MODULE DESCRIPTION FORM
نموذج وصف المادة الدراسية

<table>
<tr><td colspan="4" align="center">Module Information
معلومات المادة الدراسية</td></tr>
<tr><td>Module Title</td><td>MATHEMATICS I</td><td colspan="2">Module Delivery</td></tr>
<tr><td>Module Type</td><td>BASIC</td><td colspan="2" rowspan="5">☒ Theory
☐ Lecture
☐ Lab
☒ Tutorial
☐ Practical
☐ Seminar</td></tr>
<tr><td>Module Code</td><td>E 101</td></tr>
<tr><td>ECTS Credits</td><td>6</td></tr>
<tr><td>SWL (hr/sem)</td><td>150</td></tr>
<tr><td>Module Level</td><td>UGI</td><td>Semester (s) offered</td><td>1</td></tr>
<tr><td>Administering Department</td><td>All Departments</td><td>College</td><td>College of Engineering</td></tr>
<tr><td>Module Leader</td><td></td><td>e-mail</td><td></td></tr>
<tr><td>Module Leader's Acad. Title</td><td></td><td>Module Leader's Qualification</td><td></td></tr>
<tr><td>Module Tutor</td><td></td><td>e-mail</td><td></td></tr>
<tr><td>Peer Reviewer Name</td><td></td><td>e-mail</td><td></td></tr>
<tr><td>Review Committee Approval</td><td>10/6/2023</td><td>Version Number</td><td>1.0</td></tr>
</table>

Relation With Other Modules
العلاقة مع المواد الدراسية الأخرى

Prerequisite module	None	Semester	
Co-requisites module	None	Semester	

Module Aims, Learning Outcomes, Indicative Contents and Brief Description
أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية مع وصف مختصر

Module Aims أهداف المادة الدراسية	This module aims to provide students with an understanding of, and competence in the use of, mathematical techniques that are relevant to the solution of engineering problems. It will also give students a firm foundation from which to develop solutions to a wider and deeper range of engineering problems that they will encounter throughout their undergraduate engineering program of study.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	1. Preliminaries : Explain mathematical coordinate systems, representing line, slope of line, shifting of lines 2. Vectors: Demonstrate an understanding of vectors in plane and space. 3. Function: Demonstrate an understanding of function and related variables, range and domain of function, types of functions and their graphs. 4. Limits and Continuity: Demonstrate an understanding of the fundamental concepts of calculus including limits, continuity, and differentiability. 5. Derivatives: Apply the techniques of differentiation at different types of functions including transcendental functions 6. Applications of derivatives: Apply the techniques of differentiation to solve problems involving rates of change, linearization, curve sketching, mean value theorem and Initial value problem. 7. Complex numbers: Demonstrate an understanding of complex numbers with basic operations and their mathematical and graphical representations including Euler's Formula
Indicative Contents المحتويات الإرشادية	The topics listed under the indicative content below are the underpinning areas of knowledge and understanding that will be obtained from successful completion of the module. The mathematical topics are illustrated in the context of relevant engineering scenarios. ● **Preliminaries** Cartesian coordinates, polar coordinates, slope of lines, angle of inclination. ● **Functions**, types of functions, graph of the functions, domain and range of function

	● **Review of trigonometric function:** graph of trigonometric function, range and domain of trigonometric functions, identities. ● **Limits and Continuity:** Properties, limits involving infinity, continuity. ● **Transcendental functions**: Inverse function, graph of inverse function, Logarithmic and exponential functions, inverse trigonometric functions, hyperbolic functions, inverse hyperbolic functions. ● **Derivatives:** Definition, rules of derivative, Implicit differentiation, L hospital's rule, derivative of inverse functions ● **Applications of derivatives:** rate of change problems, Relative maximum and relative minimum, Curve sketching with 1st and 2nd derivative, Linearization, Mean value theorem, Initial value problem,. ● **Complex numbers:** Basic definitions. The geometric representations of the complex numbers**,** argand diagram, Basic operations with complex numbers, Euler's Formula ● **Vectors**: Introduction to vectors
Course Description	This course lays the foundation for a robust understanding of mathematical concepts that underpin the various disciplines within engineering. It covers a breadth of topics ranging from coordinate systems, slopes of lines, and angles of inclination to the introduction of two- and three-dimensional coordinate systems. A focus is also given to the understanding and manipulation of functions, including domain and range determination and function composition. The course incorporates a substantial overview of trigonometry, limits, continuity, derivatives, including their applications in real-world engineering contexts in addition to complex numbers and their mathematical representation. By the end of the course, students will have a sound understanding of these principles, preparing them for more advanced engineering courses in their respective fields.
Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	Begin In Mathematics I, then employ a range of teaching strategies to ensure first-year engineering students fully grasp the various mathematical concepts. Instructional methods include interactive lectures, where core mathematical principles are explained in detail, and practical problem-solving sessions to provide hands-on learning experiences. Collaborative group work encourages peer-to-peer learning and reinforces understanding through shared insights. Regular formative assessments will be conducted to monitor students' understanding of the material, and feedback will be promptly given to guide their learning process. Instructors will maintain office hours for personalized support, and online resources will be available to supplement classroom instruction.

Emphasis will be placed on relating mathematical concepts to real-world engineering applications to make the learning experience more relevant and engaging. These strategies aim to develop students' critical thinking skills, enhance their problem-solving abilities, and prepare them for advanced engineering studies.

Student Workload (SWL)
الحمل الدراسي للطالب

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	4.8
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	150		

Module Evaluation
تقييم المادة الدراسية

		Time (hr)	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	**Quizzes**	3	20% (20)	3,5, 10, 12, 14	LO #1, 2, 3, 4 ,5 and 7
	Assignments	6	10% (10)	4, 8, 12	LO # 1, 2, 3, 4, 5 and 6
	Home Work	6	10% (10)	2,5,7,9,11,13	LO # 1, 2, 3, 4, 5,6 and 7
Summative assessment	**Midterm Exam**	2	10% (10)	7	LO # 1,4
	Final Exam	3	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)
المنهاج الاسبوعي النظري

	Material Covered
Week 1	Cartesian coordinates, slope of lines, angle of inclination, functions, types of functions, graph of the functions, domain and range, identifying functions, Circles and parabolas
Week 2	Introduction to vectors
Week 3	•Preliminaries Sum, differences, products and quotients of Composite functions, shifting a graph of a function, scaling and reflecting a graph of a function, Absolute value
Week 4	•Review of trigonometric function graph of trigonometric function, range and domain, identities
Week 5	•Limits and Continuity Properties, limits involving infinity, continuity
Week 6	•Transcendental functions Inverse function, graph of inverse function, Logarithmic and exponential functions, trigonometric functions , inverse trigonometric functions, hyperbolic functions, inverse hyperbolic functions
Week 7	•Derivatives Definition, rules of derivative, slopes , tangent lines, chain rule, derivative of trigonometric functions, Implicit differentiation, L hospital's rule
Week 8	derivative of inverse trigonometric functions, derivative of exponential and logarithmic functions
Week 9	•Applications of derivatives Speed and acceleration, Relative maximum and relative minimum
Week 10	Curve sketching with 1st and 2nd derivative
Week 11	Linearization
Week 12	rate of change problems
Week 13	Mean value theorem -Initial value problem
Week 14	Complex numbers**:** Basic definitions. The geometric representations of the complex numbers**,** argand diagram
Week 15	Basic operations with complex numbers, Euler's Formula
Week 16	**Final Exam**

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	George B. Thomas and Ross L. Finney, "Calculus and Analytic Geometry, Addison- Wesley	Yes
Recommended Texts	Thomas Calculus, by George B.Thomas,Jr,Elevnth Edition Media Upgrade 2008 Calculus Early Transcendental (Sixth Edition) James Stewart	Yes
Websites		

APPENDIX:

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

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

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information
معلومات المادة الدراسية

Module Title	**Electrical Engineering Fundamentals I**		**Module Delivery**
Module Type	Core		☒ **Theory**
Module Code	**COE 101**		☐ **Lecture**
ECTS Credits	**8**		☒ **Lab** ☒ **Tutorial**
SWL (hr/sem)	**200**		☐ **Practical** ☐ **Seminar**

Module Level	UGI	Semester of Delivery	1
Administering Department	BSc – COMM	**College**	College of Engineering
Module Leader	Name:	**e-mail**	E-mail:
Module Leader's Acad. Title		**Module Leader's Qualification**	
Module Tutor	Name (if available)	**e-mail**	E-mail
Peer Reviewer Name	Name	**e-mail**	E-mail
Scientific Committee Approval Date	12/06/2023	**Version Number**	1.0

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

Module Aims, Learning Outcomes and Indicative Contents	
أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Objectives أهداف المادة الدراسية	1. This course deals with the basic concept of electrical circuits. 2. This is the basic subject for all electrical and electronic circuits. 3. To understand voltage, current and power from a given circuit. 4. To develop problem solving skills and understanding of circuit theory through the application of techniques. 5. To understand Kirchhoff's current and voltage Laws problems. 6. To perform mesh and Nodal analysis. 7. To perform Maximum Power Transfer and reciprocity theorems 8. To understand Magnetic Circuits
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	1. Recognize how electricity works in electrical circuits. 2. List the various terms associated with electrical circuits. 3. Summarize what is meant by a basic electric circuit. 4. Discuss the reaction and involvement of atoms in electric circuits. 5. Describe electrical power, charge, and current. 6. Define Ohm's law. 7. Identify the basic circuit elements and their applications. 8. Discuss the operations of sinusoid and phasors in an electric circuit. 9. Discuss the various properties of resistors, capacitors, and inductors. 10. Explain the two Kirchoff's laws used in circuit analysis. 11. Identify the capacitor and inductor phasor relationship with respect to voltage and current. 12. Understanding Maximum Power Transfer and reciprocity theorems

	13. Understanding Magnetic Circuits
Indicative Contents المحتويات الإرشادية	Indicative content includes the following. **Part A - Basic Concepts** Introduction, Systems of Units, Charge and Current, Voltage, Power and Energy, Circuit Elements [18 hrs] **Part B - Basic Laws** Ohm's Law, Nodes, Branches, and Loops, Kirchhoff's Laws, Series Resistors and Voltage Division, Parallel Resistors and Current Division, Wye-Delta Transformations. [15 hrs] **Part C - Methods of Analysis** Nodal Analysis, Nodal Analysis with Voltage Sources, Mesh Analysis, Mesh Analysis with Current Sources [12 hrs] **Part D - Circuit Theorems** Superposition, Source Transformation, Thevenin's Theorem, Norton's Theorem, Maximum Power Transfer [24 hrs] Revision problem classes [6 hrs]

Learning and Teaching Strategies
استراتيجيات التعلم والتعليم

Strategies	**1. Behavior management** Behavior management strategies foster an atmosphere of mutual respect, reduce disruptive behavior and ensure students have an equal opportunity to fulfill their potential in the classroom. It's crucial to provide them with both a positive and productive learning environment. Examples include establishing a reward system with an interactive chart where students move up or down depending on their performance and behavior in class. **2. Blended learning** With a blended learning teaching strategy, technology is incorporated with traditional learning. This allows students to work at their own pace, research their ideas and become more physically engaged during lessons. Examples include providing

interactive tablets or whiteboards with engaging activities and posting classwork online for easier access.

3. Cooperative learning

Group work is a cooperative learning strategy that allows students with various learning levels to work together. By encouraging them to express their own ideas and listen to others' ideas as a group, you help students develop communication and critical thinking skills. Examples include solving math puzzles together, performing skits as a team or working on group presentations.

4. Formative assessment

A formative assessment is used periodically to monitor student learning incrementally. This can more effectively measure the process of learning as opposed to end-of-unit tests and can help you to improve your teaching methods throughout the year. Examples of this teaching strategy include self-evaluation exercises and summarizing a topic in multiple ways.

5. Student-led teaching

The student-led teaching strategy lets students become the teacher. In a classroom with learners at different levels, you can better engage those learning faster by showing them how to teach and give feedback to their peers.They may team-teach or work in groups to teach a new topic. Examples include letting a student teach an entire lesson or having advanced writers lead a peer-editing session as well as provide constructive criticism.

Student Workload (SWL)			
الحمل الدراسي للطالب محسوب لـ 15 اسبوعا			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	124	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	8
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	76	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	5.1
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	**200**		

Module Evaluation

تقييم المـادة الدراسية

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	**Quizzes**	2	10% (10)	5 and 12	LO #1, #4 and #8, #11
	Assignments	2	10% (10)	3 and 13	LO #3, #4 and #10, #14
	Projects / Lab.	1	10% (10)	Continuous	All
	Report	1	10% (10)	14	LO #5, #8 and #10
Summative assessment	**Midterm Exam**	2hr	10% (10)	8	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	• Electrical Engineering: An Overview • The International System of Units conversions (metric prefixes) • Free electrons, electric charge & types of electric materials • Definition of: electric current, electric current flowing through a conductor, electric voltage
Week 2	• Polarity of electric voltage across an element • The difference between electric potentials and electric voltage • Linear and non-linear elements: resistances, conductance, capacitances, and inductances • Definition of: Power and energy, Sources (Independent Source & Dependent Source)
Week 3	• Ohm's Law • Definition of: Nodes, Branches, and Loops
Week 4	• Series & parallel connections of resistors • Series Resistors and Voltage Division • Parallel Resistors and Current Division
Week 5	• Short and Open Circuits • Star-Delta Transformations

Week 6	● Kirchhoff's Laws
Week 7	● Methods of Analysis: Nodal Analysis
Week 8	**Mid-term Exam**
Week 9	● Methods of Analysis: Mesh Analysis
Week 10	● Circuit Theorems: Superposition, Source Transformation
Week 11	● Circuit Theorems: Source Transformation
Week 12	● Circuit Theorems: Thevenin's Theorem
Week 13	● Circuit Theorems: Norton's Theorem, Derivations of Thevenin's and Norton's Theorems
Week 14	● Circuit Theorems: Maximum Power Transfer Theorem ● Millman's Theorem, Substitution Theorem, Reciprocity Theorem
Week 15	● Magnetic Circuits: Definitions, Composite Series Magnetic Circuit, Ampere-turns , Comparison Between Magnetic and Electric Circuits, Parallel Magnetic Circuits, Series-Parallel Magnetic Circuits, Leakage Flux and Hopkinson's Leakage Coefficient, Magnetization 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 Lab. Equipment's and How to use Avometer
Week 2	Lab 2: How to measure DC Voltage, current, power and resistor
Week 3	Lab 3: Resistor Color Code
Week 4	Lab 4: Ohm's Law
Week 5	Lab 5: Series, parallel and series- parallel circuits
Week 6	Lab 6: Star-Delta Transformations
Week 7	Lab 7: Kirchhoff's Voltage and Current Laws
Week 8	Lab 8: Nodal Analysis

Week 9	Lab 9: Mesh Analysis
Week 10	Lab 10: Superposition theorems
Week 11	Lab 11: Thevenin's theorems
Week 12	Lab 12: Norton's theorems
Week 13	Lab 13: Maximum Power Transfer Theorem
Week 14	Lab 14: Composite Series Magnetic Circuit
Week 15	**Final Exam**

Learning and Teaching Resources
مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	• Theraja, B. L. **A Textbook of Electrical Technology-Volume I (Basic Electrical Engineering)**. Vol. 1. S. Chand Publishing, 2005. • C.K. Alexander and M.N.O Sadiku, **Fundamentals of Electric Circuits**, McGraw-Hill Education, Fifth Edition, 2013	Yes
Recommended Texts	• Allan H. Robbins and Wilhelm C. Miller, **Circuit analysis: Theory and practice**, Cengage Learning, Fifth Edition, 2013. • Nilsson, James William, **Electric circuits**, Pearson Education India, 2008.	No
Websites	https://www.coursera.org/browse/physical-science-and-engineering/electrical-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
	E - Sufficient	**مقبول**	50 - 59	Work meets minimum criteria
Fail Group (0 – 49)	**FX** – Fail	**راسب (قيد المعالجة)**	(45-49)	More work required but credit awarded
	F – Fail	**راسب**	(0-44)	Considerable amount of work required

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

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information		
معلومات المادة الدراسية		
Module Title	**Digital Techniques**	**Module Delivery**

Module Type	Core	☒ Theory
		☐ Lecture
Module Code	**COE 103**	☒ Lab
		☐ Tutorial
ECTS Credits	**6**	☐ Practical
SWL (hr/sem)	**150**	☐ Seminar

Module Level	UGI	Semester of Delivery	1
Administering Department	BSc – COMM	College	College of Engineering
Module Leader		e-mail	E-mail
Module Leader's Acad. Title		Module Leader's Qualification	
Module Tutor	Name (if available)	e-mail	E-mail
Peer Reviewer Name	Name	e-mail	E-mail
Scientific Committee Approval Date	12/06/2023	Version Number	1.0

Relation with other Modules
العلاقة مع المواد الدراسية الأخرى

Prerequisite module	None	Semester	
Co-requisites module	None	Semester	

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

Module Objectives أهداف المادة الدراسية	1. To acquire the basic knowledge of Digital techniques levels and application of knowledge to understand digital electronics circuits. 2. Have a thorough understanding of the fundamental concepts and techniques used in digital electronics

	3. To understand and examine the structure of various number systems and its application in digital design. 4. The ability to understand, analyze and design various combinational and sequential circuits. 5. Ability to identify basic requirements for a design application and propose a cost effective solution. 6. To prepare students to perform the analysis and design of various digital electronic circuits.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	Important: Write at least 6 Learning Outcomes, better to be equal to the number of study weeks. 1. express basic concepts and logic circuits 2. Explains number systems and convert number systems. 3. explains logical AND,OR,NOT,NAND,NOR,EX-OR,EX-NOR functions 4. can show the simplification of logical statements 5. explains the simplification of logical statements with using Boolean rules and de-Morgan theorems 6. Writes Boolean equation by using truth table and shows its logic circuits. 7. Writes Boolean equation by logic circuits and shows its truth table. 8. explains the simplification of logical statements with karnaugh maps. 9. identifies 10. explains half and full adders 11. explains half and full subtractors 12. identifies combinational circuit 13. explains the working principles of decoder, encoder, 14. recognize 7-segmented displayers 15. explains the working principles of multiplexer and De multiplexer, 16. shows the applications of combinational circuits
Indicative Contents المحتويات الإرشادية	Indicative content includes the following. Part A – number system and simplification of digital circuit design. **Introduction to digital quantities and System Numbers:** Decimal , Binary , Binary arithmetic , Octal and Hexadecimal Numbers, Conversions of System Numbers, Arithmetic Operations with different number systems, and Signed Numbers. [24 hrs]

Digital Codes: Binary coded decimal [BCD], Exc-3 code, Gray codes. [5 hrs]

Simplification of digital circuit design: Boolean algebra, De 'Morgan theorems, Simplification Using Boolean Algebra, Standard Forms of Boolean Expressions (SOP and POS form), The karnaugh Map (Three, Four and Five-Variable Kamaugh Maps.[25 hrs]

Part B - Combinational Logic

Functions of Combinational Logic: Adders, Subtracters, Parallel Binary Adders, multiplier, and Magnitude comparators.[25 hrs].

Encoders, Decoders, Multiplexers, Demultiplexers, Parity Generators /Checkers, and code conversion circuits [25 hrs].

Flip-Flops: Latches, Edge-Triggered Flip-Flops and its applications. [5 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 experiments involving some sampling activities that are interesting to the students.

Student Workload (SWL)			
الحمل الدراسي للطالب محسوب لـ 15 اسبوعا			
Structured SWL (h/sem)	93	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	6

الحمل الدراسي المنتظم للطالب خلال الفصل			
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	57	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	3.8
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 Digital Techniques and logic gates, General number formula : Binary, octal, decimal, hexadecimal numbers
Week 2	Conversions of System Numbers
Week 3	Arithmetic operations with different number systems, complements of number systems, binary codes, BCD codes, Ex-3 code , and gray code.

Week 4	Boolean algebra , De'Morgan theorems , Simplification Using Boolean Algebra,
Week 5	Standard Forms of Boolean Expressions (SOP and POS form)
Week 6	The Karnaugh Map (two, Three, Four and Five- Variable Karnaugh Maps)
Week 7	Introduction to Combinational Logic circuit and circuit analysis
Week 8	Adders, Subtractors, Parallel Binary Adders,
Week 9	Binary multiplier circuits and Magnitude comparators circuit.
Week 10	Flip-Flops:(Latches, Edge-Triggered Flip-Flops) and it's applications.
Week 11	Counter and Shift register
Week 12	Encoders, and Decoders circuits
Week 13	Multiplexers, and Demultiplexers circuits.
Week 14	Parity Generators/Checkers and design of code conversion circuits.
Week 15	Analogue to Digital convertor and Digital to Analogue convertor
Week 16	**Preparatory week before the final Exam**

Delivery Plan (Weekly Lab. Syllabus) **المنهاج الاسبوعي للمختبر**	
	Material Covered
Week 1	Lab 1: Introduction to logic gates
Week 2	Lab 2: NOR Gate, NAND Gate, and XOR Gate application
Week 3	Lab 3: Comparator Circuit
Week 4	Lab 4: Half –Adder
Week 5	Lab 5: full –Adder Circuit
Week 6	Lab 6: Half Subtractor

Week 7	Lab 7: full Subtractor Circuit
Week 8	Lab 8: Even and odd Parity Generator and Checker Circuit
Week 9	Lab 9: Code converter Circuits
Week 10	Lab 10: Encoder Circuit
Week 11	Lab 11: Decoder Circuit
Week 12	Lab 12: Multiplexer Circuit
Week 13	Lab 13 : De - Multiplexer Circuit.
Week 14	Lab 14 : Flip- Flop application Circuits
Week 15	Lab 15 : Counter circuit
Week 16	Preparatory week before the final Exam

Learning and Teaching Resources		
مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	Digital Fundamentals, Thomas .L. Floyd, Pearson international edition.	Yes
Recommended Texts	Digital Design, M. Morris. Mano, Pearson prentice Hall .	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.

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information			
معلومات المادة الدراسية			
Module Title	**Engineering Drawing**		**Module Delivery**
Module Type	Basic		☐Theory
Module Code	COE 106		☐ Lecture ☐Lab
ECTS Credits	4		☐Tutorial ☒ Practical
SWL (hr/sem)	100		☐ Seminar

Module Level	UGI	Semester of Delivery		1
Administering Department	BSc – COMM	**College**	College of Engineering	
Module Leader	Name:	**e-mail**	E-mail:	
Module Leader's Acad. Title		**Module Leader's Qualification**		
Module Tutor	Name (if available)	**e-mail**	E-mail	
Peer Reviewer Name	Name	**e-mail**	E-mail	
Scientific Committee Approval Date	01/06/2023	**Version Number**	1.0	

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

Module Aims, Learning Outcomes and Indicative Contents	
أهداف المـادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Objectives أهداف المادة الدراسية	9. Understanding the basis for any geometric shape or system, so teaching and training the student on engineering drawing will be able to perform engineering drawing or understand and read engineering drawings. 10. To have the knowledge of interpretation of dimensions of different quadrant projections. 11. To understand the basic principles of engineering drawing 12. To have the knowledge of generating the pictorial views 13. To understand the development of surfaces 14. To understand projections concept 15. To use the drawing tools professionally 16. To grew the ability of free hand sketching
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	14. Understanding the components of an engineering drawing and how to implement an engineering drawing 15. Learn engineering drawing and complete simple and complex engineering drawings 16. Prepare and understand drawings. 17. Identify various D curves used in Engineering Drawing and their applications. 18. Use the principles of orthographic projections.

	19. By studying about projections of solids, students will be able to visualize three-dimensional objects and that will enable them to design new products. 20. Design and fabricate surfaces of different shapes. 21. Represent the objects in three-dimensional appearances.
Indicative Contents المحتويات الإرشادية	Indicative content includes the following. **Part A - Introduction** Introduction to Engineering Drawing and Drawing Instruments, Conventions, Viewing of engineering drawing sheets, Method of Folding of printed Drawing sheet , Drawing board, T-square, Drafter (Drafting M/c), Set squares, Protector, Drawing Instrument Box (Compass, Dividers, Scale, and Diagonal Scales etc.), pencils of different grades, Drawing pins/ Clips. [18 hrs] **Part B - Free hand drawing** Lines, polygons, ellipse etc., Geometrical figures and blocks with dimension, Transferring measurement from the given object to the free hand sketches., Solid objects, Cube, Cuboids, Cone, Prism, Pyramid, Frustum of Cone with dimensions, Free hand drawing of hand tools and measuring tools, simple fasteners (nuts, bolts, rivets etc.) trade related sketches. [16 hrs] **Part C - Method of presentation of Engineering Drawing** Pictorial View, Orthographic View [12 hrs]. **Symbolic representation – different symbols used in the trades:** Fastener (Rivets, Bolts and Nuts), Bars and profile sections, Weld, Brazed and soldered joints, Electrical and electronics element, Piping joints and fitting [18hrs.] **Part D - Projections** Concept of axes plane and quadrant, Orthographic projections, Method of first angle and third angle projections (definition and difference), Symbol of 1st angle and 3rd angle projection in 3rd angle [24 hrs] Orthographic projection from isometric projection, Reading of fabrication drawing Sign and Symbols of Electrical, Electronics and related trades, Sketch of Electrical and Electronics/ trade related components, Electrical and Electronics wiring diagram/ trade related Layout diagram, Electrical earthling diagram – Drawing the schematic diagram of plate and pipe earthling., Electrical, Electronics/ trade related circuit diagram, Block diagram of Instruments/ equipment of related trade [8 hrs]

| Learning and Teaching Strategies |
| استراتيجيات التعلم والتعليم |

Strategies	**1. Behavior management** Behavior management strategies foster an atmosphere of mutual respect, reduce disruptive behavior and ensure students have an equal opportunity to fulfill their potential in the classroom. It's crucial to provide them with both a positive and productive learning environment. Examples include establishing a reward system with an interactive chart where students move up or down depending on their performance and behavior in class. **2. Blended learning** With a blended learning teaching strategy, technology is incorporated with traditional learning. This allows students to work at their own pace, research their ideas and become more physically engaged during lessons. Examples include providing interactive tablets or whiteboards with engaging activities and posting classwork online for easier access. **3. Cooperative learning** Group work is a cooperative learning strategy that allows students with various learning levels to work together. By encouraging them to express their own ideas and listen to others' ideas as a group, you help students develop communication and critical thinking skills. Examples include solving math puzzles together, performing skits as a team or working on group presentations. **4. Formative assessment** A formative assessment is used periodically to monitor student learning incrementally. This can more effectively measure the process of learning as opposed to end-of-unit tests and can help you to improve your teaching methods throughout the year. Examples of this teaching strategy include self-evaluation exercises and summarizing a topic in multiple ways. **5. Student-led teaching** The student-led teaching strategy lets students become the teacher. In a classroom with learners at different levels, you can better engage those learning faster by showing them how to teach and give feedback to their peers.They may team-teach or work in groups to teach a new topic. Examples include letting a student teach an entire lesson or having advanced writers lead a peer-editing session as well as provide constructive criticism.

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	52	Unstructured SWL (h/w) الحمل الدراسي غير المنتظم للطالب أسبوعيا	3.5
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	100		

Module Evaluation					
تقييم المادة الدراسية					
		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	2	10% (10)	5 and 10	LO #1, #4 and #8, #11
	Assignments	2	10% (10)	3 and 13	LO #3, #4 and #10, #14
	Homework	8	20% (20)	Continuous	All
Summative assessment	Midterm Exam	2hr	10% (10)	12	LO #1 - #7
	Final Exam	3hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)

	المنهاج الاسبوعي العملي
	Material Covered
Week 1	**Engineering Drawing – Introduction** ● Introduction to Engineering Drawing and Drawing Instruments ● Conventions ● Viewing of engineering drawing sheets ● Method of Folding of printed Drawing sheet
Week 2	**Drawing Instrument** ● Drawing board, T-square, Drafter (Drafting M/c), Set squares, Protector, Drawing Instrument Box (Compass, Dividers, Scale, and Diagonal Scales etc.), pencils of different grades, Drawing pins/ Clips.
Week 3	**Free hand drawing** ● Lines, polygons, ellipse etc. ● Geometrical figures and blocks with dimension. ● Transferring measurement from the given object to the free hand sketches. ● Solid objects – Cube, Cuboids, Cone, Prism, Pyramid, Frustum of Cone with dimensions. ● Free hand drawing of hand tools and measuring tools, simple fasteners (nuts, bolts, rivets etc.) trade related sketches
Week 4	**Lines** ● Definition, types and applications in drawing as per BIS: 46-2003 ● Classification of lines (Hidden, center, construction, extension, Dimension, Section) ● Drawing lines of given length (Straight, curved). ● Drawing of parallel lines, perpendicular line ● Methods of Division of line segment
Week 5	**Drawing of Geometrical figures:** ● Definition, nomenclature and practice of – ● Angle: Measurement and its types, method of bisecting. ● Triangle: different types ● Rectangle, Square, Rhombus, Parallelogram. ● Circle and its elements ● Different polygon and their values of included angles. Inscribed and circumscribed polygons
Week 6	**Dimensioning , Lettering & Numbering** ● Single Stroke, Double Stroke, Inclined.

	● Definition, types and methods of dimensioning (functional, non-functional and auxiliary) ● Position of dimensioning (Unidirectional, Aligned) ● Types of arrowheads ● Leader line with text ● Symbols preceding the value of dimension and dimensional tolerance
Week 7	**Sizes and layout of drawing sheets** ● Selection of sizes ● Title Block, its position and content ● Item Reference on Drawing Sheet (Item list)
Week 8	**Method of presentation of Engineering Drawing** ● Pictorial View ● Orthographic View ● Isometric View
Week 9	**Symbolic representation – different symbols used in the trades** ● Fastener (Rivets, Bolts and Nuts) ● Bars and profile sections ● Weld, Brazed and soldered joints ● Electrical and electronics element ● Piping joints and fitting
Week 10	**Projections** ● Concept of axes plane and quadrant ● Orthographic projections ● Method of first angle and third angle projections (definition and difference) ● Symbol of 1st angle and 3rd angle projection in 3rd angle
Week 11	● Orthographic projection from isometric projection ● Reading of fabrication drawing
Week 12	**Mid – term Exam**
Week 13	● Sign and Symbols of Electrical, Electronics and related trades ● Sketch of Electrical and Electronics/ trade related components ● Electrical and Electronics wiring diagram/ trade related Layout diagram
Week 14	● Electrical earthing diagram – Drawing the schematic diagram of plate and pipe earthing. ● Electrical, Electronics/ trade related circuit diagram ● Block diagram of Instruments/ equipment of related trade
Week 15	● Maps, and Charts, Reading Datasheets and Manuals

Week 16	Preparatory week before the final Exam

Learning and Teaching Resources
مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	● الرسم الهندسي, عبد الرسول الخفاف, 2003 ● تمارين في الرسم الهندسي (متوفر في مكتبة كلية الهندسة) تاليف : سليمان توفيق احمد الناشر: دار الاعصار العلمي للنشر والتوزيع / الاردن	Yes
Recommended Texts	Colin H. Simmons, Dennis E. Maguire, Manual Of Engineering Drawing to British and International Standards, Elsevier Newnes, second edition, 2004, Typeset by Replika Press Pvt Ltd, India, Printed and bound in Great Britain	No
Websites	http://www.kutub.info/library	

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	**FX** – Fail	راسب (قيد المعالجة)	(45-49)	More work required but credit awarded

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

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	**Computer Skills**	Module Delivery
Module Type	**Basic**	⊠ **Theory**
Module Code	**U 103**	☐ **Lecture**
ECTS Credits	**4**	⊠ **Lab**
SWL (hr/sem)	**100**	☐ **Tutorial**
		☐ **Practical**
		☐ **Seminar**

Module Level	UGI	Semester of Delivery	1
Administering Department	All Departments	**College**	College of Engineering
Module Leader		**e-mail**	
Module Leader's Acad. Title		**Module Leader's Qualification**	
Module Tutor	Name (if available)	**e-mail**	E-mail
Peer Reviewer Name	Name	**e-mail**	E-mail
Scientific Committee Approval Date	12/6/2023	**Version Number**	1.0

Relation with other Modules

العلاقة مع المواد الدراسية الأخرى

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

Module Aims, Learning Outcomes and Indicative Contents

أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Objectives أهداف المادة الدراسية	1. Training students on the basics of using the computer and providing them with the necessary skills to deal with the computer with high efficiency. 2. Assisting the student in distinguishing and developing his scientific and artistic abilities. 3. Enriching the student's skills to be able to deal with the computer with high efficiency. 4. Providing students with a way to use other modern technologies related to the educational process.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	1. Enabling the student to know the concepts of information technology by learning the basics of the computer. 2. Enabling the student to know about the use of GUI operating systems. 3. Enabling the student to deal with the skills of using the operating system (Windows operating system) through exploring, customizing, and controlling its settings. 4. Enabling the student to work on the word processing program (Microsoft Word). 5. Enabling the student to work on the spreadsheet program (Microsoft Excel). 6. Enabling the student to work on the presentation program (Microsoft PowerPoint).
Indicative Contents المحتويات الإرشادية	**Indicative content includes the following.** • Course introduction (4 hrs) • Working with GUI operating systems with a focus on Microsoft Windows OS (8 hrs) • Microsoft Office Word (MS Word) (16 hrs) • Microsoft Office Excel (MS Excel) (16 hrs) • Microsoft Office PowerPoint (MS PowerPoint) (16 hrs)
Description	Overview of computers: basic components, applications. GUI operating systems: Microsoft Windows operating system. Microsoft Office Word: getting started with Word, editing a document and formatting text and paragraphs, adding tables and inserting graphic objects, controlling page appearance and proofing a document. Microsoft Office Excel: getting started with Excel, sorting, selecting and subtotaling data, formulas and functions, worksheet formatting and presentation. Microsoft Office PowerPoint: getting started with PowerPoint, developing a PowerPoint presentation, adding graphical elements to your presentation and modifying objects in your

	presentation, adding graphical elements, tables and charts to your presentation and modifying objects in your presentation, prepare to deliver your presentation.

Learning and Teaching Strategies
استراتيجيات التعلم والتعليم

Strategies	**In this course, students are guided by:** • Using different examples. • Using different styles of discussion that aim to connect the theoretical and practical sides. • Asking questions and giving exercises that require analysis and conclusions related to lectures. • Encourage students to participate in discussions and do the practical work. • Encourage students to work in groups.

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

Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	64	Structured SWL (h/w) الحمل الدراسي المنتظم للطالب أسبوعيا	4
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	36	Unstructured SWL (h/w) الحمل الدراسي غير المنتظم للطالب أسبوعيا	2.4
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	100		

Module Evaluation
تقييم المادة الدراسية

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	**Quizzes**	2	10% (10)	6 and 12	LO #1 to #3 and #4 to #6
	Assignments	2	10% (10)	2 and 13	LO #3 to #6
	Projects / Lab.	1	10% (10)	Continuous	All
	Report	1	10% (10)	13	LO #3, #4 and #6
Summative assessment	**Midterm Exam**	2hr	10% (10)	9	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	Overview of computers and their basic components and applications
Week 2	Operating computer using GUI operating systems
Week 3	The basic use of Microsoft Windows operating system
Week 4	**Microsoft Office Word:** Getting Started with Word
Week 5	**Microsoft Office Word:** Editing a Document and Formatting Text and Paragraphs
Week 6	**Microsoft Office Word:** Adding Tables and Inserting Graphic Objects
Week 7	**Microsoft Office Word:** Controlling Page Appearance and Proofing a Document
Week 8	**Microsoft Office Excel:** Getting Started with Excel
Week 9	**Microsoft Office Excel:** Sorting, Selecting and Subtotaling data
Week 10	**Microsoft Office Excel:** Formulas and Functions
Week 11	**Microsoft Office Excel:** Worksheet Formatting and Presentation
Week 12	**Microsoft Office PowerPoint:** Getting Started with PowerPoint

Week 13	**Microsoft Office PowerPoint:** Developing a PowerPoint Presentation, Adding Graphical Elements to Your Presentation and Modifying Objects in Your Presentation
Week 14	**Microsoft Office PowerPoint:** Adding Graphical Elements, tables and charts to Your Presentation and Modifying Objects in Your Presentation
Week 15	**Microsoft Office PowerPoint:** Prepare to deliver your presentation
Week 16	**Preparatory week before the final exam**

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
	Material Covered
Week 1	Introduction to the lab and get started with use of computer
Week 2	Basic use of Windows operating system
Week 3	General view of Windows OS tools with a focus on Microsoft Office tools
Week 4	**Microsoft Office Word:** Getting Started with Word
Week 5	**Microsoft Office Word:** Editing a Document and Formatting Text and Paragraphs
Week 6	**Microsoft Office Word:** Adding Tables and Inserting Graphic Objects
Week 7	**Microsoft Office Word:** Controlling Page Appearance and Proofing a Document
Week 8	**Microsoft Office Excel:** Getting Started with Excel
Week 9	**Microsoft Office Excel:** Sorting, Selecting and Subtotaling data
Week 10	**Microsoft Office Excel:** Formulas and Functions
Week 11	**Microsoft Office Excel:** Worksheet Formatting and Presentation
Week 12	**Microsoft Office PowerPoint:** Getting Started with PowerPoint
Week 13	**Microsoft Office PowerPoint:** Developing a PowerPoint Presentation, Adding Graphical Elements to Your Presentation and Modifying Objects in Your Presentation
Week 14	**Microsoft Office PowerPoint:** Adding Graphical Elements, tables and charts to Your Presentation and Modifying Objects in Your Presentation
Week 15	**Microsoft Office PowerPoint:** Prepare to deliver your presentation

Learning and Teaching Resources
مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	● Joan Lambert and Steve Lambert, Windows 10 step by step, 1st Edition 2015. ● Joan Lambert and Curtis Frye, Microsoft Office 2016 step by step, 1st Edition 2015.	Yes
Recommended Texts	● Michael Miller, ABSOLUTE BEGINNER'S GUIDE TO COMPUTER BASICS, 5th EDITION, QUE Indianapolis, Indiana 46240, 2010. ● Paul McFedries, TEACH YOURSELF VISUALLY MICROSOFT WINDOWS 10, ANNIVERSARY	No
Websites	Microsoft Help, https://support.microsoft.com/en-us/products Learn Microsoft Office, https://www.goskills.com/Microsoft-Office	

Grading Scheme
مخطط الدرجات

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

Note: Marks 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	ENGLISH LANGUAGE	**Module Delivery**	
Module Type	BASIC	☒ **Theory** ☐ **Lecture**	
Module Code	U 104	☐ **Lab**	
ECTS Credits	2	☐ **Tutorial** ☐ **Practical**	
SWL (hr/sem)	50	☐ **Seminar**	
Module Level	UGI	**Semester (s) offered**	1
Administering Department	BSc - COMM	**College**	College of Engineering

Module Leader		e-mail	
Module Leader's Acad. Title		Module Leader's Qualification	
Module Tutor		e-mail	
Peer Reviewer Name		e-mail	
Review Committee Approval	13/6/2023	Version Number	1.0

Relation With Other Modules **العلاقة مع المواد الدراسية الأخرى**			
Prerequisite module	None	**Semester**	
Co-requisites module	None	**Semester**	

Module Aims, Learning Outcomes, Indicative Contents and Brief Description **أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية مع وصف مختصر**	
Module Aims أهداف المادة الدراسية	The module aims to develop the students' English skills in reading, writing, listening and speaking.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	8. Read and understand simple texts in English. 9. Answer simple comprehension questions and match sentences about texts. 10. Reconstruct texts by reordering sentences. 11. Understand the main idea of a text. 12. Identify specific information in a text. 13. Writing and paraphrasing paragraphs.
Indicative Contents المحتويات الإرشادية	Indicative content includes the following. i) Grammar has a core place in language teaching and learning. ii) A wide variety of practice tasks in all the four skills are essential to language learning. iii) Everyday expressions, particularly of spoken English, also need a place in the syllabus. These can be functional, social, situational or idiomatic.
Course Description	Each unit is organized to enhance students' basic knowledge of vocabulary and grammar through reading texts. The students will learn how to form simple

	sentences and use them in real life situations as well as in writing different assignments. By the end of the course, students will be able to produce basic sentences and communicate in simple real-life situations.

Learning and Teaching Strategies
استراتيجيات التعلم والتعليم

Strategies	Headway's trusted methodology combines solid grammar and practice, vocabulary development, and integrated skills with communicative role-plays and personalization.
	Authentic material from a variety of sources enables students to see new language in context, and a range of comprehension tasks, language and vocabulary exercises, and extension activities practice the four skills. 'Everyday English' and 'Spoken grammar' sections practice real-world speaking skills, and a writing section for each unit at the back of the book provides models for students to analyze and imitate.

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	1.1
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	50		

Module Evaluation
تقييم المـادة الدراسية

		Time (hr)	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	2	5% (5)	5, 10, 12, 15	All
	Assignments	6	20% (20)	2, 4, 6, 8, 10, 12	LO # 1, 3, 4, 5 and 6

	Seminars	2	5% (5)	Continuous	LO # 1-5
Summative assessment	**Midterm Exam**	2	20% (10)	7	LO # 1-3
	Final Exam	3	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري	
	Material Covered
Week 1	GRAMMAR, READING , MAIN COURSE SPEAKING, LISTENING ,VOCABULARY am/is/are my/your This is… Introduction dialogues, Everyday English dialogues Introductions, Good morning! Practicing introduction dialogues. People meet each other and introduce someone else. How are you? What's this in English? Numbers 1-10 and plurals.
Week 2	He/she/they His/her. Questions Where are they from?, Two people are on holiday in New York. Students ask and answer questions about where people are from. Countries, Numbers 10-20 A set of cities and countries: Brazil, Spain… Adjectives: awful, really good, fantastic, beautiful Nouns: centre, hospital, building, park
Week 3	Verb to be is recycled and extended to include negative and question forms. We're in Las Vegas! Roleplay: in a band. An interview with the band Metro 5. Jobs: a nurse, a doctor.. Personal information: surname, first name, address, married … Social expressions: I'm sorry, thanks, please…
Week 4	Possessive adjectives. Possessive 's. Has/ have Adjective + noun Irregular Plurals Paddy McNab and his family, My best friend. The alphabet, On the phone, Saying email addresses. Who are they? Listen and identify the people. The family: mother, son.. Describing a friend: very beautiful, really funny…
Week 5	Present Simple: I/you/we/they a/an Adjective + noun Colin Brodie from Dundee. Role play: At a party. Where is Colin? Who is he with? At a party: Flavia and Terry are at a party in London. The lexical set of sports/food/drinks. Languages and nationalities.
Week 6	Present Simple: He/she Question and negatives Adverbs of frequency Prepositions of time Lois Maddox Talking about daily routines, Asking and answering questions about daily routines, Lifestyle questionnaire Listening a phone conversation between Lois and Elliot. Days of the week. The time. Words that go together: watch TV, get up early…
Week 7	Question words Subject pronouns Object pronouns Possessive pronouns This and that A postcard from San Francisco, A holiday postcard. Describing lifestyles, preferences and places, Roleplay: conversations in town. Listening the requests with Can I……..? Adjectives: lovely,

	terrible, comfortable, friendly… Opposite adjectives: new/old, big/small Places: chemist, post office
Week 8	There is /are Prepositions: in, on, under, next to Vancouver-the best city in the world, What to do and where to go. Talking and asking about rooms and furniture, Giving directions. My home town, Steve talks about living in Vancouver. Rooms and furniture: living room, bedroom … In and out of town: beach, mountain, sailing,…
Week 9	Was/were born Past simple: irregular verbs It's a Jackson Pollock. Telling a story from pictures, Saying the dates in English. Magalie Dromand, Magalie dromand talks about her family. Saying years People and jobs Irregular verbs Have, do, go: have lunch, do homework, go shopping
Week 10	Past simple: regular and irregular Questions Negatives Ago Dialogues with simple past. Did you have a good weekend? Asking about holidays, A questionnaire, My last holiday, Roleplay: asking and giving directions. Angie and Rick are at work, Jack and Millie's holiday. Weekend activities: go to the cinema, have a meal… Time expressions: on Monday, last night… Sports and leisure: tennis, skiing, windsurfing… Play or go: play tennis, go skiing… Seasons: winter, summer…
Week 11	Can / can't, Adverbs, Adjective + noun Requests and offers The Internet, What can you do on the internet? Talking about what you can do, Talking about everyday problems, Five people talk about what they do on the internet. Verbs: draw, run, drive… Verb+noun: Listen to the radio, chat to friends Adjective+noun: fast car, busy city, dangerous sport Opposite adjectives: dangerous/ safe, old/modern, old/young.
Week 12	I'd like, You are what you eat, Discussion-what is a good diet? Conversation with Adam, Shopping: bread, milk, fruit, Please and thank you Some /any, Like and would like People from different parts of the world describe what they eat. Roleplay: Ordering a meal. Birthday wishes, What people want on their birthday. stamps, cheese, ham… Food: cereal, salad, pasta, fish… In a restaurant: menu, starter, desert, soup, salmon
Week 13	Present continuous, Present simple and present continuous. This week is different, Colin, a millionaire, gives money to homeless teenagers What's the matter? Why don't you ….? What is Nigel wearing? Nigel is on holiday, What's the matter. Colours: blue, red, green… Clothes: jacket, trousers, shoes and socks… Opposite verbs: buy/sell, love/hate, open/close…
Week 14	Future plans, Revision: question words, tenses. Seven countries in seven days, Life's big events: three people talk about their family, education, work and ambitions. A mini autobiography. Eddie is talking to a friend about his holiday plans, social expressions Transport: travel by bus, coach, motorbike, plane… Revision
Week 15	Irregular verbs, phonetic symbols, consonants and vowels.

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	New Headway Beginner, by lizand john soars	Yes
Websites	https://www.learnenglish.de/ https://www.englishgrammar.org/ https://www.phrasebank.manchester.ac.uk/	

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

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

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

<table>
<tr><td colspan="3">Module Information
معلومات المادة الدراسية</td></tr>
<tr><td>Module Title</td><td>Mathematics II</td><td>Module Delivery</td></tr>
<tr><td>Module Type</td><td>Basic</td><td rowspan="4">☒ Theory
☐ Lecture
☐ Lab
☒ Tutorial
☐ Practical
☐ Seminar</td></tr>
<tr><td>Module Code</td><td>E 102</td></tr>
<tr><td>ECTS Credits</td><td>6</td></tr>
<tr><td>SWL (hr/sem)</td><td>150</td></tr>
</table>

Module Level		UGI	Semester (s) offered		2
Administering Department		All Departments	College	College of Engineering	
Module Leader			e-mail		
Module Leader's Acad. Title			Module Leader's Qualification		
Module Tutor			e-mail		
Peer Reviewer Name			e-mail		
Review Committee Approval			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, Indicative Contents and Brief Description
أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية مع وصف مختصر

Module Aims أهداف المادة الدراسية	This module aims to provide students with an understanding of, and competence in the use of, mathematical techniques that are relevant to the solution of engineering problems. It will also give students a firm foundation from which to develop solutions to a wider and deeper range of engineering problems that they will encounter throughout their undergraduate engineering program of study.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	14. Integration: Demonstrate an understanding of the fundamental concept of integration and antiderivative including types of integrations 15. Integration and transcendental functions: Extend the concept of integration to cover the integration of different types of transcendental functions 16. Numerical integration: Explain the fundamentals of numerical integration focusing on trapezoidal rule and Simpson's rule.

	17. Methods of integration: Apply the techniques of integration to evaluate the integrals that cannot be solved directly.
	18. Application of definite integrals: Extend the concept of integration to solve several problems involving area, volume, length of curve, surface area by revolution, center of mass and moment of inertia.
	19. Area with polar coordinates: Demonstrate an understanding of polar coordinate system and its difference with Cartesian coordinate system, graphing and problems solution of such system.
	20. Matrix: Explain the concept of matrix in mathematics, matrix algebra and solution of system of linear equations.
Indicative Contents المحتويات الإرشادية	The topics listed under the indicative content below are the underpinning areas of knowledge and understanding that will be obtained from successful completion of the module. The mathematical topics are illustrated in the context of relevant engineering scenarios. ● **Integration:** Definition, antiderivative, definite and indefinite integral. ● **Integration and transcendental functions:** integration of trigonometric and inverse trigonometric functions, integration of exponential and logarithmic functions, Integration of hyperbolic and inverse hyperbolic functions. ● **Numerical integration:** Introduction, trapezoidal rule and Simpson's rule. ● **Methods of integration:** Substitution method, integration by parts, Trigonometric substitution method, integration by partial fraction. ● **Application of definite integrals:** Area, Volume, Lengths of curves in the plane, Areas of surfaces of revolution, Center of mass, moment of inertia. ● **Area of polar coordinates**: Definition, polar equation, relating polar and Cartesian coordinates, Graph in polar coordinates, applications using polar coordinate system ● **Matrix:** definition, matrix algebra, Determinant of matrix, Grammar's rule, Inverse of matrix, Gauss Elimination Method
Course Description	This course discuss the foundation for a robust understanding of mathematical concepts that underpin the various disciplines within engineering. It covers the integration and its types followed by methods of integration. The concept of numerical integration is also highlighted. Students will be able to utilize

	integration to solve several problems such as area between curves and volume by revolution. A focus is also given to the understanding of polar coordinate system and how to graph the curves and solve difficult integral in an easy way using such system. Matrix topic is also covered in this course so the students will be able to solve system of linear equations using matrix in different approaches. By the end of the course, students will have a sound understanding of these principles, preparing them for more advanced engineering courses in their respective fields
Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	Begin In Mathematics II, then employ a range of teaching strategies to ensure first-year engineering students fully grasp the various mathematical concepts. Instructional methods include interactive lectures, where core mathematical principles are explained in detail, and practical problem-solving sessions to provide hands-on learning experiences. Collaborative group work encourages peer-to-peer learning and reinforces understanding through shared insights. Regular formative assessments will be conducted to monitor students' understanding of the material, and feedback will be promptly given to guide their learning process. Instructors will maintain office hours for personalized support, and online resources will be available to supplement classroom instruction. Emphasis will be placed on relating mathematical concepts to real-world engineering applications to make the learning experience more relevant and engaging. These strategies aim to develop students' critical thinking skills, enhance their problem-solving abilities, and prepare them for advanced engineering studies.

Student Workload (SWL) الحمل الدراسي للطالب			
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	4.8
Total SWL (h/sem)	150		

الحمل الدراسي الكلي للطالب خلال الفصل

Module Evaluation
تقييم المـادة الدراسية

		Time/ Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	**Quizzes**	3	20% (20)	3,5, 10, 12, 14	LO #1, 2, 3, 4 ,5 and 7
	Assignments	6	10% (10)	4, 8, 12	LO # 1, 2, 3, 4, 5 and 6
	Home Work	6	10% (10)	2,5,7,9,11,13	LO # 1, 2, 3, 4, 5,6 and 7
Summative assessment	**Midterm Exam**	2 hr	10% (20)	7	LO # 1,4
	Final Exam	3 hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)
المنهاج الاسبوعي النظري

	Material Covered
Week 1	**Integration:** Definition, antiderivative, definite and indefinite integral
Week 2	**Integration and transcendental functions:** (trigonometric and inverse trigonometric functions, exponential and logarithmic functions)
Week 3	**Integration and transcendental functions:** Integration and transcendental functions (hyperbolic and inverse hyperbolic functions)
Week 4	● **Numerical integration** Introduction, trapezoidal rule and Simpson's rule
Week 5	● **Methods of integration** Substitution method, integration by parts
Week 6	● **Methods of integration** Trigonometric substitution method

Week 7	● **Methods of integration** Integration by partial fraction method.
Week 8	● **Application of definite integrals** Areas under the curve, area between curves,
Week 9	● **Application of definite integrals** Volume by revolution
Week 10	● **Application of definite integrals** Length of curve in the plane, Area of surface of revolution
Week 11	● **Application of definite integrals** Center of mass, moment of inertia
Week 12	● **Application of definite integrals** Area by polar coordinates
Week 13	● **Matrix** Definition, matrix algebra
Week 14	● **Matrix** Determinant of matrix, Grammar's rule
Week 15	● **Matrix** Inverse of matrix, Gauss Elimination Method
Week 16	**Final Exam**

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	George B. Thomas and Ross L. Finney, "Calculus and Analytic Geometry, Addison- Wesley	Yes

Recommended Texts	Thomas Calculus, by George B.Thomas,Jr,Elevnth Edition Media Upgrade 2008 Calculus Early Transcendental (Sixth Edition) James Stewart	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	مقبول بقرار	(45-49)	More work required but credit awarded
	F – Fail	راسب	(0-44)	Considerable amount of work required
Note:				

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

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information

معلومات المادة الدراسية				
Module Title	**Electrical Engineering Fundamentals II**		**Module Delivery**	
Module Type	Core		☒ **Theory**	
Module Code	**COE 102**		☐ **Lecture** ☒ **Lab**	
ECTS Credits	**8**		☒ **Tutorial** ☐ **Practical**	
SWL (hr/sem)	**200**		☐ **Seminar**	
Module Level	UGI	**Semester of Delivery**		2
Administering Department	BSc - COMM	**College**	Type College Code	
Module Leader	Name:	**e-mail**	E-mail:	
Module Leader's Acad. Title		**Module Leader's Qualification**		
Module Tutor	Name (if available)	**e-mail**	E-mail	
Peer Reviewer Name	Name	**e-mail**	E-mail	
Scientific Committee Approval Date	12/06/2023	**Version Number**	1.0	

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

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Objectives	17. This course deals with the basic concept of AC electrical circuits.

أهداف المادة الدراسية	18. To understand ac voltage and current from a given circuit. 19. To understand Root Mean-Square (R.M.S.) & Average Value 20. To understand ac power Average power, Reactive power, Complex power. 21. To analysis the RL, RC, RLC circuit analysis 22. To perform mesh and Nodal analysis in AC circuit. 23. To develop problem solving skills and understanding of circuit theory through the application of techniques.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	22. Recognize advantages of use alternating current. 23. Recognize why using Sine Waveform 24. Define inductors and capacitors. 25. How generation of alternating voltages and currents. 26. Recognize Phasor representation of AC quantities. 27. Define Ohm's Law in AC. Circuits. 28. Identify the basic circuit elements and their applications. 29. Explain the two Kirchoff's laws used in circuit analysis. 30. Discuss the Sinusoidal Steady-State Analysis.
Indicative Contents المحتويات الإرشادية	Indicative content includes the following. **Part A - A.C. Fundamentals** Introduction, Sinusoids, Phasors, Phasor Relationships for Circuit Elements, Root Mean-Square (R.M.S.) & Average Values, Impedance and Admittance, [18 hrs] **Part B - A.C Circuit** Introduction, Capacitors, Series and Parallel Capacitors, Inductors, Series and Parallel Inductors, Series A.C. circuits, Parallel A.C. Circuits, Kirchhoff's Laws in the Frequency Domain, Impedance Combinations. [15 hrs] **Part C - Sinusoidal Steady-State Analysis** Nodal Analysis, Nodal Analysis with Voltage Sources, Mesh Analysis, Mesh Analysis with Current Sources, Superposition Theorem, Thevenin and Norton Equivalent Circuits [24 hrs] **Part D - Frequency Response** Series Resonance, Parallel Resonance, [6 hrs] Revision problem classes [6 hrs]

Learning and Teaching Strategies
استراتيجيات التعلم والتعليم

Strategies	**1. Behavior management** Behavior management strategies foster an atmosphere of mutual respect, reduce disruptive behavior and ensure students have an equal opportunity to fulfill their potential in the classroom. It's crucial to provide them with both a positive and productive learning environment. Examples include establishing a reward system with an interactive chart where students move up or down depending on their performance and behavior in class. **2. Blended learning** With a blended learning teaching strategy, technology is incorporated with traditional learning. This allows students to work at their own pace, research their ideas and become more physically engaged during lessons. Examples include providing interactive tablets or whiteboards with engaging activities and posting classwork online for easier access. **3. Cooperative learning** Group work is a cooperative learning strategy that allows students with various learning levels to work together. By encouraging them to express their own ideas and listen to others' ideas as a group, you help students develop communication and critical thinking skills. Examples include solving math puzzles together, performing skits as a team or working on group presentations. **4. Formative assessment** A formative assessment is used periodically to monitor student learning incrementally. This can more effectively measure the process of learning as opposed to end-of-unit tests and can help you to improve your teaching methods throughout the year. Examples of this teaching strategy include self-evaluation exercises and summarizing a topic in multiple ways. **5. Student-led teaching** The student-led teaching strategy lets students become the teacher. In a classroom with learners at different levels, you can better engage those learning faster by showing them how to teach and give feedback to their peers. They may team-teach or work in groups to teach a new topic. Examples include letting a student teach an entire lesson or having advanced writers lead a peer-editing session as well as provide constructive criticism.

Student Workload (SWL)			
الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	124	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	8
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	76	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	5.1
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	**200**		

Module Evaluation					
تقييم المادة الدراسية					
		Time/Number	**Weight (Marks)**	**Week Due**	**Relevant Learning Outcome**
Formative assessment	**Quizzes**	2	10% (10)	5 and 12	LO #1, #4 and #8, #11
	Assignments	2	10% (10)	3 and 13	LO #3, #4 and #10, #14
	Projects / Lab.	1	10% (10)	Continuous	All
	Report	1	10% (10)	14	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: AC Circuits, A.C. Fundamentals, Types of waveforms
Week 2	● Definition of: Waveform, Instantaneous value, Cycle, Time period, Frequency, Amplitude, Peak-to-peak value, Phase, Phase angle, Phase difference, Angular Frequency
Week 3	● Root-Mean-Square (R.M.S.) & Average Values
Week 4	● Capacitors, Series and Parallel Capacitors ● Inductors, Series and Parallel Inductors
Week 5	● A.C. Through Resistance, Inductance and Capacitances
Week 6	● Series A.C. circuits
Week 7	● Parallel A.C. circuits: Vector or Phasor Method, Admittance Method (Y), Complex or Phasor Algebra
Week 8	**Mid-term Exam**
Week 9	● Kirchhoff's Laws in the Frequency Domain ● Impedance Combinations ● Star-to-Delta transformations
Week 10	● Sinusoidal Steady-State Analysis: Nodal Analysis, Mesh Analysis
Week 11	● Sinusoidal Steady-State Analysis: Mesh Analysis
Week 12	● Circuit Theorems: Superposition, Source Transformation
Week 13	● Circuit Theorems: Thevenin and Norton Equivalent Circuits
Week 14	● AC Power Analysis: Power Triangle, Power Factor, Complex Power
Week 15	● Frequency Response: Series Resonance, Parallel Resonance
Week 16	**Preparatory week before the final Exam**

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر
Material Covered

Week 1	Lab 1: A.C. Measurement Instruments
Week 2	Lab 2: Introduction to Oscilloscope
Week 3	Lab 3: Inductors
Week 4	Lab 4: Capacitors
Week 5	Lab 5: Ohm's Law in A.C. Circuits
Week 6	Lab 6: Series and Parallel Combinations
Week 7	Lab 7: Star-Delta Transformations
Week 8	Lab 8: Kirchhoff's Laws in the Frequency Domain
Week 9	Lab 9: Superposition theorems
Week 10	Lab 10: Thevenin's theorems
Week 11	Lab 11: Norton's theorems
Week 12	Lab 12: Power in AC circuit
Week 13	Lab 13: Series Resonance
Week 14	Lab 14: Parallel Resonance
Week 15	**Final Exam**

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	• Theraja, B. L. **A Textbook of Electrical Technology-Volume I (Basic Electrical Engineering)**. Vol. 1. S. Chand Publishing, 2005. • C.K. Alexander and M.N.O Sadiku, **Fundamentals of Electric Circuits**, McGraw-Hill Education, Fifth Edition, 2013	Yes

Recommended Texts	● Allan H. Robbins and Wilhelm C. Miller, **Circuit analysis: Theory and practice**, Cengage Learning, Fifth Edition, 2013. ● Nilsson, James William, **Electric circuits**, Pearson Education India, 2008.	No
Websites	https://www.coursera.org/browse/physical-science-and-engineering/electrical-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
	E - Sufficient	مقبول	50 - 59	Work meets minimum criteria
Fail Group (0 – 49)	**FX** – Fail	راسب (قيد المعالجة)	(45-49)	More work required but credit awarded
	F – Fail	راسب	(0-44)	Considerable amount of work required

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

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية				
Module Title	**Electronic Physics**		**Module Delivery**	
Module Type	**Core**		☒ Theory	
Module Code	**COE104**		☐ Lecture ☐ Lab	
ECTS Credits	**6**		☒ L Tutorial	
SWL (hr/sem)	**150**		☐ Practical ☐ Seminar	
Module Level	UGI	**Semester of Delivery**		2
Administering Department	BSc - COMM	**College**	College of Engineering	
Module Leader		**e-mail**		

Module Leader's Acad. Title			Module Leader's Qualification		
Module Tutor	Name (if available)		e-mail	E-mail	
Peer Reviewer Name	Name		e-mail	E-mail	
Scientific Committee Approval Date	15/06/2023		Version Number	1.0	

Relation with other Modules
العلاقة مع المواد الدراسية الأخرى

Prerequisite module	None	Semester	
Co-requisites module	None	Semester	

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

Module Objectives أهداف المـادة الدراسية	1- During the school year, the student learns an idea about the atomic structure, energy levels, and conductivity of minerals 2- The student will be introduced to semiconductors and diodes, their types and applications in the field of communication science, and an understanding of electronic circuits and the most important electronic elements included in the designs of these circuits. 3- The study material aims to develop the student's mind and enable him to visualize the transmission of information and the foundations of establishing various electrical circuits. 4- Teaching this subject is the consolidation of the theoretical principles and foundations that depend on the creation of any electronic electrical circuit and its absolute understanding.

Module Learning Outcomes مخرجات التعلم للمادة الدراسية	This course is intended for teaching the basic principle of electronic physical for engineering students at the beginning graduate level. The course will have these important outcomes: (1) Understanding Energy Levels and Atomic Structure ; (2) Recognize how electricity works in electrical circuits. (3) List the various terms associated with electrical circuits. (4) Discuss the reaction and involvement of atoms in electric circuits. (5) Describe electrical conductivity, charge, and current. (6) Define Ohm's law. (7) Learn and understand the basics of transmitting electromagnetic signals through different mediums (8) Learn and understand the basics of creating electrical waves (9) Understanding the operating principle of Semiconductor , P-N Junction (10) the students will learn Rectifiers ,and its types (11) Explain the diode Circuit Applications and other Types of Semiconductor Diodes; such as zener diodes voltage regulators , clipping circuits , clamping circuits and wave form generation , (12) Understanding the waveform change of diode clipping and clamping circuits and Calculate and explain DC current-voltage behaviour of diodes and BJTs
Indicative Contents المحتويات الإرشادية	**Part A -** The atom models , wave nature of light , dual nature of matter, energy – band theory of metals , insulators and Semiconductors and explain the influence of excess minority carrier recombination of the performance of the devices.(7 hrs) **Part B-** p-n junction in equilibrium , current-voltage characteristics , charge control decryption of a diode transition and diffusion capacitance , diode switching Times, diode models, small-signal model and load line concept .(12 hrs) **Part c-,** the students will learn Rectifiers , zener diodes voltage regulators , clipping circuits , clamping circuits and wave form generation **,**Varactor diode, tunnel diode, photodiode and photovoltaic (solar)cell, Light Emitting diode, principle and operation of semiconductor laser, metal Electronic Palasisics semiconductor diode. On the last objective explain the waveform change of diode clipping and clamping circuits and the function of each one.(10 hrs)
Learning and Teaching Strategies استراتيجيات التعلم والتعليم	

Strategies	1-Encourage the student to think about ways of generating the electromagnetic wave 2- Encourage the student to think about the importance of the frequency and energy of the wave and the time periods. 3- 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 experiments involving some sampling activities that are interesting to the students. 4- Urge the student to think about the factors affecting wave transmission in the media. 5- Enable students to link theories to the practical reality of electrical circuits. 6- Enable students to pass professional exams organized by local or international bodies. 7- Enabling students to continue self-development after graduation. 8- Setting up special seminars for students for the purpose of self-development of their personalities.

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	4.8
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)	2 and 12	LO #1, #3 ,#5, #6,, 9, #10, #11,12
	Assignments	2	10% (10)	2 and 12	LO #9, #10 and #11, #12
	Projects / Lab.	1	10% (10)	Continuous	All
	Report	1	10% (10)	13	LO #1, #9 and #10,11
Summative assessment	**Midterm Exam**	2hr	10% (10)	10	LO #1 - #10
	Final Exam	3hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)
المنهاج الاسبوعي النظري

	Material Covered
Week 1	**The models of atoms** :Explain the models of atoms and the mathematical equations of each model
Week 2	**Dual nature of matter**: Studying the dual nature of light and their mathematical relations, especially electromagnetic waves
Week 3	**Energy-band theory of metals Insulators and Semiconductors**: The theory of energy bands in conductors, insulators and semiconductors and the difference between them
Week 4	**Internal structure of materials cell packing:** Internal arrangement of various materials Metals, insulators and semiconductors
Week 5	**Brags law and x-ray diffraction** : The importance of Braque's law in the study of x-ray diffraction
Week 6	**electronic ballistics, Hall effect electronic ballistics**, Hall effect: The effect of electric and magnetic fields on electron movement and the Hall effect
Week 7	**Mobility and conduction ,energy distribution of electro**ns: Mobility, conductivity and energy distribution study of semiconductors

Week 8	**Diffusion and drift motion and Carrier life time**: Explanation of the phenomena of diffusion and drift
Week 9	**semiconductors materials**: Fermi-level in semiconductor: Semiconductor materials and Fermi level study of these materials and Study the types of semiconductors and the difference between them
Week 10	**p-n junction in equilibrium, current-voltage characteristics**: Studying the P-N junction and its voltage and current characteristics
Week 11	**Small-signal model and load line concept**: Studying the model of the minimum signal and the concept of the load line
Week 12	**Rectifiers and the types of rectifiers** : Study the rectifier and its types
Week 13	**Types of Diodes:** study the types of diodes used in electrical circuits, especially communication circuits, and the characteristics of each of them
Week 14	**Clipping circuits and wave form generation:** Study clipping circles and clamping circles, And configure the output waveform through circuit applications
Week 15	**Transistor biasing PNP, NPN, FET**: A study of the types of transistor bias PNP, NPN, FET
Week 16	**Preparatory week before the final Exam**

Learning and Teaching Resources **مصادر التعلم والتدريس**		
	Text	**Available in the Library?**
Required Texts	Electrical and magnetic properties of materials Electrical and magnetic properties of materials	Yes
Recommended Texts	1. M.S. Tyagi, Introduction to Semiconductor Materials and Devices, Wiley & Sons 2. S.M. Sze, Semiconductor Devices, Wiley & Sons	No
Websites	https://www.coursera.org/browse/physical-science-and-engineering/phusical electronics	

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

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

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية			
Module Title	C++ Programming	**Module Delivery**	
Module Type	Core	☒ **Theory** ☐ **Lecture** ☒ **Lab** ☐ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	**COE 105**		
ECTS Credits	**6**		
SWL (hr/sem)	125		
Module Level	UGI	**Semester of Delivery**	2
Administering Department	BSc - COMM	**College**	College of Engineering
Module Leader		**e-mail**	
Module Leader's Acad. Title		**Module Leader's Qualification**	
Module Tutor	Name (if available)	**e-mail**	E-mail
Peer Reviewer Name		**e-mail**	
Scientific Committee Approval Date	13/06/2023	**Version Number**	1.0

Relation with other Modules العلاقة مع المواد الدراسية الأخرى

Ministry of Higher Education and Scientific Research – Iraq University College Department of Communications Engineering		

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 المـادة الدراسية	Upon completion of this course, the student will be able to: 5. Understand computers and classify programming languages . 6. Write simple C++ program. 7. Learn data types, variables, arithmetic operators, assignment and input statements. 8. Learn relational operators and logical expressions. 9. Using selection in program like if/if…else ,block statements , switch structures. 10. Develop executable programs by using repetition control structures: While Looping, Do…while Looping, For Looping, Break and continue Statements Define and use functions in C++ program. 11. Learn Enumeration type with Functions 12. Learn how to define String type with string Operations 13. Learn define and use arrays and strings 14. Define pointer data types , Address of Operator (&) ,Pointer Variables 15. Perform simple file I/O streams.
Module Learning Outcomes مخرجات التعلم للمـادة الدراسية	7. Recognize computer system and programming languages . 8. Build simple program by using different data types. 9. Define the relational operators and logical expressions. 10. Adding new abilities to program by using selection control structures. 11. Applying repetition control structures in programs. 12. Perform , Break and continue Statements. 13. Recognize functions in C++ program and their types and how to use them in program 14. Define the Enumeration type with Functions 15. Identify String type with string Operations

	16. Using arrays with their types in programs and strings with functions. 17. Applying pointer data types and classes. 18. Apply recursion in functions 19. Perform simple file I/O streams
Indicative Contents المحتويات الإرشادية	Introduction to computers and Classification of programming languages (1 hours), Introduction to problem solving (3 hours), Computers and Programming Languages (3 hours), Processing a C++ Program (3 hours). Basics of a C++ Program, Data Types, Variables, Arithmetic Operators (3 hours) , Assignment and Input Statements (3 hours). Input / Output, I/O Streams (3 hours), Predefined Functions, Output Formatting (3 hours), Control Structures I (Selection): Relational Operators, Logical Expressions (3 hours), If/If…else, Block Statements (3 hours), Switch Structures (3 hours),Control Structures I (Repetition) : While Looping, Do…while Looping (3 hours), For Looping (3 hours), Break and continue Statements (3 hours), Preparatory week before the final Exam User-Defined Functions (6 hours), User-defined simple data types and the string type (6 hours), Arrays and strings (6 hours), Pointers, Classes (3 hours), File Input/Output (3 hours).
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, homework's and examples. Practical examples help students to understand the course material.

Student Workload (SWL)

الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا

Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	64	Structured SWL (h/w) الحمل الدراسي المنتظم للطالب أسبوعيا	4
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	61	Unstructured SWL (h/w) الحمل الدراسي غير المنتظم للطالب أسبوعيا	4.1
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)	8 and 13	LO #1 to #4 and #6 to #8
	Assignments	3	10% (10)	4, 7 and 11	LO #2, #3, #4, #5 and #7,#8,#9
	Projects / Lab.	1	20% (20)	Continuous	All
	Report	0			
Summative assessment	Midterm Exam	2 hr	10% (10)	9	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	History of C++ Language - Typical C++ Development Environment
Week 2	The main structure of C++ programs- OOP Classes declaration
Week 3	Data types - Variable declaration - Constant declaration - Simple Input/Output, I/O Streams

Week 4	Arithmetic Operators - Relational Operators - Logical Operators - Assignment Operators
Week 5	Increment & Decrement Operators -Bitwise Operators - Misc Operators.
Week 6	Conditional (Selection) Statement: if statement - if...else statements
Week 7	Nested if statements - Switch statement
Week 8	Iteration (Repetition) statements: while statement - do/while statement
Week 9	for statement - Nested for statement- Break and continue Statements
Week 10	**Mid-term Exam**
Week 11	Array: Array declaration - Single dimensional array - Multiple –subscripted Arrays
Week 12	String (1D array of characters) - Array of strings (2D array of characters).
Week 13	Functions: Function Prototypes (declaration) - Calling Function - Function Definition
Week 14	Passing Arguments functions.
Week 15	Pointers: Advantage of using pointers - pointers in array.
Week 16	**Preparatory week before the final Exam**

Delivery Plan (Weekly Lab. Syllabus)	
المنهاج الاسبوعي للمختبر	
	Material Covered
Week 1	Review of typical C++ Environment and program instillation package
Week 2	Understand structure of C++ programs- OOP Classes declaration
Week 3	executing examples of Data types - Variable declaration - Constant declaration - Simple Input/Output, I/O Streams
Week 4	Applying of Arithmetic Operators - Relational Operators - Logical Operators - Assignment Operators
Week 5	Applying of Increment & Decrement Operators -Bitwise Operators - Misc Operators.
Week 6	Using Conditional (Selection) Statement: if statement - if...else statements

Week 7	Utilizing Nested if statements - Switch statement
Week 8	Appling Iteration (Repetition) statements: while statement - do/while statement
Week 9	Using for statement - Nested for statement- Break and continue Statements
Week 10	Applying Array: Array declaration - Single dimensional array
Week 11	Executing of Multiple –subscripted Arrays
Week 12	Test String - Array of strings.
Week 13	Understanding Functions: Function Prototypes (declaration) - Calling Function - Function Definition
Week 14	Applying Passing Arguments functions.
Week 15	Understanding Pointers: Advantage of using pointers - pointers in array.

Learning and Teaching Resources		
مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	1. C++ Programming: From Problem Analysis to Program Design, 6th Edition; D.S. Malik	Yes
Recommended Texts	• Programming and problem solving with C++: comprehensive sixth edition, Nell Dale and Chip Weems. • Computer Science Textbook class XI, First Edition, 2019. • C++ Primer Plus, Sixth Edition	No
Websites	▪ http://www.cplusplus.com/doc/tutorial/	

Grading Scheme
مخطط الدرجات

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

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

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information		
معلومات المادة الدراسية		
Module Title	WORKSHOPS SKILLS	**Module Delivery**
Module Type	BASIC	☐Theory ☐ Lecture ☐Lab ☐Tutorial
Module Code	COE 107	

ECTS Credits	3	☒ **Practical**
SWL (hr/sem)	75	☐ **Seminar**

Module Level	UGI	**Semester of Delivery**		2
Administering Department	BSc - COMM	**College**	Collage of Engineering	
Module Leader		**e-mail**		
Module Leader's Acad. Title		**Module Leader's Qualification**		
Module Tutor	Name (if available)	**e-mail**	E-mail	
Peer Reviewer Name	Name	**e-mail**	E-mail	
Scientific Committee Approval Date	13/06/2023	**Version Number**	1.0	

Relation with other Modules
العلاقة مع المواد الدراسية الأخرى

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

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

| **Module Objectives**
أهداف المادة الدراسية | **أـ الاهداف المعرفية**
1- أفهام وتعليم الطالب مفاهيم ومبادى مادة الورش الهندسية العامة .
2- تمكين الطلبة من الحصول على المعرفة والفهم الكامل لكافة مهارات الورش الهندسية .
3- افهام الطالب وتعريفه بكافة المهارات نظريا وعمليا وتعريفه بكافة أجزاء الماكنة التي يتم تطبيق المهارة بالإضافة الى التطبيق العملي على الماكنة لكل طالب ولكافة المهارات.
4- تمكين الطلبة من الحصول على المعرفة والفهم لكل أجزاء الماكنة وفائدة كل جزء .
5- تمكين الطلبة من الحصول على المعرفة والفهم على تشخيص انواع الاعمال التي تنجزها كل ماكنة وطريقة العمل عليها .

ب – الأهداف المهاراتية الخاصة بالبرنامج
1 - شرح المهارات بالتفصيل وتطبيقها على الماكنة عمليا والتاكيد على الطلبة بضرورة الالتزام بقواعد السلامة المهنية. |

71

	2 - تزودهم بمعلومات وطرق حل المشاكل العملية المتعلقة بجميع المهارات. 3 - يتم عرض مواضيع كافة المهارات نظريا. 4 - يتم التركيز على العملي في المهارات وضرورة مشاركة الطالب في العملي.
Module Learning Outcomes **مخرجات التعلم للمادة الدراسية**	**مخرجات التعلم للمادة الدراسية** 1- بناء الطالب علميا وعمليا وتأهيله للعمل في مجال تقنيات الهندسة. 2- بناء وإعداد الطالب نفسيا ليقوم بدوره كمهندس يعتمد عليه في هذا المجال. 3- بناء طلبة قادرين على التنافس مع مهندسين اخرين لفرص العمل و الحصول على المقاعد المطلوبة في اكمال دراسات عليا. 4- قابلية التقديم لاختبارات خارجية من قبل هيئات محلية أو أقليمية أو عالمية لغرض اكمال الدراسة او التعيين. 5- حث الطالب على الإبداع والتفكير في مشاريع التخصص ومواكبة التطور الحاصل في هذا المجال. 6- تزويد الطلبة بمهارات علمية وعملية ومهارات ذاتية تمكنه من حل المشاكل العملية والتعامل معها بمفاهيم علمية.
Indicative Contents **المحتويات الإرشادية**	**المحتويات الإرشادية** **اولا-: السلامة المهنية.** يتم تعريف الطالب بقواعد وإجراءات السلامة المهنية لجميع المهارات وجميع الأقسام لاجل سلامة المستخدم من (مخاطر التعامل مع هذه الأدوات والمكائن (3 ساعات). **ثانيا-: مهارة القياسات.** شرح نظري لمهارة القياسات وتعريف الطالب بجميع العدد والأدوات المستخدمة في عملية القياس بالتفصيل ومن ثم يتم التطبيق العملي لمهارة القياسات حيث يقوم كل طالب باجراء عملية القياس لمختلف الأدوات إضافة الى تسليم ومناقشة التقارير الخاصة بالمهارة (6ساعات). **ثالثا-: مهارة اللحام.** شرح نظري لمهارة اللحام وتعريف الطالب بجميع العدد والأدوات المستخدمة في عملية اللحام وشرع طرق اللحام بالتفصيل إضافة الى التطبيق العملي حيث يقوم كل طالب بعملية اللحام وذلك لاكتساب الخبرة العملية إضافة الى تسليم ومناقشة التقارير الخاصة بالمهارة (6ساعات). **رابعا-: مهارة البرادة.** شرح نظري لمهارة البرادة وتعريف الطالب بجميع العدد والأدوات المستخدمة في عملية البرادة وشرع طرق البرادة بالتفصيل إضافة الى التطبيق العملي حيث يقوم كل طالب بعملية البرادة يدويا وذلك لاكتساب الخبرة العملية إضافة الى تسليم ومناقشة التقارير الخاصة بالمهارة (6ساعات). **خامسا-: مهارة السباكة.** شرح نظري لمهارة السباكة وتعريف الطالب بجميع العدد والأدوات المستخدمة في عملية السباكة وشرع طرق السباكة بالتفصيل إضافة الى التطبيق العملي حيث يقوم كل طالب بعملية السباكة يدويا وذلك لاكتساب الخبرة العملية إضافة الى تسليم ومناقشة التقارير الخاصة بالمهارة (6ساعات).

	سادسا:- مهارة التفريز .
	شرح نظري لمهارة التفريز وتعريف الطالب بجميع أجزاء ماكنة التفريز اضافة الى العدد والأدوات المستخدمة في عملية التفريز وشرع طرق التفريز بالتفصيل إضافة الى التطبيق العملي حيث يقوم كل طالب بالعمل على ماكنة التفريز وتنفيذ التمارين المختلفةعلى الماكنة وذلك من اجل اكتساب الخبرة العملية إضافة الى تسليم ومناقشة التقارير الخاصة بالمهارة (6ساعات).
	سابعا:- مهارة التجليخ .
	شرح نظري لمهارة التجليخ وتعريف الطالب بجميع أجزاء ماكنة التجليخ اضافة الى العدد والأدوات المستخدمة في عملية التجليخ وشرع طرق التفريز بالتفصيل إضافة الى التطبيق العملي حيث يقوم كل طالب بالعمل على ماكنة التفريز وتنفيذ التمارين المختلفةعلى الماكنة وذلك من اجل اكتساب الخبرة العملية إضافة الى تسليم ومناقشة التقارير الخاصة بالمهارة (6ساعات).
	ثامنا:- مهارة الخراطة .
	شرح نظري لمهارة الخراطة وتعريف الطالب بجميع أجزاء ماكنة الخراطة اضافة الى العدد والأدوات المستخدمة في عملية الخراطة وشرع طرق الخراطة بالتفصيل إضافة الى التطبيق العملي حيث يقوم كل طالب بالعمل على ماكنة الخراظة وتنفيذ التمارين المختلفةعلى الماكنة وذلك من اجل اكتساب الخبرة العملية إضافة الى تسليم ومناقشة التقارير الخاصة بالمهارة (6ساعات).
	تاسعا:- مهارة التأسيسات الكهربائية .
	شرح نظري لمهارة التأسيسات الكهربائية وتعريف الطالب بجميع العدد والأدوات المستخدمة في عمليات التأسيسات الكهربائية وشرع طرق التأسيسات الكهربائي إضافة الى التطبيق العملي حيث يقوم كل طالب بالعمل على ربط الدوائر الكهربائية المختلفة وذلك من اجل اكتساب الخبرة العملية إضافة الى تسليم ومناقشة التقارير الخاصة بالمهارة (6ساعات).

Learning and Teaching Strategies	
استراتيجيات التعلم والتعليم	
Strategies	* امتحانات يومية باسئلة عملية وعلمية. *درجات مشاركة لاسئلة المنافسة الصعبة بين الطلاب . * وضع درجات للواجبات البيتية والتقاريرالمكلفة بهم. *امتحانات فصلية للمنهج الدراسي اضافة الى امتحان نصف السنة والامتحان النهائي.

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	1.8
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**	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 والعملي

	Material Covered
Week 1	شرح نظري وعملي لمبادئ السلامة المهنية وبيان خطورة عدم الالتزام بها على حياة الطالب.
Week 2	شرح نظري لمهارة القياسات وتعريف جميع العدد والأدوات المستخدمة في القياس.

Week 3	.تطبيق عملي لمهارة القياسات
Week 4	.شرح نظري لمهارة اللحام وتعريف جميع العدد والأدوات المستخدمة في عملية اللحام
Week 5	.تطبيق عملي لمهارة اللحام
Week 6	.شرح نظري لمهارة البرادة وتعريف جميع العدد والأدوات المستخدمة في عملية البرادة
Week 7	.تطبيق عملي لمهارة البرادة
Week 8	.شرح نظري لمهارة السباكة وتعريف جميع أجزاء فرن السباكة
Week 9	.تطبيق عملي لمهارة السباكة
Week 10	.شرح نظري لمهارة التفريز وتعريف الطالب بجميع أجزاء ماكنة التفريز
Week 11	.تطبيق عملي لمهارة التفريز
Week 12	.شرح نظري لمهارة التجليخ وتعريف الطالب بجميع أجزاء ماكنة التجليخ
Week 13	.تطبيق عملي لمهارة التجليخ
Week 14	.شرح نظري لمهارة التاسيسات الكهربائية مع التطبيق العملي
Week 15	.شرح نظري لمهارة الخراطة وتعريف الطالب بجميع أجزاء ماكنة الخراطة
Week 16	.تطبيق عملي لمهارة الخراطة

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**

Required Texts	MECH6014 - Mechanical Workshop Practice Tarafdar, J.C. and Raliya, R., "The Nanotechnology", Published by Scientific Publisher (SP), India, (2012).	Yes
Recommended Texts	MECH6028 - Mechanical Workshop Practice 2 - CIT Modules	No
Websites	https://www.coursera.org/browse/workshop-and-engineering/workshop -	

Grading Scheme مخطط الدرجات				
Group	Grade	التقدير	Marks %	Definition
Success Group (50 - 100)	A - Excellent	امتياز	90 - 100	Outstanding Performance
	B - Very Good	جيد جدا	80 - 89	Above average with some errors
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	E - Sufficient	مقبول	50 - 59	Work meets minimum criteria
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	F – Fail	راسب	(0-44)	Considerable amount of work required

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MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information
معلومات المادة الدراسية

Module Title	حقوق الانسان والديمقراطية	Module Delivery
Module Type	B	☒ Theory
Module Code	U101	☐ Lecture
ECTS Credits	2	☐ Lab
		☐ Tutorial
SWL (hr/sem)	30	☐ Practical
		☐ Seminar

Module Level	UGI	Semester of Delivery	2
Administering Department	All Departments	College	College of Engineering
Module Leader		e-mail	
Module Leader's Acad. Title		Module Leader's Qualification	
Module Tutor		e-mail	
Peer Reviewer Name		e-mail	
Scientific Committee Approval Date	12/06/2023	Version Number	

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- يتعلم الطالب خلال السنه الدراسية اساسيات حقوق الانسان والديمقراطية ما حقوقه وكيف يدافع عنها بالطرق القانونية وماهي ضماناتها الداخلية والدولية. 2-استحصال المعرفة في مجال الديمقراطية وأنواع أنظمتها واثرها على حقوق الانسان . 3-تنمية شخصية الطالب وتعزيز وعيهم في الأنظمة السياسية الديمقراطية وتفاصيلها وكيفية تطبيقها على ارض الواقع واهمية ان يكون فعال في المجتمع من خلال احترامه لحقوق الاخرين ومعرفه ان الحقوق والحريات تنتهي عند بداية حقوقهم وحرياتهم ويؤدي واجباته بدلا من اكتساب الحقوق فقط. 4- تعزيز ثقافة السلام القائمة على العدل والمساواة.
Module Learning Outcomes **مخرجات التعلم للمادة الدراسية**	1-تمكين الطالب من معرفة اساسيات الدفاع عن حقوقه وحقوق الاخرين بعد معرفتها ومعرفة أهميتها له وللمجتمع بصورة عامة وأيضا معرفه كل شخص حدود حقوقه وحريته . ٢- تمكين الطالب في المشاركة السياسية وذلك من خلال معرفته بأهمية مشاركته في الانتخابات وتأثير هذه المشاركة على سير الانتخابات وتشكيل السلطة فيما بعد.

	٣ـ معرفه الطالب ضمانات حقوقه وحرياته وماهي مصادرها.
	٤ — معرفة الفرق بين الحقوق والحريات.
	٥ـ تمكين الطالب من معرفة ماهي المفهوم العلمي للديمقراطية وماهي جذورها وانواعها واشكالها.
	٦ـ يتعلم الطالب كيف يؤثر النظام الديمقراطي على حقوق الانسان وماهي العلاقة بينها.
	٧ — ادراك الطالب ضرورة ان يكون مواطن فعال في المجتمع ايضاً معرفه شروط الناخب وشروط المرشح للانتخابات.
	٨ـ معرفه أنظمة الانتخابات وايهما افضل.
	٩ — فهم الطالب للقانون الدولي لحقوق الانسان وايضاً معرفة مختصرة عن المنظمات الدولية والية عملها كالأمم المتحدة ومنظمة الصليب الأحمر وغيرها.
Indicative Contents **المحتويات الإرشادية**	1 الجزء الأول -تعريف حقوق الانسان وحقوق الانسان في الحضارات القديمة.
	(تعريف الحق وتعريف الانسان ومعرفة أهمية حقوق الانسان بالنسبة للإنسان والمجتمع أيضا دراسة حقوق الانسان في الحضارات كالحضارة المصرية والعراقية واليونانية والرومانية)(٤ساعات)
	الجزء الثاني معرف حقوق الانسان في الأديان السماوية واهمها الإسلام (٢ساعة)
	مصادر حقوق الانسان تتضمن (مصادر دولية كالإعلان العالمي لحقوق الانسان والعهدان الدوليان والمصادر الإقليمية التي تشمل الاتفاقيات الإقليمية كالاتفاقية الاوربية والأمريكية والدستور)(٢ساعة)
	ضمانات حقوق الانسان (كالضمانات الدستورية والقانونية)(٢ساعة)
	الاتفاقيات الدولية والإقليمية لحقوق الانسان (٢ساعة)
	الحريات العامة وانواعها والمقارنة فيما بينها (٢ساعة)

(مستقبل حقوق الانسان والعولمة وحقوق الانسان (٢ساعة

تعريف وتاريخ وأنواع الديمقراطية (دراسة تعريف ونشأة وتطور الديمقراطية مبادئها
وانواعها كالديمقراطية المباشرة وغير المباشرة والنظام الرئاسي والبرلماني)(٦ساعات
)

(تعريف الانتخاب وشروطه وأنواع النظم الانتخابية وتعريف المجلس النيابي (٦ساعات

(العلاقة بين الديمقراطية وحقوق الانسان (٢ساعة

Learning and Teaching Strategies

استراتيجيات التعلم والتعليم

Strategies	زيادة وعي الطالب بأهمية معرفه حقوقه وواجباته اتجاه المجتمع وعلاقة حقوق-1 الانسان بالنظام الديمقراطي ثقافة عامة في مجموعة من المجالات ومنها المجال القانوني و السياسي والاجتماعي-2 ورفع ثقة الطالب بنفسه من خلال ربط المادة النظرية بالواقع العملي

Student Workload (SWL)

الحمل الدراسي للطالب محسوب لـ ١٥ أسبوعا

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	1.1
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	15% (15)	5 , 7 and 10	LO #1, #2 #,3,and #6 #7#8
	Assignments	2	10% (10)	2 and 12	LO #3, #4 and #6, #7
	Projects / Lab.				
	Report	1	15% (15)	13	LO #5, #8 and #9
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	محاضرة تعريفية عن المادة واهميتها ..
Week 2	تعريف الحق والانسان وحقوق الانسان واهمية حقوق الانسان ,حقوق الانسان في الدين الإسلامي والحضارات القديمة.
Week 3	مصادر حقوق الانسان الدولية والإقليمية والمحلية.
Week 4	ضمانات حقوق الانسان الدستورية والقانونية وضمانات حقوق الانسان على الصعيد الدولي.
Week5	ضمانات حقوق الانسان في الإسلام

Week 6	دور المنضمات الإقليمية في حماية حقوق الانسان.
Week 7	خصائص حقوق الانسان وتعريف الحريات العامة وانواعه والمقارنة بينها وبين الحقوق القانون الدولي لحقوق الانسان والقانون الدولي الإنساني ومنظمة الصليب الأحمر.
Week 8	مستقبل حقوق الانسان وسبل تطويرها .
Week 9	العولمة وحقوق الانسان .
Week 10	تعريف الديمقراطية وتطورها التاريخي ومبادئها . الديمقراطية بين العالمية والخصوصية . اشكال الديمقراطية / الديمقراطية المباشرة.
Week 11	الديمقراطية شبه المباشرة والديمقراطية التمثيلية / اركان النظام التمثيلي / اشكال النظام التمثيلي.
Week 12	المجلس النيابي وانواعه / الانتخاب وشروطه / هيئة الناخبين.
Week 13	تنظيم عملية الانتخاب / تحديد الدوائر الانتخابية / القوائم الانتخابية / المرشحون/ الحملة الانتخابية / التصويت .
Week 14	نظم الانتخابات.
Week 15	علاقة الديمقراطية بحقوق الانسان وكيفية التأثير والتأثر فيما بينها.
Week 16	**الامتحان النهائي**

Learning and Teaching Resources		
مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	حقوق الانسان والطفل والديمقراطية / تأليف ماهر صالح علاوي ورياض عزيز هادي وعلي عبد الرزاق محمد واخرون / العاتك / بيروت / ٢٠٠٩	نعم
Recommended Texts	عباس الدليمي / حقوق الانسان الفكر والممارسة فخري رشيد ،صلاح ياسين /المنظمات الدولية / العاتك لصناعة الكتاب / بغداد	لا

	عصام العطية / القانون الدولي العام / المكتبة القانونية /بغداد/2012	
Websites		

Grading Scheme مخطط الدرجات				
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Contact

Program Manager:
Abd Alriza Faiz/ Ph.D. in Computer Science / Assistant Prof.
Email: abd.alburghaidf@iuc.edu.iq
Mobile no.: +964 780 190 4044

Program Coordinator:

Mahmood A. Al-Shareeda / Ph.D. in Communication Engineering / Lecturer

Email: m.alshareeda@iuc.edu.lb

Mobile no.: +964 773 864 9816