

The University of Texas at Tyler
Department of Electrical Engineering

EENG 2101 – Matlab for Engineers (Required)

Syllabus

Catalog Description:

An introduction to engineering problem solving; MATLAB environment; MATLAB functions; matrix computations; graphing and plotting data; numerical techniques.

Prerequisites: None

Credits: (1 hours lecture, hours laboratory per week)

Text(s): MATLAB An Introduction with Applications, Amos Gilat, Wiley, Fourth Edition, ISBN 978-0-470-76785-6

Additional Material: Student Version of MATLAB strongly recommended

Course Coordinator: Hector A. Ochoa

Topics Covered: (paragraph of topics separated by semicolons)

The MATLAB environment; MATLAB math functions applied to scalars and vectors; two- and three-dimensional plotting; complex numbers in MATLAB; structured programming in MATLAB; matrix computations; solution of simultaneous equations; numerical methods in MATLAB; Graphic User Interface (GUI)

Evaluation Methods: (only items in dark print apply):

1. Examinations / Quizzes
2. Homework
3. Report
4. Computer Programming
5. Project
6. Presentation
7. Course Participation
8. Peer Review

Course Objectives¹: By the end of this course students will be able to:

1. Identify and use MATLAB math functions with scalar and matrix arguments;
2. Employ MATLAB function to create two- and three-dimensional plots;
3. Write basic structured programs in MATLAB;
4. Solve sets of simultaneous linear equations with MATLAB;
5. Perform matrix algebra with MATLAB;
6. Solve problems with numerical techniques (e.g., numerical integration, solution of nonlinear equations, curve-fitting, basic statistics)
7. Create basic Graphic User Interfaces (GUI) on MATLAB

¹Numbers in brackets refer to method(s) used to evaluate the course objective.

Relationship to Program Outcomes (only items in dark print apply)²: This course supports the following Electrical Engineering Program Outcomes, which state that our students will:

1. have the ability to apply knowledge of the fundamentals of mathematics, science, and engineering [1,4-6];
2. have the ability to use modern engineering tools and techniques in the practice of electrical engineering [1-6];
3. have the ability to analyze electrical circuits, devices, and systems;
4. have the ability to design electrical circuits, devices, and systems to meet application requirements;
5. have the ability to design and conduct experiments, and analyze and interpret experimental results;
6. have the ability to identify, formulate, and solve problems in the practice of electrical engineering using appropriate theoretical and experimental methods;
7. have effective written, visual, and oral communication skills;
8. possess an educational background to understand the global context in which engineering is practiced, including:
 - a. knowledge of contemporary issues related to science and engineering;
 - b. the impact of engineering on society;
 - c. the role of ethics in the practice of engineering;
9. have the ability to contribute effectively as members of multi-disciplinary engineering teams;
10. have a recognition of the need for and ability to pursue continued learning throughout their professional careers.

²Numbers in brackets refer to course objective(s) that address the Program Outcome.

Contribution to Meeting Professional Component: (in semester hours)

Mathematics and Basic Sciences:		Hours
Engineering Sciences and Design:	1	Hours
General Education Component:		Hours

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	Hector A. Ochoa		11 January 2010
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