MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information				
معلومات المادة الدراسية				
Module Title	**Computer**		**Module Delivery**	
Module Type	**Basic learning activities**		☐ **Theory**	
Module Code	CE101		☒ **Lecture**	
ECTS Credits	**3**		☒ **Lab**	
SWL (hr/sem)	**75**		☐ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Level	UG1		**Semester of Delivery**	1
Administering Department	Computer Eng.	**College**	College of Engineering	
Module Leader	Dr. Sura Ramzi Shareef	**e-mail**	sura.ramzishareef@uomsul.edu.iq	
Module Leader's Acad. Title	Lecturer	**Module Leader's Qualification**		Ph. d
Module Tutor	Sahar Khalid Ahmed	**e-mail**	sahar.ahmed@uomosul.edu.iq	
Peer Reviewer Name		**e-mail**		
Scientific Committee Approval Date		**Version Number**	1.0	

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

	Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية
Module Aims أهداف المادة الدراسية	Computing Fundamentals and Office applications will be covered during this course. Computing Fundamentals focuses on hardware and software and how they work together. The course includes activities and exercises that guide students to explore the Windows operating system, change settings, and customize the desktop. Students also learn how to manage files and folders. On the other hand, the Key Applications focuses on two of the Microsoft Office applications: Word and Excel.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	CLO 1: Understand the fundamental concepts of computer hardware and software. Demonstrate knowledge of computer components and their functions. Explain the interaction between software and hardware in a computer system. Identify the key elements of an operating system and their roles. CLO 2: Utilize Windows operating system functionalities for effective file management and customization. Navigate and explore the Windows operating system interface. Manage files and folders efficiently, including copying, moving, and organizing files. Customize the Windows desktop and settings to meet personal preferences. CLO 3: Apply Microsoft Word essentials for document creation, editing, and formatting. Create and format documents using Microsoft Word. Edit and revise documents, including text formatting, paragraph alignment, and page layout. Utilize document templates and styles to enhance visual presentation. CLO 4: Utilize Microsoft Excel essentials for data organization, analysis, and charting. Create and manage worksheets using Microsoft Excel. Apply formulas and functions to perform calculations and manipulate data. Create charts and graphs to visually represent data trends and patterns. These Course Learning Outcomes (CLOs) outline the knowledge and skills that students are expected to acquire throughout the "Computer " course. By achieving these outcomes, students will develop a solid understanding of computer fundamentals, operating systems, file management, and key applications within Microsoft Office, enabling them to effectively utilize computing tools for everyday tasks.
Indicative Contents المحتويات الإرشادية	Computers and Operating System, Software and Hardware Interaction, Windows File Management, computer hardware, Exploring Microsoft Office,

	Getting Started with Word Essentials, Editing and Formatting Documents, Getting Started with Excel Essentials, Organizing and Enhancing Worksheets, Creating Formulas and Charting Data.

Learning and Teaching Strategies
استراتيجيات التعلم والتعليم

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

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

Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	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	1.9
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	5%(2.5)	7, 13	Lo# 1,2- Lo# 3,4
	Assignments	2	5%(2.5)	6, 11	Lo# 1,2-Lo# 3
	Lab	10	15%(1.5)	continue	all
	Report	1	5%(5)	14	LO# 1,2,3,4
Summative assessment	Midterm Exam	2hr	20%(20)	13	LO# 1,2,3,4
	Final Exam	3hr	50% (50)		All
Total assessment			100% (100 Marks)	15	

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

Delivery Plan (Weekly Lab. Syllabus)	
المنهاج الاسبوعي للمختبر	
	Material Covered
Week 1	Computers and Operating System
Week 2	Explore Windows account options, Windows Session Termination
Week 3	Software and Hardware Interaction, Microsoft Word Interactions, Windows Update
Week 4	File Explorer, folder navigation, File Explorer, view setting, Create File and Folders, move and copy files, Delete Files and Folders, Rename Files and Folders, Pin Folder to Start Screen, Create Shortcuts, Search Files and Folders, Restore the computer
Week 5	Starting Applications and Switching Between Applications, Exiting Applications, Navigating Application Windows, Using the Office User Interface, Customizing the Quick Access Toolbar, Opening a Document, Saving a Document, Getting Help

Week 6	Creating a New Document, Entering Text in a Document, Showing Characters and Using Click and Type, Changing the Document View, Changing the Zoom Settings, Using the Navigation Pane and Scrolling, Using the Keyboard.
Week 7	Selecting Text, Deleting and Inserting Characters, Undoing, Redoing, and Repeating, Copying and Moving Text, Finding Text, Replacing Text
Week 8 **Week9**	Using the Proofing Tools, Using the Thesaurus and Word Count Features, Applying Character Formats, Applying Paragraph Formats, Setting Tabs and Indents, Bullets and Numbers, Applying Document Formats, Using Format Painter
Week 10	Identifying the Parts of the Excel Screen, Navigating a Workbook, Changing the Workbook View and Magnification, Inserting Data, Using the AutoCorrect and AutoComplete Features
Week 11	Selecting Multiple Cells in the Worksheet, Inserting and Deleting Rows and Columns, Editing the Worksheet Data, Using the AutoFill Feature to Copy Data, Using the AutoFill Feature to Fill in a Series
Week 12	Exam
Week 13	Organizing and enhancing Worksheets
Week 14 **Week 15**	Creating Formulas and charting Data

	Learning and Teaching Resources	
	مصادر التعلم والتدريس	
	Text	**Available in the Library?**
Required Texts	2015 Computer Literacy BASICS: A Comprehensive Guide to IC3 Connie Morrison, Dolores Wells, Lisa Ruffolo Cengage Learning. ISBN: 128576658X	No
Recommended Texts	1. IC3 GS5 Certification Guide Using Windows 10 & Office 2016, Print ISBN: 978-1-55332-463-8 2. Windows 10 Step by Step, Second Edition, Joan Lambert, Published with the authorization of Microsoft Corporation Copyright © 2018 by Pearson Education, Inc.	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

<table>
<tr><td colspan="5" align="center">Module Information
معلومات المادة الدراسية</td></tr>
<tr><td>Module Title</td><td colspan="2" align="center">Electrical Circuits Analysis 1</td><td colspan="2">Module Delivery</td></tr>
<tr><td>Module Type</td><td colspan="2" align="center">Core</td><td colspan="2" rowspan="4">☒ Theory
☐ Lecture
☒ Lab
☒ Tutorial
☐ Practical
☐ Seminar</td></tr>
<tr><td>Module Code</td><td colspan="2" align="center">CO105</td></tr>
<tr><td>ECTS Credits</td><td colspan="2" align="center">7</td></tr>
<tr><td>SWL (hr/sem)</td><td colspan="2" align="center">175</td></tr>
<tr><td>Module Level</td><td>1</td><td>Semester of Delivery</td><td colspan="2">1</td></tr>
<tr><td>Administering Department</td><td>Computer Engineering Dept.</td><td>College</td><td colspan="2">Engineering</td></tr>
<tr><td>Module Leader</td><td>Ahmed Mamoon</td><td>e-mail</td><td colspan="2">ahmedalkababji72@uomosul.edu.iq</td></tr>
<tr><td>Module Leader's Acad. Title</td><td>Professor</td><td>Module Leader's Qualification</td><td colspan="2">Ph.D.</td></tr>
<tr><td>Module Tutor</td><td>Ban Aziz Asi</td><td>e-mail</td><td colspan="2">ban.alzaydi@uomosul.edu.iq</td></tr>
<tr><td>Peer Reviewer Name</td><td>Prof.Qutaiba I. Ali</td><td>e-mail</td><td colspan="2">Qutaibaali@uomosul.edu.iq</td></tr>
<tr><td>Scientific Committee Approval Date</td><td>01/06/2023</td><td>Version Number</td><td colspan="2">1.0</td></tr>
</table>

<table>
<tr><td colspan="4" align="center">Relation with other Modules
العلاقة مع المواد الدراسية الأخرى</td></tr>
<tr><td>Prerequisite module</td><td>None</td><td>Semester</td><td>-</td></tr>
<tr><td>Co-requisites module</td><td>None</td><td>Semester</td><td>-</td></tr>
</table>

Module Aims, Learning Outcomes and Indicative Contents	
أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Aims أهداف المادة الدراسية	1. To develop problem solving skills and understanding of circuit theory through the application of techniques. 2. To understand voltage, current and power from a given circuit. 3. This course deals with the basic concept of electrical circuits. 4. This is the basic subject for all electrical and electronic circuits. 5. To understand Kirchhoff's current and voltage Laws problems.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	1-CLO1: An ability to identify, analyze, and solve complex engineering problems according to principles of engineering, science, and mathematics. 2-CLO2: An ability to acquire and apply new knowledge and using appropriate learning strategies. 3-CLO3: An ability to participate and work professionally and ethically in different projects to function on multi-disciplinary teams. 4-CLO4: Demonstrate a thorough understanding of the fundamental theory and mathematical principles underlying Direct Current (DC) and Alternating Current (AC) electrical circuits. 5-CLO5: Apply Ohm's law and analyze series and parallel resistor circuits, including the ability to perform Y Δ transformations and analyze circuits with dependent and independent sources. 6-CLO6: Apply Kirchhoff's laws to analyze and solve complex electrical circuits, both in DC and AC settings. 7-CLO7: Understand the characteristics of AC signals, including concepts related to frequency, amplitude, phase, and waveform. 8-CLO8: Analyze AC circuits with capacitance and inductance, employing appropriate mathematical tools and techniques to calculate voltage, current, and impedance. These CLOs emphasize the mastery of foundational concepts, principles, and analytical techniques required for the analysis of electrical circuits, particularly in the context of DC and AC circuits. Through the achievement of these learning outcomes, students will develop a solid understanding of circuit analysis and be prepared to apply their knowledge in more advanced electrical engineering courses and practical engineering scenarios

	Indicative content includes the following.
	Part A - Circuit Theory
	DC circuits – Current and voltage definitions, Passive sign convention and circuit elements, Combining resistive elements in series and parallel. Kirchhoff's laws and Ohm's law. Anatomy of a circuit, Network reduction, Introduction to mesh and nodal analysis. [15 hrs]
	AC circuits I – Time dependent signals, average and RMS values. Capacitance and inductance, energy storage elements, simple AC steady-state sinusoidal analysis. [15 hrs]
Indicative Contents المحتويات الإرشادية	AC Circuits II - Phasor diagrams, definition of complex impedance, AC circuit analysis with complex numbers. [10 hrs]
	Revision problem classes [6 hrs]
	Part B - Analogue Electronics
	Fundamentals
	Resistive networks, voltage and current sources, current and voltage division. [15 hrs]
	Components and active devices – Components vs elements and circuit modeling, real and ideal elements. [7 hrs]

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

<table>
<tr><th colspan="4">Student Workload (SWL)
الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا</th></tr>
<tr><td>Structured SWL (h/sem)
الحمل الدراسي المنتظم للطالب خلال الفصل</td><td>108</td><td>Structured SWL (h/w)
الحمل الدراسي المنتظم للطالب أسبوعيا</td><td>7</td></tr>
<tr><td>Unstructured SWL (h/sem)
الحمل الدراسي غير المنتظم للطالب خلال الفصل</td><td>67</td><td>Unstructured SWL (h/w)
الحمل الدراسي غير المنتظم للطالب أسبوعيا</td><td>4</td></tr>
<tr><td>Total SWL (h/sem)
الحمل الدراسي الكلي للطالب خلال الفصل</td><td>175</td><td></td><td></td></tr>
</table>

<table>
<tr><th colspan="6">Module Evaluation
تقييم المادة الدراسية</th></tr>
<tr><td></td><td></td><td>Time/Number</td><td>Weight (Marks)</td><td>Week Due</td><td>Relevant Learning Outcome</td></tr>
<tr><td rowspan="4">Formative assessment</td><td>Quizzes</td><td>8</td><td>16% (16)</td><td>2,4,6,7,9,10,12,14</td><td>LO # 1,2,4-8</td></tr>
<tr><td>Assignments</td><td>2</td><td>10% (10)</td><td>2, 10</td><td>LO # 6,8</td></tr>
<tr><td>Projects / Lab.</td><td>1</td><td>10% (10)</td><td>Continuous</td><td>All</td></tr>
<tr><td>Report</td><td>1</td><td>4% (4)</td><td>10</td><td>LO # 8</td></tr>
<tr><td rowspan="2">Summative assessment</td><td>Midterm Exam</td><td>2 hr</td><td>10% (10)</td><td>8</td><td>LO # 1,2,4-8</td></tr>
<tr><td>Final Exam</td><td>3hr</td><td>50% (50)</td><td>15</td><td>LO # 1,2,4-8</td></tr>
<tr><td colspan="2">Total assessment</td><td></td><td>100% (100 Marks)</td><td></td><td></td></tr>
</table>

<table>
<tr><th colspan="2">Delivery Plan (Weekly Syllabus)
المنهاج الاسبوعي النظري</th></tr>
<tr><td></td><td>Material Covered</td></tr>
<tr><td></td><td></td></tr>
<tr><td>Week 1</td><td>Introduction : electrical materials, basic quantities[ch1]</td></tr>
<tr><td>Week 2</td><td>Introduction : electrical materials, basic quantities[ch1]+quiz</td></tr>
<tr><td>Week 3</td><td>Basic relation: Ohm's law depended and indented sources, series resistor circuits, Y Δ transformation[ch2]</td></tr>
<tr><td>Week 4</td><td>Basic relation: Ohm's law depended and indented sources, parallel resistor circuits, Y Δ transformation[ch2]+quiz</td></tr>
<tr><td>Week 5</td><td>Kirchhoff's law.[ch2]</td></tr>
<tr><td>Week 6</td><td>Kirchhoff's law.[ch2] +quiz</td></tr>
</table>

Week 7	AC signals.[ch8] +quiz
Week 8	Mid exam
Week 9	AC circuits: capacitance [ch6,ch8] +quiz
Week 10	AC circuits: inductance [ch6,ch8] +quiz
Week 11	Phases.[ch8]
Week 12	Phases.[ch8] +quiz
Week 13	AC circuits analysis [ch8,ch9]
Week 14	AC circuits analysis [ch8,ch9] +quiz
Week 15	**Final exam**

Delivery Plan (Weekly Lab. Syllabus)
المنهاج الاسبوعي للمختبر

	Material Covered
	Semester 1
Week 1	Lab 1: Background information +quiz
Week 2	Lab 2: Ohm's law : series resistor circuits +quiz
Week 3	Lab 3: Ohm's law : parallel resistor circuits
Week 4	Lab 4:quiz
Week 5	Lab 5: AC circuits: capacitance
Week 6	Lab 6: AC circuits: inductance +quiz
Week 7	Lab 7 : review the experiment
Week 8	Lab 8 : mid exam
Week 9	Lab 9: Phase difference angle measurement :series circuits +quiz
Week 10	Lab 10: Phase difference angle measurement :parallel circuits
Week 11	Lab 11 : quiz
Week 12	Lab 12: Kirchhoff's law +quiz
Week 13	Lab 13: review the experiment
Week 14	Lab 14:quiz
Week 15	Lab 15:final exam

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

Required Texts	BASIC ENGINEERING CIRCUIT ANALYSIS 10th Ed by J. Irwin	Yes
Recommended Texts	Fundamentals of Electric Circuits, C.K. Alexander and M.N.O Sadiku, McGraw-Hill Education	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	**Electronics Physics**		**Module Delivery**		
Module Type	Core		☒Theory ☐Lecture ☐Lab ☒Tutorial ☐Practical ☐Seminar		
Module Code	**CE106**				
ECTS Credits	**5**				
SWL (hr/sem)	**125**				
Module Level	1	**Semester of Delivery**		1	
Administering Department	Computer Engineering Dept.	**College**	Engineering		
Module Leader	Nada Ismaial	**e-mail**	nada.ismail@uomosul.edu.iq		
Module Leader's Acad. Title	Assistant lecturer	**Module Leader's Qualification**		Msc	
Module Tutor	Name	**e-mail**	E-mail		
Peer Reviewer Name	Prof.Qutaiba I. Ali	**e-mail**	Qutaibaali@uomosul.edu.iq		
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 المادة الدراسية ونتائج التعلم والمحتويات الإرشادية

Module Aims أهداف المادة الدراسية	Study the basics of manufacturing devices.

Module Learning Outcomes
 	
مخرجات التعلم للمادة الدراسية
	1-CLO1: An ability to identify, analyze, and solve complex engineering problems according to principles of engineering, science, and mathematics.
	
	2-CLO2: An ability to acquire and apply new knowledge and using appropriate learning strategies.
	
	3-CLO3: An ability to participate and work professionally and ethically in different projects to function on multi-disciplinary teams.
	
	4-CLO4: Understand the fundamental principles of semiconductor devices and their manufacturing process.
	
	    Describe the structure and operation of PN-junction diodes.
	
	    Explain the concept of potential barrier and drift current in semiconductor materials.
	
	5-CLO5: Analyze the behavior of diodes under different biasing conditions and temperature effects.
	
	    Explain the operation of diodes in forward and reverse bias modes.
	
	    Evaluate the impact of temperature on diode characteristics.
	
	6-CLO6: Identify different types of diodes and their applications.
	
	    Classify various types of diodes based on their characteristics and properties.
	
	    Explore the applications of diodes in electronic circuits and systems.
	
	7-CLO7: Comprehend the principles of transistors and their biasing techniques.
	
	    Describe the construction and operation of PNP and NPN transistors.
	
	    Explain the different transistor currents and their significance in electronic circuits.
	
	8-CLO8: Analyze characteristic curves of transistors and their practical implications.
	
	    Interpret and analyze characteristic curves of transistors, such as the input/output characteristics.
	
	    Relate the characteristic curves to the operation and performance of transistors in electronic circuits.
	
	These Course Learning Outcomes (CLOs) for "Electronics Physics" focus on providing students with a comprehensive understanding of semiconductor devices, including diodes and transistors. By achieving these learning outcomes, students will develop the necessary knowledge and skills to analyze and apply these electronic components in various electronic systems and applications.

Indicative Contents المحتويات الإرشادية	Indicative content includes the following. PN-junction diode ،Potential barrier، drift current ،Depletion layer and capacitor, forward and reverse bias ،Temperature effect on diode characteristics ،Types of diodes 1 ،Types of diodes 2 ،Diodes applications 1 ،Diodes applications 2 ،Transistors ،PNP and NPN ،Transistor currents ،Biasing of transistors ،Characteristic curves.

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

Student Workload (SWL) الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	63	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	4
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	62	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	4
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	125		

Module Evaluation					
تقييم المادة الدراسية					
		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	2	10% (10)	5,10	LO #1,3,4,6
	Assignments	2	10% (10)	2, 12	LO # 5,7
	Projects / (لا يوجد مختبر.)	1	10% (10)	Continuous	All
	Report	1	10% (10)	13	LO # 8
Summative assessment	Midterm Exam	2 hr	10% (10)	7	LO # 1,2,4-8
	Final Exam	3hr	50% (50)	15	LO # 1,2,4-8
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)	
المنهاج الاسبوعي النظري	
	Material Covered
	Semester 1
Week 1	PN-junction diode
Week 2	Potential barrier, drift current
Week 3	Depletion layer and capacitor, forward and reverse bias
Week 4	Temperature effect on diode characteristics.
Week 5	Types of diodes 1
Week 6	Types of diodes 2
Week 7	Mide exam
Week 8	Diodes applications 1
Week 9	Diodes applications 2
Week 10	Transistors
Week 11	PNP and NPN
Week 12	Transistor currents
Week 13	Biasing of transistors
Week 14	Characteristic curves
Week 15	Final exam

	Text	Available in the Library?
Learning and Teaching Resources مصادر التعلم والتدريس		
Required Texts	1. فيزياء الإلكترونيات، وكاع الجبوري 2. الخواص الكهربائية والمغناطيسية للمواد، وكاع الجبوري	Yes
Recommended Texts	Electronic Devices, Floyd Material Science, Kakani	No
Websites		

Group	Grade	التقدير	Marks (%)	Definition
Grading Scheme مخطط الدرجات				
Success Group (50 - 100)	**A** – Excellent	امتياز	90 - 100	Outstanding Performance
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Fail Group (0 – 49)	**FX** – Fail	راسب (قيد المعالجة)	(45-49)	More work required but credit awarded
	F – Fail	راسب	(0-44)	Considerable amount of work required

Note: Marks 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 by Computer**		**Module Delivery**		
Module Type	**Basic Learning Activities**		**Theory Lecture** ☒**Lab** ☐**Tutorial** ☐**Practical** ☐**Seminar**		
Module Code	**CE104**				
ECTS Credits	**4**				
SWL (hr/sem)	**100**				
Module Level	1		**Semester of Delivery**		1
Administering Department	Computer Eng.		**College**	College of Engineering	
Module Leader	Joan Atheel Ahmed		**e-mail**	Joan.akrawi@uomosul.edu.iq	
Module Leader's Acad. Title	Assistant Lecturer		**Module Leader's Qualification**		Ms.c
Module Tutor	Jumana Abduallah		**e-mail**	E-mail	
Peer Reviewer Name	Prof.Qutaiba I. Ali		**e-mail**	Qutaibaali@uomosul.edu.iq	
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 المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Aims أهداف المادة الدراسية	The aims of the module are: (1) to develop a knowledge of both manual and computer-generated engineering drawing. (2) to create, edit and print a variety of technical drawings using a CAD system. (3) to communicate design ideas and technical information to engineers and other professionals throughout the design process (4) An engineering drawing represents a complex three-dimensional object on a two-dimensional piece of paper or computer screen by a process called projection
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	CLO 1: Proficiency in AutoCAD: Gain a comprehensive understanding of AutoCAD software, its basic commands, and tools necessary for professional 2D drawing, design, and drafting. CLO 2: Application of Drawing Commands: Acquire the ability to utilize various drawing commands in AutoCAD, including lines, circles, arcs, ellipses, polygons, and other geometric shapes, to create accurate and precise 2D drawings. CLO 3: Modification and Editing Techniques: Develop skills in modifying and editing drawings by employing commands such as erase, trim, extend, mirror, lengthen, offset, chamfer, fillet, and other relevant tools to refine and adjust the design as required. CLO 4: Dimensioning and Annotation: Understand the principles of dimensioning and annotation in engineering drawings. Learn to apply dimensioning commands, create text, use different font types, and utilize dimension styles to accurately convey measurements and annotations. CLO 5: Advanced Features and Techniques: Explore advanced features and techniques in AutoCAD, including working with layers, using design templates, inserting and managing blocks, working with 3D models, applying shading and better visibility commands, and utilizing design center and other relevant tools. By the end of the course, students will have developed the necessary skills and knowledge to effectively use AutoCAD for 2D drawing and design tasks, enabling them to create professional engineering drawings in a computer-aided environment.
Indicative Contents المحتويات الإرشادية	Indicative content includes the following. • Navigating through the User Interface • Creating Basic Drawings • Manipulating Objects • Implementing Drawing Organization and Inquiry Commands

	• Altering Objects • Annotate a Drawing • Dimension Drawings • Hatching Objects • Creating Additional Drawing Objects and work on Projects • Plotting the Drawing Output • AutoCAD 2023 3D Basics • Creating Solids • Creating Meshes • Creating Surfaces • Creating Complex Solids & Surfaces • Solid Editing Commands • 3D Modifying Commands • Converting and Sectioning • Printing in 3D and Creating 3D DWF Files • Cameras and Lights • Materials, Rendering, Visual Styles and Animation

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

Student Workload (SWL)			
الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	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
5Total 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)	8, 13	LO #1, 4
	Assignments	2	10% (10)	2, 12	LO # 2, 3
	Projects / Lab.	1	10% (10)	Continuous	All
	Report	1	10% (10)	10	LO # 5
Summative assessment	Midterm Exam	3 hr	10% (10)	9	LO # 1-4
	Final Exam	2hr	50% (50)	15	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Lab. Syllabus)	
المنهاج الاسبوعي للمختبر	
	Material Covered
Week 1	Lab 1: Getting started: 1- Start a new drawing. 2- User Interface. 3- Drafting settingsI (Snap, Rectangular & Isometric grid). 4- Limits. 5- Units. 6- Absolute & Relative coordinate system. 7- Ortho
Week 2	Lab 2: Drawing I1- Point (DDPTYPE = POINT STYLE). 2- Line, Arc, Circle, Ellipse, Polygon, Rectangle
Week 3	Lab 3: Drawing II, View. 1- Zoom, Pan, Steering wheel. 2- Drafting settingsII.(Osnap, Polar snap). 3- Pline, Pedit. 4- Erase. 5- SelecƟng objects. 6- Ltype, Ltscale
Week 4	Lab 4: ModifyI, Drawing III: 1-Copy, Rotate, Move, Scale, Stretch. 2- Undo, U, Redo. 3- Divide, Measure
Week 5	Lab 5: Layers, Modify II: 1- Working with Layers. 2- Properties (Mo, Ch)... 3- Working with Grips. 4- Align
Week 6	Lab 6: Modify III. 1- Array, Offset, Fillet, Chamfer, Trim, Extend, Lengthen, Mirror, Break, Join, Explode.
Week 7	Lab 7: Annotation I, Modify IV, Inquiry: 1-Style, Text, Mtext, Ddedit, 2- ID, Dist, Area, Massprop
Week 8	Lab 8: quiz 1
Week 9	Lab 9: Mid Term Exam I
Week 10	Lab 10: Hatch, Hatchedit.. 2- tool paleΣes 2
Week 11	Lab 11: Block I: 1- Block, Insert. 2- Wblock. 3- AΣributes, Block Editor. 4- Image, Draworder
Week 12	Lab 12: Block II: Parametric constraints. 2- Dynamic Block. 3- Tool paleΣes. 4- Jpgout, Bmpout.
Week 13	Quiz II
Week 14	Plot Drawings: 1- Mspace, Pspace. 2- Mviewport. 3- Layouts. 4- Plot.
Week 15	Final Exam.

Learning and Teaching Resources
مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	Engineering Drawing and Graphic Technology, By: French &Vierk , 12th edition, 1978 AutoCAD, 2021	Yes
Recommended Texts	Engineering Drawing, ©2005 by Wuttet Taffesse, Laikemariam Kassa	No
Websites	https://www.cartercenter.org/resources/pdfs/health/ephti/library/lecture_notes/env_health_science_students/engineeringdrawing.pdf	

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	**Support**		☒Theory ☐Lecture ☐Lab ☐Tutorial ☐Practical ☐Seminar	
Module Code	**CE107**			
ECTS Credits	**3**			
SWL (hr/sem)	**75**			
Module Level	1	**Semester of Delivery**		2
Administering Department	Computer Eng.	**College**	College of Eng.	
Module Leader	Dr. Mustafa Siham	**e-mail**	Mustafa.qassab@uomosul.edu.iq	
Module Leader's Acad. Title	Lecturer	**Module Leader's Qualification**		Ph.D.
Module Tutor	Name (if available)	**e-mail**	E-mail	
Peer Reviewer Name	Prof.Qutaiba I. Ali	**e-mail**	Qutaibaali@uomosul.edu.iq	
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**	

1

	Module Aims, Learning Outcomes and Indicative Contents
	أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية
Module Aims أهداف المادة الدراسية	This course develops further knowledge of the grammar and of essential vocabulary in order to lead the students to an advanced level of proficiency. Emphasis is placed on developing listening, speaking, reading and writing skills through an integrated approach. It focuses on grammar and fundamental writing skills. By the end of the course, students are expected to: 1. Understand the main ideas of a variety of written and spoken texts 2. Participate effectively in a short conversation using appropriate language 3. Produce a range of text types in the form of a logical and cohesive paragraph 4. Select appropriate vocabulary to talk about feelings, opinions and experiences. 5. Recognize, understand and use a number of phrasal verbs and collocations. 6. Use effective organizational strategies that include introductions, paragraphs, transitions, and conclusion
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	CLO 1: Comprehend and analyze various written and spoken texts: Demonstrate the ability to understand the main ideas, key details, and nuances of different types of texts, including articles, essays, speeches, and dialogues. CLO 2: Communicate effectively in spoken interactions: Engage in short conversations using appropriate language and effective communication strategies. Express ideas, opinions, and experiences clearly and coherently. Demonstrate active listening skills and respond appropriately to others. CLO 3: Produce well-structured written texts: Generate logically organized and cohesive paragraphs in written assignments. Apply appropriate grammar, vocabulary, and sentence structures to enhance clarity and coherence. Use effective writing strategies such as introductions, topic sentences, transitions, and conclusions. CLO 4: Employ appropriate vocabulary and expressions: Select and use a wide range of vocabulary to accurately express feelings, opinions, and personal experiences. Recognize, understand, and utilize phrasal verbs and collocations to enhance language fluency and natural expression. CLO 5: Apply effective language organization and coherence: Demonstrate the ability to structure and organize written and spoken communication effectively. Use appropriate discourse markers and transitional words to establish coherence and facilitate smooth flow of ideas. These course learning outcomes aim to develop the students' overall English language proficiency and skills in listening, speaking, reading, and writing. By the end of the course, students should be able to understand and analyze various texts, participate actively in conversations, produce well-structured written texts, employ appropriate vocabulary and expressions, and demonstrate effective language

Indicative Contents المحتويات الإرشادية	Grammar Vocabulary Everyday English

organization and coherence.

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

Student Workload (SWL) الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	33	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	2
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	42	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	3
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	75		

Module Evaluation تقييم المادة الدراسية					
		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	**Quizzes**	2	5% (5)	6, 10	LO #1, 3, 5
	Assignments	3	5% (5)	4,8,12	LO #1, 5
	Speaking	1	15%(15)	12,13	LO #1, 2, 4
	Report & Presentation	1	15% (15)	4,5	LO #4, 5
Summative assessment	**Midterm Exam**	3 hr	10% (10)	15	LO # 1-5
	Final Exam	3 hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

	Delivery Plan (Weekly Syllabus)
	المنهاج الاسبوعي النظري
	Material Covered
Week 1	UNIT 1 Hello!: Grammar: am/is/are my/your This is… Reading: Introduction dialogues, Everyday English dialogues
Week 2	UNIT 1 Hello!: Speaking: Introductions, Good morning! Practicing introduction dialogues.
Week 3	UNIT 1 Hello!: Listening: People meet each other and introduce someone else. Vocabulary: How are you? What's this in English? Numbers 1-10 and plurals.
Week 4	Report submission feedback and instructions how to make a good presentation.
Week 5	Presentation day, giving feedback and presentation notes.
Week 6	UNIT 2 Your World: Grammar: He/she/they His/her Questions. Reading: Where are they from? Two people are on holiday in New York.
Week 7	UNIT 2 Your World: Speaking: Students ask and answer questions about where people are from.
Week 8	UNIT 2 Your World: Listening: Countries, Numbers 10-20. Vocabulary: A set of cities and countries: Brazil, Spain… Adjectives: awful, really good, fantastic, beautiful Nouns: centre, hospital, building, park
Week 9	UNIT 3 All about you: Grammar: Verb to be is recycled and extended to include negative and question forms. Reading: We're in Las Vegas!
Week 10	UNIT 3 All about you: Speaking: Roleplay: in a band.
Week 11	UNIT 3 All about you: Listening: An interview with the band Metro 5. Vocabulary: Jobs: a nurse, a doctor.. Personal information: surname, first name, address, married … Social expressions: I'm sorry, thanks, please…
Week 12	Speaking test for group 1 of students. Each students takes about 5-7 minutes for the test.
Week 13	Speaking test for group 2 of students. Each students takes about 5-7 minutes for the test.
Week 14	Reviewing the Units 1-3, checking the workbook answers, and open discussion.
Week 15	Midterm exam.
Week 16	Final Exam

Delivery Plan (Weekly Lab. Syllabus)
المنهاج الاسبوعي للمختبر

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

	Learning and Teaching Resources مصادر التعلم والتدريس	
	Text	**Available in the Library?**
Required Texts	SOARS, J. & SOARS, L. 2014. New Headway: Upper-Intermediate Fourth Edition: Student's Book and iTutor Pack, OUP Oxford.	No
Recommended Texts		
Websites		

Grading Scheme مخطط الدرجات				
Group	**Grade**	التقدير	**Marks (%)**	**Definition**
Success Group (50 - 100)	**A -** Excellent	امتياز	90 - 100	Outstanding Performance
	B - Very Good	جيد جدا	80 - 89	Above average with some errors
	C - Good	جيد	70 - 79	Sound work with notable errors
	D - Satisfactory	متوسط	60 - 69	Fair but with major shortcomings
	E - Sufficient	مقبول	50 - 59	Work meets minimum criteria
Fail Group (0 – 49)	**FX –** Fail	راسب (قيد المعالجة)	(45-49)	More work 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	Human Rights		**Module Delivery**	
Module Type	Supportive		☒Theory	
Module Code	CE102		☐Lecture	
			☐Lab	
ECTS Credits	2		☐Tutorial	
SWL (hr/sem)	50		☐Practical	
			☐Seminar	
Module Level	1	**Semester of Delivery**		1
Administering Department	Computer Eng.	**College**	College of Eng.	
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	Prof.Qutaiba I. Ali	**e-mail**	Qutaibaali@uomosul.edu.iq	
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 المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Aims أهداف المادة الدراسية	Among the objectives of the human rights course is to raise awareness of the Iraqi woman (the mother) about her role in the field of exercising her role within her small family, which serves as a micro-community and to exercise her role towards her children by granting them (children's rights), which are included in the framework of (human rights) because the child is the most important pillar and infrastructure In the Iraqi society, which serves as the first nucleus for the establishment of a healthy and healthy society, free from psychological complexes and behavioral disorders, and raising the awareness of the mother about her duties towards her children, not to practice beating and psychological and physical violence, and to treat them in a sound and humane manner, and that the circumstances and daily hard work do not reflect on her behavior towards her children, and this in my opinion is one of the most important goals Which I seek to consolidate when teaching the subject (Human Rights), which considers the rights of the child as one of the most important points and pillars,In addition to directing the father to treat her children with dignity and produce a healthy child mentally, physically and psychologically. Introducing the Iraqi human rights stipulated in the Iraqi constitutions, especially the permanent Iraqi constitution of 2005. Awareness of individuals about the types of rights they enjoy, such as the first generation of rights represented by civil and political rights and the second generation Of rights such as economic, social and cultural rights. Activating the role of civil society institutions in the field of Iraqi human rights. Introducing human rights and spreading a culture of awareness among individuals of the types of rights they enjoy as citizens.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	:Course Learning Outcomes (CLOs) for the "Human Rights" course CLO 1: Knowledge and Understanding of Human Rights: Demonstrate a comprehensive understanding of the concept of human rights, including their historical development, different types of rights, and their significance in the context of Iraqi society and the international community. CLO 2: Awareness of Women's Rights and Children's Rights: Develop an awareness of the rights and roles of Iraqi women, particularly as mothers, in promoting a healthy family environment and safeguarding the rights of their children. Recognize the importance of creating a nurturing and non-violent atmosphere for children's growth and development. CLO 3: Familiarity with Human Rights Legislation: Acquire knowledge of human rights laws and regulations, including the Iraqi constitution, international conventions, and declarations. Understand the legal framework that supports and protects human rights at the national and international levels. CLO 4: Cultural and Historical Perspectives on Human Rights: Explore the historical development of human rights in various civilizations, including Greek, Roman, Persian, and the Middle Ages. Analyze the impact of social, political, and religious institutions on the recognition and protection of human rights.

	CLO 5: Critical Thinking and Awareness of Regional Human Rights: Develop critical thinking skills to evaluate regional perspectives on human rights, focusing on the European Convention on Human Rights and the Arab Organization for Human Rights. Understand the significance of regional efforts in promoting and safeguarding human rights. By the end of the "Human Rights" course, students will have gained a comprehensive understanding of human rights, including their historical, legal, cultural, and regional aspects. They will be able to critically analyze the roles of women and the importance of children's rights in creating a healthy society. Students will also demonstrate knowledge of relevant legislation and conventions while understanding the broader context of human rights in Iraqi and international settings
Indicative Contents المحتويات الإرشادية	What is right and what is human What are human rights Historic Human Rights in Iraqi Civilizations, in Greek Civilization, Roman and Persian Civilization Historical Human Rights in the Middle Ages Feudalism, the Church, and the Institution of Monarchy (King) Historical Human Rights in the Middle Ages Feudalism, the Church, and the Institution of Monarchy (King) Human rights in law legislation revolutions of the west East revolutions and human rights Human rights in the Universal Declaration of 1948 Economic, social and cultural human rights modern human rights Regional recognition of human rights European Convention on Human Rights 1953 The Arab Organization for Human Rights 1998

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

Student Workload (SWL)			
الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	18	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	1
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	32	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	2
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	50		

Module Evaluation					
تقييم المادة الدراسية					
		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	2	10% (10)	5, 10	LO #1, 3
	Assignments	2	10% (10)	2, 12	LO # 2, 4
	Projects / Lab.	0	0		
	Report	1	20% (10)	13	LO # 5
Summative assessment	Midterm Exam	3 hr	10% (20)	7	LO # 1-5
	Final Exam	3hr	50% (50)	15	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)	
المنهاج الاسبوعي النظري	
	Material Covered
Week 1	What is right and what is human
Week 2	What are human rights
Week 3	Historic Human Rights in Iraqi Civilizations, in Greek Civilization, Roman and Persian Civilization
Week 4	Historical Human Rights in the Middle Ages Feudalism, the Church, and the Institution of Monarchy (King)
Week 5	Historical Human Rights in the Middle Ages Feudalism, the Church, and the Institution of Monarchy (King)
Week 6	Human rights in law legislation
Week 7	revolutions of the west
Week 8	East revolutions and human rights
Week 9	Human rights in the Universal Declaration of 1948

Week 10	Economic, social and cultural human rights
Week 11	modern human rights
Week 12	Regional recognition of human rights
Week 13	European Convention on Human Rights 1953
Week 14	The Arab Organization for Human Rights 1998
Week 15	**Final Exam**

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	كتب المقرر العلمي الاساسية ، مصادر خارجية ، ونصوص ومواثيق الامم المتحدة في مجال حقوق الانسان والاعلان العالمي الصادر عام 1948	Yes
Recommended Texts		
Websites		

Grading Scheme مخطط الدرجات				
Group	**Grade**	التقدير	**Marks (%)**	**Definition**
Success Group (50 - 100)	**A - Excellent**	امتياز	90 - 100	Outstanding Performance
	B - Very Good	جيد جدا	80 - 89	Above average with some errors
	C - Good	جيد	70 - 79	Sound work with notable errors
	D - Satisfactory	متوسط	60 - 69	Fair but with major shortcomings
	E - Sufficient	مقبول	50 - 59	Work meets minimum criteria
Fail Group (0 – 49)	**FX – Fail**	راسب (قيد المعالجة)	(45-49)	More work 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	**Mathematics 1**		**Module Delivery**	
Module Type	**Basic**		⊠ Theory ⊠ Lecture ☐ Lab ⊠ Tutorial ☐ Practical ☐ Seminar	
Module Code	**CE103**			
ECTS Credits	**7**			
SWL (hr/sem)	**175**			
Module Level	1	**Semester of Delivery**		1
Administering Department	Computer Eng.	**College**	College of Engineering	
Module Leader	Dr. Samar Ammar Yasir	**e-mail**	samarammar@uomosul.edu.iq	
Module Leader's Acad. Title	Lecturer	**Module Leader's Qualification**		Ph.D.
Module Tutor	Hussein Mahmood Mohammed	**e-mail**	hussein.mahmood@uomosul.edu.iq	
Peer Reviewer Name	Prof.Qutaiba I. Ali	**e-mail**	Qutaibaali@uomosul.edu.iq	
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 المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Aims أهداف المادة الدراسية	The objective of this course is to introduce students to four main topics of mathematics Prerequisites for calculus, Limits, and Continuity, Differentiation methods, Vectors and Analytic Geometry in Space, Matrices, and Solution of system of equations by matrix.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	Course Learning Outcomes (CLOs) for the course "Mathematics 1": 1-CLO1: An ability to identify, analyze, and solve complex engineering problems according to principles of engineering, science, and mathematics. 2-CLO2: An ability to acquire and apply new knowledge and using appropriate learning strategies. 3-CLO3: An ability to participate and work professionally and ethically in different projects to function on multi-disciplinary teams. 4-CLO4: Apply and understand the fundamental of properties and operations of functions and trigonometric functions in engineering and scientific contexts, including domain, range and their graphs. 5-CLO5: Explain the concept of limits and continuity and their implications in mathematical analysis. 6-CLO6: Demonstrate and compute derivatives of functions using various techniques, and understand their applications in engineering and science. 7-CLO7: Understand the geometric interpretation of vectors and apply the properties of vector operations to solve problems involving vectors in the plane and in three-dimensional space. 8-CLO8: Identify and demonstrate matrix terminology to solve systems of linear equations using matrix methods, such as Gaussian elimination and matrix inverses. By the end of the "Mathematics 1" course, students should have achieved these learning outcomes, gaining a strong foundation in singlevariable mathematics and the ability to apply mathematical concepts to real-world engineering and scientific applications.

Indicative Contents
المحتويات الإرشادية
	Indicative content includes the following.
	
	1. Prerequisites for calculus:
	    1.1. Coordinates and Graphs in the Plane
	    1.2. Slope, and Equations for Lines
	    1.3. Functions and Their Graphs
	    1.4. Shifts, Circles and Parabolas
	    1.5. A Review of Trigonometric Functions
	2. Limits and Continuity : Limits of Functions
	    2.1. The Sandwich Theorem
	    2.2. Limits Involving Infinity
	    2.3. Continuous Functions

	3. Derivatives:
	
	   3.1. Slope, Tangent Lines, and Derivatives
	
	   3.2. Differentiation Rules
	
	   3.3. Derivatives of Trigonometric Functions
	
	   3.4. The Chain Rule and Implicit Differentiation and Fractional Powers
	
	   3.5. Velocity, Speed and Other Rate of Change
	
	   3.6. Linear Approximations and Differentials
	
	4. Vector and Analytic Geometry in Space:
	
	   4.1. Vector Operations using Graphical methods and Algebraic methods
	
	   4.2. Properties of vector operations
	
	   4.3. magnitude and direction of vectors, Vector Decomposition
	
	   4.4. Unit vector in 2D and 3D space
	
	   4.5. Dot product and Cross product of vectors and their properties
	
	5. Matrices:
	
	   5.1. Types and properties of Matrices
	
	   5.2. Operations of matrices: addition, subtraction, scalar multiplication and matrix multiplication.
	
	   5.3. Operations of matrices : transposition, determinant, adjoin and inverse matrix.
	
	   5.4. Solution of Linear Equations using Cramer's Rule.
	
	   5.5. Gaussian Elimination Method.

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

Student Workload (SWL)			
الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	78	Structured SWL (h/w) الحمل الدراسي المنتظم للطالب أسبوعيا	5
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	97	Unstructured SWL (h/w) الحمل الدراسي غير المنتظم للطالب أسبوعيا	6
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	175		

Module Evaluation					
تقييم المادة الدراسية					
		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	4	20% (20)	4, 6, 11, 14	LO #4, 6
	Assignments	4	20% (20)	3, 5, 11, 13	LO #3, 5, 7
Summative assessment	Midterm Exam	2 hr	10% (10)	9	LO # 1,2,4-8
	Final Exam	3hr	50% (50)	15	LO # 1,2,4-8
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)	
المنهاج الاسبوعي النظري	
	Material Covered
Week 1	Prerequisites for calculus: Coordinates and Graphs in the Plane Slope, and Equations for Lines
Week 2	Functions and Their Graphs Shifts, Circles and Parabolas
Week 3	A Review of Trigonometric Functions
Week 4	Quiz 1 + Limits and Continuity : Limits of Functions
Week 5	The Sandwich Theorem Limits Involving Infinity Continuous Functions
Week 6	Quiz 2 + Derivatives: Slope, Tangent Lines, and Derivatives Differentiation Rules
Week 7	Derivatives of Trigonometric Functions The Chain Rule and Implicit Differentiation and Fractional Powers
Week 8	Velocity, Speed and Other Rate of Change Linear Approximations and Differentials

Week 9	Mid-term Exam + Vector and Analytic Geometry in Space: Vector Operations using Graphical methods and Algebraic methods Properties of vector operations
Week 10	Magnitude and Direction of vectors, Vector Decomposition Unit vector in 2D and 3D space Dot product and Cross product of vectors and their properties
Week 11	Quiz 3 + Matrices: Types and properties of Matrices Operations of matrices: addition, subtraction, scalar multiplication and matrix multiplication.
Week 12	Operations of matrices: transposition, determinant, adjoint and inverse matrix. Solution of Linear Equations using Cramer's Rule.
Week 13	Gaussian Elimination Method.
Week 14	Quiz 4 + **Preparatory week before the final exam**
Week 15	**Final exam**

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	Calculus by Thomas and Finny.	Yes
Recommended Texts	Thomas' Calculus: Early Transcendentals 13th Edition by George B. Thomas,2014	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.

نموذج وصف المادة الدراسية

Module Information				
معلومات المادة الدراسية				
Module Title	Programming using C++ Language		**Module Delivery**	
Module Type	Core learning activity		☒Theory ☒Lecture ☒Lab ☐Tutorial ☐Practical ☐Seminar	
Module Code	CE108			
ECTS Credits	**5**			
SWL (hr/sem)	**125**			
Module Level	1	**Semester of Delivery**		2
Administering Department	Computer Eng.	**College**	College of Engineering	
Module Leader	Sahar Khalid Ahmed	**e-mail**	sahar.ahmed@uomosul.edu.iq	
Module Leader's Acad. Title	Lecturer	**Module Leader's Qualification**		M.Sc.
Module Tutor	Shaymaa Nazar	**e-mail**	sshaymaa226@uomosul.edu.iq	
Peer Reviewer Name	Prof.Qutaiba I. Ali	**e-mail**	Qutaibaali@uomosul.edu.iq	
Scientific Committee Approval Date	1/6/2023	**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 Aims أهداف المادة الدراسية	1.This course introduces students to C++ programming language. 2. Understanding the effort needed to successfully develop engineering-oriented software.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	CLO1: Understand the fundamentals of programming. Demonstrate knowledge of C++ syntax, keywords, and basic program construction principles. Apply the concepts of identifiers, variables, assignment statements, and input/output operations. CLO2: Develop competence in constructing arithmetic and logical expressions in C++. Utilize arithmetic operators, logical operators, and relational operators to manipulate data. Create efficient and accurate arithmetic and logical expressions in engineering-oriented software development. CLO3: Implement control flow structures in C++ programs. Design and implement selection statements (if, if-else, switch/-case) for decision making. Utilize loop statements (for, while, do-while) for repetitive tasks and iteration. CLO4: Apply functions, arrays, and vectors in C++ programming. Design and implement user-defined functions to modularize code and improve code reusability. Utilize arrays and vectors for efficient data storage and manipulation. CLO5: Understand and utilize pointers and structures in C++ programming. By achieving these outcomes, students will develop a solid understanding of These Course Learning Outcomes (CLOs) highlight the key objectives of the "Programming using C++" course, focusing on the fundamental concepts and skills necessary to develop engineering-oriented software using the C++ programming language. By achieving these outcomes, students will gain a solid understanding of C++ programming principles and be able to apply them effectively in practical programming scenarios.
Indicative Contents المحتويات الإرشادية	Introduction, Algorithms and Flowcharts, Basic program construction: Keywords, Identifiers, comments, variables, Assignment statements, Input and output Statements, Arithmetic and logical expression: Arithmetic operators, logical operators, relational operators, Selection statements: if, if-else, switch..case, Loop statements: for, while, do...while, functions, Arrays and Vectors, Pointers, Structures and Structure type functions.

<table>
<tr><td colspan="2" align="center">**Learning and Teaching Strategies**
استراتيجيات التعلم والتعليم</td></tr>
<tr><td>**Strategies**</td><td>Type something like: The main strategy that will be adopted in delivering this module is to encourage students' participation in the exercises, while at the same time refining and expanding their critical thinking skills. This will be achieved through classes, interactive tutorials and by considering type of simple experiments involving some sampling activities that are interesting to the students.</td></tr>
</table>

Student Workload (SWL)			
الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	93	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	6
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	32	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	2
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	5%(5)	6, 12	Lo# 1, 2, 3-Lo# 3,4
	Assignments	2	5%(5)	8,12	Lo# 1,2,3-Lo#3,4
	Lab	10	15%(15)	continue	all
	Report	1	15%(15)	14	Lo# 1-4
Summative assessment	**Midterm Exam**	3 hr	10%(10)	13	Lo# 1-4
	Final Exam	3hr	50% (50)		All
Total assessment			100% (100 Marks)	15	

Delivery Plan (Weekly Syllabus)	
المنهاج الاسبوعي النظري	
	Material Covered
Week 1	Introduction
Week2	Algorithms and Flowcharts
Week 3	Basic program construction: Keywords, Identifiers, comments, variables, Assignment statements, Input and output Statements.

Week 4	Arithmetic and logical expression: Arithmetic operators, logical operators, relational operators.
Week 5	Selection statements: if, if-else, switch..case and ? operator.
Week6	
Week 7	Loop statements: for, while, do...while
Week8	
Week 9	functions
Week10	
Week 11	Arrays and Vectors
Week 12	
Week 13	Mid-term Exam
Week 14	Pointers
Week 15	Structures and Structure type functions

Delivery Plan (Weekly Lab. Syllabus)	
المنهاج الاسبوعي للمختبر	
	Material Covered
Week 1	codeblock IDE(download, Installing, use)
Week 2	A simple C++ program using basic program construction (Identifiers, comments, variables, Assignment statements, output statement(cin)).
Week 3	A simple C++ program using input and output statements (cin, cout).
Week 4	Arithmetic and logical expression: Arithmetic operators, logical operators, relational operators.
Week 5	programs using selection statement (if-statement)
Week 6	programs using selection statements(if-statement and switch statement)
Week 7	programs using loop statements(for statement)
Week 8	programs using loop statements(while and do staements)
Week9	Functions (call by value)
Week10	Functions (call by reference)
Week11	One dimensional array
Week12	Two dimensional array
Week13	Mid-term Exam
Week 14	Pointers

Week 15	Structures and Structure type functions

Learning and Teaching Resources		
مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	1-C++ How to Program, 8/E, Paul Deitel & Harvey Deitel, ©2012 2-The Complete Reference in C++ By Herbert Schildt, 4th edition,2003.	No
Recommended Texts	The Complete Reference in C++ By Herbert Schildt, 4th edition,2003.	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
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MODULE DESCRIPTION FORM
نموذج وصف المادة الدراسية

Module Information		
معلومات المادة الدراسية		
Module Title	**Digital System Fundamentals**	**Module Delivery**
Module Type	Core	☒ **Theory**
Module Code	CE112	☒ **Lecture**
ECTS Credits	7	☒ **Lab**
SWL (hr/sem)	175	☒ **Tutorial** ☐ **Practical** ☐ **Seminar**
Module Level	1	**Semester of Delivery**	2
Administering Department	Computer Eng.	**College**	College of Engineering
Module Leader	Dr. Shawkat Sabah Khairullah	**e-mail**	Shawkat.sabah@uomosul.edu.iq
Module Leader's Acad. Title	Assistant Professor	**Module Leader's Qualification**	Ph.D.
Module Tutor	Farah Nazar Ibraheem	**e-mail**	farah_nazar80@uomosul.edu.iq
Peer Reviewer Name	Dr. Qutaiba I. Ali	**e-mail**	qutaibaali@uomosul.edu.iq
Scientific Committee Approval Date	01/06/023	**Version Number**	1.0

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

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Aims أهداف المادة الدراسية	The basic objective of this course is to give an introduction to digital logic design with an emphasis on practical design techniques and hardware circuit implementation. Topics include number representation in digital computers, Boolean algebra theorems, theory of Boolean logic functions, mapping techniques and logic function minimization, design of combinational and interactive digital circuits such as magnitude comparators, binary decoder and encoder, adder and subtractor logic circuits. An introduction on designing digital circuits using schematic capture and logic simulation is included.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	Here are Seven Course Learning Outcomes (CLOs) for the course "Digital System Fundamentals": CLO 1: Understand the fundamentals of number representation in digital computers, including binary arithmetic, binary representation of numbers, and conversions between the different number representations such as binary, octal, hexadecimal, and decimal. CLO 2: Apply properties of Boolean algebra theorems and truth table principles to simplify and analyze the Boolean logic functions of digital logic circuits. CLO 3: Utilize Karnaugh maps as a graphical tool for minimizing and optimizing Boolean logical expressions and truth tables. CLO 4: Design and analyze combinational, and interactive digital circuits such as magnitude comparators, binary adders and subtractors, binary decoder and encoder circuits and understand their applications. CLO 5: Demonstrate proficiency in the basic skills to design and fabricate digital logic circuits using discrete logic design and various logic gates and components. CLO 6: An ability to identify, analyze, and solve complex engineering problems according to principles of engineering, science, and mathematics. CLO 7: An ability to participate and work professionally and ethically in different projects to function on multi-disciplinary teams. These course learning outcomes aim to ensure that students achieve a thorough understanding of the core concepts and techniques covered in the "Digital Logic Fundamentals" course. By the end of the course, students should be able to apply their knowledge and skills in the laboratory to solve problems, design and fabricate digital logic circuits, and comprehend the practical applications of these fundamental concepts in computer engineering.

Indicative Contents المحتويات الإرشادية	Indicative content includes the following. Describing the basic logic operations, logic gates, truth table, basic logic function, logic symbol, and logic waveform [ch1,ch3]. Boolean algebra laws, logic simplification, sum of product (SOP) and product of sum (POS) logic expressions [ch4]. Proof theorems by applying properties of Boolean algebra laws and truth tables [ch4]. Number systems representation in digital computers, decimal numbers, binary numbers, octal numbers, hexadecimal numbers, binary coded decimal (BCD) [ch2]. Conversions of number systems in digital computers [ch2]. Unsigned and signed numbers representation in digital computers [ch2]. Minimization by Karnaugh maps [ch4]. Five, six variable Karnaugh map and multiple function minimization [ch4]. Variable-entered Karnaugh map, Implementing Boolean Logic Functions using Multiplexer-based logic [ch4, ch6]. Digital magnitude comparator circuits [ch6]. Binary adder and subtractor circuit, half-adder, full-adder, and ripple carry adder [ch6]. Digital binary decoder and encoder circuits [ch6]. Implementing Boolean logic functions using multiplexer-based logic [ch6].

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

<table>
<tr><td colspan="4" align="center">Student Workload (SWL)
الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا</td></tr>
<tr><td>Structured SWL (h/sem)
الحمل الدراسي المنتظم للطالب خلال الفصل</td><td>93</td><td>Structured SWL (h/w)
الحمل الدراسي المنتظم للطالب أسبوعيا</td><td>6</td></tr>
<tr><td>Unstructured SWL (h/sem)
الحمل الدراسي غير المنتظم للطالب خلال الفصل</td><td>82</td><td>Unstructured SWL (h/w)
الحمل الدراسي غير المنتظم للطالب أسبوعيا</td><td>5.5</td></tr>
<tr><td>Total SWL (h/sem)
الحمل الدراسي الكلي للطالب خلال الفصل</td><td colspan="3">175</td></tr>
</table>

<table>
<tr><td colspan="6" align="center">Module Evaluation
تقييم المادة الدراسية</td></tr>
<tr><td colspan="2"></td><td>Time/ Number</td><td>Weight (Marks)</td><td>Week Due</td><td>Relevant Learning Outcome</td></tr>
<tr><td rowspan="4">Formative assessment</td><td>Quizzes</td><td>4</td><td>16% (16)</td><td>3, 5, 9, 13</td><td>LO # 1, 2, 3, and 4</td></tr>
<tr><td>Assignments</td><td>4</td><td>8% (8)</td><td>3, 5, 8, 10</td><td>LO # 1, 2, 3, and 6</td></tr>
<tr><td>Projects/Lab</td><td>1</td><td>6% (6)</td><td>Continuous</td><td>All</td></tr>
<tr><td>Reports</td><td>1</td><td>10% (10)</td><td>2, 4, 6, 8, 10, 12, 14</td><td>LO # 2, 3, 4, 5, and 7</td></tr>
<tr><td rowspan="2">Summative assessment</td><td>Midterm Exam</td><td>2 hr</td><td>10% (10)</td><td>9</td><td>LO # 1, 2, and 3</td></tr>
<tr><td>Final Exam</td><td>3 hr</td><td>50% (50)</td><td>15</td><td>All</td></tr>
<tr><td colspan="2">Total assessment</td><td></td><td>100% (100 Marks)</td><td></td><td></td></tr>
</table>

Delivery Plan (Weekly Syllabus)	
المنهاج الاسبوعي النظري	
	Material Covered
Week 1	Introduction - Digital Logic Fundamentals
Week 2	The Operation of Basic Logic Gates, Truth Table, Logic Function, and Logic Waveform
Week 3	Boolean Algebra Laws, Sum of Product (SOP) and Product of Sum (POS) Logic Expressions
Week 4	Proof Theorems by Applying Properties of Boolean Algebra Laws and Truth Tables
Week 5	Number Systems Representation in Digital Computers
Week 6	Conversions of Number Systems in Digital Computers
Week 7	Minimization by Karnaugh Maps
Week 8	Five, Six Variable Karnaugh Map and Multiple Function Minimization
Week 9	Mid-term Exam + Implementing Boolean Logic Functions using Multiplexer-based logic
Week 10	Digital Magnitude Comparator Circuits
Week 11	Digital Binary Decoder and Encoder Circuits
Week 12	Binary Adder and Subtractor Circuit, Half-Adder, Full-Adder, and Ripple Carry Adder
Week 13	Variable-entered Karnaugh Map and Multiplexer Tree Implementation
Week 14	Unsigned and Signed Numbers representation in Digital Computers
Week 15	**Preparatory week before the final Exam**

Delivery Plan (Weekly Lab. Syllabus)	
المنهاج الاسبوعي للمختبر	
	Material Covered
Week 1,2	Experiment (1): Understanding the Operation of Basic Logic Gates
Week 3,4	Experiment (2): Boolean Algebra Laws
Week 5,6	Experiment (3): Boolean Expression Simplification
Week 7,8	Experiment (4): Functional Minimization using Karnaugh Map
Week 9,10	Experiment (5): Design of Digital Multiplexer and Comparator Circuits
Week 11,12	Experiment (6): Implementation of Digital Decoder and Encoder Circuits
Week 13,14	Experiment (7): Implementation of Adder and Subtractor Circuits using Half-Adder and Full-Adder/Ripple Carry Adder Circuits
Week 15	Final Exam

	Learning and Teaching Resources	
	مصادر التعلم والتدريس	
	Text	**Available in the Library?**
Required Texts	Modern digital design by Richard S. Sandige (McGraw-Hill)	YES
	Digital Fundamentals, 9th Edition, Thomas L. Floyd, Pearson Prentice Hall, 2006.	NO
Recommended Texts	Introduction to Logic Design, 3rd edition, Alan Marcovitz, McGraw-Hill, 2010.	NO
	Digital Design, 5th edition, Morris Mano, Pearson Prentice Hall, 2013.	NO
Websites		

	Grading Scheme			
	مخطط الدرجات			
Group	**Grade**	التقدير	**Marks (%)**	**Definition**
Success Group (50 - 100)	**A** - Excellent	امتياز	90 - 100	Outstanding Performance
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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	Electrical Circuits Analysis 2		**Module Delivery**	
Module Type	Core		☒Theory ☐Lecture ☒Lab ☒Tutorial ☐Practical ☐Seminar	
Module Code	CO111			
ECTS Credits	7			
SWL (hr/sem)	175			
Module Level		1	**Semester of Delivery**	2
Administering Department		Computer Engineering Dept.	**College**	Engineering
Module Leader	Ahmed Mamoon		**e-mail**	ahmedalkababji72@uomosul.edu.iq
Module Leader's Acad. Title		Professor	**Module Leader's Qualification**	Ph.D.
Module Tutor	Ban Aziz Asi		**e-mail**	ban.alzaydi@uomosul.edu.iq
Peer Reviewer Name		Prof.Qutaiba I. Ali	**e-mail**	Qutaibaali@uomosul.edu.iq
Scientific Committee Approval Date		01/06/2023	**Version Number**	1.0

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

	Module Aims, Learning Outcomes and Indicative Contents
	أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية
Module Aims أهداف المادة الدراسية	1. To develop problem solving skills and understanding of circuit analysis theorems through the application of (superposition, source transformation, mesh analysis, Nodal analysis) 2. To Determine the conditions for maximum power transfer to any circuit element 3. To understand the importance of transients in RL, RC & RLC. 4. To understand the principals of Resonant circuits 5. To understand the principals of Three-phase circuits
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	1-CLO1: An ability to identify, analyze, and solve complex engineering problems according to principles of engineering, science, and mathematics. 2-CLO2: An ability to acquire and apply new knowledge and using appropriate learning strategies. 3-CLO3: An ability to participate and work professionally and ethically in different projects to function on multi-disciplinary teams. 4-CLO4: Demonstrate a thorough understanding of circuit analysis theorems underlying Direct Current (DC) and Alternating Current (AC) electrical circuits. 5-CLO5: Apply circuit analysis theorems (superposition, source transformation, mesh analysis, Nodal analysis) 6-CLO6: Apply Thevenin's& Norton's theorem, maximum power transfer, both in DC and AC. 7-CLO7: Analyse transient responses of RL, RC and RLC for various circuit configurations. 8-CLO8: Get an introduction to Resonant circuits and Three-phase circuits. These CLOs emphasize the mastery of foundational concepts, principles, and analytical techniques required for the analysis of electrical circuits, particularly in the context of DC and AC circuits. Through the achievement of these learning outcomes, students will develop a solid understanding of circuit analysis and be prepared to apply their knowledge in more advanced electrical engineering courses and practical engineering scenarios
Indicative Contents المحتويات الإرشادية	Indicative content includes the following. <u>Part A - Circuit Theory</u> DC circuits – circuit analysis theorems through the application of (superposition,

	source transformation, mesh analysis, Nodal analysis). [75 hrs] AC circuits – circuit analysis theorems through the application of (superposition, source transformation, mesh analysis, Nodal analysis). [75 hrs] Thevenin and Norton equivalent circuits, maximum power transfer, RMS and power dissipation. [15 hrs] RL, RC and RLC circuits - Frequency response of RLC circuits, simple filter and band-pass circuits, resonance and Q-factor, Time response (natural and step responses). Introduction to second order circuits. [15 hrs] Introduction to Resonant circuits and Three-phase circuits. Revision problem classes [6 hrs]

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

Student Workload (SWL)			
الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	123	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	8
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	175		

Module Evaluation تقييم المادة الدراسية					
		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	8	16% (16)	2,4,6,7,9,10,12,14	LO # 1-8
	Assignments	2	10% (10)	2, 10	LO # 5,6
	Projects / Lab.	1	10% (10)	Continuous	All
	Report	1	4% (4)	10	LO # 5,8
Summative assessment	Midterm Exam	2 hr	10% (10)	8	LO # 1-8
	Final Exam	3hr	50% (50)	15	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري	
	Material Covered
	Semester 2
Week 1	Circuit theory: source transformation [ch3,5,8,9]
Week 2	Circuit theory: superposition [ch3,5,8,9] +quiz
Week 3	Circuit theory: Mesh analysis [ch3,5,8,9]
Week 4	Circuit theory: nodal analysis [ch3,5,8,9] +quiz
Week 5	Circuit theory: thevenin [ch3,5,8,9]
Week 6	Circuit theory: Norton's theorem [ch3,5,8,9] +quiz
Week 7	Circuit theory: maximum power transfer[ch3,5,8,9] +quiz
Week 8	Mid exam
Week 9	Steady-State power Analysis [ch10] +quiz
Week 10	Transient circuits: RL circuit's [ch7] +quiz
Week 11	Transient circuits: RC circuit's [ch7]
Week 12	Transient circuits: RLC circuit's [ch7] +quiz
Week 13	Resonant circuits [ch11] +quiz
Week 14	Three –phase circuits [ch11]
Week 15	**Final exam**

	Delivery Plan (Weekly Lab. Syllabus)
	المنهاج الاسبوعي للمختبر
	Material Covered
	Semester 2
Week 1	Lab 1: Superposition theory +quiz
Week 2	Lab 2: Mesh analysis +quiz
Week 3	Lab 3: Nodal analysis +quiz
Week 4	Lab 4:maximum power transfer
Week 5	Lab 5:maximum power transfer +quiz
Week 6	Lab 6: Theven's theory +quiz
Week 7	Lab 7 review the experiment
Week 8	Lab 8:Mid exam
Week 8	Lab 9: PN junction diode applications +quiz
Week 10	Lab 10: Transient state in RL circuits
Week 11	Lab 11: Transient state in RC circuits
Week 12	Lab 12: Transient state in RLC circuits +quiz
Week 13	Lab 13:review excrement
Week 14	Lab 14: quiz
Week 15	Lab 15: final exam

	Learning and Teaching Resources	
	مصادر التعلم والتدريس	
	Text	**Available in the Library?**
Required Texts	BASIC ENGINEERING CIRCUIT ANALYSIS 10th Ed by J. Irwin	Yes
Recommended Texts	Fundamentals of Electric Circuits, C.K. Alexander and M.N.O Sadiku, McGraw-Hill Education	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	**Mathematics 2**		**Module Delivery**	
Module Type	**Basic**		☒ Theory ☒ Lecture ☐ Lab ☒ Tutorial ☐ Practical ☐ Seminar	
Module Code	**CE110**			
ECTS Credits	7			
SWL (hr/sem)	**175**			
Module Level	1	**Semester of Delivery**		2
Administering Department	Computer Eng.	**College**	College of Engineering	
Module Leader	Dr. Samar Ammar Yasir	**e-mail**	samarammar@uomosul.edu.iq	
Module Leader's Acad. Title	Lecturer	**Module Leader's Qualification**		Ph.D.
Module Tutor	Hussein Mahmood Mohammed	**e-mail**	hussein.mahmood@uomosul.edu.iq	
Peer Reviewer Name	Prof.Qutaiba I. Ali	**e-mail**	Qutaibaali@uomosul.edu.iq	
Scientific Committee Approval Date	01/06/2023	**Version Number**	1.0	

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

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

Module Aims أهداف المادة الدراسية	This subject provides students with the basic skills of Mathematics, which is the core of many mathematical disciplines such as optimization, financial mathematics, statistics, simulation, etc. This subject introduces students to the fundamental concepts and skills of Mathematics.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	Course Learning Outcomes (CLOs) for the course "Mathematics 2": 1. Apply the fundamental concepts of integration, including definite and indefinite integrals, to solve mathematical problems and calculate areas, volumes, surface areas, and lengths of curves. 2. Demonstrate an understanding of the fundamental theorems of integral mathematics and their applications in various mathematical disciplines, such as optimization, financial mathematics, and statistics. 3. Utilize techniques of integration, such as integration by parts, trigonometric integrals, and partial fractions, to simplify and solve complex mathematical expressions. 4. Understand and analyze the properties of transcendental functions, including the derivatives and integrals of exponential, logarithmic. 5. Analyze and evaluate the behavior and properties inverse trigonometric functions, to support mathematical modeling and problem-solving. These Course Learning Outcomes (CLOs) aim to equip students with the necessary skills and understanding of mathematics, specifically in integration, transcendental functions and applications of integration. By achieving these outcomes, students will have a strong foundation in mathematical concepts and techniques applicable to various disciplines within computer engineering, including optimization, financial mathematics, and simulation.

Indicative Contents
 	
المحتويات الإرشادية
	1. Integration
	   1.1. Mathematics and Area.
	   1.2. Formulas for Finite sums.
	   1.3. Definite Integrals.
	   1.4. The Fundamental Theorems of Integral Mathematics.
	   1.5. Indefinite Integrals.
	   1.6. Mathematics and Area.
	     Integration by Substitution –Running the Chain Rule Backward
	2. Applications of Definite Integrals
	   2.1. Areas between Curves- Mathematics and Area.
	   2.2. Volumes of Solids of Revolution-Disks and Washers
	   2.3. Cylindrical Shells-An Alternative to Washers.
	   2.4. Lengths of Curves in the Plane
	   2.5. Areas of Surfaces of Revolution.
	3. The Mathematics of Transcendental Function

	3.1. Inverse Function and Their Derivatives.
	3.2. Ln (x) ,exp , and Logarithmic Differentiation and Integration.
	3.3. Other Exponential and Logarithmic Function.
	3.4. The Inverse Trigonometric Function.
	3.5. Derivatives and Integration of Inverse Trigonometric Functions.
	4. Techniques of Integration
	4.1. Basic Integration Formulas.
	4.2. Integration by Parts.
	4.3. Tabular Integration.
	4.4. Trigonometric Integrals.
	4.5. Trigonometric Substitutions.
	4.6. Rational Functions and Partial Fractions.

Learning and Teaching Strategies
استراتيجيات التعلم والتعليم

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

Student Workload (SWL)			
الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	93	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	6
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	82	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	5.5
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	175		

<table>
<tr><td colspan="6" align="center">**Module Evaluation**
تقييم المادة الدراسية</td></tr>
<tr><td colspan="2"></td><td>**Time/Number**</td><td>**Weight (Marks)**</td><td>**Week Due**</td><td>**Relevant Learning Outcome**</td></tr>
<tr><td rowspan="2">**Formative assessment**</td><td>**Quizzes**</td><td>4</td><td>20% (20)</td><td>3, 6, 9, 13</td><td>LO #1, 3</td></tr>
<tr><td>**Assignments**</td><td>4</td><td>20% (20)</td><td>2, 5, 8, 12</td><td>LO # 2, 4</td></tr>
<tr><td rowspan="2">**Summative assessment**</td><td>**Midterm Exam**</td><td>3 hr</td><td>10% (10)</td><td>10</td><td>LO # 1-5</td></tr>
<tr><td>**Final Exam**</td><td>3hr</td><td>50% (50)</td><td>15</td><td>All</td></tr>
<tr><td colspan="2">**Total assessment**</td><td></td><td>100% (100 Marks)</td><td></td><td></td></tr>
</table>

<table>
<tr><td colspan="2" align="center">**Delivery Plan (Weekly Syllabus)**
المنهاج الاسبوعي النظري</td></tr>
<tr><td></td><td>**Material Covered**</td></tr>
<tr><td>**Week 1**</td><td>Integration: Mathematics and Area.
Formulas for Finite sums.</td></tr>
<tr><td>**Week 2**</td><td>Definite and Indefinite Integrals.
The Fundamental Theorems of Integral Mathematics.
Mathematics and Area.</td></tr>
<tr><td>**Week 3**</td><td>Integration by Substitution –Running the Chain Rule Backward
Quiz 1 + Applications of Definite Integrals: Areas between Curves- Mathematics and Area.</td></tr>
<tr><td>**Week 4**</td><td>Volumes of Solids of Revolution using Disk method
Volumes of Solids of Revolution using Washer method</td></tr>
<tr><td>**Week 5**</td><td>Cylindrical Shells-An Alternative to Washers.</td></tr>
<tr><td>**Week 6**</td><td>Quiz 2 + Lengths of Curves in the Plane.
Areas of Surfaces of Revolution.</td></tr>
<tr><td>**Week 7**</td><td>The Mathematics of Transcendental Function: Inverse Function and Their Derivatives.</td></tr>
<tr><td>**Week 8**</td><td>Ln (x) ,exp , and Logarithmic Differentiation and Integration.
Other Exponential and Logarithmic Function.</td></tr>
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Derivatives and Integration of Inverse Trigonometric Functions.</td></tr>
<tr><td>**Week 10**</td><td>Mid Term Exam
Techniques of Integration: Basic Integration Formulas.</td></tr>
<tr><td>**Week 11**</td><td>Integration by Parts.
Tabular Integration.</td></tr>
<tr><td>**Week 12**</td><td>Trigonometric Integrals.</td></tr>
</table>

Week 13	Rational Functions and Partial Fractions. Quiz 4
Week 14	**Preparatory week before the final Exam**
Week 15	**Final exam**

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	Calculus by Thomas and Finny.	Yes
Recommended Texts	Thomas' Calculus: Early Transcendentals 13th Edition by George B. Thomas,2014	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
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MODULE DESCRIPTION FORM
نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية				
Module Title	**Mathematics 2**		**Module Delivery**	
Module Type	**Basic**		☒ Theory	
Module Code	**CE110**		☒ Lecture	
ECTS Credits	**7**		☐ Lab	
			☒ Tutorial	
SWL (hr/sem)	**175**		☐ Practical	
			☐ Seminar	
Module Level	1	**Semester of Delivery**		2
Administering Department	Computer Eng.	**College**	College of Engineering	
Module Leader	Dr. Samar Ammar Yasir	**e-mail**	samarammar@uomosul.edu.iq	
Module Leader's Acad. Title	Lecturer	**Module Leader's Qualification**		Ph.D.
Module Tutor	Dr. Hussein Mahmood Mohammed	**e-mail**	hussein.mahmood@uomosul.edu.iq	
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	Mathematics 1	**Semester**	1
Co-requisites module	None	**Semester**	

Module Aims, Learning Outcomes and Indicative Contents	
أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
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Indicative Contents
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	1.5. Indefinite Integrals.
	1.6. Mathematics and Area.
	Integration by Substitution –Running the Chain Rule Backward
	2. Applications of Definite Integrals
	2.1. Areas between Curves- Mathematics and Area.
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| Learning and Teaching Strategies |
استراتيجيات التعلم والتعليم
Strategies	Type something like: The main strategy that will be adopted in delivering this module is to encourage students' participation in the exercises, while at the same time refining and expanding their critical thinking skills. This will be achieved through classes, interactive tutorials and by considering type of simple experiments involving some sampling activities that are interesting to the students.

| Student Workload (SWL) |
الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا
Structured SWL (h/sem)	78	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	5

الحمل الدراسي المنتظم للطالب خلال الفصل			
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	97	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	7
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	175		

Module Evaluation					
تقييم المـادة الدراسية					
		Time/Number	**Weight (Marks)**	**Week Due**	**Relevant Learning Outcome**
Formative assessment	**Quizzes**	4	20% (20)	3, 6, 9, 13	LO # 1,3,5,6,7
	Onsite Assignments	4	8% (8)	2, 5, 8, 12	LO # 1,3,5,4,6,7
	Online Assignments	4	8% (8)	2, 5, 8, 12	LO # 1,2,4,6,7
	Reports	1	4% (4)	5,8,11	LO # 6,7,8
Summative assessment	**Midterm Exam**	2 hr	10% (10)	10	LO # 1,2,3,4,5,6,7
	Final Exam	3hr	50% (50)	15	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)	
المنهاج الاسبوعي النظري	
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Week 12	Trigonometric Integrals.
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Week 14	**Preparatory week before the final Exam**
Week 15	**Final exam**

Learning and Teaching Resources
مصادر التعلم والتدريس

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مخطط الدرجات

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(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.