PHYS 103  Introductory Physics
Credit Hours:  4
Scheduled hours per week
  Lecture: 3
  Lab: 2
  Other: 0

Catalog Course Description: Designed to meet the requirements of the Elementary Education Science Specialization 5-9. Topics to be covered are motion, work, energy, heat, sound, light, electricity and magnetism. An integration of scientific inquiry with basic principles of physics.

Pre-requisites:  MATH 126

Co-requisites:  PHYS 103L

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

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

Topics to be studied:
- Linear and Circular motion
- Force
- Newton's Laws of Motion
- Work, Energy, and Power
- Gravity
- Momentum
- Waves
- Thermodynamics
- Electric Charge and Electric Field
- Electric Potential and Electrical Energy
- Electric Currents
- Direct Current Circuits
- Magnetism
- Electromagnetic Waves;
- Light

Relationship of Course to Program or Discipline Learning Outcomes:

<table>
<thead>
<tr>
<th>Relationship of Course to Science Learning Outcomes:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<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>
<td>x</td>
</tr>
<tr>
<td>Students exhibit the basic safety-related rules and regulations of working in the lab.</td>
<td>x</td>
</tr>
</tbody>
</table>

WVUP UCS Form Revised June 2017
Students be able to recount the basic safety tenants associated with a specific scientific discipline.

Students will become proficient at Science Writing.

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

### Relationship of Course to General Education Learning Outcomes:

<table>
<thead>
<tr>
<th>Learning Outcomes</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Composition and Rhetoric</strong></td>
<td>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>
</tr>
<tr>
<td><strong>Science &amp; Technology</strong></td>
<td>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.</td>
</tr>
<tr>
<td><strong>Mathematics &amp; Quantitative Skills</strong></td>
<td>Students effectively use quantitative techniques and the practical application of numerical, symbolic, or spatial concepts.</td>
</tr>
<tr>
<td><strong>Society, Diversity, &amp; Connections</strong></td>
<td>Students demonstrate understanding of and a logical ability to successfully analyze human behavior, societal and political organization, or communication.</td>
</tr>
<tr>
<td><strong>Human Inquiry &amp; the Past</strong></td>
<td>Students interpret historical events or philosophical perspectives by identifying patterns, applying analytical reasoning, employing methods of critical inquiry, or expanding problem-solving skills.</td>
</tr>
<tr>
<td><strong>The Arts &amp; Creativity</strong></td>
<td>Students successfully articulate and apply methods and principles of critical and creative inquiry to the production or analysis of works of art.</td>
</tr>
</tbody>
</table>

5/3/2016

Special requirements of the course:

Additional information:

Prepared by: Jared Gump

Date: 10/20/17