

This syllabus is provided as a general informational guide. Some of the information may vary depending on the specific course section and instructor. Different sections of the same course may require different textbooks. Verify the section specific textbook information in the CUNY's Academic Course Schedule Web Page. Modifications of the grading system presented here will be communicated by the instructors of the sections when they meet the class.

BOROUGH OF MANHATTAN COMMUNITY COLLEGE

City University of New York

Department of Science

**Title of Course PHYSICS I
PHY 210**

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 college physics. Algebra and trigonometry are used throughout the course. Topics include motion, mechanics, fluids, simple harmonic motion, mechanical waves, and heat and thermodynamics.

Prerequisites/Co-requisites

Co-requisite: MAT 206

Required Text & Readings

Serway and Vuille: *“College Physics 10th Edition, Vol I”*, Cengage Learning (ISBN-13 9781285737034) or *“College Physics 10th Edition”*, Cengage Learning, (ISBN-10 1285737024, ISBN-13 9781285737027) or *“College Physics 10th Edition, Loose-Leaf”*, Brooks Cole, (ISBN-13 978-1305256699, ISBN-10 1305256697)

Laboratory Manual

Jerry D. Wilson, Cecilia A. Hernande-Hall: *Physics Laboratory Experiments, Custom Edition.*

Publisher: Cengage Learning

ISBN-13: 978-1-337-03666-5, **ISBN-10:** 1-337-03666-8

Other Resources

Use of Technology (if applicable)

A scientific calculator is useful

Evaluation & Requirements of Students

The student is evaluated on the basis of his or her performance on a series of quizzes and examinations worth a total of 75% of the final grade. The student is required to turn in a laboratory report for each experiment performed. The report is due one week following the performance of the experiment. The laboratory grade accounts for the remaining 25% of the final grade.

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Measures	Learning Outcomes
1. Graded problems involving calculations based on a lab exercise: exam questions.	<ul style="list-style-type: none"> Identify and apply the fundamental concepts and methods of a life or physical science.
2. Laboratory experiments will require the statement of a hypothesis, gathering of experimental data followed by analysis and presentation of this data.	<ul style="list-style-type: none"> Apply the scientific method to explore natural phenomena, including hypothesis development, observation, experimentation, measurement, data analysis, and data presentation.
3. Laboratory experiments will require the students to work in groups and carry out collaborative laboratory investigations.	<ul style="list-style-type: none"> Use the tools of a scientific discipline to carry out collaborative laboratory investigations.
4. Graded lab reports, where students will report, analyze and present scientific data.	<ul style="list-style-type: none"> Gather, analyze, and interpret data and present it in an effective written laboratory or fieldwork report.
5. Graded lab exercise with emphasis on the truthful collection, recording and reporting of data independent of previous expectations.	<ul style="list-style-type: none"> Identify and apply research ethics and unbiased assessment in gathering and reporting scientific data.

	General Education Learning Outcomes	Measurements (means of assessment for general education goals listed in first column)
<input checked="" type="checkbox"/>	Communication Skills- Students will be able to write, read, listen and speak critically and effectively.	Laboratory write-ups with emphasis on discussions and conclusions
<input checked="" type="checkbox"/>	Quantitative Reasoning- Students will be able to use quantitative skills and the concepts and methods of mathematics to solve problems.	Examination and homework problems
<input checked="" type="checkbox"/>	Scientific Reasoning- Students will be able to apply the concepts and methods of the natural sciences.	Graded laboratory reports with scientific validity of discussions an important criterion.
<input type="checkbox"/>	Social and Behavioral Sciences- Students will be able to apply the concepts and methods of the social sciences.	
<input type="checkbox"/>	Arts & Humanities- Students will be able to develop knowledge and understanding of the arts and literature through critiques of works of art, music, theatre or literature.	
<input type="checkbox"/>	Information & Technology Literacy- Students will be able to collect, evaluate and interpret information and effectively use information technologies.	
<input type="checkbox"/>	Values- Students will be able to make informed choices based on an understanding of personal values, human diversity, multicultural awareness and social responsibility.	

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PHY 210 LECTURE TOPICS

<u>WEEK</u>	<u>TOPICS</u>	<u>CHAPTERS</u>
1.	Introduction to Physics	1
2.	Motion in One Dimension	2
3.	Vectors and Motion in Two Dimensions	3
4.	The Laws of Motion	4
5.	Energy	5
6.	Momentum and Collisions	6
7.	Rotational Motion and Gravitation	7
8.	Rotational Equilibrium and Dynamics	8
9.	Solids and Fluids	9
10.	Thermal Physics	10
11.	Heat – Thermal Energy	11
12.	The Laws of Thermodynamics	12
13.	Vibrations and Waves	13
14.	Sound	14
15.	Review and Final Exam	

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PHY 210 LABORATORY EXPERIMENTS

<u>WEEK</u>	<u>EXPERIMENT</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 2nd Law: The Atwood Machine
6	Centripetal Force
7	Torques, Equilibrium
8	Ballistic pendulum
9	Hooke's Law and Simple Harmonic Motion
10	Archimedes' Principle
11	Standing Waves in a String
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 physics. Written reports will be collected and graded. The Laboratory reports will constitute 25% of the student's final grade.

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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).