Physics 21 - Summer 2019
1 Credit, Pre-requisite or co-enrollment of Physics 11.

STEM W414 1:00 - 4:30 Section 60008 MW
Section 60009 TR

Lab Coordinator:
Dr. Donforth
ldonfort@uvm.edu 802-656-0052
Office hours 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 during lab period, with guiding questions provided for each experiment. 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. Prior to each lab, you should review the material for that experiment on Blackboard. There will be text and videos describing the equipment, procedure, and guiding questions. Reviewing this material before coming to lab will ensure a more successful and efficient lab experience for you and your lab partners. You should either bring a laptop or your own notes for completing the experiment. You may use a laptop or notebook for taking notes and recording data in lab. It is not necessary to use carbon-copy notebooks, all of your submissions will be online.

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:

A	+	100-97.00	B	+	89.49-86.50	C	+	79.49-76.50	D	+	69.49-66.50	F	59.49 - 0
		96.99-92.50			86.49-82.50			76.49-72.50			66.49-62.50		
	-	92.49-89.50		-	82.49-79.50		-	72.49-69.50		-	62.49-59.50		

The grading for Physics 21 is independent of the grading of Physics 11.

Schedule of Experiments:

	MW Labs	TR Labs	Experiment
1st Week, 1st half	M: May 20		Introduction, Measurement, & Uncertainty
		T: May 21	
1st Week, 2nd half	W: May 22		Kinematics
		R: May 23	
2nd Week, 1st half	M: May 27		**Memorial Day – No Lab**
		T: May 28	Linear Dynamics
2nd Week, 2nd half	W: May 29		
		R: May 30	**No Lab**
3rd Week, 1st half	M: June 3		Rotational Dynamics
		T: June 4	
3rd Week, 2nd half	W: June 5		**No Lab**
		R: June 6	
4th Week, 1st half	M: June 10		Collisions & Momentum
		T: June 11	
4th Week, 2nd half	W: June 12		Work & Energy
		R: June 13	
5th Week, 1st half	M: June 17		**No Lab**
		T: June 18	
5th Week, 2nd half	W: June 19		Pendulum Oscillations
		R: June 20	
6th Week, 1st half	M: June 24		Standing Waves
		T: June 25	
6th Week, 2nd half	W: June 26		**No Lab**
		R: June 27	

There will be no final in Physics 21.

Reports:

You're encouraged to begin writing up each experiment while in lab; and the experiments are designed so that you can complete all or the bulk of your write-up during lab. You'll also have time after lab to continue your calculations and analysis. Your lab reports will be submitted via Blackboard by midnight the day after your lab day, via the Report Dropbox link. Each report must be submitted as a single PDF document, and late reports will not be accepted. It is your responsibility to ensure your report uploads and is legible to your TA.
Reports do not need a rote recitation of procedures, but should address the questions posed. Write in complete sentences. Include enough context that someone reading your answer would know the question you are addressing even if they hadn't read the question.

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:

Attendance and participation at all laboratory sessions is mandatory. Failure to attend at the regularly scheduled time will result in a grade of zero for that activity unless you have received permission to attend a different session. If you anticipate that you will be unable to attend your regularly scheduled lab, reschedule at least one week prior to the lab that you will miss. If you miss a lab due to unforeseeable circumstances beyond your control, (such as serious personal illness or a death in the family), contact your TA and the course coordinator as soon as possible. If space is available, you may be given permission to attend another laboratory session in the same week. Be prepared to provide documentation of the reason why you were unable to attend at the regular time. If you miss a laboratory due to legitimate circumstances beyond your control and are unable to arrange to attend another session the same week, you may apply to the course coordinator for an excused absence. There is a limit, however. A student missing three laboratories, for any reason, must "withdraw" or make a formal request to their Dean for an "incomplete", to avoid a failing grade. If you have been given permission to attend a different session for one week because of a particular scheduling problem or illness, you'll have to make arrangements with your TA and the instructor of the section you attend to submit your report and have it graded.

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.