

## Physics 212: Physics for Scientists and Engineers II (Spring 2015)

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 Lectures: 8:00am - 9:15am, T TH, HELD Lewis Hall, Room 101 (Auditorium)  
 Office Hours: 9:30am - 10:45am, T TH and by appointment

**Textbooks:** "Physics for Scientists and Engineers" 9th Ed. By Serway and Jewett;

**Teaching Assistant:** TBA

**Notes:**

1. The grades in this course will be determined by your performance in two term exams (20% each), final exam (40%), homework (10%), attendance (4%), pre-lecture quizzes (2%), in-class quizzes (2%), and bonus problems (2%). The grade ranges are: 90-100 = A; 80-90 = B; 65-80 = C; 50-65 = D.
2. The Final Exam will replace the worst of the two term exams if it is higher than any of them. The final exam grade cannot be used to replace a term exam that was missed.
3. February 3<sup>rd</sup> is the last day of refund period, and March 3<sup>rd</sup> is the last day for course withdrawals.
4. Final exam (comprehensive): Tuesday May 5<sup>th</sup>, 8:00am-11:00am. Please note there is no make-up for the final exam.
5. Access and do the homework problem online at <https://www.webassign.net> (see instructions\*)

| Week/Date        | Chapter/Topic                                                 | Chapter/Homework                  |
|------------------|---------------------------------------------------------------|-----------------------------------|
| 1 Jan 22         | <b>Chapters 23 &amp; 24:</b> Electric Field, Gauss' law       | HW1: Chapters 23 & 24: due Feb 10 |
| 2 Jan 27; 29     | <b>Chapters 24 &amp; 25:</b> Gauss' law, Elec. Potential      | HW2: Chapters 25 & 26: due Feb 17 |
| 3 Feb 3; 5       | <b>Chapters 26 &amp; 27:</b> Capacitors, Ohm's law            | HW3: Chapters 26 & 27: due Feb 24 |
| 4 Feb 10; 12     | <b>Chapters 27 &amp; 28:</b> Ohm's law, Kirchhoff's law       | HW4: Chapters 28 & 29: due Mar 3  |
| 5 Feb 17; 19     | <b>Chapters 28 &amp; 29:</b> Kirchhoff's law, Mag. Forces     | HW5: Chapters 30 & 31: due Mar 24 |
| 6 Feb 24; 26     | <b>Chapter 29:</b> Magnetic Forces<br><b>Feb 26 TH EXAM I</b> | HW6: Chapters 32 & 33: due Apr 7  |
| 7 Mar 3; 5       | <b>Chapters 30 &amp; 31:</b> Magnetic Fields, Faraday's law   | HW7: Chapters 34 & 35: due Apr 14 |
| 8 Mar 10; 12     | <b>Spring Break</b>                                           |                                   |
| 9 Mar 17; 19     | <b>Chapters 31 &amp; 32:</b> Faraday's law, Inductance        | HW8: Chapters 36 & 37: due Apr 21 |
| 10 Mar 24; 26    | <b>Chapters 33 &amp; 34:</b> AC, EM waves                     | HW9: Chapters 38 & 39: due Apr 28 |
| 11 Mar 31; Apr 2 | <b>Chapters 35 &amp; 36:</b> Light, Image formation           |                                   |
| 12 Apr 7; 9      | <b>Chapter 37:</b> Wave optics<br><b>Apr 9 TH EXAM II</b>     |                                   |
| 13 Apr 14; 16    | <b>Chapter 38:</b> Polarization                               |                                   |
| 14 Apr 21; 23    | <b>Chapter 39:</b> Relativity                                 |                                   |
| 15 Apr 28; 30    | <b>Reviews</b>                                                |                                   |
| 16 May 5th       | <b>FINAL EXAM: 8:00 am- 11:00 pm</b>                          |                                   |

### **\*Online Homework (WebAssign Instruction)**

You must self-enroll, the class key for Phys 212 is: **olemiss 4127 8720**, please supply your entire student Id accurately in order for the system to transfer credit from Web Assign to Blackboard. Student quick start guide is available at: [http://www.webassign.net/manual/WA\\_Student\\_Quick\\_Start.pdf](http://www.webassign.net/manual/WA_Student_Quick_Start.pdf)

### **Do Yourself (and Me) a Favor**

Read about the topics before I discuss them in lectures. It is not necessary that you study them carefully, but at least get the “smell of it”. This should make it much easier for you to follow the lectures and that should make them more interesting.

### **Recitation Sessions “OPTIONAL”**

We will set up time (after 5:00 pm) for recitation sessions according to the students’ schedule and the room availability. The recitation session is **not mandatory**, however it is very important in order to practice solving the homework problems, and enforce the physics concepts.

### **Disclaimer**

This is a tentative syllabus and a slight adjustment might be made in due course.

### **ADA statement**

The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you believe you have a disability requiring an accommodation, please contact the Office of Student Disability Services (SDS) at 234 Martindale Center ([sds@olemiss.edu](mailto:sds@olemiss.edu)) phone: 662-915-7128

### **Academic Integrity statement**

As an Olemiss student I have abided by the UM academic integrity policy. My words and actions will reflect Academic Integrity. I will not cheat or lie or steal in academic matters.

I will promote integrity in the University of Mississippi community. For more information, refer to: [http://www.olemiss.edu/depts/general\\_library/instruction/resources/plagiarism\\_resources/reinforcing.html](http://www.olemiss.edu/depts/general_library/instruction/resources/plagiarism_resources/reinforcing.html)

### **Objective**

This course is primarily about electricity and magnetism phenomena. The subject describes the motion of charged particles, and accordingly the sub-atomic particle dynamics, was developed in the 18th century and is called "classical electrodynamics". This course provides a foundation for almost all of the current technology, which stems from the Maxwell's Equations and atomic physics. This course is essential for most natural sciences and engineering majors. Among many several rather broad goals, the student will learn a few new important concepts in physics, learn to apply these concepts to practical problems, and gain the ability to reason qualitatively and quantitatively about physics.