the solid state.	in the	- Gradual
				laboratory	evaluation
					form
fourteenth	2	Acquire sufficient	Establishing a heat	PowerPoint;	- Laboratory
week		skill in creating a	equilibrium curve	oil board;	reports
		heat equilibrium	for a binary alloy	science films;	- Student
		diagram for alloys	that is completely	Conduct the	performance
		with limited	melted in the liquid	experiment	examination
		melting	state and has	on the device	forms
			limited melting in	in the	- Gradual
			the solid state.	laboratory	evaluation
					form
fifteenth	2	Acquire sufficient	Establishing a heat	PowerPoint;	- Laboratory
week		skill in creating a	equilibrium curve	oil board;	reports
		heat equilibrium	for a binary alloy	science films;	- Student

		diagram for alloys	that completely	Conduct the	performance
		of chemical	melts in the liquid	experiment	examination
		compounds	state and forms a	on the device	forms
			chemical	in the	- Gradual
			compound when	laboratory	evaluation
			frozen.		form
sixteenth	2	Acquire sufficient	Examining	PowerPoint;	- Laboratory
week		skill to	different types of	oil board;	reports
		microscopically	(alloys, solid	science films;	- Student
		examine the	solutions,	Conduct the	performance
		products of	mechanical	experiment	examination
		creating heat	mixture, chemical	on the device	forms
		balance diagrams	compound) under	in the	- Gradual
			the microscope	laboratory	evaluation
					form
seventeenth	2	Acquire sufficient	Samples of	PowerPoint;	- Laboratory
week		skill for	unheated carbon	oil board;	reports
		microscopic	steel are examined	science films;	- Student
		examination and	under a microscope	Conduct the	performance
		determination of	and the carbon	experiment	examination
		the percentage of	percentage is	on the device	forms
		carbon in non-heat-	calculated	in the	- Gradual
		treated carbon steel		laboratory	evaluation
					form

	1			1	
eighteenth	2	Acquire sufficient	Examination of	PowerPoint;	- Laboratory
week		skill to	samples of cast iron	oil board;	reports
		microscopically	(white, gray,	science films;	- Student
		examine samples of	spherical)	Conduct the	performance
		cast iron (white,		experiment	examination
		gray, spherical)		on the device	forms
				in the	- Gradual
				laboratory	evaluation
					form
nineteenth	2	Acquire sufficient	Conduct the	PowerPoint;	- Laboratory
week		skill in performing	recovery and	oil board;	reports
		the recovery and	recrystallization	science films;	- Student
		recrystallization	process, examine it	Conduct the	performance
		processes and	microscopically,	experiment	examination
		microscopic	and compare it with	on the device	forms
		examination before	the examination	in the	- Gradual
		and after them	before the recovery	laboratory	evaluation
			and		form
			recrystallization		
			process.		
twentieth	2	Acquire sufficient	hardening of	PowerPoint;	- Laboratory
week		skill in conducting	carbon steel and	oil board;	reports
		thermal treatments	comparing	science films;	- Student
		through the	composition and	Conduct the	performance
		hardening process,	properties before	experiment	examination

I	1		1	
	microscopic examination, and comparing properties before	hardening	on the device in the laboratory	forms - Gradual evaluation form
	and after the hardening procedure.			
Twenty- first week	2 Gain sufficient skill in conducting the tempering, measuring hardness, and comparing it before and after the tempering	tempering carbon steel and measuring hardness before and after tempering	PowerPoint; oil board; science films; Conduct the experiment on the device in the laboratory	 Laboratory reports Student performance examination forms Gradual evaluation form
twenty- second week	2 Acquire sufficient skill in performing the hardening process in different media and comparing the properties and microscopic	Acquire sufficient skill in performing the hardening process in different media and comparing the properties and microscopic	PowerPoint; oil board; science films; Conduct the experiment on the device in the laboratory	 Laboratory reports Student performance examination forms Gradual evaluation

		different liquids	different liquids		
twenty-	2	Gain sufficient skill	Conduct a Jomney	PowerPoint;	- Laboratory
third week		in conducting the	test to measure	oil board;	reports
		Jomney test to	hardening ability	science films;	- Student
		measure hardening		Conduct the	performance
		ability		experiment	examination
				on the device	forms
				in the	- Gradual
				laboratory	evaluation
					form
	2				
twenty-	_	Acquire sufficient	Surface hardening	PowerPoint;	- Laboratory
fourth		skill in performing	using hard	oil board;	reports
week		surface hardening	carburizing	science films;	- Student
		using hard		Conduct the	performance
		carburizing		experiment	examination
				on the device	forms
				in the	- Gradual
				laboratory	evaluation
					form
twenty-	2	Acquire sufficient	Examination of	PowerPoint;	- Laboratory
fifth week		skill in examining	various samples of	oil board;	reports
		various samples of	alloy steel;	science films;	- Student
		alloy steel;	Stainless steel	Conduct the	performance
		Stainless steel	under a microscope	experiment	examination

	1				
		under a microscope		on the device	forms
				in the	- Gradual
				laboratory	evaluation
					form
	2				
Twenty-		Gain sufficient skill	Examining various	PowerPoint;	- Laboratory
sixth week		in examining	samples of copper	oil board;	reports
		different samples	and brass under a	science films;	- Student
		of copper and	microscope	Conduct the	performance
		gecko under a		experiment	examination
		microscope		on the device	forms
				in the	- Gradual
				laboratory	evaluation
					form
twenty-	2	Acquire sufficient	Microscopic	PowerPoint;	- Laboratory
seventh		skill in microscopic	examination of	oil board;	reports
week		examination of	various samples of	science films;	- Student
		various aluminum	aluminum	Conduct the	performance
		samples		experiment	examination
				on the device	forms
				in the	- Gradual
				laboratory	evaluation
					form
twenty-	2	Gain sufficient skill	Conduct a chemical	PowerPoint;	- Laboratory
eighth		in conducting a	corrosion	oil board;	reports

week		chemical corrosion	experiment; Create	science films;	- Student
		experiment; Create	a simple corrosion	Conduct the	performance
		a simple corrosion	cell	experiment	examination
		cell		on the device	forms
				in the	- Gradual
				laboratory	evaluation
					form
twenty-	2	Acquire sufficient	Conducting a	PowerPoint;	- Laboratory
ninth week		skill in conducting	corrosion	oil board;	reports
		a corrosion	protection	science films;	- Student
		protection	experiment using	Conduct the	performance
		experiment using	the cathodic	experiment	examination
		the cathodic	protection method	on the device	forms
		protection method		in the	- Gradual
				laboratory	evaluation
					form
thirtieth	2	Acquire sufficient	Conducting an	PowerPoint;	- Laboratory
week		skill in conducting	experiment on	oil board;	reports
		the corrosion	corrosion	science films;	- Student
		protection	protection using the	Conduct the	performance
		experiment using	anodic protection	experiment	examination
		the anodic	method	on the device	forms
		protection method		in the	- Gradual
				laboratory	evaluation
					form

14. 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

15. Learning and Teaching Resources

Required textbooks (curricular books, if any)	 ملزمة المعادن العملي المنهجية
	 ملزمة معدة من قبل مدرس المادة
Main references (sources)	 كتاب مبادئ هندسة المعادن - د. حسين باقر رحمة الله
	 المواد الهندسية واختباراتما- د. قحطان الخزرجي
Recommended books and references	 الميتالورجيا الهندسية- د. عارف ابو صفية
(scientific journals, reports)	 الميتالورجيا الهندسية – د. عبد الرزاق اسماعيل
	 مبادئ علم المعادن – د. عادل محمود حسن
Electronic References, Websites	الفيديوات المنشورة عبر النت حول اجراء التجارب العملية
	الفيديوات المسجلة من قبل تدريسي المادة للتجارب العملية
	والمنشورة في القناة الخاصة بالمختبر عبر التلكرام

Course Description Form

1. Course Nam	1. Course Name:						
Industrial computer drawing							
2. Course Code	2. Course Code:						
METE216							
3. Semester / Y	Year:						
	2024-2025						
4. Description	Preparation Date:						
	25-2-2025						
5. Available At	tendance Forms:						
	Direct						
6. Number of C	Credit Hours (Total) / Number of Units (Total)						
	90						
7. Course adm	ninistrator's name (mention all, if more than one name)						
Name: Intisa	ar Rasheed Saleh						
Email: intisa	arkhursan@atu.edu.iq						
8. Course Obje	ctives						
Course Objectives	The Industrial Computer Drawing course aims to:						
	equip students with the skills to create, interpret, and modify technical						
	drawings using computer-aided design (CAD) software.						
	The course focuses on precision, industry standards, and practical appli-						
	cations in mechanical, electrical, and civil engineering fields.						
9. Teaching and Learning Strategies							

Strategy • Hands-on CAD Training & Project-Based Learning – Students practice 2D/3D drafting using software like AutoCAD and Solid-Works, working on real-world projects and simulations to enhance								
technical skills.								
	 Industry Integration & Assessments – Guest lectures, case studies, and portfolio-based evaluations ensure students meet industrial standards, with regular feedback and practical exams to track pro- gress 							
10. C	ourse S	Structure						
Week Hours Required			Unit or subject name	Learning method	Evaluation			
		Learning			method			
		Out-						
		comes						
1	3	Using Au- toCAD in draw- ing	General review of first grade topics, geometric lines, projections, sec- tions, setting dimensions using AutoCAD	Continuous guidance of stu- dents by the professor during the daily lecture	By drawing a daily painting			
2 & 3	6	Using Au- toCAD in draw- ing	Methods of connection using screws, types of screws, types of nuts, with a drawing of a board	Continuous guidance of stu- dents by the professor during the daily lecture	By drawing a daily painting			
4 & 5	6	Using Au- toCAD in draw- ing	Connecting with screws, its types, uses, drawing a group board.	Continuous guidance of stu- dents by the professor during the daily lecture	By drawing a daily painting			
6&7	6	Using Au- toCAD in draw- ing	Welding connection, welding symbols, assem- bly drawing.	Continuous guidance of stu- dents by the professor during the daily lecture	By drawing a daily painting			
8 & 9	6	Using Au- toCAD in draw- ing	Rivet connection, rivet shapes, types of rivet connection, assembly drawing.	Continuous guidance of stu- dents by the professor during the daily lecture	By drawing a daily painting			
10	3	Using Au- toCAD in draw- ing	Application panel for mechanical crane assem- bly partition	Continuous guidance of stu- dents by the professor during the daily lecture	By drawing a daily painting			
11	3	Using Au- toCAD in draw- ing	Springs, their types and uses, with a drawing of a compression spring	Continuous guidance of stu- dents by the professor during the daily lecture	By drawing a daily painting			
12	3	Using Au- toCAD in draw-	Drawing of a schematic diagram of the exhaust valve assembly and de-	Continuous guidance of stu- dents by the professor during the daily lecture	By drawing a daily painting			
		ing	composition					
---------	---	---------------------------------------	---	---	-----------------------------------			
13	3	Using Au- toCAD in draw- ing	Column connections (couplers) types, drawing an application board	Continuous guidance of stu- dents by the professor during the daily lecture	By drawing a d painting			
14	3	Using Au- toCAD in draw- ing	Clutches, their types and uses, with an application drawing	Continuous guidance of stu- dents by the professor during the daily lecture	By drawing a d painting			
15	3	Using Au- toCAD in draw- ing	Bearings, drawing of a friction bearing assembly	Continuous guidance of stu- dents by the professor during the daily lecture	By drawing a d painting			
16	٣	Using Au- toCAD in draw- ing	Pulleys and belts, their types, uses, with two drawings to assemble parts containing belt wheels of different types	Continuous guidance of stu- dents by the professor during the daily lecture	By drawing a d painting			
17 &18	٦	Using Au- toCAD in draw- ing	Gears and their types, gearboxes, basic defini- tions, gearbox drawing, with assembly plate for gearbox engagement	Continuous guidance of stu- dents by the professor during the daily lecture	By drawing a d painting			
19 &20	٦	Using Au- toCAD in draw- ing	Bevel gears, basic defini- tions with assembly drawing of bevel gear engagement	Continuous guidance of stu- dents by the professor during the daily lecture	By drawing a d painting			
21 &22	٦	Using Au- toCAD in draw- ing	Introduction to Autodesk Inventor	Continuous guidance of stu- dents by the professor during the daily lecture	By drawing a d painting			
23 &24	٦	Using Au- toCAD in draw- ing	2D drawing environment	Continuous guidance of stu- dents by the professor during the daily lecture	By drawing a daily painting			
25 & 26	٦	Using Au- toCAD in draw- ing	Assembly environment	students by the professor dur- ing the daily lecture	By drawing a daily painting			
27 & 28	٦	Using Au- toCAD in draw- ing	Dynamic and motion analysis environment	students by the professor dur- ing the daily lecture	By drawing a daily painting			
29	٣	Using Au- toCAD in draw- ing	Additions to engineering drawings	students by the professor dur- ing the daily lecture	By drawing a daily painting			
30	3	Using Au- toCAD in draw-	A project within the ju- risdiction of the relevant department for a part of	students by the professor dur- ing the daily lecture	By drawing a daily painting			

j	ng	any operational system.					
11. Course E	11. Course Evaluation						
Distributing the aration, daily ora	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 Tead	ching Resources					
Required text-							
books (curricular							
books, if any)							
Main references	Main references Engineering Drawing for Manufacture by Brian Griffiths						
(sources)	(sources)						
Recommended	• Manua	al of Engineering Drawing b	V Colin H Simmons and Dennis E	Maguire.			
books and refer-	 Engin https://doi.org/10.1000 	Engineering Drawing Basics Explained					
ences (scientific	- nups.//	/ w w w .sciencedirect.com/ sci	article/pii/b97800809424210	00218			
journals, re-							
ports…)							
Electronic Refer-							
ences, Websites							

13. Program Development Plan

Teaching and Learning Strategies: The course uses **hands-on CAD training** and **project-based learning** to teach 2D/3D drafting with software like AutoCAD and SolidWorks, enabling students to work on real-world projects and simulations. **Industry integration** through guest lectures, case studies, and portfolio assessments ensures students meet professional standards, with regular feedback and practical exams to monitor progress.

Course Description Form

1. Course Name:
English Language 2
2. Course Code:
METE239
3. Semester / Year:
Second year
4. Description Preparation Date:
23/2/2025
5. Available Attendance Forms:
Direct

6. Number of Credit Hours (Total) / Number of Units (Total)
30 Hr. /2 U
7. Course administrator's name (mention all, if more than one name)
Name: SATTAR JABBAR METTIB
Email: sattar.mettib@atu.edu.iq
8. Course Objectives
Course Objectives
9. Teaching and Learning Strategies
Strategy

10.	Cours	se Structure			
Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	
1& 2	2	Cognitive	Getting to know	Lecture and discussion	
3&4	2	Cognitive	The way we live	Lecture and discussion	
5&6	2	Emotional and cognitive	It all went wrong	Lecture and discussion	
7&8	2	Emotional and cognitive	Let's go shopping!	Lecture and discussion	
9&10	2	Emotional and cognitive	What do you want to do?	Lecture and discussion	
11&12	2	Emotional and cognitive	Tell me! What's it like?	Lecture and discussion	
13&14	2	Emotional and cognitive	Review	Lecture and discussion	
15&16	2	Emotional and cognitive	Famous couples	Lecture and discussion	
17&18	2	Emotional and cognitive	Do's and don'ts	Lecture and discussion	
19&20	2	Emotional and cognitive	Going places	Lecture and discussion	
21&22	2	Emotional and cognitive	Scared to death	Lecture and discussion	
23&24	2	Emotional and cognitive	Things that Passives changed the world	Lecture and discussion	
25&26	2	Emotional and cognitive	Dreams and reality	Lecture and discussion	
27&28	2	cognitive	Earning a living	Lecture and discussion	
29&30	2	Emotional and cognitive	Love you and leave you	Lecture and discussion	

The first and second-semester exams are evaluated of 20 points and 10 points for the work of the year including the daily exams, the attendance, and the assignments. For the final exam, the evaluation is of 50 points.

12. Learning and Teaching	Resources
Required textbooks (curricular	New headway pre-intermediate level Student
books, if any)	book
Main references (sources)	New headway pre-intermediate level Student
	book
	New headway pre-intermediate level Work book
	with key fourth edition Johne and Liz Soars
Recommended books and	
references (scientific journals,	
reports)	
Electronic References,	https://www.google.com/search?q=speak+now+
Websites	3+student+book+pdf+free+download&rlz=1C1
	GCEA_enIQ1001IQ1001&oq=&gs_lcrp=EgZja
	HJvbWUqCQgAEEUYOxjCAzIJCAAQRRg7
	<u>GMIDMgkIARBFGDsYwgMyCQgCEEUYOxj</u>
	CAzIJCAMQRRg7GMIDMgkIBBBFGDsYwg
	MyCQgFEEUYOxjCAzIJCAYQRRg7GMIDM
	gkIBxBFGDsYwgPSAQsyMzU2ODgzajBqN6
	gCCLACAQ&sourceid=chrome&ie=UTF-8

1. Course Na	ame
	Manufacturing processes 2
2. CodeDecis	sion:
	METE212
3. The chapt	er /the year
	2024-2025
4. Date this	was preparedthe description
	27/2/2025
5. Attendance	e forms available
	direct
6. Number of	f study hours (total)/number of units (total)
7 Nome of	60
7. Name of Hamzah K	adhim Hassan mailto: inkr hamz@atu.edu.ig
8 Course ob	iectives
0. 000100 00	
Goals Subject Scholarship	Preparing the student to be familiar with all manufacturing processes and their various types of machining or shaping Its position, equipment, and products. He has the ability to plan the production of various products by choosing the shapes and sizes of raw materials, machines, and appropriate operating processes, sequencing these processes, and selecting machines, tools, and devices. Measurement and calculations required for this purpose and with accuracy The required efficiency and low cost.
9. Teaching a	and learning strategies
The strategy	 A- Cognitive objectives A1- The student will be able to understand engineering tolerances, their systems, symbols, and tables, and choose Proper pairings using special tables, various products, and various geometric combinations Mechanical skills and acquisition of skills in solving exercises for models with different tolerances and couplings. A2- The student will be able to understand the quality of surfaces, systems, and symbols with different degrees of surface

Course description form

quality
Products for different manufacturing processes and different
measurement methods.
A3- The student will be able to identify the determinants of
measurement, their different types, the limits of measurement
and their uses.
A4- The student will be able to know all the machining
operations - lathe, milling, planing, grinding, and - their basic
movements, the types and number of pieces used, their various
operations and products, operating elements, cutting rates,
special tables and how to use them, calculating the operating
time for all operations.
A5- The student will be able to prepare an operation card for
various types of products and for all types of operations, which
includes the sequence of operations, a diagram of each
operation, the number of pieces used, the number of
measurements, cutting rates, and operating time.
A6- The student will be able to know all the pressure-forming
processes (rolling, drawing, extrusion, forging, pressing,
shearing, and punching), the foundations and types of each
process, the products of each process, and calculating the forces
used for each process.
B - The skills objectives of the course.
B1- The student will be able to practice measuring tolerances
and quality of different surfaces
Products with various measuring devices for this purpose with
high accuracy.
B2 - The student will be able to practice all machining
operations and all machines
Manufacturing products for various mechanical assemblies with
high precision and low cost.
B3 - The student will be able to train on all compression molding
processes and on all machines for manufacturing various
products and mechanical assemblies with high precision and
low cost.
B4 - The student will be able to maintain various manufacturing
process machines with high skill.
7- Presentation methods (lecture).
8-Discussion methods.
9- Practical teaching methods (laboratory and workshops).
Evaluation methods
First: Test tools, essay tools, number, explain, compare, explain,
and solve questions. Second - non-test tools (checklist

(measurement devices), graduated rating scale, workshop
C: Emotional and value-based goals
C-1 Offer to design a product and ask to think about developing
an integrated program for its production.
C 2- Encouraging the development of thought in memorization
and speculation and motivating it towards critical thinking.
C-3- Developing Internet research skills to expand the cognitive
horizon.
C 4- Using brainstorming to produce creative ideas for some
gifted students
Teaching and learning methods
-The student's ability to analyze, apply, and organize knowledge
as well as describe solutions.
-The ability to learn both simply and deep in exploring
knowledge to solve existing problems.
-Distinguishing that the test increases the student's motivation
towards studying and furthering and is not a means of punishing
him.
Evaluation methods
First - Test tools, essay tools (number, explain, compare, explain,
Solve questions.
choice questions interview questions -)
General and qualifying transferable skills (other skills related to
employability and personal development).
D1- Communication. communication. and information
technology skills in the work team.
D2- The tendency to cooperate and work.
D3- Possess linguistic skills in the art of listening and the art of
persuasion and dialogue.
D4- Possessing leadership qualities, strong memory, and the
ability to predict and extrapolate.

10	10. Course structure					
the	hours	Required	Name of the unit	the	Evaluation	
week		learning	or topic	weekLearning	method	
		outcomes		method		
1	2	Use lecture view software	Engineering tolerances, dimension tolerances, and their types, tolerance systems and tolerance ranks, tolerance elements, couplings, coupling units, types of couplings	Continuous guidance of students by the professor during the daily lecture	By solving exercises General questions and discussion	
2	2	Use lecture view software	Title basis system, column basis system, symbols of pairings, tolerances for loose dimensions Preferred pairings Selection of pairings, and their economic advantages	Continuous guidance of students by the professor during the daily lecture	By solving exercises General questions and discussion	
3	2	Use lecture view software	Geometric tolerances in shape and position and types of shape and position tolerances	Continuous guidance of students by the professor during the daily lecture	By solving exercises General questions and discussion	
4	2	Use lecture view software	Measurement parameters, design of measurement parameters, types of measurement parameters	Continuous guidance of students by the professor during the daily lecture	By solving exercises General questions and discussion	
5	2	Use	Classification of	Continuous	By	

		lactura	metal fabrication	guidance of	solving
		view	metal working	studente by	avarcisos
		view	theory of factors	the professor	Conorol
		soltware	affecting it	during the	General
			formation of the	during the	questions
			hit outting adap	dany lecture	diagnasion
			on, culling edge,		uiscussion
			emerging cutting		
			theory of its		
			formation factors		
			that load to		
			raducing its size		
			cooling and its		
			importance for		
			cutting		
			operations		
			various cooling		
			fluide		
			Measurement		
			narameters		
			design of		
			measurement		
			parameters, types		
			of measurement		
			parameters		
			The round shape.	Continuous	By
		Use	the incisive edges	guidance of	solving
-	•	lecture	used, and the	students by	exercises
6	2	view	longitudinal and	the professor	General
		software	transverse feed	during the	questions
			arrows.	daily lecture	and
			Identifying the	-	aiscussion
			pens used and		
			how to install		
			them in relation to		
			the workpieces.		
			Forming lathe		
			pens.		
			Classification of	Continuous	By
		Use	the number of	guidance of	solving
-	า	lecture	pieces in relation	students by	exercises
/	4	view	to the methods of	the professor	General
		software	operation, the	during the	questions
			number of cutting	daily lecture	and

			edges the metals		discussion
			they are		uiscussion
			manufactured		
			from the		
			direction of		
			feeding into them		
			the geometry of		
			turning pans and		
			the types of pen		
			angles, the offect		
			of pap angles on		
			the outting		
			ne cutting		
			Cutting		D
			cutting	Continuous	Dy
		Use	containions,	guidance of	surving
Q	2	lecture	cutting elements,	students by	Conoral
D	4	view	uses of culling	the professor	General
		software	speeds, and use of	during the	questions
			tables and speed	daily lecture	ano
			Inaps,	-	aiscussion D
			How to perform	Continuous	By
		Use	group operations,	guidance of	solving
0		lecture	calculate their	students by	exercises
9	2	view	components, and	the professor	General
		software	calculate the	during the	questions
			cutting time for	daily lecture	and
			each operation	Continuo and	discussion
			How to use the	Continuous guidance of	Dy Solving
			operating card to	students by the	General
			create a process	professor	questions
			pain for the	during the	and
		Lac	that affect the	daily lecture	discussion
		Use	that affect the		
10	2	lecture	choice of cutting		
		view	speeds (Cutting		
		sonware	tool properties,		
			effect of operating		
			elements, impact		
			properties of the		
			worked metal).		
		Use	Automatic turret	Continuous	Bv
11	2	lecture	turning machines	guidance of	solving
* *	-	view	studving the	students hv	exercises
		1 1 0 11	staaying the	Students by	22101 01909

		software	processes that can be operated and analyzing the processes on the product, how to prepare the operating card	the professor during the daily lecture	General questions and discussion
12	2	Use lecture view software	Types of tools used on the hexagonal, quadrilateral, front, and rear heads.	Continuous guidance of students by the professor during the daily lecture	By solving exercises General questions and discussion
13	2	Use lecture view software	Programming automatic lathes, factors influencing operating steps	Continuous guidance of students by the professor during the daily lecture	By solving exercises General questions and discussion
14	2	Use lecture view software	The student learns about the milling process, the operations that can be performed on milling machines, the parts and components of horizontal and vertical milling machines, and the nature of the work of each part.	Continuous guidance of students by the professor during the daily lecture	By solving exercises General questions and discussion
15	2	Use lecture view software	The student learns about machine accessories, dividing heads, tools for attaching workpieces, mandrels, and bushings.	Continuous guidance of students by the professor during the daily lecture	By solving exercises General questions and discussion

16	2	Use lecture view software	Types of disc milling knives Fingers, gear sharpening knives, angle milling knives.	Continuous guidance of students by the professor during the daily lecture	By solving exercises General questions and discussion
17	2	Use lecture view software	The student learns an explanation of the steps for performing milling operations, choosing the appropriate machine, the initial dimensions of the artifacts, and methods of attaching the artifacts.	Continuous guidance of students by the professor during the daily lecture	By solving exercises General questions and discussion
18	2	Use lecture view software	Explain the steps for performing milling operations, choosing the appropriate machine, and the initial dimensions of the artifacts. Methods We are connecting artifacts.	Continuous guidance of students by the professor during the daily lecture	By solving exercises General questions and discussion
19	2	Use lecture view software	How to make a ghanafari mesh, a 7-block mesh	Continuous guidance of students by the professor during the daily lecture	By solving exercises General questions and discussion
20	2	Use lecture	Operating rates, cutting and	Continuous guidance of	By solving

		view software	feeding speeds, and the basis for selecting them for different milling operations, using tables	students by the professor during the daily lecture	exercises General questions and discussion
21	2	Use lecture view software	The skimming process, the definition of the types of planers, the vertical plane, the operations that take place on the planing machine, the skimming capabilities available in each machine, the methods of attaching the works.	Continuous guidance of students by the professor during the daily lecture	By solving exercises General questions and discussion
22	2	Use lecture view software	Operating rates of cutting speeds and feeds, planer attachments such as dividing heads and special devices, angles of planer pens, and types of acting forces.	Continuous guidance of students by the professor during the daily lecture	By solving exercises General questions and discussion
23	2	Use lecture view software	The planer, clarification of the cutting stroke and the return stroke), methods of connection to the planer machine and operation rates, calculating the cutting time for planing, preparing the planing sequence	Continuous guidance of students by the professor during the daily lecture	By solving exercises General questions and discussion

			card		
24	2	Use lecture view software	The grinding process and an introduction to the theory of cutting and the shape of the blade in the grinding process. The grinding stones used are circumferential. Facial, side, cup, external, internal, specifications and uses, connection methods and balances	Continuous guidance of students by the professor during the daily lecture	By solving exercises General questions and discussion
25	2	Use lecture view software	Different grinding machines and operating capabilities for each type (external and internal cylindrical grinding machines, tool sharpening machines).	Continuous guidance of students by the professor during the daily lecture	By solving exercises General questions and discussion
26	2	Use lecture view software	Preparing a comprehensive operating card for all cutting operations.	Continuous guidance of students by the professor during the daily lecture	By solving exercises General questions and discussion
27	2	Use lecture view software	Metal forming, forming theory, foundations of cold and hot forming, types of forming	Continuous guidance of students by the professor during the daily lecture	By solving exercises General questions and

			processes.		discussion
28	2	Use lecture view software	Rolling: Basics of rolling and its methods, rolled products, sequence of operations in rolling, machines used, and conditions for completing the rolling process. Extrusion, basics of extrusion of metals and used metals, direct extrusion, reverse extrusion, types	Continuous guidance of students by the professor during the daily lecture	By solving exercises General questions and discussion
29	2	Use lecture view software	Cutting and perforation, the basics of cutting operations, types of molds and their parts, dimensions of the raw material and methods of selecting it, and calculation of shear strength in each case. Drawing and deep drawing, the foundations of drawing and deep drawing operations, calculating the pulling forces and special ratios in each case, types of drawing and their uses.	Continuous guidance of students by the professor during the daily lecture	By solving exercises General questions and discussion

11. Course evaluation							
Distribution of the grade out of 100 according to the tasks assigned to the student, such as daily preparation, daily, oral, monthly, written exams, reports, etc.							
12. Learning and teaching resources							
Methodological decision	Required textbooks (methodology, if any)						
AMetal fabrication mills Ali Ibrahim Al-Moussawi 2008	Main references (sources)						
	Recommended supporting books and						
	references (scientific journals, reports)						
Specialized websites	Electronic references, Internet sites						

Course description form

1. Course Name								
	Manufacturing processes 2/practical							
2. CodeDec	2. CodeDecision:							
21 000000	METE212							
3 the char	3 the chanter /the year							
5. the enup	2023-2024							
A. Date thi	s was prepared the description							
5 Attender	27/2/2023							
J. Attenual	direct							
6. Number	of study hours (total)/number of units (total)							
	60							
7. Name o tioned)	f the course administrator(If more than one name is men-							
Hamzah	Kadhim Hasan <u>mailto: inkr.hamz@atu.edu.iq</u>							
8. Course of	objectives							
Goals Subject Scholarship	Preparing the student to be familiar with all manufacturing processes and their various types of machining or shaping Its position, equipment, and products. He can plan the produc- tion of various products by choosing the shapes and sizes of raw materials, machines, and appropriate operating processes, se- quencing these processes, and selecting machines, tools, and devices. Measurement and calculations required for this purpose and with accuracy The required efficiency and low cost.							
9. Teaching	g and learning strategies							
The strategy	 A- Cognitive objectives A1- The student will be able to understand engineering tolerances, their systems, symbols, tables, and choose Proper pairings using special tables, various products, and various geometric combinations Mechanical skills and acquisition of skills in solving exercises for models with different tolerances and couplings. A2- The student will be able to understand the quality of surfaces, systems, and symbols with different degrees of surface quality Products for different manufacturing processes and different measurement methods. A2- The student will be able to identify the determinents of 							

measurement, their different types, the limits of
measurement and their uses.
A4- The student will be able to know all the machining
operations - lathe, milling, planning and grinding - their
basic movements, the types and number of pieces used,
their various operations and products, operating elements,
cutting rates, special tables and how to use them, calculating
the operating time for all operations.
A5- The student will be able to prepare an operation card
for various types of products and for all types of operations,
which includes the sequence of operations, a diagram of
each operation, the number of pieces used, the number of
measurements, cutting rates, and operating time.
A6- The student will be able to know all the pressure-
forming processes (rolling, drawing, extrusion, forging.
pressing, shearing, and punching), the foundations and
types of each process, the products of each process, and
calculating the forces used for each process.
B - The skills objectives of the course.
B1 The student will be able to practice measuring tolerances
and quality of different surfaces
Products with various measuring devices for this purpose
with high accuracy.
B2 - The student will be able to practice all machining
operations and all machines
Manufacturing products for various mechanical assemblies
with high precision and low cost.
B3 - The student will be able to train on all compression
molding processes and on all machines for manufacturing
various products and mechanical assemblies with high
precision and low cost.
B4 - The student will be able to maintain various
manufacturing process machines with high skill.
7- Presentation methods (lecture).
8-Discussion methods.
9- Practical teaching methods (laboratory and workshops).
Evaluation methods
First: Test tools, essay tools, number, explain, compare,
explain, and solve questions. Second - non-test tools
(checklist (measurement devices), graduated rating scale,
workshop exercises).
C: Emotional and value-based goals
C1- Offer to design a product and ask to think about

developing an integrated program for its production.
C 2- Encouraging the development of thought in
memorization and speculation and motivating it towards
critical thinking.
C3- Developing Internet research skills to expand the
cognitive horizon.
C 4- Using brainstorming to produce creative ideas for some
gifted students
Teaching and learning methods
-The student's ability to analyze, apply, and organize
knowledge as well as describe solutions.
-The ability to learn both simply and deep in exploring
knowledge to solve existing problems.
-Distinguishing that the test increases the student's
motivation towards studying and furthering and is not a
means of nunishing him
Fyaluation methods
First - Test tools essay tools (number explain compare
explain solve questions
Second Objective tests (true and false questions, multiple
second - Objective tests (true and faise questions, multiple
Conoral and qualifying transferable skills (other skills
General and qualifying transferable skins (other skins
D1 Communication communication and information
D1- Communication, communication and miorimation
technology skills in the work team.
D2- The tendency to cooperate and teamwork.
D3- Possessing linguistic skills in the art of listening and the
art of persuasion and dialogue.
D4- Possessing leadership qualities, strong memory, and the
ability to predict and extrapolate.

10	10. Course structure						
the	hours	Required	Name of the unit or	the week	Evaluation		
week		learning	topic	Learning	method		
week			topio	method	methou		
		outcomes	2.5	~			
1	2	Use lecture view software	Measurement, exercises and applications On dualities, modes Tolerance zones, use Tolerance tables	Continuous guidance of students by the professor during the daily lecture	By solving exercises General questions and discussion		
2	2	Use lecture view software	Use special tables With free dimensional deviations, Exercises to use Tables. Exercises on Measuring the quality of finishing Surfaces (for some products measurement laboratory).	Continuous guidance of students by the professor during the daily lecture	By solving exercises General questions and discussion		
3	2	Use lecture view software	Lathing: getting to know Lathe parts and their work, Identify pens used and how to install them For crafts as well Learn how to use Tables and speed maps On the lathe.	Continuous guidance of students by the professor during the daily lecture	By solving exercises General questions and discussion		
4	2	Use lecture view software	Lathe stolen in a way The moving crow or Lathe stolen in a way Cloning device or Side ruler.	Continuous guidance of students by the professor during the daily lecture	By solving exercises General questions and discussion		
5	2	Use lecture view software	Learn about extensions Lathe and how to install The work on it (the sample Trilogy, Chinese quartet rotary switch, rotary	Continuous guidance of students by the professor during the daily lecture	By solving exercises General questions and discussion		

			awitah		
			Switch, Al-Ranag		
			Al-Kallay.		
			stabilizing Things	Continuous	By solving
			not Regular	guidance of	exercises
		Use lecture	The clip on	students by the	General
6	2	view	Chinese	professor	questions
		software	Rotary or Chinese	during the	and
			Quartet And its	daily lecture	discussion
			axis.	-	
			Identify on Shakal		
			Reich The		
			producer And her		
			relationship		
			Deeply Pieces And	Continuous	By solving
		The lost	circumstances	guidance of	exercises
7	2	Use lecture	Pieces The other	students by the	General
1	2	view	And get to know	professor	questions
		souware	on limit The cutter	during the	and
			Emerging	daily lecture	discussion
			And how Its		
			composition during		
			practical		
			Lathing.		
			account time		
			Pieces on	Continuous	By solving
		TT T (Lathe And	guidance of	exercises
o	2	Use lecture	compare it with	students by the	General
0	2	view	method the theory,	professor	questions
		Soltware	study	during the	and
			Reasons Fur Chat	daily lecture	discussion
			that Appear.		
			Preparation Card	~ .	
			Follow-up	Continuous	By solving
		Use lecture	Processes	guidance of	exercises
9	2	view	In the workshops	students by the	General
		software	with Procedure an	during the	questions
			exercise	daily lecture	discussion
			practical on Lathes.	aung recture	
			milling, Identify	Continuous	By solving
			machinery	guidance of	exercises
			Milling And its	students by the	General
		Use lecture	accessories	professor	questions
10	2	view	And specifications	during the	and
		software	Machines with	daily lecture	discussion
			to explain Details		
			on Fares		
			And its parts.		
		1	P P	1	

	1		T 1		,
11	2	Use lecture view software	Milling And also Identify around How a test Speed nutrition And vaccination With a machine milling And choose Follow-up Processes For the job.	Continuous guidance of students by the professor during the daily lecture	By solving exercises General questions and discussion
12	2	Use lecture view software	The procedure is an exercise in milling It includes Processes of the basic And use a head Partition.	Continuous guidance of students by the professor during the daily lecture	By solving exercises General questions and discussion
13	2	Use lecture view software	Milling Species Gears different(Gears Justice, conical, Helical, wormy.	Continuous guidance of students by the professor during the daily lecture	By solving exercises General questions and discussion
14	2	Use lecture view software	Complete the exercise by straightening the hips and shoulders in a group manner.	Continuous guidance of students by the professor during the daily lecture	By solving exercises General questions and discussion
15	2	Use lecture view software	Preparation Card Follow-up Processes In the workshops with Procedure an exercise practical on The gears	Continuous guidance of students by the professor during the daily lecture	By solving exercises General questions and discussion
16	2	Use lecture view software	Identify on machinery Skimming In the workshop with Its components And accessories Backup she has	Continuous guidance of students by the professor during the daily lecture	By solving exercises General questions and discussion

17	2	Use lecture view software	And watch Forms from Processes that Done on The scraper. The procedure an exercise practical on Machine Skimming It includes	Continuous guidance of students by the professor during the	By solving exercises General questions and
18	2	Use lecture view software	Use Accessories The machine. Identify on Machines Grinding With a factor Mechanics And watch Forms from Operations Grinding different And from the number, Identify in detail on Machines age the number with Procedure an exercise basic on her.	Continuous guidance of students by the professor during the daily lecture	By solving exercises General questions and discussion
19	2	Use lecture view software	Identify Kind Stones Grinding different and watch Granules Itching (The incisor For stone Grinding under . Microscope study Tags And symbols existing on to forbid Grinding and comparison between them in Species different For stones.	Continuous guidance of students by the professor during the daily lecture	By solving exercises General questions and discussion
20	2	Use lecture	Identify on Devices	Continuous	By solving

		view	poise	guidance of	exercises
		software	to forbid Grinding	students by the	General
			and how	professor	questions
			use it, Unscrew and	during the	and
			installation	daily lecture	discussion
			to forbid grinding,		
			Procedure		
			an exercise last on		
			age the number		
			Counter Card		
			Follow-up	Continuous	By solving
		Use lecture	Processes	guidance of	exercises
21	2	view	In the workshops	students by the	General
		software	on machinery	during the	and
			Skimming	daily lecture	discussion
			and grinding.	aung itetuite	ancubbion
			Identify on		
			machinery Pieces		
			The programmer In		
			the workshop with	Continuous	By solving
		Use lecture	Its components	guidance of	exercises
22	2	view	And accessories	students by the	General
		software	Backup she has	protessor	questions
			And watch	doily locture	discussion
			Forms from	uany recture	uiscussion
			Processes that		
			Done By her.		
			Acquaintances and		
			Skills Operator	Continuous	By solving
		Use lecture	Machines	guidance of	exercises
23	2	view	programmed and	students by the	General
		software	His safety and	protessor	questions
			stages the job on	auring the	and
			her.	uany recture	uiscussioii
			Programming And		
			running Lathes	Continuous	By solving
		Use lecture	programmed	guidance of	exercises
24	2	view	Automation	students by the	General
		software	And the factors	professor	questions
			Influential steps	during the	and
			Employment	daily lecture	aiscussion
			Programming And	Continuous	By column
			running Fares	continuous guidance of	Dy SUIVING
		Use lecture	nrogrammed	students by the	General
25	2	view	Automation	nrofessor	questions
		software	And the factors	during the	and
			Influential stons	daily lecture	discussion
			minuciniai sieps		

			Employment.		
26	2	Use lecture view software	Operations Formation: Identify on Operations Blacksmithing mechanical, to watch Devices used.	Continuous guidance of students by the professor during the daily lecture	By solving exercises General questions and discussion
27	2	Use lecture view software	Identify on Operation Rolling mill and determining Clips And products different from that produce with this method, Identify on Coins Extrusion Products that Manufactured With this method.	Continuous guidance of students by the professor during the daily lecture	By solving exercises General questions and discussion
28	2	Use lecture view software	Identify on Operations Shearing And perforation And unloading.	Continuous guidance of students by the professor during the daily lecture	By solving exercises General questions and discussion
29	2	Use lecture view software	Identify on Operations Clouds and pressing, Procedure Exercises on her products With this Roads.	Continuous guidance of students by the professor during the daily lecture	By solving exercises General questions and discussion
30	2	Use lecture view software	Identify on Roads Private With formation Metals And visit Locations that Contains on machinery And devices for this method.	Continuous guidance of students by the professor during the daily lecture	By solving exercises General questions and discussion

11. Course evaluation

Distribution of the grade out of 100 according to the tasks assigned to the student such as daily preparation, daily, oral, monthly, written exams, reports, etc. Learning and teaching resources				
Methodological decision	Required textbooks (methodology, if any)			
AMetal fabrication mills Ali Ibrahim	Main references (sources)			
Al-Moussawi 2008				
	Recommended supporting books and			
	references (scientific journals, reports)			
Specialized websites	Electronic references, Internet sites			

Course description form

1. (Course	Name	:			
			Manager	ment and occupational	safety	
2. (CodeTh	e deci	ision			
				METE227		
3. t	the chap	pter /	the year:			
				2024 - 2025		
4. 1	Date thi	s was	preparedthe o	description:		
				2-3 - 2025		
5. 4	Attenda	nce fo	rms available:	Direct presence		
6	Number	ofsti	udy hours (total)/number of units (tota	1)•	
0.1	tumber	01 500		60	1).	
7. 1	Name o	of the	course admin	istrator(If more than	one name is r	mentioned)
I	Name:	husse	in younus razz	zaq Email: inkr	r.hus@atu.edu	iq
8. (Course	object	ives			
Objectiv	es of	the	Teach the stude	ent the concept of quality	control and its im	portance in vari-
study su	ubject		ous industries			
			It serves to impr	ove productivity and reduc	ce the percentage	e of spoilage.
9	Teachin	g and	learning strate	gies		
The strategy Interact In the in the By arc in som Educa quiries Praction going The st			Interactive/activ In the interactiv in the interactiv By arousing his in some practice Educational, suc quiries, prediction Practice ensures going on in the The student's ma	ractive/active lecture method: ie interactive lecture method, the lecturer is keen to involve the student ie teaching process arousing his attention and urging him to actively participate at least once ome practices cational, such as encouraging him to express opinions, observations, in- ies, predictions, etc. Lead those etice ensures that the student maintains his attention and follows what is ag on in the lecture, which improves student's mental comprehension level.		
10. Co	ourse st	ructur	e			
the	hours	Requ	ired learning	Name of the unit or	Learning	Evaluation
				136		

week		outcomes	topic	method	method
the first	2	Management and its development Stages and devel- opment of man- agement Basic principles of management Management characteristics Management levels	Administration	Interactive la ture	Asking qu tions to s dents
		management jobs			
		Industrial manage-			
		ment			
the		Its functions			Asking
se-	2	the industrial engi–	Administration	Interactive	questions to
cond		neering		lecture	students
		Characteristics of			
		industrial manage-			
		ment			
		Location and ar-			
		rangement of the			
		industrial unit			
		The main factors			
		affecting the selec-			
		tion of industrial			
		project sites			
the	2	Industrial unit ar–	Industrial unit ar-	Interactive	Asking
third	2	rangement	rangement	lecture	questions to
		Initial arrangement			students
		of the plant			
		Classification of			
		types of industrial			
		unit arrangements			
		Advantages, limita-			
		tions, and cases in			

	I				
		which it is applied			
		(commodity, func-			
		tional, mixed, and			
		combined arrange-			
		ment).			
		Production planning			
		Production planning			
C;fth	2	concept	Droduction planning	Interactive	Asking
FILLI	2	Objectives of pro-	Production planning	lecture	questions to
		duction planning			Students
		and control			
		Types of produc-			
		tion, production			
		planning methods,			Asking
VI	2	linear programming	Production planning	Interactive	questions to
		methods, graphical		lecture	students
		method and trans-			
		portation method			
		.	Discussing reports	Read sample	
Sev-	2	Discussing some	submitted by stu-	reports with	Short test
enth		reports	dents	discussion	
		Work study, work			
		study methods,		latere etime	Asking
VIII	2	method study, time		Interactive	questions to
		study, work meas–	standard time	lecture	students
		urement			
		Maintenance, im-			
		portance of mainte-		Internet!	Asking
Ninth	2	nance, concept of	Maintenance	Interactive	questions to
		technological sys-		lecture	students
		tem			
T 1.		Types of mainte-		late as of	Asking
Ine	2	nance, types of	Maintenance	Interactive	questions to
tenth		holidays		lecture	students
elev-	2	Training	Training	Interactive	Asking

[]					
enth		The concept of		lecture	questions to
		training, the im-			students
		portance of train-			
		ing, training meth-			
		ods			
		Industrial costs and			
fuch		wages	Industrial costs and	Interective	Asking
tweiv	2	costs,	wages	Interactive	questions to
eth		Classification of		lecture	students
		costs, wages			
		Industrial costs and			
		wages	• • • • • •		
Thir-	-	Methods of calcu-	Industrial costs and	Interactive	Asking
teent	eent 2	lating wages, in-	wages	lecture	questions to
h		centives, types of			students
		incentives			
		Purchases, pur-			
		chasing steps, in-			
four-		ventory, types of	purchase manage-	Interactive	Asking
teent	2	stored materials	ment	lecture	questions to
h		and methods of			students
		controlling them			
		Industrial safety.			
		accident, types of			
Fif-		accidents			A alain a
teent	2	Ways to reduce ac-	Industrial safety	Interactive	ASKING
h	2	cidents		lecture	students
		Protective equin-			
		ment and its types			
		The meaning of			
six-	r	control the mean	Quality control	Interactive	Asking
teen	L		Quanty control	lecture	questions to students
seven	•			Interactive	Asking
en-	2		Quality control	lecture	questions to
teent		tions			Students

		l		l	
h		Factors controlling			
		quality			
		Develop and im–			
		prove quality			
		Design, quality of			
		fit			
		International and			
		Iraqi standard			
		specifications			
		Quality control			
		methods, examina-			
		tion and inspection	Quality control meth-		
eight		methods, quality	ods and sample in–	Interactive	Asking
een	2	control steps, sam-	spection plans	lecture	questions to
		pling methods,			students
		sample inspection			
		tables			
		Operating charac-	Quality control meth-		
nine-		teristic curve,	ods and sample in-		Aclina
teent	2	quality of design.	spection plans	Interactive	auestions to
h		data collection	Data collection (types	lecture	students
		(types and analysis)	and analysis)		
The	2	Control charts	Control charts	Interactive	Asking
twen-	-			lecture	questions to
tieth					students
					Students
					draw the di-
				Draw the dia	agram on
		Drenering and using			graph paper
21st	2	Freparing and using	Control charts	gram on the	during the
		a mean chart			order to
				explanation	correct their
					drawings
					later
twen-	2	Preparing a stand-	Control charts	Draw the dia-	Students

	[1		1	1
tow		preparing a defect		board with	agram on
		chart		explanation	graph paper
					during the
					lecture in
					order to
					correct their
					drawings
					later
					Students
					draw the di-
				Drow the die	agram on
twen-		Scatterplot, how to		Draw the dia-	graph paper
tv	2	nrenare a scatter-	Control charts	gram on the	during the
•y	-			board with	lecture in
third		ριοτ		explanation	order to
					correct their
					drawings
					later
					Students
		Qualitative control			draw the di-
		charts for standard		Drow the his	agram on
twen-		deviation and per-		Draw the his-	graph paper
tv	2	centage of defective	Control charts	togram on the	during the
-y	2			board with	lecture in
tourth		units, nistogram		explanation	order to
		(preparation and			correct their
		use)			drawings
					later
					Students
					draw the di-
		Control charts for		Draw the dia-	agram on
				Draw the dia-	graph paper
2.5th	2	variables. Control	Types of control	gram on the	during the
	_	chart for arithmetic	charts	board with	lecture in
		mean		explanation	order to
					correct their
					drawings
					later
		Control charts for		Draw the two	Students
twen-		variables	Types of control	diagrams on	draw the di-
ty-	2	Control chart for	charte	the board	agram on
sixth			Charts		graph paper
		range, control chart		with explana-	during the

		for standard devia-		tions	lecture in
		tion			order to
					correct their
					drawings
					later
					Students
					draw the di-
		Control charts for		Draw the dia	agram on
		features (control		Draw the dia-	graph paper
2.7th	2	chart for the per-	Types of control	gram on the	during the
_ ,	-	contago of defective	charts	board with	lecture in
		centage of defective		explanation	order to
		units)			correct their
					drawings
					later
					Students
		Control charts for features (Control chart for the number of de-			draw the di-
Twent	2			Draw the dia-	agram on
Iwent			Types of control charts		graph paper
у-				gram on the	during the
eight				board with	lecture in
h				explanation	order to
		fects in one unit)			correct their
					drawings
					later
					Students
		Control charts for			draw the di-
		features		Draw the dia-	agram on
		(Control obort for	Types of control	grow on the	graph paper
XXIX	2	(Control chart for	Types of control	gram on the	during the
		the average number	charts	board with	lecture in
		of defects in the		explanation	order to
		vocabulary set)			correct their
		, ,			arawings
			.		later
		Discussing some	Discussing reports	Read sample	
thirty	2	renorte	submitted by stu-	reports with	Short test
		reports	• • • • • •	I	

Distribution of the grade out of 100 according to the tasks assigned to the student, such as daily preparation, daily, oral, monthly, written exams, reports, etc.

i	nal e	exam	Se	cond semester grade	First semester grade	
5	50 d	egrees	Second semester exam	Daily and monthly examina- tions and reports	First se- mester ex- am	Daily and monthly examina- tions and reports
	Tota	al 100	20 de- grees	5 degrees	20 degrees	5 degrees

12. Learning and teaching resor	12. Learning and teaching resources				
Required textbooks (methodology, if any)	 1•Industrial management-Acer Soussan And Fares Jabaz Shalal Authority of Technical Institutes 1990 2•Production Management - Dr. Abdel Sattar Muhammad Ali 1984 				
Main references (sources)	 1•Dr . Muhammad Aishouni. (Set of lectures)-Hael University-Kingdom of Saudi Arabia . Attributes Control Charts – Statistical Quality Control. •2 D. C. Montgomery 				
Recommended supporting books and references (scientific journals, re-ports)	•Dr . Saad Sabr Muhammad. Lectures on quality control (control maps)				
Electronic references, Internet sites	http://faculty.uoh.edu.sa/m.aichouni/				

13.Program Development Plan

- Conducting questionnaires for students and professors to understand their needs.

- Focus on risk management and methods of reducing accidents.

- Organizing practical workshops on the use of personal protective equipment
Course Description Form

1. Course Name:	
Computer Ap	plications 2
2. Course Code:	
METE	228
3. Semester / Year: Year	
Second	year
4. Description Preparation Date:	
1/3/2	025
5. Available Attendance Forms:	
dire	ct
6. Number of Credit Hours (Total) / Nun	nber of Units (Total) /
3	0/60
7. Course administrator's name (men	tion all, if more than one name)
Name: Dr. Ahmed Abdulameer Sube Email: ahmed.subeh@atu.edu.iq	h
8. Course Objectives	
Course Objectives:	• The relationship between the
	subject and the specialization
	• The Internet, e-commerce, and

				computer	components		
				 Knowing everything related to ar- 			
				tificial inte	lligence		
9.	Teachi	ng and Learning Sti	rategies			-	
Strategy	/ [l	Jser definition of	how to w	ork on th	e Internet, im	plement e-	
	C	commerce, underst	and artifici	al intellige	nce, etc.		
10.0							
10. C	ourse S	Structure					
Week	Hours	Required Learn-	Unit or sub	ject name	Learning	Evaluation	
		ing Outcomes			method	method	
		Security and Net	What is a	network?	Classroom	Through	
1	1	working:	Types of r	networks.	lecture, theo-	homework,	
			Basic netw	vork	retical	attendance,	
			componen	ITS	presentation	class activ-	
					and electron-	ities and	
					ic dowinoad	reports.	
2	1	Security and Net-	Basic network		Classroom	Through	
		working (Cont.):	components		lecture, theo-	homework,	
			-		retical	attendance,	
					presentation	class activ-	
					and electron-	ities and	
					ic download	reports	
3	1	Security and Net	network security		Classroom	Through	
		working (Cont.):	basics. un	derstand-	lecture, theo-	homework,	
			ing network to	rk threats.	retical	attendance,	
			network trouble-		and electron	class activ-	
			shooting		ic download	reports	
4	1	Security and Net	Introductio	on to	Classroom	Through	
		working (Cont.):	network tr	ouble-	lecture. theo-	homework.	
			shooting. common		retical	attendance.	
			network issues and		presentation	class activ-	
			symptoms	. network	and electron-	ities and	
			troublesho	ooting	ic download	reports	
			tools and	utilities			
5		Security and Net	using com	mand-	Classroom	Through	
		working (Cont.):	line tools	tor diag-	lecture, the-	homework,	
	1		nostics. id	entifying	oretical	attendance,	
			and resolv	ing con-	presentation	class activ-	
			nectivity 1	ssues . d1-	and elec-	ities and	

			agnosing network performance prob- lem	tronic download	reports
6	1	E – Commerce :	concepts of elec- tronic banking ser- vices this include online banking: ATM and debit card services	Classroom lecture, the- oretical presentation and elec- tronic download	Through homework, attendance, class activ- ities and reports
7	1	E – Commerce :	phone banking , SMS banking , electronic alert , mobile banking	Classroom lecture, the- oretical presentation and elec- tronic download	Through homework, attendance, class activ- ities and reports
8	1	computer trouble shooting	introduction to computer trouble- shooting , common hardware issue and solution , diagnos- ing software prob- lem	Classroom lecture, the- oretical presentation and elec- tronic download	Through homework, attendance, class activ- ities and reports
9	1	computer trouble shooting (cont.)	hardware compo- nent , diagnosis and repair , using safe mode for trouble- shooting	Classroom lecture, the- oretical presentation and elec- tronic download	Through homework, attendance, class activ- ities and reports
10	1	computer trouble shooting (cont.)	troubleshooting op- erating system is- sues, identifying and resolving blue screen errors, deal- ing with slow com- puter performance	Classroom lecture, the- oretical presentation and elec- tronic download	Through homework, attendance, class activ- ities and reports
11	1	computer trouble shooting (cont.)	virus and malware removal techniques , updating drivers and software	Classroom lecture, the- oretical presentation and elec- tronic	Through homework, attendance, class activ- ities and reports

	1	<u>г </u>			
				download	
12		Introduction to	Definition of Al,	Classroom	Through
		Al	History of Al, Al	lecture, the-	homework,
			Techniques and	oretical	attendance,
	1		Approaches	presentation	class activ-
				and elec-	ities and
				tronic	reports
				download	
13		Introduction to	Key Characteristics	Classroom	Through
		Al(Cont.):	of Al, Benefits of	lecture, the-	homework,
			Al, Challenges and	oretical	attendance,
	1		Ethical considera-	presentation	class activ-
			tions.	and elec-	ities and
				tronic	reports
				download	
14		Introduction to	Challenges and	Classroom	Through
		Al(Cont.):	Limitations of Al,	lecture, the-	homework,
			The Role of Data in	oretical	attendance,
	1		Al Systems	presentation	class activ-
				and elec-	ities and
				tronic	reports
				download	
15		Introduction to	Al Tools and	Classroom	Through
		Al(Cont.):	Frameworks	lecture, theo-	homework,
	1			retical	attendance,
				presentation	class activ-
				and electron-	ities and
10		The Dele of Alti		1c download	Threesel
10		Modern	AI-DIIVen Mobile	Lastura than	homowork
		Smortphonos	tuol Assistants (Siri	retical	nomework,
	1	Smartphones	Google Assistant	nresentation	class activ
			Aleva	and electron	ities and
			Alexa	ic download	reports
17		The Pole of Alin	Adaptiva Lagming	Classroom	Through
1/		Modern	Real_Time Transle	lecture theo	homework
		Smartnhones	tion Services	retical	attendance
	1	(Cont.)		nresentation	class activ
		(Cont.).		and electron	ities and
				ic download	reports
18		The Role of A1	The Future of A1 in	Classroom	Through
10		in Modern	Smartphone Tech-	lecture	homework
	1	Smartnhones	nology Challenges	theoretical	attendance
		(Cont).	of Implementing Al	presentation	class activ-
		(0000.).	or imprementing m	Presentation	

	1	1			
			in Mobile Devices	and elec- tronic download	ities and reports
19	1	Applications and Tools of Al	Overview of Al Ap- plications in Vari- ous Industries, Edu- cation and Healthcare	Classroom lecture, theoretical presentation and elec- tronic download	Through homework, attendance, class activ- ities and reports
20	1	Applications and Tools of Al (Cont.):	Transportation and Advertising	Classroom lecture, theoretical presentation and elec- tronic download	Through homework, attendance, class activ- ities and reports
21	1	Applications and Tools of Al (Cont.):	Finance, Robotics and Automation Technologies.	Classroom lecture, theoretical presentation and elec- tronic download	Through homework, attendance, class activ- ities and reports
22	1	Applications and Tools of Al(Cont.):	Al in Marketing: Targeting and Per- sonalization.	Classroom lecture, theoretical presentation and elec- tronic download	Through homework, attendance, class activ- ities and reports
23	1	Applications and Tools of Al(Cont.):	Al in Image and Video Analysis, Smart Cities	Classroom lecture, theoretical presentation and elec- tronic download	Through homework, attendance, class activ- ities and reports
24	1	Applications and Tools of Al (Cont.):	Future Trends in Al Applications and Tools.	Classroom lecture, theoretical presentation and elec- tronic	Through homework, attendance, class activ- ities and reports

				1 1 1	,
			T , 1 , 1 , 1 , 1 , 1	download	
25	1	Al and Society	Introduction to Al and Its Societal Im- pact, The Role of Al in Enhancing Public Safety	Classroom lecture, theoretical presentation and elec- tronic download	Through homework, attendance, class activ- ities and reports
26	1	Al and Society (Cont.):	Cultural Perspec- tives on Al Adop- tion, Al and Gov- ernance: Policy Im- plications	Classroom lecture, theoretical presentation and elec- tronic download	Through homework, attendance, class activ- ities and reports
27	1	Ethical Chal- lenges in Al:	Introduction to Eth- ics in Al, Transpar- ency and Explaina- bility of Al Sys- tems, Privacy Con- cerns in Al Data Usage	Classroom lecture, theoretical presentation and elec- tronic download	Through homework, attendance, class activ- ities and reports
28	1	Ethical Chal- lenges in Al (Cont.):	The Ethical Implica- tions of Autono- mous Systems, Eth- ics in Al- Driven Marketing and Ad- vertising	Classroom lecture, theoretical presentation and elec- tronic download	Through homework, attendance, class activ- ities and reports
29	1	Ethical Chal- lenges in Al (Cont.):	Considerations in Education, Human Rights and Al Im- plementation	Classroom lecture, theoretical presentation and elec- tronic download	Through homework, attendance, class activ- ities and reports
30	1	The Future of Al	Future trends in Al, recent research and emerging technol- ogies.	Classroom lecture, the- oretical presentation and elec-	Through homework, attendance, class activ- ities and

r						
					tronic	reports
					download	
11.Cour	rse Ev	aluation				
Distributi	ing th	ne score out of	100 accord	ling to the tas	sks assigned to	the student
such as da	aily p	reparation, dai	ly oral, mont	thly, or written	n exams, reports	s etc
12.Lear	ning	and Teaching F	Resources	·	^	
Required	textb	ooks (curricula	ar books, if	1. Grahan	n Brown, Dav	id Watson,
any)				"Cambridge	IGCSE Inform	nation and
•				Communicat	ion Technology	y", 3rd Edi-
				tion (2020)		
Main references (sources)			 Alan Mary Anne Action Comp Ahmed Artificial Int tion (2024) Micros Step 1st Edit Lambert داسیات الحاسوب عالم الاصطناعي 	Evans, Kenda Poatsy, "Tecl plete", 16th Edi l Banafa, "Intro telligence (AI) oft Office 201 ion by Curtis F الخضر بحاث " أ عبد النور, "مدخل إ	all Martin, nnology In tion (2020 oduction to ", 1st Edi- 9 Step by Frye & Joan الخضر علي الدكتور عادل	
Recomme	endec	l books and	references	Any books w	vithin the curric	ulum
(scientific	c jour	nals, reports)		~ 1.0		
Electroni	c Ref	erences, Websi	tes	Search for ea	ich title	

13.Program Development Plan

- Adopting continuous evaluation through presentations and interaction with real problems

- Digital simulation using programs such as ANSYS and Solid Works Simulation.

- Providing technical workshops on advanced engineering programs

نموذج وصف المقرر

۱. اسم المقرر
جرائم نظام البعث في العراق
۲. رمز المقرر
/
٣. الفصل / السنة
السنة الثانية / النظام السنوي
٤. تاريخ إعداد هذا الوصف
7.70/ 8/7
 أشكال الحضور المتاحة
مباشر /اسبوعي
٦. عدد الساعات الدر اسية (الكلي) عدد الوحدات (الكلي) عدد الوحدات
۳۰ ساعة ۲/ ساعة
٧. اسم مسؤول المقرر الدراسي (اذا اكثر من اسم يذكر)
الاسم: طلال مظفر غازي الأيميل : talal.almasuode@atu.edu.iq

					اف المقرر	۸. اهد
م البعث وفق توثيق	لب بمعرفة جرائم نظا	۱ - تمکین الطا			الدراسية	اهداف المادة
		قوانين				
	ع لیا عام ۲۰۰ ۰ م	المحكمة العراقية ال				
	انواع الجرائم الدولية	۲– تمكين الطالب				
ن العراقية .	بمعرفة انتهاكات القواني	٣– تمكين الطالب				
				تعليم والتعلم	تراتيجيات ال	٩. است
			در ثة	لتسرح محصف الذهني حوار والنقاش لاستعانة بالمراجع والمصاد ستخدام وسائل التعليم الحديا	۲ ۲ ل ۳ ۲ ٤ ۲ ٤ ۲	الاستراتيجية
					لمقرر	۱۰. بنية ا
طريقة التقييم	طريقة التعلم	او الموضوع	اسم الوحدة	مخرجات التعلم المطلوبة	الساعات	الأسبوع
اختبار شفوي	محاضرة ومناقشة	مفهوم الجرائم وأفسامها		المجال المعرفي والمهاري والوجداني	۲	الاول
اختبار شفوي	محاضرة	يمة لغة	تعريف الجر واصطلاحا	المجال المعرفي والمهاري والوجداني	٢	الثاني
اختبار شفوي	محاضرة	ئم .	أقسام الجرا	المجال المعرفي والمهاري الحداث	۲	الثالث
اختبار تحريري	منافشه	اقسام و انواع جرائم نظام البعث		و الوجدالي	۲	الرابع
اختبار شفوي	محاضرة	البعث وفق ، المحكمة اقية العليا عام	جرائم نظام توثيق قانون الجنائية العر ٢٠٠٥م	المجال المعرفي والمهاري والوجداني	۲	الخامس
اختبار شفوي	محاضرة	الجرائم الدولية.		المجال المعرفي والمهاري والوجداني	۲	السادس
اختبار شفوي	محاضرة	أنواع الجرائم الدولية.		المجال المعرفي والمهاري والوجداني	۲	السابع
اختبار شفوي	محاضرة	القرارات الصادرة من المحكمة الجنائية العليا.		المجال المعرفي والمهاري والوجداني	٢	الثامن
اختبار شفوي	محاضرة	الجرائم النفسية والاجتماعية وأثارها، وأبرز انتهاكات النظام البعثي في العراق		المجال المعرفي والمهاري والوجداني	۲	التاسع
اختبار تحريري	مناقشة	ىية	الجرائم النف	المجال المعرفي والمهاري والوجداني	۲	العاشر

اختبار شفوي	محاضرة	آليات الجرائم النفسية.	المجال المعرفي والمهاري والوجداني	۲	الحادي عشر
اختبار شفوي	مناقشة	آثار الجرائم النفسية	المجال المعرفي والمهاري والوجداني	۲	الثاني عشر
اختبار شفوي	محاضرة	الجرائم الاجتماعية	المجال المعرفي والمهاري والوجداني	۲	الثالث عشر
اختبار شفوي	محاضرة	عسكرة المجتمع	المجال المعرفي والمهاري والوجداني	۲	الر ابع عشر
اختبار شفوي	محاضرة	موقف النظام البعثي من الدين	المجال المعرفي والمهاري والوجداني	۲	الخامس عشر
اختبار تحريري	مناقشة	انتهاكات القوانين العراقية .	المجال المعرفي والمهاري والوجداني	۲	السادس عشر
اختبار شف <i>وي</i>	محاضرة	صور انتهاكات حقوق الإنسان وجرائم السلطة.	المجال المعرفي والمهاري والوجداني		السابع عشر
اختبار شفوي	مناقشة	بعض قرارات الانتهاكات السياسية والعسكرية لنظام البعث .	المجال المعرفي والمهاري والوجداني	۲	الثامن عشر
اختبار شفوي	محاضرة	أماكن السجون والاحتجاز لنظام البعث	المجال المعرفي والمهاري والوجداني	٢	التاسع عشر
اختبار شفوي	محاضرة	الجرائم البيئية لنظام البعث في العراق	المجال المعرفي والمهاري والوجداني	٢	العشرون
اختبار شفوي	محاضرة	التلوث الحربي والإشعاعي وانفجار الالغام.	المجال المعرفي والمهاري والوجداني	٢	الحادي و العشرون
اختبار تحريري	مناقشة	تدمير المدن والقرى سياسة الأرض المحروقة.	المجال المعرفي والمهاري والوجداني	٢	الثاني و العشرون
اختبار شف <i>وي</i>	محاضرة	تجفيف الأهوار .	المجال المعر في والمهاري والوجداني	٢	الثالث و عشرون

اختبار شفوي	مناقشة	تجريف بساتين النخيل والأشجار والمزروعات .	المجال المعرفي والمهاري والوجداني	۲	الرابع و العشرون
اختبار شفوي	محاضرة	جرائم المقابر الجماعية .	المجال المعرفي والمهاري و الوحداني	٢	الخامس و
					العشرون
اختبار شفوي	محاضرة	أحداث مقابر الإبادة	المجال المعرفي والمهاري	۲	السادس و
		الجماعية المرتكبة من	والوجداني		العشر و ن
		النظام البعثي في العراق			
اختبار شفوي	محاضرة	التصنيف الزمني لمقابر	المجال المعرفي والمهاري	۲	السابع و
		الإبادة الجماعية في العراق	والوجدائي		العشرون
		للمدة ١٩٦٢م - ٢٠٠٢م			
اختبار شفوي	مناقشة	مواقع المقابر في العراق	المجال المعرفي والمهاري	۲	الثامن و
-			والوجداني		العشرون
					0,,,
اختبار تحريري	محاضدة	· · · · · · · · · · · · · · · · · · ·	المحال المعر في والمهاري	۲	التابير
، ـــــــر ير پي		إعداد و توزيع المقابر في	والوجداني	,	التاسع و
		العراق			العسرون
اختبار شفوي	محاضرة	قاعدة ببانات شهداء المقابر	المجال المعرفي والمهاري	۲	الثلاثون
			والوجداني		
		الجماعية			
				م المقرر	۱۱. تقيي

توزيع الدرجة من ١٠٠ على وفق المهام المكلف بها الطالب مثل التحضير اليومي والامتحانات اليومية والشفوية والشهرية والتحريرية والتقارير الخ

٤٠ درجة الامتحان الشهري

١٠ درجات التحصير اليومي و الشفوي و كتابة التقارير ٥٠ درجة الامتحان النهائي

١٢. مصادر التعلم والتدريس

الكتب المقررة المطلوبة (المنهجية أن وجدت)
المراجع الرئيسة (المصادر)
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ال
د.
الكتب والمراجع الساندة التي يوصى بها (المجلات العلمية، ١
التقارير)
المراجع الإلكترونية ، مواقع الانترنيت مر
4

نموذج وصف المقرر

	 اسم المقرر
	۲. رمز المقرر
سنوي	٣. الفصل / السنة
	سنوي

7.70/7.72	
	٤. تاريخ إعداد هذا الوصف
7.70/7/7	
, ,	و أشكال الحضور المتاحة
4 · • • • •	
حصوري	* 2 • 4 • 4 · 5 • 1 · 5 • 4 · 5 · 6 · 5 · 5 · 5 · 5 · 5 · 5 · 5 · 5
ي السنة / عدد الوحدات (الكلي) /	٩. عدد الساعات الدراسية (الكلي) ٥.
) نظري/ ١ ساعة في الاسبوع	۳۰)
ا اکثر من اسم یذکر)	٧. اسم مسؤول المقرر الدراسي (اذ
athmar.turki.4@atu.edu.ig : الآيميل	الأسم: م.م اثمار حمزة تركي
	٨ اهداف المقرر
ان يكون الطالب بعد انتهاء المحاضر ققاد إعلى إن	
ال يعرف مفهو والاخطاء اللغوية	
٢ يميز بين الفعل الذي يتصل به التاء المفتوحة	
ه الاسم الذي تتصل به التاع المربوطة.	
٣ يفرق بين كتابة الإلف القائمة والإلف	
المقصورة.	
ع يبين انواع الهمزة المتوسطة.	
 يعرف مواضع كتابة الف الوصل وهمزة القطع. 	
٢. يبين اقسام الكلمة.	
٧. يحدد علامات الاسم.	
۸. يفرق بين الاسم والفعل والحرف.	
٩. يستخرج المثنى وما يلحق به .	
١٠ . يميز بين المفرد والمثنى والجمع.	
١١. يبين شروط جمع المذكر السالم	
١٢. يوضح الأشياء التي تلحق بجمع المذكر السالم.	
١٣ . يبين المقصود بجمع المؤنث السالم.	
١٤. يحدد ما لحق بجمع المؤنث السالم,	
١٥. يذكر التوابع في اللغة العربية.	
١٦. يعرف مفهوم التوكيد وفائدته	
١٧ التميز بين نوعي التوكيد.	
۸۸ پیعرف ارکان العطف	
١٩. يعرف معاني حروف العطف.	
۲۰ میں بین النعت والمنعوث.	
١١. يعرف المعصود بالأشماء الحمسة.	
۲۰ . يسكنص معنى (حصن .	
۲۰ يعرف منهوم المعرف والمعرف.	
۲۶ مين الفاعل بالحملة	
۲۷ بتعرف على علامات رفع الفاعل	
۲۰ بیتر کے سطحی موجعت رہے ہے ہے۔ ۲۸ یعد ف ارکان اسلہ ب النداء	
$1 - \frac{1}{2}$	
٣٠. بذكر ادوات القسم.	
٣١. يُعرف التمين	
٣٢ _ يذكر إقسام التمين	
٣٣. يعرف الاسم المنقوص والمقصور.	
٣٤. يقوم بتثنية الاسم المنقوص والمدود.	
٣٥. تصحيح الخطأ اللغوي في بعض الكلمات .	
	۹ استر اتدحدات التعليم و التعلم

الاستراتيجية

طريقة القاء المحاضرة. طريقة المناقشة. طريقة اكتشف الخطاء. تخصيص نسبة من الدرجة للواجبات اليومية والاختبارات.

١. بنية المقرر:					
طريقة التقييم	طريقة التعليم	اسم الوحدة / أو الموضوع	مخرجات التعلم المطلوبة	الساعات	الأسبوع
اختبارات يومية واسئلة شفهية	محاضرة نظرية	مفهوم الاخطاء اللغوية/ التاء المربوطة والتاء المفتوحة	الفهم المعرفي	,	الاول والثاني
اختبارات يومية واسئلة شفهية	محاضرة نظرية	الالف الممدودة والالف المقصورة	الفهم المعرفي	۲	الثالث
اختبارات يومية واسئلة شفهية	محاضرة نظرية	همزة الوصل	الفهم المعرفي	۲	الرابع
اختبارات يومية واسئلة شفهية	محاضرة نظرية	الهمزة المتوسطة والهمزة والمتطرفة	الفهم المعرفي	٣	الخامس والسادس والسابع
اختبارات يومية واسئلة شفهية	محاضرة نظرية	الكلمة/ اقسام الكلام.	الفهم المعرفي	۲	التاسع والعاشر
اختبارات يومية واسئلة شفهية	محاضرة نظرية	المثنى والملحق بالمثنى .	الفهم المعرفي	١	العاشر
اختبارات يومية واسئلة شفهية	محاضرة نظرية	جمع المؤنث السالم جمع المذكر السالم	الفهم المعرفي	۲	الحادي عشر- الثاني عشر
اختبارات يومية واسئلة شفهية	محاضرة نظرية	التوابع: التوكيد, العطف	الفهم المعرفي	۲	الثالث عشر۔ الرابع عشر

اختبار ات ت					الخامس عشر
يوميه واسئلة شفمية	محاصر ه نظري	الذعت , البدل	الفهم المعرفي	۲	و -السادس عشر
اختبارات يومية واسئلة شفهية	محاضرة نظرية	النكرة والمعرفة	الفهم المعرفي	۲	السادس عشر والسابع عشر
اختبارات يومية واسئلة شفهية	محاضرة نظرية	حروف القسم	الفهم المعرفي	۲	الثامن عشر
اختبارات يومية واسئلة شفهية	محاضرة نظرية	الاسماء الخمسة	الفهم المعرفي	١	التاسع عشر
اختبارات يومية واسئلة شفهية	محاضرة نظرية	النداء	الفهم المعرفي	`	العشرون
اختبارات يومية واسئلة شفهية	محاضرة نظرية	الفاعل	الفهم المعرفي	`	الحادي والعشرون
اختبارات يومية واسئلة شفهية	محاضرة نظرية	النكرة والمعرفة	الفهم المعرفي	۲	الثاني والعشرون والثالث والعشرون
اختبارات يومية واسئلة شفهية	محاضرة نظرية	الافعال الخمسة	الفهم المعرفي	`	الرابع والعشرون
اختبارات يومية واسئلة شفهية	محاضرة نظرية	الاسم المنقوص والاسم الممدود	الفهم المعرفي	,	الخامس والعشرون
اختبارات يومية واسئلة	محاضرة نظرية	التميز	الفهم المعرفي	۲	السادس والعشرون- السابع

شفهية					والعشرون
اختبارات يومية واسئلة شفهية	محاضر ة نظرية	تطبيقات الاخطاء اللغوي الشائعة	الفهم المعرفي	٤	الثامن والعشرون التاسع والعشرون- الثلاثون

	١١. تقييم المقرر
ا الطالب مثل التحضير اليومي والامتحانات اليومية	توزيع الدرجة من ١٠٠ على وفق المهام المكلف به
ريرية والتقارير الخ	والشفوية والشهرية والتد
	١٢. مصادر التعلم والتدريس
مقرر منهجي	الكتب المقررة المطلوبة (المنهجية أن وجدت)
النحو التطبيقي: خالد عبد العزيز	المراجع الرئيسة (المصادر)
. ۲۰۱۹ ۲۰۱۸ .	
اللغة العربية للصف الثاني متوسط: فاطمة ناظم	
بط۸۱۸ ک	
,	
-	الكتب والمراجع الساندة التي يوصى بها (المجلات
	العلمية، التقارير)
المواقع الالكترونية المتخصصة	المراجع الإلكترونية ، مواقع الانترنيت

تعليم النقلي						
صات / التكنولوجية المدكانيات		الذريع الانتبا-	(مستمد)			
		اللرع (اولت	(hu et t		1
		5. 1. 11. 5. 11	1	ساعات الاسبوع	ىپە	
اسم الماد	l '	السنية الدر أسية	نظري	عملي	المجموع	
معامل (۲	(الثانية			~	
المادة : اكتساب ال	لمهارة اليدوي	ية لتنفيذ عمليات التشغيل والت	سنيع باستخد	ام مختلف العدد	اليدوية وأدوات	ا ت القياس
لقدرة على العمل وتن	شغيل مكانن	التشغيل بالأسلوب التشغيل با	لأسلوب الإنتا	اجي الأمثل .		
		المفردات الع	ملية			
الأسبوع		تفاص	بيل المفرداد	ت		
		-1	1	لتفريز (• أسبو	(8.	
	-1	ماكن	ة التفريز الافة	نية ، الرنيسية ال	جامعة .	
	شرح	أجزاء الماكنة ووظيفة كل منو تسالأ بين تراليا مقة بالمكان	با ، تشغيل ال	مکانن واختیار ا ا مطرق تثنیته	لسر عات والتغذ ا مرد دوس التز	نذيات ، تة
	المناكن	ل والالجهرة المتحقة بالمصل ن ، الصينية الدوارة ، رؤوس	واستحدادات التفريز الج	امعة ، راس ع	مل الجريدة الم	مستنة ،
الأول	ر اس د	عمل المجاري .				
	-1	کترا	ت التفريز :			
	انواعها تفتيح ال	ا (تفريز اسطواني الاسطح لتروس،كترات التشكيل الخام	،تفريز اكتا سة الاسطواني	ف ، كترات ع ة ذات الثقب الد	مل المجاري ، اخلي أو الطرفي	،کترات نية)
	استعما	لات الكترات، طرق تثبيتها ،تث	بيت المشغولا	ڑت		
			الاسطح ال	ستوية :		
	-1	تفرير				
	۳۔ اختیار و	تفرير تركيب الكتر المناسب ، ظبط	سر عات القد	لمع والتغذية ، ك	كيفية تثبيت المث	شغو لات
	۳۔ اختیارو ،تتابع	تفرير تركيب الكتر المناسب ،ظبط عمليات التشغيل ، أجزاء	سر عات القر عمليات التفر	طع والتغذية ، ك يز لاستعدال م	كيفية تثبيت المث سطوح مستوية	شغولات ة ومانلة

	- L.
	الاسبوع
 رووس التقسيم وأستخداماتها: 	الثاني
جهاز التقسيم وطريقة استخدامه ، التقسيم البسيط ، التقسيم باستخدام دوائر الثقوب ، التقسيم التفاوتي ، تقاسيم الزوايا ، عمل تمارين على انواع التقاسيم المختلفة (تقسيم اجزاء ،تقسيم	
زوايا).	
۲- تفريز التروس المستقيمة على	
الماكنات العامة والجرائد المسننة العدلة القوانين الخاصة بقطع التروس الكترات	
المستخدمة ، تجهيزات الخدمات ، وأعداد عمليات التجهيز والتشغيل اجزاء	
عمليات التفريز ، مراجعة الابعاد النهائية ، تدريب على تفريز فوس عدل وجريدة	
مسننة عدله	
 ١- 	الثالث
الماكنات العامة :	6
(نفس منهاج تفريز التروس العدلة)	
٢_	
والجرائد المسننة المائلة على الماكنات العام :	
(نفس منهاج تفريز التروس العدلة)	
 تفريز المشغو لات بتقاسيم 	الر ابع
الزوايا	0.5
 ٢- ٢- 	
۲-	
القوانين العامة بكل عملية ، خطوات تنفيذها ، اعداد الخامات الاولية ، اختيار	
الكترات اختيار معدلات التشغيل ، اجراء عمليات التفريز ، مراجعة ابعاد	
المشغولات .	
صيانة ماكنة التفريز :	الخامس
 ١- ٢٠ 	
٢- ٢	
وتركيبها .	
٣- فتح صندوق سرعات القطع	
الرنيسية والتعرف على كيفية تغيير السرع واعادة تركيبه .	
٤- فتح صندوق سرعات التغذية	

والتعرف على جديد معير ما واعده ترجيد . 	والسرف على جديد معير ما واعده مرجيد . - اجراء عمليات تغيير السرعات - من خلال السور والبكرات والتعرف على كينية تحويلها و عملية شدها . - التعرف على دوائر السيطرة - الكهريائية الخاصة بتشغيل ماكنة التغريز . - التعرف على دوائر السيطرة - الكهريائية الخاصة بتشغيل ماكنة التغريز . - المعلواتي داخلي وخارجي ، تجليخ لامركزي ، تجليخ سطحي ، سن العدد) - المطواتي داخلي وخارجي ، تجليخ لامركزي ، تجليخ سطحي ، سن العدد) - المكانت التجليخ : - المكانت التجليخ : - المكاني التجليخ : - المكاني التجليخ : - التعليخ ، الواعيا ، مواصفاتها ، استعمال كل منها ، اعداد احجار التجليخ للتشغيل (ضبط الجليخ السطحي : - ماكنات التجليخ السطحي : - ماكنات التجليخ السطحي : - ماكنات التجليخ السطحي : - ماكنات التجليخ السطحي : - ماكنات التولية والمتعادة والمائلة . - ماكنات التوليخ السطحي : - ماكنات التوليخ السطحي : - ماكنات التوليخ السطحي : - ماكنات التوليخ الاسطحي : - ماكنات التوليخ السطحي : - ماكنات التوليخ الاسطحي : - ماكنات التوليخ المجاري المناخة ، والمجاري المستديرة . - ماكنات التوليخ المحاري المنطحي : - ماكنات التوليخ المجاري المخاذي . - ماكنات التريزية والمتعادة ، والمجاري المستديرة . - ماكنات التريز على عمليات توليخ - مالون على عمليات توليخ		· / ###		
 م. الجراء عليك تغيير السرعات من خلال السور والبكرات والتعرف على كفية تحويلها و علية شدها . ٦. التعرف على دوانر السيطرة ٦. التكير باتية الخاصة بتشغيل ماكنة التغريز . ١. الكير باتية الخاصة بتشغيل ماكنة التغريز . ١. ماكنات التجليخ (• اسبوع) ١. ماكنات التجليخ : - (اسطواني داخلي وخارجي ، تجليخ لامركزي ، تجليخ سطحي ، سن العدد) ١. ماكنات التجليخ : - (اسطواني داخلي وخارجي ، تجليخ لامركزي ، تجليخ سطحي ، سن العدد) ١. التجليخ (• اسبوع) ١. التحالي وخارجي ، تجليخ لامركزي ، تجليخ سطحي ، سن العدد) ١. التحليخ (• اسبوع) ١. التجليخ (• اسبوع) ١. التحليخ التشغيل (• سبوع) ١. التحيل) ١. التحليخ التشغيل (• سبوع) ١. التحليخ التشغيل (• سبوع) ١. التحيز (• السلحي) ٢. ماكنات التجليخ التشغيل (• سبوع) ٢. ماكنات التجليخ التشغيل (• سبوع) ١. التدريد وانواعه . ٢. ماكنات التجليخ السلحي : ٢. ماكنات التجليخ السلحي : ٢. ماكنات التحليخ السلحي : ٢. التدريد والواعا . موانل التبريد وانواعه . ٢. التدريب على تجليخ الأسلحي : ٢. التدريب على تجليخ المجاري المعادة والمائة ، والمجاري المستدير . ٢. التدريب على المجاري المعادة ، والمجاري المستدير . ٢. التدريب على المجلي السلواني : ٢. التدريب على المجاري المعادة ، والمجاري المستدير . ٢. التدريب على عليات الشغولات ، استخدام سوائل التبريد وادوات القيلي . ٢. المعادي الشغولات ، استخدام سوائل التبريد وادوات القيلي . ٢. المعادي : حادي الشغولات ، استخدام سوائل التبريد وادوات القيلي . ٢. المعادي : حادي	 من خلال السور والبكرات والتعرف على كفية تحويلها و عليك تغيير السرعات من خلال السور والبكرات والتعرف على كفية تحويلها و علية شدها . ٦. التكبر بانية الخاصة بتشغيل ماكنة التغريز . ١٤ الكبر بانية الخاصة بتشغيل ماكنة التغريز . ١٤ الكبر بانية الخاصة بتشغيل ماكنة التغريز . ١٤ العلوني داخلي وخارجي ، تجليخ (• اسبوع) ٢. ماكنات التجليخ : ٢. ماكنات التجليخ المحد) ١٤ المكاليا ، انواعها ، مواصفاتها ، استعمال كل منها ، اعداد احجار التجليخ التسغيل (ضبط الاول) ٢. ماكنات التجليخ السطحي : ١٤ الاول الماكنة ووظيفة كل منها ، طريقة التشغيل وضبط المثوار ، سرعة التغذية ترح اجزاء الماكنة ووظيفة كل منها ، طريقة التشغيل وضبط المثوار ، سرعة التغذية ترح اجزاء الماكنة ووظيفة كل منها ، طريقة التشغيل وضبط المثوار ، سرعة التغذية ترح اجزاء الماكنة ووظيفة كل منها ، طريقة التشغيل وضبط المثوار ، سرعة التغذية أن منوع التغزية والتعادة والمائلة . ٢. ماكنات التجليخ الاسطحي : ٢. التذريب على تجليخ الأسطح . ٢. التذريب وانواعه . ٢. التذريب على تجليخ الأسطح . ٢. التذريب على تجليخ الأسطح . ٢. تجليخ المجاري المحادي التشيئول والمائلة . ٢. تجليخ المجاري المحادي . ٢. تحليخ المجاري المحادي . ٢. التذريب على تجليخ الأسطح . ٢. التذريب على المجاري المحادي . ٢. التذريب على عليات . ٢. تحليخ المجاري المحادي . ٢. الملواني : ٢. منه عاليات . ٢. معليات التشغر . ٢. معليات تجليخ المجاري . ٢. معليات تجليخ . ٢. معليات تجليخ . 		والتعرف على حيقيه تعييرها وأعادة تركيبة .		
من خلال السيور والبكرات والتعرف على كيفية تحويلها و عسلية شدها . الكهربانية الخاصة بتشغيل ماكنة التغريز . الأسيوع الكهربانية الخاصة بتشغيل ماكنة التغريز . التجليخ (• اسيوع) ماكنات التجليخ : ماكنات التجليخ : ماكنات التجليخ : ماكنات التجليخ : اصطواتي داخلي وخارجي ، تجليخ لامركزي ، تجليخ سطحي ، سن العدد) احجار التجليخ : احجار التجليخ : احجار التجليخ المشغيل (ضبط ماكنات التجليخ المتغيل (ضبط ماكنات التجليخ المتعلي (ضبط ماكنات التجليخ السطحي : ماكنات التجليخ السطحي : ماكنات التجليخ السطحي : ماكنات التبديد وانواعه . ماكنات التجليخ الاسطح تجليخ المجاري المنتانة ، والمجاري المستديرة . تجليخ المجاري المختلفة ، والمجاري المستديرة . تجليخ المجاري المختلفة ، والمجاري المستديرة . التدريب على تجليخ الأسطح تجليخ المجاري المختلفة ، والمجاري المستديرة . تجليخ المجاري المختلفة ، والمجاري المستديرة . 	من خلال السور والبكرات والتعرف على كفية تحويلها و علية شدها . 		اجراء عمليات تغيير السرعات	-0	
٢- التعربانية الخاصة بتشغيل ماكنة التغريز . الأسبوع تقاصيل المغردات ١ ٢- التجليغ (٥ اسبوع) ١ ٢- التجليغ (٥ اسبوع) ١ ٢- ماكنات التجليخ : ٢ ٢- ماكنات التجليخ : ١ ٢- ماكنات التجليخ : ٢ ٢ ٢ ماكنات التجليخ السطحى : ٢ ٢ ٢ ٢ ٢ ماكنات التجليخ السطحى : ٢ ٢ ٢ ٢ ٢ ٢ ٢ ٢ ٢ ٢ ٢ ٢ ٢ ٢ ٢ ٢ ٢ ٢ ٢ ٢ ٢ ٢ ٢ ٢ ٢ ٢	1. التعربانية الخاصة بتشغيل ماكنة التغريز . التعرف على دوانر السيطرة الكهربانية الخاصة بتشغيل ماكنة التغريز		من خلال السيور والبكرات والتعرف على كيفية تحويلها وعملية شدها .		
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٢- ١سطواني خارجي وداخلي .	٢- ١سطواني خارجي وداخلي .		سب للشغلة ، تثبيت المشغولات ، استخدام سوائل التبريد وادوات القياس .	المناه	Ģ
اسطواني خارجي وداخلي .	اسطواني خارجي وداخلي .		تمارين على عمليات تجليخ	-1	
			سطواني خارجي وداخلي .	١	
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١ -التجليخ اللامركزي وتجليخ الكرنكات	الثالث
٢-عمليات تجليخ متنوعة باستخدام عمليات التجليخ السابقة ، التدريب عليها .	
ماكنة سن العدد :	
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التعامل معها واختيار الماكنة المناسبة لسن الاداة المعينية .	ال ابع
٢- ٢	0.5
الماكنة وتحديد الزوايا المطلوبة للحد القاطع .	
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عدد القطع (اداة قطع احادية الحد القاطع ثنانية الحد القاطع ، متعددة الحدود .	
صيانة مكانن التجليخ (ماكنة التجليخ الاسطواني العامة الداخلي والخارجي)	
 کیفیة تبدیل سانل التبرید 	الخامس
وتحديد المستوى المطلوب .	
٢- ٢- ٢	
للماكنة ونوع الزيت والشحم المناسبين .	
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السرعات الدوارنية للحجر وللمشغولة .	
تفاصيل المفردات	الأسبوع
٣-القشط (٥ اسبوع)	
 ۱- 	
الفرق بين استخدام كل منها ، اجزاء الماكنة وطريقة العمل ، المشغولات والاسطح	
الممكن تشغيلها على كل منها الاقلام المستخدمة ، طرق تثبيتها سر عات القطع	(1.81
والتغذية ومعدلات التطعيم واختيار كل منها .	0,1
٢- تمارين لقشط سطوح عدلة	
ومائلة بزوايا مختلفة .	
٢-	
وخارجية مختلفة الاشكال .	
وخارجية مختلفة الاشكال . تمارين لقشط اسطح ومشغو لات كاملة اجزاء مناكن ، V بلوك ، قواعد مثاقب .	الثاني
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- ٣- حسب نظام ISO9001 ، تنفيذ حركات عن طريق جهاز التحكم للماكنة CNC الماكنة ، تصفير الماكنة المثلثة، تصفير قطعة العمل ، طرق تثبيت قطعة العمل .	
 ١- دوال الحركة الخطية (G1,G2)،دوال خزن نقاط صفر القطعة (النقاط المرجعية) (F,M,S,T (المساعدة 51,G52,G53,G54,G55,G56,G57,G58,G59) ٢- تنفيذ برنامج تفريز وجهي باستخدام الإيعازات اعلاه وتطبيقه على الحاسبة باستخدام برامج محاكاة وتنفيذ وتنفيذ عمليا ً على الماكنة . ٣- دوال الحركة الدوارانية . 62 ، دالة التكرار ، دالة تكوين صورة مطابقة باتجاه معاكس (Mirror) . 	الثالث
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على الماكنة باستخدام الدوال اعلاه .	
 ١- الدوال الثابتة ، دالة التثقيب مرحلة واحدة ، دالة تثقيب على مراحل ، دالة تشغيل الاسنان دالة توسيع الثقوب دالة حلقة التفرز ، دالة تشغيل شق طولي ، دالة تشغيل الحفر الدائري . ٢- تنفيذ برنامج باستخدام الدوال السابقة وتطبيقة على الحاسبة باستخدام برامج محاكاة وتنفيذه على الماكنة 	الخامس
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۲-مفردات ورشة المكانن المبرمجة والتي تعمل بنظام CAD-CAM ۱-تعريف الطلبة على المكانن المبرمجة وملحقاتها والبرامج الملحقة . ۲-التعر ف على اجزاء ماكنة الخراطة المبرمجة مفاتيح لوجة التحكم ومظيفة كا.	الاول
منها ، عدد القطع ، محاور الماكنة . ٣-استخدام برنامج CAD-CAM لتصميم منتج هندسي وتنفيذ المنتج على الحاسبة بطريقة المحاكاة Simulation .	
التعرف على كيفية استدال العدد التالفة او تعريف عدة جديدة . تنفيذ منتج متكامل على الماكنة ابتدا من مرحلة التصميم على برنامج الـ CAD/CAM مرورا بعملية المحاكاة وانتهاءا بتنفيذ المنتج على الماكنة .	الثاني
١- التعرف على اجزاء ماكنة التفريز المبرمجة : مفاتيح لوحة التحكم ووظيفة كل منها ، عدد القطع ، محاور الماكنة .	الثالث
استحدام برنامج CAD/CAM استحدام برنامج Simulation التصميم منتج هندسي وتنفيذ المنتج على الحاسبة بطريقة المحاكاة .	
 ١- ١ التعرف على كيفية استبدال ١ العدد التالفة او تعريف عدد جديدة . 	الرابع
٢- تنفيد منتج متكامل على الماكنة ابتداء المنتج متكامل على الماكنة ابتداء من مرحلة التصميم على البرنامج CAD/CAM مرور ا بعملية المحاكاة وانتهاء ا بتنفيذ المنتج على الماكنة .	

	تنفيذ العديد من التمارين على مكانن الخراطة والتفريز .	الخامس
		لاحظات:
	ين يتم قبولهم بعد بداية العام الدر اسي يتم تعويض مافاتهم من تمارين وذلك خلال العطلة او امر ادارية من القسم العلمي مؤشرا فيها تاريخ مباشرتهم في المعهد.	بالنسبة للطلبة الذ ربيعية حصريا وبا
	ين ير سبون باقل من نصف الوحدات يحق لهم التعويض في الاسبوع الذي يسبق الامتحانات حصرياً.	جالنسبة للطلبة الذ نظرية لنهاية العام
	م مستمر لاوجود لدور ثان فيها وبالتالي فلا احقية للاقسام العلمية ولا لوحدات المعامل بان بة في العطلة الصيفية خوفاً من انحدار المستوى العلمي في هذه المادة .	حادة المعامل تقيير يم دورات تعويضي
حيتم ابلاغ القسم العلمي بغيابات الطلبة اسبوعياً لغرض التمكن من تنفيذ المادة (9) من التعليمات الامتحانية لتي تنص (يعتبر الطالب راسباً في اي موضوع اذا تجاوزت غياباته (١٠%) عشرة من المانة من الساعات قررة لذلك الموضوع بدون عذر مشروع او (١٥%) خمس عشر من المانة بعذر مشروع يقره مجلس لية او المعهد) .		
	مية ووحدات المعامل تبليغ الطلبة بممضمون الفقرات اعلاه منذ بداية العام الدراسي .	تتولى الاقسام العل