

# Hagerstown Community College Master Syllabus

## ELE 204: Electrical Machines

### Course Information

Course #: ELE 204 Electrical Machines

3 Credits

Spring 2019

### Instructor Information

### Course Description

In this course, students will learn industrial electric motors, generators, and transformers. Topics include three-phase circuits, saturation and hysteresis, eddy currents/losses, DC motors, AC motors, synchronous machines, induction machines, and the properties of various types of transformers. Total of 30 hours of lecture.

### Textbook and Course Materials

*Electric Motors and Control Systems, Frank Petruzella. McGraw Hill. ISBN 9780073373812*

### Student Learning Outcomes

- Provide an understanding of motor electrical drawings, nameplates and terminology.
- Explain the operation and installation of DC and AC motors.
- Describe various motor control circuits and associated electronics devices.
- Explain the operation of adjustable-speed drives.

### 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<br>In-class<br><b>37.5 hours required</b> | Student Work Out of<br>Classroom<br><b>75 hours required</b> |
|---------------------------------|--|--|
| In-class lecture and discussion | 45 hours   |  |
| Reading                         |  | 48 hours   |
| Quiz/exam studying              |  | 12 hours   |
| Reading question completion     |  | 8 hours  |

| Classwork type | Direct Faculty Instruction<br>In-class<br><b>37.5 hours required</b> | Student Work Out of<br>Classroom<br><b>75 hours required</b> |
|----------------|--|--|
| 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.