**2020 Summer Term (6W1) General Physics: Introductory Course in Electricity and Magnetism, Light, and Atomic Physics PHYS 12000 01[4650] (Hunter College)**

Syllabus

# Syllabus

## Instructor Information

**Prof. Yonatan Abranyos**
**Office:** 1214 B Hunter North
**Email:** yabranyo@hunter.cuny.edu
**Office hours:** Monday 1:30 pm - 2:30 pm, online

## Course Description

### Class Meets: Online using Blackboard Collaborate
### Lecture: Monday - Thursday 11:40 AM - 1:14 PM

### Recitation: Tuesday and Thursday 1:30 PM - 2:20 PM

This is the second part of a two-semester algebra-based introductory physics course. It is primarily taken by biological and health sciences majors

**Topics Covered**: This is the second semester of a two-semester introductory physics course without calculus and this course is appropriate for pre-professional students (pre-med, physical therapy, etc) and some majors (Biology, Chemistry, etc.). Electrostatics, Current and 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.

**Mathematics Pre-requisite**: Algebra, geometry, and trigonometry are prerequisites of PHY 120. Students with a poor mathematical background (especially algebra and geometry) do NOT do well in this course. If you do not have the necessary mathematics background, it is recommended to obtain it before proceeding with PHYS120. The pre-requisite course is MATH 125. Check the appendix of Giancoli for a good idea of what mathematics background is required for PHYS 120.

Throughout the course there will be weekly homework assignments.

***ATTENTION! Summer Course is Fast Paced***

***Textbook: Physics: Principles With Applications 7th Edition, Giancoli***

## Attendance

Attendance via Blackboard Collaborate is required

- In addition to the lecture important information regarding exams, homework, schedule, etc, is communicated during the BB session.
- You are expected to read the relevant sections before the BB session.

## Home work

Weekly Homework are assigned via MasteringPhysics:

**To register for Physics 120 Summer 2019 :**

1. Go to www.pearson.com/mastering.
2. Under Register, select **Student**.
3. Confirm you have the information needed, then select **OK! Register now**.
4. Enter your instructor's course ID: abranyos58876, and **Continue**.
5. Enter your existing Pearson account **username** and **password** to **Sign In**.

   You have an account if you have ever used a MyLab or Mastering product.
   » If you don't have an account, select **Create,** and complete the required fields.

6. Select an access option.

» Enter the access code that came with your textbook or that you purchased separately from the bookstore.

» If available for your course,
• Buy access using a credit card or PayPal. • Get temporary access.

7. From the You're Done! page, select **Go To My Courses**.

8. On the My Courses page, select the course name **Physics 120 Summer 2019** to start your work.

**To sign in later:**

1. Go to www.pearson.com/mastering.
2. Select **Sign In**.
3. Enter your Pearson account **username** and **password,** and **Sign In**. 4. Select the course name **Physics 120 Summer 2019** to start your work.

**To upgrade temporary access to full access:**

1. Go to www.pearson.com/mastering.
2. Select **Sign In**.
3. Enter your Pearson account **username** and **password,** and **Sign In**. 4. Select **Upgrade access** for **Physics 120 Summer 2019.**
5. Enter an access code or buy access with a credit card or PayPal.

### Homework Rules

- 12 Homeworks assigned 10 best will be counted to your homework grade.
- The problems have randomized data for each student.
- 4 tries maximum to get the answer, so take your time and make sure you are on the right track before entering your answers.
- Hints are available and can be used. There is no penalty for using hints and a 2% bonus for not opening hints.
- The Homework 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.)
- Technological excuses (internet down, computer stolen, etc.) for late homework will not be accepted. Don't wait until the last minute!
- Take advantage of partial credit for late work.

## LAB

The lab is an essential part of the course, and no grade is given without completion of the lab. 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.

## Lectures and Exams Schedule

| Week | Chapter | Exams | Additional Problems |
|---|---|---|---|
| | | | |
| 1 | 16: Charge and Electric fields | | 13, 31, 33, 36, 64 |
| | 17: Potential | Ch 16, 17, 18 | 10, 19, 21, 23, 50, 72, 75 |
| 2 | 18: Currents | | 5, 6, 21, 34, 39, 45, 63 |
| | 19: DC Circuits | | 6, 11, 17, 25, 30, 44, 51 |
| 3 | 20: Magnetism | Ch. 19, 20 21 | 8, 11, 12, 18, 19, 41, 45, 75, 86 |
| | 21: Electro Magnetic Induction | | 1-4, 7, 11, 12, 14, 21, 34, 42, 48 |
| 4 | 22: EM waves | | 21, 23, 42, 43 |
| | 23: Geometrical Optics | Ch. 22, 23, 24 | 3, 4,11, 15, 31, 32, 38, 52, 53, 59, 62, 72 |
| 5 | 24: The Wave Nature of Light | | |
| | 26: Special Relativity | | 7, 8, 10, 13, 17, 18, 27, 30, 36, 45, 48, 49, 52, 54, 61, 64 |
| 6 | 27: Early Quantum Theory | Ch. 26, 27, 28 | 18, 19, 20, 21, 27, 41, 45, 57, 60, 69, 82, 86 |
| | 28: Quantum mechanics | | 2, 4, 8, 13, 16, 21, 22, 41, 50, 51, 56 |

## Grade requirements

- **4 exams each covering 3 chapters (see the exam schedule).**
- **18 - 20 questions. 80 minutes long test.**

- **Approximately 2/3 multiple-choice and 1/3 problem-solving with numerical answers**.
- **Absolutely no makeup! (dropping the lowest exam)**

| | |
|---|---|
| Drop the lowest-scoring exam out of 4 exams. Each exam 22% | 66% |
| Homework: Lowest 2 homework is dropped | 20% |
| Lab | 15% |
| Total | 101% |

**The final total score will be curved to calculate your letter grade.**

### 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 advisor 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. If you do select the Credit/No Credit option, you must complete all course assignments, including the final examination.

### 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 (Accessibility)

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 E1124 to secure necessary academic accommodations.

Hunter College does not discriminate against any student on the basis of pregnancy or related conditions. Absences due to medical conditions relating to pregnancy will be excused for as long as deemed medically necessary by a student's doctor and students will be given the opportunity to make up missed work. Students needing assistance can seek accommodations from the Office of AccessABILITY

### 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

### This Syllabus is a Contract

By choosing to stay enrolled in this class, you consent to the terms outlined here. In turn, the instructor will adhere to these same terms. However, the terms are subject to change with advance notice during lecture.