Syllabus

Instructor: ***Sheng-Chiang (John) Lee***
Office: SEB 206, 478-301-2599
Office Hours: MWF 1~2 pm, or by appointment
Lecture (SEB 110): **MWF 2:00~2:50pm**
Lab (SEB 217): **T or R 12:15~2:55pm**
Co/Pre-requisite: MAT 192
Textbook:
Fundamentals of Physics, 9th edition,
by Halliday, Resnick, and Walker

Course Description:

This course is the second of a 2-semester calculus-based general physics sequence. It serves as an introduction to the field of physics, which is a foundation of disciplines in science and engineering. Although physical principles can/will be demonstrated in the class conceptually, they are all formulated through mathematical expressions. Therefore, students' performance in this aspect will influence the grades significantly. Students who take this course should have basic knowledge of calculus, including the concepts of derivatives and integrations, and ability to perform basic manipulations in calculus.
The topics covered in this class include:
Electricity and Magnetism, Waves and Sounds, Optics.

Objectives:

After taking this course, you are expected to

- Be familiar with the common scientific terminologies (e.g. charges, currents, voltages, electric and magnetic fields, etc.) and the units associated with these new quantities.
- Develop reasonable physical intuitions and be able to qualitatively understand simple physical systems and predict their behaviors.
- Be able to apply scientific logic to solve physical problems analytically and quantitatively.
- Be able to apply acquired knowledge of physics in your understanding of the physical world.

Grading Methods:

Grading Scale:

Score:	90+	85~89	80~84	75~79	70~74	60~69	59-
Grade:	A	B+	B	C+	C	D	F

Grading Components:

	Laboratory (20%)			Lecture (80%)			
	Pre-Lab Quiz	Participation	Report	In-Class Quizzes	On-line Homework	Exams (3 mid-terms + 1 final)	iClicker
Weight:	1%	2%	17%	12%	10%	(10+14+18+14) = 56%	1 + 1 = 2%

Lecture Grades

In-Class Quizzes are problems that require solving skills. They are mostly taken from the textbook content of assigned readings or homework problems. All quizzes will be announced in the previous class, and **NO** make-up quizzes or other arrangement are available for unexcused absence or late for a class.

On-line Homework will be submitted and graded through the on-line homework/tutor system, *WebAssign*®. You may find more information below. Due date of each assignment will be announced in the class. No late submission will be accepted.

Exams are inevitably **accumulative**, since physics is an accumulative knowledge. You can not master more advanced topics without being fluent with the basics. However, exams will concentrate on the content covered in the corresponding periods, unless otherwise specified. All exams will be close-book. **A formula sheet will be provided**, and you should only bring your pen/pencil, calculator, blank paper for calculation, and your knowledge of physics to the exams. **No** make-up exams are available unless you are legitimately excused **prior to the exam**.
Your grades will be posted on BlackBoard immediately after your work is graded. If there is any concern about your grades, you should discuss with me within **ONE** week after they are posted.

iClickers are used to facilitate in-class discussions through polling class responses to some conceptual questions. Your grades are based on your participation and correctness (half-half). Each student must have a unique iClicker® to use in the class throughout the semester (the same type used in many chemistry and biology courses at Mercer). You should be able to purchase them from the bookstore. There will be no make-up for missed iClicker® activities/grades. Missed grades may be waived if you have excused absence or legitimate reasons permitted by the instructor.

Laboratory Grades

Students with prior lab credits accepted by Mercer for the previous PHY 162L should refer to the addendum for how your lab credit will be handled. Other students are referred to the following description for your laboratory grades.

The lab sessions are mostly composed of topical experiments related to class lectures. Occasionally the instructor may use a session for demonstrations and interactive discussions and/or supplemental instruction. Students' performance in typical lab sessions with topical experiments will be evaluated to determine the laboratory grades, based on the explanation below.

Pre-Lab Quizzes. You should be prepared whenever you come to a laboratory. The lab manual contains the information you need for the experiments, and you should read it before you start doing anything. Simple quizzes will be given at the beginning of each lab session to encourage you to be prepared prior to the lab.

Participation is mostly a measure of your working attitude in the lab. It is subject to the instructor's judgment. If you do all you should as a good lab student, you will get all the credits.

Lab Reports are due at the beginning of the following lab. Late reports will only be accepted within the first week after they are due and will suffer 20% loss of earned points. Each report should be **typed up using the provided report template**. The reports should follow the typical format:

double-spaced between lines; font-size = 12; 1 inch margin. Full written reports will be graded upon 100 points, distributed as following.

1. Experimental Description (< 2 pages): 15 points
2. Instructor-signed Data Tables and Graphs (provided in your Lab Manual): 35 points
   You must **have the instructor sign the original data tables or graphs** you acquire in the lab before you leave the lab. Otherwise, your lab report **will not count** and will be graded with 0 point.
3. Discussion/conclusions (1 ~ 2 pages): 30 points
4. Answers to the questions: 20 points

Guidelines for reports of "inquiry-based" and other non-typical labs will be given when needed. Physics Laboratory Guidelines, which the style of your reports should follow, can be found at http://physics.mercer.edu/labs/.

Class Evaluation

In an ongoing effort to improve the quality of instruction, each student enrolled in this course is required to complete an end-of-semester course evaluation, administered through ***BlackBoard*** during the last week of the semester. The deadline for completing this evaluation is the last day of class, **12/06**.

More Information about *WebAssign*®

Each student in the course must obtain an online account with ***WebAssign*** that will cost $39.95. This will enable them to complete online homework assignments. Students also have the eBook option through WebAssign with additional cost of $17.25. Relevant links will be provided on the course webpage. A regular textbook is also available at the campus bookstore.

You will receive the "Class Key" on the first day of the class. You will use this key to create your ***WebAssign***® account (through ***WebAssign***® **self-enrollment** site). You only need to do this once at the beginning of the semester. After then, you only need to log in through the ***WebAssign***® **login** site to access the on-line homework system. You will submit all homework assignments through ***WebAssign***®, and they will be graded for 10% of your semester grade.

About Assessment

To evaluate the effectiveness of learning, there will be a pre-class assessment administered at the beginning of the semester and a post-class assessment at the end of the semester during the lab hours. The performance in the post-assessment may result in at most 1 point bonus added to the final grades following the following scales.

50-60% correct → 0.25 point

60-70% correct → 0.50 point

70-80% correct → 0.75 point

> 80% correct → 1.00 point

Important Dates:

Last Day for Course Withdrawal: 10/25/2013!!!!

Final Exam: 12/09, 2pm ~ 5pm

Class Policies:

Attendance Policy: Attendance is not mandatory for lectures. However, students are solely responsible for the missed grades due to absence and learning the materials covered in the missed classes, including announcements. Attendance and active participation in labs are mandatory.

Class Etiquette: You are expected to conduct yourself in a respectful manner to your fellow classmates and the instructor. The instructor may ask you to leave the classroom/lab if your behavior is disturbing to the instructor or other students.

Honor Code: You are bound by the Mercer honor code. The College's academic misconduct policy will be followed. All work, for which a grade is received, must be the **original** work of the **student** without aid or assistance of another party, or any printed and or electronic data/information. Academic misconduct cases will be referred to the honor council and the student will automatically receive a grade of incomplete (IC) pending a ruling by the honor council.

Cell Phone and Laptop Usage: Out of courtesy for all those participating in the learning experience, all cell phones must be **kept in your pocket/backpack with power/ringer off** before entering any classroom, lab, or formal academic or performance event.
Laptops may be used in class to assist individual's learning (e.g. to access on-line supplemental materials, to view provided class presentation and take note, etc.). However, using laptops for activities unrelated to the class is prohibited.
Warning will be given for the first-time violation. One semester credit will be taken for each following violation up to three times. If a student keeps violating the policy, one may be asked to leave the room by the instructor.
No cell phones/laptops are allowed during exam times.

Documented Disability Statement: *"Students requiring accommodations for a disability should inform the instructor at the close of the first class meeting or as soon as possible. The instructor will refer you to the ACCESS and Accommodation Office to document your disability, determine eligibility for accommodations under the ADAAA/Section 504 and to request a Faculty Accommodation Form. Disability accommodations or status will not be indicated on academic transcripts. In order to receive accommodations in a class, students with sensory, learning, psychological, physical or medical disabilities must provide their instructor with a Faculty Accommodation Form to sign. Students must return the signed form to the ACCESS Coordinator. A new form must be requested each semester. Students with a history of a disability, perceived as having a disability or with a current disability who do not wish to use academic accommodations are also strongly encouraged to register with the ACCESS and Accommodation Office and request a Faculty Accommodation Form each semester. For further information, please contact Carole Burrowbridge, Director and ADA/504 Coordinator, at 301-2778 or visit the ACCESS and Accommodation Office website at* http://www.mercer.edu/disabilityservices.

Tentative Course Schedule: may vary according to class progress

Week	Topic	Reading
8/20 – 8/23	Introduction & Electric Charge	Ch 21
8/26 – 8/30	Electric Fields	Ch 22
9/03 – 9/06	Labor Day; Gauss' Law	Ch 23
9/09 – 9/13	Review; 1st Exam	
9/16 – 9/20	Electric Potential	Ch 24
9/23 – 9/27	Capacitance	Ch 25
9/30 – 10/2	Current & Resistance; Circuit; Fall Break	Ch 26 & 27
10/07 – 10/11	Circuit; Review; Midterm	
10/14 – 10/18	Magnetic Fields	Ch 28
10/21 – 10/25	Magnetic Fields due to Currents	Ch 29
10/28 – 11/01	Induction and Inductance	Ch 30
11/04 – 11/08	Magnetism of Matter; Review; 3rd Exam	Ch 32
11/11 – 11/15	Waves	Ch 16 & 17
11/18 – 11/22	Wave; Physical Optics	Ch 35
11/25 – 11/26	Electromagnetic Waves; Thanksgiving Break	Ch 33
12/02 – 12/06	Images	Ch 34
12/09 Monday	**2~5pm**	