



MUTAH UNIVERSITY
Faculty of Engineering
Department of Electrical Engineering



Course Syllabus
Study Plan 2021: Communication Track, and Power and Control Track

Course Code	Course Name	Credits	Contact Hours
0401220	MATLAB Applications in Electrical Engineering	1	2T

INSTRUCTOR/COORDINATOR	
Name	Eng. Anwar Tarawneh
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Office Hours	12:00-13:00 (Sun, Tue, Thu)
Classroom/Time	14:00-16.00 Sun, Tue

TEXTBOOK	
Title	Laboratory Manual for MATLAB Applications in Electrical Engineering
Author/Year/Edition	Eng. Ra'd Fathi Al-Marbheh
Other Supplemental Materials	
Title	MATLAB for Electrical and Computer Engineering Students and Professionals with Simulink
Author/Year/Edition	Roland Priemer, Edison, NJ/2013/ 2013 th Ed

SPECIFIC COURSE INFORMATION
A. Brief Description of the Content of the Course (Catalog Description)
The course will provide an overview of the most important features of the MATLAB environment and programming language in order to get you started. Starting with MATLAB. Creating arrays. Mathematical operations with arrays (matrix and array arithmetic, indexing, find, sort, row and column operations). Using script files and managing data: Getting data into MATLAB (from excel, text files). Saving MATLAB results/data (saving as MAT files, exporting to excel or elsewhere). More graphics (2-D and 3-D, building up complex figures, Changing the properties of graphics objects, Outputting high quality figures for publication). Two dimensional plots. 3D plots. Programming in MATLAB (conditional statements). User defined functions. Symbolic Math. Applications in Electrical Engineering. Simulink.

B. Pre-requisites (P) or Co-requisites (C)						
Electric Circuits 2 (0401212)						
C. Course Type (Required or Elective)						
Required						
SPECIFIC GOALS						
A. Course Learning Objectives (CLOs)						
1. Use MATLAB for applications in electrical engineering. [7]						
2. Write simple program scripts and functions in MATLAB. [1]						
3. Collect data and analyze basic electronic sensors and circuits.[6]						
B. Student Learning Outcomes (SLOs) Addressed by the Course						
1	2	3	4	5	6	7
√					√	√

BRIEF LIST OF TOPICS TO BE COVERED		
List of Topics	No. of Weeks	Contact Hours
Topic 1: Introduction to MATALB, MATLAB as A Calculator.	1	2
Topic 2: Arrays; Vectors and Matrices, Linear Algebra	1	2
Topic 3: Plotting Multiple Data Sets in One Graph.	1	2
Topic 4: Script Files and Functions.	1	2
Topic 5: Relation and Control in MATLAB.	1	2
Topic 6: Electrical Circuit Problem Solving using MATLAB	2	4
Topic 7: Generation of Signals and Sequences Using MATLAB	1	2
Topic 8: Logic Gate Design Using MATLAB	1	2
Topic 9: MATALB Simulink.	2	4
Total	11	22

EVALUATION		
Assessment Tool	Due Date	Weight (%)
Mid Exam	According to the university calendar	20
Lab Reports	One week after being taken	40
Final Exam	According to the university calendar	40

ABET's Students Learning Outcomes (Criterion # 3)

		Relationship to program outcomes
ABET 1-7		... Engineering Student Outcomes
1.	✓	an ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics
2.		an ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic
3.		ability to communicate effectively with a range of audiences
4.		an ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts
5.		an ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and
6.	✓	an ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions
7.	✓	an ability to acquire and apply new knowledge as needed, using appropriate learning strategies