**DEPARTMENT OF PHYSICS**

**Syllabus**

**Physics 20300**

*www.*[*picoForceLab.org*](http://www.picoforcelab.org/)

**General Physics**

Designation: Required Undergraduate

**Catalog description:**

For majors in the life sciences (biology, medicine, dentistry, psychology, physical

therapy) and for liberal arts students. Fundamental ideas and laws of physics from

mechanics to modern physics. Included are mechanics, Newton’s laws of motion, and heat. Emphasis is on the basic principles and general laws.

**Prerequisites:**

Use of mathematics is restricted to elementary algebra and some trigonometry.

**Textbook and online Wileyplus:**

*Physics, 10th Edition* by John Cutnell, Volume I

Promo code CNY05

$60 for online access to ebook and WileyPLUS

$80 for text, ebook, and Wileyplus

<https://www.wileyplus.com/>

Step 1

Find your course: <https://www.wileyplus.com/WileyCDA/Section/id-410195.html?type=instructor&ficeCd=A00268801&locationCd=US>

Step 2

Option A:

Enter Your Registration Code: All new textbooks come packaged with a registration code in a sealed envelope. E-text access is included.

Or -- Option B:

Purchase Instant Access online: If you don't have a registration code, you can pay for access right there on the website. E-text access is included

Use **promo code CNY05** **in that shopping cart** to receive your online only access pricing $60.00

If you wish to include binder version of the text plus WileyPLUS registration code, pricing is $80.00

Option C:

Grace Period: If you're not ready to buy, you can try the course free with full access for two weeks, free. E-text access is included.

**Please contact** [**izapata@wiley.com**](mailto:izapata@wiley.com) **for ANY question on WileyPlus**

You can also contact [sueturn@sci.ccny.cuny.edu](mailto:sueturn@sci.ccny.cuny.edu) or [jhedberg@ccny.cuny.edu](mailto:jhedberg@ccny.cuny.edu) for general questions about registration.

**Course Objectives:**

After successfully completing this course, students should be able to

1. apply kinematics to problems in one and two dimensional motion

2. understand and use the concepts of forces and Newton’s Laws of Motion

3. understand the dynamics of uniform circular motion

4. understand and use the concepts of work and energy

5. understand and use the concepts of impulse and momentum

6. understand rotational kinematics and dynamics

7. understand the fundamentals of simple harmonic motion

8. understand the properties of fluids

9. understand the properties of temperature, heat, the ideal gas law, kinetic theory,

and thermodynamics

**Topics Covered:**

1. Introduction and Mathematical Concepts

2. Kinematics in One Dimension

3. Kinematics in Two Dimensions

4. Forces and Newton’s Laws of Motion

5. Dynamics of Uniform Circular Motion

6. Work and Energy

7. Impulse and Momentum

8. Rotational Kinematics

9. Rotational Dynamics

10. Simple Harmonic Motion and Elasticity

11. Fluids

12. Temperature and Heat

13. Heat Transfer

14. The Ideal Gas Law and Kinetic Theory

15. Thermodynamics

**Class schedule:**

Two 75 minute lectures, one 50 minute lecture/recitation, and one 2 hour and 50 minute lab (lab on alternate weeks with recitation)

Relationship of course to program outcomes:

The outcomes of this course contribute to the following departmental learning outcomes:

g. students of other disciplines will be able to synthesize and apply their knowledge of physics and mathematics to solve physics-related problems at an appropriate introductory level in important fields of classical physics, including mechanics, electricity and magnetism, thermodynamics, optics, and experimental physics, as appropriate to their majors.

h. students of other disciplines will have the background in physics needed to perform well in advanced courses in their own disciplines for which introductory physics courses are a prerequisite.

**Assessment Tools -- Grades**

1. Attendance

2. Homework assignments (Assigned through WileyPlus) 10%

3. Results of quizzes (4) 10%

4. Tests (4) 60%

5. Lab results Bonus of 5%

5. Class participation

6. Results of Final Exam 20%

**Instructors**

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CUNY - City College New York

[*picoForceLab.org*](http://www.picoforcelab.org/)

Office hours:

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**Teaching assistants:**

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10:00AM 11:50AM

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**Academic Integrity and Plagiarism**

The CUNY Policy on Academic Integrity can be found at

http://web.cuny.edu/academics/info-central/policies/academic-integrity.pdf

This policy defines cheating as “the unauthorized use or attempted use of material, information, notes, study aids, devices or communication during an academic exercise.” The CUNY Policy on plagiarism says the following about plagiarism (the CUNY Policy can be found in Appendix B.3 of the CCNY Undergraduate Bulletin 2007 -2009 as well as the web site listed above):

Plagiarism is the act of presenting another person’s ideas, research or writings as your own. The following are some examples of plagiarism, but by no means is it an exhaustive list:

1. Copying another person’s actual words without the use of quotation marks and footnotes attributing the words to their source.

2. Presenting another person’s ideas or theories in your own words without acknowledging the source.

3. Using information that is not common knowledge without acknowledging the source.

4. Failing to acknowledge collaborators on homework and laboratory assignments.

5. Internet plagiarism includes submitting downloaded term papers or parts of term papers, paraphrasing or copying information from the internet without citing the source, and “cutting and pasting” from various sources without proper attribution.

The City College Faculty Senate has approved a procedure for addressing violations of academic integrity, which can also be found in Appendix B.3 of the CCNY Undergraduate Bulletin.”