

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 II
PHY 220 Section _____

Credits 4

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

Course Description

This is the second half of a two-semester sequence in non-calculus-based physics. Topics include electricity and magnetism, electromagnetic waves, optics, atomic, and nuclear physics.

Prerequisites/Co-requisites

PHY 210, MAT 206

Required Text & Readings

Serway, Faughn and Vuille, *“College Physic Vol. II, 10th Edition”* (ISBN-13 9781285737041), Cengage Learning or *“College Physics, 10th Edition ”* (ISBN-10 1285737024, ISBN-13 9781285737027), Cengage Learning or *“College Physics 10th Edition, Loose-Leaf”*, Brooks Cole, (ISBN-13 978-1305256699, ISBN-10 1305256697)

Laboratory Manual

Jerry D. Wilson, Cecilia A. Hernandez, *Physics Laboratory Experiments, Custom Edition.*

Publisher: Cengage Learning

ISBN-13: 9-78-1337-03666-5, **ISBN-10:** 1-337-03666-8

Other Resources

Use of Technology (if applicable):

Scientific calculator

Evaluation & Requirements of Students

Examination and Quizzes	50%
Laboratory Reports	25%
Final Examination	25%

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Course Student Learning Outcomes (Students will be able to...)	Measurements (means of assessment for student learning outcomes listed in first column)
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 college algebra (precalculus)	1. Graded laboratory reports and examination problems
2. Students will be able to develop problem-solving skills.	2. Graded homework problems and examination problems
3. Improvements in physical intuition will permit students to apply the principles of physics to real world situations.	3. Performance in laboratory experiments as determined by graded laboratory reports with physical insights as important criteria.
	General Education Learning Outcomes
<input checked="" type="checkbox"/> Communication Skills- Students will be able to write, read, listen and speak critically and effectively.	Measurements (means of assessment for general education goals listed in first column) 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 220 LECTURE TOPICS

WEEK	LECTURE TOPICS	CHAPTER
1	Electric Forces and Electric Fields	15
2	Electric Forces and Electric Fields (Con't.) & Electrical Energy and Capacitance	15 16
3	Electrical Energy and Capacitance	16
4	Current and Resistance	17
5	Direct Current Circuits	18
6	Direct Current Circuits (Con't) & Magnetism	18 19
7	Magnetism	19
8	Induced Voltages and Inductance	20
9	Alternating Current Circuits and Electromagnetic Waves	21
10	Reflection and Refraction of Light	22
11	Mirrors and Lenses	23
12	Wave Optics	24
13	Atomic physics	28
14	Nuclear Physics	29, 30

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PHY 220 LABORATORY TOPICS

<u>WEEK</u>	<u>EXPERIMENT</u>	
1	Electrostatics and Coulomb's Law	Handout
2	Fields and Equipotentials	295-302
3	Ohm's Law	307-314
4	Resistances in Series and Parallel	351-360
5	The Measurement of Resistance: Ammeter-Voltmeter Methods and Wheatstone Bridge Method	323-333
6	Multiloop Circuits: Kirchhoff's Rules	Handout
7	The RC Time Constant	381-386
8	Current Balance	Handout
9	A.C. Circuits and Resonance	Handout
10	Reflection and Refraction	Handout
11	Spherical Mirrors and Lenses	Handout
12	Polarization of light. Malus's Law	Handout/445-450
13	The Transmission Diffraction Grating: Measuring the Wavelengths of Light	475-482
14	Line Spectra and the Rydberg Constant	461-467

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.

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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).