

**Eastern WV Community & Technical College
Master Course Record**

Course Prefix and Number: ELM 120
Course Title: Fundamentals of Fluid Power
Recommended Transcript Title: Fundamentals of Fluid Power
Date Approved/Revised: November 2, 2007; November 18, 2013; July 14, 2014; December 15, 2014; September 21, 2015
Credit Hours: 3 Contact hours per week (Based on 15 week term): Lecture: 2 Lab: 2
Prerequisite: Corequisite: Pre/Corequisite:
Grading Mode: Letter grade
Catalog Description: This course introduces the student to the theory and application of fluid power. Hydraulic and pneumatic devices and circuits will be studied. The construction, function and application of these devices will be emphasized. Fluid power schematics, circuitry, instrumentation and control will be investigated.
Course Outcomes: <ul style="list-style-type: none"> • Apply Pascal's Law using proper terminology and units. • Discuss fluid flow in hydraulic circuits • Demonstrate fluid circuit analysis • Discuss fluid pressures and power • Explain the ideal gas law ($P_1V_1/T_1=P_2V_2/T_2$) and its three derivations • Define power in a fluid power system.
Implementation Cycle: Fall
Role in College Curriculum: (Check all that apply) <input type="checkbox"/> General Education Core (Specify category) <input checked="" type="checkbox"/> Technical Core (Specify Program) Electromechanical Technology or Wind Energy Technology <input type="checkbox"/> Restricted Elective (Specify Program) <input type="checkbox"/> General Elective <input type="checkbox"/> Workforce Education <input type="checkbox"/> Other (Please specify)
Course Fee: Yes
Instructor's Qualifications: BS Engineering/Technology or related discipline and/or expertise and experience in the field.
Expanded Course Description: This course provides the students with a complete introduction to fluid power, including hydraulics and pneumatics. The differences and similarities between hydraulics and pneumatics are identified. Component specifications and realistic numbers are used so as to develop practical system design skills. The course includes: principles of hydraulics and pneumatics, hydraulic pumps and motors, hydraulic flow and pressure control, pneumatic power supply, electrical control; and common and

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Date Prepared/Revised: 09/27/07; 11/18/13; 12/05/14

Date Course Approved by LGE: 11/02/07; 11/18/13; 07/14/14; 12/15/14; 09/21/15

metric nomenclature. Pneumatic air preparation and air distribution are included. These course learning objectives are aligned with NCCER (National Center for Construction Education and Research) Curriculum which will allow students to complete certification testing and receive listing on the National Registry with NCCER. Students will also have the knowledge to obtain PMMI (The Association for Packaging and Processing Technologies) certificates of completion and be registered in the PMMI National Database.

Prepared by:

Ward Malcolm, Dean for Career & Technical
12/05/14

11/18/13; 07-14-14:

Skip Landes, 05/25/15

Approved Per LOT Minutes;

Dean, Academic and Student Services

Date