The Physical Universe
PHYS 1000

Instructor Info

Vincent Tedeschi

Office hours online:
Mon. 4 - 5 pm
Wed. 1 - 2 pm

http://www.citytech.cuny.edu/physics/faculty.aspx

FL.LastName@citytech.cuny.edu
VTedeschi@citytech.cuny.edu
vmted@helpinghand-edu.info

Course Info

Pre/Co-req: MAT 1175 or 1190

Online

About PHYS-1000

Physics is the discipline of science that studies the motion of matter and the forces and energies associated with that motion. Thus it is the study of how and why everything moves as it does, from the smallest atoms to the entire universe. Physics is the basis for almost all other sciences and engineering. study of how and why things move. The famous physicist Ernest Rutherford was alleged to have said that all of science is either physics or stamp-collecting.

Syllabus - Fall 2020

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Overview

This course is designed to introduce the physical concepts that explain the workings of the universe to non-science majors. The use of mathematics is limited and subordinate to the physical concepts being addressed. Examples from daily life are used to both illustrate the physical concepts and make them relevant to students. Laboratory exercises are performed in the classroom to explain the scientific method and to allow students to learn how to perform experiments and compose a lab report.

Material

Required Text

Physics of Everyday Phenomena, Griffith, & Brosing, 2019. ISBN-13: 978-1-259-89400-8.

Amazon

Grading Scheme

20%	Exam 1
20%	Exam 2
25%	Final Exam
35%	Lab Grade

Grades will follow the standard scale: A = 93-100, A- = 90-93, B+ = 87 - 90, B = 83-87, B- = 80-83, C+ = 77-80,C = 70-77, D = 60-70, F < 60.

Technology Statement

Before entering the course, students should be familiar with the use of a scientific calculator. During the course students will learn to use MSWord (equation editor, tables and inserting figures) and MSExcel (spreadsheet calculations and graphing).

Class Schedule

Week	Topic	Chapter	Lab Exercise
MODULE 1: Motion			
Week 1	Physics and Motion	Chapters 1 & 2	–
Week 2	Newton's Laws	Chapters 3 & 4	–
Week 3	Circular Motion, Gravity	Chapter 5	Acceleration Due to Gravity
Week 4	Energy	Chapter 6	–
Week 5	Momentum	Chapter 7	Conservation of Mechanical Energy
MODULE 2: Fluids and Heat			
Week 6	Fluids and Heat	Chapter 9 & 10	–
Week 7	Entropy	Chapter 11	Density
MODULE 3: Electricity and Magnetism			
Week 8	Electrostatics	Chapter 12	–
Week 9	Electric Circuits	Chapter 13	Ohm's Law
Week 10	Magnetism	Chapter 14	–
Week 11	Waves	Chapter 15	Properties of Waves
Week 12	Light	Chapters 16 & 17	–
MODULE 4: From Atoms to the Universe			
Week 13	The Atom and Its Nucleus	Chapters18 & 19	–
Week 14	Relativity and Beyond	Chapters 20 & 21	–
Week 15	Review and Final Exam	–	–

Class/Assignment Rules

You are encouraged to talk to each other in class and beyond, but your assignments need to be the result of your own work. Identical or very similar assignments are not acceptable. This is valid also for longer assignments and reports. Using online sources as inspiration for assignments is allowed but sources should be cited. Using large chunks of text from outside sources in reports is not allowed and will be considered plagiarism.

Academic Integrity

Students and all others who work with information, ideas, texts, images, music, inventions, and other intellectual property owe their audience and sources accuracy and honesty in using, crediting, and citing sources. As a community of intellectual and professional workers, the College recognizes its responsibility for providing instruction in information literacy and academic integrity, offering models of good practice, and responding vigilantly and appropriately to infractions of academic integrity. Accordingly, academic dishonesty is prohibited in The City University of New York (CUNY) and at New York City College of Technology (CityTech) and is punishable by penalties, including failing grades, suspension, and expulsion.

Diversity and Inclusivity Statement

The University respects individuals while acknowledging the differences among them. These differences include, but are not limited to, race, national-origin, ethnicity, religion, age, gender, sexual orientation, gender identity, disability, and socioeconomic status. However in order to create a vibrant academic, intellectual, and cultural environment for all, the University must move beyond representation to genuine participative membership. Thus, the University seeks to develop a community that is inclusive of all individuals and groups. Given CUNY's long history of proactive support for diversity and inclusion, it is uniquely positioned to build upon that strong foundation and serve as a national leader and model, exemplifying the benefits that accrue when diversity and inclusion are integral components of an institution' s educational philosophy and core mission.

Accommodations for Students with Disabilities

City Tech is committed to supporting the educational goals of enrolled students with disabilities in the areas of enrollment, academic advisement, tutoring, assistive technologies and testing accommodations. If you have or think you may have a disability, you may be eligible for reasonable accommodations or academic adjustments as provided under applicable federal, state and city laws. You may also request services for temporary conditions or medical issues under certain circumstances. If you have questions about your eligibility or would like to seek accommodation services or academic adjustments, please contact the Center for Student Accessibility at 300 Jay Street, Room L-237, Phone 718-260-5143 or http://www.citytech.cuny.edu/accessibility/.