

**Physics Outreach  
Independent Study 4974  
Fall Semester 2009**

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Physics Outreach is a two-credit, A-F course in the Physics department, and you'll be expected to take about 4 trips out to local schools to teach physics--the FUN way! We will visit local elementary, middle and high schools to do both demonstrations and activities with the students. We may also hold campus visits towards the end of the semester, which may also count towards your required trips.

There will be a weekly meeting of the class to discuss assignments for the upcoming trips and practice the demos you will be teaching. You will work together to plan and execute lessons, activities, and discussions with high school, middle school, and elementary school students. During this time you should also decide who will be doing what on the trips, who is driving, and when and where to meet. Everyone is required to go to them until you have completed your trips, even if you've done Outreach before.

**Objectives:**

1. Successful communication between the college students
2. Formation of successful teaching-learning relationships between college and school-aged science students
3. Development of a shared appreciation for the subject matter

Because the trips occur during regular school hours, you may have to miss class in order to participate. If you cannot participate in trips during regular school hours, you should drop this course as these trips are the entire purpose of this program and course. You pick which days you want to take trips; however, so you can plan to miss your less challenging courses, rather than E&M or Mechanics! Usually, the trips require ~4 hours of your time: loading/unloading the van, traveling, and presenting. Some trips also require a preparation meeting with your team, lasting no longer than an hour, to choose activities and plan. This is YOUR lesson, so do what YOU want to do!

Students will be assessed based on their active participation in preparation and execution of lessons, activities, and discussions. This includes independent work and group work. The evaluation of student performance will be a collective effort of the instructor, coordinator and the teacher which whom you are visiting. A copy of the form used by the cooperating teacher to evaluate you is attached.

Scores will be assigned for each trip by the following criteria:

- 4 - Arrived early or on time, rated as doing good or excellent job
- 3 - Arrived early or on time, rated as doing a fair job
- 2 - Arrived 1 to 30 minutes late, rated as doing a good or excellent job
- 1 - Arrived 1 to 30 minutes late, rated as doing a fair job
- 0 - Missed or arrived more than 30 minutes late

Grades will be assessed on the following scale:

- A - 3.5 average score and minimum of 14 points
- B - 2.5 average score and minimum of 10 points
- C - 1.5 average score and minimum of 6 points
- D - 0.5 average score and minimum of 2 points
- F - Less than 0.5 average score or less than 2 points earned

The above are letter grade ranges, pluses and minuses will be assigned as appropriate. Students who show up for trips on-time and perform a reasonably competent job should have very little trouble receiving an A in this course.

From the above minimum points it should be apparent that you must go on a minimum of 4 trips to receive an A. Additionally, simply not showing up to one trip which you committed to will drop your average to the B range or lower. Students who wish to increase their final number of points may have the opportunity to also complete a final project, which may include a self-assessment, an assessment of the program, or a small project, such as a lesson plan. The availability of this project is not guaranteed as it will be assigned as determined by the needs of program. Therefore do not count on it to boost your final grade. A maximum of 4 points can be earned for this project and it will be averaged in with the trip scores.

A few requirements for participation in Outreach:

You must have taken 2305 AND 2306 (or the equivalent courses) and received a C- or better in BOTH. If you have not completed 2306, you must be currently enrolled in 2306. Your overall QCA MUST be a 2.5 or higher.

## Teacher Assessment of VT Physics Outreach Visit

To insure that the program continues to provide schools with quality educational experiences, please take a moment to fill out the brief form below. Your feedback is greatly appreciated.

School/Organization Name \_\_\_\_\_

Teacher's Name \_\_\_\_\_ Date \_\_\_\_\_

<b>Present</b>	<b>Absent</b>	<b>Names of VT Physics Students</b>
<input type="checkbox"/>	<input type="checkbox"/>	_____
<input type="checkbox"/>	<input type="checkbox"/>	_____
<input type="checkbox"/>	<input type="checkbox"/>	_____
<input type="checkbox"/>	<input type="checkbox"/>	_____
<input type="checkbox"/>	<input type="checkbox"/>	_____
<input type="checkbox"/>	<input type="checkbox"/>	_____
<input type="checkbox"/>	<input type="checkbox"/>	_____
<input type="checkbox"/>	<input type="checkbox"/>	_____

Punctuality of group:

- On time
- Late (# of minutes late: \_\_\_\_\_ )

Overall impression of job done by group:

- Excellent
- Good
- Fair
- Poor

Any additional comments:

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Teacher signature: \_\_\_\_\_