

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

Course Prefix and Number: PHY 201

Credits: 4

Course Title: General College Physics I

Course Description: Teaches fundamental principles of physics on an algebra/geometry/trig math level. Covers mechanics, fluids, and thermodynamics. 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 I of II. Prerequisite: MTH 167 or approval of the instructor. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

General Course Purpose: This course may be used as an approved laboratory science elective for both Science AS and non-Science AS majors.

Course Prerequisites and Co-requisites:

Prerequisite: MTH 167 or approval of the instructor

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;
- c. Explain how the natural laws of physics are used both qualitatively and quantitatively and apply these laws to experimental situations using mathematical models; and
- d. Build a foundation for later study and expansion.

Major Topics to Be Included:

1. Units and standards of measurements
2. The nature and use of vectors
3. Newton's three laws of motion
4. Linear and projectile motion
5. Work, energy, and power
6. The nature and uses of impulse and momentum
7. Molecular structure of matter
8. Elasticity, springs, and simple harmonic motion
9. Fluids at rest, liquids, and gases, fluids in motion
10. Heat energy and its effects

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