PHYS 112  General Physics 2  
Credit Hours:  4  
Scheduled hours per week  
  Lecture: 3  
  Lab: 2  
  Other: 0

Catalog Course Description:  Continuation of PHYS 111. Light; optics; electricity; magnetism; modern physics. (Calculus based.)

Pre-requisites:  MATH 156, PHYS 111

Co-requisites:  PHYS 112L

Course Learning Outcomes:
Upon successful completion of this course, students are expected to be able to:

1. Demonstrate a working knowledge of the principles and concepts of university-level calculus based physics.  
2. Solve scientific or engineering problems involving the fundamental laws of physics;  
3. Apply physics to the workings of the world;

Topics to be studied:  
  • Electric Charge and Electric Field  
  • Electric Potential and Electrical Energy  
  • Electric Currents  
  • Direct Current Circuits and Instruments  
  • Magnetism  
  • Electromagnetic Induction  
  • Alternating Current Circuits  
  • Electromagnetic Waves;  
  • Light  
  • Interference and Diffraction of Light  
  • Optical Instruments  
  • Introduction to Modern Physics

Relationship of Course to Program or Discipline Learning Outcomes:

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<th>Relationship of Course to Science Learning Outcomes:</th>
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<td>Students will learn the process and reasoning behind the Scientific Method and be able to conduct experiments that meet the requirements of the model.</td>
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<td>Students exhibit the basic safety-related rules and regulations of working in the lab.</td>
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<td>Students be able to recount the basic safety tenants associated with a specific scientific discipline.</td>
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<td>Students will become proficient at Science Writing.</td>
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Students will recognize and identify the applications of their specific discipline in the ‘real world.’

Students will accurately recount important milestones in the history of scientific inquiry in their discipline.

5/3/2016

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<th>Relationship of Course to General Education Learning Outcomes:</th>
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<td><strong>Composition and Rhetoric</strong> Students illustrate a fundamental understanding of the best practices of communicating in English and meet the writing standards of their college or program-based communication requirements.</td>
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<td><strong>Science &amp; Technology</strong> Students successfully apply systematic methods of analysis to the natural and physical world, understand scientific knowledge as empirical, and refer to data as a basis for conclusions. x</td>
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<td><strong>Mathematics &amp; Quantitative Skills</strong> Students effectively use quantitative techniques and the practical application of numerical, symbolic, or spatial concepts. x</td>
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<td><strong>Society, Diversity, &amp; Connections</strong> Students demonstrate understanding of and a logical ability to successfully analyze human behavior, societal and political organization, or communication.</td>
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<td><strong>Human Inquiry &amp; the Past</strong> Students interpret historical events or philosophical perspectives by identifying patterns, applying analytical reasoning, employing methods of critical inquiry, or expanding problem-solving skills.</td>
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<td><strong>The Arts &amp; Creativity</strong> Students successfully articulate and apply methods and principles of critical and creative inquiry to the production or analysis of works of art.</td>
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Special requirements of the course:

Additional information:

Prepared by: Jared Gump

Date: 10/20/17