

2015

# Physics 112 Heat, electricity, & Optics Spring 2015

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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](mailto:dleake@parkland.edu) (Cobra emails should forward to this)  
 Web Page: <http://cobra.parkland.edu> (for powerpoints, lab hints and grades)

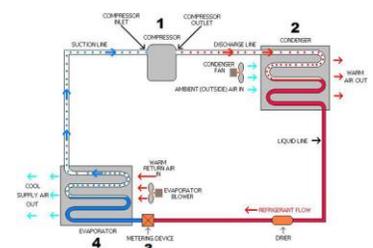
**Text:** *The Physics of Everyday Phenomena (8th edition)* by W. Thomas Griffith

**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!

<b>Grading:</b>	Homework	20%	A: 90% - 100%
	Labs	20%	B: 80% - 89%
	Exams (3)	45%	C: 70% - 79%
	Final	<u>15%</u>	D: 60% - 69%
		100%	



## TENTATIVE SPRING SYLLABUS

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

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, [crobinson@parkland.edu](mailto:crobinson@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

Room: D120

Phone: 353-2005

Sue Schreiber

Room: D120

Phone: 351-2441

You may also email the CAS at [CenterForAcademicSuccess@parkland.edu](mailto:CenterForAcademicSuccess@parkland.edu)

See [www.parkland.edu/studentpolicy/honesty](http://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>