

BOROUGH OF MANHATTAN COMMUNITY COLLEGE

City University of New York

Department of Science

Title of Course UNIVERSITY PHYSICS I
PHY 215 Section _____

Credits 4

Class hours 4
Lab hours 2
Instructor Information
Name:
Office:
Room:
Email:

Course Description

This is the first part of a two-semester sequence in calculus-based physics. Topics include: motion, mechanics, fluids, simple harmonic motion, and heat and thermodynamics.

Prerequisites/Co-requisites

Corequisite: MAT 301

Student Learning Outcomes

1. Students will be able to gain knowledge of a broad, rigorous introduction to physics at the beginning college level for students who are currently learning elementary calculus.
2. Students will be able to develop physical intuition and problem-solving skills.

Required Text & Readings

"Physics for Scientists and Engineers Volume I" 6th Edition

Authors: Serway and Jewett

Publisher: Thomson/Brooks Cole

Portions of Volume I are required for PHY 225; therefore, do not sell your text upon completion of PHY 215.

Lab Manual

"Physics Laboratory Experiments" 6th Edition

Authors: Jerry D. Wilson

Publisher: D.C. Heath and Company

Evaluation and Requirements of Students

Examinations and Quizzes	75%
Laboratory Reports	25%

Other Resources

Use of Technology (if applicable)

Evaluation & Requirements of Students

Examinations and Quizzes	75%
Laboratory Reports	25%

Outline of Topics

LECTURE SYLLABUS

	<u>TOPIC(S)</u>	<u>CHAPTER(S)</u>
1	Measurements One Dimensional Motion	1 2
2	One Dimensional Motion Vectors	2 3
3	Vectors Two Dimensional Motion	3 4
4	Newton's Laws of Motion	5
5	Circular Motion and Applications Of Newton's Laws	6
6	Static Equilibrium	12
7	Energy	7
8	Potential Energy	8
9	Impulse and Momentum	9
10	Rotation of a Rigid Body Angular Momentum	10 11
11	Oscillatory Motion	15
12	Universal Gravitation Fluid Mechanics	13 14
13	Temperature Heat	19 20
14	Heat Engines	22
15	Review for Final	

LABORATORY SYLLABUS

<u>WEEK</u>	<u>EXERCISE</u>
1	Introduction to Error Analysis Mass, Volume, and Density
2	The Simple Pendulum
3	Uniformly Accelerated Motion: Free Fall
4	Vector Addition: The Force Table
5	Newton's 2 nd Law: The Atwood Machine
6	Centripetal Force
7	Torques and Equilibrium
8	The Ballistic Pendulum
9	Elasticity: Young's Modulus
10	Hooke's Law and Simple Harmonic Motion
11	Archimedes' Principle
12	Thermal Co-efficient of Expansion
13	Specific Heat of a Metal
14	Heat of Fusion, Heat of Vaporization

In the laboratory, students will perform experiments to illustrate the applications of the laws of physics. Written reports will be collected and graded. The laboratory reports will constitute 25% of the student's final grade.

College Attendance Policy

At BMCC, the maximum number of absences is limited to one more hour than the number of hours a class meets in one week. For example, you may be enrolled in a three-hour class. In that class, you would be allowed 4 hours of absence (not 4 days). In the case of excessive absences, the instructor has the option to lower the grade or assign an F or WU grade.

Academic Adjustments for Students with Disabilities

Students with disabilities who require reasonable accommodations or academic adjustments for this course must contact the Office of Services for Students with Disabilities. BMCC is committed to providing equal access to all programs and curricula to all students.

BMCC Policy on Plagiarism and Academic Integrity Statement

Plagiarism is the presentation of someone else's ideas, words or artistic, scientific, or technical work as one's own creation. Using the idea or work of another is permissible only when the original author is identified. Paraphrasing and summarizing, as well as direct quotations, require citations to the original source. Plagiarism may be intentional or unintentional. Lack of dishonest intent does not necessarily absolve a student of responsibility for plagiarism.

Students who are unsure how and when to provide documentation are advised to consult with their instructors. The library has guides designed to help students to appropriately identify a cited work. The full policy can be found on BMCC's web side, www.bmcc.cuny.edu. For further information on integrity and behavior, please consult the college bulletin (also available online).