

**Hagerstown Community College  
Master Syllabus**

**COURSE:** MAT 209 – Engineering Programming Using MATLAB (3 Credits)  
**INSTRUCTOR:** Jennifer Szczesniak **SEMESTER/YEAR:** 17 Fall

**COURSE DESCRIPTION:**

This course is designed to give students exposure to the commonly-used scientific computing language MATLAB®. Students learn to do numerical and symbolic operations, solve equations, display graphics and write programs to solve problems.

Total of 37.5 hours of class time. Prerequisite: MAT 101 or MAT 161. Semester offered: Fall.

**TEXTBOOK:** MATLAB: An Introduction with Applications 5<sup>th</sup> edition by Gilat  
ISBN 978-1118629864 or comparable text.

**LEARNING OUTCOMES:**

**Upon successful completion of this course, students will:**

1. Use the MATLAB command window to perform basic mathematical calculations and algebraic operations.
2. Program multiple computations into an m-file.
3. Solve equations and systems both algebraically and numerically.
4. Display 2-D graphics.
5. Develop programs using if-else statements and while loops.
6. Create MATLAB programs that require user-defined functions.

**Total Hours of Coursework: 112.5 hours**

To earn one academic credit at HCC, students are required to complete a minimum of 37.5 clock hours (45 fifty-minute “academic” hours) of coursework per semester. Those hours of coursework may be completed through a combination of hours within the classroom and hours outside the classroom. Certain courses may require more than the 37.5 minimum hours of coursework per credit.

For most classes, students should expect to do at least 2 hours of coursework outside of class for each hour of in-class coursework.

**Total Time Needed: 112.5 hours**

<b>Activity</b>	<b>Time Needed</b>
<b>Outside of the Classroom</b>	
Practice	30 hours
Assignments	20 hours
Projects	15 hours
Test Preparation	10 hours
<b>Subtotal</b>	<b>75 hours</b>
<b>Inside of the Classroom</b>	<b>37.5 hours</b>
<b>Total</b>	<b>112.5 hours</b>