Eastern WV Community & Technical College
Master Course Record

Course Prefix and Number: PHS 115
Course Title: Applied Physics
Recommended Transcript Title: Applied Physics
Date Approved/Revised: 1/6/06; 4/15/13; 11/18/13; 12/8/14; 10/5/17
Credit Hours: 3 **Contact hours per week (Based on 15 week term):** **Lecture:** 2 **Lab:** 2
Prerequisite: MTH 115 or higher OR minimum acceptable test scores for placement in college-level math. **Corequisite:** None **Pre/Corequisite:**
Grading Mode: Letter Grade
Catalog Description: This course introduces the student to the basic study of the principles of physics and mechanics. A non-calculus approach to the concepts and applications is presented in this course. Students are shown by examples, classroom demonstration, and laboratory experiments how these concepts are applied. Problem solving techniques are stressed.
Course Outcomes: Upon completion of this course, the student will be able to: 1. Understand the units of length, area, volume, mass, weight, and time. 2. Analyze and solve technical problems. 3. Apply Newton's three laws of motion. 4. Analyze one-dimensional, two-dimensional concurrent, and two-dimensional parallel forces. 5. Calculate torque. 6. Define and calculate work and power. 7. Define and calculate kinetic and potential energies. 8. Solve for the mechanical advantage and efficiency of a system. 9. Calculate stress and strain on materials. 10. Understand hydraulics. 11. Calculate flow rate. 12. Understand heat transfer by conduction, convection, and radiation. 13. Use Ohm's law to analyze series, parallel, and compound circuits. 14. Describe the relationship between electricity and magnetism. 15. Discuss how transformers work.
Implementation Cycle: Fall
Role in College Curriculum: (Check all that apply) **X General Education Core:** Science AAS; CAS

☐ **Technical Core: (Specify Program)** ☐ **Restricted Elective (Specify Program)** ☐ **General Elective** ☐ **Workforce Education** ☐ **Other (Please specify)**
Course Fee: None
Instructor's Qualifications: Bachelors of Science with experience in the field.
Expanded Course Description: This course introduces the student to the basic study of the principles of physics and mechanics. A non-calculus approach to the concepts and applications is presented in this course. Students are shown by examples, classroom demonstration, and laboratory experiments how these concepts are applied. Problem solving techniques are stressed. Topics include units, linear motion, force and momentum, energy, work and power, rotational motion, machines, strength of materials, fluids, fluid flow, temperature, heat waves and magnetism.

Prepared by: Ward Malcolm
Eric Putze, Advanced Technology/Wind Energy Faculty, 10/5/17

Approved Per LOT Minutes: 11/18/13

Dean, Academic and Student Services Date