



## COURSE SYLLABUS

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**COURSE:** PHY 251 GENERAL PHYSICS I

**HOURS:** Lecture: 3 Lab/Shop: 3 Work Exp/Clinical: 0 Credits: 4

### COURSE DESCRIPTION:

This course uses calculus-based mathematical models to introduce the fundamental concepts that describe the physical world. Topics include units and measurement, vector operations, linear kinematics and dynamics, energy, power, momentum, rotational mechanics, periodic motion, fluid mechanics, and heat. Upon completion, students should be able to demonstrate an understanding of the principles involved and display analytical problem-solving ability for the topics covered.

*Note: In accordance with the Comprehensive Articulation Agreement, this course has been approved to satisfy the Universal General Education Transfer Component requirement for natural sciences in the A.S. degree program. This course has been approved to meet the natural sciences requirement for A.A.S. degree programs.*

**PREREQUISITE(S):** MAT 271

**COREQUISITE(S):** MAT 272

### TEXTBOOK(S) & OTHER SPECIAL REQUIREMENTS:

Open Educational Resources (OER) are listed in the course Moodle.

### STUDENT LEARNING OUTCOMES:

Upon successful completion of this course, the student will be able to:

1. Convert quantities with one unit to another unit using a conversion factor.
2. Distinguish and manipulate vector and scalar quantities.
3. Describe qualitatively and quantitatively the properties associated with linear motion of an object.
4. Describe qualitatively and quantitatively the properties associated with motion of an object in two dimensions.
5. Describe qualitatively and quantitatively the properties associated with Newton's laws of motion.
6. Describe qualitatively and quantitatively the properties associated with work and energy.
7. Describe qualitatively and quantitatively the properties associated with momentum and collisions.
8. Describe qualitatively and quantitatively the properties associated with motion of fluids.
9. Describe qualitatively and quantitatively the properties associated with heat.
10. Describe qualitatively and quantitatively the properties associated with rotational mechanics and periodic motion.

**\*\*\*Please refer to the online version of the Richmond Community College Program & Course Catalog and the Student Handbook for current academic and general information.**