Physics 290: “Foundations of Physics Laboratory”

Instructor: Prof. Stephanie Majewski – smajewsk@uoregon.edu
Office Hours (402 Willamette): Fridays 3pm–4pm, or by appointment

GTF Contact Information and Office Hours:
Erik Keever, ekeever1@uoregon.edu, 441 Willamette, Friday: 1-2pm
Vinny Roma, vroma@uoregon.edu, 315 Willamette, Friday: 10-11am
Jon Ruffin, jruffin@uoregon.edu, 155 Willamette, Friday: 11am-12pm

UTA: Nathan Wilson, npw@uoregon.edu

Course (CRN 15111):
Lectures: Tuesdays 10:00-10:50am in 110 Willamette
Lab Sections: Thursdays 10:00-11:50am, 12:00-1:50pm, 2:00-3:50pm, 5:00-6:50pm
Corequisite: Physics 251; Textbook: none

Overview: This course is taught as a companion to the Foundation in Physics I sequence (Phys 251-253), and covers Newton’s theory of motion and its applications. While this course is designed to support the material presented in Physics 251, this laboratory course is a separate class with separate goals.

Course Goals:
1. Explore the basic principles encountered in the Foundations of Physics I course in a laboratory setting.
2. Undertake investigation by inquiry. Devise experiments to obtain useful quantities for solving problems.
3. Gain experimental skills in error analysis, error propagation, and estimation.
4. Practice extracting data from graphs and instruments.
5. Practice thinking critically and quantitatively about the world around us.

Lecture Format:
• Discuss the upcoming lab (and any problems with the previous lab)
• Work example problems
• Bridge the gap between equations on a page and the physical world

Laboratory Format:
• Print out the lab from blackboard before class
• Turn in the pre-lab at the start of class
  • It is called a pre-lab is because it should be done before you walk into the lab
  • Late pre-labs will not be accepted
• Work in groups (ideally 3 people)
• Complete the lab worksheet and answer questions
  • Completed lab worksheets are due at 10:00am the following Monday
  • Turn in to the Homework box (near Willamette Room 009)
  • A 24-hour grace period may be used once / term (except on the final lab)
Lab Attendance:
Attendance at every lab section is essential. However, if you must miss lab (due to illness, e.g.) you must inform the instructor by email. You are allowed to make up maximum one (1) lab during the term. This makeup lab must occur within one (1) week of the original lab, pending the availability of the instructor or a GTF.

Course grade:
Pre-labs: 20%
Lab reports and questions: 60%
Final lab report: 20%

Final Grade:
A 90% to 100%
B 80% to 90%
C 70% to 80%
D 60% to 70%
F lower than 60%

Blackboard:
At https://blackboard.uoregon.edu you may login and access course documents such as this syllabus. In addition, you may view announcements, course materials, and scores on laboratory worksheets at any time. If you have problems logging in please contact: blackboard@ithelp.uoregon.edu.

Student Conduct:
Mutual respect in class is paramount. Academic dishonesty, including cheating, fabrication, facilitating academic dishonesty, and plagiarism, devalues the reputation of our institution, its faculty, its students, and the degrees we offer. Moreover, academic misconduct is particularly unfair for the students who do their work with integrity and honor. Violations of the student conduct code result in the incident being included on your student conduct record and can result in a failing grade on any course work related to the violation or a failing grade in the course.

Every effort will be made in this class to deter dishonesty through classroom procedures. Suspected academic dishonesty will be reported.

**For a list of other descriptions of cheating, see the Student Conduct Code.

Special Accommodations:
The AEC (Accessible Education Center) exists to help students achieve access to educational resources. If you have a disability but are not registered with AEC, you should contact them as soon as possible (http://aec.uoregon.edu). If you anticipate needing special accommodation in Physics 290 please contact me as soon as possible so we may discuss your situation.
## Physics 290 - Course Schedule (Tentative)

<table>
<thead>
<tr>
<th>Week</th>
<th>Day</th>
<th>Date</th>
<th>Type</th>
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<tbody>
<tr>
<td>1</td>
<td>Tu</td>
<td>Sept 30</td>
<td>Lecture</td>
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<tr>
<td></td>
<td>Th</td>
<td>Oct  2</td>
<td><strong>No lab this week</strong></td>
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<tr>
<td>2</td>
<td>Tu</td>
<td>Oct  7</td>
<td>Lecture</td>
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<td></td>
<td>Th</td>
<td>Oct  9</td>
<td>Lab: Motion in 1 Dimension</td>
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<tr>
<td>3</td>
<td>Tu</td>
<td>Oct 14</td>
<td>Lecture</td>
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<td></td>
<td>Th</td>
<td>Oct 16</td>
<td>Lab: Projectile Motion</td>
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<tr>
<td>4</td>
<td>Tu</td>
<td>Oct 21</td>
<td>Lecture</td>
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<tr>
<td></td>
<td>Th</td>
<td>Oct 23</td>
<td>Lab: Terminal Velocity</td>
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<tr>
<td>5</td>
<td>Tu</td>
<td>Oct 28</td>
<td>Lecture</td>
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<tr>
<td></td>
<td>Th</td>
<td>Oct 30</td>
<td>Lab: Newton’s Laws I</td>
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<tr>
<td>6</td>
<td>Tu</td>
<td>Nov  4</td>
<td>Lecture</td>
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<td>Th</td>
<td>Nov  6</td>
<td>Lab: Newton’s Laws II</td>
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<td>7</td>
<td>Tu</td>
<td>Nov 11</td>
<td>Lecture</td>
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<td></td>
<td>Th</td>
<td>Nov 13</td>
<td>Lab: Work/Energy/Momentum</td>
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<td>8</td>
<td>Tu</td>
<td>Nov 18</td>
<td>Lecture</td>
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<td></td>
<td>Th</td>
<td>Nov 20</td>
<td>Lab: Moment of Inertia</td>
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<tr>
<td>9</td>
<td>Tu</td>
<td>Nov 25</td>
<td>Lecture</td>
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<tr>
<td></td>
<td>Th</td>
<td>Nov 27</td>
<td><strong>No lab this week</strong></td>
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<tr>
<td>10</td>
<td>Tu</td>
<td>Dec  2</td>
<td>Lecture</td>
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<td></td>
<td>Th</td>
<td>Dec  4</td>
<td>Lab: Final Lab</td>
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<tr>
<td>11</td>
<td>Tu</td>
<td>Dec  9</td>
<td><strong>Final Lab Report due by 10:00am</strong></td>
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The given schedule is tentative; changes will be discussed in class and posted online.

**Important Dates:**

Oct 6th    Last day to drop without a “W”
Oct 8th    Last day to add a class
Nov 16th   Last day to withdraw (drop with a “W”) or change grading option to P/N