University of Pittsburgh · Department of Physics & Astronomy

Introduction to Physics 2, Physics 0111 - Section 1100 (19231 daytime)
Spring Term 2017

Official website of the course:  http://courseweb.pitt.edu
(login using your Pitt username and password)

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Instructor and TAs:

- **Instructor**: Prof. W. Vincent Liu
- **Office**: 223 Allen Hall
- **E-mail**: BEST WAY TO CONTACT ME liu.phys0111@icloud.com
  - **Important Notice on Email**: Emails sent to any other accounts may be delayed or lost due to spam filtering; send at your own risk.
- **Phone**: (412) 624-9023
- **Office hours**: See CourseWeb
- **Teaching Assistants/Graders**: (NOTE: You may see either TA during their office hours.)
  - Christian Parsons (cap162@pitt.edu).
  - Office hours: See CourseWeb
  - Kyle Whitcomb (kmw136@pitt.edu).
  - Office hours: See CourseWeb

Textbook, Course Description and Objectives

*Text: J. D. Cutnell and K. W. Johnson, Physics, 10th edition, Wiley.* Available in the University bookstores.

This course is the second half of a two-semester introductory physics course for non-majors. The major goal of this physics course is to enable you to develop logical reasoning skills, to explain or predict diverse phenomena in everyday experience, and to become good problem solvers and independent thinkers.

In this course we will cover most of Chapters 14-15, 18-27, and 29-30, which includes material on Thermodynamics, Electricity and Magnetism, Optics, Quantum Physics, and Atomic Physics. It is highly recommended that you read the relevant chapter ahead of time. The lecture material will follow the text fairly closely, and many of the assignments will be drawn from the text. You are encouraged to purchase the text or have regular access to it. There will be a copy (or copies) on reserve in the Benedum Engineering Library.

Physics 0111 has two components. The first is the lecture. The second is a smaller recitation section that meets one hour per week, taught by one of our TAs. In recitation you will take a short quiz and discuss physics and the homework.

Prerequisites: Mathematics

Mathematics is the language of physics. While this course will not require knowledge of calculus, it will require skills in algebra, trigonometry and simple geometry. Appendices of the text will help you brush up on some techniques and definitions.
Class Participation (Peer Instruction)

I encourage you to participate fully in class discussions. Physics ideas build on previous material, so it is important to understand what is being taught each step of the way. I strongly encourage you to ask questions to clarify any doubts. There is no such thing as a dumb question. Chances are, if you are having trouble understanding a concept, others are also likely struggling with the same concept. Please stop me when this happens, so I can try again.

SRS Clickers. The Department of Physics and Astronomy has purchased a Student Interactive Response System (SRS). The system consists of hand-held remote controls (clickers) for every student, which is read by receivers in the room. The system will allow me to ask questions during the lecture and let you respond anonymously. At the beginning of the semester, you will be assigned a number that corresponds to a particular pad. The pads will be stored in two carts at the front of the room, so that you may pick up your pad as you enter the hall, and return it when you leave. Don’t forget to return the pad, since other classes will also be using the system! The questions you answer during class will count for extra credit at the end of the semester (see Grading Policy). Most of the credit (80%) will be given for supplying an answer, even if incorrect. The rest of the credit (20%) will be for having the correct answer.

Class Etiquette

I assume that those who attend lecture will respect me as well as their classmates, and refrain from distracting activities during the lecture. These include: (1) talking (except during Class Participation, when talking is encouraged), (2) use of cellular phones (ringers should be turned off), (3) other distracting activities, such as newspaper rustling, etc.

Asking a question during class is encouraged, and is not considered a distraction.

Study Resources

A Resource Room will be available throughout the semester for help in understanding physics concepts and completing homework assignments. The room is available from 9am to 5pm, Monday through Friday, in room 312 Thaw Hall. Please check the Resource Room schedule. In addition, tutoring is available through the Academic Support Center (WPU 311). The Cullnell and Johnson website is another place to look for extra study resources (http://www.wiley.com/college/cullnell).

Physics Exploration Center (PEC)

For a good understanding of physics concepts learned during the lectures, you are encouraged to take advantage of our Physics Exploration Center (PEC). PEC is a learning center (located in 311/312 Thaw Hall) where lecture demonstrations have been modified and turned into small experiments for you to explore. Concrete experiences provided by the hands-on activities are very important for conceptual understanding of physical phenomena. The PEC is typically open from 9am-4pm M-F when you can do your assignment, but you should check the resource room schedule to make sure that a TA is available (the PEC is only open under TA supervision).

See the Course Schedule for the optional PEC assignments and due dates.

NOTE: The PEC assignments are not necessarily given in numerical order. You will not be formally graded for the PEC assignments, but they will count for extra credit (see Grading Policy for details) and you are strongly encouraged to check them out. Each PEC will be available for a week.

Homework

Homework is an important part of the course. This course will employ the WebAssign online homework system:

WebAssign: Electronic Homework System.

You will need to register with WebAssign (www.webassign.net) to set up your account. Different price options are available. Access to the electronic homework system only is a low-cost option if you plan to buy the printed textbook separately. You can also purchase homework bundled with the full Cullnell & Johnson e-book for a premium price. The printed version is then not necessary if you have access to the e-book via WebAssign.

To register for Physics 0111 with WebAssign:

- Go to http://www.webassign.net and click on "I have a class key".
- Enter the key for my class: pitt 0564 9654
- Follow the instruction to set up your account.
A short trial period is offered before payment is required. For help on registration and other WebAssign aspects, go to:

http://www.webassign.net/user_support/student

Homework assignments will be completed on WebAssign and no paper copies will be accepted. Each problem may be generated uniquely for each student in the course. Therefore, the problems assigned to you will be similar, but not necessarily identical, to problems assigned to other students.

Solutions to the homework problems will be posted online after the due dates. Please allow up to a week for the TAs to write them up.

**Exam**

There will be three mid-term exams (in class) and a 1 hour 50 min cumulative final examination. The exams are set on:

- Midterm Exam 1: Tuesday, Jan 31, Room: TBA
- Midterm Exam 2: Tuesday, Feb 28, Room: TBA
- Midterm Exam 3: Tuesday, Apr 4, Room: TBA
- Final: Thursday, Apr 27, 8:00-9:50am, Room: TBA

The final examination is scheduled by the University; the exam time is taken from the official University "Classroom Scheduling/Final Exams". The final exam location will be determined sometime during the semester. All midterm exams will be held during the regular class meeting time in the regular lecture room unless otherwise announced. The lowest performance of the three midterm exams will be dropped. An absent exam receives zero points and will be effectively dropped out. There will be no make-up midterm examinations under any circumstance (sorry, no exceptions).

For each exam, you will be allowed to prepare in advance and use during the exam one summary sheet of handwritten or typed formulas on both sides [double sided, single page of the standard letter paper size]. The very act of creating such a summary sheet should help you to organize concepts in your mind.

**Recitation and Quizzes**

The recitation sections are mandatory. It is important for you to attend the recitation that was originally assigned to you. Your TA will discuss problem solving strategies and will also give in-class quizzes most weeks. The times/rooms are given on the University's course schedule, copied below for your quick reference.

<table>
<thead>
<tr>
<th>Time</th>
<th>Location</th>
<th>TA/Lecturer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wed 2:00-2:50 pm</td>
<td>105 Allen</td>
<td>Parsons</td>
</tr>
<tr>
<td>Wed 3:00-3:50 pm</td>
<td>104 Thaw</td>
<td>Parsons</td>
</tr>
<tr>
<td>Thu 1:00-1:50 pm</td>
<td>105 Allen</td>
<td>Whitcomb</td>
</tr>
<tr>
<td>Thu 2:00-2:50 pm</td>
<td>105 Allen</td>
<td>Whitcomb</td>
</tr>
<tr>
<td>Thu 3:00-3:50 pm</td>
<td>105 Allen</td>
<td>Parsons</td>
</tr>
<tr>
<td>Thu 4:00-4:50 pm</td>
<td>105 Allen</td>
<td>Parsons</td>
</tr>
</tbody>
</table>

**Grading Policy**

Over the course of the semester, there will be opportunities for receiving extra credit (XCREDS). One XCREDS will be worth 0.25% in the final course grade, and these optional assignments are meant to enhance the learning experience.

The course grade will be based on: homework (20%), two midterm exams (20% each), the final exam (30%), and the recitation quiz (10%), where the lowest of the three midterm exams and the lowest quiz are dropped. Extra credit is available. Each of the PECs will count for up to one XCREDS (0.25%), and the in-class SRS (clicker) questions will count for a total of ten XCREDS (2.5%) added into the final grade. "The sum of the grades A+ through B- will generally be in the 40-50% range of all grades A through F" (quote from the Department grading guidelines dated 12/1/09).

**Late and Absent Assignments:** We do not accept late homework and PEC assignments nor makeup quizzes and SRS in-class questions/participations unless there is a special, strong, justifiable reason (such as athletes going out for games on behalf of the University, being in emergency room during the recitation time with hospital evidence, or a case as strong).
Course schedule (tentative)

The schedule (subject to change) lists the material covered, exam dates, and assignments. You are responsible for reading the chapter in the text BEFORE coming to class.

<table>
<thead>
<tr>
<th>Week of</th>
<th>Due</th>
<th>Tuesday</th>
<th>Thursday</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jan 2</td>
<td></td>
<td></td>
<td>Ch 14</td>
</tr>
<tr>
<td>Jan 9</td>
<td>HW1</td>
<td>Ch 14, 15</td>
<td>Ch 15</td>
</tr>
<tr>
<td>Jan 16</td>
<td>HW2, PEC-110_15</td>
<td>Ch 15, 18</td>
<td>Ch 18</td>
</tr>
<tr>
<td>Jan 23</td>
<td>HW3</td>
<td>Ch 18, 19</td>
<td>Ch 19</td>
</tr>
<tr>
<td>Jan 30</td>
<td>PEC5</td>
<td>Midterm Exam 1</td>
<td>Ch 19, 20</td>
</tr>
<tr>
<td>Feb 6</td>
<td>HW4</td>
<td>Ch 20</td>
<td>Ch 20, 21</td>
</tr>
<tr>
<td>Feb 13</td>
<td>HW5, PEC7</td>
<td>Ch 21</td>
<td>Ch 21, 22</td>
</tr>
<tr>
<td>Feb 20</td>
<td>HW6</td>
<td>Ch 22</td>
<td>Ch 22</td>
</tr>
<tr>
<td>Feb 27</td>
<td>PEC10</td>
<td>Midterm Exam 2</td>
<td>Ch 22, 23</td>
</tr>
<tr>
<td>Mar 6</td>
<td></td>
<td>Spring break</td>
<td>Spring break</td>
</tr>
<tr>
<td>Mar 13</td>
<td>HW7</td>
<td>Ch 24</td>
<td>Ch 24, 25</td>
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<tr>
<td>Mar 20</td>
<td>HW8, PEC15</td>
<td>Ch 25, 26</td>
<td>Ch 26</td>
</tr>
<tr>
<td>Mar 27</td>
<td>HW9, PEC18</td>
<td>Ch 26</td>
<td>Ch 26, 27</td>
</tr>
<tr>
<td>Apr 3</td>
<td>HW10</td>
<td>Midterm Exam 3</td>
<td>Ch 27</td>
</tr>
<tr>
<td>Apr 10</td>
<td>HW11, PEC4</td>
<td>Ch 27, 29</td>
<td>Ch 30</td>
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<tr>
<td>Apr 17</td>
<td>HW12, PEC19</td>
<td>Ch 30</td>
<td>Ch 30, overall review</td>
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<tr>
<td>Apr 24</td>
<td>final exam</td>
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</table>

Homework (HW) will be due at 11:30 pm on Thursdays unless otherwise noted. The optional PECs are due in recitation on the week shown above. (Important: you must turn in PECs in the recitation you are registered for to get credit.) They will be available the week before in 312 Thaw Hall. PEC numbers are from the list of PEC experiments. Chapter (Ch.) numbers are from the textbook.

Academic Integrity

“Students in this course will be expected to comply with University of Pittsburgh's Policy on Academic Integrity. Any student suspected of violating this obligation for any reason during the semester will be required to participate in the procedural process, initiated at the instructor level, as outlined in the University Guidelines on Academic Integrity. This may include, but is not limited to, the confiscation of the examination of any individual suspected of violating University Policy. Furthermore, no student may bring any unauthorized materials to an exam.”

Disabilities

"If you have a disability that requires special testing accommodations or other classroom modifications, you need to notify both the instructor and the Disability Resources and Services no later than the 2nd week of the term. You may be asked to provide documentation of your disability to determine the appropriateness of accommodations. To notify Disability Resources and Services, call 648-7890 (Voice or TTD) to schedule an appointment. The Office is located in 216 William Pitt Union.”

If you have any questions, please contact me at: liu.phys0111@icloud.com.