MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	**Electrical Engineering**			**Module Delivery**	
Module Type	**Support**			☒ **Theory** ☒ **Lecture** ☐ **Lab** ☐ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	**CE110**				
ECTS Credits	**2**				
SWL (hr./sem)	**50**				
Module Level		UGI	**Semester of Delivery**		2
Administering Department			**College**		
Module Leader	Mr. Yehia Rehab hamdy		**e-mail**	Yehia.rehab@uomosul.edu.iq	
Module Leader's Acad. Title			**Module Leader's Qualification**		
Module Tutor			**e-mail**		
Peer Reviewer Name			**e-mail**		
Scientific Committee Approval Date	2025		**Version Number**	1.1	

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	Learn protection from electric shock when working with electricity, constructing electric map of a house and residential building , making good grounding for a building and house, how to distribute electrical appliances inside the house, constructing electric bell circuits, fluorescent lamp, tester circuit...etc.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	1- Learn how to connect circuit on series and parallel. 2- Learn how to measure current, voltage and power. 3- Distribution of electrical appliances and equipment within residential buildings, laboratories, government departments...etc 4- How to properly ground electrical equipment and buildings. 5- Protection and prevention from electric lightning. 6- An ability to identify, analyze, and solve complex engineering problems according to principles of engineering, science, andmathematics. 7- An ability to acquire and apply new knowledge and using appropriate learning strategies. 8- An ability to participate and work professionally and ethically in different projects to function on multi-disciplinary teams.
Indicative Contents المحتويات الإرشادية	Indicative content includes the following. **Part A - Circuit Components and values** DC circuits, Current and voltage definitions, Passive sign convention and circuit elements, Resistive networks, real and ideal elements, voltage and current sources. [10 hrs.] **Part B- Circuit reduction** combining sources, Combining resistive elements in series and parallel, delta and star transformation. [10 hrs.] **Part C- Materials and Electrical installation** Conductors, Insulators, and Semiconductors. Lambs, Circuit breakers, bell (buzzer). [10 hrs.]

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	The main strategy that will be adopted in delivering this module is to encourage students' participation in the exercises, while at the same time refining and expanding their critical thinking skills. This will be achieved through classes, interactive tutorials and by considering type of simple experiments involving some sampling 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	33	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	2

Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	17	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	1
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**	3	24% (24)	4,8,12	LO #1, 5, 8 and 9
	Assignments	2	8% (8)	2 to 12	LO #1, 2, 4, 6 7, 8 and 9
	Projects / Lab.	1	4% (4)		
	Report	1	4% (4)	----	LO #1, 2, 4, 6 7, 8 and 9
Summative assessment	**Midterm Exam**	2 hr.	10% (10)	7	LO # 1-5
	Final Exam	3hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)
المنهاج الاسبوعي النظري

	Material Covered
Week 1	Basic Concept & Units: Electricity & atomic structure of substance, current and current density, current flow, electric circuit, E.M. F& potential difference
Week 2	international system of unit, abbreviation for multiples & sub-multiples, quantities derived from SI units, units of force-energy-torque and power, relation between energy and heat, electric units, efficiency & percentage efficiency, electromechanical equivalent of element
Week 3	Ohm's law, resistivity & conductivity
Week 4	temperature affect, internal resistance of a source, open circuit & short circuit
Week 5	equivalent resistance: Series-parallel-circulating current method-floating source method & grouping of E.M.F. sources, double subscript
Week 6	power calculation in D.C circuit
Week 7	Energy calculation in D.C circuit
Week 8	Mid-term Exam
Week 9	General rules for the prevention of electric shock
Week 10	Grounding resistor calculation
Week 11	Grounding installation for houses and buildings
Week 12	Protection and prevention from electric lightning
Week 13	Distribution of electrical appliances and equipment within residential buildings

Week 14	Conducting inspections of electrical devices
Week 15	Voltage drop calculations for transmission lines
Week 16	Final Exam

Delivery Plan (Weekly Lab. Syllabus)

المنهاج الاسبوعي للمختبر

	Material Covered
Week 1	
Week 2	
Week 3	
Week 4	
Week 5	
Week 6	

Learning and Teaching Resources

مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	Engineering Circuit Analysis 7th Edition by William Hayt , Jack Kemmerly , Steven Durbin	Yes
Recommended Texts	Schaum's Outline of Basic Circuit Analysis, Second Edition (Schaum's Outlines) 2nd Edition, by John O'Malley	No
Websites	DC Electrical Circuit Analysis: A Practical Approach Copyright Year: 2017.	

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.

أ.د. محسن عبد الجبار محمد عون
رئيس قسم الهندسة المدنية

قسم الهندسة المدنية

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	Democracy and Human Rights			**Module Delivery**	
Module Type	basic			☐ **Theory** ☒ **Lecture** ☐ **Lab** ☐ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	UOM1040				
ECTS Credits	2				
SWL (hr/sem)	50				
Module Level		1	**Semester of Delivery**		three
Administering Department			**College**		
Module Leader	Ali Abdulmutalib		**e-mail**		
Module Leader's Acad. Title			**Module Leader's Qualification**		MSc
Module Tutor			**e-mail**		
Peer Reviewer Name			**e-mail**		
Scientific Committee Approval Date	2025		**Version Number**		1.1

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

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Aims أهداف المادة الدراسية	The aim of studying the democracy and human rights topics is to: 1. **Understand** the concept of human rights and explore their sources, including international, regional, national, and religious sources. 2. **Define** administrative corruption, explore its types, and understand its detrimental effects on society. Study methods to combat administrative corruption and promote transparency, accountability, and good governance. 3. **Trace** the historical development and evolution of human rights, examining key milestones and movements that have shaped the modern understanding of human rights. 4. **Differentiate** between different categories of human rights, including civil and political rights, economic and social rights, and environmental, cultural, and developmental rights. 5. **Explore** legal, institutional, and societal guarantees to prevent human rights violations, including guarantees of human rights in Islam, national-level protections, and international safeguards. 6. **Comprehend** the concept of democracy, including its principles, values, and various forms of democratic governance such as direct, semi-direct, indirect, and digital democracy. Overall, studying these topics aims to develop a comprehensive understanding of human rights, democracy, and combating corruption, empowering individuals to actively promote and protect human rights and democratic values in society.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	After these module aims, students should be able to: 1. Demonstrate a comprehensive understanding of the concept of human rights and their sources, including international, regional, national, and religious sources. 2. Identify and explain the fundamental characteristics of human rights, such as universality, indivisibility, interdependence, and inalienability. 3. Analyze the historical emergence and evolution of human rights, including key milestones and movements that have shaped their development. 4. Differentiate between different categories of human rights, including civil and political rights, economic and social rights, and environmental, cultural, and developmental rights. 5. Evaluate and apply legal, institutional, and societal guarantees to prevent human rights violations, considering guarantees in Islam, at the national level, and within the international framework. 6. Understand and discuss the concept of democracy, including its principles, values, and different forms of democratic governance. 7. Evaluate the Islamic stance on democracy and engage in critical analysis of the strengths and weaknesses of the democratic system. 8. Recognize and assess the impact of administrative corruption on society and propose methods to combat and prevent corruption in administrative systems. 9. Demonstrate critical thinking skills by analyzing and evaluating different

	perspectives on human rights, democracy, and corruption. 10. Apply acquired knowledge and skills to promote and protect human rights, democracy, and good governance in personal, professional, and civic contexts. Overall, students should have a solid understanding of democracy and human rights, democracy, and corruption issues, and be able to apply this knowledge to contribute to the advancement of human rights and democratic values in society.
Indicative Contents المحتويات الإرشادية	The indicative content includes: 1. Definition and sources of democracy and human rights (international, regional, national, religious). [3h] 2. Characteristics of democracy and human rights: universality, indivisibility, interdependence, inalienability. [3h] 3. Emergence and evolution of human rights: historical development, key milestones, influential movements. [3h] 4. Types of human rights: civil and political, economic and social, environmental, cultural, and developmental. [3h] 5. Guarantees to prevent human rights violations: legal, institutional, societal safeguards, Islamic guarantees, national and international levels. [3h] 6. Concept of democracy: principles, values, forms of governance (direct, semi-direct, indirect). [3h] 7. Islamic stance on democracy: compatibility, strengths, weaknesses. [3h] 8. Critique of the democratic system: analysis of strengths and weaknesses. [3h] 9. Administrative corruption: definition, types, societal impact. [3h] 10. Methods to combat administrative corruption. [3h]

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	When it comes to learning and teaching strategies for a human rights module, there are several approaches can be taken to enhance understanding and engagement. Here are some effective strategies: 1. Interactive Discussions: Encourage students to actively participate in discussions, debates, and group activities. This promotes critical thinking, allows for different perspectives to be shared, and fosters a deeper understanding of human rights issues. 2. Case Studies: Present real-life case studies that highlight human rights violations or achievements. Analyzing these cases helps students apply theoretical concepts to practical situations and develops their problem-solving skills. 3. Research Projects: Assign research projects on specific human rights topics or

	issues. This encourages independent learning, critical analysis, and the development of research skills. 4. Collaborative Learning: Foster collaboration among students through group projects or assignments. This encourages teamwork, peer learning, and the exchange of diverse perspectives. 5. Assessment Variety: Use a variety of assessment methods, including essays, presentations, debates, and quizzes, to assess students' understanding of human rights concepts and their ability to apply them to real-world situations.

Student Workload (SWL)
الحمل الدراسي للطالب

Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	33	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	2
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	17	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	1
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**	2	10% (10)	5, 10	LO #2, 4, 6 and 8
	Assignments	2	20% (20)	3, 5, 8, 11, 13	LO # 1, 3, 7, 6, 9 and 10
	Projects / Lab.		10% (10)		
	Report	1	10% (10)	13	LO # 2,4,5,7,9and 10
Summative assessment	**Midterm Exam**	2 hr	10% (10)	7	LO # 1-7
	Final Exam	3 hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري	
	Material Covered
Week 1	Definition of human rights and sources of rights (international sources / regional sources / national sources / religious sources).
Week 2	Characteristics of human rights.
Week 3	The emergence and evolution of human rights.
Week 4	Types of human rights / civil and political rights. Economic and social rights. Environmental, cultural, and developmental rights.
Week 5	Guarantees to prevent human rights violations / guarantees of human rights in Islam.
Week 6	Guarantees for the protection of human rights at the national level.
Week 7	Guarantees of human rights at the international level.
Week 8	The concept of democracy.
Week 9	Characteristics of a democratic system.
Week 10	Forms of democratic governance (direct democracy / semi-direct democracy / indirect democracy).
Week 11	Digital democracy / definition and advantages and disadvantages of digital democracy / manifestations of digital democracy.
Week 12	The Islamic stance on democracy.
Week 13	Critique of the democratic system.
Week 14	Administrative corruption / definition and types.
Week 15	Methods to combat administrative corruption.
Week 16	**Preparatory week before the final Exam**

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
	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	ضمانات حقوق الانسان وحمايتها وفقا للقانون الدولي والتشريع الوطني / نبيل عبد الرحمن ناصر الدين	No
Recommended Texts	الديمقراطية وحقوق الانسان / د. امير عبد العزيز	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

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أ.د. مهند عبد المهدي محمد عون
رئيس قسم الهندسة المدنية

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	**ENGINEERING DRAWING I**			**Module Delivery**	
Module Type	**C**			☐ **Theory** ☒ **Lecture** ☒ **Lab** ☐ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	CE103				
ECTS Credits	**5**				
SWL (hr/sem)	**125**				
Module Level	UGI		**Semester of Delivery**	1	
Administering Department	Type Dept. Code		**College**	Type College Code	
Module Leader	Ibtesam hazem/sura abd-alrazaaq		**e-mail**	ibtesam_alzubady_b-s@uomosul.edu.iq	
Module Leader's Acad. Title	Lecturer		**Module Leader's Qualification**	MSc	
Module Tutor	Name (if available)		**e-mail**	E-mail	
Peer Reviewer Name	امينة احمد خليل		**e-mail**	amina.alshumam@uomosul.edu.iq	
Scientific Committee Approval Date	2025		**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	1. To know about different types of lines & use of different types of pencils in an Engineering Drawing 2. To know how to represents letters & numbers in drawing sheet. 3. To khow how to draw graphic geometry. 4. To know about different types of projection 5. To know projection of points ,straight lines, solids etc. 6. To know development of different types of surfaces.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	1- Identify and use of different grades of pencils and other drafting instruments which are used in engineering field . 2- Draw free hand sketches of various kinds of objects. 3- Utilize various types of lines used in engineering drawing. 4- Read and apply different dimensioning methods on drawing of objects. 5- Use different types of scales and their utilization in reading and reproducing drawings of objects and maps. 6- Draw 2 - dimensional view of different objects viewed from different angles (orthographic views) . 7- Draw and interpret complete inner hidden details of an object which are otherwise not visible in normal view. 8- An ability to identify, analyze, and solve complex engineering problems according to principles of engineering, science, andmathematics. 9- An ability to acquire and apply new knowledge and using appropriate learning strategies. 10- An ability to participate and work professionally and ethically in different projects to function on multi-disciplinary teams.
Indicative Contents المحتويات الإرشادية	Indicative content includes the following: Introduction about tools drawings and types of lines[4], Basic graphic &types of scales[6], graphic geometry , drwaing polygons and ellipps ,reverse curve [12] , Orthographic Projection [18], Surface States[6] , Projection on Inclined Surfaces[8] , Tangent points [6].
Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	The main strategy that will be adopted in delivering this module is to encourage students' participation in the exercises, while at the same time refining and expanding their critical thinking skills. This will be achieved through classes, interactive tutorials and by considering type of simple experiments involving some sampling 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	4
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	62	**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

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	**Quizzes**	3	15% (15)	4, 13	LO #3, 4, 5,6 and 7
	H.W & C.W	12	24% (24)	1, 13	LO #3, 4, 5,6 and 7
	Projects / Lab.				
	Report	1	1%(1)		LO #3, 4, 5,6- 10
Summative assessment	**Midterm Exam**	2 hr	10% (10)	7	LO # 1-7
	Final Exam	3 hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)
المنهاج الاسبوعي

	Material Covered
Week 1	Introduction to drawing instruments, materials, layout and sizes of drawing sheets and drawing boards.
Week 2	Different types of lines in Engineering drawing & Practice of vertical, horizontal and inclined lines.
Week 3	Basic Graphic
Week 4	Types of scales
Week 5	Graphic Geometry: how to draw to parallel , perpendicular & divide line.
Week 6	Geometrical figures such as triangles, rectangles, circles, ellipses and curves, hexagonal, pentagon with the help of drawing instruments
Week 7	Reverse Curve or Ogee Curve
Week 8	Theory of orthographic projections
Week 9	Types of projection
Week 10	Projection with parallel and perpendicular rays
Week 11	Three views of orthographic projection of different objects. (At least one sheet in 3rd angle)
Week 12	Surface States

Week 13	Projection of cylinders
Week 14	Projection on Inclined Surfaces
Week 15	Tangent points in projection
Week 16	Final Exam

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
	Material Covered
Week 1	Teaching students to use tools in the studio
Week 2	Teaching students how to draw H.W. No. 1 and how to draw angles correctly
Week 3	Application to engineering operations by giving several homework questions
Week 4	Apply the drawing scale by giving a class work
Week 5	A practical application on drawing parallel and perpendicular lines and learning how to draw polygons,ellipse.
Week 6	
Week 7	Teach students to draw an reverse curves and give examples
Week 8	Practical application to various issues related to the theory of orthographic projection through class assignments and giving homework
Week 9	
Week 10	
Week 11	
Week 12	Solve examples of surface states
Week 13	Solve examples of projection of cylinders
Week 14	A practical application of projection on inclined surfaces and teaching the student how to find points of tangent in the projections
Week 15	

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	Engineering Drawing and Graphic Technology, By French & Vierk , Twelve edition	yes
Recommended Texts	Technical drawing with engineering	No
Websites		

			(%)	
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.

أ.د. معتز عبد الجبار محمد عون
رئيس قسم الهندسة المدنية

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	**ENGINEERING DRAWING II**			**Module Delivery**	
Module Type	**core**			☐ **Theory** ☒ **Lecture** ☒ **Lab** ☐ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	CE108				
ECTS Credits	**6**				
SWL (hr/sem)	**150**				
Module Level	UGI		**Semester of Delivery**	2	
Administering Department	Type Dept. Code		**College**	Type College Code	
Module Leader	Ibtesam hazem/sura abd-alrazaaq		**e-mail**	ibtesam_alzubady_b-s@uomosul.edu.iq	
Module Leader's Acad. Title	Lecturer		**Module Leader's Qualification**	MSc	
Module Tutor	Name (if available)		**e-mail**	E-mail	
Peer Reviewer Name	امينة احمد خليل		**e-mail**	amina.alshumam@uomosul.edu.iq	
Scientific Committee Approval Date	2025		**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	1. To know about isometric projection. 2. Different lines used for representation of different Engineering Sections. 3. To know how to estimate missing view. 4. Qualifying students to use Autocad for engineering drawings efficiently in order to help them in their designs & projects.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	1- Identify and use of different grades of pencils and other drafting instruments which are used in engineering field . 2- Draw free hand sketches of various kinds of objects. 3- Generate isometric (3D) drawing from different 2D (orthographic) views/sketches. 4- Identify conventions for different engineering materials, symbols, sections of regular objects and general fittings used in Civil and Electrical household appliances. 5- Find the missing views. 6- students will be able to use Autocad commands to make drawings, create annotations, create & insert symbols, dimension a drawing, create blocks, and plot drawings with certain scales. 7- An ability to identify, analyze, and solve complex engineering problems according to principles of engineering, science, andmathematics. 8- An ability to acquire and apply new knowledge and using appropriate learning strategies. 9- An ability to participate and work professionally and ethically in different projects to function on multi-disciplinary teams.
Indicative Contents المحتويات الإرشادية	Indicative content includes the following: Introduction in in Isometric drawing then explain its type , Circles Isometric [10] , Inclined Surfaces in Isometric [4] , Missing View [6] , Sectional Views, Parts not sectioned [10] , Autocad commands [30].
Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	The main strategy that will be adopted in delivering this module is to encourage students' participation in the exercises, while at the same time refining and expanding their critical thinking skills. This will be achieved through classes, interactive tutorials and by considering type of simple experiments involving some sampling 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	4

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

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	**Quizzes**	1	12% (12)	4, 13	LO #3, 4, 5 and 6
	H.W &	1	8% (8)	1, 13	LO #3, 4, 5 and 6
	Autocad	1	10%(10)	8,15	LO #6
	C.W	1	10%		
Summative assessment	**Midterm Exam**	2 hr	10% (10)	7	LO # 1-6
	Final Exam	3 hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)
المنهاج الاسبوعي

	Material Covered
Week 1	Pictorial Drawing- Isometric drawing
Week 2	Circles Isometric
Week 3	Inclined Surfaces in Isometric
Week 4	Missing View
Week 5	Dimensions and Notes
Week 6	Sectional Views
Week 7	Parts not sectioned
Week 8	Getting started: 1- Start a new drawing. 2- User Interface. 3- Drafting settings I (Snap, Rectangular & Isometric grid). 4- Limits. 5- Units. 6- Absolute & Relative coordinate system. 7- Ortho.
Week 9	Drawing I 1- 2- Line, Arc, Circle, Ellipse, Polygon, Rectangle,
Week 10	Drawing II, View. 1- Zoom, Pan, 2- Drafting settings II.(Osnap, Polar snap). 3- Pline, Pedit. 4- Erase. 5- Selecting objects. 6- Ltype, Ltscale.awing II, View. 1- Zoom, Pan, 2- Drafting settings II.(Osnap, Polar snap). 3- Pline, Pedit. 4- Erase. 5- Selecting objects. 6- Ltype, Ltscale.
Week 11	Modify I, Drawing III: 1-Copy, Rotate, Move, Scale, Stretch. 2- Undo, U, Redo. 3-, Lweight. 4- Divide, Measure.5- Point (DDPTYPE).
Week 12	Layers, Modify II: 1- Working with Layers. 2- Properties (Mo, Ch). 4- Working with Grips.
Week 13	**Modify III.** 1- Array, Offset, Fillet, Chamfer, Trim, Extend, Lengthen, Mirror,Break, Join, Explode.
Week 14	Annotation I, Modify IV, Inquiry: 1-Style, Text, Mtext, Ddedit,. 2- ID, Dist, Area, Massprop

Week 15	Annotation II: 1- Dimensions & Leaders.
Week 16	Final Exam

Delivery Plan (Weekly Lab. Syllabus)
المنهاج الاسبوعي للمختبر

	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	Engineering Drawing and Graphic Technology, By French & Vierk , Twelve edition Autodesk Autocad 2020 online Help	yes
Recommended Texts	Technical drawing with engineering	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 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.

أ.د. مهند عبد الحكيم محمد عودة
رئيس قسم الهندسة المدنية

قسم الهندسة المدنية

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	**English Language**			**Module Delivery**	
Module Type	Basic			☐ **Theory** ☒ **Lecture** ☐ **Lab** ☐ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	UOM1021				
ECTS Credits	2				
SWL (hr/sem)	50				
Module Level		UGI	**Semester of Delivery**		1
Administering Department		Type Dept. Code	**College**	Type College Code	
Module Leader	Mohammed Kamil Faris		**e-mail**	Mohammed.kamil@uomosul.edu.iq	
Module Leader's Acad. Title		Lecturer	**Module Leader's Qualification**		Ph.D.
Module Tutor			**e-mail**		
Peer Reviewer Name			**e-mail**		
Scientific Committee Approval Date		2025	**Version Number**		1.1

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 objective of the English class is to develop vocabulary and speaking skills, focusing on personal introductions and basic conversation topics. Students will learn to express personal information, talk about their world, discuss family and friends, describe their preferences, and communicate about sports, food, and drinks. The class aims to enhance reading and listening skills through engaging texts and audio materials while improving writing skills through various writing tasks. Additionally, students will practice proper pronunciation and expand their vocabulary by learning adjectives, question words, and basic language structures. By the end of the course, students will have gained confidence in using English for everyday communication, improved their language proficiency in speaking, reading, writing, and listening, and developed a broader range of vocabulary.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	The outcome of the English class is 1. Developed a strong vocabulary and improved speaking skills for basic conversation and personal introductions. 2. Acquired knowledge about different countries, their cultures, and improved reading and speaking abilities to discuss them. 3. Gained proficiency in using personal pronouns (he/she/they) and possessive pronouns (his/her/their). 4. Enhanced reading and listening skills by understanding and responding to texts on topics such as jobs, personal information, and social expressions. 5. Strengthened reading and writing skills through activities focused on family, possessive forms, and the alphabet. 6. Expanded vocabulary related to sports, food, drinks, languages, nationalities, numbers, and prices, while improving pronunciation. 7. Developed the ability to ask questions using question words, use pronouns (me/him/us/them), and express preferences using adjectives. 8. Improved overall vocabulary and communication skills in both speaking and listening through various activities and exercises. 9. An ability to acquire and apply new knowledge and using appropriate learning strategies. 10. An ability to participate and work professionally and ethically in different projects to function on multi-disciplinary teams.
Indicative Contents المحتويات الإرشادية	Indicative content includes the following. Part A - Reading and Writing: -Developing reading comprehension skills through texts and passages related to various topics. -Practicing writing skills through activities such as summarizing, paragraph writing, and essay writing. [30 hrs] Part B -Vocabulary: -Building vocabulary related to different themes and contexts, including greetings, personal information, occupations, sports, food, drinks, etc. -Expanding word knowledge through exercises, word associations, and contextual usage [10 hrs]

	Part C -Listening and Speaking: -Enhancing listening skills through audio materials, dialogues, and conversations. -Engaging in speaking activities to improve fluency, pronunciation, and communication skills.
	-Participating in discussions, role-plays, and presentations to develop oral proficiency. [7 hrs]

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	The main strategy that will be adopted in delivering this module is to encourage students' participation in the exercises, while at the same time refining and expanding their critical thinking skills. This will be achieved through classes, interactive tutorials and by considering type of simple experiments involving some sampling 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	33	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	2
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	17	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	1
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**	3	18% (18)	5, 10	LO #3, 4, 5, and 6
	Assignments	3	18% (18)	2, 12	LO #1, 2, 5, and 6
	Projects / Lab.				
	Report	1	4%(4)		LO # 1-10
Summative assessment	**Midterm Exam**	2 hr	10% (10)	7	LO # 1-7
	Final Exam	3 hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)
المنهاج الاسبوعي النظري

	Material Covered
Week 1	Unit 1- Hello.
Week 2	Vocabulary and speaking.
Week 3	Unit 2- your world. Countries • he/she/they, his/her • Where's he from?
Week 4	Reading and Speaking.
Week 5	Unit 3- All about you. Jobs • am/are/is • Negatives and questions • Personal information • Social expressions.
Week 6	Reading and Listening.
Week 7	**Mid-term Exam**
Week 8	Unit 4- Family and friends. our/their • Possessive 's • The family • has/have • The alphabet
Week 9	Reading and Writing.
Week 10	Unit 5- The way I live. Sports/ Food/ Drinks • Present Simple - I/you/we/they • a/ an Languages and nationalities • Numbers and prices.
Week 11	Vocabulary and Pronunciation.
Week 12	Unit 6- My favorites. Question words • me/him/us/them • this/that Adjectives • Can I ... ?
Week 13	Vocabulary -Adjectives
Week 14	Reading and Writing
Week 15	Speaking and Listening.
Week 16	**A preparatory week before the Final Exam**

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
	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	New headway, beginner student's book. John and Liz Soars.	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)	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.

أ.د. مهتن عبد الجبار محمد عون
رئيس قسم الهندسة المدنية

-MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	**Geology**			**Module Delivery**	
Module Type	**Core**			☒ **Theory** ☒ **Lecture** ☒ **Lab** ☒ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	**CE104**				
ECTS Credits	**6**				
SWL (hr/sem)	**150**				
Module Level		UGIV	**Semester of Delivery**		1
Administering Department		Type Dept. Code	**College**	Type College Code	
Module Leader	Dr. Mohammed N. Jaro		**e-mail**	m.jaro@uomosul.edu.iq	
Module Leader's Acad. Title		lecture	**Module Leader's Qualification**		
Module Tutor	Zeena Ahmed Kazzaz		**e-mail**	zeena.kazzaz@uomosul.edu.iq	
Peer Reviewer Name		امينة احمد خليل	**e-mail**	amina.alshumam@uomosul.edu.iq	
Scientific Committee Approval Date		2025	**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 Module aims including the following:

1	Importance of engineering geology for civil engineer
2	Learning types of minerals and their engineering properties, in addition to clay minerals which have great importance in civil engineering
3	Understand basic relation in soil and rocks
4	Effect of geological structures on engineering facilities built above and under the earth surface.
5	Learning methods of drawing and reading geological, topographic and contour maps, and calculating the amounts of backfill and cut.

Module Learning Outcomes

مخرجات التعلم للمادة الدراسية

1	Learning types of minerals and their engineering properties, in addition to clay minerals which have great importance in civil engineering
2	Understand basic relation in soil and rocks
3	Effect of geological structures on engineering facilities built above and under the earth surface.
4	Learning methods of drawing and reading geological, topographic and contour maps, and calculating the amounts of backfill and cut.

5. An ability to identify, analyze, and solve complex engineering problems according to principles of engineering, science, andmathematics.
6. An ability to acquire and apply new knowledge and using appropriate learning strategies.
7. An ability to participate and work professionally and ethically in different projects to function on multi-disciplinary teams.

Indicative Contents
المحتويات الإرشادية

Indicative content includes the following.

1- Definition of engineering geology
2- The relationship between geology and civil engineering [4]
3- Definition of natural minerals and their engineering properties
Clay Mineralogy [4]
4- Introduction to rocks and their types in the Earth's crust
5- Definition of sedimentary, igneous and metamorphic rocks, their types and geological characteristics [4]
6- Weathering, erosion and soil formation [4]
7- Geological structures - folds, faults and joints in rocks and their impact on engineering structures [4]
8- Engineering properties of rocks - physical and mechanical [4]
9- Midterm examination [4]
10- Topographical and geological maps and the purpose of their study [4]
11- Soil engineering properties - physical, mechanical, and hydraulic properties of the soil [4]
12- Ground water - storage and movement of ground water, factors affecting groundwater movement and ground water qualityR [4]

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	The main strategy that will be adopted in delivering this module is to: **1** Importance of engineering geology for civil engineer **2** Learning types of minerals and their engineering properties, in addition to clay minerals which have great importance in civil engineering **3** Understand basic relation in soil and rocks **4** Effect of geological structures on engineering facilities built above and under the earth surface. **5** Learning methods of drawing and reading geological, topographic and contour maps, and calculating the amounts of backfill and cut.

Student Workload (SWL) الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	87	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	6
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	63	**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					
		Time/Number	**Weight (Marks)**	**Week Due**	**Relevant Learning Outcome**
Formative assessment	**Quizzes**	4	20% (20)		LO #1, 2, 3 and 4
	Assignments	3	10% (10)		LO # 3 and 4
	Projects / Lab.				
	Report	2	10% (10)		LO # 1-7
Summative assessment	**Midterm Exam**	2 hr	10% (10)	7	LO # 1-7
	Final Exam	3 hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري	
	Material Covered
Week 1	Definition of engineering geology
Week 2	Definition of engineering geology The relationship between geology and civil engineering
Week 3	Definition of natural minerals and their engineering properties Clay Mineralogy
Week 4	Introduction to rocks and their types in the Earth's crust Definition of sedimentary, igneous and metamorphic rocks, their types and geological characteristics
Week 5	Introduction to rocks and their types in the Earth's crust Definition of sedimentary, igneous and metamorphic rocks, their types and geological characteristics
Week 6	Weathering, erosion and soil formation
Week 7	Geological structures - folds, faults and joints in rocks and their impact on engineering structures
Week 8	Engineering properties of rocks - physical and mechanical
Week 9	Engineering properties of rocks - physical and mechanical
Week 10	Midterm examination
Week 11	Topographical and geological maps and the purpose of their study
Week 12	Soil engineering properties - physical, mechanical, and hydraulic properties of the soil
Week 13	Soil engineering properties - physical, mechanical, and hydraulic properties of the soil
Week 14	Ground water - storage and movement of ground water,
Week 15	factors affecting groundwater movement and ground water qualityR
Week 16	Preparatory week before the final Exam

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
	Material Covered
Week 1	Definition of laboratory apparatus
Week 2	Types and properties of minerals
Week 3	Study of the types and composition of igneous rocks
Week 4	Study of the types and composition of metamorphic rocks
Week 5	Study of the types and composition of sedimentary rocks
Week 6	Midterm examination
Week 7	Some tests on rocks

Week 9	Preparatory week before the final Exam

Learning and Teaching Resources
مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	Basic of geology for engineers	Yes
Recommended Texts	Engineering Geology Soil mechanic and foundation engineer	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 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.

أ.د. [illegible] عبد الجبار محمد عون
رئيس قسم الهندسة المدنية

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	**Mathematics I**			**Module Delivery**	
Module Type	**Core**			☒ **Theory** ☒ **Lecture** ☐ **Lab** ☒ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	**CE101**				
ECTS Credits	**6**				
SWL (hr/sem)	**150**				
Module Level		UGI	**Semester of Delivery**		1
Administering Department		Type Dept. Code	**College**	Type College Code	
Module Leader	Mohammed Th. Al-Neima Ahmad Ibrahim		**e-mail**	mohammedmth@uomosul.edu.iq	
Module Leader's Acad. Title		Lecture Assistant lecture	**Module Leader's Qualification**		Ph.D. M.SC.
Module Tutor			**e-mail**		
Peer Reviewer Name		Amina A Khaleel	**e-mail**	amina.alshumam@uomosul.edu.iq	
Scientific Committee Approval Date		2025	**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	1. Provide the fundamental base for elementary mathematics. 2. Use mathematical functions like trigonometric functions and application of derivatives to solve some Engineering problems.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	1. Basic 2D Curves drawing using shifting properties. 2. Apply mathematic techniques to find the limits. 3. Apply differential calculus and higher order to solve Engineering problems. 4. Find velocity, acceleration with application of derivatives. 5. Apply determinants properties and Crammer`s rule to solve Engineering problems. 6. An ability to identify, analyze, and solve complex engineering problems according to principles of engineering, science, and mathematics.
Indicative Contents المحتويات الإرشادية	Indicative content includes the following. Chapter 1 Prerequisites for calculus, coordinates and Graphs in the plane,. Slope and Equations for lines, functions and their graphs.Shifts, Cirrcles and parabolas , A review of trigonometric functions. [15 hrs] Chapter 2 Limits and continuity, introduction to limit, The sandwich theorem and $\frac{\sin\theta}{\theta}$, Limits involving infinity, continuous functions [15 hrs] Chapter 3 Derivatives, slopes, Tangent lines and derivatives. Differentiations Rules, Derivatives of Trigonometric functions. The chain rule, implicit differentiation and fractional powers [15 hrs] Chapter 4 Applications of derivatives, Related rates of change. Maxima, minima, curve sketching with y' and y''. Graphing Rational functions, Asymptotes, Optimization [15 hrs] Chapter 5 Types of Matrices, operations sum, multiplication by scalar, multiplication between two matrices, Determinants, The adjoin of Matrix, inverse of Matrix, Solving systems of linear equation using Matrices. [15 hrs]

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	Type something like: The main strategy that will be adopted in delivering this module is to encourage students' participation in the exercises, while at the same time refining and expanding their critical thinking skills. This will be achieved through

	classes, interactive tutorials and by considering type of simple experiments involving some sampling 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	78	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	5
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	72	**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
Formative assessment	**Quizzes**	3	24% (24)	5, 10,11	LO #1, 2, 3
	On line Assignments	4	4% (4)	2, 4,6,8	LO # 1-4
	Onsite Assignments	4	4% (4)	3,5,7,9	LO # 1-4
	Projects / Lab.				
	Report	1	3%(3)	13	LO # 1-6
	Seminars	1	5%(5)		LO # 1-6
Summative assessment	**Midterm Exam**	2 hr	10% (10)	8	LO # 1-3
	Final Exam	3hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

8

Delivery Plan (Weekly Syllabus)
المنهاج الاسبوعي النظري

	Material Covered
Week 1	Prerequisites for calculus, coordinates and Graphs in the plane,
Week 2	Slope and Equations for lines, functions and their graphs
Week 3	Shifts, Cirrcles and parabolas , A review of trigonometric functions.
Week 4	Limits and continuity, introduction to limit.

Week 5	The sandwich theorem and $\frac{\sin\theta}{\theta}$
Week 6	Limits involving infinity, continuous functions
Week 7	Derivatives, slopes, Tangent lines and derivatives
Week 8	Differentiations Rules, Derivatives of Trigonometric functions
Week 9	The chain rule, implicit differentiation and fractional powers
Week 10	Applications of derivatives, Related rates of change.
Week 11	Maxima, minima, curve sketching with y' and y''
Week 12	Graphing Rational functions, Asymptotes, Optimization
Week 13	Types of Matrices, operations sum, multiplication by scalar, multiplication between two matrices.
Week 14	Determinants, The adjoin of Matrix, inverse of Matrix
Week 15	Solving systems of linear equation using Matrices
Week 16	**Preparatory week before the final Exam**

Delivery Plan (Weekly Lab. Syllabus)

المنهاج الاسبوعي للمختبر

	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	Thomas' Calculus by Finney and Thomas.	Yes
Recommended Texts	**Calculus by Ron Larson, Bruce Edwards.**	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 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.

أ.د. معتز عبد الجبار محمد عوض
رئيس قسم الهندسة المدنية

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	**Mathematics II**			**Module Delivery**	
Module Type	**Core**			☒ **Theory** ☒ **Lecture** ☐ **Lab** ☒ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	**CE106**				
ECTS Credits	**7**				
SWL (hr/sem)	**175**				
Module Level		UGI	**Semester of Delivery**		2
Administering Department		Type Dept. Code	**College**	Type College Code	
Module Leader	Ahmad Ibrahim		**e-mail**		
Module Leader's Acad. Title		Assistant lecture	**Module Leader's Qualification**		M.SC.
Module Tutor			**e-mail**		
Peer Reviewer Name		Amina A Khaleel	**e-mail**	amina.alshumam@uomosul.edu.iq	
Scientific Committee Approval Date			**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	1. Provide the fundamental base for elementary mathematics about integraltion. 2. Use mathematical integration to find the area, length of the curve and volume.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	1. Integral some functions. 2. Apply integral information to find the area between tow curves. 3. Apply integral information to find the volume generated by revolving the area. 4. Know the inverse functions. 5. Apply the technique of integration to solve integral problems. 6. An ability to identify, analyze, and solve complex engineering problems according to principles of engineering, science, andmathematics. 7. An ability to acquire and apply new knowledge and using appropriate learning strategies. 8. An ability to participate and work professionally and ethically in different projects to function on multi-disciplinary teams.
Indicative Contents المحتويات الإرشادية	Indicative content includes the following. Chapter 1 Integrating , finding the area with x-axis, Definite integrals, indefinite integrals [10 hrs] Chapter 2 Application of definite integrals, Areas between Curves, Volumes of solids of revolution, Disks and Washers. Cylindrical shells, length of curves in the plane, Areas of surfaces of Revolution. [20 hrs] Chapter 3 The calculus of transcended functions, inverse functions, $\ln x, e^x$ and logarithmic differentiation, General exponential and logarithmic function. Indeterminate forms and l'Hopital's Rules, The inverse of trigonometric functions. [20 hrs] Chapter 4 Techniques of integration, basic integration formulas, Integration by parts, Trigonometric integrals, Trigonometric substitution, Rational functions and partial fractions [25 hrs]

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	Type something like: The main strategy that will be adopted in delivering this module is to encourage students' participation in the exercises, while at the same time refining and expanding their critical thinking skills. This will be achieved through classes, interactive tutorials and by considering type of simple experiments involving some sampling 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	78	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	5
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	97	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	6
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	175		

Module Evaluation تقييم المادة الدراسية					
		Time/Number	**Weight (Marks)**	**Week Due**	**Relevant Learning Outcome**
Formative assessment	**Quizzes**	3	30% (30)	5, 10	LO #1, 2, 3-8
	Onlie assignments	1	4% (4)	2, 12	LO # 1-8
	Onsite assignments	1	4% (4)	2, 12	LO # 1-8
	Report	1	2% (2)	2, 12	LO # 1-8
Summative assessment	**Midterm Exam**	2 hr	10% (10)	8	LO # 1-3
	Final Exam	3hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري	
	Material Covered
Week 1	Integrating , finding the area with x-axis
Week 2	Definite integrals, indefinite integrals
Week 3	Application of definite integrals, Areas between Curves
Week 4	Volumes of solids of revolution, Disks and Washers

Week 5	Cylindrical shells,
Week 6	length of curves in the plane
Week 7	Areas of surfaces of Revolution
Week 8	The calculus of transcended functions, inverse functions,
Week 9	$\ln x, e^x$ and logarithmic differentiation
Week 10	General exponential and logarithmic function
Week 11	Indeterminate forms and l'Hopital's Rules, The inverse of trigonometric functions
Week 12	Techniques of integration, basic integration formulas
Week 13	Integration by parts
Week 14	Trigonometric integrals, Trigonometric substitution
Week 15	Rational functions and partial fractions
Week 16	**Preparatory week before the final Exam**

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
	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	Thomas' Calculus by Finney and Thomas.	Yes
Recommended Texts	**Calculus by Ron Larson, Bruce Edwards.**	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 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.

أ.د. مهند عبد الجبار محمد عون
رئيس قسم الهندسة المدنية

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	**Arabic Language**			**Module Delivery**	
Module Type	**Basic**			☒ **Theory** ☒ **Lecture** ☐ **Lab** ☒ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	**Uom1011**				
ECTS Credits	**2**				
SWL (hr/sem)	**50**				
Module Level		**2**	**Semester of Delivery**		**3**
Administering Department			**College**		
Module Leader	Abeer Turki		**e-mail**		
Module Leader's Acad. Title		Lecturer	**Module Leader's Qualification**		Ph.D.
Module Tutor			**e-mail**		
Peer Reviewer Name			**e-mail**		
Scientific Committee Approval Date		2025	**Version Number**		1.1

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 Objectives أهداف المادة الدراسية	1- التعرف على الكلام العربي: من ناحية تعريفة، اقسامة، الى علامات كل قسم منه. 2- معرفة الجملة العربية واقسام الجملة العربية والجمل الاسمية والجمل الفعلية 3- التعرف على حركات الاعراب: سواء كانت اصلية او فرعية 4- معرفة الطالب بالعفل العربي: من حيث الصحة والاعلال 5- معرفة الطالب الفعل العربي من حيث اللزوم والتعدي 6- معرفة لطالب الفعل العربي من حيث الزمن 7- طرق كتابة العدد و تذكرة وتانيثه 8- معرفة علامات الترقيم في الكلام 9- تعلم قواعد رسم الهمزة 10- التعرف على طريقة كتابة التاء المربوطة، والمبسوطة 11- قل ولا تقل: الأخطاء الشائعة لدى المتكلمين والكتاب 12- معرفة ماهو الأسلوب الخبري، 13- معرفة ماهو الأسلوب الانشائي، 14- تعلم مهارات لغوية: تنمية الذوق اللغوي، وتحسين الأسلوب لدى المتعلمين
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	1- ان يعرف الطالب الكلام العربي: من ناحية تعريفة، اقسامة، الى علامات كل قسم منه. 2- ان يتعلم الطالب الجملة العربية واقسام الجملة العربية والجمل الاسمية والجمل الفعلية 3- التعرف على حركات الاعراب: سواء كانت اصلية او فرعية 4- ان يعرف الطالب العفل العربي: من حيث الصحة والاعلال 5- ان يتعلم الطالب الفعل العربي من حيث اللزوم والتعدي 6- معرفة الطالب الفعل العربي من حيث الزمن 7- معرف الطالب طرق كتابة العدد و تذكرة وتانيثه 8- معرفة الطالب لعلامات الترقيم في الكلام 9- ان يتعلم الطالب قواعد رسم الهمزة 10- معرف الطالب على طريقة كتابة التاء المربوطة، والمبسوطة 11- قل ولا تقل: الأخطاء الشائعة لدى المتكلمين والكتاب 12- التعرف على الأسلوب الخبري، 13- معرفة ماهو الأسلوب الانشائي، 14- التعلم على مهارات لغوية: تنمية الذوق اللغوي، وتحسين الأسلوب لدى المتعلمين
Indicative Contents المحتويات الإرشادية	1- التعرف على الكلام العربي: من ناحية تعريفة، اقسامة، الى علامات كل قسم منه[ساعه 2] 2- معرفة الجملة العربية واقسام الجملة العربية والجمل الاسمية والجمل الفعلية، ساعه 2 3- التعرف على حركات الاعراب: سواء كانت اصلية او فرعية، ساعه 2 4- معرفة الطالب بالعفل العربي: من حيث الصحة والاعلال، ساعه 2 5- معرفة الطالب الفعل العربي من حيث اللزوم والتعدي، ساعه 2 6- معرفة لطالب الفعل العربي من حيث الزمن، ساعه 2 7- طرق كتابة العدد و تذكرة وتانيثه، ساعه 2 8- معرفة علامات الترقيم في الكلام، ساعه 2 9- تعلم قواعد رسم الهمزة، ساعه 2 10- التعرف على طريقة كتابة التاء المربوطة، والمبسوطة، ساعه 2 11- قل ولا تقل: الأخطاء الشائعة لدى المتكلمين والكتاب ، ساعه 2 12- معرفة ماهو الأسلوب الخبري، ساعه 2 13- معرفة ماهو الأسلوب الانشائي، ساعه 2

14- التعلم مهارات لغوية: تنمية الذوق اللغوي، وتحسين الأسلوب لدى المتعلمين، ساعه 2	

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	الإستراتيجية الرئيسية التي سيتم تبنيها في تقديم هذه الوحدة هي تشجيع الطلاب على المشاركة على المشاركه في الكلام الفربي وكتابته بالصورة الصحيحه ، مع تحسين مهارات التفكير النقدي وتوسيعها في نفس الوقت. سيتم تحقيق ذلك من خلال الفصول والبرامج التعليمية التفاعلية ومن خلال النظر في أنواع التجارب البسيطة التي تتضمن بعض أنشطة أخذ العينات التي تهم الطلاب.

Student Workload (SWL) الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	33	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	2
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	17	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	1
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**	2	20% (20)	5 and 10	LO #1, #2 and #10, #11
	Assignments	2	10% (10)	2 and 12	LO #3, #4 and #6, #7
	Assignments	1	5% (5)	2 and 12	LO #3, #4 and #6, #7
	Report	5	5% (5)	13	LO #5, #8 and #10
Summative assessment	**Midterm Exam**	2hr	10% (10)	7	LO #1 - #7
	Final Exam	3hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري	
	Material Covered

Week 1	الكلام العربي: تعريفة، اقسامة، وعلامات كل قسم.
Week 2	الجملة العربية: تعريفها ، اقسامها : الاسمية والفعلية
Week 3	حركات الاعراب: اصلية، فرعية
Week 4	العفل العربي: من حيث الصحة والاعلال
Week 5	الفعل العربي من حيث اللزوم والتعدي
Week 6	الفعل العربي من حيث الزم
Week 7	امتحان
Week 8	العدد: تذكرة، وتانيثه
Week 9	علامات الترقيم في الكلام
Week 10	قواعد رسم الهمزة
Week 11	التاء المربوطة، والمبسوطة
Week 12	قل ولا تقل: الأخطاء الشائعة لدى المتكلمين والكتاب
Week 13	الأسلوب الخبري،
Week 14	والأسلوب الإنشائي
Week 15	مهارات لغوية: تنمية الذوق اللغوي، وتحسين الأسلوب لدى المتعلمين
Week 16	امتحان نهاية الفصل

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
	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	جامع الدروس العربية: الشيخ مصطفى الغلاييني	no

Recommended Texts	الجملة العربية: تأليفها وأقسامها د. فاضل السامرائي	No
Websites	https://www.almrsal.com/post/923401	

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.

أ.د. رعوان عبد الجليل محمد عون
رئيس قسم الهندسة المدنية

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	**Engineering Mechanics I**			**Module Delivery**	
Module Type	**Core**			☒ **Theory** ☐ **Lecture** ☐ **Lab** ☒ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	**CE102**				
ECTS Credits	**6**				
SWL (hr/sem)	**150**				
Module Level		UGI	**Semester of Delivery**		1
Administering Department		Type Dept. Code	**College**	Type College Code	
Module Leader	Nuha Hameedi Jasim Dr. Mohammed S. Al Jawahery		**e-mail**	nuhahamedi.nh@uomosul.edu.iq mohammed .aljawahery@uomosul.edu.iq	
Module Leader's Acad. Title		Lecturer	**Module Leader's Qualification**		MSc
Module Tutor	Nuha Hameedi Jasim Dr. Mohammed S. Al Jawahery		**e-mail**	nuhahamedi.nh@uomosul.edu.iq mohammed .aljawahery@uomosul.edu.iq	
Peer Reviewer Name		*Dr. Suhaib Y Al-darzi*	**e-mail**	suhaib.qasim@uomosul.edu.iq	
Scientific Committee Approval Date			**Version Number**		1.0

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

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Aims أهداف المادة الدراسية	This course aims to introduce the student to the system of units, types of forces, and types of quantities. How to analyze and compose forces. Finding the resultant force, Being able to calculate moments about different points and how to calculate the couple and transfer forces from one place to another. The student also learns about the effect of forces on static bodies and how to calculate reactions. And learn about the methods of analyzing some structures, such as trusses and frames.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	1. Recognizing Newton's laws and the concept of force and the basic units used for it, and understanding how to analyze and compose forces. 2. Classification of the type of forces, are they concurrent or parallel or are they nonconcurrent forces, and how to find the resultant of each type of force. 3. Finding the moment of forces about any point and determine the couple, In addition to the transfer of forces from one point to another point. 4. Applying equilibrium equations to problems and finding reactions that make bodies in equilibrium. 5. Analysis of some engineering structures such as trusses and frames. 6. An ability to identify, analyze, and solve complex engineering problems according to principles of engineering, science, andmathematics. 7. An ability to identify, analyze, and solve complex engineering problems according to principles of engineering, science, andmathematics. 8. An ability to acquire and apply new knowledge and using appropriate learning strategies. 9. An ability to participate and work professionally and ethically in different projects to function on multi-disciplinary teams.
Indicative Contents المحتويات الإرشادية	Indicative content includes the following. **Chapter 1** Introduction Fundamental concept, Newtons laws, units of measurement, the international system of units, Scalars and Vectors **[3 hrs]** **Chapter 2** Forces system and Resultant Forces, composition and resolution of forces, Parallelogram law, moment, Couples, Force analysis into force and couple, the resultant of any system of forces **[20hrs]** **Chapter 3** Equilibrium

	Free-Body Diagrams, Equations of Equilibrium, Two- and Three-Force Members, The equilibrium of bodies subjected to non-concurrent forces **[22hrs]** **Chapter 4** Truss and Frames Part A Introduction, Trusses, Assumptions of simple trusses analysis, Zero-Force Members, Analysis of trusses by joint method, Analysis of trusses by section method. **[18 hrs]** Part B Frames analysis. **[12 hrs]**

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	Type something like: The main strategy that will be adopted in delivering this module is to encourage students' participation in the exercises, while at the same time refining and expanding their critical thinking skills. This will be achieved through classes, interactive tutorials and by considering type of simple experiments involving some sampling 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	78	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	5
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	72	**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
Formative assessment	Quizzes	5	24% (24)	4, 12	LO # 2, 3, 4 ,5 and 6
	Assignments	2	6% (6)	4, 12	LO # 2, 3 and 4
	Calss work	2	6% (6)		LO # 2, 3 and 4
	Report	1	4% (4)		LO # 2, 3 and 4-9
Summative assessment	Midterm Exam	2 hr	10% (10)	7	LO # 1-7
	Final Exam	2hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)

المنهاج الاسبوعي النظري

	Material Covered
Week 1	Introduction, Basic concepts, vector and scalar quantities, units and their transformations.
Week 2	The law of parallelograms, forces and their components, Resolution and Composition of the forces
Week 3	The moments of forces, Couples
Week 4	The Resultant
Week 5	Determine the resultant location
Week 6	The concept of equilibrium and free body diagrams of the bodies
Week 7	Equilibrium equations for the concurrent force systems located in one plane
Week 8	Equilibrium of bodies subjected to two or three forces located in one plane
Week 9	Equilibrium of bodies subjected to non-concurrent forces and located in one plane
Week 10	Equilibrium of bodies subjected to non-concurrent forces and located in one plane
Week 11	Analysis of Trusses, introduction, Analysis of Trusses by joint method
Week 12	Analysis of Trusses by joint method & Analysis of Trusses by section method
Week 13	Analysis of Trusses by section method + fram analysis
Week 14	Frames analysis
Week 15	Frames analysis
Week 16	**Preparatory week before the final Exam**

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
	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	"Engineering Mechanics-statics", (1990), (Book language:Arabic)	Yes
Recommended Texts	Engineering Mechanics-statics",(2016), R.C. Hibbeler ,14th 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 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.

أ.د. محسن عبد المجيد محمد عون
رئيس قسم الهندسة المدنية

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	**Engineering Mechanics II**			**Module Delivery**	
Module Type	**Core**			☒ **Theory** ☐ **Lecture** ☐ **Lab** ☒ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	**CE107**				
ECTS Credits	**7**				
SWL (hr/sem)	**175**				
Module Level		UGI	**Semester of Delivery**		2
Administering Department		Type Dept. Code	**College**	Type College Code	
Module Leader	Nuha Hameedi Jasim Dr. Mohammed S. Al Jawahery		**e-mail**	nuhahamedi.nh@uomosul.edu.iq mohammed .aljawahery@uomosul.edu.iq	
Module Leader's Acad. Title		Lecturer	**Module Leader's Qualification**		MSc
Module Tutor	Nuha Hameedi Jasim Dr. Mohammed S. Al Jawahery		**e-mail**	nuhahamedi.nh@uomosul.edu.iq mohammed .aljawahery@uomosul.edu.iq	
Peer Reviewer Name		*Dr. Suhaib Y Al-darzi*	**e-mail**	suhaib.qasim@uomosul.edu.iq	
Scientific Committee Approval Date			**Version Number**		1.0

Relation with other Modules العلاقة مع المواد الدراسية الأخرى			
Prerequisite module		**Semester**	
Co-requisites module	Mechanic of Materials	**Semester**	

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Aims أهداف المادة الدراسية	This course aims to introduce the student to Friction with application examples, concept of centroid and center of gravities, concept of moment of inertia. In additions to Introduction to dynamic's engineering mechanics.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	1. Friction, with application examples. 2. Concept of Centroid and center of gravities. 3. Concept of Moment of inertia. 4. Introduction to dynamic's engineering mechanics. 5. An ability to identify, analyze, and solve complex engineering problems according to principles of engineering, science, andmathematics. 6. An ability to acquire and apply new knowledge and using appropriate learning strategies. 7. An ability to participate and work professionally and ethically in different projects to function on multi-disciplinary teams.
Indicative Contents المحتويات الإرشادية	Indicative content includes the following. **Chapter 1** Introduction Fundamental concept, Reviewing for Engineering Mechanics-I with application examples **[5 hrs].** **Chapter 2** Friction Introduction, Characteristics of Dry Friction, with application examples **[15 hrs]** **Chapter 3** Centroids and Center of Gravities Part A: Introduction, Centroid and center of gravities by integration. **[10 hrs]** Part B: Centroids for combined areas. **[10 hrs]** **Chapter 4** Moment of Inertia Part A: Concept of Moment of inertia. **[10 hrs]** Part B: Moment of inertia for combined areas. **[10 hrs]** Part C: Moment of inertia for an area about inclined axes. **[10 hrs]** **Chapter 5** Dynamics Introduction to dynamic (basics, definitions and concepts of projectiles). **[20 hrs]**

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	Type something like: The main strategy that will be adopted in delivering this module is to encourage students' participation in the exercises, while at the same time refining and expanding their critical thinking skills. This will be achieved through classes, interactive tutorials and by considering type of simple experiments involving some sampling 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	78	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	5
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	97	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	6
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	175		

Module Evaluation تقييم المادة الدراسية					
		Time/Number	**Weight (Marks)**	**Week Due**	**Relevant Learning Outcome**
Formative assessment	**Quizzes**	5	24% (24)	4, 12	LO # 2, 3, 4 ,5 and 6
	Assignments	2	6% (6)	4, 12	LO # 2, 3 and 4
	Class work	2	6% (6)		LO # 2, 3 and 4
	Report	1	4% (4)		LO # 2, 3 and 4-9
Summative assessment	**Midterm Exam**	2 hr	10% (10)	7	LO # 1-7
	Final Exam	2hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري	
	Material Covered
Week 1	Introduction, Basic concepts, Reviewing for Engineering Mechanics-I with application examples
Week 2	Concepts of friction (definitions and application examples)
Week 3	Problems
Week 4	Concept of centroids and center of gravities
Week 5	Centroid by integration
Week 6	Centroids for combined areas
Week 7	Problems
Week 8	Concept of Moment of inertia
Week 9	Moment of inertia for combined areas
Week 10	Product of inertia of an area
Week 11	Problems
Week 12	Moment of inertia for an area about inclined axes
Week 13	Problems
Week 14	Introduction to dynamic (basics, definitions and concepts of projectiles)
Week 15	Problems
Week 16	**Preparatory week before the final Exam**

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
	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	"Engineering Mechanics-Dynamic", (1990), (Book language: Arabic)	Yes
Recommended Texts	Engineering Mechanics-Dynamic", (2010), R.C. Hibbeler ,12 edition. (Book language: English)	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 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.

أ.د. وجدان عبد الجليل محمد عون
رئيس قسم الهندسة المدنية

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	**Statistics I**			**Module Delivery**	
Module Type	**Supported**			☒ **Theory** ☒ **Lecture** ☐ **Lab** ☐ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	CE105				
ECTS Credits	**3**				
SWL (hr/sem)	**75**				
Module Level		UGI	**Semester of Delivery**		Two
Administering Department		Type Dept. Code	**College**	Type College Code	
Module Leader	Mohammed Ghanim Mohammed Adnan		**e-mail**	Mohammed_g72@uomosul.edu.iq	
Module Leader's Acad. Title		Assistant lecture	**Module Leader's Qualification**		MSc
Module Tutor	Name (if available)		**e-mail**	E-mail	
Peer Reviewer Name		امينة احمد خليل	**e-mail**	amina.alshumam@uomosul.edu.iq	
Scientific Committee Approval Date		2025	**Version Number**	1.1	

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	1. Introduce the student to collecting and presenting statistical data 2. Classifying and tabular the engineering information in a manner consistent with the data and the field of academic work

	3. an ability to conduct experiments, analyze and interpret data 4. The ability to identify and solve engineering problems. 5. Take the appropriate decision through scientific analysis of information
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	1 Develop a clear and concise description of the problem. 2 Identify, at least tentatively, the important factors that affect this problem or that may play a role in its solution. 3 Propose a model for the problem, using scientific or engineering knowledge of the phenomenon being studied. State any limitations or assumptions of the model. 4 Conduct appropriate experiments and collect data to test or validate the tentative model or conclusions made 5 Refine the model on the basis of the observed data. 6 Manipulate the model to assist in developing a solution to the problem. 7 Conduct an appropriate experiment to confirm that the proposed solution to the problem is both effective and efficient. 8 Draw conclusions or make recommendations based on the problem solution. 9. An ability to identify, analyze, and solve complex engineering problems according to principles of engineering, science, and mathematics.
Indicative Contents المحتويات الإرشادية	- Introduction: nature of statistics. [8 hr] - The statistical terms: nature of statistical data, Distributions, Measures of central location, Measures of variation or dispersion. [12 hr] - Elementary probability theory, Probability distribution , Discrete probability distribution . [14 hr] - Continues probability distribution, Sampling theory, Estimation theory, Statistical decision theory, Simple regression and correlation. [14 hr]

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	Type something like: The main strategy that will be adopted in delivering this module is to encourage students' participation in the exercises, while at the same time refining and expanding their critical thinking skills. This will be achieved through classes, interactive tutorials and by considering type of simple experiments involving some sampling 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	33	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	2
Unstructured SWL (h/sem)	42	**Unstructured SWL (h/w)**	3

الحمل الدراسي غير المنتظم للطالب خلال الفصل		الحمل الدراسي غير المنتظم للطالب أسبوعيا	
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**	3	24% (24)	5, 10,1	LO #1, 2-9
	Assignments	6	12% (12)	2, 12	LO # 3, 4, 6 and 7
	Projects / Lab.				
	Report	1	4% (4)		LO # 3, 4, 6 and 7
Summative assessment	**Midterm Exam**	2 hr	10% (10)	7	LO # 1-7
	Final Exam	3hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)
المنهاج الاسبوعي النظري

	Material Covered
Week 1	General introduction of Engineering Statistics
Week 2	Data Presentation: Tabular presentation /Creating Frequency Table.
Week 3	Graphical presentation (Histogram, Frequency Polygon).
Week 4	Measures of central tendency (Arithmetic mean, median and mode, the relation between the central tendency measures for unimodal distributions
Week 5	Measurement of dispersion and variation, absolute dispersions (ungrouped data)
Week 6	Measurement of dispersion and variation, absolute dispersions (grouped data)
Week 7	Measurement of dispersion and variation, absolute dispersions (grouped data)
Week 8	**Probability:** Basic Concepts of Probability Theory
Week 9	Rule of Probability Additional rule Two events, mutually and non-mutually events
Week 10	Three events, mutually and non-mutually events
Week 11	Multiplication rule, Tow events, (independent and dependent events)
Week 12	The definition of conditional probability and their properties. Bayes' theorem
Week 13	The definition and classification of random variable (Discrete and Continuous), type of discrete distribution

Week 14	Discrete probability distributions (Binomial distribution)
Week 15	Discrete probability distributions Poisson distribution).
Week 16	Final Exam

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	Available in the Library?
Required Texts	مدخل الى الاحصاء ، د. هاشم الراوي	Yes
Recommended Texts	Introduction to Probability and Statistics for Engineers, Holický, Milan	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 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.

أ.د. مبعث عبد الجبار محمد عون
رئيس قسم الهندسة المدنية

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	**Statistics II**			**Module Delivery**	
Module Type	**Supportive**			☒ **Theory** ☒ **Lecture** ☐ **Lab** ☒ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	CE109				
ECTS Credits	**3**				
SWL (hr/sem)	**75**				
Module Level		UGI	**Semester of Delivery**		Two
Administering Department		Type Dept. Code	**College**	Type College Code	
Module Leader	Mohammed Adnan		**e-mail**	Maaa@uomosul.edu.iq	
Module Leader's Acad. Title		Assistant lecture	**Module Leader's Qualification**		MSc
Module Tutor	Name (if available)		**e-mail**	E-mail	
Peer Reviewer Name		امينة احمد خليل	**e-mail**	amina.alshumam@uomosul.edu.iq	
Scientific Committee Approval Date		2025	**Version Number**		1.1

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	1. Introduce the student to collecting and presenting statistical data 2. Classifying and tabular the engineering information in a manner consistent with the data and the field of academic work 3. an ability to conduct experiments, analyze and interpret data

	4. The ability to identify and solve engineering problems. 5. Take the appropriate decision through scientific analysis of information
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	1 Develop a clear and concise description of the problem. 2 Identify, at least tentatively, the important factors that affect this problem or that may play a role in its solution. 3 Propose a model for the problem, using scientific or engineering knowledge of the phenomenon being studied. State any limitations or assumptions of the model. 4 Conduct appropriate experiments and collect data to test or validate the tentative model or conclusions made 5 Refine the model on the basis of the observed data. 6 Manipulate the model to assist in developing a solution to the problem. 7 Conduct an appropriate experiment to confirm that the proposed solution to the problem is both effective and efficient. 8 Draw conclusions or make recommendations based on the problem solution. 9 An ability to identify, analyze, and solve complex engineering problems according to principles of engineering, science, andmathematics. 10 An ability to acquire and apply new knowledge and using appropriate learning strategies. 11 An ability to participate and work professionally and ethically in different projects to function on multi-disciplinary teams.
Indicative Contents المحتويات الإرشادية	- Introduction: nature of statistics. [8 hr] - The statistical terms: nature of statistical data, Distributions, Measures of central location, Measures of variation or dispersion. [12 hr] - Elementary probability theory, Probability distribution , Discrete probability distribution . [14 hr] - Continues probability distribution, Sampling theory, Estimation theory, Statistical decision theory, Simple regression and correlation. [14 hr]

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	Type something like: The main strategy that will be adopted in delivering this module is to encourage students' participation in the exercises, while at the same time refining and expanding their critical thinking skills. This will be achieved through classes, interactive tutorials and by considering type of simple experiments involving some sampling 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	33	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	2
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	42	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	3
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**	3	24% (8)	5, 10	LO #1, 2, 10 and 11
	Assignments	2	8% (4)	2, 12	LO # 3, 4, 6 and 7
	Projects / Lab.	1	4% (4)		
	Report	1	4% (4)		
Summative assessment	**Midterm Exam**	2 hr	10% (10)	7	LO # 1-7
	Final Exam	3hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)
المنهاج الاسبوعي النظري

	Material Covered
Week 1	Continuous Probability Distributions (normal distribution), Properties
Week 2	Rules to obtain the probability under the Normal Curve
Week 3	normally distributed population with a mean and variance into (N) samples
Week 4	Test of hypothesis: Types of errors in hypothesis testing. The steps of hypothesis test.
Week 5	Hypothesis Test of Two Means with Known Population Variance.
Week 6	Hypothesis Test of Two Means with Known Population Variance.
Week 7	Hypothesis Test of Two Means with Known Population Variance & confidence interval. applications
Week 8	T- test
Week 9	Test of the Mean with Unknown Population Variance using t statistic
Week 10	Test of the mean with unknown population variance using t statistic & confidence interval
Week 11	Test of the Mean with Unknown Population Variance using t statistic. applications

Week 12	F-test, applications
Week 13	F-test, applications
Week 14	χ^2- distribution
Week 15	χ^2-test, applications
Week 16	Final Exam

Learning and Teaching Resources
مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	مدخل الى الاحصاء ، د. خشيع الراوي	Yes
Recommended Texts	Introduction to Probability and Statistics for Engineers, Holický, Milan	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 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.

أ.د. ممتاز عبد المجيد محمد عون
رئيس قسم الهندسة المدنية

قسم الهندسة المدنية

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	**Computer**			**Module Delivery**	
Module Type	**Basic**			☒ **Theory** ☐ **Lecture** ☒ **Lab** ☐ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	**UOM 1031**				
ECTS Credits	**3**				
SWL (hr/sem)	**75**				
Module Level	1		**Semester of Delivery**	1	
Administering Department	**Dam and Water Resources Engineering (DWRE)**		**College**	**College of Engineering**	
Module Leader	Dr. Talal Ahmed Basheer		**e-mail**	t.basheer@uomosul.edu.iq	
Module Leader's Acad. Title	Lecturer		**Module Leader's Qualification**	Ph.D.	
Module Tutor	Omar Kanaan Taha		**e-mail**	omar.alsultan@uomosul.edu.iq	
Peer Reviewer Name	**Dr. Anmar Abdulazeez Al Talib**		**e-mail**	Anmar.altalib@uomosul.edu.iq	
Scientific Committee Approval Date			**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 Module aim is to prepare student to deal with computers. In addition to, teach the student the fundamentals of computers and its components. Furthermore, learning how to use two of Microsoft Office applications (Word and Excel).
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	It is expected from the student who passes this module learn the following topics: 1. Computers and Operating System 2. Software and Hardware Interaction 3. Windows File Management 4. Operating System Customization 5. Computer Hardware

	6. Monthly LAB Exam 7. Exploring Microsoft Office 2013 8. Getting Started with Word Essentials 9. Editing and Formatting Documents 10. Getting Started with Excel Essentials 11. Organizing and Enhancing Worksheets 12. Creating Formulas and Charting Data 13. An ability to identify, analyze, and solve complex engineering problems according to principles of engineering, science, andmathematics. 14. An ability to acquire and apply new knowledge and using appropriate learning strategies. 15. An ability to participate and work professionally and ethically in different projects to function on multi-disciplinary teams.
Indicative Contents المحتويات الإرشادية	Computers and Operating System [6 hr] Software and Hardware Interaction [6 hr] Windows File Management [3 hr] Operating System Customization [3 hr] Computer Hardware [6 hr] Exploring Microsoft Office 2013 [3 hr] Getting Started with Word Essentials [3 hr] Editing and Formatting Documents [3 hr] Getting Started with Excel Essentials [3 hr] Organizing and Enhancing Worksheets [3 hr] Creating Formulas and Charting Data [3 hr]

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	The main strategy that will be adopted in delivering this module is to encourage students' participation in the Lab activities, while at the same time refining and expanding their critical thinking skills. This will be achieved through classes, laboratory and by considering type of external search involving some of computer technology 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	48	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	3
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	27	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعياً	2
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	1	10% (10)	4, 11	LO #Q1: 1-2, Q2: 7-9
	Assignments	1	5% (5)	3, 10	LO #A1: 1-2, A2: 7-9
	Lab.	1	20% (20)	Continuous	All
	Report	1	5% (5)	14	All
Summative assessment	Midterm Exam	2 hr	10% (10)	9	LO # 1-5
	Final Exam	3hr	50% (50)		
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)
المنهاج الاسبوعي النظري

	Material Covered
Week 1	Computers and Operating System
Week 2	Computers and Operating System (Continued)
Week 3	Software and Hardware Interaction
Week 4	Software and Hardware Interaction (Continued)
Week 5	Windows File Management
Week 6	Operating System Customization
Week 7	Computer Hardware
Week 8	Computer Hardware (Continued)
Week 9	Monthly Exam
Week 10	Exploring Microsoft Office 2013
Week 11	Getting Started with Word Essentials
Week 12	Editing and Formatting Documents
Week 13	Getting Started with Excel Essentials
Week 14	Organizing and Enhancing Worksheets
Week 15	Creating Formulas and Charting Data
Week 16	**Preparatory week before the final Exam**

Delivery Plan (Weekly Lab. Syllabus)
المنهاج الاسبوعي للمختبر

	Material Covered

Week 1, 2	Computers and Operating System
Week 3, 4	Software and Hardware Interaction
Week 5	Windows File Management
Week 6	Operating System Customization
Week 7, 8	Computer Hardware
Week 9	Monthly LAB Exam
Week 10	Exploring Microsoft Office 2013
Week 11	Getting Started with Word Essentials
Week 12	Editing and Formatting Documents
Week 13	Getting Started with Excel Essentials
Week 14	Organizing and Enhancing Worksheets
Week 15	Creating Formulas and Charting Data

Learning and Teaching Resources

مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	2015 Computer Literacy BASICS: A Comprehensive Guide to IC3 Connie Morrison, Dolores Wells, Lisa Ruffolo Cengage Learning. ISBN: 128576658X	Available as PDF
Recommended Texts	IC3 GS5 Certification Guide Using Windows 10 & Office 2016	Available as PDF
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.

أ.د. معتز عبد الجبار محمد عون
رئيس قسم الهندسة المدنية

قسم الهندسة المدنية

-MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	**Geology**			**Module Delivery**	
Module Type	**Core**			☒ **Theory** ☒ **Lecture** ☒ **Lab** ☒ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	**CE104**				
ECTS Credits	**6**				
SWL (hr/sem)	**150**				
Module Level		UGIV	**Semester of Delivery**		1
Administering Department		Type Dept. Code	**College**	Type College Code	
Module Leader	Dr. Khawla Ahmed Khalil		**e-mail**	khawlah.ahmad@uomosul.edu.iq	
Module Leader's Acad. Title		lecture	**Module Leader's Qualification**		
Module Tutor	Abdulnasser Younus Ali		**e-mail**	Abdulnasser.alshuwaykhi@uomosul.edu.iq	
Peer Reviewer Name		عبد الناصر يونس علي	**e-mail**	Abdulnasser.alshuwaykhi@uomosul.edu.iq	
Scientific Committee Approval Date		2025	**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 Module aims including the following:

1	Importance of engineering geology for civil engineer
2	Learning types of minerals and their engineering properties, in addition to clay minerals which have great importance in civil engineering
3	Understand basic relation in soil and rocks
4	Effect of geological structures on engineering facilities built above and under the earth surface.
5	Learning methods of drawing and reading geological, topographic and contour maps, and calculating the amounts of backfill and cut.

Module Learning Outcomes

مخرجات التعلم للمادة الدراسية

1	Learning types of minerals and their engineering properties, in addition to clay minerals which have great importance in civil engineering
2	Understand basic relation in soil and rocks
3	Effect of geological structures on engineering facilities built above and under the earth surface.
4	Learning methods of drawing and reading geological, topographic and contour maps, and calculating the amounts of backfill and cut.

5. An ability to identify, analyze, and solve complex engineering problems according to principles of engineering, science, andmathematics.
6. An ability to acquire and apply new knowledge and using appropriate learning strategies.
7. An ability to participate and work professionally and ethically in different projects to function on multi-disciplinary teams.

Indicative Contents
المحتويات الإرشادية

Indicative content includes the following.

1- Definition of engineering geology
2- The relationship between geology and civil engineering [4]
3- Definition of natural minerals and their engineering properties
Clay Mineralogy [4]
4- Introduction to rocks and their types in the Earth's crust
5- Definition of sedimentary, igneous and metamorphic rocks, their types and geological characteristics [4]
6- Weathering, erosion and soil formation [4]
7- Geological structures - folds, faults and joints in rocks and their impact on engineering structures [4]
8- Engineering properties of rocks - physical and mechanical [4]
9- Midterm examination [4]
10- Topographical and geological maps and the purpose of their study [4]
11- Soil engineering properties - physical, mechanical, and hydraulic properties of the soil [4]
12- Ground water - storage and movement of ground water, factors affecting groundwater movement and ground water qualityR [4]

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	The main strategy that will be adopted in delivering this module is to: **1** Importance of engineering geology for civil engineer **2** Learning types of minerals and their engineering properties, in addition to clay minerals which have great importance in civil engineering **3** Understand basic relation in soil and rocks **4** Effect of geological structures on engineering facilities built above and under the earth surface. **5** Learning methods of drawing and reading geological, topographic and contour maps, and calculating the amounts of backfill and cut.

Student Workload (SWL) الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	87	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	6
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	63	**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					
		Time/Number	**Weight (Marks)**	**Week Due**	**Relevant Learning Outcome**
Formative assessment	**Quizzes**	4	20% (20)		LO #1, 2, 3 and 4
	Assignments	3	10% (10)		LO # 3 and 4
	Projects / Lab.				
	Report	2	10% (10)		LO # 1-7
Summative assessment	**Midterm Exam**	2 hr	10% (10)	7	LO # 1-7
	Final Exam	3 hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

elivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري

	Material Covered
Week 1	Definition of engineering geology
Week 2	Definition of engineering geology The relationship between geology and civil engineering
Week 3	Definition of natural minerals and their engineering properties Clay Mineralogy
Week 4	Introduction to rocks and their types in the Earth's crust Definition of sedimentary, igneous and metamorphic rocks, their types and geological characteristics
Week 5	Introduction to rocks and their types in the Earth's crust Definition of sedimentary, igneous and metamorphic rocks, their types and geological characteristics
Week 6	Weathering, erosion and soil formation
Week 7	Geological structures - folds, faults and joints in rocks and their impact on engineering structures
Week 8	Engineering properties of rocks - physical and mechanical
Week 9	Engineering properties of rocks - physical and mechanical
Week 10	Midterm examination
Week 11	Topographical and geological maps and the purpose of their study
Week 12	Soil engineering properties - physical, mechanical, and hydraulic properties of the soil
Week 13	Soil engineering properties - physical, mechanical, and hydraulic properties of the soil
Week 14	Ground water - storage and movement of ground water,
Week 15	factors affecting groundwater movement and ground water qualityR
Week 16	Preparatory week before the final Exam

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
	Material Covered
Week 1	Definition of laboratory apparatus
Week 2	Types and properties of minerals
Week 3	Study of the types and composition of igneous rocks
Week 4	Study of the types and composition of metamorphic rocks
Week 5	Study of the types and composition of sedimentary rocks
Week 6	Midterm examination
Week 7	Some tests on rocks
Week 8	Topographical and geological maps drawings
Week 9	Preparatory week before the final Exam

Learning and Teaching Resources
مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	New headway, beginner student's book. John and Liz Soars.	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)	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.

أ.د. مهتن عبد الجبار محمد عون
رئيس قسم الهندسة المدنية

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	**Computer**			**Module Delivery**	
Module Type	**Basic**			☒ **Theory** ☐ **Lecture** ☒ **Lab** ☐ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	**UOM 1031**				
ECTS Credits	**3**				
SWL (hr/sem)	**75**				
Module Level	1		**Semester of Delivery**	1	
Administering Department	**Civil Engineering Department (CED)**		**College**	**College of Engineering**	
Module Leader	**Dr. Khawla Ahmed Khalil**		**e-mail**	khawlah.ahmad@uomosul.edu.iq	
Module Leader's Acad. Title	Lecturer		**Module Leader's Qualification**	MSc	
Module Tutor	ABDULNASSER YOUNUS ALI ALSHUWAYKHI		**e-mail**	abdulnasser.alshuwaykhi@uomosul.edu.iq	
Peer Reviewer Name	**Dr. Khawla Ahmed Khalil**		**e-mail**	khawlah.ahmad@uomosul.edu.iq	
Scientific Committee Approval Date	**2025**		**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 Module aim is to prepare student to deal with computers. In addition to, teach the student the fundamentals of computers and its components. Furthermore, learning how to use two of Microsoft Office applications (Word and Excel).
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	It is expected from the student who passes this module learn the following topics: 1. Computers and Operating System 2. Software and Hardware Interaction 3. Windows File Management 4. Operating System Customization

	5. Computer Hardware 6. Monthly LAB Exam 7. Exploring Microsoft Office 2013 8. Getting Started with Word Essentials 9. Editing and Formatting Documents 10. Getting Started with Excel Essentials 11. Organizing and Enhancing Worksheets 12. Creating Formulas and Charting Data 13. An ability to identify, analyze, and solve complex engineering problems according to principles of engineering, science, andmathematics. 14. An ability to acquire and apply new knowledge and using appropriate learning strategies. 15. An ability to participate and work professionally and ethically in different projects to function on multi-disciplinary teams.
Indicative Contents المحتويات الإرشادية	Computers and Operating System [6 hr] Software and Hardware Interaction [6 hr] Windows File Management [3 hr] Operating System Customization [3 hr] Computer Hardware [6 hr] Exploring Microsoft Office 2013 [3 hr] Getting Started with Word Essentials [3 hr] Editing and Formatting Documents [3 hr] Getting Started with Excel Essentials [3 hr] Organizing and Enhancing Worksheets [3 hr] Creating Formulas and Charting Data [3 hr]

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	The main strategy that will be adopted in delivering this module is to encourage students' participation in the Lab activities, while at the same time refining and expanding their critical thinking skills. This will be achieved through classes, laboratory and by considering type of external search involving some of computer technology 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	48	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	3
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	27	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعياً	2
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	1	10% (10)	4, 11	LO #Q1: 1-2, Q2: 7-9
	Assignments	1	5% (5)	3, 10	LO #A1: 1-2, A2: 7-9
	Lab.	1	20% (20)	Continuous	All
	Report	1	5% (5)	14	All
Summative assessment	Midterm Exam	2 hr	10% (10)	9	LO # 1-5
	Final Exam	3hr	50% (50)		
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)
المنهاج الاسبوعي النظري

	Material Covered
Week 1	Computers and Operating System
Week 2	Computers and Operating System (Continued)
Week 3	Software and Hardware Interaction
Week 4	Software and Hardware Interaction (Continued)
Week 5	Windows File Management
Week 6	Operating System Customization
Week 7	Computer Hardware
Week 8	Computer Hardware (Continued)
Week 9	Monthly Exam
Week 10	Exploring Microsoft Office 2013
Week 11	Getting Started with Word Essentials
Week 12	Editing and Formatting Documents
Week 13	Getting Started with Excel Essentials
Week 14	Organizing and Enhancing Worksheets
Week 15	Creating Formulas and Charting Data
Week 16	**Preparatory week before the final Exam**

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
	Material Covered
Week 1, 2	Computers and Operating System
Week 3, 4	Software and Hardware Interaction
Week 5	Windows File Management
Week 6	Operating System Customization
Week 7, 8	Computer Hardware
Week 9	Monthly LAB Exam
Week 10	Exploring Microsoft Office 2013
Week 11	Getting Started with Word Essentials
Week 12	Editing and Formatting Documents
Week 13	Getting Started with Excel Essentials
Week 14	Organizing and Enhancing Worksheets
Week 15	Creating Formulas and Charting Data

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	2015 Computer Literacy BASICS: A Comprehensive Guide to IC3 Connie Morrison, Dolores Wells, Lisa Ruffolo Cengage Learning. ISBN: 128576658X	Available as PDF
Recommended Texts	IC3 GS5 Certification Guide Using Windows 10 & Office 2016	Available as PDF
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.

أ.د. مهند عبد الجبار محمد عون
رئيس قسم الهندسة المدنية

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	**Engineering Mathematics I**			**Module Delivery**	
Module Type	Core			☒ **Theory** ☒ **Lecture** ☐ **Lab** ☒ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	**CE201**				
1ECTS Credits	**5**				
SWL (hr/sem)	**125**				
Module Level	UGII		**Semester of Delivery**	3	
Administering Department	CE		**College**	ENG	
Module Leader	Asaad Al-Omari		**e-mail**	asaad.alomari@uomosul.edu.iq	
Module Leader's Acad. Title	Assistant Professor		**Module Leader's Qualification**	Ph.D.	
Module Tutor	Revan Nahith		**e-mail**	revan.nahith@uomosul.edu.iq	
Peer Reviewer Name	Asaad Al-Omari		**e-mail**	asaad.alomari@uomosul.edu.iq	
Scientific Committee Approval Date	2025		**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	1. Provide the fundamental base for elementary mathematics for functions in more than one variable. 2. Use mathematical differentiation and integration to solve some engineering problems.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	1. Find the derivative of the functions that have two and three variables. 2. Apply integral information to find the area and volume. 3. Apply integral information to solve some physical problems. 4. Know the hypobaric functions. 5. Solve the engineering problem Catenary. 6. An ability to identify, analyze, and solve complex engineering problems according to principles of engineering, science, and mathematics. 7. An ability to acquire and apply new knowledge and using appropriate learning strategies. 8. An ability to participate and work professionally and ethically in different projects to function on multi-disciplinary teams.
Indicative Contents المحتويات الإرشادية	Indicative content includes the following. Chapter 1 Partial Derivative. Second Order Partial Derivative, Higher Order Partial Derivative, Chain Rule, Total Derivative, Maximum and Minimum & Saddle Point, t, Lagrange Multipliers [20 hrs] Chapter 2 Introduction to Multiple Integration Multiple Integrals, Double and Iterated Integrals over Rectangles, Double Integrals over General Regions, Area by Double Integration, Double Integrals in Polar Form, and Moments and Centers of Mass. [20 hrs] Chapter 3 Introduction to Hyperbolic Functions. Identities of Hyperbolic Functions. Graphs of Hyperbolic Functions. Derivative and Integral of hyperbolic Functions Graphs of Inverse Hyperbolic Functions. Identities of Inverse Hyperbolic Functions. Derivative of Inverse Hyperbolic Functions. The integral of Inverse Hyperbolic Functions. Relationship between Inverse Hyperbolic Functions and Logarithm Formula. [12 hrs] Chapter 4 Application of Hyperbolic Functions : Catenary [8 hrs]

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	Type something like: The main strategy that will be adopted in delivering this module is to encourage students' participation in the exercises, while at the same time refining and expanding their critical thinking skills. This will be achieved through classes, interactive tutorials and by considering type of simple experiments involving some sampling 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	78	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	5
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	72	**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**
Formative assessment	**Quizzes**	3	30% (30)	5, 10	LO #1, 2, 3
	Assignments	5	10% (10)	2, 12	LO # 1-4
	Projects / Lab.				
	Report				
Summative assessment	**Midterm Exam**	2 hr	10% (10)	8	LO # 1-3
	Final Exam	3hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري	
	Material Covered
Week 1	Partial Derivative.
Week 2	Second Order Partial Derivative, Higher Order Partial Derivative
Week 3	Chain Rule,
Week 4	Maximum and Minimum & Saddle Point

Week 5	Lagrange Multipliers
Week 6	Introduction to Multiple Integration
Week 7	Multiple Integrals, Double and Iterated Integrals over Rectangles
Week 8	Double Integrals over General Regions, Area by Double Integration
Week 9	Double Integrals in Polar Form
Week 10	Moments and Centers of Mass.
Week 11	Introduction to Hyperbolic Functions. Identities of Hyperbolic Functions. Graphs of Hyperbolic Functions
Week 12	Derivative and Integral of hyperbolic Functions Graphs of Inverse Hyperbolic Functions. Identities of Inverse Hyperbolic Functions
Week 13	Derivative of Inverse Hyperbolic Functions. The integral of Inverse Hyperbolic Functions. Relationship between Inverse Hyperbolic Functions and Logarithm Formula
Week 14	Application of Hyperbolic Functions: Catenary
Week 15	Solve engineering problem abut catenary
Week 16	**Preparatory week before the final Exam**

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
	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	Thomas' Calculus by Finney and Thomas.	Yes
Recommended Texts	Thomas’ Calculus Early Transcendentals - Thirteenth Edition	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 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.

أ.د. وجدان عبد الجبار محمد عون
رئيس قسم الهندسة المدنية

جامعة الموصل - كلية الهندسة
قسم الهندسة المدنية

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	**Engineering Mathematics II**			**Module Delivery**	
Module Type	**Core**			☒ **Theory** ☒ **Lecture** ☐ **Lab** ☒ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	**CE206**				
1ECTS Credits	**5**				
SWL (hr/sem)	**125**				
Module Level	UGII		**Semester of Delivery**	4	
Administering Department	CE		**College**	ENG	
Module Leader	Asaad Al-Omari		**e-mail**	asaad.alomari@uomosul.edu.iq	
Module Leader's Acad. Title	Assistant Professor		**Module Leader's Qualification**	Ph.D.	
Module Tutor	Revan Nahith		**e-mail**	revan.nahith@uomosul.edu.iq	
Peer Reviewer Name	Asaad Al-Omari		**e-mail**	asaad.alomari@uomosul.edu.iq	
Scientific Committee Approval Date	2025		**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	1. Provide the fundamental base for elementary mathematics for Vectors and differential equations 2. Use mathematical information in vectors to solve some engineering problems.
Module Learning	1. Know the student the three-dimensional coordinate system. 2. Find the dot and cross product and angle between vectors

Outcomes مخرجات التعلم للمادة الدراسية	3. Know the equation and parametric equation. 4. Solve the differential equations in first-order first-degree. 5. Solve linear differential equations in high order.
Indicative Contents المحتويات الإرشادية	Indicative content includes the following. Part A Three-Dimensional Coordinate Systems, The Distance Between two points, Vectors, Component Form, Vector Algebra Operations, Properties of Vector Operations, Midpoint of a Line Segment, The Dot Product, Angle Between Vectors [8 hrs] The Angle Between Two Nonzero Vectors u and v, Orthogonal Vectors, Dot Product Properties and Vector Projections. The Cross Product, The Cross Product of Two Vectors in Space, Parallel Vectors. [8 hrs] Properties of the Cross Product, Area of a Parallelogram, Calculating the Cross Product as a Determinant Lines and Planes in Space.Lines and Line Segments in Space. Parametric Equations for a Line, [8 hrs] The Distance from a Point to a Line in Space. An Equation for a Plane in Space, Equation for a Plane, Lines of Intersection, The Distance from a Point to a Plane, Angles Between Planes [4 hrs] Part B Differential Equations: Definition, Classification, order and degree of Des Homogeneity and linearity of the DEs, Generation of the DEs. Solution of DEs (First order First degree DEs by Separable method). Homogenous and non-homogenous DEs method). [8 hrs] Solution of DEs (First order First degree DEs by Linear and nonlinear method). Exact and non-exact method [8 hrs] Second order DEs for X-is missing, y-missing Solution of DEs (higher order DEs – Complementary solution + Particular solution). [16 hrs]

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	Type something like: The main strategy that will be adopted in delivering this module is to encourage students' participation in the exercises, while at the same time refining and expanding their critical thinking skills. This will be achieved through classes, interactive tutorials and by considering type of simple experiments involving some sampling 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	4
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	62	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	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**	3	30% (30)	5, 10	LO #1, 2, 3
	Assignments	5	10% (10)	2, 12	LO # 1-4
	Projects / Lab.				
	Report				
Summative assessment	**Midterm Exam**	2 hr	10% (10)	8	LO # 1-3
	Final Exam	3hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)
المنهاج الاسبوعي النظري

	Material Covered
Week 1	Three-Dimensional Coordinate Systems, The Distance Between two points Vectors, Component Form, Vector Algebra Operations, Properties of Vector Operations, Midpoint of a Line Segment
Week 2	The Dot Product, Angle Between Vectors. The Angle Between Two Nonzero Vectors u and v, Orthogonal Vectors, Dot Product Properties and Vector Projections.
Week 3	The Cross Product, The Cross Product of Two Vectors in Space, Parallel Vectors Properties of the Cross Product, Area of a Parallelogram, Calculating the Cross Product as a Determinant
Week 4	Lines and Planes in Space. Line
Week 5	Vector Equation for a Line.
Week 6	Parametric Equations for a Line, The Distance from a Point to a Line in Space
Week 7	An Equation for a Plane in Space, Equation for a Plane, Lines of Intersection, The Distance from a Point to a Plane, Angles Between Planes
Week 8	Differential Equations: Definition, Classification, order and degree of
Week 9	DEs Homogeneity and linearity of the DEs, Generation of the DEs

Week 10	First order First degree DEs by Separable method
Week 11	First order First degree DEs by linear and nonlinear DEs method
Week 12	First order First degree DEs by Exact and non-Exact DEs method
Week 13	Second order DEs for X-is missing, y-missing
Week 14	higher order DEs – Complementary solution + Particular solution).
Week 15	higher order DEs – Complementary solution + Particular solution).
Week 16	**Preparatory week before the final Exam**

Delivery Plan (Weekly Lab. Syllabus)

المنهاج الاسبوعي للمختبر

	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	Thomas' Calculus by Finney and Thomas.	Yes
Recommended Texts	Thomas' Calculus Early Transcendentals - Thirteenth Edition	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

Week 10	First order First degree DEs by Separable method
Week 11	First order First degree DEs by linear and nonlinear DEs method
Week 12	First order First degree DEs by Exact and non-Exact DEs method
Week 13	Second order DEs for X-is missing, y-missing
Week 14	higher order DEs – Complementary sclution + Particular solution).
Week 15	higher order DEs – Complementary sclution + Particular solution).
Week 16	**Preparatory week before the final Exam**

Delivery Plan (Weekly Lab. Syllabus)

المنهاج الاسبوعي للمختبر

	Material Covered
Week 1	
Week 2	
Week 3	
Week 4	
Week 5	
Week 6	
Week 7	

Learning and Teaching Resources

مصادر التعلم و التدريس

	Text	Available in the Library?
Required Texts	Thomas' Calculus by Finney and Thomas.	Yes
Recommended Texts	Thomas' Calculus Early Transcendentals - Thirteenth Edition	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

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	**Mechanics of Materials I**			**Module Delivery**	
Module Type	**Core**			☒ **Theory** ☒ **Lecture** ☐ **Lab** ☒ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	**CE202**				
ECTS Credits	**5**				
SWL (hr/sem)	**125**				
Module Level		UGII	**Semester of Delivery**		3
Administering Department		CE	**College**	ENG	
Module Leader	Dr. Ali Natheer Abdul Baki		**e-mail**	aliabdulbaki@uomosul.edu.iq	
Module Leader's Acad. Title		Lecturer	**Module Leader's Qualification**		Ph.D.
Module Tutor	Dr. Khalid Ahmed Abdullah		**e-mail**	khalid.alnuaemie75@uomosul.edu.iq	
Peer Reviewer Name		Dr. Ali Natheer Abdul Baki	**e-mail**	aliabdulbaki@uomosul.edu.iq	
Scientific Committee Approval Date		2025	**Version Number**	1.0	

Relation with other Modules العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	CE102, CE107	**Semester**	one, two
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. Teaching students the developed stresses, strains, and the effects of Poisson's ratio in various types of structural elements. 2. Teaching students the developed stresses due to changes in temperature or torsion. 3. Teaching students in detail drawings of the shear and moment diagrams and the calculation of deflection and rotation in beams and drawing of the elastic curve.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	1. Ability to calculate the developed stresses in various structural elements. 2. Ability to calculate the developed strains in various structural elements. 3. Ability to calculate the developed thermal stresses in various structural elements. 4. Ability to calculate the developed stresses in various structural elements due to torsion. 5. Ability to draw the shear and moment diagram and find maximum shear and moments in beams. 6. Ability to draw the elastic curve of loaded beams. 7. Ability to calculate the developed deflections and the angle of rotation in beams. 8. An ability to identify, analyze, and solve complex engineering problems according to principles of engineering, science, and mathematics. 9. An ability to acquire and apply new knowledge and using appropriate learning strategies. 10. An ability to participate and work professionally and ethically in different projects to function on multi-disciplinary teams.
Indicative Contents المحتويات الإرشادية	Indicative content includes the following. <u>Simple stress</u> Simple stress is developed in structural members when these members are subjected to an external load. There are three types of stresses: normal stress, shearing stress, and bearing stress. [10 hrs] <u>Simple strain</u> The normal strain is developed in a structural member, like a bar, due to the presence of axial loading or changes in temperatures. The stress-strain curve for structural materials, such as low-carbon steel and aluminum, and Hooke's law are explained in detail. In addition, Poisson's ratio, which is the ratio between the lateral and axial strain. Finally, compatibility equations are required to solve statically indeterminate problems, in these problems, the internal forces cannot be determined from statics alone. [20 hrs] <u>Torsion</u> The torsional stress, which is developed due to the applied torsional moment, is calculated for circular sections (solids and hollow). [5 hrs]

	Shear and moment in beams Beam is a bar, which is subjected to transverse loads, the internal forces in any section of the beam will generally consist of a shear force V and a bending couple M. The shear force V creates shearing stresses in that section, while the bending couple M creates normal stresses in the cross-section. Determining the maximum absolute values of the shear and the bending moment in a beam are greatly facilitated if V and M are plotted against the distance x measured from one end of the beam. Both of the equations method and the area method are utilized to draw the shear and moment diagram. [20 hrs] Deflection in beams From a structural perspective, deflection in a beam means the movement of a beam or node respecting its original location. The deflection is happened due to applied loads. The double integration method and area method are utilized to calculate deflection and rotation at any point on the beam. [20 hrs]

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	The main strategy that will be adopted in delivering this module is to encourage students' participation in the exercises, while at the same time refining and expanding their critical thinking skills. This will be achieved through classes and interactive tutorials.

Student Workload (SWL) الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	78	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	5
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	72	**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**
Formative	**Quizzes**	7	20% (20)	3,6,8,10,12,13,15	LO #1, 2, 3, 4, 5, 6 and 7

assessment	**Assignments**	7	15% (15)	2,5,7,9,11,12,14	LO #1, 2, 3, 4, 5, 6 and 7
	Report	1	5% (5)	8	LO # 1, 2, 3, 4 and 5
Summative assessment	**Midterm Exam**	2 hr	10% (10)	7	LO # 1-7
	Final Exam	3 hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

elivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري	
	Material Covered
Week 1	Introduction – Simple stress
Week 2	Simple stress (normal stress, shearing stress and bearing stress)
Week 3	Simple strain (Stress – Strain relationship and Hook's Law)
Week 4	Simple strain (Poisson's ratio and statically indeterminate members)
Week 5	Simple strain caused by thermal stresses
Week 6	Simple strain caused by thermal stresses + Torsion
Week 7	Mid-term Exam + Torsion
Week 8	Shear and moment in beams / shear and moment diagram (Equations method)
Week 9	Shear and moment diagram (Equations method)
Week 10	Shear and moment diagram (Area method)
Week 11	Shear and moment diagram (Area method)
Week 12	Deflection in beams (Double integration method)
Week 13	Deflection in beams (Moment-area method)
Week 14	Deflection in beams (Moment-area method)
Week 15	Deflection in beams (Moment-area method)
Week 16	**Preparatory week before the final Exam**

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	Strength of materials; Andrew Pytel; Ferdinand Leon Singer	Yes
Recommended Texts	Mechanics of Materials; Ferdinand P. Beer, E. Russell Johnston Jr., John T. DeWolf, David F. Mazurek	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 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.

أ.د. معتز عبد الجبار محمد عوض
رئيس قسم الهندسة المدنية

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	**Mechanics of Materials II**			**Module Delivery**	
Module Type	**Core**			☒ **Theory** ☒ **Lecture** ☐ **Lab** ☒ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	**CE207**				
ECTS Credits	**6**				
SWL (hr/sem)	**150**				
Module Level		UGII	**Semester of Delivery**		4
Administering Department		CE	**College**	ENG	
Module Leader	Dr. Ali Natheer Abdul Baki		**e-mail**	aliabdulbaki@uomosul.edu.iq	
Module Leader's Acad. Title		Lecturer	**Module Leader's Qualification**		Ph.D.
Module Tutor	Dr. Khalid Ahmed Abdullah		**e-mail**	khalid.alnuaemie75@uomosul.edu.iq	
Peer Reviewer Name		Dr. Ali Natheer Abdul Baki	**e-mail**	aliabdulbaki@uomosul.edu.iq	
Scientific Committee Approval Date		2025	**Version Number**	1.0	

Relation with other Modules العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	CE102, CE107	**Semester**	one, two
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. Teaching students the developed Tensile and compressive bending stresses in beams (symmetrical cross-section). 2. Teaching students the developed Shear stress in beams. 3. Teaching students the developed Combined stresses in beams

	4. Teaching students the developed stresses in beams by Mohr's Circle method.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	1. Ability to calculate developed bending stress in beams. 2. Ability to calculate developed shear stress in beams. 3. Ability to calculate developed combined stresses in beam 4. Ability learn to determine the stresses created by such combined loadings in structures.
Indicative Contents المحتويات الإرشادية	Indicative content includes the following. Bending Stress in beam bending stress is developed in beam when these beams are subjected to an external load. [20 hrs] shear Stress in beam shear stress is developed in beam when these beams are subjected to an external load. [20 hrs] Combined stresses in beams There are four possible combinations of these loadings: (1) axial and flexural; (2) axial and torsional; (3) torsional and flexural: and (4) axial, torsional, and flexural,(to combine normal stresses in beams). [20 hrs]. Mohr's Circle the stress applied in the cross-section of the beam is represented and developed by the Moh'r circle. [15 hrs].

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	The main strategy that will be adopted in delivering this module is to encourage students' participation in the exercises, while at the same time refining and expanding their critical thinking skills. This will be achieved through classes and interactive tutorials.

Student Workload (SWL) الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	78	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	5
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	72	**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
Formative assessment	**Quizzes**	7	20% (20)	3,6,8,10,12,13,15	LO #1, 2, 3, 4, 5, 6 and 7
	Assignments	7	15% (15)	2,5,7,9,11,12,14	LO #1, 2, 3, 4, 5, 6 and 7
	Report	1	5% (5)	8	LO # 1, 2, 3, 4 and 5
Summative assessment	**Midterm Exam**	2 hr	10% (10)	7	LO # 1-7
	Final Exam	3 hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)

المنهاج الاسبوعي النظري

	Material Covered
Week 1	Introduction – shear and bending moment in beam
Week 2	Tensile and compressive bending stresses in beams (symmetrical cross-section)
Week 3	Tensile and compressive bending stresses in beams (unsymmetrical cross-section)
Week 4	Shear stress in solid section beams
Week 5	Shear stress in deferent section beams
Week 6	Shear stress in deferent section beams
Week 7	Mid-term Exam+ Introduction - Combined stresses
Week 8	Combined stresses deferent structure member
Week 9	Combined stresses in beams (axial and flexural)
Week 10	Combined stresses in beams (axial and torsional)
Week 11	Combined stresses in beams (torsional and flexural).
Week 12	Combined stresses in beams (axial, torsional, and flexural)
Week 13	represented stresses in cross section beam by equations
Week 14	represented stresses in cross section beam by Mohr's Circle
Week 15	represented stresses in cross section beam by Mohr's Circle
Week 16	**Preparatory week before the final Exam**

Learning and Teaching Resources

مصادر التعلم والتدريس

		Library?
Required Texts	Strength of materials; Andrew Pytel; Ferdinand Leon Singer	Yes
Recommended Texts	Mechanics of Materials; Ferdinand P. Beer, E. Russell Johnston Jr., John T. DeWolf, David F. Mazurek	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 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.

أ.د. معتز عبد الجبار محمد عون
رئيس قسم الهندسة المدنية

جامعة الموصل - كلية الهندسة
قسم الهندسة المدنية

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	**Fluid Mechanics**			**Module Delivery**	
Module Type	**supported**			☒**Theory** ☒**Lecture** ☒**Lab** ☒**Tutorial** ☐**Practical** ☐**Seminar**	
Module Code	CE203				
ECTS Credits	**5**				
SWL (hr/sem)	**125**				
Module Level	UGll		**Semester of Delivery**	4	
Administering Department	CE		**College**	ENG	
Module Leader	Dr. Khansaa Abdulelah AHMED		**e-mail**	khansaa.abd@uomosul.edu.iq	
Module Leader's Acad. Title	lecture		**Module Leader's Qualification**	Ph.D.	
Module Tutor	Dr. Khansaa Abdulelah AHMED		**e-mail**	khansaa.abd@uomosul.edu.iq	
Peer Reviewer Name	Dr. Khansaa Abdulelah AHMED		**e-mail**	khansaa.abd@uomosul.edu.iq	
Scientific Committee Approval Date	01/09/2024		**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 Objectives أهداف المادة الدراسية	1. Understanding fluid behavior: Fluid mechanics helps engineers understand the fundamental principles governing the behavior of fluids, both liquids and gases. This includes studying fluid properties, such as density, viscosity, and pressure, as well as understanding how fluids flow, interact, and react under different conditions.

	2. Analysis and design of fluid systems: Fluid mechanics provides the necessary tools and techniques for analyzing and designing various engineering systems involving fluids. This includes designing pipelines, channels, pumps, turbines, compressors, and other devices that handle fluids. Engineers need to understand fluid mechanics to ensure efficient and safe operation of these systems. 3. Fluid flow measurement and control: Fluid mechanics helps engineers learn about different techniques and instruments used for measuring fluid flow rates, pressures, velocities, and other parameters. This knowledge is crucial for maintaining control and optimizing performance in industrial processes, such as chemical plants, power generation, and oil refineries. 4. Aerodynamics and hydrodynamics: Fluid mechanics plays a significant role in the study of aerodynamics (air flow) and hydrodynamics (water flow). These fields are essential for designing efficient aircraft, automobiles, ships, and submarines. Engineers use fluid mechanics principles to analyze and improve the performance, stability, and maneuverability of these vehicles. 5. Energy efficiency: Head loss is directly related to energy losses in fluid systems. By studying head loss, engineers can identify areas of high energy dissipation and implement measures to reduce it. This leads to improved energy efficiency and reduced operating costs. Engineers can select pipe materials with lower friction factors, design smoother pipe fittings, or employ strategies such as pump optimization to minimize head loss and energy consumption.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	1. Understanding of hydrostatics: Civil engineers need to understand the principles of hydrostatics, which involve the study of fluids at rest. This includes topics such as pressure distribution in fluids, forces on submerged surfaces. 2. Analysis of fluid flow in pipes and channels: Civil engineers frequently encounter fluid flow in pipes and open channels. Studying fluid mechanics helps in understanding the behavior of fluids in these systems, including topics such as energy losses, flow rates, pressure distribution, and hydraulic design. 3. Understanding fluid forces and flow patterns helps engineers ensure the stability, functionality, and safety of these structures in different hydraulic condition. 4. Understanding energy conservation in fluid flow: The Bernoulli equation represents a fundamental principle of energy conservation in fluid flow. By studying the Bernoulli equation, civil engineers gain an understanding of how energy is transferred and conserved in fluid systems. 5. Understanding fluid dynamics around structures: The Bernoulli equation helps civil engineers understand fluid dynamics around structures, such as weirs, spillways, and bridges. 6. Design and analysis of fluid systems: Understanding head loss is crucial for designing and analyzing fluid systems, such as pipelines, ducts, and channels. By studying head loss, engineers can determine the pressure drop along a flow path and ensure that the system operates efficiently. This knowledge

	helps in selecting appropriate pipe sizes, optimizing the layout of the system, and ensuring that the required flow rates and pressures are maintained. 7. Understanding of fluid forces: The momentum equation is a fundamental principle that relates the forces acting on a fluid to changes in its momentum. By studying the momentum equation, civil engineers gain an understanding of fluid forces, including pressure forces and viscous forces. This knowledge is crucial for designing structures that interact with fluid flows, such as dams, bridges, and offshore platforms, and for analyzing the stability and safety of hydraulic systems. 8. Design and analysis of hydraulic structures: The continuity equation is applicable to the design and analysis of various hydraulic structures encountered in civil engineering. Civil engineers can use the continuity equation to analyze the flow behavior and hydraulic performance of structures such as weirs, spillways, culverts, and hydraulic jumps. This knowledge helps engineers ensure the proper functioning and safety of these structures under different flow conditions. 9. An ability to identify, analyze, and solve complex engineering problems according to principles of engineering, science, and mathematics. 10. An ability to acquire and apply new knowledge and using appropriate learning strategies. 11. An ability to participate and work professionally and ethically in different projects to function on multi-disciplinary teams.
Indicative Contents المحتويات الإرشادية	Indicative content includes the following. 1. Introduction of Fluid Mechanics: Definition and properties of fluids, Fluid Statics: Pressure and forces. 2. Fluid static: Pascal Law, Viscosity, Surface tension, Capillarity. Fluid Dynamics: flow characteristics and classifications [10 hrs] Fluid Kinematics: Flow visualization and description, streamlines, Velocity and discharge. [10 hrs] 3. Fluid flow in pipes and Ducts: Laminar and turbulent flow, Reynolds number and flow regimes, Pressure drop Conservation laws and control volume analysis, continuity equation, Euler equation of motion, Bernoulli equation (energy equation) in ideal and real fluids and head loss calculation. Flow measurements: Principles and types of flow measuring devices, Venturi meter, Orifice meter, and Pitot tube. [10 hrs] 4. Momentum equation and computation of forces acting on a fluid to changes in its momentum. 5. Pumps and Turbines. [5 hrs] 6. Head loss calculation. [5 hrs] 7. Three reservoir Problems. [5 hrs] 8. Design and analysis of a multi-pipe system involve considering several factors, such as pipe sizing, pipe material selection, hydraulic calculations, pressure drop, and flow distribution. [8 hrs] 9. Flow in open channels: Types of Flow, Channel Geometry, Flow Velocity and

	Discharge, Manning Equation. [10 hrs]

Learning and Teaching Strategies
استراتيجيات التعلم والتعليم

Strategies	1. Lectures: Lectures serve as the primary mode of delivering content in fluid mechanics courses. Instructors use presentations, demonstrations, and visual aids to explain theoretical concepts, equations, and fundamental principles. They may also incorporate real-world examples and applications to help students connect theory to practice. 2. Problem-solving: Fluid mechanics is a highly problem-oriented subject. Instructors often emphasize problem-solving exercises and provide students with practice questions that cover a range of difficulty levels. Solving these problems helps students develop analytical and critical thinking skills, apply theoretical concepts to practical situations, and reinforce their understanding of the subject. 3. Laboratory experiments: Hands-on laboratory experiments provide students with an opportunity to observe fluid phenomena and validate theoretical concepts. By conducting experiments involving flow measurements, fluid properties, and hydraulic systems, students gain practical experience and learn how to use instruments and equipment commonly used in fluid mechanics. 4. Online resources and interactive tools: Online resources, such as interactive simulations, virtual labs, and multimedia materials, can supplement traditional teaching methods. These resources provide students with additional opportunities for self-study, practice, and exploration of fluid mechanics concepts at their own pace.

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	62	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	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**	2	10% (10)	3 and 10	LO #1, #2, #3, #4, #6
	Assignments	2	10% (10)	2 and 12	LO #3, #4 and #6, #7

	Projects / Lab.	1	10% (10)	Continuous	All
	Report	1	10% (10)	13	LO #5, #6 and 8
Summative assessment	**Midterm Exam**	2hr	10% (10)	7	LO #1 - #7
	Final Exam	3hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)

المنهاج الاسبوعي النظري

	Material Covered
Week 1	Fluid Definition, Units and dimensions, Fluid properties.
Week 2	Viscosity and Newtons Law
Week 3	Ideal and Real Fluids, Capillary, Surface Tension
Week 4	Static Fluid, Pascal Law, Basic equation for static fluids,
Week 5	Pressure in fluids, types of pressure, pressure measurement devices
Week 6	Kinematics of Fluid motion, Types of flow, Continuity Equation.
Week 7	Mid-term Exam
Week 8	Bernoulli Equation.
Week 9	Application of Bernoulli Equation
Week 10	Momentum Equation and application
Week 11	Pumps and Turbines
Week 12	Flow in Real Fluids, Head Loss
Week 13	Multi Pipe system, Pipes in Parallel, Pipes in Series.
Week 14	Three Reservoir Problems
Week 15	Flow in open channels
Week 16	**Preparatory week before the final Exam**

Delivery Plan (Weekly Lab. Syllabus)

المنهاج الاسبوعي للمختبر

	Material Covered
Week 1	Lab 1: Reynold Number.
Week 2	Lab 2: Impact of Jet.
Week 3	Lab 3: Center of Pressure.
Week 4	Lab 4: Bernoulli equation.

Week 5	Lab 5: Venturi meter.
Week 6	Lab 6: Friction factor for pipes.
Week 7	Lab 7: Flow through orifice.

Learning and Teaching Resources
مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	Street, R.L., Watters, G.Z. and Vennard, J.K., 1996. Elementary fluid mechanics. *(John Wiley)*.	Yes
Recommended Texts	Cimbala, J.M. and Cengel, Y.A., 2006. *Fluid mechanics: fundamentals and applications*. McGraw-Hill Higher Education.	No only online
Websites	https://www.udemy.com/course/the-complete-course-of-fluid-mechanics-for-engineers-2021/ https://www.edx.org/learn/fluid-mechanics	

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.

أ.د. وعد عبد الجبار محمد عون
رئيس قسم الهندسة المدنية

جامعة الموصل - كلية الهندسة
قسم الهندسة المدنية

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	**Concrete Technology I**			**Module Delivery**	
Module Type	**Core learning activity**			☒ **Theory** ☒ **Lecture** ☒ **Lab** ☐ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	**CE204**				
ECTS Credits	**5**				
SWL (hr/sem)	**125**				
Module Level		UGII	**Semester of Delivery**		3
Administering Department		CE	**College**	ENG	
Module Leader	Dr. Sufyan Younis Ahmad		**e-mail**	sofyan1975@uomosul.edu.iq	
Module Leader's Acad. Title		Assistance Professor	**Module Leader's Qualification**		Ph.D.
Module Tutor	Zeena Adel Mohammed		**e-mail**	zena.adal@uomosul.edu.iq	
Peer Reviewer Name		Roua Suhail Zidan Riffa dalli hamad	**e-mail**	rouasuhail@uomosul.edu.iq Reffashlla@uomosul.edu.iq	
Scientific Committee Approval Date		2025	**Version Number**		1.0

Relation with other Modules العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	None	**Semester**	
Co-requisites module	Concrete Technology II	**Semester**	4

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Aims أهداف المادة الدراسية	1. Introducing all construction materials, specifically cement and aggregate. 2. Finding the composition of different types of cement and the properties of cement with all tests that used to determine cement properties. 3. Study the properties of aggregate with all tests that conducted to find these properties. 4. Study the effect of cement and aggregate properties on the properties of concrete based on workability, strength, and durability. 5. Study how to calculate the bulking factor in aggregate to calculate the actual volume provided in site. 6. Study how to correct the weight of fine and coarse aggregate based on their humidity conditions. 7. Focus on sustainable materials (friendly environmental materials) that can be used as a replacement of construction materials including supplementary cementitious materials and recycling aggregate. 8. An ability to identify, analyze, and solve complex engineering problems according to principles of engineering, science, and mathematics. 9. An ability to acquire and apply new knowledge and using appropriate learning strategies. 10. An ability to participate and work professionally and ethically in different projects to function on multi-disciplinary teams.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	1. Identify the standard specification of quality control for construction materials (cement, aggregate, and water) based on ASTM, BS EN, IQS. 2. Learn how to conduct all tests to determine the properties of all construction materials specially cement and aggregate and recognize the importance of these properties and their effect on the properties of concrete mixture. 3. Focus on the properties of plastic concrete including workability, and precautions that should be considered when concreting in hot and cold weather. 4. Learn how to determine concrete mix ratios (by weight) and convert it to volumes. 5. Learn how to correct the volume and weight of fine and coarse aggregate based on their moisture. 6. Identify the importance of using sustainable materials to improve the properties of plastic concrete.
Indicative Contents المحتويات الإرشادية	Indicative content includes the following. Part A – Concrete Technology I / Theory • Introduction – Introduction of all construction materials. [5 hrs] • Cement - Focusing in Cement Composition, main compounds of

	cement and their effect on hydration process, types of cements, manufacturing and their uses, Rule of water in hydration, properties of cement according to the specifications. [25 hrs] • Aggregate – Identifying the properties of coarse and fine aggregate and their effect on concrete properties, and correct the weight of aggregate based on its humidity. [15 hrs] • Determine concrete mix ratios (by weight) and how to convert it to volume ratios. [5 hrs] • Properties of fresh concrete including workability and consistency of concrete, rheology of concrete and its plasticity. [10 hrs] • Temperature effect on fresh concrete properties and precautions considered in concreting under cold and hot weathers. [10 hrs] • Sustainable materials – including supplementary cementitious materials and recycling aggregate. [5 hrs] Part B – Concrete Technology I / Lab • Writing a good technical report [5 hrs] • Tests for ordinary Portland cement including (normal consistency, setting time, compressive strength, tensile strength and the effect on curing conditions on strength development). [25 hrs] • Tests of fine and coarse aggregate to determine all its properties including (sieve analysis, specific gravity, unit weight, moisture content, absorption). [20 hrs] • Tests of clay and concrete blocks, tests of tiles, and tensile test of steel. [20 hrs]

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	Type something like: The main strategy that will be adopted in delivering this module is to encourage students' participation in the exercises, while at the same time refining and expanding their critical thinking skills. This will be achieved through classes, interactive tutorials and by considering type of simple experiments involving some sampling activities that are interesting to the students.

Student Workload (SWL) الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا			
Structured SWL (h/sem)	63	**Structured SWL (h/w)**	4

الحمل الدراسي المنتظم للطالب خلال الفصل		الحمل الدراسي المنتظم للطالب أسبوعيا	
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	62	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	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**	2	14% (10)	5, 10	LO #1, 3, and 4
	Assignments	2	6% (10)	2, 5, 8, 11	All
	Projects / Lab.	1	10% (10)	weekly	All
	Report	1	10% (10)	13	LO # 3, and 4
Summative assessment	**Midterm Exam**	2 hr	10% (10)	9	LO # 3, and 4
	Final Exam	3hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)
المنهاج الاسبوعي النظري

	Material Covered
Week 1	Introduction of Construction Materials Especially Cement And Concrete Aggregate.
Week 2	Cement Composition.
Week 3	Main Compounds of Cement and Their Effect On Hydration Process.
Week 4	Types of Cements, Manufacturing and Their Uses.
Week 5	Rule of Water in Hydration
Week 6	Concrete Ingredients, Calculating Mix Ratios, and Conversion The Weights to Volumes
Week 7	Aggregate Properties, Sieve Analysis of Fine and Coarse Aggregate
Week 8	Bulking Factor of Aggregates For Volume Correction
Week 9	ACI Code Procedure For Correction of Aggregate Weights Based on Its Humidity.
Week 10	Properties of Fresh Concrete, Workability and Consistency of Fresh Concrete.
Week 11	Standard Tests For Measuring The Workability and Consistency of Concrete.
Week 12	Calculating Yield, Unit Weight, and Cement Factor of fresh ($1m^3$) fresh concrete.
Week 13	Concreting in Hot Weather
Week 14	Concreting in Cold Weather
Week 15	Sustainable Materials (Supplementary Cementitious Materials + Recycling Aggregate)

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
	Material Covered
Week 1	Lab 1: Writing a good technical report
Week 2	Lab 2: Tests for ordinary Portland cement (Normal consistency)
Week 3	Lab 3: Tests for ordinary Portland cement (Setting time)
Week 4	Lab 4: Tests of cement mortar (Compressive strength for different ages).
Week 5	Lab 5: Tests for cement mortar (Tensile strength for different ages).
Week 6	Lab 6: Sieve analysis of coarse aggregates (Grading , M.A.S , and A.S.S).
Week 7	Lab 7: Sieve analysis of fine aggregates (Grading , FM , and Fine materials passing No. 200).
Week 8	Lab 8: Midterm Exam.
Week 9	Lab 9: Tests for aggregates (Specific gravity of fine and coarse aggregates).
Week 10	Lab 10: Tests for aggregates (Unit weight, Absorption).
Week 11	Lab 11: Test of concrete blocks (Compressive strength ,Unit weight, Absorption).
Week 12	Lab 12: Tensile test and modulus of elasticity for steel.
Week 13	Lab 13: Tests for clayey Bricks (Compressive strength ,Unit weight, Absorption).
Week 14	Lab 14: Tests for tiles (Flexural tensile strength, Absorption).
Week 15	Lab 15: Activity Index of sustainable Cementitious materials.

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	Composition and properties of concrete (Troxell)	Yes (Text Book)
Recommended Texts	Properties of Concrete (M. Neville)	Yes
Websites	N/A	

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

(0 – 49)	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	**Concrete Technology II**			**Module Delivery**	
Module Type	**Core learning activity**			☒ **Theory** ☒ **Lecture** ☒ **Lab** ☐ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	**CE209**				
ECTS Credits	**5**				
SWL (hr/sem)	**125**				
Module Level		UGII	**Semester of Delivery**		4
Administering Department		CE	**College**	ENG	
Module Leader	Dr. Sufyan Younis Ahmad		**e-mail**	sofyan1975@uomosul.edu.iq	
Module Leader's Acad. Title		Assistance Professor	**Module Leader's Qualification**		Ph.D.
Module Tutors	Zeena Adel Mohammed Roua Suhail Zidan Riffa dalli hamad		**e-mail**	zena.adal@uomosul.edu.iq rouasuhail@uomosul.edu.iq Reffashlla@uomosul.edu.iq	
Peer Reviewer Name		Dr. Sufyan Younis Ahmad	**e-mail**	sofyan1975@uomosul.edu.iq	
Scientific Committee Approval Date		2025	**Version Number**		1.0

Relation with other Modules العلاقة مع المواد الدراسية الأخرى			
Prerequisite module		**Semester**	
Co-requisites module		**Semester**	

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Aims أهداف المادة الدراسية	1. Finding bleeding and plastic shrinkage in fresh concrete. 2. Identifying the properties of hardened concrete. 3. Identifying Factors affecting the properties of hardened concrete 4. Study the effect of w/c ratio on concrete strength and durability. 5. Study the effect of test conditions on concrete strength. 6. Study the effect of cement type and aggregate nature on concrete strength. 7. Methods to measure tensile strength of hardened concrete and its relation with compressive strength. 8. Calculating the modulus of elasticity of concrete according to different international codes. 9. Calculating the drying shrinkage in concrete and its effect on durability. 10. Design of concrete mix based on ACI Method. 11. Acceptance of compressive strength results respect to Iraqi Code.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	1. Identify the unhealthy effect of bleeding and plastic shrinkage on the properties of concrete. 2. Identifying the effect of (high and low) water content on the concrete strength and durability. 3. Identifying the effect of cement type and aggregate nature on the concrete strength and durability. 4. Calculating the modulus of elasticity and tensile strength of concrete using (ACI and BS) equations and ASTM specification. 5. Determining the drying shrinkage strain of concrete. 6. Learn how to design concrete mixture based on ACI Method. 7. Learn how to evaluate the concrete strength results according to IQS Code.
Indicative Contents المحتويات الإرشادية	**Indicative content includes the following.** **<u>Part A – Concrete Technology II / Theory</u>** • Bleeding and plastic shrinkage in fresh concrete. [7 hrs] • Properties of hardened concrete and Factors affecting on the concrete properties. [7 hrs] • Effect of w/c ratio, and the conditions at test on concrete strength and durability. [7 hrs] • Effect of cement type and aggregate nature on concrete strength. [7 hrs] • Methods to measure tensile strength of hardened concrete and its relation with compressive strength. [7 hrs] • Calculating the modulus of elasticity of concrete according to different international codes. [4 hrs] • Design of concrete mix based on ACI code Method. [7 hrs]

	• Acceptance of compressive strength results respect to IQS Code. [4 hrs] **<u>Part B – Concrete Technology II / Lab</u>** • Writing a good technical report [5 hrs] • Testing the fresh concrete for Temperature, unit weight, slump, and bleeding of concrete specimens. [4 hrs] • Testing the strength of cured concrete samples at a standard age of 28 day, effect of capping of concrete cylinder on the compressive strength, and Effect of shape (standard cylinder and cube) of the concrete specimens on the compressive strength. [8 hrs] • Test of flexural tensile strength (one and two points loads). [3hrs] • Non-destructive testing of concrete (Hammer, ultrasonic test) and destructive testing of concrete (Core and loading test). [8 hrs] • ACI design method and making trial mix. [2hrs]

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	Type something like: The main strategy that will be adopted in delivering this module is to encourage students' participation in the exercises, while at the same time refining and expanding their critical thinking skills. This will be achieved through classes, interactive tutorials and by considering type of simple experiments involving some sampling 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	78	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	5
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	72	**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**

Formative assessment	**Quizzes**	2	14% (10)	3, 8	LO #1, 3, and 4
	Assignments	2	6% (10)	5, 8	All
	Projects / Lab.	1	10% (10)	weekly	All
	Report	1	10% (10)	13	LO # 3, and 4
Summative assessment	**Midterm Exam**	2 hr	10% (10)	7	LO # 1-3
	Final Exam	3hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)

المنهاج الاسبوعي النظري

	Material Covered
Week 1	Finding bleeding and plastic shrinkage in fresh concrete.
Week 2	Identifying the properties of hardened concrete.
Week 3	Identifying Factors affecting the properties of hardened concrete.
Week 4	Effect of w/c ratio on the properties of hardened concrete.
Week 5	Study the effect of test conditions on concrete strength.
Week 6	Study the effect of cement type, fineness of cement, and aggregate nature on concrete strength.
Week 7	Effect of curing conditions and temperature on the properties of hardened concrete.
Week 8	Factors affecting compression & tensile in concrete and conversion between different ages.
Week 9	Measuring the tensile strength of hardened concrete and its relation with compressive strength.
Week 10	Relation between Compression and Tensile strength of concrete.
Week 11	Drying Shrinkage of concrete.
Week 12	Calculating the modulus of elasticity of concrete according to different codes.
Week 13	Calculating drying shrinkage of concrete.
Week 14	Design of concrete mix based on ACI Method.
Week 15	Acceptance of compressive strength results respect to IQS Code

Delivery Plan (Weekly Lab. Syllabus)

المنهاج الاسبوعي للمختبر

	Material Covered
Week 1	Lab 1: Review writing a good technical report.
Week 2	Lab 2: Slump test of fresh concrete, making and curing concrete test specimens.
Week 3	Lab 3: Temperature and unit weight measurement of freshly mixed concrete.
Week 4	Lab 4: Bleeding measurement of freshly mixed concrete..
Week 5	Lab 5: Testing the compressive strength of hardened concrete samples and finding the effect of shape (standard cylinder and cube) of the concrete specimens on the strength.

Week 7	Lab 7: Testing the flexural tensile strength (one and two points load).
Week 8	Lab 8: Midterm Exam.
Week 9	Lab 9: Non-destructive testing of concrete (Hammer test).
Week 10	Lab 10: Non-destructive testing of concrete (ultrasonic test).
Week 11	Lab 11: Destructive testing of concrete (Core test and loading test).
Week 12	Lab 12: Retarders and Accelerators additives.
Week 13	Lab 13: Fiber reinforced concrete
Week 14	Lab 14: Effect of recycled coarse aggregate in concrete.
Week 15	Lab 15: making trial mix according to ACI design method.

Learning and Teaching Resources
مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	Composition and properties of concrete (Troxell)	Yes (Text Book)
Recommended Texts	Properties of Concrete (M. Neville)	Yes
Websites	N/A	

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.

أ.د. وهيثم عبد الباقي محمد عون
رئيس قسم الهندسة المدنية

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	**Engineering Surveying I**			**Module Delivery**	
Module Type	**Core**			☒**Theory** ☒**Lecture** ☒**Lab** ☒**Tutorial** ☐**Practical** ☐**Seminar**	
Module Code	CE205				
ECTS Credits	**6**				
SWL (hr/sem)	150				
Module Level		UGII	**Semester of Delivery**		3
Administering Department		CE	**College**	ENG	
Module Leader	Yezin A. Alnajjar		**e-mail**	Yazinalnajjar@uomosul.edu.iq	
Module Leader's Acad. Title		lecturer	**Module Leader's Qualification**		Ph.D.
Module Tutor	Zeena A. Al-Kazzaz		**e-mail**	Zeena.kazzaz@uomosul.edu.iq	
Peer Reviewer Name		Yezin A. Alnajjar	**e-mail**	Yazinalnajjar@uomosul.edu.iq	
Scientific Committee Approval Date		2025	**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 Objectives أهداف المادة الدراسية	1. To develop problem solving skills and understanding of surveying theory through the application of techniques. 2. To understand linear and level measurements. 3. This course deals with the basic concept of surveying. 4. This is the basic subject for surveying. 5. To understand instruments. 6. To understand contouring.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	1. Define surveying and types. 2. Angle units and conversions. Error types. 3. Scale types. 4. Basic surveying tools. 5. Distance measurements by tape. 6. Levels types and calculations. 7. Earth curvature and refraction. 8. Reciprocal leveling. 9. Two peg test. 10. Longitudinal and cross sections. 11. Contour lines. 12. An ability to identify, analyze, and solve complex engineering problems according to principles of engineering, science, and mathematics. 13. An ability to acquire and apply new knowledge and using appropriate learning strategies. 14. An ability to participate and work professionally and ethically in different projects to function on multi-disciplinary teams.
Indicative Contents المحتويات الإرشادية	Indicative content includes the following. **<u>Part A: theory</u>** Definition and types, history. Types of error- mistakes, systematic and randon. [6 hrs] Different formats of angles. How to convert, Scales, stations, basic map contents.[6 hrs] Revision problem classes [5 hrs] Leveling definitions and basics. Method of leveling. Types of levels, effects of Earth curvature and refraction. [14 hrs] Longitudinal and cross sections. Contours. [10 hrs]

	Part B: Lab Basic Surveying Instruments and Tools، Definition and Care (3hrs) Measuring distances with tape and other methods (3hrs) Surveying a building using the direct method (3hrs) Establishing and dropping vertical columns (3hrs) Measuring distances in the presence of obstacles (3hrs) Identifying the leveling instrument and its components (3hrs) Setting up the leveling instrument and taking readings (3hrs) Using the leveling instrument for transferring point elevations (fly leveling) (3hrs) Using the leveling instrument for precision leveling (3hrs) Finding intermediate point elevations (3hrs) Finding negative point elevations (3hrs) Conducting the two-peg test (3hrs) Conducting the reverse leveling (3hrs) Longitudinal profiles (3hrs) Cross-sectional profiles (3hrs)

Learning and Teaching Strategies
استراتيجيات التعلم والتعليم

Strategies	The main strategy that will be adopted in delivering this module is to encourage students' participation in the exercises, while at the same time refining and expanding their critical thinking skills. This will be achieved through classes, interactive tutorials and by considering types of simple activities that are interesting to the students.

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

Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	78	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	5
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	75	**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
Formative assessment	Quizzes	2	14% (7)	5 and 10	LO #1, #2 and #10, #11
	H.w. Assignments	1	3% (3)	2 and 12	LO #3, #4 and #6, #7
	Class .Assignments	1	3% (3)		
	Projects / Lab.	4	20% (5)	Continuous	All
	Report				
Summative assessment	Midterm Exam	2hr	10% (10)	7	LO #1 - #7
	Final Exam	3hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري	
	Material Covered
Week 1	Introduction to surveying, basic definitions
Week 2	Angles and conversions
Week 3	Types of errors
Week 4	Basic surveying tools
Week 5	Measuring lines
Week 6	Types of obstacles, Quiz
Week 7	Systematic errors in tape measurements
Week 8	Midterm Examination
Week 9	Basic leveling definitions, Optics of levels
Week 10	Types of levels
Week 11	HI method of leveling
Week 12	Check leveling, Two peg test, Effect of curvature and refraction
Week 13	Reciprocal leveling
Week 14	Longitudinal and cross sections, Contouring
Week 15	contouring
Week 16	Preparing for Final Exam
Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
	Material Covered

Week 1	Lab 1: Basic Surveying Instruments and Tools، Definition and Care.
Week 2	Lab 2: Measuring distances with tape and other methods.
Week 3	Lab 3: Surveying a building using the direct method.
Week 4	Lab 4: Establishing and dropping vertical columns.
Week 5	Lab 5: Measuring distances in the presence of obstacles.
Week 6	Lab 6: Identifying the leveling instrument and its components.
Week 7	Lab 7: Setting up the leveling instrument and taking readings.
Week 8	Lab 8: Using the leveling instrument for transferring point elevations (fly leveling).
Week 9	Lab 9: Using the leveling instrument for precision leveling.
Week 10	Lab 10: Finding intermediate point elevations.
Week 11	Lab 11: Finding negative point elevations.
Week 12	Lab 12: Conducting the two-peg test.
Week 13	Lab 13: Conducting the reverse leveling.
Week 14	Lab 14: Longitudinal profiles.
Week 15	Lab 15: Cross-sectional profiles.

Learning and Teaching Resources
مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	Kavanagh, Barry and Diane K. Slattery. Surveying with Construction Applications. 8th ed., Pearson Education, Inc., 2014.	Yes
Recommended Texts	Kavanagh, Barry and Diane K. Slattery. Surveying with Construction Applications. 8th ed., Pearson Education, Inc., 2014.	No
Websites	https://www.coursera.org/browse/physical-science-and-engineering/civil-engineering	

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

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
	Material Covered
Week 1	Lab 1: Basic Surveying Instruments and Tools• Definition and Care.
Week 2	Lab 2: Measuring distances with tape and other methods.
Week 3	Lab 3: Surveying a building using the direct method.
Week 4	Lab 4: Establishing and dropping vertical columns.
Week 5	Lab 5: Measuring distances in the presence of obstacles.
Week 6	Lab 6: Identifying the leveling instrument and its components.
Week 7	Lab 7: Setting up the leveling instrument and taking readings.
Week 8	Lab 8: Using the leveling instrument for transferring point elevations (fly leveling).
Week 9	Lab 9: Using the leveling instrument for precision leveling.
Week 10	Lab 10: Finding intermediate point elevations.
Week 11	Lab 11: Finding negative point elevations.
Week 12	Lab 12: Conducting the two-peg test.
Week 13	Lab 13: Conducting the reverse leveling.
Week 14	Lab 14: Longitudinal profiles.
Week 15	Lab 15: Cross-sectional profiles.

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	Kavanagh, Barry and Diane K. Slattery. Surveying with Construction Applications. 8th ed., Pearson Education, Inc., 2014.	Yes
Recommended Texts	Kavanagh, Barry and Diane K. Slattery. Surveying with Construction Applications. 8th ed., Pearson Education, Inc., 2014.	No
Websites	https://www.coursera.org/browse/physical-science-and-engineering/civil-engineering	

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

أ.د. [illegible]
رئيس قسم الهندسة المدنية

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	**Engineering Surveying II**			**Module Delivery**	
Module Type	**Core**			☒**Theory** ☒**Lecture** ☒**Lab** ☒**Tutorial** ☐**Practical** ☐**Seminar**	
Module Code	CE210				
ECTS Credits	**6**				
SWL (hr/sem)	150				
Module Level		UGII	**Semester of Delivery**		4
Administering Department		CE	**College**	ENG	
Module Leader	Yezin A. Alnajjar		**e-mail**	yazinalnajjar@uomosul.edu.iq	
Module Leader's Acad. Title		Lecturer	**Module Leader's Qualification**		Ph.D.
Module Tutor	Zeena A. Al-Kazzaz		**e-mail**	Zeena.kazzaz@uomosul.edu.iq	
Peer Reviewer Name		Yezin A. Alnajjar	**e-mail**	yazinalnajjar@uomosul.edu.iq	
Scientific Committee Approval Date		2025	**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 Objectives أهداف المادة الدراسية	1. To develop problem solving skills and understanding of surveying theory through the application of techniques. 2. To understand measurements. 3. This course deals with the basic concept of surveying. 4. This is the basic subject for surveying. 5. To understand angles and bearings problems. 6. To perform surveying.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	1. Recognize how to do angle measurements. 2. List the various terms associated with surveying. 3. Summarize what is meant by surveying. 4. Discuss the bearings. 5. Explain the coordinates. 6. Define Total station. 7. Identify the basic total station applications. 8. Define GPS basics. 9. Identify basic GPS applications. 10. Explain Area surveying. 11. Explain Volume surveying.
Indicative Contents المحتويات الإرشادية	Indicative content includes the following. <u>Part A- Course Theory</u> Theodolite definition- types, history. Angle types- horizontal and vertical, face right and face left, positive and negative vertical angles, drawing the right shapes, clockwise and counterclockwise angles. [10 hrs] Naming convention of horizontal angles, one letter, three letter, closed and open traverse, Sum of internal angles. Bearings of lines. North determination. Departure and latitude. Coordinates (XYZ, ENH). Traverse errors and correction. Theodolite for coordinates. [12 hrs] Total station, components, types,,Prism and Non-Prism. Robotic and smart stations, TLS, point clouds, [6 hrs] GPS, types and segments. Sources of errors. Sky Plot. [4 hrs] Area measurements, from longitudinal and cross sections, from contours and spot heights, using trapezoidal and simpson methods. Volume calculations. [8 hrs] Revision problem classes [5 hrs] <u>Part B. Lab</u>

	Introduction to theodolites, setting, leveling, centering, orientation. measuring horizontal and vertical angles. Traversing. [14 hrs] Total station surveying. Survey of new coordinates, setting out, intersection. [5 hrs] GPS surveying, Sky plot, waypoints. Route. [5 hrs] Area calculations. Volume calculations. [6 hrs]

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	The main strategy that will be adopted in delivering this module is to encourage students' participation in the exercises, while at the same time refining and expanding their critical thinking skills. This will be achieved through classes, interactive tutorials and by considering types of simple 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	78	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	5
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	75	**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**
Formative assessment	**Quizzes**	2	10% (10)	5 and 10	LO #1, #2 and #10, #11
	Assignments	2	10% (10)	2 and 12	LO #3, #4 and #6, #7
	Projects / Lab.	1	10% (10)	Continuous	All
	Report	1	10% (10)	13	LO #5, #8 and #10
Summative assessment	**Midterm Exam**	2hr	10% (10)	7	LO #1 - #7
	Final Exam	3hr	50% (50)	16	All

Total assessment	100% (100 Marks)		

Delivery Plan (Weekly Syllabus)

المنهاج الاسبوعي النظري

	Material Covered
Week 1	Introduction to Theodolites
Week 2	Angle types
Week 3	Theodolite setup
Week 4	Bearing types and conversions
Week 5	Coordinates
Week 6	Open and closed traverse
Week 7	Trigonometric leveling
Week 8	Midterm Examination
Week 9	Total Station and laser scanning
Week 10	GPS Surveying
Week 11	Areas
Week 12	Areas using coordinates
Week 13	Volumes
Week 14	Volumes, from contours and spot heights
Week 15	Horizontal and vertical curves
Week 16	**Preparatory week before the final Exam**

Delivery Plan (Weekly Lab. Syllabus)

المنهاج الاسبوعي للمختبر

	Material Covered
Week 1	Lab 1: Introduction to theodolites, setting
Week 2	Lab 2: measuring horizontal and vertical angles.
Week 3	Lab 3: traversing
Week 4	Lab 4: total station surveying
Week 5	Lab 5: gps surveying
Week 6	Lab 6: Area calculations
Week 7	Lab 7: Volume calculations

Learning and Teaching Resources
مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	Kavanagh, Barry and Diane K. Slattery. Surveying with Construction Applications. 8th ed., Pearson Education, Inc., 2014.	Yes
Recommended Texts	Kavanagh, Barry and Diane K. Slattery. Surveying with Construction Applications. 8th ed., Pearson Education, Inc., 2014.	No
Websites	https://www.coursera.org/browse/physical-science-and-engineering/civil-engineering	

Grading Scheme
مخطط الدرجات

Group	Grade	التقدير	Marks %	Definition
Success Group (50 - 100)	A - Excellent	امتياز	90 - 100	Outstanding Performance
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	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.

أ.د. معتز عبد الجبار محمد عون
رئيس قسم الهندسة المدنية

جامعة الموصل - كلية الهندسة
قسم الهندسة المدنية

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	The crimes of the Baath regime in Iraq			**Module Delivery**	
Module Type	Basic			☐ **Theory** ☒ **Lecture** ☐ **Lab** ☐ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	UOM2050				
ECTS Credits	2				
SWL (hr/sem)	50				
Module Level		UGII	**Semester of Delivery**		three
Administering Department		CE	**College**	ENG	
Module Leader	Shaza Jagan		**e-mail**	xxxxxx	
Module Leader's Acad. Title		Assistant Lecturer	**Module Leader's Qualification**		M.Sc
Module Tutor			**e-mail**		
Peer Reviewer Name		Shaza Jagan	**e-mail**	xxxxxx	
Scientific Committee Approval Date		2025	**Version Number**		1.0

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

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Aims أهداف المادة الدراسية	• **توعية. .الطلاب بالجرائم التي ارتكبها البعث في العراق..** • **توجيه الطلاب للإلمام والمعرفة بالجرائم.....** **توعية الطلاب بخطورة الجرائم.**
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	1. **فهم تاريخي ومعرفي**: أن يكون لدى الطلاب فهم عميق للجرائم التي ارتكبها البعث في العراق، بما في ذلك السياق التاريخي والأسباب والنتائج. 2. **تطوير الوعي النقدي**: أن يتمكن الطلاب من تحليل وتقييم الأحداث التاريخية بشكل نقدي، وفهم تأثيرها على المجتمع العراقي. 3. **تعزيز القيم الإنسانية**: أن يتعلم الطلاب أهمية حقوق الإنسان والعدالة، وأن يكونوا قادرين على التعرف على انتهاكات حقوق الإنسان والتصدي لها.
Indicative Contents المحتويات الإرشادية	• **مفهوم الجرائم وأقسامها**: o تعريف الجريمة. o أنواع الجرائم (جنائية، سياسية، اجتماعية، إلخ). o أمثلة على كل نوع. • **أنواع الجرائم الدولية**: o تعريف الجرائم الدولية. o أمثلة على الجرائم الدولية (جرائم الحرب، الجرائم ضد الإنسانية، الإبادة الجماعية). o القوانين والمعاهدات الدولية المتعلقة بالجرائم الدولية.: • **الجريمة السياسية**: o تعريف الجريمة السياسية. o أمثلة على الجرائم السياسية. o تأثير الجرائم السياسية على المجتمع والدولة. o مراجعة شاملة للمواضيع التي تم تغطيتها في الأسابيع الثلاثة الأولى. o امتحان قصير لتقييم فهم الطلاب. • **الجريمة الاجتماعية**: o تعريف الجريمة الاجتماعية. o أمثلة على الجرائم الاجتماعية. • **جريمة قمع الانتفاضة الشعبانية**: o خلفية تاريخية عن الانتفاضة الشعبانية. o تفاصيل الجرائم المرتكبة خلال قمع الانتفاضة. • **الجرائم النفسية وآثارها**: o تعريف الجرائم النفسية. o أمثلة على الجرائم النفسية. o الآثار النفسية والاجتماعية لهذه الجرائم.

	• **جرائم نظام البعث وفق قانون المحكمة الجنائية العراقية العليا 2005:** o نظرة عامة على قانون المحكمة الجنائية العراقية العليا. o أمثلة على الجرائم التي ارتكبها نظام البعث والتي تم محاكمتها بموجب هذا القانون. • **جرائم أحداث صلاة الجمعة:** o خلفية عن أحداث صلاة الجمعة. o تفاصيل الجرائم المرتكبة خلال هذه الأحداث. • **جرائم المقابر الجماعية:** o تعريف المقابر الجماعية. o أمثلة على المقابر الجماعية في العراق. • **قصف العتبات المقدسة:** o خلفية عن قصف العتبات المقدسة. o تفاصيل الجرائم المرتكبة خلال هذه الأحداث. • **الهجوم الكيميائي على حلبجة:** o خلفية عن الهجوم الكيميائي على حلبجة. o تفاصيل الجرائم المرتكبة خلال هذا الهجوم. • **استعمال الأسلحة المحرمة دولياً:** o تعريف الأسلحة المحرمة دولياً. o أمثلة على استخدام هذه الأسلحة في العراق. o تأثير هذه الجرائم على المجتمع. o مراجعة شاملة للمواضيع التي تم تغطيتها في الأسابيع السابقة. o امتحان لتقييم فهم الطلاب. • **الجرائم البيئية لنظام البعث في العراق:** o تعريف الجرائم البيئية. o أمثلة على الجرائم البيئية التي ارتكبها نظام البعث. • **أحداث المقابر والإبادة الجماعية المرتكبة من النظام البعثي في العراق:** o خلفية عن أحداث المقابر والإبادة الجماعية. o تفاصيل الجرائم المرتكبة خلال هذه الأحداث.

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	**المحاضرات التفاعلية** • **وصف الاستراتيجية:** تقديم محاضرات تتضمن تفاعلًا مباشرًا مع الطلاب من خلال طرح أسئلة، وإجراء مناقشات، واستخدام وسائل تعليمية متعددة مثل الفيديوهات والصور. • **الفوائد:** يحافظ على انتباه الطلاب ويشجع على المشاركة الفعالة. **التعلم القائم على القيم** • **وصف الاستراتيجية: التركيز على القيم الإنسانية والأخلاقية من خلال مناقشة تأثير الجرائم على حقوق الإنسان والعدالة.** • **الفوائد: يعزز الوعي بالقيم الإنسانية ويشجع على التفكير النقدي حول القضايا الأخلاقية.**

Student Workload (SWL) الحمل الدراسي للطالب			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	33	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	2
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	17	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	1
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**	2	20% (10)	5, 10	LO #2, 4, 6 and 8
	H. W. Assignments	1	7% (7)	3, 5, 8, 11, 13	LO # 1, 3, 7, 6, 9 and 10
	Class . Assignments	1	7% (7)	3, 5, 8, 11, 13	LO # 1, 3, 7, 6, 9 and 10
	Projects / Lab.		10% (10)		
	Report	1	6% (6)	13	LO # 2,4,5,7,9and 10
Summative assessment	**Midterm Exam**	2 hr	10% (10)	7	LO # 1-7
	Final Exam	3 hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري	
	Material Covered

Week 1	مفهوم الجرائم واقسامها
Week 2	أنواع الجرائم الدولية
Week 3	الجريمة السياسية
Week 4	امتحان
Week 5	الجريمة الاجتماعية
Week 6	جريمة قمع الانتفاضة الشعبانية
Week 7	الجرائم النفسية واثارها
Week 8	جرائم نظام البعث وفق قانون المحكمة الجنائية العراقية العليا 2005
Week 9	جرائم احاث صلاة الجمعة
Week 10	جرائم المقابر الجماعية
Week 11	قصف العتبات المقدسة
Week 12	الهجوم الكيمائي على حلبجة
Week 13	استعمال الأسلحة المحرمة دوليا
Week 14	الجرائم البيئية لنظام البعث في العراق
Week 15	احداث المقابر والابادة الجماعية المرتكبة من النظام البعثي في العراق
Week 16	

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
	Material Covered
Week 1	
Week 2	
Week 3	
Week 4	
Week 5	
Week 6	

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	Available in the Library?
Required Texts	كتاب المقرر جرائم نظام البعث في العراق من قبل وزارة التعليم العالي والبحث العلمي	No
Recommended Texts		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 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.

أ.د. [illegible]
رئيس قسم الهندسة المدنية

جامعة الموصل - كلية الهندسة
قسم الهندسة المدنية

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title اسم المنهج	اللغة العربية			**Module Delivery**	
Module Type نوع المنهج	اساسي			☒**Theory** ☐**Lecture** ☐**Lab** ☐**Tutorial** ☐**Practical** ☒**Seminar**	
Module Code رمز المنهج	UOM2012				
ECTS Credits عدد الوحدات	2				
SWL (hr/sem) الحمل الكلي	50				
Module Level / المستوى	2		**Semester of Delivery /** سحب المنهج	1	
Administering Department القسم الإداري	CE		**College** الكلية	ENG	
Module Leader	Rasha Taha		**e-mail**	xxxxxx	
Module Leader's Acad. Title	Assistant Lecturer		**Module Leader's Qualification**	M.Sc.	
Module Tutor	-------		**e-mail**	-------	
Peer Reviewer Name	Rasha Taha		**e-mail**	xxxxxx	
Scientific Committee Approval Date	2025		**Version Number**	1.0	

Relation with other Modules العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	لا يوجد	**Semester**	
Co-requisites module	لا يوجد	**Semester**	

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Objectives أهداف المادة الدراسية	الهدف من هذا الفصل الدراسي هو تمكين الطالب من القراءة الصحيحة، وأن يكتسب القدرة على استعمال اللغة استعمالاً صحيحاً في الاتّصال مع الآخرين؛ كالسرعة وجودة الإلقاء وحسن التعبير، وتعويده حسن الاستماع وتنمية الذوق الأدبي لدى الطالب وتعويده على التعبيرات السليمة الواضحة.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	**CLO1:** تعريف الطالب بضرورة ممارسة قواعد الكتابة والكلام باللغة العربية الفصيحة. **CLO2:** تعريف الطالب بمستويات نظام اللغة العربية **CLO3:** تعميق اتصال الطالب بالتراث العربي والإسلامي. **CLO4:** تعزيز البحث العلمي في مجال اللغة العربية وعلومها لإعداد الدراسات والبحوث. **CLO5:** إظهار جمال اللغة العربية واتساع معانيها واساليبها الإنشائية. **CLO6:** تمكين الطالب من تجاوز الأخطاء اللغوية وتصحيحها. **CLO7:** تنمية الذوق الأدبي لدى الطالب لإدراك النواحي الجمالية في اسلوب الكلام وصوره ومعانيه. **CLO8:** التعريف بأبرز شعراء العصر العباسي.
Indicative Contents المحتويات الإرشادية	**الجزء الأول:** (6 ساعات) • قواعد اللغة العربية (النحو) • المبتدأ والخبر • نواسخ المبتدأ والخبر **الجزء الثاني**: (6 ساعات) • كان واخواتها • إن واخواتها • ظن واخواتها **الجزء الثالث**: (6 ساعات) • الامتحان الفصلي • الأسماء المنصوبة • المفعول المطلق **الجزء الرابع:** (4 ساعات) • الأخطاء اللغوية • الأملاء **الجزء الخامس:** (8 ساعات) • الادب في العصر العباسي • الشاعر المتنبي • الشاعر أبو تمام • الشاعر أبو فراس الحمداني
Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	إنّ الغاية الأساسية من دروس اللغة العربية هو القضاء على الصعوبة والجمود الذي قد يصاحب مواضيع بعض

الاستراتيجيات	هذه الدروس، بالإضافة إلى إيصال الأفكار والمعلومات المطلوبة إلى الطلاب بطرق مفهومة وتناسب الفروقات الفردية بينهم، ومن أبرز ما تم التركيز عليه في المحاضرات هو قواعد اللغة العربية والأدب وتتمثل الدراسة بالمحاضرات والامتحانات والواجبات داخل الصف والمناقشة والواجبات المنزلية.

Student Workload (SWL)

الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا

Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	33	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	2.2
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	17	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	1.1
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 التقويم التكويني	**Quizzes** الكويز	3	5% (15)	4,8 and 10	All
	H.W Assignments الواجبات البيتية	2	5% (10)	6, 7	CLO4, CLO5, and CLO6
	Seminars السمنار	1	5% (5)	12	All
	On-site Assignment واجبات داخل الصف	2	5% (10)	6, 10	CLO4, CLO5, and CLO6
Summative Assessment التقويم التلخيصي	**Midterm Exam** امتحان نصف الفصل	2 hrs	10% (10)	7	All
	Final Exam الامتحان النهائي	3 hrs	50% (50)	16	All
Total Assessment / التقويم النهائي			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)

المنهاج الاسبوعي النظري

	Material Covered / المواضيع المغطاة
Week 1	قواعد اللغة العربية (النحو)
Week 2	المبتدأ والخبر
Week 3	نواسخ المبتدأ والخبر
Week 4	كان واخواتها
Week 5	إن واخواتها
Week 6	ظن واخواتها
Week 7	ظن واخواتها

Week 8	الأسماء المنصوبة
Week 9	المفعول المطلق
Week 10	الأخطاء اللغوية
Week 11	الأملاء
Week 12	الادب في العصر العباسي
Week 13	الشاعر المتنبي
Week 14	الشاعر أبو تمام
Week 15	الشاعر أبو فراس الحمداني
Week 16	الامتحان النهائي

Delivery Plan (Weekly Lab. Syllabus)

	Material Covered / المواضيع المغطاة
Week 1	لا يوجد
Week 2	لا يوجد
Week 3	لا يوجد
Week 4	لا يوجد
Week 5	لا يوجد
Week 6	لا يوجد
Week 7	لا يوجد

Learning and Teaching Resources
مصادر التعلم والتدريس

	Text الاسم	**Available in the Library?** هل متوفر في المكتبة؟
Required Texts المنهج المطلوب	النحو الوافي / عباس حسن	نعم
Recommended Texts المنهج الموصى به	في الأدب العباسي / محمد مهدي البصير	نعم
Websites المواقع الالكترونية	https://uomosul.edu.iq/en/engineering/environmental-engineering-dept/	

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

Week 8	الأسماء المنصوبة
Week 9	المفعول المطلق
Week 10	الأخطاء اللغوية
Week 11	الأملاء
Week 12	الأدب في العصر العباسي
Week 13	الشاعر المتنبي
Week 14	الشاعر ابو تمام
Week 15	الشاعر ابو فراس الحمداني
Week 16	الامتحان النهائي

Delivery Plan (Weekly Lab. Syllabus)

	Material Covered / المواضيع المغطاة
Week 1	لا يوجد
Week 2	لا يوجد
Week 3	لا يوجد

Learning and Teaching Resources
مصادر التعلم والتدريس

	Text الاسم	Available in the Library? هل متوفر في المكتبة؟
Required Texts المنهج المطلوب	النحو الوافي / عباس حسن	نعم
Recommended Texts المنهج الموصى به	في الأدب العباسي / محمد مهدي البصير	نعم
Websites المواقع الالكترونية	https://uomosul.edu.iq/en/engineering/environmental-engineering-dept/	

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
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	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.

أ.د. معتز عبد الجبار محمد عون
رئيس قسم الهندسة المدنية

قسم الهندسة المدنية

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	**Computer**			**Module Delivery**	
Module Type	**Basic**			☒ **Theory** ☐ **Lecture** ☒ **Lab** ☐ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	**UOM2032**				
ECTS Credits	**3**				
SWL (hr/sem)	**75**				
Module Level	1		**Semester of Delivery**	1	
Administering Department	**Civil Engineering**		**College**	**College of Engineering**	
Module Leader	Mohammed Th. Younis		**e-mail**	mohammedmth@uomosul.edu.iq	
Module Leader's Acad. Title	Assist. Prophesier		**Module Leader's Qualification**	Doctor	
Module Tutor			**e-mail**		
Peer Reviewer Name			**e-mail**		
Scientific Committee Approval Date			**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	Students successfully completing this course will be able to: 1. Utilize the computer for fundamental tasks. letoMATION 2. Identify and discuss the hardware components of the computer system. 3. Creating documents using a word processor and creating presentations. 4. Conducting research on the Internet. 5. An introduction to Artificial Intelligence
Module Learning Outcomes مخرجات التعلم للمادة	Students successfully completing this course will be able to: 1. Utilize the computer for fundamental tasks. letoMATION 2. Identify and discuss the hardware components of the computer system. 3. Creating

الدراسية	documents using a word processor and creating presentations. 4. Conducting research on the Internet. 5. An introduction to Artificial Intelligence
Indicative Contents المحتويات الإرشادية	**security and Networking:** What is a network? Types of networks. Basic network components. Network Security Basics. Understanding network threats. Network Troubleshooting **E-Commerce:** Concepts of Electronic banking services this include online banking: ATM and debit card services, Phone banking, SMS banking, electronic alert, Mobile banking **Computer Troubleshooting**: Identifying and solving common hardware and software problems that computer users encounter. Basic troubleshooting techniques and tools for diagnosing and resolving issues. **Introduction to Al: Definition of Al, History of Al, Al Techniques and Approaches, Challenges and Ethical Considerations.** **Al in Our Daily Lives:** Al in smartphones and virtual assistants like Siri or Google Assistant.) **Ethical Challenges in Al** :(Al ethics, privacy and surveillance, the impact of Al on the job market.) **The Future of Al** (Future trends in Al, recent research and emerging technologies.)

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	The main strategy that will be adopted in delivering this module is to encourage students' participation in the Lab activities, while at the same time refining and expanding their critical thinking skills. This will be achieved through classes, laboratory and by considering type of external search involving some of computer technology 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	48	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	3
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	27	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعياً	2
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	1	10% (10)	4, 11	LO #Q1: 1-2, Q2: 7-9
	Assignments	1	5% (5)	3, 10	LO #A1: 1-2, A2: 7-9
	Lab.	1	20% (20)	Continuous	All
	Report	1	5% (5)	14	All
Summative assessment	Midterm Exam	2 hr	10% (10)	9	LO # 1-5
	Final Exam	3hr	50% (50)		
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)
المنهاج الاسبوعي النظري

	Material Covered
Week 1	**security and Networking:** What is a network? Types of networks. Basic network components. Network Security Basics. Understanding network threats. Network Troubleshooting
Week 2	**E-Commerce:** Concepts of Electronic banking services this include online banking: ATM and debit card services, Phone banking, SMS banking, electronic alert, Mobile banking
Week 3	**Computer Troubleshooting**: Identifying and solving common hardware and software problems that computer users encounter. Basic troubleshooting techniques and tools for diagnosing and resolving issues.
Week 4	**Introduction to AI: Definition of AI, History of AI, AI Techniques and Approaches, Challenges and Ethical Considerations.**
Week 5	**AI in Our Daily Lives:** AI in smartphones and virtual assistants like Siri or Google Assistant.)
Week 6	**Applications of AI:** Education, Healthcare, Finance, Transportation, Marketing and Advertising.
Week 7	**AI and Society:** (How AI affects social, AI and international relations, AI and the future of humanity.)
Week 8	**Ethical Challenges in AI** :(AI ethics, privacy and surveillance, the impact of AI on the job market.)
Week 9	**The Future of AI** (Future trends in AI, recent research and emerging technologies.)
Week 10	

Week 11	
Week 12	
Week 13	
Week 14	
Week 15	
Week 16	

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
	Material Covered
Week 1, 2	**ecurity and Networking:** What is a network? Types of networks. Basic network components. Network Security Basics. Understanding network threats. Network Troubleshooting
Week 3, 4	**E-Commerce:** Concepts of Electronic banking services this include online banking: ATM and debit card services, Phone banking, SMS banking, electronic alert, Mobile banking
Week 5	**Computer Troubleshooting**: Identifying and solving common hardware and software problems that computer users encounter. Basic troubleshooting techniques and tools for diagnosing and resolving issues.
Week 6	**Introduction to Al: Definition of Al, History of Al, Al Techniques and Approaches, Challenges and Ethical Considerations.**
Week 7, 8	**Al in Our Daily Lives:** Al in smartphones and virtual assistants like Siri or Google Assistant.)
Week 9	**Applications of Al:** Education, Healthcare, Finance, Transportation, Marketing and Advertising.
Week 10	**Al and Society:** (How Al affects social, Al and international relations, Al and the future of humanity.)
Week 11	**Ethical Challenges in Al** :(Al ethics, privacy and surveillance, the impact of Al on the job market.)
Week 12	**The Future of Al** (Future trends in Al, recent research and emerging technologies.)
Week 13	
Week 14	
Week 15	

Week 15	

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	Available in the Library?
Required Texts	Graham **Brown**, David Watson, "Cambridge IGCSE Information and Communication Technology", 3rd Edition (2020)	
Recommended Texts	Alan Evans, Kendall Martin, Mary Anne Poatsy, "Technology In Action Complete", 16th Edition (2020).	
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.

أ.د. ممتن عبد الجبار محمد عون
رئيس قسم الهندسة المدنية

جامعة الموصل - كلية الهندسة
قسم الهندسة المدنية

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	English Language-2			**Module Delivery**	
Module Type	**Support or related learning activity**			**Theory** **☒ Lecture** **Lab** **☐ Tutorial** **☐ Practical** **☐ Seminar**	
Module Code	**UOM2022**				
ECTS Credits	**2**				
SWL (hr/sem)	50				
Module Level		UGII	**Semester of Delivery**		4
Administering Department		CE	**College**	ENG	
Module Leader	Atheer Khudhur Jumaah		**e-mail**	atheer.khudur@uomosul.edu.iq	
Module Leader's Acad. Title		Assistant Lecturer	**Module Leader's Qualification**		M.Sc.
Module Tutor	Atheer Khudhur Jumaah		**e-mail**	atheer.khudur@uomosul.edu.iq	
Peer Reviewer Name		Amina Ahmed	**e-mail**	Amina.alshumam@uomosul.edu.iq	
Scientific Committee Approval Date		2025	**Version Number**		1.0

Relation with other Modules العلاقة مع المواد الدراسية الأخرى			
Prerequisite module		**Semester**	
Co-requisites module		**Semester**	

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Aims أهداف المادة الدراسية	1. Study grammar, (verb tenses, structure sentence, question words, adverbs and adjectives, quantity, articles, verb pattern, prepositions, comparative and superlative). 2. Learn Vocabulary, focus on all academic words specifically in environmental engineering field. 3. Study comprehensive reading in variety subjects. 4. Focus on listening and speaking using videos and conversation between students in class. 5. Study how to write an academic paragraph.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	1. Learn grammar specifically that help student to write and speak. 2. Learn new vocabulary and focus on academic word that related in environmental engineering field. 3. Learn the comprehensive reading. 4. Practice more on listening and speaking. 5. Learn how to write an academic paragraph.
Indicative Contents المحتويات الإرشادية	Indicative content includes the following. – English Language • Grammar/ Verb tenses and examples, structure sentence, question words, adverb and adjectives, articles, quantity, phrasal verbs, and comparative & superlatives, and certainty. [18 hrs.] • Practice on comprehensive reading. [4 hrs.] • Practice on Listening and Speaking. [4 hrs.] • Writing an academic paragraph and paraphrasing. [6hrs.]

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	Type something like: The main strategy that will be adopted in delivering this module is to encourage students' participation in the exercises, while at the same time refining and expanding their critical thinking skills. This will be achieved through classes, interactive tutorials and by considering type of simple experiments involving some sampling 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	33	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	2
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	17	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	1
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**	2	10% (10)	8.11	LO #1, 3, and 5
	Assignments	2	10% (10)	2, 5, 8, 12	All
	OnsitAssignments	1	10%		
	حلقات دراسية	1	10		
Summative assessment	**Midterm Exam**	1 hr	10% (10)	9	LO # 1-3
	Final Exam	3hr	50% (60)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري	
	Material Covered
Week 1	Grammar / Verb tenses and examples (present, past, future) / Vocabulary / Reading, listening, speaking
Week 2	Grammar/ Verb tenses and examples (present) / Vocabulary / Reading, listening, speaking
Week 3	Grammar/ Verb tenses and examples (past) / Vocabulary / Reading, listening, speaking
Week 4	Grammar/ Quantity/ Vocabulary / Reading, listening, speaking
Week 5	Grammar/ Verb tenses and examples (future) / Vocabulary / Reading, listening, speaking
Week 6	Grammar/ Comparative & Superlatives / Vocabulary / Reading, listening, speaking
Week 7	Grammar/ Verb tenses and examples (present perfect) / Vocabulary / Reading, listening, speaking
Week 8	Grammar/ have to, should / Vocabulary / Reading, listening, speaking
Week 9	Midterm Exam

	speaking
Week 11	Grammar/ Verb tenses and examples (passive) / Vocabulary / Reading, listening, speaking
Week 12	Grammar/ Verb tenses and examples (present perfect continuous) / Vocabulary / Reading, listening, speaking
Week 13	Writing an academic paragraph / Reading, listening, speaking
Week 14	Grammar/ if condition / Vocabulary / Reading, listening, speaking
Week 15	Writing / Paraphrasing / Reading, listening, speaking

Learning and Teaching Resources
مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	Headway Pre-Intermediate Student's Book-Fourth Edition	Yes (text book)
	Headway Pre-Intermediate Student's Book-Fourth Edition	Yes
Websites	https://meet.google.com/yof-ngkn-ssc	

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

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أ.د. ممتاز عبد الجبار محمد عون
رئيس قسم الهندسة المدنية

جامعة الموصل - كلية الهندسة
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MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	**Building construction and damages assessment**			**Module Delivery**	
Module Type	**Core**			☒ **Theory** ☒ **Lecture** ☐ **Lab** ☒ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	CE211				
ECTS Credits	**3**				
SWL (hr/sem)	**75**				
Module Level	UGII		**Semester of Delivery**	4	
Administering Department	CE		**College**	ENG	
Module Leader	Zeena Adel Mohammed Atheer Khudhur Jumaah		**e-mail**	Zena.adal@uomosul.edu.iq atheer.khudhur@uomosul.edu.iq	
Module Leader's Acad. Title	lecture		**Module Leader's Qualification**	M.sc.	
Module Tutor	Name (if available)		**e-mail**		
Peer Reviewer Name			**e-mail**		
Scientific Committee Approval Date	2025		**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	1. تطوير مهارات الطلبة للتعرف على أنواع المباني من الناحية الانشائية 2. يتناول المقرر المراحل الأساسية لطريقة انشاء المباني

	3. يتناول المقرر المشاكل التي تتعرض لها الأبنية من الناحية التنفيذية 4. تطوير مهارات الطلبة في التعرف على محددات المواصفات الانشائية 5. توضيح اسباب التلف والاضرار في الأبنية 6. تطوير المهارات للتحري الموقعي تناول اهم طرق المعالجات الموقعية للأبنية
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	1. التعرف على العناصر الانشائية المكونة للأبنية للمباني باختلاف أنواعها 2. تعريف أسلوب تنفيذ العناصر الانشائية 3. شرح ابعاد ومواصفات الوحدات البنائية 4. كيفية اجراء الفحوصات الموقعية 5. مناقشة مستوى تقييم الاضرار وطرق معالجتها
Indicative Contents المحتويات الإرشادية	– مقدمة عامة عن المباني وانواعها حسب التنفيذ ، الحفريات الترابية واساليبها المختلفة وكيفية تصريف المياه وتجفيف ساحة العمل ، الاملائيات الترابية. [6 hr] – اعمال الأسس وطبيعة التربة ، اعمال الركائز وتصنيفها، اعمال الخرسانة ، تلف الخرسانة- المسببات وطرق الوقاية[hr 7] . – اكمال وتوصيل الجدران والتمشيط واختيار السمك ، الاعتاب، الاعمدة وتصنيفها[hr 5] . – الارضيات والسقوف وأنواع الاحمال المسلطة ، اعمال القوالب وطريقة تصميم القالب الخشبي ز [hr 5] – خطوات تقييم الاضرار في المنشآت وتشخيص الاسباب واعداد تقرير الفحص والمعاينة البصرية. [hr 5] – الفحوصات الموقعية والمختبرية المعتمدة في تقييم الاضرار في المنشآت. [hr 5] – مانع الرطوبة وطرق قطع الرطوبة للجدران والارضيات والسراديب. [hr 5]

Learning and Teaching Strategies
استراتيجيات التعلم والتعليم

Strategies	الاستراتيجية الأساسية التي هي تشجيع الطالب للاطلاع ومناقشة المراحل الانشائية وكيفية التحري الموقعي من خلال التعليم التفاعلي وأسلوب عرض المشكلة والحلول المناسبة لها

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

Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	48	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	3
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	27	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	2
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**	3	30% (10)	2,5,10	LO #1, 2, 3 and 5
	Assignments	1	6% (10)	8	LO # 1,2, and 5
	Projects / Lab.	0	0% (0)	Continuous	All
	Report	1	4% (10)	3	LO # 5, 8 and 10
Summative assessment	**Midterm Exam**	2 hr	10% (10)	9	LO # 2,4
	Final Exam	3hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)

المنهاج الاسبوعي النظري

	Material Covered
Week 1	مقدمة عامة عن المباني وانواعها حسب التنفيذ (بناء هيكلي ، بناء غير هيكلي والبناء المشترك)
Week 2	الحفريات الترابية واساليبها المختلفة وكيفية تصريف المياه وتجفيف ساحة العمل
Week 3	الاملائيات الترابية
Week 4	اعمال الأسس وطبيعة التربة وعلاقتها بالأسس وأنواع النزول
Week 5	اعمال الركائز وتصنيفها حسب النوع وحسب موادها وطرق تنفيذها
Week 6	اعمال الخرسانة وأسلوب نقلها ورصها
Week 7	اسباب تضرر الخرسانة- المسببات وطرق الوقاية.
Week 8	اكمال وتوصيل الجدران والتمشيط واختيار السمك
Week 9	الاعتاب (أنواع الاعتاب والمسنمات الحديدية)
Week 10	الاعمدة (تصنيف الاعمدة الخرسانية والمعدنية) ، الارضيات والسقوف وأنواع الاحمال المسلطة
Week 11	اعمال القوالب وطريقة تصميم القالب الخشبي
Week 12	انهاء المفاصل البنائية والمواد الرابطة
Week 13	خطوات تقييم الاضرار في المنشآت وتشخيص الاسباب واعداد تقرير الفحص والمعاينة البصرية
Week 14	الفحوصات الموقعية والمختبرية المعتمدة في تقييم الاضرار في المنشآت
Week 15	مانع الرطوبة وطرق قطع الرطوبة للجدران والارضيات والسراديب
Week 16	Preparatory week before the final Exam

Learning and Teaching Resources

مصادر التعلم والتدريس

	Text	**Available in the Library?**

Grading Scheme مخطط الدرجات				
Group	Grade	التقدير	Marks (%)	Definition
Success Group (50 - 100)	A - Excellent	امتياز	90 - 100	Outstanding Performance
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