

Hagerstown Community College
OFFICIAL MASTER SYLLABUS DOCUMENT

COURSE: EGT–235-01 Fluid Power (3 credits)

INSTRUCTOR: Olu Bamiduro, Ph.D. **SEMESTER/ YEAR:** SPRING/ 2018

COURSE DESCRIPTION:

This course focuses on the industrial use of fluid power. The fundamental properties of fluid statics and dynamics are applied to the design of pumps, valves, motors, actuators, accumulators, fluid circuits, and control systems. Laboratory fee required. Co requisite: MAT 101 or MAT 114

TEXTBOOK (REQUIRED):

Fluid Power with Applications, 2009, Prentice-Hall. 7th Edition ISBN 0-13-513690-4

TEXTBOOK (SUGGESTED):

Introduction to Fluid Power; Johnson, 2002, Delmar; ISBN: 07668-2365-2

STUDENT LEARNING OUTCOMES:

Upon completion of this class the student will be able to:

- Identify the following properties of fluids: density, specific gravity, pressure and viscosity
- Understand hazards of hydraulic and pneumatic circuits and be able to work safely.
- Understand the concepts of fluid statics and dynamics as applied to commercial and industrial control.
- Apply the following laws to analyzing basic closed fluid systems: Pascal’s law, Bernoulli’s equation, continuity, hydraulic power, Darcy’s equation, Reynolds number and equivalent length
- Recognize standard schematic symbols for common fluid power components.
- Understand and troubleshoot basic fluid power, electro-hydraulic, and electro-pneumatic circuits using schematic diagrams.
- Understand the operation, application, and maintenance of common fluid power components such as pumps, compressors, valves, cylinders, motors, rotary actuators, accumulators, pipe, hose, and fittings.
- Be able to find component application data online.
- Be able to select components from manufacturer’s catalogs.

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.

Revised 01/01/2018

	Direct Faculty Instruction (In Class) 37.5 Hrs. Required	Student Work (Out of Class) 90 Hrs. Required
Lecture & Lab time	60 Hours	
3 Exams (2 Tests and Final Exam)		(3 Exams) x (3 Hrs. Prep) = 9 Hrs.
Labs		(11 Lab ASSG's) x (3 Hrs)=33 Hrs.
Homework Assignments		(11 Assignment) x (4 Hrs)= 44 Hrs.
Other Instructor Material		4 Hrs.

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