# Physics 212: Physics for Scientists and Engineers II (Spring 2013)

Instructor: Dr. Ahmed M. Hamed Office: 5 Kennon Observatory Phone: 915-7849 Email: hamed@phy.olemiss.edu Online: http://www.phy.olemiss.edu/~hamed/olemiss\_212.html Lectures: 8:00am - 9:15am, TTh, HELD Lewis Hall, Room 101 (Auditorium) Office Hours: 9:30am - 10:40am, TTh and by appointment

Textbooks: "Physics for Scientists and Engineers" 8th Ed. By Serway and Jewett;

# **Teaching Assistant:**

Mr. Zhongyang Zhang

zzy2417@gmail.com

### Note:

- The grades in this course will be determined by your performance on three term exams (20% each), final exam (30%), homework (10%), and bonus problems (5%). The grade ranges are: 90-105 = A; 80-90 = B; 65-80 = C; 50-65 = D. In order to earn the 5% of bonus problems you should solve all the assigned "challenge" problems.
- 2. If your grade on the final exam is higher than your lowest grade on one of the three term exams during the semester, the grade on the final will replace that one lowest exam grade in computing the course grade. The final exam grade **cannot** be used to replace an exam that was missed.
- 3. February 4th is the last day of refund period, and March 4th is the last day for course withdrawals.
- 4. Final exam (comprehensive): May 7th, Tuesday, 8:00am-10:00am Please note there is no make-up for the final.
- 5. Access and do the homework problem online at <a href="https://www.webassign.net">https://www.webassign.net</a> (see instruction\*)

| Week/Date |            | Chapter/Topic                                                     |                                                             | Chapter/Homework                   |
|-----------|------------|-------------------------------------------------------------------|-------------------------------------------------------------|------------------------------------|
| 1         | Jan 22; 24 | <u>Chapters 23, 24</u> : Coulomb's law;<br>electric field, Gaus   | apters 23, 24: Coulomb's law;<br>electric field, Gauss' law |                                    |
| 2         | Jan 29; 31 | Chapters 24, 25: Gauss law, electric                              | ootential                                                   | HW2: Chapters 24, 25; due T Feb 5  |
| 3         | Feb 5; 7   | <u>Chapters 26, 27</u> : Capacitors;<br>Ohm's law                 |                                                             | HW3: Chapters 26, 27; due T Feb 12 |
| 4         | Feb 12; 14 | <u>Chapters 27, 28:</u> Ohm's law;<br>Kirchhoff's rules           |                                                             | HW4: Chapters 27, 28; due T Feb 19 |
| 5         | Feb 19; 21 | <u>Chapter 29</u> : magnetic forces<br>Feb 21st                   | <u>Exam I</u>                                               | HW5: Chapter 29; due T Feb 26      |
| 6         | Feb 26; 28 | <u>Chapters 30, 31</u> : sources of magnetic field, Faraday's law |                                                             | HW6: Chapters 30, 31; due T Mar 5  |
| 7         | Mar 5; 7   | Chapters 31, 32: Faraday's law;<br>inductance                     |                                                             | HW7: Chapters 31, 32; due T Mar 12 |
| 8         | Mar 12; 14 | Spring Break                                                      |                                                             |                                    |
| 9         | Mar 19; 21 | Chapters 33, 34: AC;<br>EM waves                                  |                                                             | HW8: Chapters 33, 34; due T Mar 26 |
|           |            | Mar 21st                                                          | <u>Exam II</u>                                              |                                    |

| Week/Date |                     | Chapter/Topic                                           |                 | Chapter/Homework                   |  |  |
|-----------|---------------------|---------------------------------------------------------|-----------------|------------------------------------|--|--|
| 10        | Mar 26; 28          | Chapters 34: EM waves                                   |                 | HW9: Chapter 34; due T Apr 2       |  |  |
| 11        | Apr 2; 4            | Chapters 35, 36: light;<br>image formation              |                 | HW10: Chapters 35,36; due T Apr 9  |  |  |
| 12        | Apr 9, 11           | <u>Chapters 36, 37:</u> image formation;<br>wave optics |                 | HW11: Chapters 36,37; due T Apr 16 |  |  |
| 13        | Apr 16, 18          | <u>Chapters 37, 38</u> : wave optics;<br>polarization   |                 | HW12: Chapters 37,38; due T Apr 23 |  |  |
|           |                     | Apr 18Th                                                | <u>Exam III</u> |                                    |  |  |
| 14        | Apr 23, 25          | Chapter 38: polarization                                |                 | HW13: Chapter 38 due; T Apr 30     |  |  |
| 15        | Apr 30, May 2       | Chapter 39: Relativity;                                 |                 | HW14: Chapter 39; due T May 7      |  |  |
| 16        | May 7 <sup>th</sup> | Final exam (comprehensive), 8:00 am-10:00 am            |                 |                                    |  |  |

# \*Online Homework (WebAssign Instruction):

You must self-enroll, the class key for Physics 212, section 2 is: **olemiss 0892 4618**, please supply your entire student Id accurately in order for the system to transfer credit from Web Assign to Blackboard.

# 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.

### **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) 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

### Disclaimer:

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