

**J. Sargeant Reynolds Community College
Course Content Summary**

Course Prefix and Number: PHY 202

Credits: 4

Course Title: General College Physics II

Course Description: Teaches fundamental principles of physics on an algebra/geometry/trig math level. Covers wave phenomena, optics, electricity and magnetism, an introduction to relativity, nuclear physics, and selected topics in modern physics. Students should consult the requirements of their individual program and transfer school to determine the correct course and the transferability of course to senior institution. Part II of II. Prerequisite: PHY 201. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

General Course Purpose: The credits earned in this course can be applied to the Science AS degree.

Course Prerequisites and Co-requisites:

Prerequisite: PHY 201

Student Learning Outcomes:

Upon completing the course, the student will be able to

- a. Apply the language of physics;
- b. Explain and apply some of the basic laws of physics; and
- c. Explain how the natural laws of physics are used both qualitatively and quantitatively, and apply these laws to experimental situations using mathematical models.

Major Topics to Be Included:

- a. General nature and behavior of waves
- b. Geometric optics
- c. Some optical instruments
- d. Electric charge and Coulomb's Law
- e. Electric field
- f. Energy and power in electricity
- g. Electric current and its applications
- h. Magnetism
- i. Interaction of light and matter
- j. Einstein and special relativity
- k. Basic structure of the atom and some of its effects
- l. Structure of the nucleus and some of its effects

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