

Syllabus

Course Code: PHYS-223

Title: General Physics III

Institute: STEM

Department: Physics

Course Description: Students will relate classical and relativistic mechanics in the investigation of contemporary physics. They will solve problems related to harmonic motion, thermodynamics, special relativity, elementary quantum theory, atomic nature of matter and elementary nuclear and particle physics.

Prerequisites: A grade of "C" or higher in PHYS-122.

Credits: 4

Lecture Hours: 3

Lab Hours: 2

Required Textbook/Materials: Textbook and Lab Manual:

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 six units:

Unit 1: Relativity

Unit 2: Introduction to Quantum Physics

Unit 3: Quantum Mechanics

Unit 4: Atomic Physics

Unit 5: Nuclear Structure

Unit 6: Fission and Fusion

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Grading Standard:

1. Testing: There will be three tests as follows:

Test 1 - includes Unit 1 through Unit 2 (25 %).

Test 2 - includes Unit 3 through Unit 4 (25 %).

Test 3 - includes Unit 5 through Unit 7 (25 %).

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 are no make ups on tests.

2. Quizzes and Homework: (15 %) You will be given homework for every chapter.

There will be a 20-minute quiz on the problems with homework. There are no make up on these quizzes.

3. Laboratory: (10%) You will be provided with a list of the laboratory experiments which must be performed to pass 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 |

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

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standing, and veteran status. For additional information, support services, and engagement opportunities, please visit 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.

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.

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**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.*