Bossier Parish Community College
Master Syllabus

Course Prefix and Number: PHYS 211 **Credit Hours:** 3

Course Title: Physics for Engineering and Science I

Course Prerequisites: MATH 250

Textbook: Serway and Jewett; Physics for Scientist and Engineers, 10th edition

Course Description:
A calculus-based treatment of fundamental principles and their application; including vectors, kinematics, Newton's Laws, momentum, work and energy, rotations, oscillations, elasticity and equilibrium. This course is intended for engineering and physical science majors.

Learning Outcomes:

At the end of this course, the student will

A. utilize appropriate mathematical skills to manipulate formulae and derive correct numerical solutions that can be measured in the real world; and
B. demonstrate the ability to think critically and to use appropriate concepts to analyze qualitative problems or situations involving the fundamental principles of physics.

To achieve the learning outcomes, the student will

1. demonstrate the concepts of velocity and acceleration. (A,B)
2. solve problems dealing with the concept of motion with constant acceleration and free fall. (B)
3. resolve a vector into components. (A)
4. explain the concept of projectile motion. (B)
5. discern Newton's Laws of Motion. (B)
6. solve problems dealing with the concept of force. (A,B)
7. demonstrate knowledge of the concepts of work, energy and power. (A,B)
8. identify the concept of momentum. (A,B)
9. calculate problems of uniform circular motion. (A,B)
10. explain the relationships between translational and rotational quantities. (A,B)
11. calculate pressure, density, specific gravity, and flow rates. (A,B)
12. explain the kinetic molecular theory. (A,B)
13. calculate basic properties of waves, springs, and pendulums. (A,B)
14. explain the concept of wave motion. (B)
15. define the terminology used to describe waves. (B)

16. explain how waves are described mathematically. (A)
17. describe the principle of superposition. (B)

Course Requirements: To earn a grade of "C" or higher the student must earn 70% of the total points for the course and meet all of the following course requirements.

- minimum average of 60% on unit tests
- minimum 50% on comprehensive final test
- satisfactory review of scientific literature

Course Grading Scale:

A- 90% or more of total possible points, and meet all course requirements.

B- 80% or more of total possible points, and meet all course requirements.

C- 70% or more of total possible points, and meet all course requirements.

D- 60% or more of total possible points, and/or failed to meet one or more of the course requirements.

F- less than 60% of total possible points, and/or failed to meet one or more of the course requirements.

Attendance Policy: The college attendance policy is available at http://catalog.bpcc.edu/content.php?catoid=5&navoid=369#class-attendance

Nondiscrimination Statement

Bossier Parish Community College does not discriminate on the basis of race, color, national origin, gender, age, religion, qualified disability, marital status, veteran's status, or sexual orientation in admission to its programs, services, or activities, in access to them, in treatment of individuals, or in any aspect of its operations. Bossier Parish Community College does not discriminate in its hiring or employment practices.

COORDINATOR FOR SECTION 504 AND ADA
Angie Cao, Student and Disability Services Specialist
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318-678-6511
acao@bpcc.edu
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Equity/Compliance Coordinator

Teri Bashara, Director of Human Resources
Human Resources Office, A-105
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Bossier City, LA 71111
Phone: 318-678-6056
Hours: 8:00 a.m.-4:30 p.m. Monday - Friday, excluding holidays and weekends.

Reviewed by C. Reed/ April 2021