

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

**COURSE:** ELE 101 Device Data Systems Architecture 3 Credits

**INSTRUCTOR:**

**SEMESTER/YEAR:** Spring/2018

**COURSE DESCRIPTION:**

In this course, students will study the essentials of troubleshooting and problem solving of industrial data communications systems including areas such as RS-232, RS-485, industrial protocols such as Modbus, fiber optics, industrial Ethernet, TCP/IP, DeviceNet and Fieldbus protocols such as Profibus and Foundation Fieldbus.. The goal is for students to be able to design, analyze, and install industrial data networks. Total of 45 hours of lecture.

**TEXTBOOK:**

Practical Industrial Data Networks: Design, Installation and Troubleshooting. 1<sup>st</sup> Edition.  
Steve Mackay, Edwin Wright, Deon Reynders, John Park. Newnes-Elsevier. ISBN:  
978075065807X

Optional

Fieldbus and Networking in Process Automation, Sunit Kumar Sen. CRC-Press. ISBN  
9781466586765

**STUDENT LEARNING OUTCOMES:**

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

- Specify and build network components related to industrial data networks.
- Understand strengths and limitations of several industrial data protocols.
- Troubleshoot simple networking protocol problems

**TOTAL HOURS OF COURSEWORK FOR ONLINE CLASSES:**

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 h required</b>	Student Work Out of Classroom <b>75 h required</b>
In-class “lecture”	37.5 hours	
Reading chapters		15 hours
Projects	Included in lecture time	10 hours prep
Lab Activities Prep		10 hours
Lecture exams		30 hours exam prep
Cumulative final exam	Included in lecture time	10 hours exam prep

**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.