

**Bossier Parish Community College**  
**Master Syllabus**

**Course Prefix and Number:** PHYS 202

**Credit Hours** 3

**Course Title:** General Physics II

**Textbook:** Cutnell and Johnson; Physics, 11<sup>th</sup> edition

**Course Prerequisites:** PHYS 201

**Course Description:**

A continuation of Physics 201, this course includes the study of gravitational fields, waves, electrostatic, circuits, magnetisms, induction, optics and light and modern physics. Not intended for engineering majors. This course is only offered in the spring & summer.

**Learning Outcomes:**

At the end of this course, the student will

- A. utilize appropriate algebraic and trigonometric skills to develop problem solving skills and apply them to physics problems; and
- B. apply critical thinking to understand the behavior, measurement, and management of electrical and light energy

To achieve the learning outcomes, the student will

1. describe the fundamental principles of electrostatics. (B)
2. define Coulomb's law. (B)
3. describe the concept of superposition of electric forces and electric fields. (B)
4. explain the concept of electric potential energy and electric potential. (B)
5. calculate the electric potential produced by a single point charge or by several point charges. (A,B)
6. demonstrate the concept of capacitance and its relationship to electric charge and potential difference. (B)
7. calculate capacitance for some simple geometrics. (A,B)
8. define the electric current. (B)
9. exhibit the relationship between resistance and resistivity. (B)
10. apply the concepts of energy and power as applied to an electric circuit. (B)
11. define Ohm's law. (B)
12. solve simple series and parallel circuits. (A,B)
13. explain the concepts of magnetic field. (B)
14. demonstrate the concepts of A.C. circuits. (A,B)
15. define the meaning of the term geometrical optics. (B)
16. apply the law of reflection. (B)

17. explain the relationship of radius of curvature and focal length as applied to a spherical mirror. (A,B)
18. define the meaning of the term wave optics. (B)
19. demonstrate the production of interference effects by the thin films, single slits, double slits, diffraction gratings. (B)
20. define the meaning of relative motion. (B)
21. explain the postulates of Einstein's special theory of relativity. (B)
22. explain the concepts of proper length, proper time, and proper mass. (B)
23. explain Einstein's mass – energy relationship. (B)
24. explain the concepts behind the photon theory of light. (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 average of 50% on the comprehensive final test

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

Disability Services, F254, 6220 East Texas Street, Bossier City, LA 71111  
318-678-6511

[acao@bpcc.edu](mailto:acao@bpcc.edu)

Hours: 8:00 a.m.-4:30 p.m. Monday - Friday, excluding holidays and weekends.

Equity/Compliance Coordinator

Teri Bashara, Director of Human Resources

Human Resources Office, A-105

6220 East Texas Street

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