

# Syllabus

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**Course Code:** PHYS-121

**Title:** General Physics I

**Institute:** STEM

**Department:** Physics

**Course Description:** The student will employ calculus in the development of the basic concepts of vectors; kinematics; dynamics; work and energy; momentum; rotational mechanics; molecular and thermal properties of matter; wave motion; and sound.

**Prerequisites or Corequisites:** MATH 171

**Credits:** 4

**Lecture Hours:** 3

**Lab Hours:** 2

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**Required Textbook/Materials:** Textbook and Lab Manual:

[WWW.BROOKDALECC.BKSTR.COM](http://WWW.BROOKDALECC.BKSTR.COM).

Calculator with trigonometric Functions.

**Additional Support/Labs:**

See <https://www.brookdalecc.edu/academic-tutoring/>

**Course Learning Outcomes:**

Upon successful completion of this general physics II (non-calculus) course, students will be able to:

- Communicate information and ideas about the basic concepts of experimental and theoretical physics in electromagnetism and optics clearly and effectively in the written and spoken form (**COMMUNICATION & INFORMATION LITERACY**).
- Apply the scientific method, fundamental principles of physics and mathematical techniques to solve problems in electromagnetism and optics (**MATHEMATICAL/SCIENTIFIC REASONING & CRITICAL THINKING**).
- Use instruments computers to gather and analyze data (**TECHNOLOGICAL LITERACY**).

**Course Content:**

The course is comprised of the following twelve units:

- 1 Introduction: Physics and Measurement
- 2 Motion in One Dimension
- 3 Vectors
- 4 Motion in two Dimensions
- 5 The Laws of Motion

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- 6 Energy of a System
- 7 Conservation of Energy
- 8 Linear Momentum and Collisions
- 9 Rotation, Rolling Motion, and Static Equilibrium
- 10 Fluid Mechanics
- 11 Oscillating Motion, Wave and Sound
- 12 Heat and Thermodynamics

## Grading Standard:

1. Testing (45%): There will be three tests as follows:

Test 1 - includes Unit 1 through Unit 4. (15 %)

Test 2 - includes Unit 5 through Unit 7. (15 %)

Test 3 - includes Unit 8 through Unit 11. (15 %)

These tests may be given during class time or scheduled for the testing center. If you fail to take a test when scheduled, a grade of zero will be assigned. There is no make-up on tests.

2. Homework (35%): Homework for every chapter is to be completed and graded on WebAssign by the assigned due date.

3. Laboratory: (20%) You will be provided with a list of the laboratory experiments which must be performed to get credit for the course. You will write a laboratory report for each experiment according to the format given in your lab manual. Laboratory reports will be averaged into a final grade of ten percent.

## Course Grade:

The final grade assigned will be:

92 - 100	A
89 - 91	A-
86 - 88	B+
82 - 85	B
79 - 81	B-
76 - 78	C+
70 - 75	C
65 - 69	D
0 - 64	F

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## **College Policies:**

As an academic institution, Brookdale facilitates the free exchange of ideas, upholds the virtues of civil discourse, and honors diverse perspectives informed by credible sources. Our college values all students and strives for inclusion and safety regardless of a student's disability, age, sex, gender identity, sexual orientation, race, ethnicity, country of origin, immigration status, religious affiliation, political orientation, socioeconomic standing, and veteran status. For additional information, support services, and engagement opportunities, please visit [www.brookdalecc.edu/support](http://www.brookdalecc.edu/support).

For information regarding:

- Academic Integrity Code
- Student Conduct Code
- Student Grade Appeal Process

Please refer to the [student handbook](#) and [catalog](#).

## **Notification for Students with Disabilities:**

Brookdale Community College offers reasonable accommodation and/or services to persons with disabilities. Students with disabilities who wish to self-identify must contact the Accessibility Services Office at 732-224-2730 (voice) or 732-842-4211 (TTY) to provide appropriate documentation of the disability and request specific accommodation or services. If a student qualifies, reasonable accommodations and/or services, which are appropriate for the college level and are recommended in the documentation, can be approved.

## **Mental Health:**

24/7/365 Resources:

- Monmouth Medical Center Psychiatric Emergency Services at **(732) 923-6999**
- 2nd Floor Youth Helpline – Available to talk with you about any problem, distress, or hardship you are experiencing. Call or text at **888-222-2228** or visit the website at <https://www.2ndfloor.org/>

Faculty Counselors:

- Students who need to make an appointment with a faculty counselor can do so by calling 732-224-1822 (non-emergency line) during business hours. Faculty counselors are licensed mental health professionals who can assist students and refer them to other mental health resources.

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## **Diversity Statement:**

Brookdale Community College fosters an environment of inclusion and belonging. We promote a safe and open culture, encourage dialogue respecting diverse perspectives informed by credible sources, and uphold the virtues of civil discourse. We celebrate all identities with the understanding that ultimately, diversity, equity, and inclusion cultivate belonging and make us a stronger Brookdale community.

*\*The syllabus is intended to give student guidance in what may be covered during the semester and will be followed as closely as possible. However, the faculty member reserves the right to modify, supplement, and make changes as the need arise.*