Syllabus

ESC 170 Computing for Engineers

General Information

Date

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Author

Selim Araci

Department

Science and Technology

Course Prefix

ESC

Course Number

170

Course Title

Computing for Engineers

Course Information

Credit Hours

3

Lecture Contact Hours

2

Lab Contact Hours

3

Catalog Description

A first course that introduces a variety of fundamental computational techniques to the engineering student which are essential in the analysis and solution of engineering problems. The course utilizes the software packages of MATLAB and LabVIEW as the main computational tools. Topics include modeling, simulation, numerical analysis, data acquisition, data visualization, and instrument control. Both the structured text and graphical programming approaches are used in the course.

Key Assessment

This course does not contain a Key Assessment for any programs

Prerequisites

None

Co-requisites

MAT 145

Grading Scheme

Letter

First Year Experience/Capstone Designation

This course DOES NOT satisfy the outcomes applicable for status as a FYE or Capstone.

SUNY General Education

This course is designated as satisfying a requirement in the following SUNY Gen Ed category

None

FLCC Values

Institutional Learning Outcomes Addressed by the Course

Inquiry

Perseverance

Interconnectedness

Course Learning Outcomes

Course Learning Outcomes

1. Apply the basic principles of computer programming to the solution of engineering problems.

2. Write text-based programs in MATLAB to analyze basic engineering problems.

3. Use SIMULINK to develop models for simulating dynamic engineering problems.

4. Write basic graphical programs in LabVIEW to control instruments

Outline of Topics Covered

I. MATLAB Structure and Basics

II. M-Files

III. MATLAB Vectors

IV. Matrices in MATLAB

V. Graphing in MATLAB

VI. Solving Linear Equations