

# Virginia Western Community College

## EGR 127

### Introduction to Computer Programming

#### **Prerequisites**

None

#### **Course Description**

Introduces programming in a higher level language such as FORTRAN, BASIC or PASCAL, or C++ on the microcomputer. Uses the operating system, packaged software and peripheral devices. Emphasizes engineering program problem solving. Lecture 1-2 hours. Laboratory 1-2 hours. Total 2-4 hours per week.

**Semester Credits: 2**

**Lecture Hours: 2**

#### **Required Materials**

##### **Textbook:**

MATLAB for Engineers, 4/E, Holly Moore, ISBN-10: 0133485978 • ISBN-13: 9780133485974

##### **Other Required Materials:**

Calculator

Access to Excel or other spreadsheet software

#### **Course Outcomes**

**At the completion of this course, the student should be able to:**

- Create a User-Defined function in MATLAB
- Manipulate matrices in MATLAB
- Create Plots in MATLAB
- Write simple decisional and/or repetition programs in MATLAB

#### **Topical Description**

<b>Week</b>	<b>Topic</b>
1	About MATLAB
2	MATLAB Environment
3	Built-In MATLAB Functions
4	Manipulating MATLAB Matrices
5	Plotting
6	User-Defined Functions

- 7 User-Controlled Input & Output
- 8 Logical Functions and Selection Structures
- 9 Repetition Structures
- 10 Matrix Algebra
- 11 Other Arrays
- 12 Symbolic Mathematics
- 13 Numerical Techniques
- 14 Advanced Graphics & GUI's
- 15 SimuLink – An Introduction
- 16 Final Exam

### **Notes to Instructors**

1. All instructors teaching this course will use the same textbook.
2. Course content within this course may be covered at the instructor's discretion but with all topics being understood.
3. This course and its grades will be structured around a minimum of a midterm exam, final exam, and homework.
4. At the end of the semester, all instructors will give the outcome assessment as it relates to the final exam to the program head at the same time they prepare their student final grades.
5. The final exam will include only the material covered after the midterm exam.