

Physics 120

Algebra-based Introductory Physics II - Syllabus

Course Information

Physics 120, Section 03: 3 hours lecture, 2 hours lab and 1 hour recitation, 4.5 Credits
In Person, Web-Enhanced
Monday 7 PM -8:15 PM, Wednesday 7 PM - 8:15 PM and 8:30 PM - 9:15 PM
Hunter North Room 510
Additional information on Blackboard.

Contact Information

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Course Materials

Required texts: Physics: Principles with Applications 7th Edition, Douglas C. Giancoli, **ISBN-13: 978-0321625922**
Required manual: Physics Lab Manual, Department of Physics and Astronomy

Lecture notes: PDF format on Blackboard

Instructional technologies: Blackboard, Weekly homework assignments via MasteringPhysics

Materials on reserve in the library: Principles with Applications 7th Edition, Douglas C. Giancoli.

Course Description

Physics 120 is the second semester of a two semester introductory physics course without calculus. It covers Electrostatics, Current and electric circuits, Magnetism, Electromagnetic Induction and Electromagnetic Waves, Geometrical Optics and Optical Instruments, The wave nature of Light, Interference, Diffraction and Polarization, Special Relativity, Modern Physics and Quantum Theory.

Pre-requisites: Physics 110, Math 125,

Teaching philosophy & approach: Fundamental physical principles are introduced and the concepts are further developed and reinforced through examples, applications and problem solving.

Learning Outcomes:

- Learn the fundamental laws of physics pertaining to electricity and magnetism, light and atomic physics
- Apply these laws to various physical systems via problem solving.
- Perform experiments, collaborate with a lab partner, collect data, perform error/statistical analysis of data, write a lab report.
- Develop the skill of casting word problems into mathematically and solve them.

Grading Method & Scale

There are three midterms with the lowest midterm dropped, and a final exam. The grading is described in the

table below.

Highest midterm of 1, 2 and 3	25%
Second highest midterm of 1, 2 and 3	15%
Online homework (Best 10 of 12 homework set)	10%
Lab: Mandatory (Cannot get a grade for the course without it)	15%
Comprehensive Final exam is mandatory (Cannot get a grade for the course without it)	35%
Total	100%

The exam questions are multiple choice types!

Homework

- 12 Home works assigned 10 best will be counted to your homework grade.
- The Home work sets have a due date! Make sure you complete the homework before the due date.
- Late Work Grade will be decreased by 20% for each day late (after 5 days it goes down to zero.)

Laboratories

1. The lab is 15% of the total grade. The lab grade will be based on the average of 10 best lab reports. If a student completes less than 10 experiments, the missing scores are counted as zero in the average.
2. If a student is repeating the course and has completed the lab in a preceding semester, it is not necessary to repeat the lab: the lab average from the preceding semester will be used in determining the course grade.

Attendance

In addition to the lecture important information regarding exams, quizzes, homework, schedule etc. is communicated during class

Credit/No Credit Grading Option

You may choose to be graded in this course on a Credit/No Credit basis. Before selecting this option, check with your departmental adviser and be aware that many colleges, professional schools, and employers may look with disfavor on Credit/No Credit grades and may even convert Credit to C and No Credit to F for their purposes, as described in the Hunter Catalog.

Course Calendar & Content

Week	Chapter	Sections omitted	Homework
1	16: Charge and Electric fields	16.10 - 16.12	13, 31, 33, 36, 64
2	17: Electric Potential	17.6, 17.10, 17.11	10, 19, 21, 23, 50, 72, 75

3	18: Electric Currents	18.8 - 18.10	5, 6, 21, 34, 39, 45, 63
4	19: DC Circuits	19.7, 19.8	6, 11, 17, 25, 30, 44, 51
Midterm Exam I			
Chapters 16, 17, 18 and 20			
5	20: Magnetism	20.10 - 20.12	8, 11, 12, 18, 19, 41, 45, 75, 86
6	21: Electromagnetic Induction	21.6, 21.8, 21.12 -21.14	1-4, 7, 11, 12, 14, 21, 34, 42, 48
7	22: EM waves	22.6, 22.7	21, 23, 42, 43
Midterm Exam II			
Chapters 20, 21 and 22			
8	23: Light, Geometric Optics	23.10	3, 4, 11, 15, 31, 32, 38, 52, 53, 59, 62, 72
9	24: Wave Nature of Light	24.7 - 24.9, 24.11, 24.12	5, 7, 10, 23, 26, 27, 30, 34, 35, 43, 71, 79
10	25: Optical Instruments	25.1, 25.2, 25.6 - 25.12	24, 25, 32, 33, 42, 44, 71
Midterm Exam III			
Chapters 23, 24 and 25			
11	26: Special relativity	11.5 - 11.6, 11.13 - 11.15	7, 8, 10, 13, 17, 18, 27, 30, 36, 45, 48, 49, 52, 54, 61, 64
12	27: Early Quantum theory	27.5 - 27.7, 27.9	18, 19, 20, 21, 27, 41, 45, 57, 60, 69, 82, 86
13	28: Quantum Mechanics	28.4, 28.9 - 28.12	2, 4, 8, 13, 16, 21, 22, 41, 50, 51, 56

Cumulative Exam

Hunter College Policy on Academic Integrity

"Hunter College regards acts of academic dishonesty (e.g., plagiarism, cheating on examinations, obtaining

unfair advantage, and falsification of records and official documents) as serious offenses against the values of intellectual honesty. The College is committed to enforcing the CUNY Policy on Academic Integrity and will pursue cases of academic dishonesty according to the Hunter College Academic Integrity Procedures."

ADA Policy (AccessABILITY)

"In compliance with the American Disability Act of 1990 (ADA) and with Section 504 of the Rehabilitation Act of 1973, Hunter College is committed to ensuring educational parity and accommodations for all students with documented disabilities and/or medical conditions. It is recommended that all students with documented disabilities (Emotional, Medical, Physical, and/or Learning) consult the Office of AccessABILITY, located in Room E1214B, to secure necessary academic accommodations. For further information and assistance, please call: (212) 772- 4857 or (212) 650-3230."

Hunter College Policy on Sexual Misconduct

"In compliance with the CUNY Policy on Sexual Misconduct, Hunter College reaffirms the prohibition of any sexual misconduct, which includes sexual violence, sexual harassment, and gender-based harassment retaliation against students, employees, or visitors, as well as certain intimate relationships. Students who have experienced any form of sexual violence on or off campus (including CUNY-sponsored trips and events) are entitled to the rights outlined in the Bill of Rights for Hunter College.

a. Sexual Violence: Students are strongly encouraged to immediately report the incident by calling 911, contacting NYPD Special Victims Division Hotline (646-610-7272) or their local police precinct, or contacting the College's Public Safety Office (212-772-4444).

b. All Other Forms of Sexual Misconduct: Students are also encouraged to contact the College's Title IX Campus Coordinator, Dean John Rose (jtrose@hunter.cuny.edu or 212-650-3262) or Colleen Barry (colleen.barry@hunter.cuny.edu or 212-772-4534) and seek complimentary services through the Counseling and Wellness Services Office, Hunter East 1123.

CUNY Policy on Sexual Misconduct Link: <http://www.cuny.edu/about/administration/offices/la/Policy-on-Sexual-Misconduct-12-1-14-with-links.pdf>

Syllabus Change Policy

Except for changes that substantially affect implementation of the evaluation (grading) statement, this syllabus is a guide for the course and is subject to change with advance notice. Students are expected to find out about changes to the syllabus via Blackboard, class attendance or email.