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, 0 hours laboratory per week )


**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 Objectives**¹: 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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Modified By: Hector A. Ochoa  Date: 23 February 2009
Hector A. Ochoa  Date: 11 January 2010
Hector A. Ochoa  Date: 11 January 2011