2015

Physics 112 Heat, electricity, & Optics Spring 2015

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Recommended Citation
http://spark.parkland.edu/physics_course/13

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PHYSICS 112
Heat, Electricity, & Optics
Spring, 2015  Sec. 1-4  8-8:50am, M126

Instructor:  Dave Leake
Office: Planetarium (phone: 351-2567)
Student Hours: Mon, 9-10am (M159), or by appointment.
Phone mail: 373-3782 ext. 2567
Electronic mail: dleake@parkland.edu (Cobra emails should forward to this)
Web Page: http://cobra.parkland.edu (for powerpoints, lab hints and grades)


Homework: There will be one problem set each week. These problems will be assigned on
Wednesdays and will be due by 5pm the following Wednesday. Turn in assignments either in
class or deliver to my office. Your lowest grade will be dropped at the end of the semester. Each
problem set will be based on 100%. Late homework will be accepted for up to one week after it
is due at a cost of 5% per day. No homework will be accepted after the written solutions have
been posted online. This covers all excuses!

Laboratory: There will be one laboratory experiment or activity each week, explained on
Monday. Experiments will be performed either on Tuesday or Thursday - you should have
enrolled in a lab section when you enrolled in the class. A lab monitor will be in charge during
lab but you will be on your own, so prepare accordingly. Lab hints appear on the course’s Cobra
site. Labs are held in room M126. You will be admitted ONLY at the start of your lab time, so
please be prompt. Note the time you started lab and the time you turned in your lab on the lab
sheet. Turn in your lab write up to the lab monitor on duty before you leave the lab! Internet
and take-home activities will be due the following Monday, in-class. Each lab will be based on
100% and your lowest grade will be dropped. Write-ups should be legible, coherent and include
a data section, a sample calculation, and conclusions. You must show your calculations for full
credit! This is a lab course, meaning you must have 60% of the total lab points to pass the
course! Collaboration (NOT plagiarism) is encouraged.

Exams: There will be three hour exams and a final exam, each worth 100 points. Each hour
exam will concentrate on the material covered since the previously exam; the final is just hour
exam #4 and won’t be cumulative. These tests are closed-book, though you may use a calculator
in addition to the formula sheet that I will provide you. Emphasis will be on concepts & problem
solving processes and not memorization of formulae!

Grading:  

<table>
<thead>
<tr>
<th>Component</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Homework</td>
<td>20%</td>
</tr>
<tr>
<td>Labs</td>
<td>20%</td>
</tr>
<tr>
<td>Exams (3)</td>
<td>45%</td>
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<tr>
<td>Final</td>
<td>15%</td>
</tr>
</tbody>
</table>

A: 90% - 100%
B: 80% - 89%
C: 70% - 79%
D: 60% - 69%
TENTATIVE SPRING SYLLABUS

<table>
<thead>
<tr>
<th>Week#</th>
<th>Chapter/Topic</th>
<th>Lab/Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jan. 12</td>
<td>Ch. 1 - Units, Notation</td>
<td>“Pre-test” activity (on Cobra)</td>
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<tr>
<td>Jan. 19</td>
<td>Ch. 12 – Electrostatic stuff</td>
<td>Math Review (take home)</td>
</tr>
<tr>
<td>Jan. 26</td>
<td>Ch. 13 – Electric circuits &amp; Ohm’s Law</td>
<td>Static Electricity (in-lab)</td>
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<tr>
<td>Feb. 2</td>
<td>Ch. 14 – Magnetism</td>
<td>Resistivity in wires</td>
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<tr>
<td>Feb. 9</td>
<td>Exam #1; Chap. 14 - Transformers</td>
<td>Series &amp; Parallel Circuits</td>
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<tr>
<td>Feb. 16</td>
<td>Ch. 9 – AC/DC &amp; Transformers</td>
<td>Magnetic Fields</td>
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<tr>
<td>Feb. 23</td>
<td>Ch. 15 – E &amp; M waves</td>
<td>No lab (no classes Thursday)</td>
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<tr>
<td>Mar. 2</td>
<td>Ch. 16 – Light</td>
<td>Transformers</td>
</tr>
<tr>
<td>Mar. 9</td>
<td>Exam #2, Emission &amp; absorption</td>
<td>Process of Science (online)</td>
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<tr>
<td>Mar. 16</td>
<td>Chap. 17 – Optical systems</td>
<td>Light, Spectra, &amp; Illumination</td>
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<tr>
<td>Mar. 23</td>
<td>** ** Spring Break – no class ** **</td>
<td>No lab</td>
</tr>
<tr>
<td>Mar. 30</td>
<td>Ch. 18 – Nuclear physics &amp; radioactivity</td>
<td>Basic Optics</td>
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<tr>
<td>Apr. 6</td>
<td>Ch. 19 – Nuclear energy</td>
<td>Radioactivity</td>
</tr>
<tr>
<td>Apr. 13</td>
<td>Exam #3; Ch. 10 - Heat &amp; Temperature</td>
<td>TBA</td>
</tr>
<tr>
<td>Apr. 20</td>
<td>Ch. 10 – Phase transitions</td>
<td>Specific Heat</td>
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<tr>
<td>Apr. 27</td>
<td>Ch. 11 – Thermodynamics &amp; heat engines</td>
<td>Latent Heat</td>
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<tr>
<td>May 4</td>
<td>Review</td>
<td>Review</td>
</tr>
</tbody>
</table>

There are hints for each of these labs as well as the homework assignments on the Cobra web site. The hour exams will be held on Wednesdays and are tentatively scheduled for: February 11, March 11, & April 15 [last day to drop is May 1] Final Exam (Hour Exam #4): 8–10am, Monday, May 11, room M126

A full syllabus (including college policies) appears on the Cobra web site. Class attendance is imperative! You are expected to be here each day of lecture.

If you believe you have a disability for which you may need an academic accommodation (e.g. an alternate testing environment, use of assistive technology or other classroom assistance), please contact: Cathy Robinson, Room U260, 217-353-2338, c robinson@parkland.edu
On the ten-day roster, I am required to assess your attendance. If you have not attended regularly to that point, you will be dropped with no refund of tuition or fees. After the ten-day roster, you should not plan on an instructor withdrawal if you want to withdraw from the course. You are ultimately responsible for your own withdrawal by the withdrawal date. Non-attendance after the ten-day roster will result in an “F” if you don't withdraw yourself. It is your responsibility to withdraw yourself from the class if you feel the need to do so. Please check out the withdrawal procedures in the Parkland catalog. After midterm, I cannot drop you. Class attendance is imperative! You're expected to be here each class day!

This is not an online class, but I'll be using Cobra to post weekly folders for the homework, homework solutions, weekly announcements, any class powerpoints, grades and lab hints. The homework assignments will also be posted on the board in class. You are highly encouraged to check the lab hint folder for more information on the week’s lab before you go to lab. I may also post a discussion question or two for the class before a class meeting.

Center for Academic Success
The Center for Academic Success provides a wide range of academic support services to enable you learn well, grow as a student, succeed in your classes, and excel at what you do. These services include the following:

1. Tutoring and Learning Assistance: Make use of walk-in tutoring services provided by faculty, staff and trained peer tutors, Monday through Friday. Many students come to get help in study skills, reading, writing, math (all levels), and many other subjects.
2. For-credit Modules and Tutorials: Enroll in one-credit hour Tutorials to supplement classroom instruction in reading, writing, ESL, math, chemistry, and study skills. Modules are available for eligible students to complete certain developmental coursework requirements.
3. Advising and Advocacy: Work with our team of advocates and academic advisor to plan a semester schedule, understand transfer requirements, or manage issues that stand in the way of school.

For more information, please contact

Anita Taylor  Sue Schreiber
Room: D120     Room: D120
Phone: 353-2005 Phone: 351-2441

You may also email the CAS at CenterForAcademicSuccess@parkland.edu

See www.parkland.edu/studentpolicy/honesty for policies on academic honesty.

We believe strongly in the Core Values espoused by Parkland College: Honesty and Integrity, Fairness and Just Treatment, Responsibility, Multiculturalism, Education, and Public Trust. Essentially, these values set guidelines for how we should treat you and how you should treat each other (and us). Failure to be respectful of one another or to maintain ethical behavior will not be tolerated.

In the event of a significant campus emergency, Parkland College will activate its mass notification system. We encourage you to sign up for this free service and select how you would like to be notified: text message, audio message, or email message. Sign up at http://www.parkland.edu/publicsafety/alerts.htm