MODULEDESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information معلوماتالمادةالدراسية					
ModuleTitle	**Computer Programming**			**Module Delivery**	
ModuleType	**Basic**			☒**Theory** ☐**Lecture** ☒**Lab** ☐**Tutorial** ☐**Practical** ☐**Seminar**	
ModuleCode	**EPE205**				
ECTS Credits	**3**				
SWL(hr/sem)	125				
Module Level		4	**Semester of Delivery**		2
Administering Department		Science and Engineering	**College**	College of Engineering College of Science	
Module Leader	Hayder Salim Hameed		**e-mail**	haydersalim@uodiyala.edu,iq	
Module Leader's Acad. Title			**Module Leader's Qualification**		
Module Tutor			**e-mail**		
Peer Reviewer Name			**e-mail**		
Scientific Committee Approval Date		1/09/2024	**Version Number**		1.0

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

Module Aims, Learning Outcomes and Indicative Contents

أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Objectives أهداف المادة الدراسية	1. Providing the student with basic information about the various well-known engineering programs. 2. Familiarity with the famous mathematical and engineering analysis program (MATLAB). 3. The student's knowledge of the programming statements of the MATLAB language and how to benefit from them in writing programs to solve mathematical problems of the basics of electrical engineering for which there are no programs in ready-made systems. 4. Obtain sufficient information about using the program in mathematical analysis, programming, and the use of matrices, as well as solving and drawing complex mathematical equations.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	A- Cognitive goals A1 - Teach the student to understand the principle of programming. A2- Teaching students to know the basics of programming in Matlab. A3- Teaching the student how to explain and express the programming problem using MATLAB. A4- Enable students to obtain knowledge and understanding of building any computer application using MATLAB. A 5- Students' knowledge of linking programs with external devices those are under its control. B - Skills objectives of the course. B1 - Translate the software problem into a computer program using Matlab. B2 - Apply various computer programs. B3 - Produce computer programs in Matlab according to the given problem. B 4- Computer skills in writing various programs.
Indicative Contents المحتوياتالإرشادية	**Indicative content includes the following.** • Course introduction(4hrs) • Starting with MATLAB • **Creating Arrays** • Built-In Functions For Analyzing Arrays • **Two-Dimensional Plots** • User-Defined Functions and Function • Introduction, What is Simulink? • MATLAB & Simulink Working Together • The Solver: Zero-Crossing Options • Creation of Mask & Subsystem

Description	Introduction to MATLAB. Algebra & trigonometric function. Boolean & Matrix Operation. Complex Number. Array Indexing. Graphing. The switch Construct. If construct. while statement loop. Introduction to Simulink. Algebra & Trigonometric function representation as a block diagram. Simulation of First order systems & check their response. Simulation of Second order systems & check their response. Import & export data from/to workspace. Import & export data from/to M-file. Creation of Mask & Subsystem.

Learning and Teaching Strategies

استراتيجيات التعلم و التعليم

Strategies	**In this course, students are guided by:** • Studying the theoretical and practical academic program for the specialty lessons • The theoretical program is taught using the smart board, whiteboard or data show connected to the personal computer, discussing ideas and facts with the students. • Adopting the study through virtual electronic classes as an aid to the real classes. Assigning students to seminars and seminars that are displayed inside the classroom using the available technologies

Student Workload(SWL)

الحمل الدراسي للطالب محسوبة بال 15 اسبوع

Structured SWL(h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	63	**Structured SWL(h/w)** الحمل الدراسي المنتظم للطالب اسبوعيا	**3.2**
Unstructured SWL (h/sem) الحمل الدراسي اللامنتظم للطالب خلال الفصل	62	**Unstructured SWL(h/w)** الحمل الدراسي اللامنتظم للطالب خلال الفصل أسبوعيا	**1.8**
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
	Quizzes	**2**	**10%(10)**	**6 and 12**	A1, A2, A3, and A4
	Assignments	**2**	**10%(10)**	**2 and 13**	**A1, A3 and A5**

Formative assessment	Projects/ Lab.	1	10%(10)	Continuous	All
	Report	1	10%(10)	13	B1, B2,B3 and B4
Summative assessment	Midterm Exam	2hr	10%(10)	9	B4 and B5
	Final Exam	3hr	50%(50)	16	All
Total assessment			100%(100Marks)		

Delivery Plan (Weekly Syllabus)

المنهاج الأسبوعي النظري

	Material Covered
Week1	Introduction To MATLAB. Algebra & Trigonometric
Week2	Boolean & Matrix Operation
Week3	Complex Number, Array Indexing. Graphing
Week4	Relational And Logical Operators
Week5	If Construct. While Statement Loop
Week6	The Switch Construct
Week7	LOOPS(For-End Loops , While-End Loops , NESTED LOOPS AND NESTED CONDITIONAL STATEMENTS)
Week8	User-Defined Functions And Function
Week9	Introduction To Simulink
Week 10	Algebra & Trigonometric Function Representation As A Block Diagram
Week 11	Simulation Of First Order Systems & Check Their Response.
Week 12	Simulation Of Second Order Systems & Check Their Response
Week 13	Matlab & Simulink Working Together
Week 14	Import & Export Data From/To M-File
Week 15	Creation Of Mask & Subsystem
Week 16	Preparatory Week Before The Final Exam

Delivery Plan (Weekly-Lab Syllabus) المنهاج الأسبوعي للمختبر	
	Material Covered
Week1	**Introduction To MATLAB. Algebra & Trigonometric**
Week2	**Boolean & Matrix Operation**
Week3	**Complex Number, Array Indexing. Graphing**
Week4	**Relational And Logical Operators**
Week5	**If Construct. While Statement Loop**
Week6	**The Switch Construct**
Week7	**LOOPS(For-End Loops , While-End Loops , NESTED LOOPS AND NESTED CONDITIONAL STATEMENTS)**
Week8	**User-Defined Functions And Function**
Week9	**Introduction To Simulink**
Week 10	**Algebra & Trigonometric Function Representation As A Block Diagram**
Week 11	**Simulation Of First Order Systems & Check Their Response.**
Week 12	**Simulation Of Second Order Systems & Check Their Response**
Week 13	**Matlab & Simulink Working Together**
Week 14	**Import & Export Data From/To M-File**
Week 15	**Creation Of Mask & Subsystem**
Week 16	**Preparatory Week Before The Final Exam**

Learning and Teaching Resources
مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	• MATLAB Programming for Engineers • Modeling and simulation of systems using M**ATLAB**	No
Recommended Texts	• MATLAB An Introduction with Applications • ELECTRONICS and CIRCUIT ANALYSIS using MATLAB • Applied Mathematical Modelling of Engineering Problems • Introduction to Simulink®with Engineering Applications	No
Websites	**https://www.mathworks.com**	

Grading Scheme
مخطط الدرجات

Group	Grade	التقدير	Marks%	Definition
Success Group (50 - 100)	**A-** Excellent	امتياز	90-100	Outstanding Performance
	B-Very Good	جيدجدا	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 (قيدد 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.