Hagerstown Community College Master Syllabus
ELE 158: Circuits, Schematics, and Test Equipment

Course Information
Course ELE 158 Circuits, Schematics, and Test Equipment
3 Credits
Fall 2019

Instructor Information

Course Description
This course teaches students how to recognize, interpret, and troubleshoot electrical and electronic circuits thru symbol identification and use of a variety of test instruments. Students will learn to effectively solve problems through critical thinking, logical and root cause analysis. Electrical standards for circuit structure using NFPA 79, IEEE, and IEC Standards, as well as ANSI and IEC codes and symbols. Total of 45 hours of lecture.

Textbook and Course Materials
• BEGINNER'S GUIDE TO READING SCHEMATICS 4th edition STAN GIBILISCO ISBN: 9781260031102
• MAKE YOUR OWN PCBs WITH EAGLE 2nd Edition SIMON MONK ISBN: 9781260019193

Student Learning Outcomes
• Recognize standard schematic symbols for common electrical and electronic components.
• Recognize and competently use common test equipment to evaluate test circuits.
• Understand measurement errors and calibration procedures.
• Understand the complete cycle of printed circuit board fabrication.

Course Content Objectives
• Recognize electrical circuit components.
• Read schematics, identify and test electronic devices.
• Have a practical hands-on understanding of circuit design, testing, and manufacturing.
• Understand how to use and calibrate test instruments to measure physical variables.

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.

<table>
<thead>
<tr>
<th>Classwork type</th>
<th>Clock Hours</th>
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<tbody>
<tr>
<td>In-class/Online lecture and discussion</td>
<td>45</td>
</tr>
<tr>
<td>Textbook Chapter Readings</td>
<td>15</td>
</tr>
<tr>
<td>Study of Manuals for Hands-on Activities</td>
<td>15</td>
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<tr>
<td>Classwork type</td>
<td>Clock Hours</td>
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<tr>
<td>Chapter Review Questions and Answers</td>
<td>15</td>
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<tr>
<td>Research Assignments</td>
<td>15</td>
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<tr>
<td>Test Preparation</td>
<td>20</td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>125 hours</strong></td>
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**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 or at 240-500-2530.