

# Hagerstown Community College Master Syllabus

## Course ELE 203: PLC Applications

### Course Information

ELE 203 PLC Applications

3 Credits

Fall 2018

### Instructor Information

### Course Description

This course features the Allen-Bradley SLC-500, PLC 5, A.I. Series, and RSLogic software. Topics include conceptual understanding and troubleshooting of PLC systems, which utilize data manipulation instructions, program control instructions, data communications, remote I/O, analog I/O, block transfer, and PID process controls. PID based motion control is also discussed. Students will study the methodology to design PLC applications. Discrete, continuous and batch processes in manufacturing plants are covered with some detail. An emphasis on code design for discrete and continuous processes and essentials of troubleshooting and problem solving is the central part of this course. The goal is for students to be able to design, analyze, and install PLC industrial PLC systems. Total of 45 hours of lecture.

### Textbook and Course Materials

Allen-Bradley PLCs: An emphasis on Design and Application 1st Edition. Kelvin T. Erickson. Dogwood Valley Press. ISBN: 9780976625933

### Student Learning Outcomes

- Specify PLC equipment. Design, code and build PLC applications.
- Understand strengths and limitations of several PLC hardware/software configurations.
- Troubleshoot code and hardware related failures.
- Be able to troubleshoot code and hardware related failures.

### Definition of Credit Hour: Classroom Courses

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 in 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 complete at least 2 hours of coursework outside of class for each hour of in-class coursework.

Classwork type	Clock Hours
Lecture	45
Textbook Chapter Readings	15
Projects	10
In class Activities prep	15
Lecture Exams	40
Final	10
<b>Total</b>	<b>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.