Petrochemical Technologies

Ammar Issa Naji

Ministry of Higher Education and Scientific Research
Scientific Supervision and Evaluation Authority
Department of Quality Assurance and Academic Accreditation

Academic program description form for colleges and institutes

The University: **Middle Technical**
The college/ Institute: **Technical Institute - Kut**
Scientific department: **Petrochemical Technologies**

Date of filling out the file: ٧/٢/٢٠٢٤

Department head:
Dr. Noor Muhson Farhan
Date: ٧/٢/٢٠٢٤
Signature:

Scientific assistant:
A .M. Dr.Adel Saber
Date: ٧/٢/٢٠٢٤
Signature:

The file has already been checked
Quality Assurance and University Performance Division
Name of the Director of the Quality Assu
University Performance Division: Lecturer
Khalil Ibrahim
Date:
Signature:

الجامعة التقنية الوسطى
المعهد التقني كوت
شعبة ضمان الجودة وتقويم الأداء

Dean's endorsement

الأستاذ الدكتور
مهدي فرحان بلية
عميد المعهد التقني / كوت

HIGHER EDUCATION PERFORMANCE REVIEW: PROGRAMME REVIEW

PROGRAMME SPECIFICATION

This Programme Specification provides a concise summary of the main features of the programme and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if he/she takes full advantage of the learning opportunities that are provided. It is supported by a specification for each course that contributes to the programme.

1. Teaching Institution	Middle Technical University – Alkut Technical Institute
2. University Department/Centre	Central Middle Technical University
3. Programme Title	
4. Title of Final Award	Technical Diploma
5. Modes of Attendance offered	Semester first and second for the academic year 2023-2024
6. Accreditation	ABET
7. Other external influences	The views of experts in the corresponding foreign universities Sectional
8. Date of production/revision of this specification	7.3.2024

9. Aims of the Programme

.Introduce the student to the most important foundations and principles of surveying

Preparing graduates to work in the public and private sectors, characterized by high skill in the use of instrumentation, theodolite and total station. It includes laboratories: ground survey - aerial survey - geological laboratory. Map lab • Qualifying the student to obtain a technical diploma in surveying techniques, enabling him to work in the public and private sectors as a surveyor

The vision

The vision of the department is to be a pioneer among its peers in terms of achieving a distinguished level in the fields of theoretical and practical education and in accordance with the quality standards in higher education and scientific research and community service in In the petrochemical and oil industries.

Mission

The Department of Petrochemical Technologies at the Kut Technical Institute / Central Technical University aims to graduate technical cadres specialized in working in oil facilities, especially oil refineries and oil laboratories. These cadres will be equipped with the knowledge and mental and manual skills that qualify them to work and compete at the local and regional levels in the field of oil and petrochemical industries in accordance with comprehensive quality standards to contribute to improving the reality of technical education and the oil and petrochemical industries in Iraq. The department focuses on three main axes: teaching, scientific research, and community service.

The goals

1- Preparing technical cadres specialized in the oil and petrochemical industries.

2- Providing distinguished study programs that contribute to the preparation of productive industrial cadres capable of keeping pace with the development taking place in the field of petrochemical industries.

3- Establishing a close relationship with companies, projects and factories specialized in the oil and petrochemical industries at the local, regional and global levels and linking academic information with the industrial and applied site.

4- Enhancing graduates' skills and their ability to be creative in their field of work.

5- Achieving quality in all work joints.

10. Learning Outcomes, Teaching, Learning and Assessment Methods

A. Knowledge and Understanding

. A1- To know the most important principles and concepts of space.
A 2- To identify the main functions of the surveyor.
A 3- To explain the concepts of space
A4- To apply the concepts of space with real examples and case studies.
A 5- To analyze the validity of survey theories with practical reality.
To A 6- express his opinion in terms of cadastral concepts

B. Subject-specific skills

. B 1 - Interaction skills: Possessing the ability to communicate with the subject's professor and colleagues.
B 2 - Diagnostic skills: the ability to diagnose spatial theories and their realistic applications.
B 3 - Analytical skills: the ability to analyze cadastral concepts and the relationships between them.

Teaching and learning methods

1 - lectures.
2 - discussion and dialogue.
3 - Questions enrichment.
4 - direct questioning.

Assessment methods

1 - questions of right and wrong.
2 - multiple choice questions
3 - questions clarifications.
4 - duties.
5 - self-assessment.
6 - tests (monthly, quarterly, and the final).

C. Thinking Skills

C1. Put forward new ideas on the subject by the student and provide the subject and give solutions.
C2. Differentiate between the problems and explains and analyzes the phenomena and problems.
C3. Simple thinking (the ability to examine and assess the topics).
C4 Critical thinking: (the ability to critique and highlight topics and test them).
C5. Creative thinking (the ability to produce new accounting ideas).

Teaching and Learning Methods

1 - Using the method of lecture and active participation of the students.
2 - Use the style of question and answer and form working groups to resolve accounting problems.
3 - student participation in the presentation of ideas for cases of accounting and

develop solutions to them.

Assessment methods

1 - a variety of tests (daily, monthly, quarterly, final)
2 - oral tests.
3 - Duties.
4 - graduation projects.

D. General and Transferable Skills (other skills relevant to employability and personal development)
D1. The use of references and terminology skills.
D2. Skills in data on the subject collection and analysis.
D3. Collection and analysis of Abianat accounting concepts and how to use them in organizations skills.
D4. Training and personal development on how to apply accounting concepts in various fields skills.
D5 - The preparation of the appropriate accounting concepts for use in various fields skills.

Teaching and Learning Methods

1 -Use the direct method of lecture and discussion.
2 -Use the style of question and answer.
3 -Specialized reports through electronic accounting (online(

Assessment Methods

1 - Questions of objectivity and are divided into: a multi-test questions or questions of right and wrong and the interview questions.
2 - self-assessment and evaluation of the colleague.
3 - tests include:
A - achievement tests associated with the structural plans and teaching.
B - Final achievement tests include:
• Final monthly tests at the end of each month semester.
• Final tests quarterly end of the semester.
• Final final tests at the end of the school year.

11. Programme Structure

Level/Year	Course or Module Code	Course or Module Title	Credit Rating	

12. Awards and Credits
1 - Use of references and terminology skills. 2 - skills in data collection and analysis on topics. 3 - skills to exploit the available potential. 4 - skills make comparisons on the subject. 5 - skills to prepare own concepts on the subject. 6 - Students get Aladaoualozivi skills.
13. Personal Development Planning
1 - a central through User Acceptance issued by the Ministry of Higher Education and Scientific Research.

2 - direct submission through the presentation evening for the study.
14. Admission criteria .
-scientific department . -Register - Instructor

TEMPLATE FOR COURSE SPECIFICATION

HIGHER EDUCATION PERFORMANCE REVIEW: PROGRAMME REVIEW

9.Goals the program Academic
(1) Achievement Goals the University within field Technologies petrochemical. (2) Gives education Right at Basics Technologies petrochemical. (3) Develop skills and trust the essential to solve, document On Engineering and principle scientific, for trouble at Industries chemical vitality and chemical and industries other. (4) Continue at finding graduates with ability High. (5) Saving education compatible With needs Market the work.
Provide the program Opportunities for students To develop show Knowledge and understanding, qualities, skills and properties Other at fields next:- **A- Knowledge And understanding:-** 1- The facts necessary and concepts and principles and theories Engineering chemical and techniques petrochemical , and understand limitations Which face staff in sector oil Around take the decision the correct.

2- Maths the basic and science and techniques
3- Thoughts And the concepts Administration.

B- awareness And understand:-

1- Ethics and professional for the profession.
2- Effect of events engineering On the society and civilization.
3- Compatibility With issues future.

C- Capacity Cultural:-

1- Solve problems industrial Which may be be specific circumstances Information or unknown.
2- analyzing and discuss data Available or Procedure Experiments certain to get On More From data.
3- Design units and operations and conduct improvements necessary.
4- Ability On Application Techniques New.
5- to have a look inclusive for problems Processes industrial and take in consideration Cost and safety and quality and influences environmental and ability On Evaluation Risks and manage it.

D- Skills the operation:-

1- Use Techniques and devices Multiple With software related by specialization.
2- Use a laboratory devices to find data.
3- Development saving Environment Action Safe.

E- skills midwife For transportation:-

1- Application skills sports at problems the operation.
2- skills at Communication orally and editorially.
3- Use the information and communication picture active.
4- the control On time and resources.
5- the work within Team One.
6- that is being Creator Especially at designs.
7- my work at analyzing problems
8- extraction the information From Sources published.

10. Output the program required and modalities education and learning and evaluation

A- Objectives Cognitive
a1- the facts necessary and concepts and principles and theories Engineering chemical
a2- understand limitations Which face The engineer at take the decision the correct
a3- Mathematics the basic and science
a4- Techniques used
a5- Ideas and concepts Administration

B – Objectives Marathi own program
b1 - Ethics and professional for the profession.
b2 - Impact of events engineering On the society and civilization.
b3 - Compatibility With issues future.

Modalities education and learning

1 - The lectures.
2 - Discussion and dialogue.
3 - Questions enrichment .
4 - Interrogation direct.

Modalities Evaluation

1- The exams daily And the Quarterly and the final.
2- Reports And household.
3- Attendees and commitment in time lecture.

C- Goals sentimental and value:

c1- Solve problems industrial Which may be specific circumstances Information or unknown.

c2- Analysis and discuss data Available or Procedure Experiments certain to get On More From data.

c3- Design units and operations and conduct improvements necessary.

c4- ability On Application Techniques New And the to have a look inclusive for problems Engineering industrial and take in consideration Cost and safety and quality and influences environmental and ability On Evaluation Risks and manage it.

D. Skills the public and qualifying movable (Skills other related portability

recruitment and evolution profile).

Dr1- Apply skills sports at problems the operation

Dr2- Skills at Communication orally and editorially and use the information and communication picture active.

Dr3- control On time and resources and work within Team One

Dr4- ability On the design And the my work at analyzing problems And the extraction the information From Sources published.

1. Structure the program

Hours approved		Noun course or course	Code course or course	stage school
Experimental	Theoretical			
3	2	Analytical and physical chemistry		first
2	2	oil chemistry		first
2	2	fluid mechanics		first
2	2	Characteristics of petroleum products		first
3	0	workshop		first
2	1	computer principles (1)		first
0	2	corrosion		first
0	2	Maths		first
0	2	Human rights and democracy		first
0	2	English (1)		first

0	1	Arabic		first
0	2	Professional Ethics		first
3	2	Crude oil refining		the second
2	2	material transmission		the second
2	2	heat transfer		the second
4	0	Graduation Project		the second
2	1	Operation of industrial units		the second
2	1	minerals and material properties		the second
3	0	Computer engineering drawing		second
0	2	Petrochemical industries and environmental pollution		second
0	2	Measurements of storage and transportation of oil derivatives		second
0	2	industrial safety and management		second
0	1	English (2)		second

2. planning to develop the profile
1- Skills of using references and terminology. 2- Skills in collecting and analyzing data on topics. 3 - Skills to exploit the available possibilities. 4 - Skills of making comparisons on the topic. 5 - Skills of preparing special concepts on the subject. 6- The student acquires job performance skills 7- Providing students with self-learning skills that enable them to update their scientific knowledge in specialization.
3. standard admissions (put systems related by joining in college or institute)
– Central acceptance from the Ministry of Higher Education and Scientific Research according to the absorptive capacities of the faculties. – Average for graduates of middle school, scientific branch and professional study.
4. most important Resources the information About the program
– scientific department. – Registration – subject teacher

Curriculum

please tick in the relevant boxes where individual Programme Learning Outcomes are being a

				Programme Learning Outcomes													
	Cours	Course Title	Core (C) Title or Option (O)	Knowledge and understanding				Subject-specific skills				Thinking Skills				Gener Transfera (or) Oth relev	
				A1	A2	A3	A4	B1	B2	B3	B4	C1	C2	C3	C	D1	D
		Account	**Accoun**	/	/	/	/	/	/	/	/	/	/	/	/	/	
		Analytical															
		oil chemistry															
		fluid															
		Characteristic															
		workshop															
		computer															
		corrosion															
		Maths															
		Human rights															
		English (1)															
		Arabic															
		Professional															
		Crude oil															
		material															
		heat transfer															
		Graduation															
		Operation of															
		minerals and															
		Computer															
		Petrochemica															
		Measurement															
		industrial															
		English (2)															

First Stage

Description model

Dr. Israa Jabar

This course description provides a brief summary of the most important characteristics of the course and the learning outcomes expected of the student to achieve, demonstrating whether he has made maximum use of the available learning opportunities. It must be linked to the description of the program.

1- Educational institution	Middle Technical University, Al KUT Technical Institution
2- Scientific Department / Center	Department of Petrochemical Technologies
3- Course name/code	**Analytical chemistry**
4- Attendance type available	Mandatory
5- Semester / year	The first and second semester of the academic year 2023-2024
6- Number of hours of study (total)	(150) hours of study, 5 hours per week
7- The date this description was made	7/3/2024
8- Course objectives:	
1-The student is introduced to the different methods of expressing volumetric concentration and the different methods of volumetric analysis	
2-Introduce students to their applications, gravimetric analysis methods, and the theoretical foundations of sedimentation and its applications.	
3-The student learns about the physical properties of chemicals using tools such as spectroscopy, quantum mechanics, and gas laws.	

4- Helps him explore intramolecular bonding mechanisms to understand their properties, modifiers that allow optimizing chemical reactions and understanding chemical equilibrium

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

A Cognitive goals

A1- Knows a general idea, elementary standard solutions, and standard methods

A2- Explains to the student the volumetric calculations of acid-base titrations

A3- Describe how oxidation titrations, reduction titrations, and precipitation titrations are performed

A4- Explains to the student the basics of automated analysis. A5- Explains to the student the foundations of physical chemistry.

B - The Marathi objectives of the course.

B1 - Prepare standard solutions.

B2 - apply standard methods, practical applications of equivalence titrations.

B3 - Compare past and present experiences.

B 4 - Apply the basics of operating automatic analysis devices.

Teaching and learning methods

1 - Objective questions are divided into: multiple choice questions, true and false questions, or approximation questions

2 - Self-evaluation and evaluation of the colleague.

3- The tests include:

A - Constructive achievement tests accompanying the teaching plans.

B - Final achievement tests and include:

• Monthly final exams at the end of each academic month.

• Final final exams at the end of a semester.

• Final final exams at the end of the academic year.

Evaluation methods

Using achievement tests:

• daily

• Monthly

• Quarterly Final

C- Emotional and value goals

C1 - Presenting new ideas on the topic by the student.

C 2- The student's ability to evaluate the topic and give solutions.

C 3 - differentiate between problems.

C4- Explain and analyze phenomena and problems.
Teaching and learning methods
1 - Use the presentation and presentation method 2- Draw illustrations. 3 - Brainstorming method.
D - Transferred general and qualifying skills (other skills related to employability and personal development). D 1- Skills of using references and terminology. D 2 - Skills in collecting and analyzing data on the subject. D 3 - the skills of exploiting the available capabilities. D 4- Skills of making comparisons on the topic D 5 - Skills of preparing special concepts on the subject.

10. Course structure

The week	Education method	Unit name and / or topic	Required learning outcomes	Hours	Evaluation method
1	lecture	general idea	Get a general idea of the course material	5	oral exams
2	Discussion and dialogue	Primary standard solutions	Know the types and classifications of primary standard solutions	5	Self and peer evaluation
3	Discussion and dialogue	Standard methods	How to use the devices in the standard way	5	oral exams
4	Discussion and dialogue	Reactions and materials used in volumetric analyzes	How to deal with materials used in volumetric analyzes during reactions	5	Self and peer evaluation
5	Lecture	Reaction end point in volumetric analyses	Learn how to determine the end point of a reaction in volumetric	5	oral exams

			analyses		
6	Discussion and dialogue	Volumetric Calculations for Acid - Base Titrations	Understand the volumetric calculations of the components of acid - base reactions	5	oral exams
7	Discussion and dialogue	Volumetric Calculations for Acid - Base Titrations	Understand the volumetric calculations of the components of acid - base reactions	5	Self and peer evaluation
8	Discussion and dialogue	Oxidation titrations	Knowledge of oxidation titrations methods	5	Self and peer evaluation
9	Lecture	Down sampling calibrations	Learn how to reduce titrations	5	oral exams
10	Lecture	precipitation titrations	Know how to titrations of sedimentation	5	oral exams
11	Lecture	Complex vehicle composition parameters	Knowing how complex vehicle configuration parameters are	5	oral exams
12	Lecture	Fundamentals of automated analysis	Learn the basics of automated analysis	5	Oral and written exams
13	Lecture	gravimetric analysis	Know the types and methods of weight analysis	5	oral exams
14	Lecture	Introduction to the foundations of physical chemistry	Knowledge of the basics of physical chemistry	5	oral exams

15	Discussion and dialogue	Introduction to the foundations of physical chemistry	Knowledge of the basics of physical chemistry	5	Self assessment and colleague assessment

10- Infrastructure	
Required prescribed books	
1- Fundamentals of physical chemistry (practical) 2- Physical Chemistry, Ninth Edition, Ninth Edition, written by Peter Atkin, Julio de Paula 3- Basics of Analytical Chemistry - Dr. Thabet Saeed Al-Ghabsha 4- Vogel's book on quantitative chemical analysis, fifth edition	2main references) sources (
Reputable international sites specialized and sober publishing sites	A- recommended books and references) scientific journals , reports (.... ,
discreet publishing sites	B- Electronic references , Internet sites...

11- course development plan
Providing the student with available recent research as far as the topic of the lecture is concerned .

Description model

Dr. Israa Jabar

This course description provides a brief summary of the most important characteristics of the course and the learning outcomes expected of the student to achieve, demonstrating whether he has made maximum use of the available learning opportunities. It must be linked to the description of the program.

1- Educational institution	Middle Technical University, Al KUT Technical Institution
2- Scientific Department / Center	Department of Petrochemical Technologies
3- Course name/code	**physical chemistry**
4- Attendance type available	Mandatory
5- Semester / year	The first and second semester of the academic year 2023-2024
6- Number of hours of study (total)	(150) hours of study, 5 hours per week
7- The date this description was made	7/3/2024
8- Course objectives:	
1-The student is introduced to the different methods of expressing volumetric concentration and the different methods of volumetric analysis	
2-Introduce students to their applications, gravimetric analysis methods, and the theoretical foundations of sedimentation and its applications.	
3-The student learns about the physical properties of chemicals using tools such as	

spectroscopy, quantum mechanics, and gas laws.
4- Helps him explore intramolecular bonding mechanisms to understand their properties, modifiers that allow optimizing chemical reactions and understanding chemical equilibrium

9- Course outcomes and methods of teaching, learning and assessment
A Cognitive goals A1- Knows a general idea, elementary standard solutions, and standard methods A2- Explains to the student the volumetric calculations of acid-base titrations A3- Describe how oxidation titrations, reduction titrations, and precipitation titrations are performed A4- Explains to the student the basics of automated analysis. A5- Explains to the student the foundations of physical chemistry.
B - The Marathi objectives of the course. B1 - Prepare standard solutions. B2 - apply standard methods, practical applications of equivalence titrations. B3 - Compare past and present experiences. B 4 - Apply the basics of operating automatic analysis devices.
Teaching and learning methods
1 - Objective questions are divided into: multiple choice questions, true and false questions, or approximation questions 2 - Self-evaluation and evaluation of the colleague. 3- The tests include: A - Constructive achievement tests accompanying the teaching plans. B - Final achievement tests and include: • Monthly final exams at the end of each academic month. • Final final exams at the end of a semester. • Final final exams at the end of the academic year.
Evaluation methods
Using achievement tests: • daily • Monthly • Quarterly Final
C- Emotional and value goals C1 - Presenting new ideas on the topic by the student. C 2- The student's ability to evaluate the topic and give solutions.

C 3 - differentiate between problems. C4- Explain and analyze phenomena and problems.
Teaching and learning methods
1 - Use the presentation and presentation method 2- Draw illustrations. 3 - Brainstorming method.
D - Transferred general and qualifying skills (other skills related to employability and personal development). D 1- Skills of using references and terminology. D 2 - Skills in collecting and analyzing data on the subject. D 3 - the skills of exploiting the available capabilities. D 4- Skills of making comparisons on the topic D 5 - Skills of preparing special concepts on the subject.

10. Course structure

The week	Education method	Unit name and / or topic	Required learning outcomes	Hours	Evaluation method
1	lecture	general idea	Get a general idea of the course material	5	oral exams
2	Discussion and dialogue	Primary standard solutions	Know the types and classifications of primary standard solutions	5	Self and peer evaluation
3	Discussion and dialogue	Standard methods	How to use the devices in the standard way	5	oral exams
4	Discussion and dialogue	Reactions and materials used in volumetric analyzes	How to deal with materials used in volumetric analyzes during reactions	5	Self and peer evaluation
5	Lecture	Reaction end point in volumetric analyses	Learn how to determine the end point of a reaction in	5	oral exams

			volumetric analyses		
6	Discussion and dialogue	Volumetric Calculations for Acid - Base Titrations	Understand the volumetric calculations of the components of acid - base reactions	5	oral exams
7	Discussion and dialogue	Volumetric Calculations for Acid - Base Titrations	Understand the volumetric calculations of the components of acid - base reactions	5	Self and peer evaluation
8	Discussion and dialogue	Oxidation titrations	Knowledge of oxidation titrations methods	5	Self and peer evaluation
9	Lecture	Down sampling calibrations	Learn how to reduce titrations	5	oral exams
10	Lecture	precipitation titrations	Know how to titrations of sedimentation	5	oral exams
11	Lecture	Complex vehicle composition parameters	Knowing how complex vehicle configuration parameters are	5	oral exams
12	Lecture	Fundamentals of automated analysis	Learn the basics of automated analysis	5	Oral and written exams
13	Lecture	gravimetric analysis	Know the types and methods of weight analysis	5	oral exams
14	Lecture	Introduction to the foundations of physical	Knowledge of the basics of physical	5	oral exams

		chemistry	chemistry		
15	Discussion and dialogue	Introduction to the foundations of physical chemistry	Knowledge of the basics of physical chemistry	5	Self assessment and colleague assessment

1	Lecture, discussion and debate	Basic and Derivative Units	Know the basic units and their derivatives	5	oral exams
2	Discussion and dialogue	Gaseous state Boyle's law and its derivation	Knowing the gaseous state Boyle's law and its derivation	5	Self assessment and colleague assessment
3	And discussion and dialogue	Charles's law and its derivation	Knowing Charles' law and its derivation	5	oral exams
4	Discussion and dialogue	Dalton's Law of Molecular Pressure	Knowing Dalton's Law of Molecular Pressures	5	Self assessment and colleague assessment
5	Discussion and dialogue	The law of pressure and the general law of gases	Know the law of pressure and the general law of gases	5	Self assessment and colleague assessment
6	Discussion and dialogue	Derivation of ideal gas laws	How to derive ideal gas laws	5	oral exams
7	Discussion and dialogue	Graham's Law of Gases	Knowing Graham's Law of Gases	5	oral exams
8	Discussion and dialogue	semester exam		5	Self-assessment and dialogue

					evaluation
9	Discussion and dialogue	Liquid state - viscosity - surface tension - vapor pressure	Know the liquid state, viscosity, surface tension, vapor pressure	5	oral exams
10	Discussion and dialogue	evaporation of liquids vapor pressure standard boiling point freezing of liquids	Know the evaporation of liquids - vapor pressure - standard boiling point - freezing of liquids	5	Self-assessment and dialogue evaluation
11	Discussion and dialogue	evaporation of liquids vapor pressure standard boiling point freezing of liquids	Know the evaporation of liquids - vapor pressure - standard boiling point - freezing of liquids	5	oral exams
12	Discussion and dialogue	Latent heat of fusion - properties of solids - types of crystals	Identifier of latent heat of fusion - properties of solids - types of crystals	5	Self-assessment and dialogue evaluation
13	Discussion and dialogue	Chemical equilibrium and the law of mass action - Le Chatelier's rule	Knowledge of chemical equilibrium and the law of mass action - Le Chatelet's rule	5	Self-assessment and dialogue
14	Discussion and dialogue	Chemical equilibrium and the law of mass action - Le Chatelier's rule	Knowledge of chemical equilibrium and the law of mass action - Le Chatelet's rule	5	oral exams

10- Infrastructure	
Required prescribed books	
5- Fundamentals of physical chemistry (practical) 6- Physical Chemistry, Ninth Edition, Ninth Edition, written by Peter Atkin, Julio de Paula 7- Basics of Analytical Chemistry - Dr. Thabet Saeed Al-Ghabsha 8- Vogel's book on quantitative chemical analysis, fifth edition	2main references) sources (
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11- course development plan
Providing the student with available recent research as far as the topic of the lecture is concerned .

Description Mode

Dr. Israa Jabar

This course description provides a brief summary of the most important characteristics of the course and the learning outcomes expected of the student to achieve, demonstrating whether he has made maximum use of the available learning opportunities. It must be linked to the description of the program.;

1- Educational institution	Middle Technical University, Al KUT Technical Institution
2- Scientific Department / Center	Department of Petrochemical Technologies
3- Course name/code	**Petroleum chemistry**
4- Attendance type available	mandatory
5- Semester / year	The first and second semester of the academic year 2023-2024
6- Number of hours of study (total)	(120) hours of study, 5 hours per week
7- The date this description was made	7/3/2024
8- Course objectives:	
1 - The student learns about the chemical composition of oil and its derivatives	
2- Introducing students to the most important chemical processes that take place on oil and its derivatives	

3 - The student learns about industrial processes, refining and separation of petroleum products.

9- Course outcomes and methods of teaching, learning and assessment
A- Cognitive goals A1- Knows a general idea of the chemical composition of oil A2- Know the types and classifications of petroleum products A3- Knowing the different types of how to conduct industrial operations on oil A4- Familiarize the student with the processes of refining and separating oil derivatives
B - The Marathi objectives of the course. B1 - It applies some laboratory experiments to oil. B2 - Apply some simple and safe interactions about refining methods. B3 - Application of some tests on crude oil derivatives .
Teaching and learning methods
1 - Objective questions are divided into: multiple choice questions, true and false questions, or approximation questions 2 - Self-evaluation and evaluation of the colleague. 3- The tests include: A - Constructive achievement tests accompanying the teaching plans. B - Final achievement tests and include: • Monthly final exams at the end of each academic month. • Final final exams at the end of a semester. • Final final exams at the end of the academic year.
Evaluation methods
Using achievement tests: • daily • Monthly • Quarterly Final
C- Emotional and value goals C1 - Presenting new ideas on the topic by the student. C 2- The student's ability to evaluate the topic and give solutions. C 3 - differentiate between problems. C4- Explain and analyze phenomena and problems.

Teaching and learning methods
1 - Use the presentation and presentation method 2- Draw illustrations. 3 - Brainstorming method.
D - Transferred general and qualifying skills (other skills related to employability and personal development). D 1- Skills of using references and terminology. D 2 - Skills in collecting and analyzing data on the subject. D 3 - the skills of exploiting the available capabilities. D 4- Skills of making comparisons on the topic D 5 - Skills of preparing special concepts on the subject.

10. Course structure

the week	education method	Unit name and / or topic	Required learning outcomes	hours	Evaluation method
1	lecture	Chemical composition of oil - chemical compounds produced from petroleum	Knowledge of the chemical composition of oil -chemical compounds produced from oil	4	oral exams
2	Discussion and dialogue	Chemical composition of oil - chemical compounds produced from petroleum	Chemical composition of oil -chemical compounds produced from petroleum	4	Self assessment and colleague assessment
	Discussion and dialogue	Ethylene) composition- methods of obtaining it - uses (	How to deal with ethylene) its composition- methods of obtaining it - its uses (	4	Self assessment and colleague assessment

3	Discussion and dialogue	Ethylene) composition- methods of obtaining it - uses (	How to deal with ethylene) its composition- methods of obtaining it - its uses (	4	Self assessment and colleague assessment
	Lecture	Propylene) its composition- methods of obtaining it - its uses (	How to deal with propylene) its composition- methods of obtaining it - its uses (	4	oral exams
4	Discussion and dialogue	Propylene) its composition- methods of obtaining it - its uses (	How to deal with propylene) its composition- methods of obtaining it - its uses (	4	Self assessment and colleague assessment
	Discussion and dialogue	Butadiene) composition- methods of obtaining it - uses (	How to deal with butadiene) its composition- methods of obtaining it - its uses (	4	oral exams
5	Discussion and dialogue	Butadiene) composition- methods of obtaining it - uses (	How to deal with butadiene) its composition- methods of obtaining it - its uses (	4	Self assessment and colleague assessment
	Lecture	Acetylene) composition- methods of obtaining it - uses (	How to deal with acetylene) its composition- methods of obtaining it - its uses (	4	Self assessment and colleague assessment
6	Lecture	Acetylene) composition- methods of	How to deal with acetylene) its composition-	4	oral exams

		obtaining it - uses (	methods of obtaining it - its uses (		
	Lecture	Aromatic substances and their uses in the petrochemical industries) benzene - intermediate aromatic compounds(	Knowing how aromatic materials and their uses in the petrochemical industries) benzene - intermediate aromatic compounds (	4	Self assessment and colleague assessment
7	Lecture	Aromatic substances and their uses in the petrochemical industries) benzene - intermediate aromatic compounds(	Knowledge of aromatic substances and their uses in the petrochemical industries) benzene - intermediate aromatic compounds(	4	oral exams
8	Lecture	The most important halogen industries used in the petrochemical industries - oxidation processes in the petrochemical industries	Knowing the most important halogen industries used in the petrochemical industries - oxidation processes in the petrochemical industries	4	Self assessment and colleague assessment
9	Lecture	The most important halogen industries used in the petrochemical industries - oxidation processes in the petrochemical	Knowing the most important halogen industries used in the petrochemical industries - oxidation processes in the petrochemical	4	oral exams

		industries	industries		
	Discussion and dialogue	The most important halogen industries used in the petrochemical industries - oxidation processes in the petrochemical industries	Knowing the most important halogen industries used in the petrochemical industries - oxidation processes in the petrochemical industries	4	Self assessment and colleague assessment
10	Lecture, discussion and debate	Physical and chemical petroleum refining processes	Knowledge of physical and chemical petroleum refining processes	4	Self assessment and colleague assessment
	Discussion and dialogue	Physical and chemical petroleum refining processes	Knowledge of physical and chemical petroleum refining processes	4	oral exams
	And discussion and dialogue	Chemical processes)coking - conversion - decomposition - cracking with a catalyst - catalytic reforming of benzeneReforming) ((	Knowledge of chemical processes)coking - conversion - decomposition - cracking by catalyst - catalytic reform of gasoline Reforming) ((	4	Self assessment and colleague assessment
11	Discussion and dialogue	Chemical processes)coking - conversion - decomposition - cracking with a catalyst - catalytic reforming of benzeneReforming) ((	Knowledge of chemical processes)coking - conversion - decomposition - cracking by catalyst - catalytic reform of gasoline Reforming) ((	4	oral exams
	Discussion	Isomerization	Knowledge of	4	Self

	and dialogue	processes - polymerization	isomerization - polymerization processes		assessment and colleague assessment
12	Discussion and dialogue	Isomerization processes - polymerization	How is isomerization processes - polymerization	4	oral exams
	Discussion and dialogue	Chemical additives Petroleum) additives to lubricating oils - Cleaned additions dispersive - Cleaned additions - additions resistance to erosion - additions resistance to oxidation - additives Viscosity -discount additions -resistance to wear resistance and additions to the sculpture - the special additions	Knowledge of additions of chemical oil) additives to lubricating oils - Cleaned additions dispersive - Cleaned additions - additions resistance to erosion - additions resistance to oxidation - additives Viscosity -discount additions - resistance to wear resistance and additions to the sculpture - the special additions	4	Self assessment and colleague assessment
13	Discussion and dialogue	Crude Oil Valuation, Steps in the Valuation Process, Crude Oil Fractionation , Modeling, Modeling Methods	knowledge Oil evaluation of crude, the evaluation process steps, fragmentation of crude oil, modeling, ways Alnmzj	4	Self assessment and colleague assessment
	Discussion	Crude oil	knowledge Crude	4	oral exams

	and dialogue	evaluation, evaluation process steps, crude oil segmentation, modeling, modeling methods	oil evaluation, evaluation process steps, crude oil segmentation, modeling, modeling methods Freezing liquids		
14	Discussion and dialogue	Preparing crude oil for filtering and marketing	Knowing the preparation of crude oil for refining and marketing	4	Self assessment and colleague assessment
	Discussion and dialogue	Stages of preparing crude oil for refinement and marketing	Identifier of the stages of preparing crude oil for refinement and marketing	4	oral exams
15	Discussion and dialogue	Light oil derivatives) types, specifications, uses, laboratory testing (Types of oil derivatives, inquiries	Knowledge of light petroleum derivatives) types - specifications - uses - laboratory examination of them (types of petroleum derivatives, inquiries	4	Self assessment and colleague assessment
	Discussion and dialogue	Light oil derivatives) types, specifications, uses, laboratory testing (Types of oil derivatives, inquiries	Knowledge of light petroleum derivatives) types - specifications - uses - laboratory examination of them (types of petroleum derivatives, inquiries	4	oral exams

11. Infrastructure	
Required prescribed books	
1- Petroleum and Natural Gas Chemistry, translated by Dr. Issa Masouh, Darmir, Moscow, 2nd edition, 1981 AD 2- Physical and chemical analyzes of oils and fats - Dr. Radwan Sedky Farag Muhammad 3- Basics of chemistry of polymers and colloids - Dr. Muhammad Fikri Al-Hadi	2main references) sources (
Reputable international sites specialized and sober publishing sites	A recommended books and references) scientific journals , reports (.... ,
discreet publishing sites	B- Electronic references , Internet sites...

12. Course development plan
Providing the student with available recent research as far as the topic of the lecture is concerned.

Description model

Haybet lafta Katie

This course description provides a brief summary of the most important characteristics of the course and the learning outcomes expected of the student to achieve, demonstrating whether he has made maximum use of the available learning opportunities. It must be linked to the description of the program.;

1.	Educational institution	Middle Technical University Al KUT Technical Institution
2.	Scientific Department / Center	Department of Petrochemical Technologies
3.	Course name/code	**Fluids Mechanics**
4.	Attendance type available	mandatory
5.	Semester / year	The first and second semester of the academic year 2023-2024
6.	Number of hours of study (total)	(120) hours of study, 4 hours per week
7.	The date this description was made	2024/03/22
8- Course objectives:		
1 - The student recognizes all fluids, whether gases or liquids		
2- Introduce students to the volume and pressure equations for fluids		
3 - The student learns about fluid and the mechanics of their flow through their physical properties.		
4- The student learns about the phenomena and standard conditions for dealing with the flow of heat and fluids		

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

A - the cognitive goals

A -1 Knows a general idea about all fluids, whether gases or liquids

A -2 Know the equations and laws governing fluids

A -3 Knowing the fluids and their flow mechanics through their physical properties

A - 4 Familiarize yourself with the phenomena and standard conditions for dealing with heat and fluid flow .

a

B - Objectives of skills yeh for PAL decision .

B1 - Some laboratory experiments are applied .

B - 2 Apply some simple and safe interactions around refining methods .

B - 3 Application of some tests on fluids and crude oil derivatives .

Teaching and learning methods

1- Objective questions are divided into : multiple choice questions, true and false questions, or approximation questions

2- Self-evaluation and evaluation of the colleague .

3- The tests include :

A - Constructive achievement tests accompanying the teaching plans .

B - Final achievement tests and include :

- Monthly final exams at the end of each academic month.
- Semester final exams at the end of a semester.
- Final exams at the end of the academic year.

Evaluation methods

1- Use of achievement tests :

- daily
- monthly
- Quarterly
- Final

C - affective and value goals

C -1 Presenting new ideas about the topic by the student .

C -2 The student's ability to evaluate the topic and give solutions.

C - 3 differentiate between problems.

C - 4 Explains and analyzes phenomena and problems.

Teaching and learning methods
1- Use the presentation and introductory method . 2- drawing diagrams . 3- Brainstorming method .
D - Transferred general and rehabilitative skills) other skills related to employability and personal development.(D -1 Skills of using references and terminology . D - 2 Skills in collecting and analyzing data on the subject . D - 3 the skills of exploiting the available capabilities . D -4 Skills of making comparisons on the topic D - 5 Skills of preparing special concepts on the subject

Course structure

Evaluation method	education method	Unit name and / or topic	Required learning outcomes	hours	the week
1	lecture	Unit - SI unit - other unit system, conversion from on system to another, examples.	Knowledge of the chemical composition of oil -chemical compounds produced from oil	4	oral exams
	Discussion and dialogue	Unit - SI unit - other unit system, conversion from on system to another, examples.	Chemical composition of oil -chemical compounds produced from petroleum	4	Self assessment and colleague assessment
2	Discussion and dialogue	Fluid definition – fluid properties (density - specific gravity - surface tension -	How to deal with ethylene) its composition- methods of obtaining it - its uses (	4	oral exams

		compressibility - Viscosity)			
	Discussion and dialogue	Fluid definition – fluid properties (density - specific gravity - surface tension - compressibility - Viscosity)	How to deal with ethylene) its composition- methods of obtaining it - its uses (	4	Self assessment and colleague assessment
3	Lecture	Static pressure and head	How to deal with propylene) its composition- methods of obtaining it - its uses (	4	oral exams
	Discussion and dialogue	Static pressure and head	How to deal with propylene) its composition- methods of obtaining it - its uses (	4	Self assessment and colleague assessment
4	Discussion and dialogue	Buoyancy and stability of floating bodies	How to deal with butadiene) its composition- methods of obtaining it - its uses (	4	Self assessment and colleague assessment
	Discussion and dialogue	Buoyancy and stability of floating bodies	How to deal with butadiene) its composition- methods of obtaining it - its uses (	4	Self assessment and colleague assessment
5	Lecture	Fluid flow - types of flow	How to deal with acetylene) its composition- methods of	4	oral exams

			obtaining it - its uses (		
	Lecture	Fluid flow - types of flow	How to deal with acetylene) its composition- methods of obtaining it - its uses (	4	oral exams
6	Lecture	Continuity equation	Knowing how aromatic materials and their uses in the petrochemical industries) benzene - intermediate aromatic compounds (	4	oral exams
	Lecture	Continuity equation	Knowledge of aromatic substances and their uses in the petrochemical industries) benzene - intermediate aromatic compounds(	4	oral exams
7	Lecture	Energy of flowing fluid – Bernoulli's theorem	Knowing the most important halogen industries used in the petrochemical industries - oxidation processes in the petrochemical industries	4	Oral and written exams
	Lecture	Energy of flowing fluid – Bernoulli's	Knowing the most important halogen industries used in	4	oral exams

		theorem	the petrochemical industries - oxidation processes in the petrochemical industries		
8	Discussion and dialogue	Practical application for Bernoulli's equation	Knowing the most important halogen industries used in the petrochemical industries - oxidation processes in the petrochemical industries	4	Self assessment and colleague assessment
	Lecture, discussion and debate	Bernoulli's equation correction	Knowledge of physical and chemical petroleum refining processes	4	Self assessment and colleague assessment
9	Discussion and dialogue	Bernoulli's equation correction	Knowledge of physical and chemical petroleum refining processes	4	oral exams
	And discussion and dialogue	Energy loss in pipes - fittings and valves	Knowledge of chemical processes)coking - conversion - decomposition - cracking by catalyst - catalytic reform of gasoline Reforming) ((	4	Self assessment and colleague assessment
10	Discussion and dialogue	Energy loss in pipes - fittings and valves	Knowledge of chemical processes)coking - conversion - decomposition -	4	Self assessment and colleague assessment

			cracking by catalyst - catalytic reform of gasoline Reforming) ((		
	Discussion and dialogue	Pumps: pump types	Knowledge of isomerization - polymerization processes	4	oral exams
	Discussion and dialogue	Pumps: pump types	How is isomerization processes - polymerization	4	Self-assessment and dialogue evaluation
11	Discussion and dialogue	Pipeline problems	Knowledge of additions of chemical oil) additives to lubricating oils - Cleaned additions dispersive - Cleaned additions - additions resistance to erosion - additions resistance to oxidation - additives Viscosity -discount additions -resistance to wear resistance and additions to the sculpture - the special additions	4	oral exams
12	Discussion and dialogue	Motion of particles in fluids	knowledge Crude oil evaluation, evaluation process steps, crude oil segmentation, modeling, modeling methods	4	Self-assessment and dialogue evaluation

	Discussion and dialogue	Motion of particles in fluids	knowledge Crude oil evaluation, evaluation process steps, crude oil segmentation, modeling, modeling methods Freezing liquids	4	oral exams
13	Discussion and dialogue	Fluid flow through packed - bed	Knowing the preparation of crude oil for refining and marketing	4	Self-assessment and dialogue evaluation
	Discussion and dialogue	Fluid flow through packed - bed	Identifier of the stages of preparing crude oil for refinement and marketing	4	oral exams
14	Discussion and dialogue	Fluid flow between tanks	Knowledge of light petroleum derivatives) types - specifications - uses - laboratory examination of them (types of petroleum derivatives, inquiries	4	Self-assessment and dialogue evaluation
15	Discussion and dialogue	Fluid flow between tanks	Knowledge of light petroleum derivatives) types - specifications - uses - laboratory examination of them (types of petroleum derivatives, inquiries	4	oral exams

10. Infrastructure	
	1- Required prescribed books
Principles of Fluid Mechanics - Part One Written by Jamil Al Malaka Fluid Mechanic Dr. Nima Hamad Emara - University of Technology Fluid Mechanic, translated by Nabil Zaki Mortada and Dr. Fawzi Ibrahim Abdel Sadiq Unit. Operation of chemical Eng. By maccade, Published by maccraw-hill, 3ed edition 1967 Unit operation by Brown, published by Willy London 1965 Priciples of unit operation by A. S . Faust published by Toppan and Willy 2nd edition 1961 Tokyo. Japan 1960 Chemical Eng Vol 1 and 2nd Coulson and Richardason by preutice- Hill 1960	sources) main references 2- (
Reputable international sites specialized and sober publishing sites	A recommended books) and references , scientific journals (.... , reports
discreet publishing sites	, B- Electronic references ... Internet sites

11. course development plan
Providing the student with available recent research as far as the topic of the lecture is concerned

Description Model

Dr. Hayder Abdulkhaleq

This course description provides a brief summary of the most important characteristics of the course and the learning outcomes expected of the student to achieve, demonstrating whether he has made maximum use of the available learning opportunities. It must be linked to the description of the program.;

1- Educational institution	Middle Technical University ,Al KUT Technical Institution
2- Scientific Department / Center	Department of Petrochemical Technologies
3- Course name/code	**Characteristics of Petroleum Products**
4- Attendance type available	mandatory
5- Semester / year	The first and second semester of the academic year 2023-2024
6- Number of hours of study (total)	(120) hours of study, 4 hours per week
7- The date this description was made	7/3/2024
8. Course objectives: At the end of the academic year, the student will be able to:	
1 - The student gets to know a general idea of crude oil	
2- Introducing students to its types and methods of evaluating crude oil and its derivatives	
3 - Students get acquainted with petroleum products and their physical properties.	
4- The student gets to know the most important petrochemical industries such as natural gas	

5- Petroleum refining operations and to be able to test and evaluate oil and its derivatives based on the results of laboratory analyzes

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

A- Cognitive goals
A1- Knows a general idea about crude oil and its derivatives
A2- Know the industries related to crude oil and its derivatives
A3- Knowledge of the refining and petrochemical industries
A4- Familiarize the student with the phenomena and standard conditions for dealing with the flow of heat and fluids.
A5- The student becomes acquainted with the testing of oil and its derivatives and their evaluation based on the results of laboratory analyzes

B - The Marathi objectives of the course.
B1 - Do some laboratory experiments.
B2 - Apply some simple and safe interactions about refining methods.
B3 - Application of some tests on fluids and crude oil derivatives.

Teaching and learning methods

1 - Objective questions are divided into: multiple choice questions, true and false questions, or approximation questions
2 - Self-evaluation and evaluation of the colleague.
3- The tests include:
A - Constructive achievement tests accompanying the teaching plans.
B - Final achievement tests and include:
• Monthly final exams at the end of each academic month.
• Final final exams at the end of a semester.
• Final final exams at the end of the academic year.

Evaluation methods

2- Using achievement tests:
• daily
• Monthly
• Quarterly Final

C- Emotional and value goals
C1 - Presenting new ideas on the topic by the student.
C 2- The student's ability to evaluate the topic and give solutions.
C 3 - differentiate between problems.
C4- Explain and analyze phenomena and problems.

Teaching and learning methods
1 - Use the presentation and presentation method 2- Draw illustrations. 3 - Brainstorming method.
D - Transferred general and qualifying skills (other skills related to employability and personal development). D 1- Skills of using references and terminology. D 2 - Skills in collecting and analyzing data on the subject. D 3 - the skills of exploiting the available capabilities. D 4- Skills of making comparisons on the topic D 5 - Skills of preparing special concepts on the subject.

10. Course structure .

Evaluation method	education method	or / Unit name and topic	Required learning outcomes	hours	the week
1	lecture	Introduction - Crude Oil, Crude Oil Composition Theories, Classes of compounds in petroleum - classification of petroleum	Knowledge of the chemical composition of oil - chemical compounds produced from oil	6	oral exams
	Discussion and dialogue	Introduction - Crude Oil, Crude Oil Composition Theories, Classes of compounds in petroleum - classification of petroleum	Chemical composition of oil - chemical compounds produced from petroleum	6	Self assessment and colleague assessment
2	Discussion and dialogue	Evaluation of crude oil and its products - the most important characteristics to be determined	How to deal with ethylene) its composition- methods of obtaining it - its uses (	6	Self assessment and colleague assessment

		(specific weight - viscosity - degree of flash - volatility - degree of aniline - ash content - coagulation - specifications of combustion - cetane and octane number - degree of cloudiness - colorimetry - doctor's examination			
	Discussion and dialogue	Evaluation of crude oil and its products - the most important characteristics to be determined (specific weight - viscosity - degree of flash - volatility - degree of aniline - ash content - coagulation - specifications of combustion - cetane and octane number - degree of cloudiness - colorimetry - doctor's examination	How to deal with ethylene) its composition- methods of obtaining it - its uses (	6	Self assessment and colleague assessment
3	Lecture	Dripping degree - degree of completion and dryness - heat of combustion -	How to deal with propylene) its composition- methods of obtaining it - its	6	oral exams اختبارات

		number of penetration - degree of spillage - refractive index	uses (		
	Discussion and dialogue	Dripping degree - degree of completion and dryness - heat of combustion - number of penetration - degree of spillage - refractive index	How to deal with propylene) its composition- methods of obtaining it - its uses (	6	Self assessment and colleague assessment
4	Discussion and dialogue	Petroleum products (petroleum gases - gasoline - gas oil and diesel fuel - kerosene and heating oils - fuel oils - lubricating oils(	How to deal with butadiene) its composition- methods of obtaining it - its uses (	6	Self assessment and colleague assessment
	Discussion and dialogue	Petroleum products (petroleum gases - gasoline - gas oil and diesel fuel - kerosene and heating oils - fuel oils - lubricating oils(	How to deal with butadiene) its composition- methods of obtaining it - its uses (	6	Self assessment and colleague assessment
5	Lecture	Supplementation of petroleum products (oil grease - oil wax - petroleum asphalt - petroleum solvents or naphtha(	Knowing how aromatic materials and their uses in the petrochemical industries) benzene -intermediate aromatic	6	oral exams اختبارات

			compounds(		
	Lecture	Supplementation of petroleum products (oil grease - oil wax - petroleum asphalt - petroleum solvents or naphtha(	Knowledge of aromatic substances and their uses in the petrochemical industries) benzene -intermediate aromatic compounds(	6	oral exams اختبارات
6	Lecture	Petrochemical industries - natural gas (chemical composition - industrial gas production(	Knowing the most important halogen industries used in the petrochemical industries - oxidation processes in the petrochemical industries	6	Oral and written exams
	Lecture	Petrochemical industries - natural gas (chemical composition - industrial gas production(	Knowing the most important halogen industries used in the petrochemical industries - oxidation processes in the petrochemical industries	6	oral exams اختبارات
7	Discussion and dialogue	Expulsion of gases and oil stabilization in the fields - dewatering and salts - petroleum emulsions	Knowing the most important halogen industries used in the petrochemical industries - oxidation processes in the petrochemical industries	6	Self assessment and colleague assessment

8	Lecture, discussion and debate	Expulsion of gases and oil stabilization in the fields - dewatering and salts - petroleum emulsions	Knowledge of physical and chemical petroleum refining processes	6	Self assessment and colleague assessment
	Discussion and dialogue	Expulsion of gases and oil stabilization in fields - dewatering and salts - petroleum emulsions - extractive distillation(	Knowledge of physical and chemical petroleum refining processes	6	Self assessment and colleague assessment
9	And discussion and dialogue	Expulsion of gases and oil stabilization in the fields - dewatering and salts - petroleum emulsions	Knowledge of chemical processes)coking - conversion - decomposition - cracking by catalyst -catalytic reform of gasolineReforming) ((	6	Self assessment and colleague assessment
	Discussion and dialogue	Petroleum refining processes - physical processes and separation by distillation)fractional distillation - fractional distillation under vacuum pressure - azeotropic distillation - extractive	Knowledge of chemical processes)coking - conversion - decomposition - cracking by catalyst -catalytic reform of gasolineReforming) ((	6	Self assessment and colleague assessment

		distillation(			
10	Discussion and dialogue	Petroleum refining processes - physical processes and separation by distillation (fractional distillation - fractional distillation under vacuum pressure - azeotropic distillation - extractive distillation(	Knowledge of isomerization - polymerization processes	6	Self assessment and colleague assessment
	Discussion and dialogue	Petroleum refining processes - physical processes and separation by distillation)fractional distillation - fractional distillation under vacuum pressure - azeotropic distillation - extractive distillation(	How is isomerization processes - polymerization	6	Self-assessment and dialogue evaluation
11	Discussion and dialogue	Petroleum refining processes - chemical processes (thermal cracking - catalytic cracking) and the types of catalysts used	Knowledge of additions of chemical oil) additives to lubricating oils - Cleaned additions dispersive - Cleaned additions - additions resistance to erosion -	6	Self assessment and colleague assessment

			additions resistance to oxidation - additives Viscosity -discount additions -resistance to wear resistance and additions to the sculpture - the special additions		
	Discussion and dialogue	semester exam		6	Self-assessment and dialogue evaluation
12	Discussion and dialogue	Petroleum refining processes - chemical processes (thermal cracking - catalytic cracking) and the types of catalysts used	knowledge Crude oil evaluation, evaluation process steps, crude oil segmentation, modeling, modeling methods	6	Self-assessment and dialogue evaluation
	Discussion and dialogue	Petroleum refining processes - chemical processes (thermal cracking - catalytic cracking) and types of catalysts used	knowledge Crude oil evaluation, evaluation process steps, crude oil segmentation, modeling, modeling methods Freezing liquids	6	Self-assessment and dialogue evaluation
13	Discussion and dialogue	Petroleum refining operations - treatment or purification operations) purification operations of oil derivatives	Knowing the preparation of crude oil for refining and marketing	6	Self-assessment and dialogue evaluation

		(treatment with sulfuric acid - desalination - extraction of the two compounds - treatment with mud - treatment with sieves.(			
	Discussion and dialogue	Petroleum refining operations - treatment or purification operations) purification operations of oil derivatives (treatment with sulfuric acid - desalination - extraction of the two compounds - treatment with mud - treatment with sieves.(	Identifier of the stages of preparing crude oil for refinement and marketing	6	Self-assessment and dialogue evaluation
14	Discussion and dialogue	Petroleum refining operations - treatment or purification operations) purification operations of oil derivatives (treatment with sulfuric acid - desalination - extraction of the two compounds - treatment with mud - treatment	Knowledge of light petroleum derivatives) types - specifications - uses - laboratory examination of them (types of petroleum derivatives, inquiries	6	Self-assessment and dialogue evaluation

		with sieves.(			
15	Discussion and dialogue	Petroleum refining operations - treatment or purification operations) purification operations of oil derivatives (treatment with sulfuric acid - desalination - extraction of the two compounds - treatment with mud - treatment with sieves.(	Knowledge of light petroleum derivatives) types - specifications - uses - laboratory examination of them (types of petroleum derivatives, inquiries	6	Self-assessment and dialogue evaluation

11. **Infrastructure**	
	Required prescribed books
1- Characterization and Properties of Petroleum Fractions. First Edition by Riazi 2- Fundamental od Petroleum Refining. Mohammad A. Fahim , Tahir A. Alsahhaf, and Amal Elkilani 3- Petroleum Refining by Mayer	(sources) main references
Reputable international sites specialized and sober publishing sites	A recommended books and scientific) references (.... , reports , journals

discreet publishing sites	B- Electronic referencesInternet ... sites

12. Course development plan
Providing the student with available recent research as far as the topic of the lecture is concerned

Description model

This course description provides a brief summary of the most important characteristics of the course and the learning outcomes expected of the student to achieve, demonstrating whether he has made maximum use of the available learning opportunities. It must be linked to the description of the program.;

1. Educational institution	Middle Technical University ,Al KUT Technical Institution
2. Scientific Department / Center	Department of Petrochemical Technologies
3. Course name/code	**Workshop**
4. Attendance type available	mandatory
5. Semester / year	The first and second semester of the academic year 2023-2024
6. Number of hours of study (total)	(90) hours of study, 3 hours per week
7. The date this description was made	
8. Course objectives: At the end of the academic year, the student will be able to:	
1 - The student will get a general idea of the basics of working in the workshops	
2- Introducing students to the basic principles of each workshop, safety conditions, used equipment and manual tools,	
3 - The student learns about the types of models manufactured in each workshop and how the exercise model works.	
4- The student gets acquainted with the devices and equipment of each workshop, in addition to the personal equipment of the workers in each workshop	
5- Operation, extinguishing, maintenance and safety instructions for each device in each workshop	

9 - Course outcomes and methods of teaching, learning and assessment
A- Cognitive goals A1- Knows a general idea about crude oil and its derivatives A2- Know the industries related to crude oil and its derivatives A3- Knowledge of the refining and petrochemical industries A4- Familiarize the student with the phenomena and standard conditions for dealing with the flow of heat and fluids. A5- The student becomes acquainted with the testing of oil and its derivatives and their evaluation based on the results of laboratory analyzes
B - The Marathi objectives of the course. B1 - Do some laboratory experiments. B2 - Apply some simple and safe interactions about refining methods. B3 - Application of some tests on fluids and crude oil derivatives.
Teaching and learning methods
1 - Objective questions are divided into: multiple choice questions, true and false questions, or approximation questions 2 - Self-evaluation and evaluation of the colleague. 3- The tests include: A - Constructive achievement tests accompanying the teaching plans. B - Final achievement tests and include: • Monthly final exams at the end of each academic month. • Final final exams at the end of a semester. • Final final exams at the end of the academic year.
Evaluation methods
Using achievement tests: • daily • Monthly • Quarterly Final
C- Emotional and value goals C1 - Presenting new ideas on the topic by the student. C 2- The student's ability to evaluate the topic and give solutions. C 3 - differentiate between problems. C4- Explain and analyze phenomena and problems.

Teaching and learning methods
1 - Use the presentation and presentation method 2- Draw illustrations. 3 - Brainstorming method.
D - Transferred general and qualifying skills (other skills related to employability and personal development). D 1- Skills of using references and terminology. D 2 - Skills in collecting and analyzing data on the subject. D 3 - the skills of exploiting the available capabilities. D 4- Skills of making comparisons on the topic D 5 - Skills of preparing special concepts on the subject.

Course structure					
Evaluation method	education method	Name of the unit / subject	Required learning outcomes	hours	the week
1	lecture	The basics of working in the workshops - an introductory tour	Knowing the basics of workshop work	6	oral exams
	Discussion and dialogue	Joiner 's basic principles in the models , shouting model , the equipment used and the number of manual , practical training Chenkrh parts according to operational drawing.	Knowledge of the basic principles in carpentry models , shouting model , the equipment used and the number of manual ,practical training Chenkrh parts according to operational drawing.	6	Self assessment and colleague assessment
2	Discussion and dialogue	Joiner 's basic principles in the models , shouting model , the	Joiner 's models , shouting model , the equipment used and the	6	Self assessment and colleague

		equipment used and the number of manual , practical training Chenkrh parts according to operational drawing.	number of manual ,practical training Chenkrh parts according to operational drawing.		assessment
	Discussion and dialogue	Joiner 's basic principles in the models , shouting model , the equipment used and the number of manual , practical training Chenkrh parts according to operational drawing.	Joiner 's models , shouting model , the equipment used and the number of manual ,practical training Chenkrh parts according to operational drawing.	6	Self assessment and colleague assessment
3	Lecture	Joiner 's basic principles in the models , shouting model , the equipment used and the number of manual , practical training Chenkrh parts according to operational drawing.	Joiner 's models , shouting model , the equipment used and the number of manual ,practical training Chenkrh parts according to operational drawing.	6	oral exams اختبارات
	Discussion and dialogue	Metal foundry and its importance , sand mold for a one-piece model with identification of estuaries and elevators , metal smelting and casting into a mould , extraction and cleaning of castings , metal smelting furnaces , types ,	Making a sand mold for a one-piece model with the identification of estuaries and elevators , metal smelting and pouring into a mould , extraction and cleaning of castings , metal smelting furnaces , types ,	6	Self assessment and colleague assessment

		characteristics , uses ,rotary kiln , fixed dumper.	characteristics , uses , rotary kiln , fixed tipper		
4	Discussion and dialogue	Metal foundry and its importance , sand mold for a one-piece model with identification of estuaries and elevators , metal smelting and casting into a mould , extraction and cleaning of castings , metal smelting furnaces , types , characteristics , uses ,rotary kiln , fixed dumper.	Making a sand mold for a one-piece model with the identification of estuaries and elevators , metal smelting and pouring into a mould , extraction and cleaning of castings , metal smelting furnaces , types , characteristics , uses , rotary kiln , fixed dumper	6	Self assessment and colleague assessment
	Discussion and dialogue	Metal foundry and its importance , sand mold for a one-piece model with identification of estuaries and elevators , metal smelting and casting into a mould , extraction and cleaning of castings , metal smelting furnaces , types , characteristics , uses ,rotary kiln , fixed dumper.	Making a sand mold for a one-piece model with the identification of estuaries and elevators , metal smelting and pouring into a mould , extraction and cleaning of castings , metal smelting furnaces , types , characteristics , uses , rotary kiln , fixed tipper	6	Self assessment and colleague assessment
5	Lecture	Metal foundry and its importance , sand mold for a one-piece model with	Making a sand mold for a one-piece model with the identification	6	oral exams

		identification of estuaries and elevators , metal smelting and casting into a mould , extraction and cleaning of castings , metal smelting furnaces , types , characteristics , uses ,rotary kiln , fixed dumper.	of estuaries and elevators , metal smelting and pouring into a mould , extraction and cleaning of castings , metal smelting furnaces , types , characteristics , uses , rotary kiln , fixed tipper		
	Lecture	Metal foundry and its importance , sand mold for a one-piece model with identification of estuaries and elevators , metal smelting and casting into a mould , extraction and cleaning of castings , metal smelting furnaces , types , characteristics , uses ,rotary kiln , fixed dumper.	Making a sand mold for a one-piece model with the identification of estuaries and elevators , metal smelting and pouring into a mould , extraction and cleaning of castings , metal smelting furnaces , types , characteristics , uses , rotary kiln , fixed tipper	6	oral exams
6	Lecture	Uses of files , the method of cleaning files , the cold process , an exercise on a scissor and simple filings , the process of tamping , the process of drilling and grooving ,the grinder.,	Knowledge of the uses of files , the method of cleaning files , the cold process , an exercise on a scissor and simple filings , the process of tamping ,the process of drilling and	6	oral exams

			grooving , the grinder .,		
	Lecture	Uses of files , the method of cleaning files , the cold process , an exercise on a scissor and simple filings , the process of tamping , the process of drilling and grooving ,the grinder.,	Knowledge of the uses of files , the method of cleaning files , the cold process , an exercise on a scissor and simple filings , the process of tamping ,the process of drilling and grooving , the grinder .,	6	oral exams
7	Lecture	Uses rasps , cleaning method rasps , the process of cold , exercise on Chenkrh simple and refrigerator , the process of eutrophication , the hole process and granulation , Alqlaz .,	Knowledge of the uses of files , the method of cleaning files , the cold process , an exercise on a scissor and simple filings , the process of tamping ,the process of drilling and grooving , the grinder .,	6	Oral and written exams
	Lecture	Uses of files , the method of cleaning files , the cold process , an exercise on a scissor and simple filings , the process of tamping , the process of drilling and grooving ,the grinder.,	Knowledge of the uses of files , the method of cleaning files , the cold process , an exercise on a scissor and simple filings , the process of tamping ,the process of drilling and	6	oral exams

			grooving , the grinder .,		
8	Discussion and dialogue	Occupational safety and security precautions : gas welding , the equipment used and how to install , practical training , welding surfaces opposite , perpendicular surfaces , oblique surfaces , welding circle , cut longitudinal and accidental , training on welding arc protected gas)TIG,MIG(	Knowledge of occupational safety and security precautions : gas welding , the equipment used and how to install , practical training , welding surfaces opposite , surfaces perpendicular , oblique surfaces , welding circle , cut longitudinal and accidental , training on welding arc protected gas) TIG,MIG(	6	Self assessment and colleague assessment
	Discussion and dialogue	Occupational safety and security precautions : gas welding , the equipment used and how to install , practical training , welding surfaces opposite , perpendicular surfaces , oblique surfaces , welding circle , cut longitudinal and accidental , training on welding arc protected gas)TIG,MIG(	Knowledge of occupational safety and security precautions : gas welding , the equipment used and how to install , practical training , welding surfaces opposite , surfaces perpendicular , oblique surfaces , welding circle , cut longitudinal and accidental , training on welding arc protected gas)	6	Self assessment and colleague assessment

			TIG,MIG(		
9	Lecture, discussion and debate	Occupational safety and security precautions : gas welding , the equipment used and how to install , practical training , welding surfaces opposite , perpendicular surfaces , oblique surfaces , welding circle , cut longitudinal and accidental , training on welding arc protected gas)TIG,MIG(	Knowledge of occupational safety and security precautions : gas welding , the equipment used and how to install , practical training , welding surfaces opposite , surfaces perpendicular , oblique surfaces , welding circle , cut longitudinal and accidental , training on welding arc protected gas) TIG,MIG(	6	Self assessment and colleague assessment
	Discussion and dialogue	Occupational safety and security precautions : gas welding , the equipment used and how to install , practical training , welding surfaces opposite , perpendicular surfaces , oblique surfaces , welding circle , cut longitudinal and accidental , training on welding arc protected gas)TIG,MIG(	Knowledge of occupational safety and security precautions : gas welding , the equipment used and how to install , practical training , welding surfaces opposite , surfaces perpendicular , oblique surfaces , welding circle , cut longitudinal and accidental , training on welding arc protected gas) TIG,MIG(	6	Self assessment and colleague assessment

10	And discussion and dialogue	Occupational safety and security precautions : gas welding , the equipment used and how to install , practical training , welding surfaces opposite , perpendicular surfaces , oblique surfaces , welding circle , cut longitudinal and accidental , training on welding arc protected gas)TIG,MIG(	Knowledge of occupational safety and security precautions : gas welding , the equipment used and how to install , practical training , welding surfaces opposite , surfaces perpendicular , oblique surfaces , welding circle , cut longitudinal and accidental , training on welding arc protected gas) TIG,MIG(	6	Self assessment and colleague assessment
	Discussion and dialogue	Pallet bending cutting equipment , machine rolling , machine grooves and manual number , use BENDING pallet manually , Dezrh normal , the menu and the method of drawing , simple Alanfradat , calculate Anfradat triggers broken and missing , training at the expense of private operators cross , the work of an exercise for the cylinders crossbones ,Anfradat cone and	Knowledge of cutting equipment Pallet bending , machine rolling , machine grooves and manual number , use BENDING pallet manually , Dezrh normal , the menu and the method of drawing , simple Alanfradat , calculate Anfradat triggers broken and missing , training at the expense of private operators cross , the work of an	6	Self assessment and colleague assessment

		cone minus.	exercise for the cylinders crossbones , Anfradat cone and cone imperfect .		
11	Discussion and dialogue	Pallet bending cutting equipment , machine rolling , machine grooves and manual number , use BENDING pallet manually , Dezrh normal , the menu and the method of drawing , simple Alanfradat , calculate Anfradat triggers broken and missing , training at the expense of private operators cross , the work of an exercise for the cylinders crossbones ,Anfradat cone and cone minus.	Knowledge of cutting equipment Pallet bending , machine rolling , machine grooves and manual number , use BENDING pallet manually , Dezrh normal , the menu and the method of drawing , simple Alanfradat , calculate Anfradat triggers broken and missing , training at the expense of private operators cross , the work of an exercise for the cylinders crossbones , Anfradat cone and cone imperfect .	6	Self assessment and colleague assessment
	Discussion and dialogue	Pallet bending cutting equipment , machine rolling , machine grooves and manual number , use BENDING pallet manually , Dezrh normal , the menu and the method of	Knowledge of cutting equipment Pallet bending , machine rolling , machine grooves and manual number , use BENDING pallet manually , Dezrh	6	Self-assessment and dialogue evaluation

		drawing , simple Alanfradat , calculate Anfradat triggers broken and missing , training at the expense of private operators cross , the work of an exercise for the cylinders crossbones ,Anfradat cone and cone minus.	normal , the menu and the method of drawing , simple Alanfradat , calculate Anfradat triggers broken and missing , training at the expense of private operators cross , the work of an exercise for the cylinders crossbones , Anfradat cone and cone imperfect .		
12	Discussion and dialogue	Pallet bending cutting equipment , machine rolling , machine grooves and manual number , use BENDING pallet manually , Dezrh normal , the menu and the method of drawing , simple Alanfradat , calculate Anfradat triggers broken and missing , training at the expense of private operators cross , the work of an exercise for the cylinders crossbones ,Anfradat cone and cone minus.	Knowledge of additions of chemical oil) additives to lubricating oils - Cleaned additions dispersive - Cleaned additions -additions resistance to erosion - additions resistance to oxidation - additives Viscosity -discount additions - resistance to wear resistance and additions to the sculpture - the special additions	6	Self assessment and colleague assessment
	Discussion and	Pallet bending cutting equipment ,	Knowledge of cutting equipment	6	Self-assessment

	dialogue	machine rolling , machine grooves and manual number , use BENDING pallet manually , Dezrh normal , the menu and the method of drawing , simple Alanfradat , calculate Anfradat triggers broken and missing , training at the expense of private operators cross , the work of an exercise for the cylinders crossbones ,Anfradat cone and cone minus.	Pallet bending , machine rolling , machine grooves and manual number , use BENDING pallet manually , Dezrh normal , the menu and the method of drawing , simple Alanfradat , calculate Anfradat triggers broken and missing , training at the expense of private operators cross , the work of an exercise for the cylinders crossbones , Anfradat cone and cone imperfect .		and dialogue evaluation
13	Discussion and dialogue	The cone and its specifications, uses, accessories and installation methods ,the operation of the cone , the types of cone pens using each of them , turning operations , flat turning , straightening , the work of the center , the work of a simple graduated exercise , the use of measuring tools , maps of the	Knowledge of the cone and its specifications, uses, accessories and installation methods , the operation of the cone , the types of cone pens using each of them , turning operations ,flat turning , straightening , the work of the center ,the work of a simple graduated	6	Self-assessment and dialogue evaluation

		external drawer in different ways with an explanation of the laws of each method ,work An exercise for the external method , cutting speeds , choosing them, and using their tables.	exercise , the use of measuring tools ,maps of the external drawer		
	Discussion and dialogue	The cone and its specifications, uses, accessories and installation methods ,the operation of the cone , the types of cone pens using each of them , turning operations , flat turning , straightening , the work of the center , the work of a simple graduated exercise , the use of measuring tools , maps of the external drawer in different ways with an explanation of the laws of each method ,work An exercise for the external method , cutting speeds , choosing them, and using their tables.	Cone and its specifications, uses, accessories and installation methods , operating the cone ,types of cone pens using each of them , turning operations , flat turning , straightening , center work , making a simple runway exercise , using measuring tools , maps of the external drawer	6	Self-assessment and dialogue evaluation
14	Discussion and dialogue	The cone and its specifications, uses, accessories and	Cone and its specifications, uses, accessories	6	Self-assessment and

		installation methods ,the operation of the cone , the types of cone pens using each of them , turning operations , flat turning , straightening , the work of the center , the work of a simple graduated exercise , the use of measuring tools , maps of the external drawer in different ways with an explanation of the laws of each method ,work An exercise for the external method , cutting speeds , choosing them, and using their tables.	and installation methods , operating the cone ,types of cone pens using each of them , turning operations , flat turning , straightening , center work , making a simple runway exercise , using measuring tools , maps of the external drawer		dialogue evaluation
	Discussion and dialogue	The cone and its specifications, uses, accessories and installation methods ,the operation of the cone , the types of cone pens using each of them , turning operations , flat turning , straightening , center work , the work of a simple graduated exercise , the use of measuring tools , maps of the external	Cone and its specifications, uses, accessories and installation methods , operating the cone ,types of cone pens using each of them , turning operations , flat turning , straightening , center work , making a simple runway exercise , using measuring	6	Self-assessment and dialogue evaluation

		drawer in different ways with an explanation of the laws of each method ,work An exercise for the external method , cutting speeds , choosing them, and using their tables.	tools , maps of the external drawer		
15	Discussion and dialogue	Implementation of training on what was previously studied	A joint exercise through which all workshops are used	6	Self-assessment and dialogue evaluation
	Discussion and dialogue	Implementation of training on what was previously studied	A joint exercise through which all workshops are used	6	Self-assessment and dialogue evaluation

10. Infrastructure	
1. Required prescribed books	
2. main references) A set of specialized books	A set of specialized books
3. A recommended books and references) scientific journals , reports (.... ,	Reputable international sites specialized and sober publishing sites مواقع
4. Electronic references , Internet sites...	discreet publishing sites

11. course development plan
Providing the student with available recent research as far as the topic of the lecture is concerned .

Description model

Course Instructor					
Title	Computer application/1				
Course Objective	1 - Teaching the student on the calculator and the use of their applications. How to surf online..				
Course Description	Readings of the accounting cycle - readings on financial statements				
Textbook	Innovative material				
References	Various sources				
Course Assessment	Term Tests	Laboratory	Quizzes	Project	Final Exam
	As (35%)	As (15%)	As (10%)	----	As (40%)
General Notes					

Course weekly Outline

week	Topics Covered	Lab. Experiment Assignments	Notes
1	Computer components and computer parts	Computer components and computer parts	
2	Computer components and computer parts	Computer components and computer parts	
3	Windows	Windows	
4	Windows	Windows	
5	Windows	Windows	

6	Windows	Windows	
7	Windows	Windows	
8	Windows	Windows	
9	Windows	Windows	
10	Windows	Windows	
11	Windows	Windows	
12	Windows	Windows	
13	Computer Ethics	Computer Ethics	
14	Computer Ethics	Computer Ethics	
15	Word processing	Word processing	
16			
17	Word processing	Word processing	
18	Word processing	Word processing	
19	Word processing	Word processing	
20	Word processing	Word processing	
21	Word processing	Word processing	
22	Word processing	Word processing	
23	Word processing	Word processing	
24	Word processing	Word processing	
25	Word processing	Word processing	
26	Word processing	Word processing	
27	Internet	Internet	
28	Internet	Internet	
29	Internet	Internet	
30	Internet	Internet	

Description model

Ammar Issa Naji

This course description provides a brief summary of the most important characteristics of the course and the learning outcomes expected of the student to achieve, demonstrating whether he has made maximum use of the available learning opportunities. It must be linked to the description of the program.

1. Educational institution	Middle Technical University ,Al KUT Technical Institution
2. Scientific Department / Center	Department of Petrochemical Techniques
3. Course name/code	**Corrosion**
4. Attendance type available	Mandatory
5. Semester / year	The first and second semester of the academic year 2023-2024
6. Number of hours of study (total)	(60) hours of study, 1 hours per week
7. The date this description was made	2024/3/7
8. Course objectives: At the end of the academic year, the student will be able to:	
1 – the student will be able to Acquire the skills of dealing and understanding the corrosion process that occurs to metals.	
2- The student will be able to understand the important terms in corrosion.	
3 - The student will be able to distinguish the effect of corrosion on industrial	

facilities, the reasons for corrosion and its types, chemical and electrochemical reactions that occur as a result of corrosion.
4- The student will be able to perfect processes to protect the metal from corrosion or the methods used to avoid corrosion.

9- Course outcomes and methods of teaching, learning and assessment
A- Cognitive goals A1- Defines the concept of corrosion and the terms associated with it. A2- Explains the damages and causes of corrosion and how to combat it. A3- Shows the effect of corrosion from an industrial point of view A4- Explains the factors affecting the corrosion of the metal. A5 - Explains ways to protect the metal from corrosion. A6- Explains the effective methods for examining corrosion and its measurement methods and indications.
B - The Marathi objectives of the course. B1 - Understand the process of corrosion and the reasons for its occurrence. B2 - Analyze damages caused by corrosion of metals. B3 - Compare the effect of corrosion from one metal to another. B - Communication and delivery skills.
Teaching and learning methods
1 - Objective questions are divided into: multiple choice questions, true and false questions, or approximation questions 2 - Self-evaluation and evaluation of the colleague. 3- The tests include: A - Constructive achievement tests accompanying the teaching plans. B - Final achievement tests and include: • Monthly final exams at the end of each academic month. • Final final exams at the end of a semester. • Final final exams at the end of the academic year.
Evaluation methods
4. Using achievement tests: • daily • Monthly • Quarterly Final

C- Emotional and value goals C1 - Presenting new ideas on the topic by the student. C 2- The student's ability to evaluate the topic and give solutions. C 3 - differentiate between problems. C4- Explain and analyze phenomena and problems.
Teaching and learning methods
1 – Use the Google Apps like, Google meet, Zoom Claud meeting, Class room. Use the presentation and presentation method 2- Draw illustrations. 3 - Brainstorming method.
D - Transferred general and qualifying skills (other skills related to employability and personal development). D 1- Skills of using references and terminology. D 2 - Skills in collecting and analyzing data on the subject. D 3 - the skills of exploiting the available capabilities. D 4- Skills of making comparisons on the topic D 5 - Skills of preparing special concepts on the subject.

Course structure .					
The week	education method	or / Unit name and topic	Required learning outcomes	hours	Evaluation method
1	lecture	Corrosion, its definition Important terms: anode, cathode, ion, positive ion, negative ion, electrolytic medium, dielectric junction, conductor, polarization, .electrochemical chain	Understand the concept of corrosion and the important terms associated with it	1	oral exams
2	Discussion and dialogue	Dry column, Faraday's law, cathode and elevator, types of .electrochemical cells	Learn about Faraday's law and the types of electrochemical cells	1	Self assessment and colleague assessment
3	Discussi	Corrosion damage, and	Identify the damage	1	Self

	on and dialogue	the reasons for combating it Effect of corrosion on industrial aspects, direct and indirect .corrosion costs	caused by corrosion and how to combat it		assessment and colleague assessment
4	Discussion and dialogue	Corrosion mechanics, corrosion conditions, .corrosion occurrence	Understand the mechanics of corrosion and its conditions	1	Self assessment and colleague assessment
5	Lecture	Corrosives, types of corrosion, general corrosion, galvanic corrosion, inter-gap .corrosion	Identify corrosive substances and their types	1	oral exams
6	Discussion and dialogue	The corrosion by Click, selective corrosive, mechanical corrosive, underwater corrosive.	Identify the corrosion accrues under water	1	Self assessment and colleague assessment
7	Discussion and dialogue	Sediment erosion, intergranular erosion, .stress erosion	Identifying sediment erosion	1	Self assessment and colleague assessment
8	Discussion and dialogue	Thermodynamics and Electrochemical :Equilibrium Chemical and Electrochemical Reactions, Van Hoof Equation	Learn about dynamics, electrochemical equilibrium, and the Van Hoof equation	1	Self assessment and colleague assessment
9	Lecture	The relationship between potential difference and pH, chemical reaction direction, electromotive force	Finding the relationship between potential difference, pH and direction of chemical reaction	1	oral exams

		and electrochemical .series			
10	Lecture	Factors affecting the occurrence of metal corrosion: graph of pH and potential difference, comparison .electrode	Detection of the factors affecting and contributing to the occurrence of corrosion of the metal	1	oral exams
11	Lecture	The relationship between potential difference and current strength, corrosion .rate	Understand the kinetics of chemical reactions and apply the relationship between voltage and current	1	oral exams
12	Lecture	Cathodic Protection, Anodic Protection, Coating, Corrosion Prevention, Fitting Design	Learn how to protect metal from corrosion	1	oral exams
13	Lecture	Metal quality, corrosion medium, coverage	Identify the quality of the metal and the medium of corrosion	1	Oral and written exams
14	Lecture	Visual inspection, lost weight determination method, full polarization, AC resistance, corrosion meter, X-ray qualitative analysis, Signs of onset of erosion, change of medium voltage	Learn about methods of inspection or examination for corrosion	1	oral exams
15	Discussion and dialogue	Choosing the protection system, special survey work, and measuring devices. Measurement Methods:	Identify the measurement work and choose the anti-corrosion system	1	Self assessment and colleague assessment

		Measurement Guides			

10- Infrastructure	
1.Required prescribed books	
2. (sources) main references	- Corrosion control, Samuel A. Bradford Corrosion control and surface 2-.finishing, Hideyuki Kanematsu 3 - .Corrosion of Metals, Kaesche 4 - Corrosion processes, George Vachtsevanos 5- Applied Materials Science Corrosion, Saudi Development Institute
3. A recommended books and reference	Reputable international sites specialized and Higher publishing sites
4- Electronic references , Internet sites ...	discreet publishing sites

11- Course development plan
Providing the student with available recent research as far as the topic of the lecture is concerned

Description model

Mortadha Kareem Abdulrazzaq

This course description provides a brief summary of the most important characteristics of the course and the learning outcomes expected of the student to achieve, demonstrating whether he has made maximum use of the available learning opportunities. It must be linked to the description of the program.

1. Teaching Institution	Middle Technical University Technical Institute / kut
2. University Department/Centre	Department of Petrochemical Techniques- First year
3. Course title / code	**Mathematics Applied**
4. Program me (s) to which it contributes	Department
5. Modes of Attendance offered	Attend mandatory weekly
6. Semester / Year	Academic year 2023- 2024
7. Number of hours tuition (total)	2theory * 15 weeks = 30 hours Faculty
8. Date of production/revision of this specification	7/3/2024
9. Aims of the Course	
1) understand the key concepts and knowledge of the rules and the laws of Mathematics applied	
2) Illustrate mathematical ideas through the representation of geometric shapes in both The level and the leisure and study some of the algebraic structure	

3) The subject of mathematics that are designed to clarify the practical and philosophical Challenges of the current engineering and mathematics that spurred this constant evolution , as well as providing basic concepts of differentiation and integration useful for further study of the science of engineering and applied mathematics in the scientific and practical field

4) Students acquire the skills to resolve issues.

10. Learning Outcomes, Teaching, Learning and Assessment Methods

A. Knowledge and Understanding

A1. recgnize the fundamental concepts of mathematics and application
A2. expand the perceptions of students and promote concept of mathematics by giving them general principles and concepts of matrices second degree equation differentiation integration drawing curves area
A3. recognizes the application of the concepts of mathematics applied

B. Subject-specific skills

B1.Adetailed study of mathematics .
B2.knowledge of mathematical relationships that represent types of algebraic functions and painted
B3.knowledge of the laws of finding the derivative with the profile and return to the basic function of the impact drone ties of integration
B4. Technical preparation to be successful art by learning the correct principles to allocate cars and the application of mathematical relationships solving problems

Teaching and Learning Methods

.The teaching lectured detailed theory.
.The teaching request periodic reports for the international information network (the internet) to get extra knowledge for subjects

Assessment methods

.Assess students individually by giving the opportunity to participate through classroom answering questions.

.Student Assessment collectively through daily exams quizzed process and theory

. Student Assessment collectively by giving extra – curricular duties such writing reports or those that concerning

. The end of the first semester exams (half a year) and the second chapter and final exams for the first round and the second

C. Thinking Skills

C1.Urged the students to think of ways to solve simultaneous equations and drawing functions of all kinds.

C2. Urged the students to think about the importance of the derivative and integration applications in slaying engineering problems .

C3. Urged students to integrate the know edge of where to take advantage of sports information in the fiends other study theory and practice and the adoption of subjects on each other

C4. Urged the students to gain a glowing skills for mathematics in terms of language and symbols information and ways of thinking analysis of the results of resolving issues and compare them with the reality and extent of the mentally make them match

Teaching and Learning Methods

The definition of teaching students the most important key applications mathematical equations in various space technologies in theory and practice .

. Give students and duties do not require them to make descriptive skills and subjective interpretations of test methods

. Questioning the student through panel discussions by asking questions the thinking (how, why, when, where,) for specific topics

. Using the style – minded brainstorming and feedback in order to activate the accumulated experiences of the students by linking what was taken from subjects in the previous academic stages and linked to new

Assessment methods

Assessment is based on

1.The first chapter exam (20% Theory) 2.

2. Chapter H exam (20% Theory)

3. Acts of the year (10%) is taken into account attendance attendance and participation

4- Final exam (50% T) first – round and second round .

D. General and Transferable Skills (other skills relevant to employability and personal development)

D1. Enable students to writing duties on special topics textured mathematics

D2. Enable students to solve algebraic equations in eluding matching can practice for communication systems

D3. Enable students to pass the professional tests organized by local or international destinations

D4. Enable students of continuous self- development of the post – graduation

D5. Develop the students ability to analyze the information and interpret the data obtained by conducting practical experiments

D6. Enable the student to hold identify problems that lies on the shoulders of art in the field survey

Teaching and Learning

. Preparation and implementation of research projects by students within the automotive technology department vocabulary enter math applications and display in the student center

. Math vocabulary development and updating to keep up with the evolution to achieve personal development level of students

Assessment Methods

. Discuss research and projects by the scientific committees in the department

. Written tests

. Direct observations

Course Structure					
Week	Hours	ILOs	Unit/Module or Topic Title	Teaching Method	Assessment Method
1	2	The student will be able to understand the lesson	Matrices, defined kinds, operations on matrices , adding and subtracting and multiplication	Lecture theory	Discuss and solve exercises, fast exam and homework
2	4	The student will be able to understand the lesson	Determinants ,defined, How to calculate specified bilateral , tripartite, Solving linear equations(The way Kramer)	Lecture theory	Discuss and solve exercises, fast exam and homework
3	4	The student will be able to understand the lesson	Vector , vector analysis and vector quantities , calculations on vectors, scalar multiplication and cross product	Lecture theory	Discuss and solve exercises, fast exam and homework
4	4	The student will be able to understand the lesson	Logarithms, define logarithm , the laws of logarithms , how to use laws in logarithmic equations solution , solving exponential equations	Lecture theory	Discuss and solve exercises, fast exam and homework
5	4	The student will be able to understand the lesson	Function , the meaning of the function , the independent variable and adopted, The clear function and implicit function , trigonometry and the relationship between them , very very odd functions and	Lecture theory	Discuss and solve exercises, fast exam and homework

			trigonometric		
6	8	The student will be able to understand the lesson	differentiation, derivative, geometric definition of derivative, laws of direct derivation of algebraic functions, chain rule, implicit function, derivative of exponential function, derivative of logarithmic function, derivative of trigonometric function	Lecture theory	Discuss and solve exercises, fast exam and homework
7	4	The student will be able to understand the lesson	Derivatives of higher echelons and partial derivatives	Lecture theory	Discuss and solve exercises, fast exam and homework
8	4	The student will be able to understand the lesson	Applications of the derivative ,equation of the straight line , the slope of the tangent line and column , speed and acceleration	Lecture theory	Discuss and solve exercises, fast exam and homework
9	6	The student will be able to understand the lesson	Integration (indefinite integral) integration of algebraic functions exponential and logarithmic functions trigonometric functions	Lecture theory	Discuss and solve exercises, fast exam and homework
10	4	The student will be able to understand the lesson	Integration methods , (retail method and method of partial fractions	Lecture theory	Discuss and solve exercises, fast exam and homework

11	6	The student will be able to understand the lesson	Indefinite integral , the specified integration applications , the area between curve and axes , area between two curves	Lecture theory	Discuss and solve exercises, fast exam and homework
12	2	The student will be able to understand the lesson	Differential equations of the first order and first class reunions	Lecture theory	Discuss and solve exercises, fast exam and homework
13	4	The student will be able to understand the lesson	Census , statistical processes and frequency distributions , histogram frequency curve arithmetic mean and geometric mean	Lecture theory	Discuss and solve exercises, fast exam and homework
14- 15	4	The student will be able to understand the lesson		Lecture theory	Discuss and solve exercises, fast exam and homework

12. Infrastructure	
The required textbooks	Institute library for additional sources
Main references(Sources)	George B. Thomas , Jr., Thomas Calculus , 12 th edition ,Addison Wesley , Pearson Education , Inc , 2010
Recommended reference books (Scientific magazines reports)	All scientific journals related to applied mathematics
Electronic references and internet sites	Web sites related to the mathematics

Course weekly Outline

human rights

week	Topics Covered	Lab. Experiment Assignments	Notes
1	human rights		
	Human Rights in Civilizations		
2	Human Rights in Middle Ages		
	Human rights in schools and schools		
3	Human rights in companies		
	Human rights in modern history		
4	International recognition		
	Regional recognition		
5	European Convention		
	American Convention		
6	African Convention		
	The Arab Charter		
7	Non-governmental organizations		
	Relationship between rights		
8	World Declaration		
9	Determination of liability		
	Litigation		
10	Areas of competence		

	Legal jurisdiction		
11	Bargaining		
	Democracy		
12	Classification of freedoms		
	Intellectual freedoms		
13	Individual freedoms		
	Freedom of associations		
14	Right to work		
	Capitalism		
15	Socialism		
	Contents of the Constitution		

Description model

Saddam Hassan

This course description provides a brief summary of the most important characteristics of the course and the learning outcomes expected of the student to achieve, demonstrating whether he has made maximum use of the available learning opportunities. It must be linked to the description of the program.;

1- Educational institution	Middle Technical University ,Al KUT Technical Institution
2- Scientific Department / Center	Department of Petrochemical Techniques
3- Course name/code	**English Language/1**
4- Attendance type available	
5- Semester / year	The first and second semester of the academic year 2023-2024
6- Number of hours of study (total)	(15) hours of study, 1 hours per week
7- The date this description was made	2024/3/7
8. Course objectives: At the end of the academic year, the student will be able to:	
1 - The student learns about the Basic or Beginner English Language	
2- The student will be able to understand the primaries of grammars , reading and writing of English Language	
3 - The student learns a little speaking or conversation in English Language	

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

A- Cognitive goals A1- Knows a essentials of grammars. A2- Knows the conversation in English Language. A3- Understands all unites related with the new headway beginner student's book. A4- Understands speaking or talking with other people at first level.
B - The Marathi objectives of the course. B1 - It applies some grammars essentials and comfortable with suitable sentences. B2 - Apply some simple ways about reading and writing in English Language. B3 - Application of some tests which related with the book .
Teaching and learning methods
1 - Objective questions are divided into: multiple choice questions, true and false questions, or approximation questions 2 - Self-evaluation and evaluation of the colleague. 3- The tests include: A - Constructive achievement tests accompanying the teaching plans. B - Final achievement tests and include: • Monthly final exams at the end of each academic month. • Final final exams at the end of a semester. • Final final exams at the end of the academic year.
Evaluation methods
4- Using achievement tests: • daily • Monthly • Quarterly Final
C- Emotional and value goals **C1 - Presenting new ideas on the topic by the student.** **C 2- The student's ability to evaluate the topic and give solutions.** **C 3 - differentiate between problems.** **C4- Explain and analyze phenomena and problems.**
Teaching and learning methods
1 – Use the Google Apps like, Google meet, Zoom Claud meeting, Class room. Use the presentation and presentation method 2- Draw illustrations. 3 - Brainstorming method.

D - Transferred general and qualifying skills (other skills related to employability and personal development). D 1- Skills of using references and terminology. D 2 - Skills in collecting and analyzing data on the subject. D 3 - the skills of exploiting the available capabilities. D 4- Skills of making comparisons on the topic D 5 - Skills of preparing special concepts on the subject.

Course structure					
The week	education method	/ Unit name and or topic	Required learning outcomes	hours	Evaluation method
1	lecture	Unit one: hello Am\are\is ,my\your This is With practice in work	The student will be able to understand the lesson	1	oral exams
2	Discussion and dialogue	Unit two : your world He\she\they, his\her Questions	The student will be able to understand the lesson	1	Self assessment and colleague assessment
3	Discussion and dialogue	Unit three: all about	The student will be able to understand the lesson	1	Self assessment and colleague assessment
4	Discussion and dialogue	Unit four: family and friends Possessive adjectives Possessives Has\have - Adjective+noun	The student will be able to understand the lesson	1	Self assessment and colleague assessment

5	Lecture	UNIT Five: the way l live Present simple I \you\we\they A and An Adjective + noun	The student will be able to understand the lesson	1	oral exams
6	Discussion and dialogue	Unit six: every day Present simple he\she Questions and negatives Adverbs of frequency	The student will be able to understand the lesson	1	Self assessment and colleague assessment
7	Discussion and dialogue	Unit seven: my favorites Question words Pronouns This and that	The student will be able to understand the lesson	1	Self assessment and colleague assessment
8	Discussion and dialogue	Unit eight: where l live There is\are Prepositions	The student will be able to understand the lesson	1	Self assessment and colleague assessment
9	Lecture	Unit nine: times past Was\were born Past simple-irregular verbs	The student will be able to understand the lesson	1	oral exams
10	Lecture	Unit ten: we had a great time Past simple-regular and irregular Question Negatives Ago	The student will be able to understand the lesson	1	oral exams
11	Lecture	Unit eleven: I	The student will	1	oral exams

		can do that Can |can't Adverbs - Requests	be able to understand the lesson		
12	Lecture	Unit twelve: please and thank you I'd like… Some and any Like and would like	The student will be able to understand the lesson	1	oral exams
13	Lecture	Unit thirteen: here and now Present simple and present continuous	The student will be able to understand the lesson	1	Oral and written exams
14	Lecture	Unit fourteen: it's time to go Future plans	The student will be able to understand the lesson	1	oral exams
15	Discussion and dialogue	Revision writing email and informant letter	The student will be able to understand the lesson	1	Self assessment and colleague assessment

10- Infrastructure	
The new headway beginner student's book	Required prescribed books 1
	) main references 2 (sources
Reputable international sites specialized and Higher publishing sites	A recommended books and references , scientific journals) (.... , reports

https://elt.oup.com/catalogue/items/global/adult_courses/headway/beginner/9780194524223 http://www.new-headway.com/new-headway-beginner.html. discreet publishing sites	B- Electronic Internet , references ... sites

11- course development plan
Providing the student with available recent research as far as the topic of the lecture is concerned

Second Stage

Description model

This course description provides a brief introduction to the student's introduction to the basics of the phenomena of material transport in its gaseous, liquid and solid states, and the relationships and laws that govern them.

1. Educational Institution	Central Technical University - Kot Technical Institute
2. Scientific Department / Center	Petrochemical Technology Department
3. Name / Course Icon	**Mass Transfer**
4. Forms of attendance available	Is mandatory
5. Semester/year	The first and second semester of the academic year 2023-2024
6. Number of hours of study (total)	(120) hours of study, 4 hours per week
7. Date of preparation of this description	7/3/2024
1. Course objectives: At the end of the academic year, the student will be able to:	
1. Brief introduction to laboratory environment, safety, materials and equipment	
2. Enumerates the methods of liquid transmission	
3. Assess the pressure drop in absorption and absorption columns	
4. Enumerate the methods of liquid mixture separation	
5. Demonstrates methods for liquefying solid gases	

9- **Course outcomes and methods of teaching, learning and assessment**
A- Cognitive goals A1- The student knows the concept of mass transfer. A2-Explains to the student the mechanism of mass transfer A3- Shows the basics of the mass transfer process, concentrations, velocities, mass and molar flows A4- Explains to the student the most important laws of gas diffusion. A5- It gives the student practical examples of mass transfer**.**
B - Skills objectives of the course. B1 - Gather information on everything related to mass transfer. B2 - Analyze the causes of these problems. B3 - Compare past and present experiences. B - Communication and delivery skills**.**
Teaching and learning methods
1- Objective questions are divided into: multiple choice questions, true and false questions, or approximation questions **2**- Self-evaluation and evaluation of the colleague**.** The tests include**:** A - Constructive achievement tests accompanying the teaching plans**.** B - Final achievement tests and include**:** ●Monthly final exams at the end of each academic month**.** ●Final final exams at the end of a semester**.** Final final exams at the end of the academic year**.**
Evaluation methods
1- Using achievement tests**:** ●daily ●monthly ●Quarterly final
C- Emotional and value goals C1 - Presenting new ideas about the topic by the student. C 2- The student's ability to evaluate the topic and give solutions. C 3 - differentiate between problems. C4 - Explains and analyzes phenomena and problems**.**

Teaching and learning methods
1 - Use the presentation and presentation method. 2- Draw illustrations. **3**- Brainstorming method**.**
D - Transferred general and qualifying skills (other skills related to employability and personal development). D 1- Skills of using references and terminology. D 2 - Skills in collecting and analyzing data on the subject. D 3 - the skills of exploiting the available capabilities. D 4- Skills of making comparisons on the topic D 5- Skills of preparing special concepts about the subject**.**

10- Course structure					
The week	Education method	Unit name and/or topic	Required learning outcomes	hours	Evaluation method
1-4	lecture	1- Basics of the mass transfer process. 2- Concentration. 3- speeds, -4Mass and molar flows	Fundamentals of mass transfer processes, concentrations, velocities, mass & molar fluxes	16	oral test
5-9	Discussion and dialogue	1- Diffusion gaseous diffusion. 2- Fic's first law for publication. 3- Diffusion in gas mixtures,	Diffusion in binary gaseous Fick's first law of diffusion. Diffusion in gas mixtures, Equimolecular diffusion, diffusion in stationary layer. Correlations, to calculate diffusivity, correcting diffusivity	20	Self evaluation and peer evaluation

10-15	Discussion and dialogue	Gas and liquid absorption and equilibrium	Absorption, equilibrium of gas and liquid - Packed tower - Tray tower	24	Self evaluation and peer evaluation
16		semester exam	semester exam	4	A written test
17-21	Discussion and dialogue	extraction	Extraction	20	Self evaluation and peer evaluation
22-29	lecture	Purification	Leaching	16	oral test
30	lecture	Distillation, vapor and liquid equilibrium, wave distillation, continuous distillation.	Distillation, vapor-liquid equilibrium, flash distillation, Continuous distillation (binary system)	4	oral test

11-course development plan
Providing the student with a systematic book that helps him with references and making the course study for a whole year, not for one semester

Description model

Zaman Khalil Ibrahim

This course description provides a brief summary of the most important basics of heat transfer, the most important types of heat exchangers and their industrial applications, the most important types of insulators and methods of use

1. Educational institution	Middle Technical University ,Al KUT Technical Institution
2. Scientific Department / Center	Department of Petrochemical Technologies

3. Course name/code	**Heat transfer**
4. Attendance type available	Mandatory
5. Semester / year	The first and second semester of the academic year 2021-2020
6. Number of hours of study (total)	(120) hours of study, 4 hours per week
7. The date this description was made	06/12/2021
8- Course objectives:	
1. The student knows the basics of temperature	
2. The student knows thermal conductivity	
3. The student knows the transfer of heat by radiation	
4. Familiarizes students with heat exchangers	

9 - Course outcomes and methods of teaching, learning and assessment
A Cognitive goals A1- Know the concept of heat and its transmission methods. A2- Explain to the student the thermal conductivity A3- Shows the student the content of heat transfer by radiation A4- Explains to the student the development of heat exchangers.
B - The Marathi objectives of the course. B1 - Gather information on thermal conductivity. B2 - Analyze the causes of these problems. B3 - compare past and present experiences. B - Communication and delivery skills.
Teaching and learning methods
1 - Objective questions are divided into: multiple choice questions, true and false questions, or approximation questions 2 - Self-evaluation and evaluation of the colleague. 3- The tests include: A - Constructive achievement tests accompanying the teaching plans. B - Final achievement tests and include: • Monthly final exams at the end of each academic month.

• Final final exams at the end of a semester. • Final final exams at the end of the academic year.
Evaluation methods
Using achievement tests: • daily • Monthly • Quarterly Final
C- Emotional and value goals C1 - Presenting new ideas on the topic by the student. C 2- The student's ability to evaluate the topic and give solutions. C 3 - differentiate between problems. C4- Explain and analyze phenomena and problems.
Teaching and learning methods
1 - Use the presentation and presentation method 2- Draw illustrations. 3 - Brainstorming method.
D - Transferred general and qualifying skills (other skills related to employability and personal development). D 1- Skills of using references and terminology. D 2 - Skills in collecting and analyzing data on the subject. D 3 - the skills of exploiting the available capabilities. D 4- Skills of making comparisons on the topic D 5 - Skills of preparing special concepts on the subject.

10- Course structure

the week	education method	Unit name and / or topic	Required learning outcomes	hours	Evaluation method
1	lecture	The basics of heat, its units and types (specific heat and latent heat)	The basics of heat, its units and types (specific heat and latent heat)	4	oral exams
2	Discussion and dialogue	Methods of heat transfer and the	Methods of heat transfer and the	4	Self and peer

		difference between them	difference between them		evaluation
3	Discussion and dialogue	Conduction Heat Transfer and Fourier's Law	Conduction Heat Transfer and Fourier's Law	4	Self and peer evaluation
4	Discussion and dialogue	Temperature distribution through the walls	Temperature distribution through the walls	4	Self and peer evaluation
5	Lecture	Heat conduction through the hollow cylindrical body	Heat conduction through the hollow cylindrical body	4	oral exams اختبارات
6	Discussion and dialogue	Thermal conduction through double and combined cylinders	Thermal conduction through double and combined cylinders	4	Self and peer evaluation
7	Discussion and dialogue	Practical applications	Practical applications	4	Self and peer evaluation
8	Discussion and dialogue	semester exam	semester exam	4	Self and peer evaluation
9	Lecture	Delivery to the unstable state	Delivery to the unstable state	4	oral exams
10	Lecture	Convection Heat Transfer	Convection Heat Transfer	4	oral exams
11	Lecture	semester exam	semester exam	4	oral

					exams اختبارات
12	Lecture	Forced Convection in a Tube + Practical Applications	Forced Convection in a Tube + Practical Applications	4	oral exams اختبارات
14+ 13	Lecture	Heat Transfer by Radiation (Wave Theory and Quantum Theory)	Heat Transfer by Radiation (Wave Theory and Quantum Theory)	4	Oral and written exams
16 +15	Lecture	(absorption, reflection and transmittance) and their applications	(absorption, reflection and transmittance) and their applications	4	oral exams اختبارات
18 + 17	Discussion and dialogue	Black body and emitted energy	Black body and emitted energy	4	Self assessment and colleague assessment
20 + 19	Discussion and dialogue	Practical applications	Practical applications	4	Self and peer evaluation
21	Lecture, discussion and debate	semester exam	semester exam	4	Self assessment and colleague assessment
23 + 22	Discussion and dialogue	heat exchangers	heat exchangers	4	Self assessme

					nt and colleague assessment
25 + 24	And discussion and dialogue	Parallel flow and opposite flow	Parallel flow and opposite flow	4	Self assessment and colleague assessment
27 + 26	Discussion and dialogue	Furnaces used in petroleum products	Furnaces used in petroleum products	4	Self assessment and colleague assessment
29 + 28	Discussion and dialogue	Gaseous fuel burners and their types	Gaseous fuel burners and their types	4	Self assessment and colleague assessment
30	Discussion and dialogue	Practical applications	Practical applications	4	Self-assessment and dialogue evaluation

11. course development plan
Provide the student with a systematic book to help him with references and make the course study for a full year and not for one semester.

Description model

Saeed Abbas Medoudi

This course description provides a brief summary of the basics of operating the industrial units located in the industrial and oil facility and related to the flow of fluids, whether they are gases or liquids, including filtration processes.

1. Educational institution	Middle Technical University ,Al KUT Technical Institution
2. Scientific Department / Center	Department of Petrochemical Technologies
3. Course name/code	**Operation of industrial units**
4. Attendance type available	Mandatory
5. Semester / year	The first and second semester of the academic year 2021-2020
6. Number of hours of study (total)	(90) hours of study, 3 hours per week
7. The date this description was made	22/03/2021
8- Course objectives:	
1. Fluidization	
2. Cyclone	
3. Filtration	

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

A Cognitive goals A1- Know the concept of Fluidization. A2- Explain to the student the Cyclone A3- Explains to the student the content of Filtration
B - The Marathi objectives of the course. B1 - Gather information about the operation of units. B2 - Analyze the causes of these problems. B3 - compare past and present experiences. B - Communication and delivery skills.
Teaching and learning methods
1 - Objective questions are divided into: multiple choice questions, true and false questions, or approximation questions 2 - Self-evaluation and evaluation of the colleague. 3- The tests include: A - Constructive achievement tests accompanying the teaching plans. B - Final achievement tests and include: • Monthly final exams at the end of each academic month. • Final final exams at the end of a semester. • Final final exams at the end of the academic year.
Evaluation methods
Using achievement tests: • daily • Monthly • Quarterly Final
C- Emotional and value goals C1 - Presenting new ideas on the topic by the student. C 2- The student's ability to evaluate the topic and give solutions. C 3 - differentiate between problems. C4- Explain and analyze phenomena and problems.
Teaching and learning methods
1 - Use the presentation and presentation method 2- Draw illustrations. 3 - Brainstorming method.

D - Transferred general and qualifying skills (other skills related to employability and personal development). D 1- Skills of using references and terminology.
D 2 - Skills in collecting and analyzing data on the subject.
D 3 - the skills of exploiting the available capabilities.
D 4- Skills of making comparisons on the topic
D 5 - Skills of preparing special concepts on the subject.

10- Course structure

the week	education method	/ Unit name and or topic	Required learning outcomes	hours	Evaluation method
1	lecture	Fluidization	Fluidization	3	oral exams
2	Discussion and dialogue	Mechanical separation	Mechanical separation	3	Self and peer evaluation
3	Discussion and dialogue	Screen analysis	Screen analysis	3	Self and peer evaluation
4	Discussion and dialogue	Sedimentation and thickening	Sedimentation and thickening	3	Self and peer evaluation
6+ 5	Lecture	Centrifuge	Centrifuge	3	oral exams اختبارات
8 + 7	Discussion and dialogue	Cyclone	Cyclone	3	Self and peer evaluation
10 + 9	Discussion and dialogue	Flotation	Flotation	3	Self and peer evaluation
12 + 11	Discussion and dialogue	Filtration	Filtration	3	Self and peer evaluation
14+ 13		أمتحان فصلي	أمتحان فصلي	3	oral exams

16 + 15	Lecture	Filtration equipment	Filtration equipment	3	oral exams
18 + 17	Lecture	Size reduction	Size reduction	3	oral exams اختبارات
20 + 19	Lecture	Size reduction equipment	Size reduction equipment	3	oral exams اختبارات
22 + 21	Lecture	Size reduction equipment operation (Feed control, energy consumption , removal of heat)	Size reduction equipment operation (Feed control, energy consumption , removal of heat)	3	Oral and written exams
24 + 23		Exam		3	
26 + 25	Discussion and dialogue	Mixing of solids and pastes	Mixing of solids and pastes	3	Self assessment and colleague assessment
28 + 27	Discussion and dialogue	Materials handling	Materials handling	3	Self and peer evaluation
30 + 29	Lecture, discussion and debate	Storage	Storage	3	Self assessment and colleague assessment

11. course development plan
Provide the student with a systematic book to help him with references and make the course study for a full year and not for one semester .

Description model

Dr.

This course provides a brief description of the most important petrochemical industries, the resulting oil, its use in industry, the pollutants it imposes, its methods, and its treatment.

1- Educational institution	*Middle Technical University ,Al KUT Technical Institution*

2- Scientific Department / Center	Department of Petrochemical Technologies
3- Course name/code	**minerals and material properties**
4- Attendance type available	mandatory
5- Semester / year	The first and second semester of the academic year 2021-2020
6- Number of hours of study (total)	(90) hours of study, 3 hours per week
7- The date this description was made	22/03/2021
8- Course objectives:	
1. The student knows the engineering subjects	
2. The student knows the classification of minerals	
.3The student knows heat treatments	
4. The student knows the ceramic materials	

9- Course outcomes and methods of teaching, learning and assessment
A Cognitive goals A1- Know the concept of engineering materials. A2- Explains to the student the classification of minerals A3- Explain to the student the content of heat treatments A4- Explains to the student the development that ceramic materials have reached.
B - The Marathi objectives of the course. B1 - Gather information about minerals and material properties. B2 - Analyze the causes of these problems. B3 - compare past and present experiences. B - Communication and delivery skills.
Teaching and learning methods
1 - Objective questions are divided into: multiple choice questions, true and false

questions, or approximation questions 2 - Self-evaluation and evaluation of the colleague. 3- The tests include: A - Constructive achievement tests accompanying the teaching plans. B - Final achievement tests and include: • Monthly final exams at the end of each academic month. • Final final exams at the end of a semester. • Final final exams at the end of the academic year.
Evaluation methods
Using achievement tests: • daily • Monthly • Quarterly Final
C- Emotional and value goals **C1 - Presenting new ideas on the topic by the student.** **C 2- The student's ability to evaluate the topic and give solutions.** **C 3 - differentiate between problems.** **C4- Explain and analyze phenomena and problems.**
Teaching and learning methods
1 - Use the presentation and presentation method 2- Draw illustrations. 3 - Brainstorming method.
D - Transferred general and qualifying skills (other skills related to employability and personal development). D 1- Skills of using references and terminology. D 2 - Skills in collecting and analyzing data on the subject. D 3 - the skills of exploiting the available capabilities. D 4- Skills of making comparisons on the topic D 5 - Skills of preparing special concepts on the subject.

10- Course structure .					
the week	education method	/ Unit name and or topic	Required learning outcomes	hours	Evaluation method

1	lecture	Definition of engineering materials	Definition of engineering materials	3	oral exams
2	Discussion and dialogue	The atom, the element and the types of bonds	The atom, the element and the types of bonds	3	Self and peer evaluation
3	Discussion and dialogue	Crystal and amorphous materials	Crystal and amorphous materials	3	Self and peer evaluation
4	Discussion and dialogue	Crystal Forms (H.C.P) (F.C.C.) ((B.C.C	Crystal Forms (H.C.P) (F.C.C.) ((B.C.C	3	Self and peer evaluation
5	Lecture	Classification of Minerals (Crystal Chemical Classification - Chemical Economic Classification - Chemical (Classification	Classification of Minerals (Crystal Chemical Classification - Chemical Economic Classification - Chemical (Classification	3	oral exams
6	Discussion and dialogue	Crystalline structure of minerals - crystalline and non-crystalline substances - crystalline properties (anistro and astroscopic phenomena) - types of bonding	Crystalline structure of minerals - crystalline and non-crystalline substances - crystalline properties (anistro and astroscopic phenomena) - types of bonding in solids	3	Self and peer evaluation

		in solids			
7	Discussion and dialogue	Metal freezing - Metal structure - Common defects in casting	Metal freezing - Metal structure - Common defects in casting	3	Self and peer evaluation
8	Discussion and dialogue	Physical and mechanical properties of metals - the most important properties of minerals (general - (physical	Physical and mechanical properties of metals - the most important properties of minerals (general - (physical	3	Self and peer evaluation
9	Lecture	Mechanical tests (tensile test - (hardness test	Mechanical tests (tensile test - (hardness test	3	oral exams
7+ 6	Lecture	Impact resistance test - fatigue test - creep test	Impact resistance test - fatigue test - creep test	3	oral exams
9 + 8	Lecture	ferrous metals Non-ferrous metals (aluminum - copper - lead - magnesium - (zinc	ferrous metals Non-ferrous metals (aluminum - copper - lead - (magnesium - zinc	3	oral exams
11 + 10	Lecture	Carbon steel heat treatment Metal forming (hot and cold forming - foundry) -	Carbon steel heat treatment Metal forming (hot and cold forming - foundry) - metalworking	3	oral exams

		metalworking			
13 + 12		semester exam	semester exam	3	Oral and written exams
15 + 14	Lecture	The borate minerals group - the sulfate minerals group - the tungstate and molybdate minerals group	The borate minerals group - the sulfate minerals group - the tungstate and molybdate minerals group	3	oral exams
16 + 15	Discussion and dialogue	twin crystals Common twin laws in different crystal systems	twin crystals Common twin laws in different crystal systems	3	Self assessment and colleague assessment
18 + 17	Discussion and dialogue	Powder metallurgy (methods for obtaining mineral powders, mechanical methods, physical and chemical methods, physical, mechanical and chemical properties of powders	Powder metallurgy (methods for obtaining mineral powders, mechanical methods, physical and chemical methods, physical, mechanical and chemical properties of powders	3	Self and peer evaluation
19	Lecture, discussion and debate	Powder pressing and sintering process	Powder pressing and sintering process	3	Self assessment and colleague

					assessment
21 + 20	Discussion and dialogue	Ceramic materials - glass, its types, manufacture, uses	Ceramic materials - glass, its types, manufacture, uses	3	Self assessment and colleague assessment
23+ 22		semester exam	semester exam	3	Self assessment and colleague assessment
25 + 24	Discussion and dialogue	Concrete and its industrial uses Polymers - polymer molecules - types of polymers	Concrete and its industrial uses Polymers - polymer molecules - types of polymers	3	Self assessment and colleague assessment
27 + 26	Discussion and dialogue	Properties and uses of plastics	Properties and uses of plastics	3	Self assessment and colleague assessment
29 + 28	Discussion and dialogue	The basic concepts of polymer chemistry - the relationship of the degree of polymerization to the molecular weight of the polymer	The basic concepts of polymer chemistry - the relationship of the degree of polymerization to the molecular weight of the polymer	3	Self-assessment and dialogue evaluation
30	Discussion	Organic and	Organic and	3	Self

	and dialogue	inorganic compounds with macromolecules	inorganic compounds with macromolecules		assessment and colleague assessment

11- course development plan
Provide the student with a systematic book to help him with references and make the course study for a full year and not for one semester .

نموذج وصف المقرر

م. م. عمار عيسى ناجي:سم مدرس المادة وصف المقرر : الرسم الهندسي بالحاسوب

والتعرف على اوامر ونوافذ النظام.**Windows 7**- تعليم الطالب مكونات الحاسبة ودراسة نظام التشغيل 1 2- تعليم الطالب كتابة واعدادات النصوص في برنامج **Word 2010**. 3- تعليم الطالب انشاء الجداول وادارة الكائنات الصورية والاشكال الهندسية والتعامل مع قواعد البيانات في برنامج**Excel 2010**.

1. المؤسسة التعليمية	الجامعة التقنية الوسطى – المعهد التقني كوت
2. القسم العلمي / المركز	قسم التقنيات البتروكيمياويات
3. اسم / رمز المقرر	الرسم الهندسي بالحاسوب
4. أشكال الحضور المتاحة	حضوري/الكتروني حسب التوجيهات الوزارية
5. الفصل / السنة	الفصل الدراسي الاول والثاني للعام الدراسي 2022-2023
6. عدد الساعات الدراسية (الكلي)	ساعة عملي اسبوعيا2)ساعة نظري و1) ساعة دراسية بواقع ((90

7. تاريخ إعداد هذا الوصف	**2020 22-9-**

8. أهداف المقرر : ان يكون الطالب في نهاية السنة الدراسية قادرا على

1- يعرف مكونات الحاسبة ودراسة نظام التشغيل Windows 7 والتعرف على اوامر ونوافذ النظام.

2- يعرف كتابة واعدادات النصوص في برنامج Word 2010.

3- يعرف انشاء الجداول وادارة الكائنات الصورية والاشكال الهندسية والتعامل مع قواعد البيانات في برنامج Excel 2010.

4- يعرف اعداد الشرائح للنصوص والاشكال الرسومية واعداد عرض تفاعلي للشرائح في برنامج Slides Power Point 2010.

5- يعرف استخدام برنامج الرسم Auto CAD 2010 والتعرف على واجهة البرنامج و اوامر الرسم والتعديل و أوامر الكتابة واضافة الابعاد والتهشير وتكوين الطبقات.

- مخرجات المقرر وطرائق التعليم والتعلم والتقييم

1- تعليم الطالب مكونات الحاسبة ودراسة نظام التشغيل **Windows 7** والتعرف على اوامر ونوافذ النظام.

2- تعليم الطالب كتابة واعدادات النصوص في برنامج **Word 2010**.

3- تعليم الطالب انشاء الجداول وادارة الكائنات الصورية والاشكال الهندسية والتعامل مع قواعد البيانات في برنامج **Excel 2010**.

4- تعليم الطالب اعداد الشرائح للنصوص والاشكال الرسومية Slides

ب - الأهداف المهاراتية الخاصة بالمقرر.

ب1. 1- يعرف مكونات الحاسبة ودراسة نظام التشغيل Windows 7 والتعرف على اوامر ونوافذ النظام.

ب2 يعرف انشاء الجداول وادارة الكائنات الصورية والاشكال الهندسية والتعامل مع قواعد البيانات في برنامج Excel 2010.

ب3 – يعرف اعداد الشرائح للنصوص والاشكال الرسومية واعداد عرض تفاعلي للشرائح في برنامج Slides Power Point 2010.

طرائق التعليم والتعلم

1 – الاسئلة الموضوعية وتقسم الى : اسئلة الاختيار من متعدد او اسئلة الصواب والخطا او اسئلة المقارنة
2 – التقييم الذاتي وتقييم الزميل .
3 – الاختبارات وتشمل :
أ – الاختبارات التحصيلية البنائية المصاحبة للخطط التدريسية .
ب – الاختبارات التحصيلية الختامية وتتضمن :

- الاختبارات الختامية الشهرية في نهاية كل شهر دراسي .
- الاختبارات الختامية الفصلية في نهاية فصل دراسي .
- الاختبارات الختامية النهائية في نهاية العام الدراسي .

طرائق التقييم

1 – استعمال الاختبارات التحصيلية :

- اليومية
- الشهرية
- الفصلية
- النهائية

ج- الأهداف الوجدانية والقيمية
ج1- طرح افكار جديدة حول الموضوع من قبل الطالب .
ج2-قدرة الطالب على تقييم الموضوع واعطاء الحلول .
ج3-يفرق بين المشكلات .
ج4- يفسر ويحلل الظواهر والمشكلات .

طرائق التعليم والتعلم

1 – استعمال طريقة العرض والتقديمية .
2 – رسم المخططات التوضيحية .
3 – طريقة العصف الذهني .

د - المهارات العامة والتأهيلية المنقولة (المهارات الأخرى المتعلقة بقابلية التوظيف والتطور الشخصي).
د1- مهارات استخدام المراجع والمصطلحات .
د2- مهارات في جمع البيانات حول الموضوع وتحليلها .
د3- مهارات استغلال ما متاح من امكانات .
د4- مهارات اجراء المقارنات عن الموضوع
د5- مهارات اعداد المفاهيم الخاصة عن الموضوع .

10. بنية المقرر

ت	الأسبوع	الساعات	مخرجات التعلم المطلوبة	اسم الوحدة / أو الموضوع	طريقة التعليم	طريقة التقييم
1	- مقدمة عامة عن اساسيات الحاسوب ومكوناته Software والبرمجيةHardwareالمادية (تشغيل النظام, Windows 7- نظام التشغيل Iconsمكونات سطح المكتب, مفهوم الايقونة تغير ترتيب سطح المكتب, التحكم بحجم الشاشة Taskbarودرجة دقة الشاشة, شريط المهام ومكوناته والتحكم بالوقت والتاريخ والصوت,	3	الجزء العملي هو تمارين تطبيقية وتطبيق عملي على الحاسوب لمفردات الجزء النظري.	- نظام التشغيل Windows 7	تعليم مدمج	الكترونية

	الخروج من النظام, اطفاء الحاسوب)					
2	- مفهوم النافذة لأي برنامج والتعرف على مكوناتها الرئيسية, تغير حجم النوافذ ونقلها واغلاقها والتنقل بين النوافذ المفتوحة ومحتوياتهاStart- التعرف على القائمة My computer- التعرف على ايقونة وخصائصها والمعلومات الاساسية عن الحاسوب(سرعة المعالج, نوع المعالج, حجم الذاكرة, نظام التشغيل ورقم الاصدار)	3	الجزء العملي هو تمارين تطبيقية وتطبيق عملي على الحاسوب لمفردات الجزء النظري.	- نظام التشغيل Windows 7	تعليم مدمج	الكترونية
3	- المجلدات والملفات (تكوينها, نقلها, استنساخها, تغير اسمها, حذفها, استرجاعها من سلة المهملات, افراغ سلة المهملات) لتحديد ملف او مجلدFind- استخدام امر البحث - مفهوم ضغط الملفات او المجلد وفك الضغط - التحكم في خيارات عرض الملفات والمجلدات Folder Option	3	الجزء العملي هو تمارين تطبيقية وتطبيق عملي على الحاسوب لمفردات الجزء النظري.	- نظام التشغيل Windows 7	تعليم مدمج	الكترونية
4	اعدادات الـControl Panel)([System and security, Network and internet,] [Appearance and personalization, User accounts and family safety,] [Programs(uninstall a program), Hardware and sound]	3	الجزء العملي هو تمارين تطبيقية وتطبيق عملي على الحاسوب لمفردات الجزء النظري.	- نظام التشغيل Windows 7	تعليم مدمج	الكترونية
5 **6**	برنامج Word 2010 - مقدمة عن البرنامج, استدعاء البرنامج, التعرف على الواجهة الرئيسية وعناصرها (شريط الاوامر Ribbons , الاشرطة Command bar, اسم ملف العمل الافتراضي, Toolsالأدوات , تغير الاسم, تغير قياس نطاق الرؤية, خزن ملف جديد لاول مرة) (ادراج نص, تغير Word Art- النص الرئيسي النص, تدوير النص, تغير حجم الخط, Formatشريط)	3	الجزء العملي هو تمارين تطبيقية وتطبيق عملي على الحاسوب لمفردات الجزء النظري.	برنامج Word 2010	تعليم مدمج	الكترونية
	اعدادات عامة (قلب الصفحة من الوضع العمودي الى الوضع الأفقي, عمل اطار للصفحة, اظهار Header &, ترقيم الصفحات, Rulerالمسطرة Footer(المعاينة قبل الطباعة, الطباعة ,	3	الجزء العملي هو تمارين تطبيقية وتطبيق عملي على الحاسوب لمفردات الجزء النظري.	برنامج Word 2010	تعليم مدمج	الكترونية
7	1- النص المباشر (كتابة { Text- النصوص النص, اعدادات النص, اضافة الرموز والمعادلات الرياضية Symbols Equation(}2- صندوق النص, مختصرات لوحة المفاتيح	3	الجزء العملي هو تمارين تطبيقية وتطبيق عملي على الحاسوب لمفردات الجزء النظري.	برنامج Word 2010	تعليم مدمج	الكترونية
8	(الاشكال الاساسية Graphics- الرسوم الرسوم الكارتونية Pictures, الصور Shapes , المخططات التوضيحية والأحصائيةClip Art , الجداول (رسم جدول, تغير قياس جدول, حشر -	3	الجزء العملي هو تمارين تطبيقية وتطبيق عملي على الحاسوب لمفردات الجزء النظري.	برنامج Word 2010	تعليم مدمج	الكترونية

	سطر او عمود داخل جدول, دمج عدة خلايا في الجدول, تقسيم الخلية, الترتيب التصاعدي والتنازلي لسطور الجدول, حذف السطور والأعمدة)					
9	برنامج Excel 2010 - تشغيل البرنامج, التعرف على الواجهة الرئيسية والأشرطة (ادخال قيم للخلايا, الأنتقال Table- انشاء جدول بين الخلايا, تكبير وتصغير الخلايا, دمج الخلايا, اختيار الخلايا والأسطر ولأعمدة, اختيار كل الصفحة, تحريك الخلايا, حشر سطر او عمود, مسح سطر او عمود) - خزن الملف Home-تعديل صيغة النصوص من الشريط وتعديل Boarders - رسم اطار للخلايا الاعدادات للاطار	3	الجزء العملي هو تمارين تطبيقية وتطبيق عملي على الحاسوب لمفردات الجزء النظري.	برنامج Excel 2010	تعليم مدمج	الكترونية
10	- تغير تسمية صفحة, اضافة صفحة جديدة, مسح صفحة, تحريك او نسخ صفحة, حماية صفحة من التعديلات, اخفاء الصفحة - تغير اتجاه العناوين (جعل الصفحة من اليمين الى اليسار) Series- انشاء متسلسلة - انشاء دالة (انشاء دالة يدويا, استخدام الدوال الجاهزة الرياضية والاحصائية والمنطقية)	3	الجزء العملي هو تمارين تطبيقية وتطبيق عملي على الحاسوب لمفردات الجزء النظري.	برنامج Excel 2010	تعليم مدمج	الكترونية
11	- اعدادات الطباعة - ادارة البيانات (كتابة رمز, تغير صيغة محتوى خلية, البحث عن قيمة Find, استبدال القيم Replace, الترشيح Filter, الترتيب Sort, الجوانب الثابتة Freeze panes) - التعامل مع قواعد البيانات (استيراد البيانات من الانترنيت, استيراد البيانات من قواعد بيانات, استيراد البيانات من الملفات النصية)	3	الجزء العملي هو تمارين تطبيقية وتطبيق عملي على الحاسوب لمفردات الجزء النظري.	برنامج Excel 2010	تعليم مدمج	الكترونية
12	ادارة الكائنات (الصور والرسوم Clip Art, اضافة صندوق نص Shapes, الشكال الهندسية Word Art, تأثيرات الوورد Text Box, المخطط Smart Art المخططات الذكية, رأس وتذيل Statistical Chart الاحصائي, الصفحات	3	الجزء العملي هو تمارين تطبيقية وتطبيق عملي على الحاسوب لمفردات الجزء النظري.	برنامج Excel 2010	تعليم مدمج	الكترونية
13	برنامج Power Point 2010 - تشغيل البرنامج والتعرف على واجهة البرنامج Word (النص الرئيسي Slide- اعداد شريحة, مربع النص Shapes, الاشكال الرسومية Art, الخلفية Back ground(, Text Box	3	الجزء العملي هو تمارين تطبيقية وتطبيق عملي على الحاسوب لمفردات الجزء النظري.	برنامج Power Point 2010	تعليم مدمج	الكترونية
14	Custom - تحريك العناصر في الشريحة (اضافة حركة لأي عنصر في Animation	3	الجزء العملي هو تمارين تطبيقية وتطبيق عملي	برنامج Power	تعليم مدمج	الكترونية

	الشريحة, اضافة صوت الى الحركة, استعراض المشروع ضمن لوحة العمل, استعراض المشروع على كل الشاشة, مسح الحركة, تغير تسلسل الحركة, اضافة حركة ضمنية)		على الحاسوب لمفردات الجزء النظري.	Point 2010		
15	- اعداد مشروع متعدد الشرائح (اضافة شريحة جديدة, تحرير الشرائح, حذف الشرائح) Interactive- اعداد عرض تفاعلي للشرائح show بأستخدام الارتباطات التشعبية Hyper Link	3	الجزء العملي هو تمارين تطبيقية وتطبيق عملي على الحاسوب لمفردات الجزء النظري.	برنامج Power Point 2010	تعليم مدمج	الكترونية
16	برنامج Auto CAD 2010 تشغيل البرنامج ومفاهيم عامة (تشغيل البرنامج, التعرف على مساحة عمل البرنامج, مكعب العرض, عجلة القيادة, حركة العرض, الشريط , اشرطة الأدوات, Menu, القوائم Ribbon اغلاق البرنامج)	3	الجزء العملي هو تمارين تطبيقية وتطبيق عملي على الحاسوب لمفردات الجزء النظري.	برنامج Auto CAD 2010	تعليم مدمج	الكترونية
17	- فتح ملف رسم سابق, التحكم بعرض محتويات وخياراته, Zoomملف الرسم بأستعمال الأمر , غلق ملف الرسم, انشاء ملف جديد, Panالأمر خزن الملف Limits والأمر Units- الأمر	3	الجزء العملي هو تمارين تطبيقية وتطبيق عملي على الحاسوب لمفردات الجزء النظري.	برنامج Auto CAD 2010	تعليم مدمج	الكترونية
18	Grid ,Snapالرسم الدقيق ومساعدات الرسم (,Ortho ,Polar ,Osnap(	3	الجزء العملي هو تمارين تطبيقية وتطبيق عملي على الحاسوب لمفردات الجزء النظري.	برنامج Auto CAD 2010	تعليم مدمج	الكترونية
19	, صيغ Line, Point (Drawاوامر الرسم Multiline (تعريف احداثيات النقاط ,	3	الجزء العملي هو تمارين تطبيقية وتطبيق عملي على الحاسوب لمفردات الجزء النظري.	برنامج Auto CAD 2010	تعليم مدمج	الكترونية
20	, Draw) Polyline اوامر الرسم Rectangle , Polygon (	3	الجزء العملي هو تمارين تطبيقية وتطبيق عملي على الحاسوب لمفردات الجزء النظري.	برنامج Auto CAD 2010	تعليم مدمج	الكترونية
21	,Ellipse(Draw) Circle ,Arc اوامر الرسم	3	الجزء العملي هو تمارين تطبيقية وتطبيق عملي على الحاسوب لمفردات الجزء النظري.	برنامج Auto CAD 2010	تعليم مدمج	الكترونية
22	Gripsتحديد عناصر الرسم , الماسكات	3	الجزء العملي هو تمارين تطبيقية وتطبيق عملي على الحاسوب لمفردات الجزء النظري.	برنامج Auto CAD 2010	تعليم مدمج	الكترونية
23	, Modify (Eraseاوامر التعديل Move , Rotation,Copy ,Offset(	3	الجزء العملي هو تمارين تطبيقية وتطبيق عملي على الحاسوب لمفردات	برنامج Auto CAD 2010	تعليم مدمج	الكترونية

			الجزء النظري.		
24	اوامر التعديلModify) Mirror ,Array , Scale ,Break ,Extend(	3	الجزء العملي هو تمارين تطبيقية وتطبيق عملي على الحاسوب لمفردات الجزء النظري.	برنامجAuto CAD 2010	تعليم مدمج	الكترونية
25	اوامر التعديلModify) Fillet ,Chamfer , Trim ,Explode(	3	الجزء العملي هو تمارين تطبيقية وتطبيق عملي على الحاسوب لمفردات الجزء النظري.	برنامجAuto CAD 2010	تعليم مدمج	الكترونية
26	اوامر الكتابةText) Single line text , Multiline text عمل نماذج Style, جديدة للكتابة	3	الجزء العملي هو تمارين تطبيقية وتطبيق عملي على الحاسوب لمفردات الجزء النظري.	برنامجAuto CAD 2010	تعليم مدمج	الكترونية
27	القطاعات والتهشير	3	الجزء العملي هو تمارين تطبيقية وتطبيق عملي على الحاسوب لمفردات الجزء النظري.	برنامجAuto CAD 2010	تعليم مدمج	الكترونية
28	التحكم بمواصفات الرسم (-Line type ,Line weight ,Color(-Properties تعديل خصائص الرسم	3	الجزء العملي هو تمارين تطبيقية وتطبيق عملي على الحاسوب لمفردات الجزء النظري.	برنامجAuto CAD 2010	تعليم مدمج	الكترونية
29	اضافة الأبعادDimension) Linear Dim. , Aligned Dim. ,Radial Dim. ,Diameter Dim. ,Angular Dim. ,Quick Dim. , Baseline Dim. ,Continuous Dim. , Dimension Style(	3	الجزء العملي هو تمارين تطبيقية وتطبيق عملي على الحاسوب لمفردات الجزء النظري.	برنامجAuto CAD 2010	تعليم مدمج	الكترونية

11. البنية التحتية

1- الكتب المقررة المطلوبة	1- د.هاشم يحي المصرف, مبادئ علم الخرائط,الطبعة الاولى,1982 بغداد 2- د.هاشم يحي المصرف ,تمارين تطبيقية في علم الخرائط,1986.بغداد د.خضر العبادي,الكارتوكرافي,مساقط الخرائط,1980,بغداد
2- المراجع الرئيسية (المصادر)	Robinson,J,S.,"Elements of cartography",5th Ed.,1980 **-1** Keats,J,S.,"Cartography Design and Production",3rd Ed.,198

ا- الكتب والمراجع التي يوصى بها (المجلات العلمية , التقارير , ...)	
ب - المراجع الالكترونية, مواقع الانترنيت	

Description model

Ammar Issa Naji

This course description provides a brief summary of the most important characteristics of the course and the learning outcomes expected of the student to achieve, demonstrating whether he has made maximum use of the available learning opportunities. It must be linked to the description of the program.

1- Educational institution	Middle Technical University, Al KUT Technical Institution
2- Scientific Department / Center	Department of Petrochemical Technologies
3- Course name/code	**Engineering Drawing by Computer**
4- Attendance type available	Mandatory
5- Semester / year	The first and second semester of the academic year 2023-2022
6- Number of hours of study (total)	(90) hours of study, 3 hours per week
7- The date this description was made	7/3/2024
8- Course objectives:	
1- Knows the components of the calculator, studies the Windows 7 operating system, and learns about the system's commands and windows.	
2- Knows how to use the drawing program Auto CAD 2010 and become familiar with the program's interface, drawing and modification commands, writing commands, adding dimensions, segmentation, and composing layers.	

3- The student knows how to draw geometric projections.
4- The student knows how to draw pieces.

9- Course outcomes and methods of teaching, learning and assessment
A Cognitive goals A1- Teaching the student the components of the calculator, studying the Windows 7 operating system, and learning about the system's commands and windows. A2- Teaching the student to use the AUTOCAD program. A3- Teaching the student geometric projections and perspective.
B - The skills objectives of the course. B 1- Knows the components of the calculator, studies the Windows 7 operating system, and learns about the system's commands and windows. B2- Knows how to create engineering drawings projections. B3 - Known as drawing dimensions and preparing drawings.
Teaching and learning methods
1 - Objective questions are divided into: multiple choice questions, true and false questions, or approximation questions 2 - Self-evaluation and evaluation of the colleague. 3- The tests include: A - Constructive achievement tests accompanying the teaching plans. B - Final achievement tests and include: • Monthly final exams at the end of each academic month. • Final final exams at the end of a semester. • Final final exams at the end of the academic year.
Evaluation methods
Using achievement tests: • daily • Monthly • Quarterly Final
C- Emotional and value goals C1 - Presenting new ideas on the topic by the student. C 2- The student's ability to evaluate the topic and give solutions. C 3 - differentiate between problems. C4- Explain and analyze phenomena and problems.

Teaching and learning methods
1 - Use the presentation and presentation method 2- Draw illustrations. 3 - Brainstorming method.
D - Transferred general and qualifying skills (other skills related to employability and personal development). D 1- Skills of using references and terminology. D 2 - Skills in collecting and analyzing data on the subject. D 3 - the skills of exploiting the available capabilities. D 4- Skills of making comparisons on the topic D 5 - Skills of preparing special concepts on the subject.

10. Course structure					
The week	Education method	Unit name and /or topic	Required learning outcomes	Hours	Evaluation method
1	lecture	Auto CAD 2010 program	-A general introduction to the basics of the computer and its hardware and software components -Windows 7 operating system (system operation, desktop components, icon concept, changing desktop arrangement, controlling screen size and screen resolution, Taskbar and its components, controlling time, date and sound,	5	oral exams and practice on computer

			exiting the system, turning off the computer(		
2	Discussion and dialogue	Auto CAD 2010 program	-The concept of the window for any program and identifying its main components, changing the size of windows, moving them, closing them, and moving between open windows -Get to know the Start menu and its contents -Identify the My Computer icon, its characteristics, and basic information about the computer (processor speed, processor type, memory size, operating system and version number(	5	Self and peer evaluation
3	Discussion and dialogue	Auto CAD 2010 program	-Folders and files (created, moved, cloned, renamed, deleted, retrieved from the trash, emptying the trash(-Use the Find command to select a file or folder -The concept of compressing files	5	oral exams and practice on computer

			or folders and decompressing them -Control Folder Option display options for files and folders		
4	Discussion and dialogue	Auto CAD 2010 program	Control Panel settings)) [System and security, Network and internet,] [Appearance and [personalization,	5	Self and peer evaluation
5	Lecture	Auto CAD 2010 program	User accounts and family safety,] [Programs(uninstall a program), Hardware and sound	5	oral exams and practice on computer
6	Discussion and dialogue	Auto CAD 2010 program	-Run the program, get to know the main interface and bars Create a table -	5	oral exams and practice on computer
7	Discussion and dialogue	Auto CAD 2010 program	-Save the file -Modify text formatting from the Home bar -Draw a frame for Boarders cells and modify the settings for the frame	5	Self and peer evaluation
8	Discussion and dialogue	Auto CAD 2010 program	Print settings -Data management (writing code, changing the formula of a cell content, searching for a value,	5	Self and peer evaluation
9	Lecture	Auto CAD	replacing values,	5	oral exams

		2010 program	replacing sorting, filtering, fixed aspects, freeze panes(-Dealing with databases (importing data from the Internet, importing data from databases, importing data from text files		and practice on computer
10	Lecture	Auto CAD 2010 program	Animating elements on the slide Custom Animation (add movement to any element on the slide	5	oral exams and practice on computer
11	Lecture	Auto CAD 2010 program	, add sound to the movement, review the project within the storyboard, review the project on the entire screen,	5	oral exams and practice on computer
12	Lecture	Auto CAD 2010 program	-erase the movement, change the movement sequence, add implicit movement(	5	Oral and written exams
13	Lecture	Auto CAD 2010 program	Prepare a multi- - layers project (add a new slide, edit layers, delete (slides	5	oral exams and practice on computer
14	Lecture	Auto CAD 2010 program	-Preparing an interactive	5	oral exams and

			presentation of slides using Hyper Link		practice on computer
15	Discussion and dialogue	Auto CAD 2010 program	Auto CAD 2010 program Running the program and general concepts (running the program, getting to know the program's workspace,	5	Self assessment and colleague assessment
16					
17	Lecture, discussion and debate	Auto CAD 2010 program	display cube, steering wheel, display movement, ribbon, menus, toolbars, closing the program(	5	oral exams and practice on computer
18	Discussion and dialogue	Auto CAD 2010 program	Open a previous drawing file, control the display of the contents of the drawing file using the Zoom command and its options,	5	Self assessment and colleague assessment
19	And discussion and dialogue	Auto CAD 2010 program	the Pan - command, close the drawing file, create a new file, save the file -Units command and Limits command	5	oral exams and practice on computer
20	Discussion and dialogue	Auto CAD 2010 program	Precise drawing and drawing aids (Grid, Snap, Ortho,	5	Self assessment and

			Polar, Osnap(		colleague assessment
21	Discussion and dialogue	Auto CAD 2010 program	Draw commands (Point, Line, formulas for defining point coordinates, Multiline(	5	Self assessment and colleague assessment
22	Discussion and dialogue	Auto CAD 2010 program	Drawing commands (Polyline, Rectangle, Polygon(	5	oral exams and practice on computer
23	Discussion and dialogue	Auto CAD 2010 program	Drawing commands (Circle, Arc, Ellipse(	5	oral exams and practice on computer
24	Discussion and dialogue	Auto CAD 2010 program	Identify drawing elements, Grips	5	Self-assessment and dialogue evaluation
25	Discussion and dialogue	Auto CAD 2010 program	Modify commands (Erase, Move, Rotation, Copy, Offset(	5	oral exams and practice on computer
26	Discussion and dialogue	Auto CAD 2010 program	Modify commands (Mirror, Array, Scale, Break, Extend(	5	Self-assessment and dialogue evaluation
27	Discussion and dialogue	Auto CAD 2010 program	Modify commands (Fillet, Chamfer, Trim, Explode(	5	oral exams and practice on computer
28	Discussion and dialogue	Auto CAD 2010 program	Text writing commands (Single line text, Multiline	5	Self-assessment and

			text, creating new style models for writing		dialogue evaluation
29	Discussion and dialogue	Auto CAD 2010 program	Sectors and segmentation	5	Self-assessment and dialogue
30	Discussion and dialogue	Auto CAD 2010 program	Add dimensions (Linear Dim., Aligned Dim., Radial Dim., Diameter Dim., Angular Dim., Quick Dim., Baseline Dim., Continuous Dim., Dimension Style(	5	oral exams and practice on computer

10- Infrastructure	
Required prescribed books	
9- Fundamentals of physical chemistry (practical) 10- Physical Chemistry, Ninth Edition, Ninth Edition, written by Peter Atkin, Julio de Paula 11- Basics of Analytical Chemistry - Dr. Thabet Saeed Al-Ghabsha 12- Vogel's book on quantitative chemical analysis, fifth edition	2main references) sources (
Reputable international sites specialized and sober publishing sites	A- recommended books and references) scientific journals , reports (.... ,
discreet publishing sites	B- Electronic references , Internet sites...

11- course development plan
Providing the student with available recent research as far as the topic of the lecture is concerned .

Description model

Ammar Issa Naji

This course provides a brief description of the most important petrochemical industries, the resulting oil, its use in industry, the pollutants it imposes, its methods, and its treatment.

1. Educational institution	Middle Technical University ,Al KUT Technical Institution
2. Scientific Department / Center	Department of Petrochemical Technologies
3. Course name/code	**Petrochemical industries and environmental pollution**
4. Attendance type available	mandatory
5. Semester / year	The first and second semester of the academic year 2021-2020
6. Number of hours of study (total)	(60) hours of study, 4 hours per week
7. The date this description was made	22/03/2021
8- Course objectives:	
1. Familiarizes the student with the petrochemical industries and their manufacturing methods	
2. The student knows the types of chemical industries	
3. The student knows the materials produced from natural gas	
4. Introduces the student to the manufacture of intermediate materials المواد	

5. Introduces the student to the concept of pollution and the concept of the environment
6. The student knows the sources and damages of pollution

9 - Course outcomes and methods of teaching, learning and assessment
A Cognitive goals A1- Know the concept of industries and pollution. A2- Explains to the student the petrochemical industries and environmental pollution A3- Explains to the student the content of the petrochemical industries A4- Explains to the student the development reached by the petrochemical industries. A5- It gives the student practical examples of the petrochemical industries.
B - The Marathi objectives of the course. B1 - Gathering information on the petrochemical industries. B2 - Analyze the causes of these problems. B3 - compare past and present experiences. B - Communication and delivery skills.
Teaching and learning methods
1 - Objective questions are divided into: multiple choice questions, true and false questions, or approximation questions 2 - Self-evaluation and evaluation of the colleague. 3- The tests include: A - Constructive achievement tests accompanying the teaching plans. B - Final achievement tests and include: • Monthly final exams at the end of each academic month. • Final final exams at the end of a semester. • Final final exams at the end of the academic year.
Evaluation methods
Using achievement tests: • daily • Monthly • Quarterly Final
C- Emotional and value goals **C1 - Presenting new ideas on the topic by the student.** **C 2- The student's ability to evaluate the topic and give solutions.** **C 3 - differentiate between problems.**

C4- Explain and analyze phenomena and problems.
Teaching and learning methods
1 - Use the presentation and presentation method 2- Draw illustrations. 3 - Brainstorming method.
D - Transferred general and qualifying skills (other skills related to employability and personal development). D 1- Skills of using references and terminology. D 2 - Skills in collecting and analyzing data on the subject. D 3 - the skills of exploiting the available capabilities. D 4- Skills of making comparisons on the topic D 5 - Skills of preparing special concepts on the subject.

10. Course structure					
the week	education method	Unit name and / or topic	Required learning outcomes	hours	Evaluation method
1	lecture	Introduction to the petrochemical industries includes the classification of the petrochemical industry sector and the stages that any of those industries include	Introduction to the petrochemical industries includes the classification of the petrochemical industry sector and the stages that any of those industries include	4	oral exams

2	Discussion and dialogue	The emergence and development of the petrochemical industry	The emergence and development of the petrochemical industry	4	Self and peer evaluation
3	Discussion and dialogue	Evolution of the paraffinic hydrocarbon industry	Evolution of the paraffinic hydrocarbon industry	4	Self and peer evaluation
4	Discussion and dialogue	Materials from natural gas - construction gas - water vapor modification process - partial oxidation process	Materials from natural gas - construction gas - water vapor modification process - partial oxidation process	4	Self and peer evaluation
5	Lecture	Materials from petroleum distillates: 1- ethylene 2- propylene 3- butylene 4- acetylene	Materials from petroleum distillates: 1- ethylene 2- propylene 3- butylene 4- acetylene	4	oral exams اختبارات
6	Discussion and dialogue	aromatic	aromatic	4	Self and peer evaluation
7	Discussion and dialogue	semester exam	semester exam	4	Self and peer evaluation
8	Discussion and dialogue	Intermediate petrochemical industry: 1-	Intermediate petrochemical industry: 1-	4	Self and peer evaluatio

		Materials from construction gas	Materials from construction gas		n
9	Lecture	2- Substances resulting from paraffins	2- Substances resulting from paraffins	4	oral exams اختبارات
6	Lecture	3- Substances derived from olefins	3- Substances derived from olefins	4	oral exams اختبارات
12	Lecture	Some industries of finished petrochemical materials	Some industries of finished petrochemical materials	4	oral exams اختبارات
12	Lecture	Introduction to pollution, its dangers and types	Introduction to pollution, its dangers and types	4	oral exams اختبارات
13	Lecture	The concept of environmental pollution, its types, types and levels, and classification of pollutants	The concept of environmental pollution, its types, types and levels, and classification of pollutants	4	Oral and written exams
14	Lecture	Environmental systems, their composition and the impact of pollutants on them	Environmental systems, their composition and the impact of pollutants on them	4	oral exams اختبارات
15th	Discussio n and dialogue	semester exam	semester exam	4	Self assessme nt and

					colleague assessment
16	Discussion and dialogue	Causes of water pollution - natural pollution - - anthropogenic pollution (semi-manufactured pollutants - manufactured pollutants)	Causes of water pollution - natural pollution - - anthropogenic pollution (semi-manufactured pollutants - manufactured pollutants)	4	Self and peer evaluation
17	Lecture, discussion and debate	Sources of water pollution (civilian sources of water pollution - industrial sources of water pollution)	Sources of water pollution (civilian sources of water pollution - industrial sources of water pollution)	4	Self assessment and colleague assessment
18	Discussion and dialogue	Sources of water pollution (agricultural sources) - point and non-point sources of pollution and their assessment	Sources of water pollution (agricultural sources) - point and non-point sources of pollution and their assessment	4	Self assessment and colleague assessment
19	And discussion and dialogue	Air pollution sources and effects (atmosphere components - components of unpolluted air) -	Air pollution sources and effects (atmosphere components - components of unpolluted air) - natural sources of	4	Self assessment and colleague assessment

		natural sources of air pollution - unnatural sources of air pollution - effects of air pollution - air pollution damage to humans - air pollution damages inside buildings - acid rain	air pollution - unnatural sources of air pollution - effects of air pollution - air pollution damage to humans - air pollution damages inside buildings - acid rain		
20 و 21	Discussion and dialogue	The effects of air pollution on humans - the harms of indoor air pollution - acid rain	The effects of air pollution on humans - the harms of indoor air pollution - acid rain	4	Self assessment and colleague assessment
22 و23	Discussion and dialogue	- Air pollution damages the ozone layer - Environmental pollution and the increase in the rate of mutagenicity and carcinogenesis - Efforts to reduce the risk of pollution - Means used to control air pollution - Proposals to reduce air	- Air pollution damages the ozone layer - Environmental pollution and the increase in the rate of mutagenicity and carcinogenesis - Efforts to reduce the risk of pollution - Means used to control air pollution - Proposals to reduce air pollution - The most famous environmental disasters caused by	4	Self assessment and colleague assessment

		pollution - The most famous environmental disasters caused by chemicals	chemicals		
24 و 25	Discussion and dialogue	The most important gaseous air pollutants and greenhouse gases (nitrogen oxides - carbon oxides - halogenated hydrocarbons)	The most important gaseous air pollutants and greenhouse gases (nitrogen oxides - carbon oxides - halogenated hydrocarbons)	4	Self-assessment and dialogue evaluation
26 و 27	Discussion and dialogue	Water drainage system in factories and fishing equipment	Water drainage system in factories and fishing equipment	4	Self assessment and colleague assessment
28 و 29	Discussion and dialogue	The importance of industrial wastewater in the national economy and methods of purification	The importance of industrial wastewater in the national economy and methods of purification	4	Self-assessment and dialogue evaluation
30	Discussion and dialogue	Installation and operation of petroleum products fisheries - collection, processing and	Installation and operation of petroleum products fisheries - collection, processing and utilization of	4	Self-assessment and dialogue evaluation

		utilization of products from fisheries	products from fisheries		

11. course development plan
Provide the student with a systematic book to help him with references and make the course study for a full year and not for one semester.

Description model

Name:

This course description provides a brief summary of the basics of metrology, its units, systems, equipment, and uses in the transfer (ownership) of oil and its derivatives and their applications in the centers of distribution and transportation of oil and its derivatives. As well as introducing the student to the basics of storing and transporting crude oil and its derivatives, units, systems and equipment so that the student is qualified to work in oil depots, refineries and distribution stations

1. Educational institution	*Middle Technical University ,Al KUT Technical Institution*
2. Scientific Department / Center	Department of Petrochemical Technologies
3. Course name/code	**Measurements of transportation and storage of petroleum products**
4. Attendance type available	Mandatory
5. Semester / year	The first and second semester of the academic year 2021-2020
6. Number of hours of study (total)	(60) hours of study, 2 hours per week
7. The date this description was made	22/03/2021
8- Course objectives:	
1. Metrology	
2. Measuring systems	

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

A Cognitive goals A1- Know the concept of metrology. A2- Explains to the student the measurement systems A3- Explains to the student the content of Filtration
B - The Marathi objectives of the course. B1 - Gathering information on oil measurements. B2 - Analyze the causes of these problems. B3 - compare past and present experiences. B - Communication and delivery skills.
Teaching and learning methods
1 - Objective questions are divided into: multiple choice questions, true and false questions, or approximation questions 2 - Self-evaluation and evaluation of the colleague. 3- The tests include: A - Constructive achievement tests accompanying the teaching plans. B - Final achievement tests and include: • Monthly final exams at the end of each academic month. • Final final exams at the end of a semester. • Final final exams at the end of the academic year.
Evaluation methods
Using achievement tests: • daily • Monthly • Quarterly Final
C- Emotional and value goals C1 - Presenting new ideas on the topic by the student. C 2- The student's ability to evaluate the topic and give solutions. C 3 - differentiate between problems. C4- Explain and analyze phenomena and problems.
Teaching and learning methods
1 - Use the presentation and presentation method 2- Draw illustrations. 3 - Brainstorming method.
D - Transferred general and qualifying skills (other skills related to employability and personal development). D 1- Skills of using references and terminology. D 2 - Skills in collecting and analyzing data on the subject. D 3 - the skills of exploiting the available capabilities. D 4- Skills of making comparisons on the topic

D 5 - Skills of preparing special concepts on the subject.

10- Course structure					
the week	education method	/ Unit name and or topic	Required learning outcomes	hours	Evaluation method
1	lecture	chapter one: general metrology -1metrology .2Measured Transfer of Ownership	chapter one: general metrology -1metrology .2Measured Transfer of Ownership	3	oral exams
2	Discussion and dialogue	-3Definitions of important measurement vocabulary A - units of measurement	-3Definitions of important measurement vocabulary A - units of measurement	3	Self and peer evaluation
3	Discussion and dialogue	B - Measuring tools, equipment and systems C-types of measurement	B - Measuring tools, equipment and systems C-types of measurement	3	Self and peer evaluation
4	Discussion and dialogue	D- Equipment for operating and documenting measurement	D- Equipment for operating and documenting measurement	3	Self and peer evaluation

6 +5	Lecture	E-Measurement errors The most important characteristics of measurement	E-Measurement errors The most important characteristics of measurement	3	oral exams
8 + 7	Discussion and dialogue	g- Measurement calculations for the transfer of ownership	g- Measurement calculations for the transfer of ownership	3	Self and peer evaluation
10 + 9	Discussion and dialogue	h- Standard conditions and correction of volumetric measurements to standard conditions i- International standards for measurement	h- Standard conditions and correction of volumetric measurements to standard conditions i- International standards for measurement	3	Self and peer evaluation
12 + 11	Discussion and dialogue	Chapter Two: - Qualitative Measurements -1Taking models A- Modeling B- Modeling methods	Chapter Two: - Qualitative Measurements -1Taking models A- Modeling B- Modeling methods	3	Self and peer evaluation
14+ 13		-2Laboratory tests A- Density check and measurement	-2Laboratory tests A- Density check and measurement	3	oral exams
16 + 15	Lecture	b- Examine and measure the percentage of	b- Examine and measure the percentage of	3	oral exams

		water and impurities c- Determine the percentage of ash	water and impurities c- Determine the percentage of ash		
18 + 17	Lecture	D- Determination of viscosity E-Determination of the ratio of sulfur, nitrogen and oxygen First semester exam	D-Determination of viscosity E-Determination of the ratio of sulfur, nitrogen and oxygen First semester exam	3	oral exams
20 + 19	Lecture	Types of meters and their working principles	Types of meters and their working principles	3	oral exam
22 + 21	Lecture	Types of meters and their working principles - positive displacement counters - turbo counters - Kariolis counters (mass measurement counters)	Types of meters and their working principles - positive displacement counters - turbo counters - Kariolis counters (mass measurement counters)	3	Oral and written exams
24 + 23	Discussion and dialogue	- Kariolis counters (mass measurement counters)	- Kariolis counters (mass measurement counters)	3	oral exams
26 + 25	Discussion and dialogue	Cyclones	Cyclones	3	Self assessment and colleague

					assessment
28 + 27	Discussion and dialogue	cyclones counters	cyclones counters	3	Self and peer evaluation
30 + 29	Lecture, discussion and debate	- differential pressure meters	- differential pressure meters	3	Self assessment and colleague assessment

11- course development plan
Provide the student with a systematic book to help him with references and make the course study for a full year and not for one semester .

Course description form

Course description **Name:**

This course description provides a brief about introducing the student to safety procedures in laboratories and the procedures to be taken to secure the lives of workers and visitors. As well as teaching the student the concept of quality control and its importance in the different industry in a manner that serves to improve production and reduce the percentage of spoilage.

1. Educational Institution	Central Technical University - Kot Technical Institute
2. Scientific Department / Center	Petrochemical Technology Department
3. Name / Course Icon	**industrial safety and management**
4. Forms of attendance available	Is mandatory
5. Semester/year	The first and second semester of the academic year 0202-1920
6. Number of hours of study (total)	(120) hours of study, 4 hours per week
7. Date of preparation of this description	12/06/2020
8. Course objectives: At the end of the academic year, the student will be able to:	
1. Brief introduction to the history of the petroleum industry	
2. Lists the most important treatments that are carried out on crude oil to produce various oil derivatives	
3. Enumerates the stages of crude oil extraction and refining	
4. Shows how to expel gases, stabilize oil in fields, and remove water and salts from oil	
5. Explains drilling and production operations	

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

A- Cognitive goals
A1- The student knows the safety procedures in laboratories and the procedures to be taken to secure the lives of workers and visitors.
A2- Explains to the student the concept of quality control and its importance in different industries in a way that serves to improve production and reduce the percentage of spoilage.
A3- It shows the student the safety tasks for personal protection, and how to use personal protective equipment.
A4- Explains to the student the most important guiding and warning signs.
A5- It gives the student real examples of accidents that occurred in some factories or oil fields.

B - Skills objectives of the course.
B1 - Gather information on everything related to occupational safety and management.
B2 - Analyze the causes of possible accidents during work.
B3 - Compare past and present experiences to avoid accidents.
B - Communication and delivery skills.

Teaching and learning methods

1- Objective questions are divided into: multiple choice questions, true and false questions, or approximation questions
2 - Self-evaluation and evaluation of the colleague.
3- The tests include:
A - Constructive achievement tests accompanying the teaching plans.
B - Final achievement tests and include:
● Monthly final exams at the end of each academic month.
● Final final exams at the end of a semester.
● Final final exams at the end of the academic year.

Evaluation methods

1- Using achievement tests:
● daily
● monthly
● Quarterly
final

C- Emotional and value goals
C1 - Presenting new ideas about the topic by the student.
C 2- The student's ability to evaluate the topic and give solutions.
C 3 - differentiate between problems.
C4 - Explains and analyzes phenomena and problems.

Teaching and learning methods
1 - Use the presentation and presentation method. 2- Draw illustrations. 3 - Brainstorming method.
Dr - Transferred general and qualification skills (Other skills related to employability and personal development). Dr1- Reference and terminology skills . Dr2- Skills in collecting and analyzing data on a topic . Dr3- Skills to exploit the available possibilities . Dr4- Comparison skills on the topic Dr5- Skills of preparing special concepts about the topic .

10- Course structure

the week	education method	Unit name and/or topic	Required learning outcomes	hours	Evaluation method
1	Lecture	Introduction	Safety, introduction, safety objectives, causes of accidents (unsafe working conditions, unsafe behavior)- Types of hazards and ways to prevent them (natural, chemical, mechanical, electrical, ...)	4	oral exams
2	Discussion and dialogue	Safety tasks for personal protection	Personal protective equipment, personal protective equipment (head protection, hand protection).	4	Self assessment and colleague assessment
3	Discussion and dialogue	Personal protective	Personal protective equipment (safety shoes, respirators, ...) -	4	Self evaluation and

		equipment	Scaffolding, its types and rules, causes of scaffolding accidents, requirements and conditions.		peer evaluation
4	Lecture	Guidance and warning signs	Indicative and warning signs (danger signs, warnings, instructions, indicative signs on special places and places to install them.	4	A written test
5	Discussion and dialogue	Fall dangers	Fall protection, its general requirements, and fall prevention methods and systems. Falling material and equipment hazards.	4	Self evaluation and peer evaluation
6	Lecture	Identification of hazardous materials	Information exchange system on hazardous materials, identification of hazardous materials, types of warning labels.	4	oral exams
7	Lecture	Safety methods in enclosed spaces	Safety methods inside enclosed spaces, types of potential hazards, procedures for entering and working inside enclosed spaces. Responsibility of observers and employees.	4	oral exams
8		Safety measures when using workers lift	Personnel lifting basket, its supplies, requirements, equipment, inspection	4	Self assessment and

		basket	methods, special instructions.		colleague assessment
9	Discussion and dialogue	Safety measures during welding and cutting	Welding and cutting works, flame retardant control methods, ventilation and sanitary protection, hot work permit.	4	Self assessment and colleague assessment
10	Discussion and dialogue	Fires and fire extinguishers	Fires and fire extinguishers, definition, ignition elements, causes, types, types of fire extinguishers, methods of extinguishing fires.	4	Self evaluation and peer evaluation
11	Lecture	Forklifts	Forklifts, special instructions, pre-checks الفحوصات	4	A written test
12	Discussion and dialogue	hand number	Manual numbers, special instructions and rules, errors in the use of hand numbers.	4	Self evaluation and peer evaluation
13	Lecture	Energy sources and types	Energy sources and types, closures and its devices, procedures for closure.	4	oral exams
14	Lecture	Emergency and evacuation plan	The emergency and evacuation plan, their definition, the measures taken to	4	oral exams

			evacuate.		

15	Lecture	General guidelines to be followed in laboratories and laboratories	General guidelines to be followed in laboratories and laboratories. Personal safety tools in laboratories. Safety in chemical laboratories, classification of materials, important tips for workers in chemical laboratories. Inventory and storage of chemicals in laboratories, planning work before conducting experiments	4	oral exams
16	semester exam			4	
17	Lecture	take Safety and security precautions for handling chemicals	takeSafety and security precautions for handling chemicals, precautions for conducting experiments. Emergency and evacuation from chemical laboratories	4	Self evaluation and peer evaluation
18	Lecture	first aid	First aid, laboratory first aid specifications, methods of first aid for some common cases. Chemical waste disposal, definition and methods.	4	A written test
19	Discussio	Classification	Classification of	4	Self

	n and dialogue	of chemical waste	chemical waste, classificationMERCK Chemical Experiment Remnants Collection. Comprehensive information on the safety card for the material. Procedures required of chemical waste producers.		evaluation and peer evaluation
20	Lecture	risk Chemicals and their prevention	Precautions for laboratory administrator and personnel, chemical hazard prevention tools. protectionOne of the dangers of storing chemicals is some cancer-causing chemicals. Discharge of chemical waste.	4	oral exams
21	Lecture	types risk	riskGlasses and ways to prevent them. Electrical and mechanical hazards and ways to prevent them. Safety in biochemistry laboratories, laboratory (laboratory) equipment. Procedures for cleaning up spills in the laboratory (laboratory), packaging of samples and pathogens.	4	oral exams

22	Discussion and dialogue	Administration	Management and its development, stages and development of management, basic principles of management, characteristics of management, levels of management. Administrative jobs, industrial management, its functions, industrial engineering, industrial management characteristics	4	Self evaluation and peer evaluation
23	Lecture	Industrial unit arrangement	Location and arrangement of the industrial unit الوحدة The main factors affecting the selection of the location of industrial projects - Order Industrial unit (factory initial arrangement) Classification of types of industrial unit arrangements - Advantages and limitations and the cases in which it is applied (commodity, functional, mixed, joint)	4	oral exams
24	semester exam			4	

25	Lecture	production planning	The concept of production planning,	4	oral

			the objectives of production planning and control - types of production, methods of production planning, methods of linear programming, the graphic method and the method of transmission		exams
26	Discussion and dialogue	Feasibility study for industrial projects	An idea for a feasibility study for industrial projects Industrial project The stages of the feasibility study The importance of the feasibility study Work study and standard time: work study, work study methods, method study, time study, work measurement	4	Self assessment and colleague assessment
27	Discussion and dialogue	maintenance	The importance of maintenance, the concept of the technological system, types of maintenance, types of holidays	4	Self evaluation and peer evaluation
28	Lecture	training	Training, the concept of training, the importance of training. Training methods	4	A written test
29	Discussion and dialogue	Industrial costs and wages	Costs, classification of costs, wages, methods of calculating wages, incentives, types of	4	Self evaluation and peer

			incentives		evaluation
30	Lecture	purchase management	Procurement, purchasing steps, inventory, types of stored materials, methods of controlling them	4	oral exams

10. Infrastructure	
	1- Required prescribed books
- Laboratory Safety Handbook. Bilge Gunaydin, 2016. - Safety in Science Laboratories, Curriculum Development Institute, Education Bureau	2 main references (sources)
Sober international sites specialized and sober publishing sites	Recommended books and references (scientific journals, reports, ...)
discreet publishing sites	B electronic references, websites...

11- course development plan
Providing the student with a textbook to help him with references and making the course study for a full year and not for one semester .

Description model

This course description provides a brief summary of the most important characteristics of the course and the learning outcomes expected of the student to achieve, demonstrating whether he has made maximum use of the available learning opportunities. It must be linked to the description of the program.;

1- Educational institution	***Middle Technical University ,Al KUT Technical Institution***
2- Scientific Department / Center	Department of Petrochemical Techniques
3- Course name/code	**English Language/2**
4- Attendance type available	Mandatory
5- Semester / year	The first and second semester of the academic year 2021-2020
6- Number of hours of study (total)	(30) hours of study, 1 hours per week
7- [The date this description was made	22/03/2021
8. Course objectives: At the end of the academic year, the student will be able to:	
1 - The student learns about the middle or Pre- intermediate English Language	
2- The student will be able to understand of grammars , reading and writing of English Language related with pre- intermediate level.	
3 - The student learns a little speaking or conversation in English Language at pre-intermediate level.	

9- Course outcomes and methods of teaching, learning and assessment
A- Cognitive goals A1- Knows a essentials of grammars. A2- Knows more vocabularies and the conversation in English Language. A3- Understands all unites related with the new headway Pre-intermediate student's book. A4- Understands speaking or talking with other people at second level.

B - The Marathi objectives of the course. B1 - It applies some grammars essentials and comfortable with suitable sentences. B2 - Apply some simple ways about reading and writing in English Language. B3 - Application of some tests which related with the book .
Teaching and learning methods
1 - Objective questions are divided into: multiple choice questions, true and false questions, or approximation questions 2 - Self-evaluation and evaluation of the colleague. 3- The tests include: A - Constructive achievement tests accompanying the teaching plans. B - Final achievement tests and include: • Monthly final exams at the end of each academic month. • Final final exams at the end of a semester. • Final final exams at the end of the academic year.
Evaluation methods
8- Using achievement tests: • daily • Monthly • Quarterly Final
C- Emotional and value goals C1 - Presenting new ideas on the topic by the student. C 2- The student's ability to evaluate the topic and give solutions. C 3 - differentiate between problems. C4- Explain and analyze phenomena and problems.
Teaching and learning methods
1 – Use the Google Apps like, Google meet, Zoom Claud meeting, Class room. Use the presentation and presentation method 2- Draw illustrations. 3 - Brainstorming method.
D - Transferred general and qualifying skills (other skills related to employability and personal development). D 1- Skills of using references and terminology. D 2 - Skills in collecting and analyzing data on the subject. D 3 - the skills of exploiting the available capabilities. D 4- Skills of making comparisons on the topic D 5 - Skills of preparing special concepts on the subject.

Course structure					
The week	education method	/ Unit name and or topic	Required learning outcomes	hours	Evaluation method
1+2	lecture	Unit one: getting to know you tenses Questions Questions words	The student will be able to understand the lesson	1	oral exams
3+4	Discussion and dialogue	Unit two: the way live Present tenses Present simple Present continuous Have\have got	The student will be able to understand the lesson	1	Self and peer evaluation
5+6	Discussion and dialogue	Unit three: it all went wrong Past tenses Past simple Past continuous	The student will be able to understand the lesson	1	Self and peer evaluation
7+8	Discussion and dialogue	Unit four: let’s go shopping Quantity Much and many Some and any Something, anyone, nobody ,everywhere A few, a little , a lot of Articles	The student will be able to understand the lesson	1	Self and peer evaluation
9+10	Lecture	Unit five: what do you want to do	The student will be able to understand the lesson	1	oral exams اختبارات

		Past tenses Verb patterns 1 Future intentions Going to and will			
11+12	Discussion and dialogue	Unit six: tell me What's it like? Comparative and superlative Adjectives	The student will be able to understand the lesson	1	Self and peer evaluation
12+13	Discussion and dialogue	Unit seven: fame Present perfect and past simple For and since Tense revision	The student will be able to understand the lesson	1	Self and peer evaluation
14+15	Discussion and dialogue	Unit eight: do's and don'ts Have(got) to Should Must	The student will be able to understand the lesson	1	Self and peer evaluation
16				1	oral exams
17+18	Lecture	Unit nine: going places Time and conditional clauses what if..?	The student will be able to understand the lesson	1	oral exams
19+20	Lecture	Unit ten: scared to death Verbs patterns Infinitives What, ect. + infinitive something, ect. + infinitive	The student will be able to understand the lesson	1	oral exams اختبارات
21+22	Lecture	Unit eleven: things that changed the	The student will be able to understand the lesson	1	oral exams

		world Passives			
23+24	Lecture	Unit twelve: dreams and reality Second conditional might	The student will be able to understand the lesson	1	Self and peer evaluation
25+26	Lecture	أمتحان فصلي	The student will be able to understand the lesson	1	Self and peer evaluation
27+28	Lecture	Unit thirteen: earning a living Present perfect continuous Present perfect simple versus continuous	The student will be able to understand the lesson	1	Self and peer evaluation
29+30	Discussion and dialogue	Unit fourteen : family ties Present perfect and past perfect and clarification Reported statements	The student will be able to understand the lesson	1	oral exams

10- Infrastructure	
The new headway Pre- Intermediate student's book	Required prescribed books 1
	(sources) main references 2
Reputable international sites specialized and Higher publishing sites	A recommended books and scientific) references (.... , reports , journals

https://www.slideshare.net/KseniiaHorenko/new-english-file-pre-intermediate-students-book-104241443 https://www.coursef.com/headway-pre-intermediate-workbook-pdf	, B- Electronic references ... Internet sites

11- course development plan
Providing the student with available recent research as far as the topic of the lecture is concerned

Curriculum

please tick in the relevant boxes where individual Programme Learning Outcomes are being a

				Programme Learning Outcomes													
	Cours	Course Title	Core (C) Title or Option (O)	Knowledge and understanding				Subject-specific skills				Thinking Skills				Gener Transfera (or) Oth relev	
				A1	A2	A3	A4	B1	B2	B3	B4	C1	C2	C3	C	D1	D
		Account	**Accoun**	/	/	/	/	/	/	/	/	/	/	/	/	/	
		Analytical															
		oil chemistry															
		fluid															
		Characteristic															
		workshop															
		computer															
		corrosion															
		Maths															
		Human rights															
		English (1)															
		Arabic															
		Professional															
		Crude oil															
		material															
		heat transfer															
		Graduation															
		Operation of															
		minerals and															
		Computer															
		Petrochemica															

		Measurement														
		industrial														
		English (2)														