EE373-2: Practical Special Topics

Course code and name	EE373-2: Practical Special Topics
Credits units	2 Credit units
Contact hours	6 Contact hours: 0 lecture, 0 tutorial and 6 practical
Instructor name	Dr. Shahir Hussain
Textbook	MATLAB: An Introduction with Applications, 6th Edition, By Amos Gilat, 2016, Wiley publisher, ISBN 978-1-119-25683-0
Other supplemental materials	- Getting Started with MATLAB, version 6 - A Guide to MATLAB for Beginners and Experienced Users, 2nd edition - MATLAB for Engineers, 3rd Edition, By Holly Moore, 2012, Pearson publisher, ISBN 978-0-13-210325-1. - MATLAB and SIMULINK documentation.
	Specific course information
a. Course description	This course will give the students a sufficient background on Matlab fundamentals for the purpose of skills application of theoretical materials. All the principles and fundamentals of Matlab language are presented.
b. Prerequisite	EE272-2
c. Required / Elective	Required
	Course Learning Outcomes
<u>CLO of the Lecture Activities:</u> CLO1: Identify and write programs in MATLAB to solve basic engineering problems. CLO2: Recognize computer programs and simulations consisting of multiple modules of numerical methods to analyze electrical engineering problems. CLO3: Analyze and Make the MATLAB m.file and functions file that perform required tasks based on specified data inputs and outputs of engineering problems.	

CLO of the Laboratory Activities:

CLO1: Verify theory and to improve knowledge learned in class.

CLO2: Formulate and solve problems related to theory.

CLO3: Design and safety conducts an experimental procedure.

CLO4: Independently perform accurate quantitative measurements, interpret experimental results, perform calculations on these results and draw a reasonable, accurate conclusion.

CLO5: Communicate critical analysis of scientific information through written reports.

CLO6: Be integrated inside a group of work and respect the team working.

Brief list of topics to be covered

- An Overview of MATLAB

- Arrays

- Mathematical Operations with Arrays

- Script Files and Managing Data

- 2D Plots & 3D Plots

- Programming in MATLAB

- User-Defined Functions

- Polynomials

- Numerical Methods - Symbolic Math

- Simulink

- MATLAB Applications in Electrical Engineering (circuits, signal processing: sound, digital image processing)

Mapping Course Learning Outcomes to Student Outcomes

	Lecture Activities						
	SO1	SO2	SO3	SO4	SO5	SO6	SO7
CLO1							
CLO2							
CLO3							
	Laboratory Activities						

	SO1	SO2	SO3	SO4	SO5	SO6	SO7
CLO1							
CLO2							
CLO3							
CLO4							
CLO5							
CLO6							