

## PHYS021

**Room: E330**

**Pre-requisite or co-enrollment:** Physics 11

### Lab Instructor:

Dr. Varuni Seneviratne [vsenevir@uvm.edu](mailto:vsenevir@uvm.edu)

Room 203A

Office hours: 11:00 a.m. to Noon Tuesday and Friday

### Teaching Assistants:

Name	Email address	Office hours and Room No
Xiaozhi Zhang	xzhang20@uvm.edu	Tuesday, 10:30 – 12:30, W129
Thomas Cleary	tcclarey@uvm.edu	Wed, 1:00 – 2:00 4 <sup>th</sup> floor of Discovery
Aaditya Dimri	adimri@uvm.edu	Mon, 3:00 – 4:00, 4 <sup>th</sup> floor of Discovery
Prishank Thapa	pthapa@uvm.edu	Fri, 2:00 – 3:00, 4 <sup>th</sup> floor of Discovery

### Course Objective:

““A normal person sees a failed experiment; a scientist sees progress” Steven Magee

This course provides opportunities for hands-on investigation of the concepts and ideas of an introductory physics course focused on mechanics.

### Course Structure:

The course runs with a lab session on Tuesday where you'll hopefully be able to complete most of your work. You'll have until Friday to finish up your reports, which you'll submit your reports via Blackboard at the end of the week. Lab times are for working on your Physics 21 labs and project, and also getting help in Physics 11 as you need.

There is no lab the first week. After that, you'll have a couple of short labs. Then, there will be a multi-week final project that will be the majority of your grade.

You are encouraged to discuss and collaborate with your classmates. You may work together to perform experiments in groups of up to three people. However, each person must perform their own analysis and write up their own lab report (see Academic Integrity).

You should 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.

Physics 21 is a separate class from Physics 11 (they will be grade independently); You may use the Physics 21 time to help you solidify the concepts of Physics 11.

### **Required Course Materials:**

The required information sheets for the lab is provided via Blackboard.

You will need certain equipment for recording and reviewing videos of your experiments. A cell phone or laptop camera will be fine for shooting videos. You will need a computer to run software, write up your reports, and do video analysis.

As part of your final project, you may want to purchase a small amount of supplies. The project is designed such that you can complete it with recycled or scrap material if desired.

### **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 in this course is the best way to ensure success in the course. Our expectation is that you will complete these labs during your weekly session, with some follow-up after class. Please read the lab manual before coming to class.

All of the TAs for Physics 21 will have office hours. We strongly encourage you to attend, especially if you are feeling stuck or frustrated. You're welcome to attend the sessions of any of the TAs, not just the one that will be grading your reports.

## Grading:

The marks of weekly assignments (lab reports, project activities) will be add up and normalized to 100 to obtain the final grade.

Letter grades will be assigned to final course percentage as follows:

Letter Grade	Numerical Grade
A+	97-100
A	93-96
A-	90-92
B+	87-89
B	83-86
B-	80-82
C+	77-79
C	73-76
C-	70-72
D+	67-69
D	63-66
D-	60-62
F	<60

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

**There will be no final examination in Physics 21.**

### Lab Reports

Labs are due on Friday after the week's activities. Note, the lab term project has small assignments due as you progress.

Your reports will be docked 5 points for every day (partial or full) it's late. Will start reducing soon after mid night Friday.

### Accommodations:

In keeping with University policy, any student with a documented disability interested in utilizing accommodations should contact [Student Accessibility Services](#).

They work with students to create reasonable and appropriate accommodations via an accommodation letter to their professors as early as possible each semester.

Contact:

A170 Living/Learning Center

802-656-0739

[access@uvm.edu](mailto:access@uvm.edu).

Note, we do not have quizzes or exams in Physics 21, so extra time or a distraction free space for exams will not be pertinent.

### 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. Discussion and cooperation with classmates is encouraged; but your analysis, conclusions, and write-up must be your own individual work. Plagiarism and collusion are referred to the Office of Academic Integrity, and will result in academic sanctions.

### Semester Plan (Tentative)

Lab Day	Lab	Due Day
29-Aug	No Lab	
6-Sep	Measurement	9-Sep
13-Sep	Estimation	16-Sep
20-Sep	Gravity and Height	23-Sep
27-Sep	Preparation for PHYS11 (optional)	30-Sep
4-Oct	3 Project Proposals	7-Oct
11-Oct	Project: Building	14-Oct
18-Oct	Project: Testing	21-Oct
25-Oct	Project: Video	28-Oct
1-Nov	Project: Analysis	4-Nov
8-Nov	Preparation for PHYS11 (optional)	11-Nov
15-Nov	Project: Final Write up	18-Nov
22-Nov	Thanks giving week	
29-Nov	Preparation for PHYS11 (optional)	
5-Dec	Preparation for PHYS11 (optional)	
There is no final exam for Physics 21		