

Physics 1005 (MT) Physics: The Simple Laws that Govern the Universe Spring 2024

Prof. Raymond Tung
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Office Hours: Mon. & Wed. 12:00 – 12:30

Lectures: Mon. & Wed. 12:50 – 13:40 IH 2143

Lab: Mon. 2:15 – 4:05 PM IH 3414

Textbook: Physics Matters (recommended) An Introduction to Conceptual Physics, Trefil and Hazen, Wiley. In addition: Lab Manual may be purchased from physics department.

Subject Matter: The history of the development of physics, and the applications to everyday life will be discussed. Laws of universal gravitation and the conservation of energy will be covered. Examination of a topic in modern physics in which these classical concepts are transformed, extended, and/or applied. Student learning outcomes include: Identify and apply concepts and methods of science; apply the scientific method to explore natural phenomena; use scientific tools to carry out collaborative laboratory work; use research ethics and unbiased assessment.

Exams: There will be 2 lecture exams and a final exam. No makeup exams will be given. Absences from exams must be excused by the lecturer or a grade of zero will be assigned. Generally, a doctor's note is required for an absence due to illness. Two or more missed exams results in F.

Grades: Will be based on lecture exams (20% + 20%), final exam (35%), and laboratory work (25%). However, to pass this course a passing grade for laboratory is required. Note: in order to pass the laboratory component, a student is not allowed to miss more than 3 labs.

Websites: Exam solutions, lecture viewgraph sets, and other information on this course can be found at <http://academic.brooklyn.cuny.edu/physics/tung/phys1005S24>

Lecture Plan (tentative):

Jan. 29, Chap 1 Science	Jan. 31, Chaps 1 & 2
Feb 5, Chap 2 The Language of Science	Feb. 7, Chap3 Motions in the Universe
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Feb. 22 (Thu), Chap 4 Newton Laws	Feb. 21, Chap 4 Newton Laws
Feb. 26, Chap 5 Laws of Gravitation	Feb. 28, Chap 5 Laws of Gravitation
Mar. 4, Chap 6 Linear Momentum	Mar 6, Chap 6 Linear Momentum
Mar. 11, Chap 7 Rotational Motion	Mar. 13, Chap 7 Rotational Motion
Mar. 18, Exam #1, (Ch 1-6)	Mar. 20, Chap 8 Kinetic and Potential Energy
Mar. 25, Chap 8 Kinetic and Potential Energy	Mar. 27, 2, Heat and Temperature
Apr. 1, Chap 11 Heat and Temperature	Apr. 3, Chap 14 Vibrations and Waves
Apr. 8, Chap 14 Vibrations and Waves	Apr. 10, Chap 16 Electric and Magnetic Force
Apr. 15, Chap 16 Electric and Magnetic Forces	Apr. 17, Chap 18 Electric Circuits
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May 6, Exam #2 (Ch. 7,8,11,14,16,18)	May 8, Chap 20 Optics
May 13, Review	May 15, Review
May 20, 10:30 – 12:30, Final (incl.Exams1&2)	

PHYS 1005 Specific Learning Outcomes

As a Pathways course for the Life and Physical Sciences component of the Required Common Core, PHYS 1005 has 5 required specific learning outcomes (SLOs):

SLO 1: Identify and apply the fundamental concepts and methods of a life or physical science.

SLO 2: Apply the scientific method to explore natural phenomena, including hypothesis development, observation, experimentation, measurement, data analysis, and data presentation.

SLO 3: Use the tools of a scientific discipline to carry out collaborative laboratory investigations.

SLO 4: Gather, analyze, and interpret data and present it in an effective written laboratory or fieldwork report.

SLO 5: Identify and apply research ethics and unbiased assessment in gathering and reporting scientific data.

Academic Integrity

The faculty and administration of Brooklyn College support an environment free from cheating and plagiarism. Each student is responsible for being aware of what constitutes cheating and plagiarism and for avoiding both. The complete text of the CUNY Academic Integrity Policy and the Brooklyn College procedure for policy implementation can be found at www.brooklyn.cuny.edu/bc/policies. If a faculty member suspects a violation of academic integrity and, upon investigation, confirms that violation, or if the student admits the violation, the faculty member MUST report the violation. *Students should be aware that faculty may use plagiarism detection software.*

Student Disability Services

In order to receive disability-related academic accommodations students must first be registered with the Center for Student Disability Services (CSDS). Students who have a documented disability or suspect they may have a disability (physical or mental condition which substantially limits one or more major life activity) are invited to call the Center at (718) 951-5538 or visit us in 138 Roosevelt Hall. If you have already registered with the CSDS and submitted necessary forms, you will receive your course accommodation letter to provide to your professor and these specific accommodations can be discussed when appropriate.

Student Bereavement Policy

The College has a student bereavement policy to assist students in the event of the death of a loved one: <http://www.brooklyn.cuny.edu/web/about/initiatives/policies/bereavement.php>

Nonattendance Because of Religious Beliefs

The New York State Education Law provides that no student shall be expelled or refused admission to an institution of higher education because he or she is unable to attend classes or participate in examinations or study or work requirements on any particular day or days because of religious beliefs. Students who are unable to attend classes on a particular day or days because of religious beliefs will be excused from any examination or study or work requirements. I will make good-faith efforts to provide students absent from class because of religious beliefs equivalent opportunities to make up the work missed. For more on this policy, please see page 66 of this year's undergraduate bulletin:

<https://www.brooklyn.edu/wp-content/uploads/2023-2024-Undergraduate-Bulletin.pdf>

Library Services

Here is a link to the library website: <https://library.brooklyn.cuny.edu/resources/>