Physics 22 is the lab accompaniment to Physics 12. You will have weekly lab sessions where you are expected to perform experiments, record observations, investigate phenomena, and explain what’s happening. It’s your chance to connect the concepts discussed in lecture to hands-on experiences.

Course Coordinator:
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Lab Manager:
Dr. Donforth
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E-mail: ldonfort@uvm.edu

Course Format:

There is one two-hour laboratory per week, held in the south half of 414 in the Discovery Building. You must attend each weekly laboratory session, completing all data taking during your lab period.

Physics 22 uses the Blackboard to deliver course resources and for you to submit your assignments. We will NOT have a physical lab manual for Physics 22, the information you need to complete your labs is published on the Blackboard course page.

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 22 from your courses.

Prior to each lab, review information about the experiment posted on Blackboard. This preparatory work should provide you with sufficient background to write a brief paragraph answering a question about the lab (see "Pre-Lab Paragraph" link on left”). Those paragraphs are due by 10 am the day before your lab.

You should either bring a laptop computer to lab to review the lab instructions as needed during the experiment, or prepare sufficient notes to be able to complete the experiment on your own. Computers will not regularly be available for Physics 22.

Your report for the lab will be submitted via the Report Dropbox on the left before midnight two days after your lab section however, late reports will not be accepted. It is strongly recommended you finish your analysis and as much of the write-up as possible before leaving lab. Reports will be graded via the published rubrics. Not all reports are worth the same weight. There is no final exam in Physics 22.
**Required Course Materials:**

There is not a lab manual for Physics 22. Review the material online ahead of time, and either bring a laptop or your own notes for completing the experiment. You should have a notebook or digital device for taking additional notes in lab. Carbon-copy notebooks or such are not required, all of your submissions are online.

**Attendance:**

Attendance at all laboratory sessions and the lab practicum 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 from Dr. Donforth to attend a different session. If you anticipate that you will be unable to attend your regularly scheduled lab, you must reschedule it with Dr. Donforth 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 Professor Pepe & Dr. Donforth 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, apply to Professor Pepe 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.

**Prerequisites:**

This laboratory course is designed to accompany Physics 12. Students registered in Physics 22 must now be enrolled in Physics 12 or have previously completed Physics 12 or Physics 125. Physics 22 labs require a background knowledge that is best gained from concurrent enrollment in, or previous completion of, the accompanying lecture course Physics 12. For this reason, students who withdraw from Physics 12 during the add/drop period must also withdraw from Physics 22 or risk being disenrolled. Students withdrawing from Physics 12 after the end of the Add/Drop period may remain enrolled in Physics 22 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 22.

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

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

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<th>A</th>
<th>100-97.00</th>
<th>B</th>
<th>89.49-86.50</th>
<th>C</th>
<th>79.49-76.50</th>
<th>D</th>
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<td>+</td>
<td>96.99-</td>
<td>92.50</td>
<td>+</td>
<td>86.49-82.50</td>
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<td>76.49-72.50</td>
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Students who are concerned about their performance in the course are encouraged to discuss the matter with Professor Pepe. Please note that April 4th, is the last day to withdraw from courses. The lab grade for Physics 22 is independent of the lecture grade for Physics 12.

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. If you previously took this or another physics course, you are still expected to take data this semester and base your reports of your experience this term.

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.

Note, if you provide your work to another student and they submit it; you have both participated in the act of collusion, a violation of the Code of Academic Integrity. Write your own lab reports.

Religious Accommodation:

Students have the right to practice the religion of their choice. To facilitate that, students who anticipate religious holidays conflicting with their course work must submit in writing to their instructors by the end of the second full week of classes their documented religious holiday schedule for the semester. If you miss work for the purpose of religious observance, you will have the opportunity to make up this work. You must coordinate making up the work before the holiday.
**ACCESS - Student Accessibility Services**
In keeping with University policy, any student with a documented disability interested in utilizing accommodations should contact the Center for Student Success. Student Accessibility Services works with students and faculty in an interactive process to explore reasonable and appropriate accommodations, which are communicated to faculty in an accommodation letter. All students are strongly encouraged to meet with their TA, the lab coordinator, and the course instructor to discuss the accommodations they plan to use in each course. A student's accommodation letter lists those accommodations that will not be implemented until the student meets with their faculty to create a plan. Begin the process at: A170 Living/Learning Center; 802-656-7753; access@uvm.edu; or https://www.uvm.edu/academicsuccess/student_accessibility_services.

**Schedule of Experiments**

January 16-17 - Optional Orientation
January 23-24 - Charging by Induction
January 30-31 - Electric Fields and Potentials
February 6-7 - Circuit Analysis
**February 13-14 - No Lab**
February 20-21 - Tangent Galvanometer
February 27-28 - Electromagnetic Induction
March 6-7 - No Labs (6th is Town Meeting Day)
March 14-16 - No Labs (Spring Break)
March 20-21 - Reflection and Refraction
March 27-28 - Practicum week 1
April 3-4 - Practicum week 2
**April 10-11 - No Lab - optional review for exam III**
April 17-18 - The Photoelectric Effect
April 24-25 - Atomic Spectrum
**May 1-2 - No Lab - optional review for final**

Labs are held Tuesdays and Wednesdays. You must go to the section you are enrolled in. If you know you have a conflict ahead of time, you can contact your TA and Dr. Donforth to see if you can attend a different section that week.

There is no lab final.

**Safety is a priority in these labs. Negligent or deliberate misuses of the equipment will not be tolerated, and may result in an F for the assignment or entire course.**