I. **Course Title**
   - College Physics II

II. **Course Prefix/Number**
   - PHYS 226

III. **Credit Hours**
   - 5.0

IV. **Prerequisites**
   - PHYS 225 Minimum Grade: D

V. **Catalog Description**
   - The second course of a two-semester lecture/laboratory sequence introducing the fundamental principles of physics. In this second semester, students will be introduced to the areas of electricity, magnetism, electric circuits, optics, and topics in modern physics. Conceptual understanding as well as problem solving techniques will be emphasized in the lecture. The laboratory sections meet for two hours each week and the exercises performed in the laboratory coincide closely with the topics presented in the lecture.

VI. **Curricular Relationships**
   - This course is required for biology and geology majors. It is an approved general education course on the ASC campus and is on the statewide list of courses that have been given guaranteed transfer status for general education credit.

VII. **Student Learning Outcomes**
   - Students will demonstrate a conceptual understanding of many fundamental principles in physics including electricity, magnetism, electric circuits, optics, and some topics in modern physics.
   - Students will demonstrate a quantitative understanding of many fundamental principles in physics including electricity, magnetism, electric circuits, optics, and some topics in modern physics.
   - Students will be able to solve problems relevant to the physical universe.
   - Students will be able to apply principles learned in lecture to the laboratory environment.
   - Students will be able to collect and interpret data within the context of the physical laws of the universe.
VIII. Content Outline
- Electric charge, electric fields, conductors, and insulators.
- Electric potential, and electric energy.
- Electric resistance, capacitors, and circuits.
- Magnetism and induction.
- Electromagnetic waves.
- Geometric and wave optics.
- Topics in modern physics such as special relativity and the quantum nature of matter and energy.

IX. Course Procedures/Policies/Grading Scale
- Approximately 3-5 written examinations will be given during the semester in addition to a comprehensive final examination.
- Homework may be assigned with a representative group of problems being graded and weighted as a portion of the course grade.
- The laboratory will comprise approximately 15-20% of the course grade.
- The grading scale will be:
  90-100 A
  80-89  B
  70-79  C
  60-69  D
  <60   F

X. Required/Recommended Readings
- The course will use a standard (algebra/trigonometry based) college physics textbook such as Physics by James S. Walker, published by Prentice-Hall Publishing.

XI. Issues Unique to this Course
- None

XII. Additional Departmental Issues
- None