

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

**COURSE:** ELE 113 Instrumentation and Process Control I 3 Credits

**INSTRUCTOR:**

DATE: Fall 2017

**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:**

Fundamentals of Industrial Instrumentation and Process Control, 1st Edition; William Dunn, 2005 McGraw Hill. ISBN 9780071457354

**STUDENT LEARNING OUTCOMES:**

On successful completion of this course, students should be able to:

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

**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.

**Minimum clock hours required for this course**

	DIRECT Faculty Instruction In-class <b>37.5 hours required</b>	Student Work Out of Classroom <b>75 hours required</b>
In-class "lecture"	37.5 hours	
Reading chapters		15 hours
Quiz/activity for each chapter	Included in lecture time	10 hours prep
Lab Activities Prep		10 hours
3 lecture exams		30 hours exam prep
Cumulative final exam (Academic Testing Center)	Included in lecture time	10 hours exam prep
<b>Total Hours</b>	<b>37.5 hours</b>	<b>75 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.