Ministry of Higher Education and

Scientific Research - Iraq

University of Misan

College of Engineering

Department of Civil Engineering

نماذج وصف المواد الدراسية لمقررات برنامج بكالوريوس الهندسة المدنية حسب مسار بولونيا للمرحلة الأولى والثانية للعام الدراسي 2025\2024

Module Description forms of the Modules of Bachelor of Science in Civil Engineering Program according to Bologna Process

First and Second Year

2024\2025

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First year Modules Description Form (freshman)

Module Information

معلومات المادة الدراسية

Module Title	chemistry		**Module Delivery**
Module Type	Basic		☒ **Theory**
Module Code	E113		☒ **Lecture**
ECTS Credits	4		☐ **Lab**
SWL (hr/sem)	100		☐ **Tutorial** ☐ **Practical** ☐ **Seminar**
Module Level	3 1	**Semester of Delivery**	1
Administering Department	Mech. Department	**College**	Engineering College
Module Leader	Hanan hashim abid	**e-mail**	hananalmaula@uomisan.edu.iq
Module Leader's Acad. Title	Assist lecture	**Module Leader's Qualification**	master
Module Tutor	Name (if available)	**e-mail**	E-mail
Peer Reviewer Name	Name	**e-mail**	E-mail

Scientific Committee Approval Date	30/06/2023	**Version Number**	

Relation with other Modules العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	chemistry	**Semester**	1
Co-requisites module	None	**Semester**	

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Aims أهداف المادة الدراسية	Knowledge of Atomic Structure and Bonding: Understand the structure of atoms, electronic configurations, chemical bonding, and hybridization, which form the basis for understanding the behavior of chemical substances. Understanding of Radioactivity and Nuclear Chemistry: Explore the principles of radioactivity, nuclear stability, radioactive decay, and applications of nuclear chemistry in tracers, dating, and power sources. Knowledge of Cement Chemistry: Study the chemistry of cement, including electrochemical corrosion, hydration reactions, and the weathering of cement. Understanding of Thermal Chemistry and Chemical Kinetics: Learn about exothermic and endothermic reactions, the heat of formation, fuel and water gas, rocket propulsions, energy, and collision. Study the kinetics of chemical reactions and the factors that influence reaction rates.

	Knowledge of Acids and Bases: Gain an understanding of the chemistry of acids and bases, including water treatments, dissociation constants, acid and base strength, pH scale, sterilization, clarification, and boiler feed water. Understanding of Petroleum Refining: Explore the chemistry involved in petroleum refining, including boiling point diagrams and processes for separating and processing hydrocarbons. Knowledge of Hydrocarbons and Aromatic Compounds: Study the structure of benzene, homologs of benzene, reactions involving benzene substitution, as well as alcohol synthesis, ester formation, and reactions of phenols. Overall, these modules aim to provide students with a comprehensive understanding of key concepts and principles in chemistry that are relevant to mechanical engineering. This knowledge will enable students to apply chemical principles in analyzing and solving engineering problems, understanding materials and their properties, and making informed decisions related to chemical processes and reactions in mechanical engineering applications.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	Understand the fundamental principles and concepts of chemistry, including atomic structure, chemical bonding, and chemical reactions. Apply chemical knowledge to analyze and predict the properties and behavior of materials used in mechanical engineering, such as metals and composites. Demonstrate an understanding of the relationship between chemical processes and mechanical engineering applications, such as corrosion, combustion, and heat transfer. Demonstrate awareness of ethical and safety considerations in handling and working with chemical substances

	.
Indicative Contents المحتويات الإرشادية	Atomic Structure and Bonding: Atomic theory: Historical development, models of the atom (e.g., Bohr model, quantum mechanical model) Electronic structures: Electron configuration, energy levels, orbitals Chemical bonding: Ionic, covalent, and metallic bonding; Lewis structures; VSEPR theory Hybridization: Hybrid orbitals, molecular geometry, hybridization in organic molecules Radioactivity / Periodic Tables / Material State: Radioactivity: Types of radiation, nuclear decay, half-life, radioactive dating Periodic table: Periodic trends (e.g., atomic size, ionization energy, electronegativity) Material states: Solid, liquid, gas; phase transitions; phase diagrams Cement / Electrochemical Corrosion: Cement: Hydration reactions, setting and hardening of cement, properties of concrete Electrochemical corrosion: Galvanic cells, corrosion mechanisms, corrosion prevention techniques Thermal Chemistry / Chemical Kinetics: Exothermic and endothermic reactions: Energy changes, heat transfer, enthalpy The heat of formation: Calculation of enthalpy changes, Hess's law Fuel and water gas: Combustion reactions, energy content of fuels, water-gas shift reaction Rocket propulsion: Principles of rocket engines, propellant combustion Energy and collision: Activation energy, reaction rates, collision theory Chemistry of Acids and Bases / Water Treatments: Dissociation constants: Acid and base dissociation, pH, pOH Acid and base strength: Strong and weak acids/bases, acid-base equilibrium Water treatment: Water purification methods, disinfection techniques, water quality parameters Boiler feed water: Water treatment for steam generation, corrosion control

	Petroleum refining: Crude oil composition, refining processes (e.g., distillation, cracking) Hydrocarbons, Aromatic Compounds, Alcohol: Hydrocarbons: Alkanes, alkenes, alkynes, isomerism, reactions (e.g., combustion, addition) Aromatic compounds: Structure of benzene, aromaticity, reactions (e.g., substitution) Alcohol: Structure, nomenclature, synthesis, reactions, ester formation Phenol: Properties, reactions (e.g., electrophilic aromatic substitution)

Learning and Teaching Strategies
استراتيجيات التعلم والتعليم

Strategies	Implement active learning strategies such as problem-solving exercises, case studies, and group discussions, students with engineering problems that require the application of chemical knowledge and skills to find solutions. Encourage students to analyze and solve these problems, fostering critical thinking and problem-solving abilities.

Student Workload (SWL)
الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا

Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	63	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	2
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	37	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	2

Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	100

Module Evaluation

تقييم المادة الدراسية

As		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	2	5% (5)	5, 10	All
	Assignments	2	5% (5)	2, 12	All
	Projects / Lab.				
	Report				
Summative assessment	Midterm Exam	2 hr	20% (20)	7	All
	Final Exam	3 hr	70% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)

المنهاج الاسبوعي النظري

Week	Material Covered
Week 1	Atomic structure and Bonding Atomic Theory the nuclear Atoms
Week 2	Electronic Structures

	Chemical Bonding Hybridization
Week 3	Radioactivity Periodic Tables Material State
Week 4	Nuclear Stability, Radioactive decay Tracers Dating Power Sources
Week 5	Cement Electrochemical Corrosion Hydration Reaction Weathering of Cement quiz
Week 6	Thermal Chemistry Chemical Kinetics Exothermic And Endothermic Reaction
Week 7	heat of Formation fuel and Water gas Rocket Propulsions Energy and collision
Week 8	Chemistry of acids and bases Water Treatments

	Dissociation Constants
Week 9	The Strength of Acid and Bases The PH Scale Known Acid and Base
Week 10	Sterilization Clarification Boiler feed Water Boiling point Diagram Petroleum Refining Quiz.
Week 11	Hydrocarbons Aromatic Compounds
Week 12	Benzene Structure Substitution of Benzene.
Week 13	Homologues of Benzene substitution in benzene ring
Week 14	Alcohol synthesis of Alcohol
Week 15	Ester Formation, reaction of Phenol
Week 16	**A preparatory week before the Final Exam**

Learning and Teaching Resources
مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	General Chemistry: Principles and Modern Applications" by Ralph H. Petrucci, F. Geoffrey Herring, Jeffry D. Madura, and Carey Bissonnette.	Yes
Recommended Texts	Principles of Modern Chemistry" by Oxtoby, Gillis, and Campion.	yes
Websites		

Grading Scheme
مخطط الدرجات

Group	Grade	التقدير	Marks (%)	Definition
Success Group (50 - 100)	**A** - Excellent	امتياز	90 - 100	Outstanding Performance
	B - Very Good	جيد جدا	80 - 89	Above average with some errors
	C - Good	جيد	70 - 79	Sound work with notable errors
	D - Satisfactory	متوسط	60 - 69	Fair but with major shortcomings
	E - Sufficient	مقبول	50 - 59	Work meets minimum criteria
Fail Group (0 – 49)	**FX** – Fail	راسب (قيد المعالجة)	(45-49)	More work is required but credit awarded
	F – Fail	راسب	(0-44)	A considerable amount of work required

Note: Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.

Module Information

معلومات المادة الدراسية

Module Title	Construction Materials			**Module Delivery**
Module Type	Basic			☒ **Theory**
Module Code	CE125			☒ **Lecture**
ECTS Credits	6			☒ **Lab**
SWL (hr/sem)	150			☒ **Tutorial** ☐ **Practical** ☐ **Seminar**
Module Level	33CE21		**Semester of Delivery**	1
Administering Department	CE		**College**	E
Module Leader	A.L. Rasool Dakhil		**e-mail**	Rasool.81@uomisan.edu.iq
Module Leader's Acad. Title	**Assistant Lecturer**		**Module Leader's Qualification**	**MSc.**

Module Tutor	None		**e-mail**	None	
Peer Reviewer Name		Scientific Committee	**e-mail**		
Review Committee Approval		30/06/2023	**Version Number**	1.0	

Relation With Other Modules

العلاقة مع المواد الدراسية الأخرى

Prerequisite module	CONCRETE TECHNOLOGY, Building Construction and Reinforced Concrete Design I and II	**Semester**	1,2
Co-requisites module	None	**Semester**	

Module Aims, Learning Outcomes and Indicative Contents

أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية

Module Aims أهداف المادة الدراسية	1. When a material with high resistance, defined by good performance, high durability, and fire resistance is required, it is great to introduce students to the most commonly used structural material in the discipline of civil engineering. 2. Give students the engineering knowledge and hands-on experience they need to understand the characteristics and behavior of construction materials as well as the key determinants of the quality of construction materials produced in various construction industries. 3. Gaining knowledge of how to do laboratory tests on construction materials and their components in accordance with Iraqi and international standards.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	1. Understanding of important physical and chemical properties of the construction materials. 2. Describe the physical & mechanical properties of construction materials. 3. Production and quality control of construction materials, describe and carry out tests relevant to the use of construction materials on site. 4. Explain factors affecting the strength of construction materials.

	5. Study factors affecting the durability of construction materials.
Indicative Contents المحتويات الإرشادية	Indicative content includes the following: 1-Portland cement: and the action of gypsum, Setting, Fineness of cement, Volume of products of hydration 2-Properties of Clay Bricks and Manufacture of Clay Bricks 3-Properties and building Materials : Physical, Chemical, Thermal and Mechanical Properties 4-Other Types of Bricks (Refractory Bricks, Sand Lime Bricks, Glass Bricks, Glazed Bricks and Concrete Bricks) 5- Metal: Steel , Cast iron, Aluminum, 6- Mortar and Binders 7- Wood (Types, Properties and Test of Wood)
Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	The educational material is delivered, encourage students to discussion, and laboratory tests learning.

Student Workload (SWL) الحمل الدراسي للطالب			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	127	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	8
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	23	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	2

Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	150

Module Evaluation

تقييم المادة الدراسية

As		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	**Quizzes**	30 min/4	10% (10)	3,6,9,12	LO # 1-2, LO# 3-5, LO# 6-8, LO# 9-11
	Assignments/ In-class discussions	15 min/5	10% (10)	4, 10	LO # 1-4
	Laboratory	5hr /15	10% (10)	Continuous	
	Report/ Homework	10 min /6	10% (10)	13	LO # 5
Summative assessment	**Midterm Exam**	1.5hr/1	10% (10)	8	LO # 1-7
	Final Exam	3hr/1	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)

المنهاج الاسبوعي النظري

Week	Material Covered
Week 1	Introduction and Specifications Overview
Week 2	Properties and building Materials : Physical, Chemical, Thermal and Mechanical Properties

Week 3	Properties and building Materials : Physical, Chemical, Thermal and Mechanical Properties
Week 4	Properties and building Materials : Physical, Chemical, Thermal and Mechanical Properties
Week 5	Clay Bricks
Week 6	Properties of Clay Bricks and Manufacture of Clay Bricks
Week 7	Other Types of Bricks (Refractory Bricks, Sand Lime Bricks, Glass Bricks, Glazed Bricks and Concrete Bricks)
Week 8	Mid Term Exam
Week 9	Cement Types
Week 10	Metal: Steel , Cast iron, Aluminum,
Week 11	Wood (Types, Properties and Test of Wood)
Week 12	Cement : Hydration of Cement, cement mortar
Week 13	Gypsum Mortar (Properties and Types)
Week 14	Lime Mortar
Week 15	Stress and Strain
Week 16	**Final Exam**

Delivery Plan (Weekly Lab. Syllabus)

المنهاج الاسبوعي للمختبر

Week	**Material Covered**
Week 1	1-Dimension of clay bricks test
Week 2	2- Compressive strength test
Week 3	3- Test of flexural strength
Week 4	4- Water absorption test

Week 5	5- Efflorescence test
Week 6	6- Shape and dimensions Tiles test
Week 7	7- Water absorption Tiles test
Week 8	Mid Term Exam
Week 9	8- Flexural Strength Tiles test
Week 10	9-Cement Fineness
Week 11	10- Gypsum fineness test
Week 12	11- Gypsum water ratio test
Week 13	12- Compressive strength Cement test
Week 14	13- Reinforcing Steel
Week 15	Final Exam

Learning and Teaching Resources

مصادر التعلم والتدريس

	Text	**Available in the Library?**
Required Texts	Materials of Construction	Yes
Recommended Texts	• Building materials in civil engineering by Haimei Zhang • PRINCIPAL PROPERTIES OF BUILDING MATERIALS by Mau Stnlnd. • MATERIALS FOR CIVIL AND CONSTRUCTION ENGINEERS \\THIRD EDITION BY MICHAEL S. MAMLOUK , JOHN P. ZANIEWSKI. • MATERIALS IN CONSTRUCTION / AN INTRODUCTION BY G. D.TAYLOR	Available Online
Websites	www. construction materials.org	

APPENDIX:

GRADING SCHEME مخطط الدرجات				
Group	**Grade**	التقدير	**Marks (%)**	**Definition**
Success Group (50 - 100)	**A -** Excellent	امتياز	90 - 100	Outstanding Performance
	B - Very Good	جيد جدا	80 - 89	Above average with some errors
	C - Good	جيد	70 - 79	Sound work with notable errors
	D - Satisfactory	متوسط	60 - 69	Fair but with major shortcomings
	E - Sufficient	مقبول	50 - 59	Work meets minimum criteria
Fail Group (0 – 49)	**FX –** Fail	مقبول بقرار	(45-49)	More work required but credit awarded
	F – Fail	راسب	(0-44)	Considerable amount of work required

Note:

NB Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.

Module Information

معلومات المادة الدراسية

Module Title	Engineering Drawing			**Module Delivery**	
Module Type	Basic			☒ **Theory**	
Module Code	CE112			☒ **Lecture**	
ECTS Credits	6			☒ **Lab**	
SWL (hr/sem)	150			☐ **Tutorial**	
				☐ **Practical**	
				☐ **Seminar**	
Module Level		33CE21	**Semester of Delivery**		1
Administering Department		CE	**College**	E	
Module Leader	A.L. Rasool Dakhil		**e-mail**	Rasool.81@uomisan.edu.iq	
Module Leader's Acad. Title		**Assistant Lecturer**	**Module Leader's Qualification**		**MSc.**
Module Tutor	None		**e-mail**	None	

Peer Reviewer Name	Scientific Committee	**e-mail**	
Review Committee Approval	30/06/2023	**Version Number**	1.0

Relation With Other Modules
العلاقة مع المواد الدراسية الأخرى

Prerequisite module	Engineering surveying I, Building Construction and Reinforced Concrete Design	**Semester**	1,2
Co-requisites module	None	**Semester**	

Module Aims, Learning Outcomes and Indicative Contents
أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية

Module Aims أهداف المادة الدراسية	1. Give the students the engineering knowledge and practical experience they need to understand the drawings as well as the main determinants of how they are drawn and illustrated so that they are easy to understand and implement by the implementing engineer. 2. Acquisition of knowledge of how structural, architectural and mechanical plans and their components work.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	1 Student is able to understand and read plans, transfer them to reality, and implement them in engineering projects 2-A student who is able to draw diagrams in a clear and easy to understand and implement manner 3-The student should be familiar with all the details and symbols of the drawing and its implications 4- The student should be able to draw engineering using a computer
Indicative Contents المحتويات الإرشادية	

Learning and Teaching Strategies

استراتيجيات التعلم والتعليم

Strategies	The educational material is delivered, encourage students to discussion, and laboratory tests learning.

Student Workload (SWL)

الحمل الدراسي للطالب

Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	93	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	6
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	57	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	4
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	150		

Module Evaluation

تقييم المادة الدراسية

As		**Time/Number**	**Weight (Marks)**	**Week Due**	**Relevant Learning Outcome**
Formative assessment	**Quizzes**	30 min/4	10% (10)	3,6,9,12	LO # 1-2, LO# 3-5, LO# 6-8, LO# 9-11
	Assignments/ In-class discussions	15 min/5	10% (10)	4, 10	LO # 1-4
	Laboratory	5hr /15	10% (10)	Continuous	

	Report/ Homework	10 min /6	10% (10)	13	LO # 5
Summative assessment	**Midterm Exam**	1.5hr/1	10% (10)	8	LO # 1-7
	Final Exam	3hr/1	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)

المنهاج الاسبوعي النظري

Week	Material Covered
Week 1	Introduction
Week 2	Instruments
Week 3	Instruments
Week 4	Lines and Lettering
Week 5	Lines and Lettering
Week 6	Applied Geometry
Week 7	Applied Geometry
Week 8	Mid Term Exam
Week 9	Projection
Week 10	Dimensions
Week 11	Dimensions
Week 12	Isometric
Week 13	Isometric
Week 14	Sections

Week 15	Sections
Week 16	**Final Exam**

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
Week	**Material Covered**
Week 1	Introduction
Week 2	Structural Drawing (Plan, Foundation Plan, Lintels, Slabs Reinforcement Plan, Section through Building and Stairs)
Week 3	Structural Drawing (Plan, Foundation Plan, Lintels, Slabs Reinforcement Plan, Section through Building and Stairs)
Week 4	Structural Drawing (Plan, Foundation Plan, Lintels, Slabs Reinforcement Plan, Section through Building and Stairs)
Week 5	Structural Drawing (Plan, Foundation Plan, Lintels, Slabs Reinforcement Plan, Section through Building and Stairs)
Week 6	Structural Drawing (Plan, Foundation Plan, Lintels, Slabs Reinforcement Plan, Section through Building and Stairs)
Week 7	Drawings by computer
Week 8	Mid Term Exam
Week 9	Drawings by computer
Week 10	Drawings by computer
Week 11	Drawings by computer
Week 12	Drawings by computer
Week 13	Drawings by computer
Week 14	Drawings by computer

Week 15	Final Exam

Learning and Teaching Resources

مصادر التعلم والتدريس

	Text	**Available in the Library?**
Required Texts	ENGINEERING DRAWING	Yes
Recommended Texts	*ENGINEERING DRAWING* عبد الرسول الخفاف	Available Online
Websites	www. ENGINEERING DRAWING.org	

APPENDIX:

GRADING SCHEME

مخطط الدرجات

Group	**Grade**	التقدير	**Marks (%)**	**Definition**
Success Group (50 - 100)	**A** - Excellent	امتياز	90 – 100	Outstanding Performance
	B - Very Good	جيد جدا	80 – 89	Above average with some errors
	C - Good	جيد	70 – 79	Sound work with notable errors
	D - Satisfactory	متوسط	60 – 69	Fair but with major shortcomings
	E - Sufficient	مقبول	50 – 59	Work meets minimum criteria
Fail Group (0 – 49)	**FX** – Fail	مقبول بقرار	(45-49)	More work required but credit awarded
	F – Fail	راسب	(0-44)	Considerable amount of work required
Note:				

NB Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.

Module Information

معلومات المادة الدراسية

Module Title	Engineering Drawing	**Module Delivery**
Module Type	Basic	☒ **Theory**
Module Code	CE112	☒ **Lecture**
ECTS Credits	6	☒ **Lab**
SWL (hr/sem)	150	☐ **Tutorial** ☐ **Practical** ☐ **Seminar**

Module Learning Outcomes مخرجات التعلم للمادة الدراسية	1 Student is able to understand and read plans, transfer them to reality, and implement them in engineering projects 2-A student who is able to draw diagrams in a clear and easy to understand and implement manner

	3-The student should be familiar with all the details and symbols of the drawing and its implications 4- The student should be able to draw engineering using a computer

Module Information

معلومات المادة الدراسية

Module Title	Physics		**Module Delivery**
Module Type	Basic		☒ **Theory**
Module Code	E123		☒ **Lecture**
ECTS Credits	4		☐ **Lab**
SWL (hr/sem)	100		☐ **Tutorial** ☒ **Practical** ☐ **Seminar**
Module Level	3 1	**Semester of Delivery**	2
Administering Department	Mech. Department	**College**	Engineering College
Module Leader	Hanan hashim abid	**e-mail**	hananalmaula@uomisan.edu.iq

Module Leader's Acad. Title	Assist lecture	**Module Leader's Qualification**	Master
Module Tutor	Name (if available)	**e-mail**	E-mail
Peer Reviewer Name	Name	**e-mail**	E-mail
Scientific Committee Approval Date	30/06/2023	**Version Number**	

Relation with other Modules
العلاقة مع المواد الدراسية الأخرى

Prerequisite module	physics	**Semester**	2
Co-requisites module	None	**Semester**	

Module Aims, Learning Outcomes and Indicative Contents
أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية

Module Aims أهداف المادة الدراسية	to provide an understanding of the behavior of fluids at rest, including topics such as liquid pressure, pressure measurement, surface tension, Bernoulli's equation, viscosity, and the effects of turbulence. Students will learn how to apply these concepts to practical engineering applications. to introduce students to the properties of solids, including crystalline structures, stress and strain analysis, elasticity and plasticity, and the behavior of materials under different loading conditions. Students will learn about concepts such as elasticity modulus, Poisson's ratio, and the energy stored in

	stressed bodies. Acquire knowledge and skills in the measurement and analysis of physical quantities, including the use of appropriate instruments and units. to familiarize students with temperature measurement techniques and the thermal properties of materials. Topics covered may include different types of thermometers, thermal expansion of materials, thermal impedance, and phase transformations in materials due to temperature changes. focuses on the study of motion, including the equations of motion, simple harmonic motion (such as pendulums), damped motion, forced motion, and wave motion. Students will learn how to analyze and solve problems related to these types of motion. to provide an understanding of sound waves, including their power and intensity, the relationship between sound and temperature, and the Doppler phenomenon. Students will learn about the properties and behavior of sound waves in different media.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	Understand the principles of fluid pressure and its measurement. Apply Bernoulli's equation to analyze fluid flow in various situations. Explain the concept of surface tension and its practical applications. Understand the behavior of fluids under turbulent conditions. Analyze and solve problems related to fluid viscosity and flow. Describe different types of crystalline solids and their structures. Analyze stress and strain in materials and understand their behavior under different loading conditions. Calculate elasticity modulus and Poisson's ratio for materials. Evaluate the energy stored in stressed bodies and understand their elastic and plastic behavior. Explain the working principles of different types of thermometers. Understand the concept of thermal expansion and its measurement. Analyze phase transformations in materials due to temperature changes.

	Evaluate the thermal properties of materials and their implications in engineering applications. Apply the equations of motion to analyze and solve problems related to motion. Understand the behavior of simple harmonic motion, such as pendulums. Analyze damped and forced motion and their practical implications. Understand the nature of wave motion and analyze longitudinal waves in pipes. Understand the power and intensity of sound waves. Analyze the relationship between sound and temperature. Explain the Doppler phenomenon and its applications. Analyze and solve problems related to the behavior of sound waves in different media.
Indicative Contents المحتويات الإرشادية	

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	The main strategies that will be adopted in delivering this unit are: 1- Encourage students to participate in the exercises. This is achieved through classes and interactive educational programs. 2-Raise students' scientific and knowledge levels by employing the automatic technique, conversational approach, and active method.

Student Workload (SWL) الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	59	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	2
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	41	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	3
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	100		

Module Evaluation

تقييم المادة الدراسية

As		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	**Quizzes**	2	5% (5)	5, 10	All
	Assignments	2	5% (5)	2, 12	All
	Projects / Lab.				
	Report				
Summative assessment	**Midterm Exam**	2 hr	20% (20)	7	All
	Final Exam	3 hr	70% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)

المنهاج الاسبوعي النظري

Week	Material Covered
Week 1	**Static Fluids** liquid pressure pressure gauges
Week 2	Surface tension Capillary effect
Week 3	Applications of Bernoulli equation Viscosity Poisson's Law Turbulent and Reynolds' number.
Week 4	**Material Properties** Solids crystalline solids types quiz
Week 5	crystalline structures Stress Strain
Week 6	Elasticity and plasticity Elasticity Modulus Poisson's ratio Energy stored in a stressed body

Week 7	**Temperature Measuring** Thermometers Types Thermal Expansion Thermal Impedance
Week 8	Mid-Term Exam
Week 9	Materials Phase Transformation Thermal Properties of Materials Quiz.
Week 10	**Motion** Equation of Motion pendulum
Week 11	damping Motion Forced motion
Week 12	Wave Motion longitudinal wave in Pipes
Week 13	. **Sound Waves** Power and intensity
Week 14	relations of sound and temperature Doppler Phenomenon
Week 15	Preparation week for the final Examination

Learning and Teaching Resources

مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	PHYSICS FOR SCIENTISTS AND ENGINEERS, Sixth Edition	Yes
Recommended Texts		
Websites		

Grading Scheme مخطط الدرجات				
Group	**Grade**	التقدير	**Marks (%)**	**Definition**
Success Group (50 - 100)	**A** - Excellent	امتياز	90 - 100	Outstanding Performance
	B - Very Good	جيد جدا	80 - 89	Above average with some errors
	C - Good	جيد	70 - 79	Sound work with notable errors
	D - Satisfactory	متوسط	60 - 69	Fair but with major shortcomings
	E - Sufficient	مقبول	50 - 59	Work meets minimum criteria
Fail Group (0 – 49)	**FX** – Fail	راسب (قيد المعالجة)	(45-49)	More work is required but credit awarded
	F – Fail	راسب	(0-44)	A considerable amount of work required

Note: Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.

Module Information

معلومات المادة الدراسية

Module Title	Statistics			**Module Delivery**
Module Type	Basic			☒ **Theory**
Module Code	CE126			☒ **Lecture**
ECTS Credits	4			☐ **Lab**
SWL (hr/sem)	100			☐ **Tutorial** ☒ **Practical** ☐ **Seminar**
Module Level	3	1	**Semester of Delivery**	2
Administering Department	Civil. Department		**College**	Engineering College
Module Leader	N/A		**e-mail**	
Module Leader's Acad. Title	Assist lecture		**Module Leader's Qualification**	Master
Module Tutor	Name (if available)		**e-mail**	E-mail

Peer Reviewer Name	Name	**e-mail**	E-mail
Scientific Committee Approval Date	30/06/2023	**Version Number**	

Relation with other Modules العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	None	**Semester**	
Co-requisites module	None	**Semester**	

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	The main strategies that will be adopted in delivering this unit are: 1- Encourage students to participate in the exercises. This is achieved through classes and interactive educational programs. 2-Raise students' scientific and knowledge levels by employing the automatic technique, conversational approach, and active method.

Student Workload (SWL) الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	59	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	3
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	41	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	3
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	100		

Module Evaluation

تقييم المادة الدراسية

As		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	**Quizzes**	2	5% (5)	5, 10	All
	Assignments	2	5% (5)	2, 12	All
	Projects / Lab.				
	Report				
Summative assessment	**Midterm Exam**	2 hr	20% (20)	7	All
	Final Exam	3 hr	70% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)

المنهاج الاسبوعي النظري

Week	Material Covered
Week 1	Introduction
Week 2	Description and Classification of Data
Week 3	Description and Classification of Data
Week 4	Frequency Distribution(Cumulative Frequency Distribution, Frequency Histogram, Frequency Polygon, Frequency Curve and Relative Frequency
Week 5	Frequency Distribution(Cumulative Frequency Distribution, Frequency Histogram, Frequency Polygon, Frequency Curve and Relative Frequency
Week 6	Measurements of Central Tendency (Mathematical Mean, Mode, Geometric Mean and Harmonic Mean) Measurements of Central Tendency (Mathematical Mean, Mode, Geometric Mean and Harmonic Mean)
Week 7	Mid-term Exam
Week 8	Measures of Dispersion (Standard Deviation, Variance, Coefficient of Variance, Range and Mean Absolute Deviation)
Week 9	Theory of Probability
Week 10	Permutation and Combination
Week 11	Permutation and Combination
Week 12	Statistical Probability Distributions (Poisson, Binomial and Normal)
Week 13	Statistical Probability Distributions (Poisson, Binomial and Normal)
Week 14	Sampling and Testing of Significant Chi-Square Distribution and Linear Correlation and regression Applications Solved by Computer

Week 15	Preperations for the final examination

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	"Thomas' Calculus Early Transcendentals" by George Thomas ،Maurice D. Weir ،Joel Hass · 2014	Yes
Recommended Texts	Schaum's Outline of College Mathematics, Fourth Edition (Schaum's Outlines) 4th Edition	Yes
Websites		

Grading Scheme مخطط الدرجات				
Group	**Grade**	التقدير	**Marks (%)**	**Definition**
Success Group (50 - 100)	**A** - Excellent	امتياز	90 - 100	Outstanding Performance
	B - Very Good	جيد جدا	80 - 89	Above average with some errors
	C - Good	جيد	70 - 79	Sound work with notable errors
	D - Satisfactory	متوسط	60 - 69	Fair but with major shortcomings
	E - Sufficient	مقبول	50 - 59	Work meets minimum criteria
Fail Group (0 – 49)	**FX** – Fail	راسب (قيد المعالجة)	(45-49)	More work is required but credit awarded
	F – Fail	راسب	(0-44)	A considerable amount of work required

Note: Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.

Module Information **معلومات المادة الدراسية**		
Module Title	Engineering Workshops	

Module Type	**C (Core learning activity)**			**Class lecture** **Lab**
Module Code	**CE127**			
ECTS Credits	**2 (2 hrs. per week)**			
SWL(hr/sem)				
Module Level	**UGI**	**Semester of Delivery**	**1**	
Administering Department	**CE**	**College**	**E**	
Module Leader	**Murtada Abass Abed Ali**	**email**	**murtadaa@uomisan.edu.iq**	
Module Leader s Acad. Title	**Associate Professor**	**Module Leader s Qualification**	**Ph.D.**	
Module Tutor	**Same Module leader**	**e-mail**		
Peer Reviewer Name		**e-mail**		
Scientific Committee Approval Date	**18/06/2023**	**Version Number**	**1.0**	

Relation with other Modules **العلاقة مع المواد الدراسية الاخرى**			
Prerequisite module	**None**	**Semester**	
Co-requisite module	**None**	**Semester**	

Module Aims, Learning Outcomes and Indicative Contents
اهداف المادة الدراسية ونتائج التعلم والمحتويات الارشادية

Module Aims **اهداف المادة الدراسية**	Develop an understanding of the principles of statics, and the ability to analyze problem rationally in a systematic and logical manner including the ability to draw free-body diagrams of structures subjected to distributed loads. The ability to change the distributing load into point load. Ability to compute the centroid of lines, areas, and volumes in plane and in space for regular and irregular shapes. The student will develop a knowledge about the importance of moment of inertia and its relationship to the strength of materials. The ability to compute the moment of inertia around the centroid of shapes and around any axis that does not lie at the centroid. The importance of the radius of gyration. Static Friction and its importance and how to compute the friction force for different types of surfaces.This understanding requires a knowledge not only about physics and mathematics of mechanics, but also to; visualize the geometry configuration, the type of the materials, and types of constraints that govern the behavior of the mechanics of materials and thus the structures.
Module Learning Outcomes **مخرجات التعلم للمادة الدراسية**	After Accomplishing the course requirements, the student will be able to: **1.** solve the problems of statically determinate structures that are subjected to distributed load and point loads and apply the equilibrium equations to them **2.** Compute the centroid and the center of mass of bodies in plane and in space and implement this in equilibrium and the ability to determine the reactions of structure supports due to the self-weight of the structure. **3.** Compute the moment of inertia and the radius of gyration of different types of shapes in plane. **4.** Develop the understanding on the effect of static friction on structures and how to analyze the free body diagram due to the friction forces.
Indicative Contents **المحتويات الارشادية**	Indicative assessments in this course are as follows: (1) Individual in class and homework assignments and quizzes after each topic; (2) group work home work assignment; and (3) One mid-term and one final examinations.

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	The strategies applied in this course are based on creating an active learning environment and engaging students in it. Problem-based learning and collaborative learning are the two strategies applied in this course.

Student \Workload (SWL) الحمل الدراسي للطالب			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	**65**	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب خلال الأسبوع	**4-5**
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	**85**	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب اسبوعيا	**5-6**
TOTAL SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	**150**		

Module Evaluation تقييم المادة الدراسية				
	Time/Number	**Weight (Marks)**	**Week Due**	**Relevant Learning Outcome**
Formative assessment	**Quizzes**	**5%**		
	Assignments	**5%**	Continuous	
	Projects /Lab,			
	Report	**N.A**		

Summative assessment	**Midterm Exam**	**1.5hr 20%**	**7**	
	Final Exam	**3hr 70%**	**16**	**All**
Total assessment		**100%(100 marks)**		

Delivery Plan (Weekly Syllabus) المنهاج الأسبوعي النظري	
	Material Covered
Week 1	**Chapter 1**: Introduction: Quick review to statically determinate structures and the equilibrium equations and the creation of the free body diagram
Week 2	**Chapter 2:** changing the distributed load into point load and the analysis of frame structures.
Week 2	**Cont'd with Chapter 2:** changing the distributed load into point load and the analysis of frame structures.
Week 3	**Chapter 3:** Centroid of lines
Week 4	**Chapter 3:** Centroid of lines
Week 5	**Chapter 3:** Centroid of lines
Week 6	**Chapter 3:** Center of mass of lines in space
Week 7	**Chapter 3:** Moment of inertia
Week 8	**Mid-term Examination**
Week 9	**Chapter 3:** Moment of inertia
Week 10	**Chapter 3:** Moment of inertia
Week 11	**Chapter 3:** Moment of inertia and radius of gyration of bodies in plane
Week 12	Chapter 3: The relationship between the moment of Inertia and the flexural strength of the material

Week 13	**Chapter 3:** Friction
Week 14	**Chapter 3:** Friction
Week 15	**Chapter 3:** Friction
Week 16	**Preparations week for Final Examinations**

Delivery Plan (Weekly Lab. Syllabus) **المنهاج الأسبوعي للمختبر**	
	Material Covered
Week 1	N.A
Week 2	N.A
Week 3	N.A
Week 4	N.A
Week 5	N.A
Week 6	N.A
Week 7	N.A

Learning and Teaching Resources **مصادر التعلم والتدريس**		
	Text	**Available in the Library?**
Required Texts		
Recommended Texts	Engineering Mechanics by Russell Hibbeler any edition, Publisher: Pearson Education, Limited, Harlow	**Yes**
Websites		

Grading Scheme **مخطط الدرجات**				
Group	**Grade**	**التقدير**	**Marks (%)**	**Definition**

Success Group (50 - 100)	A- Excellent	امتياز	90-100	Outstanding Performance
	B - Very Good	جيد جدا	80-89	Above average with some errors
	C - Good	جيد	70-79	Sound work with notable errors
	D - Satisfactory	متوسط	60-69	Fair but with major shortcomings
	E - Sufficient	مقبول	50-59	Work meets minimum criteria
Fail Group (0 - 49)	FX- Fail	راسب (قيد المعالجة)	(45-49)	More work required but credit awarded
	F- Fail	راسب	(0-44)	Considerable amount of work required
Note: Marks with decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55. whereas a mark of 54.4 will be rounded to 54. The University- has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the, automatic rounding outlined above.				

Contact

Program Manager:

Murtada Abass Abed Ali | Ph.D. of Civil Engineering (Structural) | Associate Professor.

Email: murtadaa@uomisan.edu.iq

Mobile No.: 07728194966

Telegram User: @MA05112019

Website: https://murtadaabass.wordpress.com

Program Coordinator:

Same contact details of the Program Manager

Module Information معلومات المادة الدراسية					
Module Title	Mathematics I				
Module Type	Basic			Theory Lecture Lab Tutorial Seminar	
Module Code	E111				
ECTS Credits	6				
SWL(hr/sem)	150				
Module Level		1	Semester of Delivery	1	
Administering Department		CE	College	E	
Module Leader	Ahmed Hatif Obaid		email	aobaid@uomisan.edu.iq	
Module Leader s Acad. Title	Assistant Lecturer		Module Leader s Qualification	MSc.	
Module Tutor			e-mail		
Peer Reviewer Name	Scientific Committee		e-mail		
Scientific Committee Approval Date	15/06/2023		Version Number	1.0	

Relation with other Modules العلاقة مع المواد الدراسية الاخرى			
Prerequisite module	None	Semester	

Co-requisite module	None	Semester	

Module Aims, Learning Outcomes and Indicative Contents اهداف المادة الدراسية ونتائج التعلم والمحتويات الارشادية	
Module Aims **اهداف المادة الدراسية**	• Good understanding of General Mathematics. • To give information about derivations and how they are used in the physics field. • Helping students to connect mathematics with physics. • solving mathematical examples in their physics modules. • better understanding of derivations and their importance of them in physics.
Module Learning Outcomes **مخرجات التعلم للمادة الدراسية**	After successful completion of the module, students should be able to: • Work with functions represented in various ways: graphical, numerical, analytical, or verbal. They should understand the connections among these representations. The functions include linear, polynomial, absolute value, rational, and piecewise defined functions. • Define and apply the concepts of limits and continuity to the mentioned functions and study them graphically and analytically. • Understand the meaning of the derivative in terms of a rate of change and local linear approximation, and should be able to use derivatives to solve a variety of problems.

Indicative Contents **المحتويات الارشادية**	

Learning and Teaching Strategies

استراتيجيات التعلم والتعليم

Strategies	• Different forms of teaching will be used to come across with objectives of the course. pdf presentations for the head titles, definitions, graphs, and many useful illustrations with a summary at the end of each chapter will be presented and discussed. • The pdf contains information about new topics and unsolved examples, and then the whiteboard will be used to solve them and to let students to see the solutions.

Student \Workload (SWL)

الحمل الدراسي للطالب

Structured SWL (h/sem) **الحمل الدراسي المنتظم للطالب خلال الفصل**	65	**Structured SWL (h/w)** **الحمل الدراسي المنتظم للطالب خلال الفصل**	5
Unstructured SWL (h/sem) **الحمل الدراسي غير المنتظم للطالب خلال الفصل**	85	**Unstructured SWL (h/w)** **الحمل الدراسي غير المنتظم للطالب اسبوعيا**	6
TOTAL SWL (h/sem) **الحمل الدراسي الكلي للطالب خلال الفصل**	150		

Module Evaluation تقييم المادة الدراسية				
	Time/Number	**Weight (Marks)**	**Week Due**	**Relevant Learning Outcome**
Formative assessment	**Quizzes**	10% (10)		
	Assignments	10% (10)		
	Projects /Lab,	10% (10)		
	Report	10% (10)		
Summative assessment	**Midterm Exam**	1.5hr 10 % (10)		
	Final Exam	3hr 50 % (50)	16	All
Total assessment		100 % (100 marks)		

Delivery Plan (Weekly Syllabus) المنهاج الأسبوعي النظري	
	Material Covered
Week 1	**Algebraic Preliminaries** Numbers, Sets, Inequalities & Absolute value.
Week 2	**Functions** Domain, Range, graphs, Symmetry, Asymptotes.
Week 3	**Functions**

	Domain, Range, graphs, Symmetry, Asymptotes
Week 4	**Limits** Definition of Limit, Theorems, Continuity, One-Sided Limits, Limits at Infinity, L Hopital's rule.
Week 5	**Limits** Definition of Limit, Theorems, Continuity, One-Sided Limits, Limits at Infinity, L Hopital's rule.
Week 6	**Limits** Definition of Limit, Theorems, Continuity, One-Sided Limits, Limits at Infinity, L Hopital's rule.
Week 7	**Derivatives** Definition, Power and Sum Rules, Product and Quotient Rules, Chain rule, High-Order derivatives, Parametric Functions ,Implicit differentiation.
Week 8	**Derivatives** Definition, Power and Sum Rules, Product and Quotient Rules, Chain rule, High-Order derivatives, Parametric Functions ,Implicit differentiation.
Week 9	**Applications of Derivative** Maximum and minimum, mean value theorem, Increasing and Decreasing Functions, Concavity and Points of inflection, Second Derivative Test.
Week 10	**Applications of Derivative** Maximum and minimum, mean value theorem, Increasing and Decreasing Functions, Concavity and Points of inflection, Second Derivative Test.
Week 11	**Applications of Derivative** Maximum and minimum, mean value theorem, Increasing and Decreasing Functions, Concavity and Points of inflection, Second Derivative Test.
Week 12	**Applications of Derivative** Maximum and minimum, mean value theorem, Increasing and Decreasing Functions, Concavity and Points of inflection, Second Derivative Test.
Week 13	**Applications of Derivative** Maximum and minimum, mean value theorem, Increasing and Decreasing Functions, Concavity and Points of inflection, Second Derivative Test.
Week 14	**Plane Analytic Geometry** Circle, Parabola, Ellipse, Hyperbola
Week 15	**Plane Analytic Geometry** Circle, Parabola, Ellipse, Hyperbola
Week 16	**Preparatory week before the final Exam**

Delivery Plan (Weekly Lab. Syllabus) المنهاج الأسبوعي للمختبر	
	Material Covered
Week 1	N. A
Week 2	N. A
Week 3	N. A
Week 4	N. A
Week 5	N. A
Week 6	N. A
Week 7	N. A

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	1.Calculus, 11th Edition, By Thomas, 2013.	Yes
Recommended Texts	1. Calculus Early transcendentals Howard Anton, Irl Bivens, Stephen Davis 2.Understanding Basic Calculus, by S.K. Chung, 2007	No
Websites	https://www.mathway.com/	

Grading Scheme مخطط الدرجات				
Group	**Grade**	**التقدير**	**Marks (%)**	**Definition**
Success Group (50 - 100)	A- Excellent	امتياز	90-100	Outstanding Performance
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	C - Good	جيد	70-79	Sound work with notable errors
	D - Satisfactory	متوسط	60-69	Fair but with major shortcomings
	E - Sufficient	مقبول	50-59	Work meets minimum criteria
Fail Group (0 - 49)	FX- Fail	راسب (قيد المعالجة)	(45-49)	More work required but credit awarded
	F- Fail	راسب	(0-44)	Considerable amount of work required

Note: Marks with decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55. whereas a mark of 54.4 will be rounded to 54. The University- has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the, automatic rounding outlined above.

Contact

Program Manager:

Ahmed Hatif Obaid | MSc. In Structural Engineering | Assistant lecturer.

Email: aobaid@uomisan.edu.iq

Mobile no: 07702434961

Program Coordinator :

Ahmed Hatif Obaid | MSc. In Structural Engineering | Assistant lecturer.

Email: aobaid@uomisan.edu.iq

Mobile no: 07702434961

Module Information **معلومات المادة الدراسية**					
Module Title	Mathematics II				
Module Type	**Basic**			**Theory** **Lecture** **Lab** **Tutorial** **Seminar**	
Module Code	**E121**				
ECTS Credits	**6**				
SWL(hr/sem)	**150**				
Module Level		**1**	**Semester of Delivery**		**2**
Administering Department		**CE**	**College**		**E**
Module Leader	**Ahmed Hatif Obaid**		**email**	**aobaid@uomisan.edu.iq**	
Module Leader s Acad. Title	**Assistant Lecturer**		**Module Leader s Qualification**		**MSc.**
Module Tutor			**e-mail**		
Peer Reviewer Name	**Scientific Committee**		**e-mail**		
Scientific Committee Approval Date	**15/06/2023**		**Version Number**	**1.0**	

Relation with other Modules العلاقة مع المواد الدراسية الاخرى			
Prerequisite module	**None**	**Semester**	
Co-requisite module	**None**	**Semester**	

Module Aims, Learning Outcomes and Indicative Contents اهداف المادة الدراسية ونتائج التعلم والمحتويات الارشادية	
Module Aims اهداف المادة الدراسية	•To give information about Integrations and derivations of Transcendental Functions and how they are used in the physics field. •Helping students to connect mathematics with physics. •Solving mathematical examples in their physics modules. •Better understanding of integration and derivations of Transcendental Functions and their importance of them in physics. •Solving matrices and operations of it.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	After successful completion of the module, students should be able to: •Work with transcendental functions represented in various ways: graphical, numerical, analytical, or verbal. They should understand the connections among these representations. exponential, logarithmic, trigonometric, inverse trigonometric, hyperbolic, and inverse hyperbolic,

	•Define and apply the concepts of limits and continuity to the mentioned functions and study them graphically and analytically. • Understand the meaning of the definite integral both as a limit of Riemann sums as the net accumulation of change and should be able to use integrals to solve a variety of problems. •Use various integration techniques to obtain anti-derivatives without an integral table or calculator. •Use various operations matrices
Indicative Contents **المحتويات الارشادية**	

Learning and Teaching Strategies

استراتيجيات التعلم والتعليم

Strategies	• Different forms of teaching will be used to come across with objectives of the course. pdf presentations for the head titles, definitions, graphs, and many useful illustrations with a summary at the end of each chapter will be presented and discussed. • The pdf contains information about new topics and unsolved examples, and then the whiteboard will be used to solve them and to let students to see the solutions.

Student \Workload (SWL)

الحمل الدراسي للطالب

Structured SWL (h/sem) **الحمل الدراسي المنتظم للطالب خلال الفصل**	65	**Structured SWL (h/w)** **الحمل الدراسي المنتظم للطالب خلال الفصل**	4.64
Unstructured SWL (h/sem) **الحمل الدراسي غير المنتظم للطالب خلال الفصل**	85	**Unstructured SWL (h/w)** **الحمل الدراسي غير المنتظم للطالب اسبوعيا**	6.07
TOTAL SWL (h/sem) **الحمل الدراسي الكلي للطالب خلال الفصل**	150		

Module Evaluation تقييم المادة الدراسية				
	Time/Number	**Weight (Marks)**	**Week Due**	**Relevant Learning Outcome**
Formative assessment	**Quizzes**	10% (10)		
	Assignments	10% (10)		
	Projects /Lab,	10% (10)		
	Report	10% (10)		
Summative assessment	**Midterm Exam**	1.5hr 10 % (10)		
	Final Exam	3hr 50 % (50)	16	All
Total assessment		100 % (100 marks)		

Delivery Plan (Weekly Syllabus) المنهاج الأسبوعي النظري	
	Material Covered
Week 1	**Introduction**
Week 2	**Definite Integration** Definition, Integral Theorems, Length of a Curve, Areas, Volume of Solids, Surface Area, Indefinite Integrals.
Week 3	**Definite Integration** Definition, Integral Theorems, Length of a Curve, Areas, Volume of Solids, Surface Area, Indefinite Integrals.
Week 4	**Definite Integration** Definition, Integral Theorems, Length of a Curve, Areas, Volume of Solids, Surface Area, Indefinite Integrals.
Week 5	**Definite Integration** Definition, Integral Theorems, Length of a Curve, Areas, Volume of Solids, Surface Area, Indefinite Integrals.

Week 6	**Transcendental Functions** Trigonometric Functions, Graphs, Derivatives of trigonometric functions, Inverse trigonometric functions, Graphs, Derivatives of Inverse trigonometric functions, Natural Logarithm Functions, Exponential Functions, Functions a^u and $\log_a u$.
Week 7	**Transcendental Functions** Trigonometric Functions, Graphs, Derivatives of trigonometric functions, Inverse trigonometric functions, Graphs, Derivatives of Inverse trigonometric functions, Natural Logarithm Functions, Exponential Functions, Functions a^u and $\log_a u$.
Week 8	**Transcendental Functions** Trigonometric Functions, Graphs, Derivatives of trigonometric functions, Inverse trigonometric functions, Graphs, Derivatives of Inverse trigonometric functions, Natural Logarithm Functions, Exponential Functions, Functions a^u and $\log_a u$.
Week 9	**Transcendental Functions** Trigonometric Functions, Graphs, Derivatives of trigonometric functions, Inverse trigonometric functions, Graphs, Derivatives of Inverse trigonometric functions, Natural Logarithm Functions, Exponential Functions, Functions a^u and $\log_a u$.
Week 10	**Hyperbolic Functions** Definition, Derivatives, Integrals, Inverse Hyperbolic Functions.
Week 11	**Hyperbolic Functions** Definition, Derivatives, Integrals, Inverse Hyperbolic Functions.
Week 12	**Methods of Integrations** Integration by substitution, Trigonometric Integrals & Quadratic Functions, Integration by Parts, Integration by partial fractions, Integration of Rational Functions, improper integrals.
Week 13	**Methods of Integrations** Integration by substitution, Trigonometric Integrals & Quadratic Functions, Integration by Parts, Integration by partial fractions, Integration of Rational Functions, improper integrals.
Week 14	**Matrices and Determinates** Definition, Properties of Matrices, Operations on Matrices, Determinants, Matrix Inverse, Solution of Linear Simultaneous Equations (Gramer's Rule).
Week 15	**Matrices and Determinates** Definition, Properties of Matrices, Operations on Matrices, Determinants, Matrix Inverse, Solution of Linear Simultaneous Equations (Gramer's Rule).
Week 16	**Preparatory week before the final Exam**

Delivery Plan (Weekly Lab. Syllabus) **المنهاج الأسبوعي للمختبر**	
	Material Covered
Week 1	N. A
Week 2	N. A

Week 3	N. A
Week 4	N. A
Week 5	N. A
Week 6	N. A
Week 7	N. A

Learning and Teaching Resources **مصادر التعلم والتدريس**		
	Text	**Available in the Library?**
Required Texts	1.Calculus, 11th Edition, By Thomas, 2013.	Yes
Recommended Texts	1. Calculus Early transcendentals Howard Anton, Irl Bivens, Stephen Davis 2.Understanding Basic Calculus, by S.K. Chung, 2007	No
Websites	https://www.mathway.com/	

Grading Scheme **مخطط الدرجات**				
Group	**Grade**	**التقدير**	**Marks (%)**	**Definition**
Success Group (50 - 100)	A- Excellent	امتياز	90-100	Outstanding Performance
	B - Very Good	جيد جدا	80-89	Above average with some errors
	C - Good	جيد	70-79	Sound work with notable errors
	D - Satisfactory	متوسط	60-69	Fair but with major shortcomings
	E - Sufficient	مقبول	50-59	Work meets minimum criteria
Fail Group (0 - 49)	FX- Fail	راسب (قيد المعالجة)	(45-49)	More work required but credit awarded
	F- Fail	راسب	(0-44)	Considerable amount of work required

Note: Marks with decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55. whereas a mark of 54.4 will be rounded to 54. The University- has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the, automatic rounding outlined above.

Contact

Program Manager:

Ahmed Hatif Obaid | MSc. In Structural Engineering | Assistant lecturer.

Email: aobaid@uomisan.edu.iq

Mobile no: 07702434961

Program Coordinator :

Ahmed Hatif Obaid | MSc. In Structural Engineering | Assistant lecturer.

Email: aobaid@uomisan.edu.iq

Mobile no: 07702434961

Module Information

معلومات المادة الدراسية

Module Title	Engineering Geology			**Module Delivery**	
Module Type	Basic			**Theory**	
Module Code	CE124			✓ **Lecture**	
ECTS Credits	4			✓ **Lab**	
SWL (hr/sem)	100			**Tutorial**	
				✓ **Practical**	
				Seminar	
Module Level			**Semester of Delivery**	1	
Administering Department	Type Dept. Code		**College**	Type College Code	
Module Leader	Murtada Abass Abel Ali		**e-mail**	murtadaa@uomisan.edu.iq	
Module Leader's Acad. Title	Associate Professor		**Module Leader's Qualification**	PhD	
Module Tutor	Murtada Abass Abel Ali		**e-mail**	murtadaa@uomisan.edu.iq	

Peer Reviewer Name	Murtada Abass Abel Ali	**e-mail**	murtadaa@uomisan.edu.iq
Scientific Committee Approval Date	04/07/2023	**Version Number**	1.0

Relation with other Modules العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	1-Soil Mechanics 2-Building Material Science	**Semester**	
Co-requisites module	None	**Semester**	

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Aims أهداف المادة الدراسية	1 – Developing an understanding of the concepts and language of geology and engineering geology 2 – By understanding the geological conditions and factors, Informed engineering decisions can be made to ensure the stability and safety of the foundations. 3 – Acquiring the necessary background knowledge to efficiently conduct site investigation to a site to determine its suitability for construction projects by studying the rock and soil properties and identifying potential geological hazards such as landslides.

Module Learning Outcomes مخرجات التعلم للمادة الدراسية	1- Understanding the processes that have formed the earth and the characteristics of its components. 2- Understanding the chemical classification of minerals supported with examples. 3- Identifying the types of minerals that cause soil swelling. 4- Understanding the main three types of rocks (Igneous, sedimentary and Metamorphic rocks) and their formation processes, physical and chemical characteristics and their types. 5- Understanding the different types of mechanical and chemical weathering 6- Understanding soil types and the features and classification of each type in addition to the engineering classification of soil based on particles size 7- Understanding the different types of geological structures and their components and types. 8- Understanding the engineering properties of rocks and the related calculations 9- Interpreting geological maps including topographic and geological cross-sections
Indicative Contents المحتويات الإرشادية	The internal structure of the earth, minerals, Rocks, Weathering, Soil, Structural geology, The Engineering Properties of Rocks

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	Lectures with students' engagement, Project-based learning through reports, Peer teaching through seminars and group projects, Laboratories and assignments.

Student Workload (SWL)

الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا

Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	63	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	4
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	37	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	4
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	100		

Module Evaluation

تقييم المادة الدراسية

As		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	**Quizzes**	30 min/4	10% (10)	2,5,8,11	1,2,3,4,5,6
	Assignments	4	10% (10)	4,10	1,2,3,4,5
	Projects / Lab.	3	10% (10)	10	1,2,3,4,9
	Report	1	10% (10)	2,12	1,2,3,4,5,6,7
Summative assessment	**Midterm Exam**	1.5hr	10% (10)	7	1,2,3,4
	Final Exam	3hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري	
Week	**Material Covered**
Week 1	Introduction
Week 2	The internal structure of the earth
Week 3	Sources of minerals
Week 4	Classification of Minerals: Non-Silicate Minerals
Week 5	Classification of Minerals: Silicate Minerals
Week 6	Clay Minerals
Week 7	Rocks: Igneous and sedimentary rocks
Week 8	Rocks: Metamorphic rocks
Week 9	Weathering
Week 10	Soil formation
Week 11	The engineering classification of soil
Week 12	Structural geology: Folds and Joints
Week 13	Structural geology: Faults and Un-conformability
Week 14	The Engineering Properties of Rocks
Week 15	The Engineering Properties of Rocks
Week 16	Final Exam

Delivery Plan (Weekly Lab. Syllabus)

المنهاج الاسبوعي للمختبر

Week	Material Covered
Week 7	Rocks Classification
Week 9	Topographic Maps
Week 11	Cross-sectional Maps

Learning and Teaching Resources

مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts		
Recommended Texts	Engineering Geology, 2nd edition by F G Bell	No
Websites		

Grading Scheme

مخطط الدرجات

Group	Grade	التقدير	Marks (%)	Definition
Success Group (50 - 100)	**A** - Excellent	امتياز	90 - 100	Outstanding Performance
	B - Very Good	جيد جدا	80 - 89	Above average with some errors
	C - Good	جيد	70 - 79	Sound work with notable errors
	D - Satisfactory	متوسط	60 - 69	Fair but with major shortcomings
	E - Sufficient	مقبول	50 - 59	Work meets minimum criteria

Fail Group **(0 – 49)**	**FX –** Fail	راسب (قيد المعالجة)	(45-49)	More work is required but credit awarded
	F – Fail	راسب	(0-44)	Considerable amount of work required

Note: Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.

MODULE DESCRIPTION FORM

وصف المادة الدراسية

Module Information **معلومات المادة الدراسية**					
Module Title	Human rights and democracy				
Module Type	**Basic**		**Theory** **Lecture** **Lab** **Tutorial** **Seminar**		
Module Code	U226				
ECTS Credits	**3**				
SWL(hr/sem)	**75**				
Module Level	**2**	**Semester of Delivery**	**3**		
Administering Department	**CE**	**College**	**E**		
Module Leader	**Rafaa zaati**	**email**			
Module Leader s Acad. Title	**Assistant Lecturer**	**Module Leader s Qualification**	**MSc.**		
Module Tutor		**e-mail**			

Peer Reviewer Name	Scientific Committee	e-mail	
Scientific Committee Approval Date	15/06/2023	Version Number	1.0

Relation with other Modules العلاقة مع المواد الدراسية الاخرى			
Prerequisite module	None	Semester	
Co-requisite module	None	Semester	

Module Aims, Learning Outcomes and Indicative Contents اهداف المادة الدراسية ونتائج التعلم والمحتويات الارشادية	
Module Aims اهداف المادة الدراسية	• To learn the student the social rights and freedoms. The individual rights in the state security as the right of getting job. To ensure that the student be get the equality in Islam. The equality in Law. The equality in Judiciary and Employment The financial corruption. The equality in the public costs and burdens To show and get the Arab chart for human rights
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	After completing this module, students should demonstrate competency in the following:

	The main rules that organize human rights. Admitting of rights under the authority of the modern state of law The intellectual base of the principle of rights and freedoms in Islam. Properties and the nature of rights and freedoms in Islam. The non-organized rights and freedoms in Islam.
Indicative Contents **المحتويات الارشادية**	

Learning and Teaching Strategies

استراتيجيات التعلم والتعليم

Strategies	Different forms of teaching will be used to come across with objectives of the course. pdf presentations for the head titles, definitions, graphs, and many useful illustrations with a summary at the end of each chapter will be presented and discussed. The pdf contains information about new topics and unsolved examples, and then the whiteboard will be used. Quizzes and Assessments: Incorporate regular quizzes and assessments to assess students' understanding . Homework Assignments: Assign regular programming exercises and projects as homework. Encourage students to actively apply the concepts learned in class to realworld scenarios. Provide constructive feedback on their submissions to promote improvement and reinforce learning.

Student \Workload (SWL)

الحمل الدراسي للطالب

Structured SWL (h/sem) **الحمل الدراسي المنتظم للطالب خلال الفصل**	36	**Structured SWL (h/w)** **الحمل الدراسي المنتظم للطالب خلال الفصل**	5
Unstructured SWL (h/sem) **الحمل الدراسي غير المنتظم للطالب خلال الفصل**	31	**Unstructured SWL (h/w)** **الحمل الدراسي غير المنتظم للطالب اسبوعيا**	4

TOTAL SWL (h/sem) **الحمل الدراسي الكلي للطالب خلال الفصل**	75

Module Evaluation **تقييم المادة الدراسية**				
	Time/Number	**Weight (Marks)**	**Week Due**	**Relevant Learning Outcome**
Formative assessment	**Quizzes**	10% (10)		
	Assignments	10% (10)		
	Projects /Lab,	10% (10)		
	Report	10% (10)		
Summative assessment	**Midterm Exam**	1.5hr 10 % (10)		
	Final Exam	3hr 50 % (50)	16	All
Total assessment		100 % (100 marks)		

Delivery Plan (Weekly Syllabus) **المنهاج الأسبوعي النظري**	
	Material Covered
Week 1	Introduction
Week 2	The social rights and freedoms. The individual rights in the state security as the right of getting job.
Week 3	The social rights and freedoms. The individual rights in the state security as the right of getting job.
Week 4	The administrative corruption.
Week 5	The equality in Islam. The equality in Law. The equality in Judiciary and Employment The financial corruption. The equality in the public costs and burdens.
Week 6	The rights of human in Iraqi law. The general rights of individuals especially those rights related to human morals.
Week 7	The individuals' freedoms related to their material interest.
Week 8	The Arab chart for human rights.
Week 9	Introduction about human rights. The literal and linguistic definition of rights. The historic development of the human rights concept

Week 10	appearance of Islam and the basis of human right. Europe and human rights.
Week 11	The concept of human in the material civilization. The concept of human in Islam.
Week 12	The status of human in the modem civilization. The status of human in Jurisprudence.
Week 13	The features of human rights in the Islamic intellectuals.
Week 14	The main rules that organize human rights. Admitting of rights under the authority of the modern state of law.
Week 15	The intellectual base of the principle of rights and freedoms in Islam. Properties and the nature of rights and freedoms in Islam. The non-organized rights and freedoms in Islam.
Week 16	**Preparatory week before the final Exam**

Delivery Plan (Weekly Lab. Syllabus) **المنهاج الأسبوعي للمختبر**	
	Material Covered
Week 1	N. A
Week 2	N. A
Week 3	N. A
Week 4	N. A
Week 5	N. A
Week 6	N. A
Week 7	N. A

Learning and Teaching Resources **مصادر التعلم والتدريس**		
	Text	**Available in the Library?**
Required Texts	حقوق الانسان بين النصوص والنسيان	Yes
Recommended Texts	حقوق الانسان القواعد والاليات الدولية	yes
Websites		

Grading Scheme مخطط الدرجات				
Group	**Grade**	**التقدير**	**Marks (%)**	**Definition**
Success Group (50 - 100)	A- Excellent	امتياز	90-100	Outstanding Performance
	B - Very Good	جيد جدا	80-89	Above average with some errors
	C - Good	جيد	70-79	Sound work with notable errors
	D - Satisfactory	متوسط	60-69	Fair but with major shortcomings
	E - Sufficient	مقبول	50-59	Work meets minimum criteria
Fail Group (0 - 49)	FX- Fail	راسب (قيد المعالجة)	(45-49)	More work required but credit awarded
	F- Fail	راسب	(0-44)	Considerable amount of work required
Note: Marks with decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55. whereas a mark of 54.4 will be rounded to 54. The University- has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the, automatic rounding outlined above.				

Contact

Program Manager:

Haidar rafaa z. | MSc. law | Assistant lecturer.

Email:

Mobile no:

Program Coordinator:

Haidar rafaa z. | MSc. law | Assistant lecturer.

Email:

Mobile no:

MODULE DESCRIPTION FORM

وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	Computer Programming I				
Module Type	B		Theory Lecture Lab Tutorial Seminar		
Module Code	U114				
ECTS Credits	6				
SWL(hr/sem)	150				
Module Level		UGI	Semester of Delivery	2	
Administering Department		CE	College	E	
Module Leader	Huda Ismail Olewi		email	hudaismail@uomisan.edu.iq	
Module Leader s Acad. Title	Assistant Lecturer		Module Leader s Qualification		MSc.
Module Tutor	Huda Ismail Olewi		e-mail	hudaismail@uomisan.edu.iq	

Peer Reviewer Name	**Huda Ismail Olewi**	**e-mail**	**hudaismail@uomisan.edu.iq**
Scientific Committee Approval Date	**20/06/2023**	**Version Number**	**1.0**

Relation with other Modules **العلاقة مع المواد الدراسية الاخرى**			
Prerequisite module	**None**	**Semester**	
Co-requisite module	**CE225**	**Semester**	**4**

Module Aims, Learning Outcomes and Indicative Contents

اهداف المادة الدراسية ونتائج التعلم والمحتويات الارشادية

Module Aims **اهداف المادة الدراسية**	Learn how to use computer and knowledge basic component of it. learn how to format text, save and share documents, modify line and paragraph spacing, use tables and columns, and do more with documents. learn how to use themes and background styles, add pictures and clip art, modify charts and lists, and do more to create standout presentations.

	learn how to create formulas and charts, use functions, format cells, and do more with spreadsheets. Recall fundamental programming concepts and terminology. identify and remember basic syntax and data types in QuickBasic. Memorize key programming principles and rules. Comprehend the fundamental concepts of programming and their relevance. Explain the principles behind QuickBasic programming language. Interpret and understand QuickBasic code examples. Utilize QuickBasic programming language to solve simple coding problems. Apply programming techniques to implement algorithms and solutions. Design and create basic QuickBasic programs to perform specific tasks. Apply problem-solving strategies and programming principles. learn how to format text, use paragraph dialog boxes, add indents, work with tables and columns, and do more with your documents.
Module Learning Outcomes **مخرجات التعلم للمادة الدراسية**	Demonstrate a foundational understanding of computer and programming concepts and terminology, specifically in the context of QuickBasic. Apply knowledge of Microsoft Office and QuickBasic syntax and data types to write basic programs. Analyze and interpret QuickBasic examples to understand their functionality. Design and implement QuickBasic programs that utilize control flow, variables, and data structures effectively. Solve simple coding problems using QuickBasic programming techniques and algorithms.

	Communicate programming concepts and solutions effectively, both orally and in written form.
Indicative Contents **المحتويات الارشادية**	**Fundamentals of Computer:** This section focuses on imparting the basics of computer knowledge, the knowledge about Operating Systems, how different features of Windows Operating systems are organized, and finally how can we use the computer to browse in the internet to seek for the necessary information at the earliest possible. **Fundamentals of Microsoft Office:** This section focuses on different features of the interface, shows how to perform basic tasks, and introduces the most important tools in Word, PowerPoint, and Excel. **Fundamentals of Programming:** This section introduces the foundational concepts, principles, and techniques of programming. Students learn about the importance of programming, the role of programming languages, and the basic components of a program. They also explore problem-solving techniques and the process of designing and implementing algorithms.

Learning and Teaching Strategies **استراتيجيات التعلم والتعليم**	
Strategies	**Think-Pair-Share:** Include think-pair-share activities in which students consider a programming concept or problem on their own, pair up with a classmate to debate their ideas, and then present their ideas to the entire group. This promotes active engagement, teamwork, and critical thinking. Present students with actual case studies or scenarios that they must evaluate, create, and put into practice using QuickBasic. This encourages the use of programming principles in real-world contexts and the development of problem-solving abilities and critical thinking. **Code Review Sessions:** Organize code review sessions when students show their code to the class, explain their reasoning, and ask for feedback. This encourages investigation of code quality, critical thinking, and exchange of helpful criticism. **Quizzes and Assessments:** Include periodical tests and quizzes to evaluate students' knowledge of Microsoft Office,

	computer fundamentals, QuickBasic programming, syntax, and problem-solving abilities. Use interactive tools or online platforms that offer quick feedback to increase participation and encourage self-evaluation. **Homework Assignments:** Regular programming exercises and projects should be assigned as homework. Encourage your students to actively apply what they have learnt in the classroom to actual situations. Give them insightful criticism on their submissions to encourage progress and strengthen learning.

Student \Workload (SWL) الحمل الدراسي للطالب			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	97	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب اسبوعيا	5
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	28	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب اسبوعيا	6
TOTAL SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	125		

Module Evaluation تقييم المادة الدراسية				
	Time/Number	**Weight (Marks)**	**Week Due**	**Relevant Learning Outcome**
Formative assessment	**Quizzes**	10% (10)	5 and 10	
	Assignments	10% (10)	2 and 12	
	Projects /Lab,	10% (10)	Continuous	
	Report	10% (10)	13	
Summative assessment	**Midterm Exam**	2 hr 10 % (10)	7	
	Final Exam	3 hr 50 % (50)	16	All
Total assessment		100 % (100 marks)		

Delivery Plan (Weekly Syllabus) المنهاج الأسبوعي النظري	
	Material Covered
Week 1	Introduction to computers and historical review
Week 2	Basics of Computers – Computer Hardware and Software
Week 3	Microsoft Office Word 2010
Week 4	Microsoft Office Word 2010
Week 5	Microsoft Office PowerPoint-2010
Week 6	Microsoft Office PowerPoint-2010
Week 7	Microsoft Office Excel-2010
Week 8	Microsoft Office Excel-2010+ **Mid-term Exam**
Week 9	QUICK BASIC Introduction , Comments, Floating Point Numbers, Strings, Arithmetic Expressions, Negative Numbers
Week 10	Variable, String Variable,
Week 11	The INPUT Statement, Let Statement, Read, Data Statement, Library Functions
Week 12	The IF Then Commands, The INT Function, Multiple Expression
Week 13	Looping Statement
Week 14	Series
Week 15	Series
Week 16	**Preparatory week before the final Exam**

Delivery Plan (Weekly Lab. Syllabus)
المنهاج الأسبوعي للمختبر

	Material Covered
Week 1	Basics of Computers – Computer Hardware and Software Operating System Operating Systems Functions Install an operating system such as (WINDOWS 10)
Week 2	Basics of Computers – Computer Hardware and Software Example of an Operating System (WINDOWS 10) and apply all actions.
Week 3	Microsoft Office Word 2010 The Ribbon Backstage view The Quick Access toolbar create a new blank document open an existing document Text Basics
Week 4	Microsoft Office Word 2010 Formatting Text Line and Paragraph Spacing Working with Shapes Text boxes Inserting Clip Art and Pictures Inserting and modifying tables
Week 5	Microsoft Office PowerPoint-2010 Introduction (Getting Started with PowerPoint) Creating and opening presentations Slide Basics
Week 6	Microsoft Office PowerPoint-2010 Text Basics Applying Theme Inserting Image Applying Transitions
Week 7	Microsoft Office Excel-2010 The Excel interface Creating and Opening Workbooks Cell Basics Modifying Columns, Rows, and Cells
Week 8	Microsoft Office Excel-2010+ **Mid-term Exam** Formulas and Functions

	Working with basic functions
Week 9	QUICK BASIC Introduction , Comments, Floating Point Numbers, Strings, Arithmetic Expressions, Negative Numbers
Week 10	Variable, String Variable,
Week 11	The INPUT Statement, Let Statement, Read, Data Statement, Library Functions
Week 12	The IF Then Commands, The INT Function, Multiple Expression
Week 13	Looping Statement
Week 14	Series
Week 15	Series
Week 16	**Final Exam**

Learning and Teaching Resources **مصادر التعلم والتدريس**		
	Text	**Available in the Library?**
Required Texts	Qbasic for Beginners by Manfred Tornsdorf (Author), Helmut Tornsdorf (Author)	No
Recommended Texts		-
Websites	https://edu.gcfglobal.org/en/subjects/microsoft-office/#	

Grading Scheme **مخطط الدرجات**				
Group	**Grade**	**التقدير**	**Marks (%)**	**Definition**
Success Group (50 - 100)	A- Excellent	امتياز	90-100	Outstanding Performance
	B - Very Good	جيد جدا	80-89	Above average with some errors
	C - Good	جيد	70-79	Sound work with notable errors
	D - Satisfactory	متوسط	60-69	Fair but with major shortcomings
	E - Sufficient	مقبول	50-59	Work meets minimum criteria

Fail Group (0 - 49)	FX- Fail	راسب (قيد المعالجة)	(45-49)	More work required but credit awarded
	F- Fail	راسب	(0-44)	Considerable amount of work required
Note: Marks with decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55. whereas a mark of 54.4 will be rounded to 54. The University- has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the, automatic rounding outlined above.				

Contact

Program Manager:

Huda Ismail Olewi | MSc. In Computer Engineering | Assistant lecturer.

Email: hudaismail@uomisan.edu.iq

Mobile no: 07705503208

Program Coordinator :

Huda Ismail Olewi | MSc. In Computer Engineering | Assistant lecturer.

Email: hudaismail@uomisan.edu.iq

Mobile no: 07705503208

MODULE DESCRIPTION FORM

وصف المادة الدراسية

Module Information معلومات المادة الدراسية				
Module Title	English Language			
Module Type	Support		Theory Lecture Lab Tutorial Seminar	
Module Code	U116			
ECTS Credits	2			
SWL (hr/sem)	50			
Module Level	1	Semester of Delivery	1	
Administering Department	CE	College	E	
Module Leader	Jwad Kadhim Taher	email	eng.jawad@uomisan.edu.iq	
Module Leader s Acad. Title	Assistant Lecturer	Module Leader s Qualification	MSc.	
Module Tutor	Jwad Kadhim Taher	e-mail	eng.jawad@uomisan.edu.iq	
Peer Reviewer Name	Scientific Committee	e-mail		
Scientific Committee Approval Date	15/06/2023	Version Number	1.0	

Relation with other Modules العلاقة مع المواد الدراسية الاخرى			
Prerequisite module		Semester	
Co-requisite module		Semester	

Module Aims, Learning Outcomes and Indicative Contents اهداف المادة الدراسية ونتائج التعلم والمحتويات الارشادية	
Module Aims **اهداف المادة الدراسية**	The Basic English Language Course is designed to provide students with a solid foundation in the English language, focusing on essential skills in reading, writing, listening, and speaking. This course is suitable for students who have little to no prior knowledge of English or for those who wish to enhance their basic language abilities. Through a combination of interactive activities, engaging exercises, and practical assignments, students will develop their language skills and gain confidence in using English in various everyday situations.
Module Learning Outcomes **مخرجات التعلم للمادة الدراسية**	By the end of this module, students will be able to: Demonstrate comprehension of basic English vocabulary & Civil Engineering Terminology., grammar, and sentence structures. Develop essential reading skills. Speak English with improved pronunciation, intonation, and fluency in simple dialogues and everyday conversations. Expand their vocabulary through exposure to commonly used words, phrases, and idiomatic expressions. Utilize basic English language skills to effectively communicate in various practical situations.
Indicative Contents **المحتويات الارشادية**	

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	There are various learning and teaching strategies that can be employed to enhance the acquisition and teaching of the English language. Here are some commonly used strategies: Communicative Approach: This approach emphasizes meaningful communication as the primary goal of language learning. Visual Aids and Multimedia: Visual aids, such as pictures, videos, charts, and real objects, can enhance comprehension and vocabulary acquisition. Multimedia resources, such as interactive software, online resources, and language learning apps, provide engaging and interactive learning experiences. Continuous Practice: Consistent practice is essential for language learning. Encouraging learners to immerse themselves in English outside the classroom through activities like reading books, watching movies, listening to music, or engaging in conversations with native speakers can significantly enhance language proficiency.

Student \Workload (SWL) الحمل الدراسي للطالب			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	34	Structured SWL (h/w) الحمل الدراسي المنتظم للطالب خلال الفصل	2.42
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	16	Unstructured SWL (h/w) الحمل الدراسي غير المنتظم للطالب اسبوعيا	1.14
TOTAL SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	50		

Module Evaluation تقييم المادة الدراسية				
	Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	10% (10)		
	Assignments	10% (10)		
	Projects /Lab,	10% (10)		
	Report	10% (10)		
Summative assessment	Midterm Exam	1.5hr 10 % (10)		
	Final Exam	3hr 50 % (50)	16	All
Total assessment		100 % (100 marks)		

Delivery Plan (Weekly Syllabus) المنهاج الأسبوعي النظري	
	Material Covered
Week 1	Basic English essentials.
Week 2	English grammar.
Week 3	English grammar & Basic conversation practice
Week 4	English grammar & Basic conversation practice
Week 5	Reading comprehension & Academic writing
Week 6	Reading comprehension & Academic writing
Week 7	Vocabulary & Civil Engineering Terminology.
Week 8	Mid-term Exam.
Week 9	English grammar & Basic conversation practice
Week 10	English grammar. & Basic conversation practice
Week 11	English grammar.
Week 12	Reading comprehension & Academic writing
Week 13	Reading comprehension & Academic writing
Week 14	Vocabulary & Civil Engineering Terminology.
Week 15	Situational conversation practice
Week 16	Preparatory week before the final Exam

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	Oxford English for Electrical and Mechanical. English Grammar in Use by Raymond Murphy	No

Recommended Texts	A Dictionary of Construction, Surveying and Civil Engineering (Oxford University Press)	No
Websites	https://preply.com/en/blog/websites-to-learn-english/	

Grading Scheme **مخطط الدرجات**				
Group	**Grade**	**التقدير**	**Marks (%)**	**Definition**
Success Group (50 - 100)	A- Excellent	امتياز	90-100	Outstanding Performance
	B - Very Good	جيد جدا	80-89	Above average with some errors
	C - Good	جيد	70-79	Sound work with notable errors
	D - Satisfactory	متوسط	60-69	Fair but with major shortcomings
	E - Sufficient	مقبول	50-59	Work meets minimum criteria
Fail Group (0 - 49)	FX- Fail	راسب (قيد المعالجة)	(45-49)	More work required but credit awarded
	F- Fail	راسب	(0-44)	Considerable amount of work required
Note: Marks with decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55. whereas a mark of 54.4 will be rounded to 54. The University- has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the, automatic rounding outlined above.				

Contact

Program Manager:

Jwad Kadhim Taher | MSc. In Civil Engineering | Assistant lecturer.

Email: eng.jawad@uomisan.edu.iq

Mobile no: 07705599402

Program Coordinator:

Jwad Kadhim Taher | MSc. In Civil Engineering | Assistant lecturer.

Email: eng.jawad@uomisan.edu.iq

Mobile no: 07705599402

MODULE DESCRIPTION FORM

وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	Engineering Mechanics I				
Module Type	C (Core learning activity)			Class lecture Tutorial	
Module Code	CE115				
ECTS Credits	6 (4 hrs. per week)				
SWL(hr/sem)	150				
Module Level	UGI		Semester of Delivery	1	
Administering Department	CE		College	E	
Module Leader	Murtada Abass Abed Ali		email	murtadaa@uomisan.edu.iq	
Module Leader s Acad. Title	Associate Professor		Module Leader s Qualification	Ph.D.	
Module Tutor	Same Module leader		e-mail		
Peer Reviewer Name			e-mail		

Scientific Committee Approval Date	**18/06/2023**	**Version Number**	**1.0**

Relation with other Modules **العلاقة مع المواد الدراسية الاخرى**			
Prerequisite module	**None**	**Semester**	
Co-requisite module	**None**	**Semester**	

Module Aims, Learning Outcomes and Indicative Contents **اهداف المادة الدراسية ونتائج التعلم والمحتويات الارشادية**	
Module Aims **اهداف المادة الدراسية**	Develop an understanding of the principles of statics, and the ability to analyze problem rationally in a systematic and logical manner including the ability to draw free-body diagrams. Ability to analyze the statics of trusses, frames. The student will develop an understanding on the effects of forces on rigid bodies in order to carry out a structural analysis in civil engineering. This understanding requires a knowledge not only about physics and mathematics of mechanics, but also to; visualize the geometry configuration, the type of the materials, and types of constraints that govern the behavior of the mechanics of materials and thus the structures.
Module Learning Outcomes **مخرجات التعلم للمادة الدراسية**	After Accomplishing the course requirements, the student will be able to: **1.** Define the magnitude and the directions of forces and moments and identify associated scale and vector

	Products. The ability to determine resultant of forces and the ability to resolve forces into their components into local or global coordinates. **2.** Sketch the free body diagrams for two-and-three-dimensional force systems. Understanding the restriction and the isolation of a structure from its mechanical system and provide the equivalent reaction **3.** Solve simple problems using the equations of static equilibrium. **4.** Estimate the forces and couples acting on a variety of objects using SI or US system of units. **5.** Analyze the structure of trusses, and determine the force in each member (strut) and show their type (compression or tension)
Indicative Contents **المحتويات الارشادية**	Indicative assessments in this course are as follows: (1) Individual in class and homework assignments and quizzes after each topic ; (2) group work home work assignment; and (3) One mid-term and one final examinations.

Learning and Teaching Strategies **استراتيجيات التعلم والتعليم**	
Strategies	The strategies applied in this course are based on creating an active learning environment and engaging students in it. Problem-based learning and collaborative learning are the two strategies applied in this course.

Student \Workload (SWL) الحمل الدراسي للطالب			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	**65**	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب خلال الأسبوع	**4-5**
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	**85**	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب اسبوعيا	**5-6**
TOTAL SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	**150**		

Module Evaluation تقييم المادة الدراسية				
	Time/Number	**Weight (Marks)**	**Week Due**	**Relevant Learning Outcome**
Formative assessment	**Quizzes**	**20%**		
	Assignments	**20%**		
	Projects /Lab,			
	Report	**N.A**		
Summative assessment	**Midterm Exam**	**1.5hr 10%**	**7**	
	Final Exam	**3hr 50%**	**16**	**All**
Total assessment		**100%(100 marks)**		

Delivery Plan (Weekly Syllabus) المنهاج الأسبوعي النظري	
	Material Covered
Week 1	Chapter 1: Introduction: Fundamental Concepts to Engineering Mechanics-Statics. Newton's laws, Vector operations, and limited Integration of areas under curves.
Week 2	Cont'd with the introduction of Chapter 1
Week 2	Chapter 2: Force Systems: Forces, Moments, Couples, Resultants, and Equilibrium.
Week 3	Chapter 2: Main forces (point loads) and components of forces. Components in global coordinates and components in local coordinates
Week 4	Chapter 2: resultant of forces
Week 5	Chapter 2: moment and couples
Week 6	Chapter 2: Equilibrium, Equations of Equilibrium and creating the free body diagram
Week 7	Chapter 3: Structural Analysis: Application on Equilibrium to two dimensional (2D) Statically determinate trusses and Frames.
Week 8	Chapter 3: Structural Analysis: Application on Equilibrium to two dimensional (2D) Statically determinate trusses and Frames: method of joints for simple trusses
Week 9	**Mid-term Examination**
Week 10	Chapter 3: Structural Analysis: Application on Equilibrium to two dimensional (2D) Statically determinate trusses and Frames: method of joints for complex trusses with different types of supports
Week 11	Chapter 3: Structural Analysis: Application on Equilibrium to two dimensional (2D) trusses and Frames: method of sections, Introduction
Week 12	Chapter 3: Structural Analysis: Application on Equilibrium to two dimensional (2D) trusses and Frames: method of sections, Selection of section for three members
Week 13	Chapter 3: Structural Analysis: Application on Equilibrium to two dimensional (2D) trusses and Frames: method of sections, selection of section for more than 3 members
Week 14	Chapter 4: Structural Analysis of statically determinate structures made from truss and beam system
Week 15	Chapter 4: Structural Analysis of statically determinate structures made from truss and beam system

Week 16	**Preparations week for Final Examinations**

Delivery Plan (Weekly Lab. Syllabus)

المنهاج الأسبوعي للمختبر

	Material Covered
Week 1	N.A
Week 2	N.A
Week 3	N.A
Week 4	N.A
Week 5	N.A
Week 6	N.A
Week 7	N.A

Learning and Teaching Resources

مصادر التعلم والتدريس

	Text	**Available in the Library?**
Required Texts		
Recommended Texts	Engineering Mechanics by Russell Hibbeler any edition, Publisher: Pearson Education, Limited, Harlow	**Yes**
Websites		

Grading Scheme

مخطط الدرجات

Group	**Grade**	**التقدير**	**Marks (%)**	**Definition**
Success Group (50 - 100)	A- Excellent	امتياز	90-100	Outstanding Performance
	B - Very Good	جيد جدا	80-89	Above average with some errors
	C - Good	جيد	70-79	Sound work with notable errors
	D - Satisfactory	متوسط	60-69	Fair but with major shortcomings
	E - Sufficient	مقبول	50-59	Work meets minimum criteria

Fail Group (0 - 49)	FX- Fail	راسب (قيد المعالجة)	(45-49)	More work required but credit awarded
	F- Fail	راسب	(0-44)	Considerable amount of work required
Note: Marks with decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55. whereas a mark of 54.4 will be rounded to 54. The University- has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the, automatic rounding outlined above.				

Contact

Program Manager:

Murtada Abass Abed Ali | Ph.D. of Civil Engineering (Structural) | Associate Professor.

Email: murtadaa@uomisan.edu.iq

Mobile No.: 07728194966

Telegram User: @MA05112019

Website: https://murtadaabass.wordpress.com

Program Coordinator:

Same contact details of the Program Manager

MODULE DESCRIPTION FORM

وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	Engineering Mechanics				
Module Type	C (Core learning activity)			Class lecture Tutorial	
Module Code	CE122				
ECTS Credits	6 (4 hrs. per week)				
SWL(hr/sem)	150				
Module Level	UGI		Semester of Delivery	1	
Administering Department	CE		College	E	
Module Leader	Murtada Abass Abed Ali		email	murtadaa@uomisan.edu.iq	
Module Leader s Acad. Title	Associate Professor		Module Leader s Qualification	Ph.D.	
Module Tutor	Same Module leader		e-mail		
Peer Reviewer Name			e-mail		
Scientific Committee Approval Date	18/06/2023		Version Number	1.0	

Relation with other Modules العلاقة مع المواد الدراسية الاخرى			
Prerequisite module	None	Semester	
Co-requisite module	None	Semester	

Module Aims, Learning Outcomes and Indicative Contents اهداف المادة الدراسية ونتائج التعلم والمحتويات الارشادية	
Module Aims اهداف المادة الدراسية	Develop an understanding of the principles of statics, and the ability to analyze problem rationally in a systematic and logical manner including the ability to draw free-body diagrams of structures subjected to distributed loads. The ability to change the distributing load into point load. Ability to compute the centroid of lines, areas, and volumes in plane and in space for regular and irregular shapes. The student will develop a knowledge about the importance of moment of inertia and its relationship to the strength of materials. The ability to compute the moment of inertia around the centroid of shapes and around any axis that does not lie at the centroid. The importance of the radius of gyration. Static Friction and its importance and how to compute the friction force for different types of surfaces.This understanding requires a knowledge not only about physics and mathematics of mechanics, but also to; visualize the geometry configuration, the type of the materials, and types of constraints that govern the behavior of the mechanics of materials and thus the structures.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	After Accomplishing the course requirements, the student will be able to: **1.** solve the problems of statically determinate structures that are subjected to distributed load and point loads and apply the equilibrium equations to them **2.** Compute the centroid and the center of mass of bodies in plane and in space and implement this in equilibrium and the ability to determine the reactions of structure supports due to the self-weight of the structure. **3.** Compute the moment of inertia and the radius of gyration of different types of shapes in plane. **4.** Develop the understanding on the effect of static friction on structures and how to analyze the free body diagram due to the friction forces.
Indicative Contents المحتويات الارشادية	Indicative assessments in this course are as follows: (1) Individual in class and homework assignments and quizzes after each topic; (2) group work home work assignment; and (3) One mid-term and one final examinations.

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	The strategies applied in this course are based on creating an active learning environment and engaging students in it. Problem-based learning and collaborative learning are the two strategies applied in this course.

Student \Workload (SWL) **الحمل الدراسي للطالب**			
Structured SWL (h/sem) **الحمل الدراسي المنتظم للطالب خلال الفصل**	**65**	**Structured SWL (h/w)** **الحمل الدراسي المنتظم للطالب خلال الأسبوع**	**4-5**
Unstructured SWL (h/sem) **الحمل الدراسي غير المنتظم للطالب خلال الفصل**	**85**	**Unstructured SWL (h/w)** **الحمل الدراسي غير المنتظم للطالب اسبوعيا**	**5-6**
TOTAL SWL (h/sem) **الحمل الدراسي الكلي للطالب خلال الفصل**	**150**		

Module Evaluation **تقييم المادة الدراسية**				
	Time/Number	**Weight (Marks)**	**Week Due**	**Relevant Learning Outcome**
Formative assessment	**Quizzes**	**5%**		
	Assignments	**5%**	Continuous	
	Projects /Lab,			
	Report	**N.A**		
Summative	**Midterm Exam**	**1.5hr 20%**	**7**	

assessment	**Final Exam**	**3hr 70%**	**16**	**All**
Total assessment		**100%(100 marks)**		

Delivery Plan (Weekly Syllabus) المنهاج الأسبوعي النظري	
	Material Covered
Week 1	**Chapter 1**: Introduction: Quick review to statically determinate structures and the equilibrium equations and the creation of the free body diagram
Week 2	**Chapter 2:** changing the distributed load into point load and the analysis of frame structures.
Week 2	**Cont'd with Chapter 2:** changing the distributed load into point load and the analysis of frame structures.
Week 3	**Chapter 3:** Centroid of lines
Week 4	**Chapter 3:** Centroid of lines
Week 5	**Chapter 3:** Centroid of lines
Week 6	**Chapter 3:** Center of mass of lines in space
Week 7	**Chapter 3:** Moment of inertia
Week 8	**Mid-term Examination**
Week 9	**Chapter 3:** Moment of inertia
Week 10	**Chapter 3:** Moment of inertia
Week 11	**Chapter 3:** Moment of inertia and radius of gyration of bodies in plane
Week 12	Chapter 3: The relationship between the moment of Inertia and the flexural strength of the material
Week 13	**Chapter 3:** Friction

Week 14	**Chapter 3:** Friction
Week 15	**Chapter 3:** Friction
Week 16	**Preparations week for Final Examinations**

Delivery Plan (Weekly Lab. Syllabus) **المنهاج الأسبوعي للمختبر**	
	Material Covered
Week 1	N.A
Week 2	N.A
Week 3	N.A
Week 4	N.A
Week 5	N.A
Week 6	N.A
Week 7	N.A

Learning and Teaching Resources **مصادر التعلم والتدريس**		
	Text	**Available in the Library?**
Required Texts		
Recommended Texts	Engineering Mechanics by Russell Hibbeler any edition, Publisher: Pearson Education, Limited, Harlow	**Yes**
Websites		

Grading Scheme **مخطط الدرجات**				
Group	**Grade**	**التقدير**	**Marks (%)**	**Definition**
	A- Excellent	امتياز	90-100	Outstanding Performance

Success Group (50 - 100)	B - Very Good	جيد جدا	80-89	Above average with some errors
	C - Good	جيد	70-79	Sound work with notable errors
	D - Satisfactory	متوسط	60-69	Fair but with major shortcomings
	E - Sufficient	مقبول	50-59	Work meets minimum criteria
Fail Group (0 - 49)	FX- Fail	راسب (قيد المعالجة)	(45-49)	More work required but credit awarded
	F- Fail	راسب	(0-44)	Considerable amount of work required
Note: Marks with decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55. whereas a mark of 54.4 will be rounded to 54. The University- has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the, automatic rounding outlined above.				

Contact

Program Manager:

Murtada Abass Abed Ali | Ph.D. of Civil Engineering (Structural) | Associate Professor.

Email: murtadaa@uomisan.edu.iq

Mobile No.: 07728194966

Telegram User: @MA05112019

Website: https://murtadaabass.wordpress.com

Program Coordinator:

Same contact details of the Program Manager

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Second Year Modules Description Form (Sophomore)

معلومات المادة الدراسية

Module Title	Engineering surveying I			**Module Delivery**
Module Type	C			☒ **Theory**
Module Code	CE214			☒ **Lecture**
ECTS Credits	5			☐ **Lab**
SWL (hr/sem)	125			☐ **Tutorial**
				☐ **Practical**
				☐ **Seminar**
Module Level	UGx11 **2**		**Semester of Delivery**	3
Administering Department	**CE**		**College**	E
Module Leader	Fadhil Mezher		**e-mail**	fadhil.mz87@uomisan.edu.iq
Module Leader's Acad. Title	**Assistant Lecturer**		**Module Leader's Qualification**	**MSc.**
Module Tutor			**e-mail**	

Peer Reviewer Name	**Scientific Committee**	**e-mail**	
Scientific Committee Approval Date	**15/06/2023**	**Version Number**	1.0

Relation with other Modules العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	**None**	**Semester**	
Co-requisites module	**None**	**Semester**	

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Aims أهداف المادة الدراسية	The student will be introduced to surveying calculations. The goal is that the student will have a feel for the accuracy, precision and limitations of the survey data To enable students to make a judgment call that the data can be relied on for inclusion into a design and/or that the survey procedures such as traverse and triangulation will meet the construction staking requirements . To enable students to use surveying instruments such as theodolite and total station .
Module Learning Outcomes	students will be able to: apply the rules of significant figures to surveying measurements and calculations

مخرجات التعلم للمادة الدراسية	identify sources and types of error in surveying measurements, compute the standard error of a set of repeated measurements and establish an acceptable range of observed values based upon a specified level of confidence, adjust a set of measured angles and compute line directions for a closed traverse, compute and adjust by compass rule the departures and latitudes of a closed traverse apply coordinate geometry methods to compute coordinates, direction, distance, and area.
Indicative Contents المحتويات الإرشادية	

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	teaching and learning strategies in this course are discovery learning, experiments, demonstrations, questioning, discussion, feedback, and lecturing.

Student Workload (SWL)

الحمل الدراسي للطالب			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	82	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	5.85
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	43	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	3.07
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	125		

Module Evaluation

تقييم المادة الدراسية

As		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes		10		
	Assignments		10		
	Projects / Lab.		10		
	Report		10		
Summative assessment	Midterm Exam		10		
	Final Exam		50		
Total assessment			100		

Delivery Plan (Weekly Syllabus)

المنهاج الاسبوعي النظري

Week	Material Covered
Week 1	Introduction
Week 2	Distance Measurements
Week 3	Distance Measurements
Week 4	Chain surveying
Week 5	Chain surveying
Week 6	Levels and Leveling
Week 7	Levels and Leveling
Week 8	Levels and Leveling
Week 9	Areas and Volumes
Week 10	Areas and Volumes
Week 11	Areas and Volumes
Week 12	Contours and Contouring
Week 13	Contours and Contouring
Week 14	Contours and Contouring
Week 15	Application solved by computer

Delivery Plan (Weekly Lab. Syllabus)

المنهاج الاسبوعي للمختبر

Week	Material Covered
Week 1	زياره مختبرات المساحة والتعرف على الاجهزه المستخدمة في القياس

Week 2	التعرف على وحدات القياس والعلاقة بينها و تحويلها من نظام الى اخر
Week 3	التعرف على كيفية القيام بتصميم مقاييس الرسم الطولية والشبكية على لوحة الرسم
Week 4	اجراء عملية التوجيه والتعرف على الاشارات المستخدمة في الوجيه وقياس خط باستخدام شريط القياس والسلسلة والخطوات
Week 5	اقامة وانزال الاعمدة
Week 6	قياس مسافة بين نقطتين يعترضهما عائق
Week 7	التصحيحات اللازمة للمسافات
Week 8	الرفع (او التحشية) بأستخدام ادوات القياس الطولية واعداد خارطة للمنطقة
Week 9	ونصبه وتعلم القراءه علي المسطره(Level) دراسة اجزاء جهاز التسوية
Week 10	استخدام جهاز التسوية في الحصول على القراءات الثلاثة للشعيرات و حساب المسافة
Week 11	فحص و ضبط جهاز التسوية باستعمال الطريقة الحقلية (طريقة الوتدين)
Week 12	عملية التسوية (الفرقية) وتدوين القراءات في الجدول
Week 13	اجراء عملية التسوية المتبادلة (العكسية)
Week 14	تشكيل و رسم المقاطع الطولية
Week 15	تشكيل و رسم المقاطع العرضية

Learning and Teaching Resources

مصادر التعلم والتدريس

	Text	**Available in the Library?**
Required Texts	Ghilani, Charles D., and Paul R. Wolf. *Elementary surveying*. Prentice hall, 2010.	yes

Recommended Texts	Nadolinets, Leonid, Eugene Levin, and Daulet Akhmedov. *Surveying instruments and technology*. CRC press, 2017.	yes
Websites	NA	

Grading Scheme

مخطط الدرجات

Group	Grade	التقدير	Marks (%)	Definition
Success Group (50 - 100)	**A** - Excellent	امتياز	90 - 100	Outstanding Performance
	B - Very Good	جيد جدا	80 - 89	Above average with some errors
	C – Good	جيد	70 - 79	Sound work with notable errors
	D - Satisfactory	متوسط	60 - 69	Fair but with major shortcomings
	E - Sufficient	مقبول	50 - 59	Work meets minimum criteria
Fail Group (0 – 49)	**FX** – Fail	راسب (قيد المعالجة)	(45-49)	More work required but credit awarded
	F – Fail	راسب	(0-44)	Considerable amount of work required

Note: Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information

معلومات المادة الدراسية

Module Title	Engineering surveying II			**Module Delivery**
Module Type	C			☒ **Theory**
Module Code	CE224			☒ **Lecture**
ECTS Credits	5			☐ **Lab**
SWL (hr/sem)	149			☐ **Tutorial** ☐ **Practical** ☐ **Seminar**
Module Level	UGx11 2		**Semester of Delivery**	4
Administering Department	CE		**College**	E
Module Leader	Fadhil Mezher		**e-mail**	fadhil.mz87@uomisan.edu.iq
Module Leader's Acad. Title	**Assistant Lecturer**		**Module Leader's Qualification**	**MSc.**
Module Tutor			**e-mail**	
Peer Reviewer Name	Scientific Committee		**e-mail**	
Scientific Committee Approval Date	**15/06/2023**		**Version Number**	1.0

Relation with other Modules العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	**None**	**Semester**	
Co-requisites module	**None**	**Semester**	

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Aims أهداف المادة الدراسية	Course Objectives The student will be introduced to surveying calculations. The goal is that the student will have a feel for the accuracy, precision and limitations of the survey data To enable students to make a judgment call that the data can be relied on to meet the requirements. To enable students to use total station.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	Course Outcomes: After the course the student will be able to Have product and theoretical knowledge of using a Total Station, describe the functions and uses of the Total station, describe use of correct surveying terminology when using a total station, and demonstrate how to use the Total station in a practical situation. List the main design parameters of traditional control networks Determine the accuracy, precision and limitations of the survey data Understand the significant figures and their relation to work accuracy tolerances and final accuracy
Indicative Contents المحتويات الإرشادية	

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	teaching and learning strategies in this course are discovery learning, experiments, demonstrations, questioning, discussion, feedback, and lecturing.

Student Workload (SWL) الحمل الدراسي للطالب			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	63	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	4.5
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	86	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	6.14
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	149		

Module Evaluation تقييم المادة الدراسية

As		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes		10		
	Assignments		10		
	Projects / Lab.		10		
	Report		10		
Summative assessment	Midterm Exam		10		
	Final Exam		50		
Total assessment			100		

Delivery Plan (Weekly Syllabus)

المنهاج الاسبوعي النظري

Week	Material Covered
Week 1	Introduction
Week 2	Traversing
Week 3	Traversing
Week 4	Indirect distance
Week 5	Indirect distance
Week 6	Setting out works
Week 7	Setting out works
Week 8	Theory of errors
Week 9	Theory of errors
Week 10	Theory of errors
Week 11	Triangulation and Water surface areas
Week 12	Total station
Week 13	Total station

Week 14	**Theodolite**
Week 15	**Applications solved by computer**

Delivery Plan (Weekly Lab. Syllabus)

المنهاج الاسبوعي للمختبر

Week	Material Covered
Week 1	حساب مساحات المقاطع و حجوم الكميات الترابية اللازمة لانجاز مشروع معين
Week 2	عمل الخرائط الكنتورية وتمرير الخطوط الكنتورية
Week 3	و كيفية استعماله(Theodolite)التعرف على اجزاء جهاز المزواة
Week 4	)Theodoliteضبط (او نصب) جهاز المزواة (
Week 5	قراءة الدوائر الافقية والرأسية لجهاز الثيودولايت
Week 6	عمل مضلع مغلق وقياس زواياه الداخلية و تصحيحها
Week 7	قياس الارتفاعات باستخدام جهاز الثيودولايت
Week 8	) و كيفية استعمالهTotal stationالتعرف على اجزاء جهاز المحطة الكامله (
Week 9	) Total stationالتعرف على برامج جهاز المحطة الكامله (
Week 10	التسقيط المساحي بطريقة الاحداثيات و طريقة الطول والاتجاه
Week 11	الرفع المساحي بطريقة الاحداثيات و طريقة الطول + الاتجاه
Week 12	قياس المساحات بطريقة الاحداثيات باستخدام العاكس و بدون عاكس
Week 13	MLM والازاحات بطريقة REMقياس الارتفاعات بطريقة
Week 14	تصدير البيانات من الجهاز الى الكمبيوتر و بالعكس
Week 15	شرح الاعمال المساحية المكتبية من خلال **تطبيقات** الحاسوب

Learning and Teaching Resources

مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	Ghilani, Charles D., and Paul R. Wolf. *Elementary surveying*. Prentice hall, 2010.	yes
Recommended Texts	Nadolinets, Leonid, Eugene Levin, and Daulet Akhmedov. *Surveying instruments and technology*. CRC press, 2017.	yes
Websites	NA	

Grading Scheme

مخطط الدرجات

Group	Grade	التقدير	Marks (%)	Definition
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MODULE DESCRIPTOR FORM

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	Concrete Technology			**Module Delivery**	
Module Type	Core			☒ **Theory** ☒ **Lecture** ☐ **Lab** ☐ **Tutorial** ☒ **Practical** ☐ **Seminar**	
Module Code	CE216				
ECTS Credits	6				
SWL (hr/sem)	150				
Module Level		33CE22	**Semester of Delivery**		3
Administering Department		CE	**College**	E	
Module Leader	Assist. Prof. Dr. Hayder ALKHAZRAJI		**e-mail**	hayder_alkhazraji@uomisan.edu.iq	
Module Leader's Acad. Title		Assistant Professor	**Module Leader's Qualification**		Ph.D.
Module Tutor	None		**e-mail**	None	
Peer Reviewer Name		Scientific Committee	**e-mail**		

Review Committee Approval	15/06/2023	Version Number	1.0

Relation With Other Modules
العلاقة مع المواد الدراسية الأخرى

Prerequisite module	Construction Materials , Building Construction and Reinforced Concrete Design I and II	**Semester**	1,2
Co-requisites module	None	**Semester**	

Module Aims, Learning Outcomes and Indicative Contents
أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية

Module Aims أهداف المادة الدراسية	1. When a material with high resistance, defined by good performance, high durability, and fire resistance is required, it is great to introduce students to the most commonly used structural material in the discipline of civil engineering. 2. Give students the engineering knowledge and hands-on experience they need to understand the characteristics and behavior of concrete as well as the key determinants of the quality of concrete produced in various construction industries. 3. Gaining knowledge of how to do laboratory tests on concrete and its components in accordance with Iraqi and international standards.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	1. Understanding of hydration of cement as well as important physical and chemical properties of the hydration products. 2. Describe the physical & mechanical properties of aggregates. 3. Production and quality control of concrete at its fresh and hardened state, describe and carry out tests relevant to the use of concrete on site. 4. Explain factors affecting strength of concrete. 5. Design the concrete mixtures using British and American methods. 6. Study factors affecting durability of concrete. 7. Special Concrete, uses and application. 8. Analysis and design of reinforced concrete beams.

Indicative Contents المحتويات الإرشادية	Indicative content includes the following: **Portland cement:** Manufacture of Portland cement, Chemical composition of Portland cement, Hydration of cement, Calcium silicate hydrates, Tricalcium aluminate hydrate and the action of gypsum, Setting, False set, Fineness of cement, Structure of hydrated cement, Volume of products of hydration, Capillary pores, Gel pores, Water held in hydrated cement paste,Heat of hydration of cement. **Types of Cement:** Ordinary Portland cement, Rapid-hardening Portland cement, Special very rapid-hardening Portland cements, Low heat Portland cement, Sulfate-resisting cement, White cement and pigments, Portland blastfurnace cement, Pozzolanic cements, Other cements, High-alumina cement. **Properties of aggregate:** General classification of aggregates, Sampling, Particle shape and texture, Strength of aggregate, impact and crushing value of aggregate, Specific gravity, Bulk density, Porosity and absorption of aggregate, Moisture content of aggregate, Deleterious substances in aggregate, Alkali–silica reaction, Sieve analysis, Fineness modulus, Grading requirements, Gap-graded aggregate, Maximum aggregate size. **Fresh concrete:** Quality of mixing water, workability and measurement (slump test),Factors affecting workability, Effect of time and temperature on workability, Segregation, Bleeding, the mixing of concrete, Concrete mixers, Hand mixing, Ready-mixed concrete, Pumped concrete, Vibration of concrete, Internal vibrators, External vibrators, Vibrating tables, Other vibrators, concreting in hot weather. **Strength of hardened concrete:** Nature of concrete, Types of strength (compressive, tensile, flexural), Factors affecting strength, Curing of concrete, Bond with reinforcement, Quality of water. **Mix Design of Concrete:** British and American methods. **Durability of concrete:** Effects of carbonation, Sulfate attack on concrete, Effects of sea water on concrete, Chloride attack, corrosion of steel in concrete. **Elasticity, Creep and Shrinkage.**

	Special concrete: General classification of special concrete, Uses and application of special concrete, Special types of concrete with and without Portland cement. **Flexural behavior of reinforced concrete beams (Analysis and design):** Find the stresses and loads that affected the concrete and reinforced bars. In addition, calculate the dimensions of the section beam when the design method is used.

Learning and Teaching Strategies

استراتيجيات التعلم والتعليم

Strategies	The educational material is delivered, encourage students to discussion, and laboratory tests learning.

Student Workload (SWL)

الحمل الدراسي للطالب

Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	77	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	5
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	73	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	5
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	150		

Module Evaluation

تقييم المادة الدراسية

	Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome

As					
Formative assessment	**Quizzes**	30 min/4	10% (10)	2,5,8,11	LO # 1-2, LO# 3-4, LO# 6-7, LO# 9-10
	Assignments/ In-class discussions	15 min/5	10% (10)	4, 10	LO # 1-4
	Laboratory	5hr /15	10% (10)	Continuous	
	Report/ homework	10 min /6	10% (10)	13	LO # 5
Summative assessment	**Midterm Exam**	1.5hr/1	10% (10)	7	LO # 1-3
	Final Exam	3hr/1	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)

المنهاج الاسبوعي النظري

Week	Material Covered
Week 1	Introduction, Portland cement, Manufacturing and Chemical composition
Week 2	Cement hydration, Properties (fineness, heat of hydration, setting, soundness), Microstructure of cement paste, Types of Cement
Week 3	Aggregate (Classification, Properties (shape, texture, density), Moisture content, Deleterious substances)
Week 4	Aggregate (Sieve analysis, Practical grading, Gap-grading)
Week 5	Fresh concrete (Consistency, Workability & tests, Segregation & bleeding)
Week 6	Mix Design of Concrete, American method, British method
Week 7	Strength of Concrete (Nature of concrete, Types of strength (compressive, tensile, flexural), Factors affecting strength, Curing of concrete, Bond with reinforcement,

	Quality of water, Durability of Concrete (Permeability of concrete, Effect of sea water, Effect of sulfate, corrosion of steel), Elasticity, Creep and Shrinkage.
Week 8	Mid Term Exam
Week 9	Special Concrete, Introduction, Uses and applications.
Week 10	Special Types of concrete with and without Portland cement.
Week 11	Light weight concrete, Light weight aggregate concrete, Aerated concrete, No-fine concrete.
Week 12	High-density and Mass concrete, Roller compacted concrete.
Week 13	Soil-cement. Shotcrete, Pervious concrete.
Week 14	White concrete, Colored concrete and Photocatalytic concrete.
Week 15	Flexural behavior of reinforced concrete beam (Analysis and design).
Week 16	**Final Exam**

Delivery Plan (Weekly Lab. Syllabus)

المنهاج الاسبوعي للمختبر

Week	Material Covered
Week 1	Normal consistency of cement, Initial and final setting times of cement
Week 2	Compressive strength of cement
Week 3	Specific gravity and absorption of fine aggregate
Week 4	Specific gravity and absorption of coarse aggregate.
Week 5	Sieve analysis of fine aggregate and coarse aggregate
Week 6	Flakiness index of coarse aggregate
Week 7	Elongation index of coarse aggregate
Week 8	Aggregate Crushing value
Week 9	Aggregate Impact Value

Week 10	Unit Weight of Aggregate
Week 11	Workability of fresh concrete (slump test)
Week 12	Compressive strength and splitting tensile strength of concrete
Week 13	Flexural Strength of hardened concrete
Week 14	Non-destructive testes for hardened concrete (Ultrasonic Pulse Velocity, Schmidt hammer, Core test).
Week 15	Final Exam

Learning and Teaching Resources

مصادر التعلم والتدريس

	Text	**Available in the Library?**
Required Texts	Properties of concrete, A. M. Neville, fifth edition, 2011	Yes
Recommended Texts	1. Concrete technology, theory and practice, M.S. SHETTY, S. CHAND & COMPANY LTD, 2005 2. Michael S. Mamlouk and John P.Zaniewski, Materials for Civil and Construction Engineers, 3rd edition, 2011 3. Advanced Materials and Techniques for Reinforced Concrete Structures, Mohamed A. El-Reedy, Ph.D. Consultant Engineer Cairo, Egypt	Available Online
Websites	www. concrete.org	

APPENDIX:

GRADING SCHEME

مخطط الدرجات				
Group	**Grade**	التقدير	**Marks (%)**	**Definition**
Success Group (50 - 100)	**A** - Excellent	امتياز	90 - 100	Outstanding Performance
	B - Very Good	جيد جدا	80 - 89	Above average with some errors
	C - Good	جيد	70 - 79	Sound work with notable errors
	D - Satisfactory	متوسط	60 - 69	Fair but with major shortcomings
	E - Sufficient	مقبول	50 - 59	Work meets minimum criteria
Fail Group (0 – 49)	**FX** – Fail	مقبول بقرار	(45-49)	More work required but credit awarded
	F – Fail	راسب	(0-44)	Considerable amount of work required

Note:

NB Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية		
Module Title	Strength of Materials-I	**Module Delivery**

Module Type	Core			**Class lecture** **Tutorial**
Module Code	CE 211			
ECTS Credits	6			
SWL (hr/sem)	150			
Module Level	UGII		**Semester of Delivery**	3
Administering Department	CE		**College**	E
Module Leader	Assist. Prof. Dr.Faten Ibrahim MUSSA		**e-mail**	faten.haydree@uomisan.edu.iq
Module Leader's Acad. Title	Assistant Professor		**Module Leader's Qualification**	**Ph.D.**
Module Tutor			**e-mail**	
Peer Reviewer Name	Scientific Committee		**e-mail**	
Scientific Committee Approval Date	15/06/2023		**Version Number**	**1.0**

Relation with other Modules

العلاقة مع المواد الدراسية الأخرى

Prerequisite module	Engineering Mechanics-statics, Theory of structure	**Semester**	1,2
Co-requisites module	None	**Semester**	-

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Objectives أهداف المادة الدراسية	1. The course aims to provide the students with basic knowledge of material behavior, stress-strain relations, and their analysis. 2. During the course, students will review mechanics first and obtain knowledge of stress-strain relations, and their types. 3. Students will review modern sources, and show the problems and their solving methods for all issues related to the strength of materials 4. At the end students will have a basic concept of the theory of shear, flexure, deflection, and column buckling.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	On completion of the module, the student is expected to be able to: LO#1- Understand the basics of the strength of materials, and the effect of forces, moments, stresses, and strains on materials' behavior. LO#2- applies the principle of static, forces, and moments equilibrium to rigid bodies and 2D structures to determine internal stresses. LO#3- applies the principle of static, forces, and moments equilibrium to rigid bodies and 2D structures to determine internal strains. LO# 4-Discusses and solves problems related to Hooke's law, deformations in axially loaded bars, deformations in a system of axially loaded bars, statically indeterminate axially loaded members, and thermal effects on axial deformation. LO# 5- Learn the fundamentals of shear force and bending moment diagrams.
Indicative Contents المحتويات الإرشادية	Indicative content includes the following:- Stresses: Normal Stress, Direct Shear Stress, Bearing Stress, Strain: Displacement, Deformation, Normal strain, Shear strain, Thermal strain. The stress-strain diagram, Hooke's law, and Poisson's ratio. Deformations in axially loaded bars, Deformations in a system of axially loaded bars, statically indeterminate axially loaded members, Thermal effects on axial deformation. Shear Force and Bending Moment Diagrams.

Learning and Teaching Strategies

استراتيجيات التعلم والتعليم

Strategies	The main strategy that will be adopted in delivering this module is to refine and expand their critical thinking skills. This will be achieved through classes (lectures), interactive tutorials, quizzes, and by considering types of homework (assignments) that involve some sample activities that are interesting to the students.

Student Workload (SWL)

الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا

Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	63	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	6
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	87	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	6
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	**150**		

Module Evaluation

تقييم المادة الدراسية

As		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	**Quizzes**	20min. /3	10% (10)	5 and 10	LO #2, and #3
	Assignments	30min. /3	10% (10)	2 and 12	LO #1, and #4
	Projects / Lab.	None	None	None	-
	Report	None	None	None	-
Summative assessment	**Midterm Exam**	1.5hr	10% (20)	9	LO #1- #4
	Final Exam	3hr	50% (60)	16	All

Total assessment	100% (100 Marks)		

Delivery Plan (Weekly Syllabus)

المنهاج الاسبوعي النظري

Week	Material Covered
Week 1	CH1: Introduction, Equilibrium, Statics Review, Stress: Introduction, Average Normal Stress in Axially Loaded Members, Distribution of Average Normal Stress, Maximum Average Normal Stress.
Week 2	CH1: Stress: Introduction, Average Normal Stress in Axially Loaded Members, Distribution of Average Normal Stress, Maximum Average Normal Stress.
Week 3	CH1: Average Shear Stresses, Shear Stress Equilibrium, Average Bearing Stresses.
Week 4	CH1: Average Shear Stresses, Shear Stress Equilibrium, Average Bearing Stresses.
Week 5	CH2: Strain: Displacement, Deformation, and the concept of strain, Normal strain, Shear strain, Thermal strain.
Week 6	CH2: Strain: Displacement, Deformation, and the concept of strain, Normal strain, Shear strain, Thermal strain.
Week 7	CH3: Mechanical Properties of Materials: The stress-strain diagram, Hooke's law, Poisson's ratio.
Week 8	CH3: Mechanical Properties of Materials: The stress-strain diagram, Hooke's law, Poisson's ratio.
Week 9	**Mid-term Exam**
Week 10	CH4: Axial Deformation: Introduction; Saint-Venant's Principle; Elastic Deformation of an Axially Loaded Member, statically indeterminate axially loaded members, Thermal stress.
Week 11	CH4: Axial Deformation: Introduction; Saint-Venant's Principle; Elastic Deformation of an Axially Loaded Member, statically indeterminate axially loaded members, Thermal stress.
Week 12	Torsion: Torsional shear stress and strain.

Week 13	Torsional, Deformations.
Week 14	CH6: Shear Force and Bending Moment Diagrams
Week 15	CH6: Graphical method for constructing shear force and moment diagrams,
Week 16	**Preparatory week before the Final Exam**

Delivery Plan (Weekly Lab. Syllabus)

المنهاج الاسبوعي للمختبر

Week	Material Covered
Week 1	None
Week 2	None
Week 3	None
Week 4	None
Week 5	None
Week 6	None
Week 7	None

Learning and Teaching Resources

مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	**Mechanics of Materials** R.C. Hibbeler Publisher: PEARSON.	Yes
Recommended Texts	**Strength of Materials** Ferdinand L. Singer and Andrew Pytel	Yes

	Publisher: Addison-Wesley Educational Publishers, Incorporated	
Websites		

Grading Scheme

مخطط الدرجات

Group	Grade	التقدير	Marks %	Definition
Success Group (50 - 100)	**A -** Excellent	امتياز	90 - 100	Outstanding Performance
	B - Very Good	جيد جدا	80 - 89	Above average with some errors
	C - Good	جيد	70 - 79	Sound work with notable errors
	D - Satisfactory	متوسط	60 - 69	Fair but with major shortcomings
	E - Sufficient	مقبول	50 - 59	Work meets minimum criteria
Fail Group (0 – 49)	**FX –** Fail	راسب (قيد المعالجة)	(45-49)	More work required but credit awarded
	F – Fail	راسب	(0-44)	Considerable amount of work required

Note: Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.

Description

وصف المادة الدراسية

The strength of materials-I covers the following topics; stress and strain concepts, axial load, statically indeterminate axially loaded members, thermal stress, torsion, angle of twist, statically indeterminate torque-loaded members, bending, eccentric axial loading of beams, transverse shear, shear flow in build-up members, combined loadings, stress and strain transformation, deflection of beams and shafts, statically indeterminate beams and shafts.

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information

معلومات المادة الدراسية

Module Title	Strength of Materials-II		**Module Delivery**	
Module Type	Core		**Class lecture**	
Module Code	CE 221		**Tutorial**	
ECTS Credits	6			
SWL (hr/sem)	150			
Module Level	UGII	**Semester of Delivery**	3	
Administering Department	CE	**College**	E	
Module Leader	Assist. Prof. Dr.Faten Ibrahim MUSSA	**e-mail**	faten.haydree@uomisan.edu.iq	
Module Leader's Acad. Title	Assistant Professor	**Module Leader's Qualification**	**Ph.D.**	
Module Tutor		**e-mail**		
Peer Reviewer Name	Scientific Committee	**e-mail**		

Scientific Committee Approval Date	15/06/2023	**Version Number**	**1.0**

Relation with other Modules العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	Strength of Materials-I, Theory of structure-1	**Semester**	1
Co-requisites module	None	**Semester**	-

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Objectives أهداف المادة الدراسية	1. The course aims to provide the students with basic knowledge of material behavior, stress-strain relations, and their analysis. 2. During the course, students will review mechanics first and obtain knowledge of stress-strain relations, and their types. 3. Students will review modern sources, and show the problems and their solving methods for all issues related to the strength of materials 4. At the end students will have a basic concept of the theory of shear, flexure, deflection, and column buckling.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	On completion of the module, the student is expected to be able to: LO#1- Understand the basics of the strength of materials, and the effect of forces, moments, stresses, and strains on materials' behavior. LO#2- applies the principle of static, forces, and moments equilibrium to rigid bodies and 2D structures to determine internal stresses.

	LO#3- applies the principle of static, forces, and moments equilibrium to rigid bodies and 2D structures to determine internal strains. LO# 4-Discusses and solves problems related to Hooke's law, deformations in axially loaded bars, deformations in a system of axially loaded bars, statically indeterminate axially loaded members, and thermal effects on axial deformation. LO# 5- Learn the fundamentals of shear force and bending moment diagrams.
Indicative Contents المحتويات الإرشادية	Indicative content includes the following:- Stresses: Normal Stress, Direct Shear Stress, Bearing Stress, Strain: Displacement, Deformation, Normal strain, Shear strain, Thermal strain. The stress-strain diagram, Hooke's law, and Poisson's ratio. Deformations in axially loaded bars, Deformations in a system of axially loaded bars, statically indeterminate axially loaded members, Thermal effects on axial deformation. Shear Force and Bending Moment Diagrams.

Learning and Teaching Strategies
استراتيجيات التعلم والتعليم

Strategies	The main strategy that will be adopted in delivering this module is to refine and expand their critical thinking skills. This will be achieved through classes (lectures), interactive tutorials, quizzes, and by considering types of homework (assignments) that involve some sample activities that are interesting to the students.

Student Workload (SWL)
الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا

Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	63	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	6
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	87	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	6

Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	**150**

Module Evaluation

تقييم المادة الدراسية

As		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	**Quizzes**	30 min/2	10% (10)	3, 11	LO #2, and #4
	Assignments	15 min/4	10% (10)	2,5,8,11	LO #1, and #4
	Projects / Lab.	5hr /15	10% (10)	Continuous	
	Report	10 min /5	10% (10)	13	
Summative assessment	**Midterm Exam**	1.5hr/1	10% (10)	7	LO #1- #4
	Final Exam	3hr/1	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)

المنهاج الاسبوعي النظري

Week	Material Covered
Week 1	CH6: Shear Force and Bending Moment Diagrams
Week 2	Ch6: Bending Deformation Of A Straight Member, Composite Beams, Reinforced Concrete Beams.
Week 3	Ch6: Bending Deformation Of A Straight Member, Composite Beams, Reinforced Concrete Beams.
Week 4	CH9: Stress Transformations: Stress at a general point in an arbitrarily loaded body.
Week 5	CH9: Equilibrium method for plane stress transformations.

Week 6	CH9: Principal stresses and maximum shear stress, Mohr's circle for plane stress, General state of stress at a point.
Week 7	**Mid-term Exam**
Week 8	Pressure Vessels: Thin walled spherical pressure vessels, Thin walled cylindrical pressure vessels.
Week 9	Pressure Vessels: Thin walled spherical pressure vessels, Thin walled cylindrical pressure vessels.
Week 10	CH12: Beam Deflections: Moment-curvature relationship, the differential equation of the elastic curve, determining deflections by integration of a moment equation.
Week 11	CH12: Beam Deflections: Moment-curvature relationship, the differential equation of the elastic curve, determining deflections by integration of a moment equation.
Week 12	CH 12: Determining deflections by integration of shear force or load equations.
Week 13	CH12: Determining deflections by using discontinuity functions, determining deflections by the method of superposition.
Week 15	Axially loaded compression members, effective length, slenderness ratio, critical load, Euler's equation.
Week 16	**Preparatory week before the Final Exam**

Delivery Plan (Weekly Lab. Syllabus)

المنهاج الاسبوعي للمختبر

Week	Material Covered
Week 1	
Week 2	
Week 3	
Week 4	

Week 5	
Week 6	
Week 7	

Learning and Teaching Resources

مصادر التعلم والتدريس

	Text	**Available in the Library?**
Required Texts	**Mechanics of Materials** R.C. Hibbeler Publisher: PEARSON.	Yes
Recommended Texts	**Strength of Materials** Ferdinand L. Singer and Andrew Pytel Publisher: Addison-Wesley Educational Publishers, Incorporated	Yes
Websites		

Grading Scheme

مخطط الدرجات

Group	**Grade**	التقدير	**Marks %**	**Definition**
Success Group (50 - 100)	**A -** Excellent	امتياز	90 - 100	Outstanding Performance
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	D - Satisfactory	متوسط	60 - 69	Fair but with major shortcomings
	E - Sufficient	مقبول	50 - 59	Work meets minimum criteria
Fail Group	**FX –** Fail	راسب (قيد المعالجة)	(45-49)	More work required but credit awarded

(0 – 49)	**F –** Fail	راسب	(0-44)	Considerable amount of work required

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Description وصف المادة الدراسية
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MODULE DESCRIPTION FORM

وصف المادة الدراسية

Module Information **معلومات المادة الدراسية**		
Module Title	Applied Mathematics I	
Module Type	**Basic**	**Theory** **Lecture** **Lab** **Tutorial** **Seminar**
Module Code	**E212**	
ECTS Credits	**5**	
SWL(hr/sem)	**125**	

Module Level	**UGII**	**Semester of Delivery**	**3**
Administering Department	**CE**	**College**	**E**
Module Leader	**Haidar Hassan Haidar**	**email**	**3haidar@uomisan.edu.iq**
Module Leader s Acad. Title	**Assistant Lecturer**	**Module Leader s Qualification**	**MSc.**
Module Tutor		**e-mail**	
Peer Reviewer Name	**Scientific Committee**	**e-mail**	
Scientific Committee Approval Date	**15/06/2023**	**Version Number**	**1.0**

Relation with other Modules **العلاقة مع المواد الدراسية الاخرى**			
Prerequisite module	**None**	**Semester**	
Co-requisite module	**None**	**Semester**	

Module Aims, Learning Outcomes and Indicative Contents

اهداف المادة الدراسية ونتائج التعلم والمحتويات الارشادية

Module Aims **اهداف المادة الدراسية**	•After completing this module, students should have developed a clear understanding of the fundamental concepts of applied mathematics and a range of skills allowing them to work effectively with the concepts. The basic concepts are : 1. Applied conical sections in civil engineering.

	2. better understanding of polar coordinates, draw polar functions and used it in area calculations . 2. To give information about vectors and used in calculates of volumes.
Module Learning Outcomes **مخرجات التعلم للمادة الدراسية**	After completing this module, students should demonstrate competency in the following skills: 1. Use conical sections in real life applications. 2. Sketch the graph of a function using polar coordinate. 3. Convert point and functions from rectangular coordinate to polar coordinate. 4. Calculate area of shapes by use polar coordinate. 5. Evaluate integrals both by using Riemann sums and by using the Fundamental Theorem of Calculus. 6. Apply dot product and cross product of vectors to compute volumes and areas.
Indicative Contents **المحتويات الارشادية**	

Learning and Teaching Strategies **استراتيجيات التعلم والتعليم**	
Strategies	Different forms of teaching will be used to come across with objectives of the course. pdf presentations for the head titles, definitions, graphs, and many useful illustrations with a summary at the end of each chapter will be presented and discussed. The pdf contains information about new topics and unsolved examples, and then the whiteboard will be used to solve them and to let students to see the solutions. Quizzes and Assessments: Incorporate regular quizzes and assessments to assess students' understanding of Python concepts, syntax, and problem-solving skills. Use online platforms or interactive tools that provide immediate feedback to enhance engagement and promote self-assessment. Group Projects: Assign group projects that require students to collaborate on developing a Python application or solving a programming problem. This encourages teamwork, division of tasks, and coordination, while applying their programming skills. Homework Assignments: Assign regular programming exercises and projects as homework. Encourage students to actively apply the concepts learned in class to realworld

	scenarios. Provide constructive feedback on their submissions to promote improvement and reinforce learning.

Student \Workload (SWL) الحمل الدراسي للطالب			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	63	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب خلال الفصل	5
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	62	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب اسبوعيا	4
TOTAL SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	125		

Module Evaluation تقييم المادة الدراسية				
	Time/Number	**Weight (Marks)**	**Week Due**	**Relevant Learning Outcome**
Formative assessment	**Quizzes**	10% (10)		
	Assignments	10% (10)		
	Projects /Lab,	10% (10)		
	Report	10% (10)		
Summative assessment	**Midterm Exam**	1.5hr 10 % (10)		
	Final Exam	3hr 50 % (50)	16	All
Total assessment		100 % (100 marks)		

Delivery Plan (Weekly Syllabus)

المنهاج الأسبوعي النظري

	Material Covered
Week 1	**Conical Sections** Introduction and circle
Week 2	**Conical Sections** Parabola, Ellipses. Hyperbola
Week 3	**Conical Sections** Parabola, Ellipses. Hyperbola
Week 4	**Conical Sections** Parabola, Ellipses. Hyperbola
Week 5	**Polar coordinates** Definition of polar coordinates, representation of point in polar coordinates, relationship between polar and rectangular coordinates, equations conversion, polar graph, standard polar curves and area in polar coordinates
Week 6	**Polar coordinates** Definition of polar coordinates, representation of point in polar coordinates, relationship between polar and rectangular coordinates, equations conversion, polar graph, standard polar curves and area in polar coordinates
Week 7	**Polar coordinates** Definition of polar coordinates, representation of point in polar coordinates, relationship between polar and rectangular coordinates, equations conversion, polar graph, standard polar curves and area in polar coordinates
Week 8	**Polar coordinates** Definition of polar coordinates, representation of point in polar coordinates, relationship between polar and rectangular coordinates, equations conversion, polar graph, standard polar curves and area in polar coordinates.
Week 9	**Polar coordinates** Definition of polar coordinates, representation of point in polar coordinates, relationship between polar and rectangular coordinates, equations conversion, polar graph, standard polar curves and area in polar coordinates.
Week 10	**Parametric Equations** Derivative of Parametric Equations.
Week 11	**Parametric Equations** Derivative of Parametric Equations.

Week 12	**Vectors** Vector Algebra, Scalars and Vectors, Unit Vector, Vector Addition and Subtraction, Vectors and scalars, basic, Scalar fields and vector fields.
Week 13	**Vectors** Vector Algebra, Scalars and Vectors, Unit Vector, Vector Addition and Subtraction, Vectors and scalars, basic, Scalar fields and vector fields.
Week 14	**Vectors** Vector Algebra, Scalars and Vectors, Unit Vector, Vector Addition and Subtraction, Vectors and scalars, basic, Scalar fields and vector fields..
Week 15	**Vectors** Vector Algebra, Scalars and Vectors, Unit Vector, Vector Addition and Subtraction, Vectors and scalars, basic, Scalar fields and vector fields..
Week 16	**Preparatory week before the final Exam**

Delivery Plan (Weekly Lab. Syllabus)

المنهاج الأسبوعي للمختبر

	Material Covered
Week 1	N. A
Week 2	N. A
Week 3	N. A
Week 4	N. A
Week 5	N. A
Week 6	N. A
Week 7	N. A

Learning and Teaching Resources

مصادر التعلم والتدريس

	Text	**Available in the Library?**
Required Texts	1.Calculus, 11th Edition, By Thomas, 2013.	Yes
Recommended Texts	1. GEORGE B. THOMAS, JR. " Calculus ", 14th edition, Cenveo® Publisher Services, 2018.	No
Websites	https://www.mathway.com/	

Grading Scheme مخطط الدرجات				
Group	**Grade**	**التقدير**	**Marks (%)**	**Definition**
Success Group (50 - 100)	A- Excellent	امتياز	90-100	Outstanding Performance
	B - Very Good	جيد جدا	80-89	Above average with some errors
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Contact

Program Manager:

Haidar Hassan Haidar | MSc. In Structural Engineering | Assistant lecturer.

Email: 3haidar@uomisan.edu.iq

Mobile no: 07703174437

Program Coordinator:

Haidar Hassan Haidar | MSc. In Structural Engineering | Assistant lecturer.

Email: 3haidar@uomisan.edu.iq

Mobile no: 07703174437

MODULE DESCRIPTION FORM

وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	Applied Mathematics II				
Module Type	Basic			Theory Lecture Lab Tutorial Seminar	
Module Code	E222				
ECTS Credits	5				
SWL(hr/sem)	125				
Module Level		UGII	Semester of Delivery		4
Administering Department			College	E	
Module Leader	Haidar Hassan Haidar		email	3haidar@uomisan.edu.iq	
Module Leader s Acad. Title			Module Leader s Qualification		MSc.
Module Tutor			e-mail		
Peer Reviewer Name	Scientific Committee		e-mail		
Scientific Committee Approval Date	15/06/2023		Version Number	1.0	

Relation with other Modules العلاقة مع المواد الدراسية الاخرى			
Prerequisite module	None	Semester	
Co-requisite module	None	Semester	

Module Aims, Learning Outcomes and Indicative Contents اهداف المادة الدراسية ونتائج التعلم والمحتويات الارشادية	
Module Aims اهداف المادة الدراسية	•To give information about Partial derivatives of Functions of Two or more variable functions. • Provide an understanding of chain rule, gradient, directional derivatives and know their applications. • To understand how to find Maxima, minima, saddle point. •To calculate also areas and volumes for surfaces using double integrals •The student should understand how to deal with complex numbers and use them correctly with all associated mathematical operations .• To understand as well as solution techniques such as first order differential equations.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	After successful completion of the module, students should be able to: • Understand the concept of partial differential, partial derivative and directional derivative. • The student should understand how to finding the maximum and minimum points and areas of increasing, decreasing and how to link the concepts of these topics to the practical reality of courses related to civil engineering. • Understand the concept of integration and its importance in engineering applications and calculate the area and volume. •Students will be able to perform arithmetic operations with complex numbers, convert between rectangular and polar forms, and find complex conjugates. •Understand the first order differential equation
Indicative Contents المحتويات الارشادية	

Learning and Teaching Strategies
استراتيجيات التعلم والتعليم

Strategies	• Different forms of teaching will be used to come across with objectives of the course. pdf presentations for the head titles, definitions, graphs, and many useful illustrations with a summary at the end of each chapter will be presented and discussed. • The pdf contains information about new topics and unsolved examples, and then the whiteboard will be used to solve them and to let students to see the solutions. • Quizzes and Assessments: Incorporate regular quizzes and assessments to assess students' understanding of Python concepts, syntax, and problem-solving skills. Use online platforms or interactive tools that provide immediate feedback to enhance engagement and promote self-assessment. • Group Projects: Assign group projects that require students to collaborate on developing a Python application or solving a programming problem. This encourages teamwork, division of tasks, and coordination, while applying their programming skills. • Homework Assignments: Assign regular programming exercises and projects as homework. Encourage students to actively apply the concepts learned in class to realworld scenarios. Provide constructive feedback on their submissions to promote improvement and reinforce learning.

Student \Workload (SWL)
الحمل الدراسي للطالب

Structured SWL (h/sem) **الحمل الدراسي المنتظم للطالب خلال الفصل**	75	**Structured SWL (h/w)** **الحمل الدراسي المنتظم للطالب خلال الفصل**	5
Unstructured SWL (h/sem) **الحمل الدراسي غير المنتظم للطالب خلال الفصل**	50	**Unstructured SWL (h/w)** **الحمل الدراسي غير المنتظم للطالب اسبوعيا**	4
TOTAL SWL (h/sem) **الحمل الدراسي الكلي للطالب خلال الفصل**	125		

Module Evaluation تقييم المادة الدراسية				
	Time/Number	**Weight (Marks)**	**Week Due**	**Relevant Learning Outcome**
Formative assessment	**Quizzes**	10% (10)		
	Assignments	10% (10)		
	Projects /Lab,	10% (10)		
	Report	10% (10)		
Summative assessment	**Midterm Exam**	1.5hr 10 % (10)		
	Final Exam	3hr 50 % (50)	16	All
Total assessment		100 % (100 marks)		

Delivery Plan (Weekly Syllabus) المنهاج الأسبوعي النظري	
	Material Covered
Week 1	**Partial Differentiation** Definition, Function of two or more variables, chain rule , Directional derivative, Gradient, Maxima, minima & saddle point.
Week 2	**Partial Differentiation** Definition, Function of two or more variables, chain rule , Directional derivative, Gradient, Maxima, minima & saddle point.
Week 3	**Partial Differentiation** Definition, Function of two or more variables, chain rule , Directional derivative, Gradient, Maxima, minima & saddle point.
Week 4	**Partial Differentiation** Definition, Function of two or more variables, chain rule , Directional derivative, Gradient, Maxima, minima & saddle point.
Week 5	**Multiple Integral** Double Integral over rectangular region, Double Integral over non- rectangular region, Double integral in polar coordinates.

Week 6	**Multiple Integral** Double Integral over rectangular region, Double Integral over non- rectangular region, Double integral in polar coordinates.
Week 7	**Multiple Integral** Double Integral over rectangular region , Double Integral over non- rectangular region, Double integral in polar coordinates..
Week 8	**Multiple Integral** Double Integral over rectangular region , Double Integral over non- rectangular region, Double integral in polar coordinates..
Week 9	**Complex Numbers** Complex numbers and operations, Graphical representation of complex numbers, and Polar form of a complex number.
Week 10	**Complex Numbers** Complex numbers and operations, Graphical representation of complex numbers, and Polar form of a complex number.
Week 11	**Complex Numbers** Complex numbers and operations, Graphical representation of complex numbers, and Polar form of a complex number.
Week 12	**Ordinary differential Equations** First order (variables separable, homogeneous, linear and exact).
Week 13	**Ordinary differential Equations** First order (variables separable, homogeneous, linear and exact).
Week 14	**Ordinary differential Equations** First order (variables separable, homogeneous, linear and exact).
Week 15	**Ordinary differential Equations** First order (variables separable, homogeneous, linear and exact).
Week 16	**Preparatory week before the final Exam**

Delivery Plan (Weekly Lab. Syllabus) **المنهاج الأسبوعي للمختبر**	
	Material Covered
Week 1	N. A
Week 2	N. A
Week 3	N. A
Week 4	N. A
Week 5	N. A
Week 6	N. A
Week 7	N. A

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	1.Calculus, 11th Edition, By Thomas, 2013.	Yes
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Contact

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MODULE DESCRIPTION FORM

وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	Fluid Mechanics 1				
Module Type	Basic		Theory Lecture Lab Tutorial Seminar		
Module Code	CE213				
ECTS Credits	5				
SWL(hr/sem)	125				
Module Level	2	Semester of Delivery	1		
Administering Department	CE	College	E		
Module Leader	Firas Jwad Kadhum	email			
Module Leader s Acad. Title	Assistant Professor	Module Leader s Qualification	PhD		
Module Tutor		e-mail			
Peer Reviewer Name	Scientific Committee	e-mail			
Scientific Committee Approval Date	19/8/2024	Version Number	2.0		

Relation with other Modules

العلاقة مع المواد الدراسية الاخرى			
Prerequisite module	**i- Mathematics 1 and Mathematics 2 ii- Statics I**	**Semester**	**i- 1 and 2 ii- 1**
Co-requisite module	**i- Irrigation Engineering and Drainage Engineering ii- Water Supply Engineering and Environmental and Sanitary Swage Engineering**	**Semester**	**i- 1 and 2 ii- 1 and 2**

Module Aims, Learning Outcomes and Indicative Contents اهداف المادة الدراسية ونتائج التعلم والمحتويات الارشادية	
Module Aims اهداف المادة الدراسية	The overall objectives of a fluid mechanics course are to give students a solid foundation in the fundamentals of fluid mechanics, problem-solving skills, practical knowledge, and a mindset for further learning and using fluid mechanics in diverse engineering situations.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	The fluid mechanics staff's goal is to give students a thorough understanding of fluid mechanics' foundational ideas, theories, and practical applications. We want to foster a profound understanding of the importance of fluid dynamics in diverse engineering fields and sectors. Our course aims to provide a solid grounding in the fundamentals of fluid mechanics through interesting lectures, lively discussions, and practical experiments. We work hard to help students hone their analytical and problem-solving abilities so they can accurately assess and forecast fluid behavior in real-world situations. We are dedicated to fostering a welcoming and inclusive learning atmosphere that promotes critical thinking, active involvement, and teamwork. By placing a strong emphasis on how fluid mechanics principles may be applied to actual

	problems, we give students the tools they need to successfully handle challenging engineering issues.
Indicative Contents **المحتويات الارشادية**	

Learning and Teaching Strategies **استراتيجيات التعلم والتعليم**	
Strategies	The course objectives will be communicated via a variety of teaching methods. There will be PPT presentations for the chapter headings, definitions, graphs, and several helpful images, as well as a summary at the end of each chapter. The PPT provides details on brand-new subjects and unsolved examples, which will be solved on the whiteboard and shown for students to view.

Student \Workload (SWL) **الحمل الدراسي للطالب**			
50	78	**Structured SWL (h/w)** **الحمل الدراسي المنتظم للطالب خلال الفصل**	5
Unstructured SWL (h/sem) **الحمل الدراسي غير المنتظم للطالب خلال الفصل**	47	**Unstructured SWL (h/w)** **الحمل الدراسي غير المنتظم للطالب اسبوعيا**	5
TOTAL SWL (h/sem) **الحمل الدراسي الكلي للطالب خلال الفصل**	125		

Module Evaluation **تقييم المادة الدراسية**

	Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	10% (2)		
	Assignments	10% (2)		
	Projects /Lab,	10% (1)		
	Report	10% (2)		
Summative assessment	Midterm Exam	1.0hr 10 % (1)	8	
	Final Exam	3hr 50 % (50)	15	All
Total assessment		100 % (100 marks)		

Delivery Plan (Weekly Syllabus)
المنهاج الأسبوعي النظري

	Material Covered
Week 1	Introduction
Week 2	Fluid Properties and Flow Characteristics
Week 3	Fluid Properties and Flow Characteristics
Week 4	Surface Tension and Capillarity
Week 5	Pressure Variations in Static Fluid
Week 6	Measurement of Static Pressure (Manometer)
Week 7	Hydrostatic Force on Plane Surfaces
Week 8	Hydrostatic Force on Plane Surfaces
Week 9	Hydrostatic Pressure Forces on Curved Surfaces
Week 10	Buoyancy
Week 11	Constant Translation Acceleration Of Liquid, Accelerated Fluid Masses
Week 12	Kinematics of Fluid Motion
Week 13	Conservation of Mass and Applications of Energy Equations
Week 14	Applications of Bernoulli's Equation
Week 15	Momentum Equations and Its Applications

Delivery Plan (Weekly Lab. Syllabus)
المنهاج الأسبوعي للمختبر

	Material Covered

Week 1	**Fluid properties**
Week 2	**Fluid properties**
Week 3	**Dead weight calibrated**
Week 4	**Manometers**
Week 5	**Manometers**
Week 6	**Visualization of the flow in the channels**
Week 7	**Visualization of the flow in the channels**

Learning and Teaching Resources
مصادر التعلم والتدريس

	Text	**Available in the Library?**
Required Texts	1.Fuild Mechanics. Russell C. Hibbeler	Yes
Recommended Texts	1. Engineering Fluid Mechanics. Clayton T. Crowe (Author), Donald F. Elger (Author) 2. Fluid Mechanics and its Applications. Vijay Gupta	No
Websites		

Grading Scheme
مخطط الدرجات

Group	**Grade**	**التقدير**	**Marks (%)**	**Definition**
Success Group (50 - 100)	A- Excellent	امتياز	90-100	Outstanding Performance
	B - Very Good	جيد جدا	80-89	Above average with some errors
	C - Good	جيد	70-79	Sound work with notable errors
	D - Satisfactory	متوسط	60-69	Fair but with major shortcomings
	E - Sufficient	مقبول	50-59	Work meets minimum criteria
Fail Group (0 - 49)	FX- Fail	راسب (قيد المعالجة)	(45-49)	More work required but credit awarded
	F- Fail	راسب	(0-44)	Considerable amount of work required

Note: Marks with decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55. whereas a mark of 54.4 will be rounded to 54. The University- has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the, automatic rounding outlined above.

Contact

Program Manager:

Mustafa Chasib Jasim |PhD. In Structural Engineering | lecturer.

Email: mustafa-jasim@uomisan.edu.iq

Mobile no: 077027920444

Program Coordinator :

Mustafa Chasib Jasim |PhD. In Structural Engineering | lecturer.

Email: mustafa-jasim@uomisan.edu.iq

Mobile no: 077027920444

MODULE DESCRIPTION FORM

وصف المادة الدراسية

Module Information **معلومات المادة الدراسية**					
Module Title	Fluid Mechanics 2				
Module Type	**Basic**			**Theory** **Lecture** **Lab** **Tutorial** **Seminar**	
Module Code	**CE223**				
ECTS Credits	**5**				
SWL(hr/sem)	**125**				
Module Level		**2**	**Semester of Delivery**		**2**
Administering Department		**CE**	**College**	**E**	
Module Leader	**Mustafa Chasib Jasim**		**email**	**mustafa-jasim@uomisan.edu.iq**	
Module Leader s Acad. Title	**Lecturer**		**Module Leader s Qualification**		**PhD**
Module Tutor			**e-mail**		
Peer Reviewer Name	**Scientific Committee**		**e-mail**		

Scientific Committee Approval Date	**15/06/2023**	**Version Number**	**1.0**

Relation with other Modules **العلاقة مع المواد الدراسية الاخرى**			
Prerequisite module	**i- Fluid Mechanics I** **ii-Mathematics 1 and Mathematics 2** **iii- Statics I**	**Semester**	**i- 1** **ii- 1 and 2** **iii- 1**
Co-requisite module	**i- Irrigation Engineering and Drainage Engineering** **ii- Water Supply Engineering and Environmental and Sanitary Swage Engineering**	**Semester**	**i- 1 and 2** **ii- 1 and 2**

Module Aims, Learning Outcomes and Indicative Contents **اهداف المادة الدراسية ونتائج التعلم والمحتويات الارشادية**	
Module Aims **اهداف المادة الدراسية**	The overall objectives of a fluid mechanics course are to give students a solid foundation in the fundamentals of fluid mechanics, problem-solving skills, practical knowledge, and a mindset for further learning and using fluid mechanics in diverse engineering situations.
Module Learning Outcomes **مخرجات التعلم للمادة الدراسية**	The fluid mechanics staff's goal is to give students a thorough understanding of fluid mechanics' foundational ideas, theories, and practical applications. We want to foster a profound understanding of the importance of fluid dynamics in diverse engineering fields and sectors. Our course aims to provide a solid grounding in the fundamentals of fluid mechanics through interesting lectures, lively discussions, and practical experiments. We

	work hard to help students hone their analytical and problem-solving abilities so they can accurately assess and forecast fluid behavior in real-world situations. We are dedicated to fostering a welcoming and inclusive learning atmosphere that promotes critical thinking, active involvement, and teamwork. By placing a strong emphasis on how fluid mechanics principles may be applied to actual problems, we give students the tools they need to successfully handle challenging engineering issues.
Indicative Contents **المحتويات الارشادية**	

Learning and Teaching Strategies

استراتيجيات التعلم والتعليم

Strategies	The course objectives will be communicated via a variety of teaching methods. There will be PPT presentations for the chapter headings, definitions, graphs, and several helpful images, as well as a summary at the end of each chapter. The PPT provides details on brand-new subjects and unsolved examples, which will be solved on the whiteboard and shown for students to view.

Student \Workload (SWL)

الحمل الدراسي للطالب

Structured SWL (h/sem) **الحمل الدراسي المنتظم للطالب خلال الفصل**	80	**Structured SWL (h/w)** **الحمل الدراسي المنتظم للطالب خلال الفصل**	5
Unstructured SWL (h/sem) **الحمل الدراسي غير المنتظم للطالب خلال الفصل**	45	**Unstructured SWL (h/w)** **الحمل الدراسي غير المنتظم للطالب اسبوعيا**	6
TOTAL SWL (h/sem) **الحمل الدراسي الكلي للطالب خلال الفصل**	125		

Module Evaluation تقييم المادة الدراسية				
	Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	10% (10)		
	Assignments	10% (10)		
	Projects /Lab,	10% (10)		
	Report	10% (10)		
Summative assessment	Midterm Exam	1.5hr 10 % (10)		
	Final Exam	3hr 50 % (50)	16	All
Total assessment		100 % (100 marks)		

Delivery Plan (Weekly Syllabus) المنهاج الأسبوعي النظري	
	Material Covered
Week 1	Introduction + Flow of Real Fluid
Week 2	Similitude and Dimensional Analysis
Week 3	Similitude and Dimensional Analysis
Week 4	Fluid Flow in Pipes
Week 5	Fluid Flow in Pipes
Week 6	Friction Losses
Week 7	Minor Losses
Week 8	Pipes in Series
Week 9	Pipes in Parallel Network
Week 10	Fluid Flow in Open Channels
Week 11	Specific Energy and Transitions
Week 12	Open-Channel Flow Over A Rise Or Bump
Week 13	Open-Channel Flow Under A Sluice Gate
Week 14	Steady Uniform Channel Flow
Week 15	Weirs

Delivery Plan (Weekly Lab. Syllabus) المنهاج الأسبوعي للمختبر	
	Material Covered
Week 1	**Pitot static tube**
Week 2	**Bernoulli´s Theorem Demonstration**
Week 3	**Bernoulli´s Theorem Demonstration**
Week 4	**Reynolds number**
Week 5	**Reynolds number**
Week 6	**Flow meter measurement**
Week 7	**Weirs**

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	1.Fuild Mechanics. Russell C. Hibbeler	Yes
Recommended Texts	1. Engineering Fluid Mechanics. Clayton T. Crowe (Author), Donald F. Elger (Author) 2. Fluid Mechanics and its Applications. Vijay Gupta	No
Websites		

Grading Scheme مخطط الدرجات				
Group	**Grade**	**التقدير**	**Marks (%)**	**Definition**
Success Group	A- Excellent	امتياز	90-100	Outstanding Performance
	B - Very Good	جيد جدا	80-89	Above average with some errors
	C - Good	جيد	70-79	Sound work with notable errors

(50 - 100)	D - Satisfactory	متوسط	60-69	Fair but with major shortcomings
	E - Sufficient	مقبول	50-59	Work meets minimum criteria
Fail Group (0 - 49)	FX- Fail	راسب (قيد المعالجة)	(45-49)	More work required but credit awarded
	F- Fail	راسب	(0-44)	Considerable amount of work required
Note: Marks with decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55. whereas a mark of 54.4 will be rounded to 54. The University- has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the, automatic rounding outlined above.				

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MODULE DESCRIPTION FORM

وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	Crimes of Al Ba'ath Regime				
Module Type	Basic		Theory Lecture Lab Tutorial Seminar		
Module Code	U226				
ECTS Credits	3				
SWL(hr/sem)	75				
Module Level	2	Semester of Delivery	3		
Administering Department	CE	College	E		
Module Leader	Rafaa zaati	email			
Module Leader s Acad. Title	Assistant Lecturer	Module Leader s Qualification	MSc.		
Module Tutor		e-mail			
Peer Reviewer Name	Scientific Committee	e-mail			
Scientific Committee Approval Date	15/06/2023	Version Number	1.0		

Relation with other Modules العلاقة مع المواد الدراسية الاخرى			
Prerequisite module	None	Semester	
Co-requisite module	None	Semester	

Module Aims, Learning Outcomes and Indicative Contents اهداف المادة الدراسية ونتائج التعلم والمحتويات الارشادية	
Module Aims اهداف المادة الدراسية	• To learn the student the social rights and freedoms. The individual rights in the state security as the right of getting job. To ensure that the student be get the equality in Islam. The equality in Law. The equality in Judiciary and Employment The financial corruption. The equality in the public costs and burdens To show and get the Arab chart for human rights
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	After completing this module, students should demonstrate competency in the following: The main rules that organize human rights. Admitting of rights under the authority of the modern state of law The intellectual base of the principle of rights and freedoms in Islam. Properties and the nature of rights and freedoms in Islam. The non-organized rights and freedoms in Islam.
Indicative Contents المحتويات الارشادية	

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	Different forms of teaching will be used to come across with objectives of the course. pdf presentations for the head titles, definitions, graphs, and many useful illustrations with a summary at the end of each chapter will be presented and discussed. The pdf contains information about new topics and unsolved examples, and then the whiteboard will be used. Quizzes and Assessments: Incorporate regular quizzes and assessments to assess students' understanding . Homework Assignments: Assign regular programming exercises and projects as homework. Encourage students to actively apply the concepts learned in class to realworld

	scenarios. Provide constructive feedback on their submissions to promote improvement and reinforce learning.

Student \Workload (SWL) الحمل الدراسي للطالب			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	36	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب خلال الفصل	5
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	31	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب اسبوعيا	4
TOTAL SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	75		

Module Evaluation تقييم المادة الدراسية				
	Time/Number	**Weight (Marks)**	**Week Due**	**Relevant Learning Outcome**
Formative assessment	**Quizzes**	10% (10)		
	Assignments	10% (10)		
	Projects /Lab,	10% (10)		
	Report	10% (10)		
Summative assessment	**Midterm Exam**	1.5hr 10 % (10)		
	Final Exam	3hr 50 % (50)	16	All
Total assessment		100 % (100 marks)		

Delivery Plan (Weekly Syllabus)

المنهاج الأسبوعي النظري

	Material Covered
Week 1	Introduction
Week 2	The social rights and freedoms. The individual rights in the state security as the right of getting job.
Week 3	The social rights and freedoms. The individual rights in the state security as the right of getting job.
Week 4	The administrative corruption.
Week 5	The equality in Islam. The equality in Law. The equality in Judiciary and Employment The financial corruption. The equality in the public costs and burdens.
Week 6	The rights of human in Iraqi law. The general rights of individuals especially those rights related to human morals.
Week 7	The individuals' freedoms related to their material interest.
Week 8	The Arab chart for human rights.
Week 9	Introduction about human rights. The literal and linguistic definition of rights. The historic development of the human rights concept
Week 10	appearance of Islam and the basis of human right. Europe and human rights.
Week 11	The concept of human in the material civilization. The concept of human in Islam.
Week 12	The status of human in the modem civilization. The status of human in Jurisprudence.
Week 13	The features of human rights in the Islamic intellectuals.
Week 14	The main rules that organize human rights. Admitting of rights under the authority of the modern state of law.
Week 15	The intellectual base of the principle of rights and freedoms in Islam. Properties and the nature of rights and freedoms in Islam. The non-organized rights and freedoms in Islam.
Week 16	**Preparatory week before the final Exam**

وصف المقرر

1.اسم المقرر جرائم نظام البعث في العراق
(نظري)
2. رمز المقرر
3 . الفصل / السنة 2025/2024
السنة الثانية / الفصل الآول
4. تاريخ إعداد هذا الوصف 2024/9/21
5. أشكال الحضور المتاحة / صفي
6. عدد الساعات الدراسية (الكلي) عدد الوحدات (الكلي) 30 ساعة كلية / 2 ساعة اسبوعياً
7. اسم مسؤول المقرر الدراسي (اذا اكثر من اسم يذكر)
الاسم: م.م مؤيد كريم حسان muayad.k.hassan@uomisan.edu.iq الايميل:
8. اهداف المقرر

اهداف المادة الدراسية	للتعرف والاطلاع على مجموعة من الجرائم التي ارتكبها حزب البعث البائد والمنحل بحق أبناء الشعب العراقي ومن مختلف المكونات لأطيافه ولتأسيس وعي للطلبة لرفض جميع اشكال الظلم والتسلط لهذه الأنظمة والمطالبة بجميع الحقوق المدنية والسياسية
استراتيجيات التعليم والتعلم	
الاستراتيجية	القاء المحاضرات واستخدام طريقة النقاش والحوار، العصف الذهني والتقارير والكوزات

10. بنية المقرر

الأسبوع	الساعات	مخرجات التعلم المطلوبة	اسم الوحدة او الموضوع	طريقة التعليم	طريقة التقييم
1	2	فهم المحاضرة	مفهوم وتعريف الجرائم وأقسامها تعريف الجريمة لغة واصطلاحا	القاء المحاضرة وأستخدام السبورة	سؤال وجواب
2	2	فهم المحاضرة	موقف قانون المحكمة الجنائية العليا لسنة 2005 من انتهاكات نظام البعث وأهم القرارات الصادرة عنها	القاء المحاضرة وأستخدام السبورة	ـ سؤال وجواب

3	2	فهم المحاضرة	انواع الجرائم الدولية	القاء المحاضرة وأستخدام السبورة	سؤال وجواب اختبار سريع
4	2	فهم المحاضرة	دور نظام البعث في الانتهاكات النفسية وأثارها المترتبة عليها	القاء المحاضرة وأستخدام السبورة	سؤال وجواب
5	2	فهم المحاضرة	دور نظام البعث في الانتهاكات الاجتماعية وأثارها المترتبة عليها	القاء المحاضرة واستخدام السبورة	سؤال وجواب تقرير
6	2	فهم المحاضرة	موقف نظام البعث من الدين والمؤسسات الدينية	القاء المحاضرة واستخدام السبورة	سؤال وجواب
7	2	فهم المحاضرة	دور نظام البعث بأنتهاك القوانين الخاصة بحقوق الانسان	القاء المحاضرة وأستخدام السبورة	سؤال وجواب حلقة دراسية
8	2		امتحان نصف الفصل		
9	2	فهم المحاضرة	انتهاكات نظام البعث السياسية والعسكرية	القاء المحاضرة واستخدام السبورة	سؤال وجواب
10	2	فهم المحاضرة	انتهاكات نظام البعث للبيئة في العراق / التلوث الحربي	القاء المحاضرة واستخدام السبورة	سؤال وجواب
11	2	فهم المحاضرة	انتهاكات نظام البعث للبيئة في العراق/ تدمير المدن والقرى	القاء المحاضرة وأستخدام السبورة	اختبار سريع
12	2	فهم المحاضرة	انتهاكات نظام البعث للبيئة في العراق/تجفيف الاهوار والبساتين	القاء المحاضرة وأستخدام السبورة	سؤال وجواب
13	2	فهم المحاضرة	التكييف القانوني والشرعي لجريمة المقابر الجماعية	القاء المحاضرة وأستخدام السبورة	سؤال وجواب
14	2	فهم المحاضرة	دور نظام البعث في احداث المقابر الجماعية في العراق	القاء المحاضرة واستخدام السبورة	سؤال وجواب
15	2	فهم المحاضرة	التكييف القانوني لجرائم المقابر الجماعية خلال حكم نظام البعث	القاء المحاضرة وأستخدام السبورة	سؤال وجواب اختبار سريع

11. تقييم المقرر

توزيع الدرجة من ١٠٠ على وفق المهام المكلف بها الطالب مثل التقارير والامتحانات اليومية والندوات والحلقات الدراسية والكوزات وامتحان المد والنهائية

12. مصادر التعليم والتدريس

الكتب المقررة المطلوبة (المنهجية أن وجدت)	جرائم نظام البعث في العراق
المراجع الرئيسة (المصادر)	أرشيف مؤسسة السجناء السياسيين
الكتب والمراجع السائدة التي يوصى بها المجلات العلمية، التقارير ....)	
المراجع الإلكترونية ، مواقع الانترنيت	

Delivery Plan (Weekly Lab. Syllabus) المنهاج الأسبوعي للمختبر	
	Material Covered
Week 1	N. A
Week 2	N. A

Week 3	N. A
Week 4	N. A
Week 5	N. A
Week 6	N. A
Week 7	N. A

Learning and Teaching Resources
مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	حقوق الانسان بين النصوص والنسيان	Yes
Recommended Texts	حقوق الانسان القواعد والاليات الدولية	yes
Websites		

Grading Scheme
مخطط الدرجات

Group	Grade	التقدير	Marks (%)	Definition
Success Group (50 - 100)	A- Excellent	امتياز	90-100	Outstanding Performance
	B - Very Good	جيد جدا	80-89	Above average with some errors
	C - Good	جيد	70-79	Sound work with notable errors
	D - Satisfactory	متوسط	60-69	Fair but with major shortcomings
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Fail Group (0 - 49)	FX- Fail	راسب (قيد المعالجة)	(45-49)	More work required but credit awarded
	F- Fail	راسب	(0-44)	Considerable amount of work required

Note: Marks with decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55. whereas a mark of 54.4 will be rounded to 54. The University- has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the, automatic rounding outlined above.

Contact

Program Manager:

Haidar rafaa z. | MSc. law | Assistant lecturer.

Email:

Mobile no:

Program Coordinator:

Haidar rafaa z. | MSc. law | Assistant lecturer.

Email:

Mobile no:

MODULE DESCRIPTION FORM

وصف المادة الدراسية

MODULE DESCRIPTION FORM

وصف المادة الدراسية

Module Information **معلومات المادة الدراسية**		
Module Title	Building Construction	
Module Type	**C**	**Theory** **Lecture**
Module Code	**CE226**	

ECTS Credits	**4**			**Lab** **Tutorial** **Seminar**	
SWL(hr/sem)	**100**				
Module Level		**2**	**Semester of Delivery**		**4**
Administering Department		**CE**	**College**	**E**	
Module Leader	**Dr. Firas Jawad**		**email**	**firasjk@uomisan.edu.iq**	
Module Leader s Acad. Title		**Lecturer**	**Module Leader s Qualification**		**Ph.D**
Module Tutor			**e-mail**		
Peer Reviewer Name	**Scientific Committee**		**e-mail**		
Scientific Committee Approval Date	**015/06/2023**		**Version Number**	**1.0**	

Relation with other Modules **العلاقة مع المواد الدراسية الاخرى**			
Prerequisite module	**None**	**Semester**	
Co-requisite module	**None**	**Semester**	

Module Aims, Learning Outcomes and Indicative Contents

اهداف المادة الدراسية ونتائج التعلم والمحتويات الارشادية

Module Aims **اهداف المادة الدراسية**	The Module Aims to cover the following subjects: Types of Buildings Earthwork Types of Foundation

	Concrete Works Bricks works Forms and Scaffoldings Doors and Windows Stairs
Module Learning Outcomes **مخرجات التعلم للمادة الدراسية**	After successful completion of the module, students should be able to: How to use the multiples and sub-multiples of SI units likely to be used in the construction industry. The nature and the function of a building and recognize the building as a technology. How to use the various options of excavation and trench support methods. With the primary function of any trench and excavation support method. Explains type of buildings and their usage aims. Explains construction stages. Explain properties of building elements and prepare the drawings. Explains functions of building elements. Explains types and properties of foundations The student prepares foundation plans of buildings. Expresses properties of different structures walls. Expresses properties of different structures floors. Expresses properties of different types of doors and windows Draws details of foundation, walls and floors. Finally, all types of stairs with their functional requirements
Indicative Contents **المحتويات الارشادية**	

Learning and Teaching Strategies **استراتيجيات التعلم والتعليم**	
Strategies	Encourage students' participation in the exercises and expanding their critical thinking skills. This will be achieved through classes, interactive tutorials and by considering types of

	simple experiments via practice involving some sampling activities that are interesting to the students. Different forms of teaching will be used to come across with objectives of the course. pdf presentations for the head titles, definitions, graphs, and many useful illustrations, movies and site visit.

Student \Workload (SWL) الحمل الدراسي للطالب			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	**76**	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب خلال الفصل	**4**
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	**24**	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب اسبوعيا	**4**
TOTAL SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	**100**		

Module Evaluation تقييم المادة الدراسية				
	Time/Number	**Weight (Marks)**	**Week Due**	**Relevant Learning Outcome**
Formative assessment	**Quizzes**	10% (10)		
	Assignments	10% (10)		
	Projects /Lab,	10% (10)		
	Report	10% (10)		
Summative assessment	**Midterm Exam**	2hr 10 % (10)		
	Final Exam	3hr 50 % (50)	16	All
Total assessment		100%(100 marks)		

Delivery Plan (Weekly Syllabus) المنهاج الأسبوعي النظري	
	Material Covered
Week 1	**General introduction about building**
Week 2	**Earthworks** **Excavations** **GRADING** **Excavation support** **Earth filling**
Week 3	**Foundations** **Depth of foundation** **Site investigation and exploration** **Wall footing** **Isolated Foundation** **Combined Foundation**
Week 4	**Cantilever Foundation** **Continuous Foundation** **Raft Foundation** **Buoyancy (Floating) foundation**
Week 5	**Piles Foundations**
Week 6	**Concrete works** **Storing concrete materials** **Batching of concrete** **Concrete mixers** **Transport of concrete**
Week 7	**Pouring of concrete and compaction** **Why we compact concrete with good efficiency** **Concrete works in hot weather**
Week 8	**Brick Works** **Classification of Bricks** **Work bricks expressions** **Building of bricks** **Factors affecting the stability of brick building** **Brick walls classification**
Week 9	**Bond of bricks** **Mortar Joint Profiles** **Expansion Control in Brick Walls** **Efflorescence in Brick Walls**
Week 10	**FORMS and SCAFFOLDING** **General**

	Qualities of Formworks **Types of Formworks**
Week 11	**Time of removal of formwork** **Maintenance of formwork** **Cost of formwork** **Erection and Securing of Forms** **Greasing of Forms** **Slipform** **Scaffolding**
Week 12	**FLOORING** **Floor classification** **Floor plate with beams along one direction** **Floors with main and secondary cross beams** **Floors with close ribs and hollow blocks** **Grid reinforced concrete floor** **Flat slab floors** **Characteristics of a good flooring** **Types of flooring**
Week 13	**STAIRS** **Stair fundamentals** **Tread, riser, and nosing** **Stair shapes** **Headroom** **Guard unit, handrail, balusters, and newel post** **Stair layout and stair plan**
Week 14	**WINDOWS AND DOORS** **Window styles** **Window materials** **Performance ratings of windows** **Structural, water-leakage, and other performance ratings of a window**
Week 15	**Window installation and surrounding details** **Classification based on door material** **Classifications based on door operation and door styles**
Week 16	**Preparatory week before the final Exam**

Delivery Plan (Weekly Lab. Syllabus) **المنهاج الأسبوعي للمختبر**	
	Material Covered
Week 1	Lab 1.
Week 2	Lab 2.
Week 3	Lab 3.
Week 4	Lab 4.

Week 5	Lab 5.
Week 6	Lab 6.
Week 7	Lab 7.

Learning and Teaching Resources **مصادر التعلم والتدريس**		
	Text	**Available in the Library?**
Required Texts	**انشاء المباني /زهير ساكو**	**Yes**
Recommended Texts	**BUILDING CONSTRUCTION /Madan Mehta**	**Yes**
Websites		

Grading Scheme **مخطط الدرجات**				
Group	**Grade**	**التقدير**	**Marks (%)**	**Definition**
Success Group (50 - 100)	A- Excellent	امتياز	90-100	Outstanding Performance
	B - Very Good	جيد جدا	80-89	Above average with some errors
	C - Good	جيد	70-79	Sound work with notable errors
	D - Satisfactory	متوسط	60-69	Fair but with major shortcomings
	E - Sufficient	مقبول	50-59	Work meets minimum criteria
Fail Group (0 - 49)	FX- Fail	راسب (قيد المعالجة)	(45-49)	More work required but credit awarded
	F- Fail	راسب	(0-44)	Considerable amount of work required

Note: Marks with decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55. whereas a mark of 54.4 will be rounded to 54. The University- has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the, automatic rounding outlined above.

Contact

Program Manager:

Firas Jawad Kadhim | PhD. In Geotechnical Engineering | lecturer.

Email: firasjk@uomisan.edu.iq

Mobile no: 07737195100

Program Coordinator :

Firas Jawad Kadhim | PhD. In Geotechnical Engineering | lecturer.

Email: firasjk@uomisan.edu.iq

Mobile no: 07737195100