Physics 21 – Fall 2021
1 Credit, Pre-requisite or co-enrollment of Physics 11.

Course format: In person classes.

Lab Coordinator: Dr. Donforth
ldonfort@uvm.edu 802-656-0052
Office hours online by appointment

Course Objective:

"An experiment is a question we ask the universe." - C.V. Boys

This course provides opportunities for hands-on investigation of the concepts and ideas of an introductory physics course focused on mechanics. You will do a series of experiments, looking at the kinematics with video analysis. You will exit the course with a more solid understanding of physics and the world around you; and with a greater dexterity in applying physics concepts and calculating expected outcomes.

Required Course Materials:

The manual for the lab is provided via Blackboard. All of your lab report submissions will be online. You will be provided with a free-to-you license to use video analysis tools. Someone in your group must have a digital camera to record video.

You will have to construct an apparatus as for your final lab project. Your apparatus must be made of materials you find, recycle, or purchase yourself (the project is designed so that recycled materials can work just fine).

While you may ask for tape or string from lab, the bulk of your materials are ones you will need to procure yourself.

You may not leave your project apparatus in the classroom.
Multiple classes use the space, and your apparatus will be thrown out if you leave it in the room after class.
Grading:

Reports will be graded via rubrics that are provided for each experiment. Not all reports are equal weight. Your final grade will be your percentage of the total points available. Letter grades will be assigned to final course averages as follows:

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The grading for Physics 21 is independent of the grading of Physics 11. There is no final for Physics 21.

Schedule of Experiments:

Tentative schedule (will be impacted by Physics 11):

Week 1: No lab
Week 2: Measurement and Uncertainty
Week 3: Estimation (Fermi Questions)
Week 4: Acceleration due to Gravity
Week 5: Exam Review (for Physics 11)
Week 6: Introduction of Project
Week 7: Work on Project (construction)
Week 8: Exam Review (for Physics 11)
Week 9: Work on Project (data collection)
Week 10: Exam Review (for Physics 11)
Week 11: Work on Project (data analysis)
Week 12: Work on Project (testing and troubleshooting)
Week 13: Final Presentation of Project
Week 14: No labs
Week 15: Final Review (for Physics 11)

There will be no final in Physics 21.
Prerequisites:

This laboratory course is designed to accompany Physics 11. Students registered in Physics 21 must now be enrolled in Physics 11 or have previously completed Physics 11, 31 or 51. Physics 21 labs require a background knowledge that is best gained from concurrent enrollment in, or previous completion of, the accompanying lecture course Physics 11. For this reason, students who withdraw from Physics 11 during the add/drop period must also withdraw from Physics 21 or risk being disenrolled.

Students withdrawing from Physics 11 after the end of the Add/Drop period may remain enrolled in Physics 21 Laboratory, but are expected to independently continue their study of the Physics concepts relevant to each laboratory experiment. Failure to do so may seriously jeopardize their chances of successfully completing Physics 21.

Reminder: Add, Drop or Section Changes must be done using the UVM Registrar's web page, or directly through the Registrar's office.

Attendance:

You are expected to attend every lab session until your final project is complete. You will work in groups, and the expectation is that class time is when you and your group will meet to discuss things in your group and with your TA.

Note, you are welcome and encouraged to discuss the experiments and results with your peers in the class, but you must write-up the experiments yourself.
Accommodations:

In keeping with University policy, any student with a documented disability interested in utilizing accommodations should contact ACCESS, the office of Disability Services on campus. ACCESS works with students to create reasonable and appropriate accommodations via an accommodation letter to their professors as early as possible each semester. Contact ACCESS: A170 Living/Learning Center - 802-656-7753 - access@uvm.edu.

Religious Accommodations:

Students have the right to practice the religion of their choice. If you need to miss class to observe a religious holiday, please submit the dates of your absence to me in writing by the end of the second full week of classes. You will be permitted to make up work within a mutually agreed-upon time.

Academic Integrity:

Students are expected to comply with the University's Code of Academic Integrity. Please consult the website of the “Center for Student Ethics & Standards” for details. In addition to the matters described there, please note that it is a serious offense to submit a report, or use data, from an experiment in which you did not actively participate. Cooperation with laboratory partners is encouraged during the setting up and data gathering parts of each experiment, but your analysis, conclusions, and write-up must be your own individual work. Plagiarism and collusion will be referred to the Office of Academic Integrity.

Blackboard:

To log on to blackboard, go to https://myuvm.uvm.edu and enter your net ID and password. Once you've logged in there, select Blackboard from the top row of icons; then select Physics 21 from your courses.