

**Hagerstown Community College**  
**OFFICIAL MASTER SYLLABUS DOCUMENT**

**COURSE:** ELE 140 Introduction to Robotics

**Credits:** 3

**INSTRUCTOR:**

**SEMESTER/YEAR:** Spring 2018

**COURSE DESCRIPTION:**

This course will provide instruction in the basic principle and application of robotic and motion control systems. With a focus on industrial robotic applications, this course will include: basic robotic principles, power supplies, motion control, sensors, grippers, control systems and maintenance. Prerequisites: INT-110 and INT-102. Lab Fee: \$100..

**TEXTBOOK:**

Robotics Theory and Industrial Applications, 2nd Edition,, Ross, Fardo, Masterson and Towers, The Goodheart-Wilcox Co., 2011 ISBN 978-1-60525-321-3

**Class Methods:**

The class will be taught using lecture, discussion, laboratory projects, research assignments and group activities.

**STUDENT LEARNING OUTCOMES:**

On successful completion of this course, students should be able, at entry level, to:  
Classify and define different robot styles

- Successfully program an industrial robot
- Describe degrees of freedom and identify how many a robot may have
- Identify Pneumatic and Hydraulic components
- Define End Effector and identify the different types
- Troubleshoot malfunctioning code

**MINIMUM CLOCK HOURS REQUIRED FOR THIS COURSE**

**Total Hours of Coursework:**

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.

<b>Assignment/Assessment</b>	<b>Clock Hours</b>
In-class Instruction	45
Textbook Chapter Readings	15 hours
Study of Manuals for Hands-on	15 hours
Chapter Review Questions and Answers	15 hours
Research Assignments	15 hours
Exam Preparation	20 hours
	<b>Total hours=125 hours</b>

**Services for Students with Disabilities:** Students may receive reasonable accommodations if they have a diagnosed disability and present appropriate documentation. Students seeking accommodations are required to contact the Disability Support Services (DSS) office as early as possible. Students may contact a DSS staff member for an appointment at [dss@hagerstowncc.edu](mailto:dss@hagerstowncc.edu) or at 240-500-2530