Course Syllabus
Physics 290: “Foundations of Physics Laboratory”
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Instructor: Prof. Benjamin McMorran – mcmoran@uoregon.edu
Office Hours (174 Willamette): Wednesdays 3pm–4pm, or by appointment

GTF Contact Information and Office Hours:
Teddy Hay, edouardh@uoregon.edu, Willamette 414a, Fridays 11am-12pm
Sudarshan Karki, skarki@uoregon.edu, Willamette 315, Fridays 10am-11am
PPLA: Isaac Brown Heft, isaacb@uoregon.edu, Willamette 17, Tuesdays 2pm-3pm

Course (CRN 24985):
Lectures: Willamette 110 Tuesdays 10:00-10:50am
Labs: Willamette 17 Thurs. 10:00-11:50am, 12:00-1:50pm, 2:00-3:50pm, 5:00-6:50pm
Co-/Pre-requisite: Physics 252; Textbook: none

Overview: This course is taught as a companion to the Foundation in Physics I sequence (Phys 251-253), and covers the topics of fluids, oscillations, waves, and optics. While this course is designed to support the material presented in Physics 252, 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:
We will discuss the upcoming lab (and any problems with the previous lab), work example problems, and bridge the gap between equations on a page and the physical world. Occasionally, talks by experts will relate these concepts to modern scientific research.

Laboratory Format:
• Print out and complete the pre-lab posted on Canvas before lab.
• Turn in the pre-lab at the start of lab on Thursday. It is called a pre-lab because it should be done before you walk into the lab. Late pre-labs will not be accepted.
• Work in groups (ideally 3 people) to work through the lab.
• Complete the lab report and turn it in by 10:00am the following Monday to the Homework box near Willamette room 9 in the basement. A 24-hour grace period may be used once per 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%

**Canvas:**
At [https://canvas.uoregon.edu](https://canvas.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.

**Student Conduct:**
Mutual respect in class is paramount. Interact with other students in a professional manner. Be continuously sensitive to engaging and interacting with all members of your group. When working in groups, do not be either too passive or dominating.

**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](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 - Tentative Course Schedule**

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<th>Week 1</th>
<th>Tu</th>
<th>Jan 5</th>
<th>Lecture</th>
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<tr>
<td></td>
<td>Th</td>
<td>Jan 7</td>
<td>Lab: Fluids I</td>
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<td>Week 2</td>
<td>Tu</td>
<td>Jan 12</td>
<td>Lecture</td>
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<td>Th</td>
<td>Jan 14</td>
<td>Lab: Fluids II</td>
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<td>Week 3</td>
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<td>Jan 19</td>
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<td>Th</td>
<td>Jan 21</td>
<td>Lab: Oscillations I</td>
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<td>Week 4</td>
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<td>Jan 26</td>
<td>Lecture</td>
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<td>Th</td>
<td>Jan 28</td>
<td>Lab: Oscillations II</td>
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<tr>
<td>Week 5</td>
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<td>Feb 2</td>
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<td>Th</td>
<td>Feb 4</td>
<td>Lab: Oscillations III</td>
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<td>Week 6</td>
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<td>Feb 9</td>
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<td>Feb 11</td>
<td>Lab: Sound</td>
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<td>Week 7</td>
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<td>Feb 18</td>
<td>Lab: Light I</td>
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<td>Week 8</td>
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<td>Feb 23</td>
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<td>Th</td>
<td>Feb 25</td>
<td>Lab: Light II</td>
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<td>Week 9</td>
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<td>Mar 1</td>
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<td>Mar 3</td>
<td>Lab: Light III</td>
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<td>Week 10</td>
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<td>Mar 10</td>
<td>Lab: Light IV</td>
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<td>Week 11</td>
<td>Tu</td>
<td>Mar 15</td>
<td>Final Lab Report due by 10am</td>
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The given schedule is tentative; changes will be discussed in class and posted online.

**Important Dates:** (academic calendar)

- Jan 11th: Last day to drop without a “W”
- Jan 13th: Last day to add a class
- Feb 21st: Last day to withdraw (drop with a “W”) or change grading option to P/N