

# Hagerstown Community College Master Syllabus

## ELE 113: Instrumentation and Process Control I

### Course Information

Course #: ELE 113 Instrumentation and Process Control I

3 Credits

Fall 2018

### Instructor Information

Instructor: Juan C Luna

### Course Description

This class will introduce students to the concept and application of typical process control systems used in today's industries. Students will develop a basic understanding of the most common types of instrumentation used to measure such items as level, flow, pressure and temperature. Students will learn how data is collected and used to monitor, test, and diagnose various types of systems. Hands-on exercises will include demonstrations of different measurement devices, open loop systems, and an introduction to PID control. Course fee required. Total of 45 hours of lecture.

### Textbook and Course Materials

*Fundamentals of Industrial Instrumentation and Process Control, 2nd Edition; William Dunn, 2005 McGraw Hill. ISBN 978-1260122251.*

### Student Learning Outcomes

- Identify the various types of instrumentation used in industry.
- Understand basic control techniques, specifically PID loop control.
- Understand control systems and terminology.

### 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	Direct Faculty Instruction In-class <b>37.5 hours required</b>	Student Work Out of Classroom <b>75 hours required</b>
In-class lecture and discussion	45 hours	

Classwork type	Direct Faculty Instruction In-class <b>37.5 hours required</b>	Student Work Out of Classroom <b>75 hours required</b>
Reading		48 hours
Quiz/exam studying		12 hours
Reading question completion		8 hours
Paper writing		18 hours
<b>Total</b>	<b>45 hours</b>	<b>86 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.