A. Course Description

Credits: 5

Prerequisites: MATH 115 College Algebra AND PHYS 111 General Physics I - Algebra Based

Lab Hours/ Weeks: Corequisites: None

Lecture Hours/ Week :

MnTC Goals: None

This course is a continuation of Phys 111 General Physics I. Phys 112 covers concepts of light, electricity/magnetism, nuclear energy and modern physics. It is taught at the algebra/trigonometry level and includes extensive laboratory work.


C. Outline of Major Content Areas:

See Course Description for major content areas.

D. Learning Outcomes (General)

1. Demonstrate understanding of scientific facts and theories in physics.
2. Ability to use all of the above listed physics knowledge in quantitative problem solving.
3. Communicate their experimental findings, analyses, and interpretations both orally and in writing.
4. Demonstrate quantitative reasoning skills and competency with arithmetic, algebra and elementary statistics at a level appropriate for graduates of bachelors degree programs.
5. Evaluate societal issues from a natural science perspective, ask questions about the evidence presented, and make informed judgments about science-related topics and policies.
6. Formulate and test hypotheses by experiment in physics, including the collection of data, statistical and graphical analysis of results, and interpretation of its sources of error and uncertainty.
7. Recall, describe and apply the concepts, knowledge and vocabulary of physics at the level necessary for informed citizenship and success in courses that require algebra-based physics.
8. Understand magnetic fields, solenoids, inductance, Faraday's law, Lenz's law, the formation of AC current, and how electromagnetic waves are formed.
9. Understand the principles of geometric optics and physical optics.
10. Understand the principles of quantization and conservation of electric charge, Coulomb's Law, Gauss's Law qualitatively, the concepts of electric field, electric potential, electric potential energy, capacitors, the formation of DC current, Ohm's law, the rules of series and parallel connections of resistors, Kirchhoff's rules, energy dissipation and transformation in an electric circuit.

E. Learning Outcomes (MN Transfer Curriculum)

This contains no goal areas.

G. Special Information

None