Intro Physics Lab, Physics 205
Syllabus Winter 2016

Professor: Dr. Josh Peterson
Office: Willamette Room 177 (You will probably find me in the lab room, Willamette 13)
Office Hours: Thursday 12:30 – 2:30, Friday 12:30 – 2:00 PM or by appointment.

Class times and Graduate Teaching Assistants:

<table>
<thead>
<tr>
<th>Name</th>
<th>Teaching time</th>
<th>Office</th>
<th>Office hours</th>
<th>Drop in center hours</th>
<th>Email</th>
</tr>
</thead>
<tbody>
<tr>
<td>Josh Peterson</td>
<td>M 12:30 – 2:50</td>
<td>WIL 13</td>
<td>R 12:30 – 2:30</td>
<td></td>
<td><a href="mailto:jpeters4@uoregon.edu">jpeters4@uoregon.edu</a></td>
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<td>F 12:30 – 2:00</td>
<td>or by appointment</td>
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<tr>
<td>Bill Waterson</td>
<td>M 3:30 – 5:50</td>
<td>WIL 72</td>
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<td><a href="mailto:wwateters@uoregon.edu">wwateters@uoregon.edu</a></td>
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<tr>
<td>Alice Greenberg</td>
<td>M 6:30 – 8:50</td>
<td>WIL 217</td>
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<td><a href="mailto:agreeenberg09@gmail.com">agreeenberg09@gmail.com</a></td>
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<tr>
<td>Josh Ziegler</td>
<td>T 9:00 – 11:20</td>
<td>WIL 218</td>
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<td><a href="mailto:jez@uoregon.edu">jez@uoregon.edu</a></td>
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<tr>
<td>Wesley Erickson</td>
<td>T 12:00 – 14:20</td>
<td>WIL 272</td>
<td></td>
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<td><a href="mailto:wwe@uoregon.edu">wwe@uoregon.edu</a></td>
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<tr>
<td>Andy Hammond</td>
<td>T 3:00 – 5:20</td>
<td>WIL 373</td>
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<td><a href="mailto:ahammon7@uoregon.edu">ahammon7@uoregon.edu</a></td>
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<tr>
<td>Sofiane Merkouche</td>
<td>W 10:00 - 12:20</td>
<td>WL 217</td>
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<td><a href="mailto:sofianem@uoregon.edu">sofianem@uoregon.edu</a></td>
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<tr>
<td>Robert Rogers</td>
<td>W 3:00 – 5:20</td>
<td>WIL 219</td>
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<td><a href="mailto:rdaviddrogers@gmail.com">rdaviddrogers@gmail.com</a></td>
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<tr>
<td>Mae Voeun</td>
<td>W 6:00 – 8:20</td>
<td>WIL 218</td>
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<td><a href="mailto:maev@uoregon.edu">maev@uoregon.edu</a></td>
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More Stuff:
- Textbook: “RealTime Physics, Active Learning Laboratories, Module 2 Heat & Thermodynamics”, Sokoloff
- Supplemental Handouts:
  - See Canvas for weekly lab handouts
- This course is the lab complement to Physics 202.

Grading Breakdown
- 70% Weekly lab packets
  - Average of highest 9 lab scores
  - Lowest lab score will be dropped
- 30% Final Exam
- Each lab packet is worth 14 points
  - 8 points for correctness of homework
  - 6 points for completion of lab (See below)
- Breakdown of lab completion points:
  - Each lab activity consists of the following:
    - Prelab (1 point)
    - Lab activity (2 - 3 points)
    - Checkpoints (1 - 2 points)
    - Cleanup (1 point)
  - Failure to complete any of these tasks will result in lost points

Grading:
- F < 60
- 60 < D_minus < 63 < D < 67 < D_plus < 70
- 70 < C_minus < 73 < C < 77 < C_plus < 80
- 80 < B_minus < 83 < B < 87 < B_plus < 90
- 90 < A_minus < 93 < A < 98 < A_plus

Students getting less than 50% on the final exam will not receive a grade higher than a D+ regardless of the score calculated via the points breakdown. (See caveats below)

At least 50% of the final exam will be problems you have already seen, (with modifications).

Students earning less than 50% can redeem themselves with a lab practicum taken the first week of Spring term. The practicum does not replace the final exam score, it merely allows the student to earn greater than a D+ through the regular grade calculation rubric.

Breakdown of homework correctness points:
- At the end of lab you will be given a homework assignment.
- The assignment will test your understanding of the material that you should have learned in lab.
- The assignment is given to you at the end of class, so that you are forced to learn all aspects of the lab and not just what is on the homework assignment.
- It is your responsibility to learn the material in lab.
The Daily Lab Routine:
• Print the lab from Canvas before class
• Complete the prelab before the start of class
• Your instructor will periodically check your prelab for completeness
  • Incomplete prelabs will lose points
• Do (and understand) the lab
• Get and do the homework assignment
• Completed lab packets are due at 2 PM on Friday.
  • Turn in to homework box (basement Willamette hall)
  • Late work will entail a 1 point penalty per week it is late (on 14 point scale)

Attendance Policy:
• If you know that you are going to miss a lab, contact Peterson beforehand. It is easiest for you and me, if you simply come to a different section of the lab. The Wednesday night class has some open seats.
• If you can not make it to another section of the class, contact Peterson to arrange a make up time.
• Make up labs must be completed within 1 week of the missed class.
• The lowest lab score will be dropped.

Disabilities:
• I’m fully committed to helping each and every student perform to the best of their ability in this class.
• For students with special testing needs, a secondary quiet classroom will be available for you to take your test.
• Contact Peterson if this is not a suitable solution for your needs and we will work something out.
• Students with special testing needs should not plan on taking the exam earlier than Wednesday.

Course Objectives:
• Explore the basic principles of introductory physics in a laboratory setting.
• Devise experiments to obtain useful quantities for solving problems.
• Practice extracting data from graphs and instruments.
• Practice thinking critically and quantitatively about the world around us.
• Practice doing math in a practical setting
• Practice using calculators, computers, and measurement devices (ex, meter stick)
• Bridge the gap between the equations on a page and the physical world

Final Exam:
• You will be allowed to use an equation cheat sheet on the final exam. (You make your own sheet)
  • One sheet, both sides, 8.5 x 11”
• Students should plan on taking the final exam during the scheduled final exam time (Mar 16)
  • DO NOT PLAN ON TAKING THE EXAM EARLY.
• List of things that are valid excuses with valid documentation for taking the exam at a different time
  • Death in family
  • Severe Illness
• List of things that are not valid excuses for taking the exam at a different time.
  • Airplane tickets
  • Non-medical family things (graduation, family reunion, vacation, wedding, etc.)
  • Special testing needs
  • Work related issues
  • Personal issues
  • Other incidental things
• Students wishing to take the exam at a time other than the scheduled test date will entail a 25% penalty on their exam score.
• Peterson reserves the right to judge a student’s wish to take the test early on a case by case basis.

Lab Course Schedule:

<table>
<thead>
<tr>
<th>Class #</th>
<th>Date</th>
<th>Lab activity</th>
<th>Location</th>
<th>Final Exam (comprehensive)</th>
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<tbody>
<tr>
<td>1</td>
<td>Jan 4 – 6</td>
<td>Temperature and Heat</td>
<td>TBA</td>
<td>Final Exam (comprehensive)</td>
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<td>2</td>
<td>Jan 11 – 13</td>
<td>Heat, Energy Transfer</td>
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<td>3</td>
<td>Jan 18 – 20</td>
<td>Kinetic theory of gasses</td>
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<td>4</td>
<td>Jan 25 – 27</td>
<td>Ideal gas law</td>
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<td>5</td>
<td>Feb 1 – 3</td>
<td>Simple Harmonic Motion</td>
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<td>6</td>
<td>Feb 8 – 10</td>
<td>Waves in a spring</td>
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<td>7</td>
<td>Feb 15 – 17</td>
<td>Standing waves</td>
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<td>8</td>
<td>Feb 22 – 24</td>
<td>Basics of light, Refraction, Reflection</td>
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<td>9</td>
<td>Feb 29 – Mar 2</td>
<td>Lenses</td>
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<td>10</td>
<td>Mar 7 – 9</td>
<td>Light Interference patterns</td>
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<td>Wednesday, Mar 16 at 5 PM</td>
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