

# PHY2054C, College Physics - II

Fall 2008, Tu,Th 3:00 PM - 4:15 PM, Section 002, MAP 0359

Instructor: Dr. Aniket Bhattacharya

Office: MAP 322  
Office Hours: Tu & Th 2:00 PM -3:00 PM  
or by appointment

Phone: 823-5206  
email: [aniket@physics.ucf.edu](mailto:aniket@physics.ucf.edu)  
Web : [www.physics.ucf.edu/~aniket](http://www.physics.ucf.edu/~aniket)

Teaching Assistant: Mr. Christopher Lorsch (MAP 307)  
TA Office hours: Tu: 11:30 AM - 1:00 PM, W 1:00 PM - 2:30 PM

*e-mail:* [christopher12642@aim.com](mailto:christopher12642@aim.com)

- **Course Outline & Objectives:**

PHY 2054C is the second of two-semester sequence in introductory physics offered primarily for students majoring in information technology, the biological science and pre-health professions. Emphasis is placed on understanding major principles, and mathematics is used to clarify concepts. Students should have a good working knowledge of algebra and trigonometry.

- **Course Text & related materials:**

- Text: *College Physics: Vol-II (Chapter 17 - 30)* , **Eighth Edition** (required)  
Authors: Young & Geller .  
Publisher: Pearson, Addition Wesley.
- A **MasteringPhysics** is required as a component of the course to solve homework problems.
- **Clickers** will be used for more active involvement and feedback on a regular basis. The details will be discussed during the lecture.

- **Course Organization & expectation:**

The course is quite intense and it will require you to invest considerable amount of time in studying and problem solving. The course will consist of a set of class lectures with demonstrations. Ideally, class time will be used to clarify the concepts that you have read in the text and to work out examples to show and help avoid common pitfalls. To obtain maximum benefit from this course you should read the materials *before* and *after* they are covered in class. It is very difficult to catch up if you fall behind. Experience has shown that problem solving done in class is helpful for everybody only if the majority of the students are familiar with the topic. **Class attendance** is very important since some of the quizzes, test questions will be drawn from the class lectures, demonstrations, and discussions. Thus, reading the material prior to class attendance is not only required but will be helpful to yourself, and also to the rest of the class.

- **Homework:**

Homework will be assigned, submitted and graded online through **MasteringPhysics** ([www.masteringphysics.com](http://www.masteringphysics.com)). Several new assignments will be posted each week. Please drop by my office or see the teaching assistance if you are having difficulties in doing the homework.

- **Quizzes:**

In general the quizzes will not be announced in advance. Quizzes will be based on previously covered material up to and including the quiz day reading assignment and lecture. It is anticipated that **10-12 quizzes** will be given during the semester. The **best 8-10 scores** will be used to compute your quiz grade. There will be **NO MAKE UP Quizzes**.

- **Examinations:**

There will be **2 mid-term exams and a comprehensive final exam** in this course. All exam grades count toward your final grade. The comprehensive final will cover all the materials covered during the lectures.

• **Methods of evaluation & Grades:**

The **final grade** will be based upon Homework, in class Quizzes, two Midterms, the **comprehensive final examination** and your lab grade. Tests and quizzes will assess student’s grasp of physics concept and analytical problem solving skills, using basic concepts of algebra, trigonometry, and geometry. Students are expected to be proficient

in basic mathematics. The **final letter grade** (including ± grades) will be determined based on the following proposed breakdown:

<b>Homework</b>	<b>Quizzes</b>	<b>Midterm-I</b>	<b>Midterm-II</b>	<b>Final</b>	<b>Lab</b>
$(\frac{1}{6}) \times 100 \%$	$(\frac{1}{6}) \times 100 \%$	$(\frac{1}{6}) \times 100 \%$	$(\frac{1}{6}) \times 100 \%$	$(\frac{1}{6}) \times 100 \%$	$(\frac{1}{6}) \times 100 \%$

**Final grades** will be given according to the following scale:

A > 85 %	82 % ≤ A- < 85 %	
80 % ≤ B+ < 82 %	78 % ≤ B < 80 %	75 % ≤ B- < 78 %
70 % ≤ C+ < 74 %	65 % ≤ C < 70 %	60 % ≤ C- < 65 %
50 % ≤ D < 60 %	F < 50 %	

• **Policies:**

1. For missed work, please refer to the attached “PHYSICS DEPARTMENT MISSED WORK POLICY” disclosure.
2. Questions regarding returned quizzes or tests must be brought to the instructor’s attention within 6 days.
3. Picture ID is required in quizzes and tests.
4. As one or more quizzes will be dropped from the final grade, there will be no make-up quizzes!
5. Scientific calculators with trigonometric capabilities are allowed in quizzes and tests. However, calculators must not have any pre-programmed physics information.
6. Grades are not given out in response to e-mail or telephone calls.

• **Important Dates:**

Classes begin: Aug 25  
 Withdrawl Deadline: Friday, October 17  
 Classes end Dec 06  
 Final Exam: Dec 11, Thursday, 1:00 PM - 3:50 PM

• **Holidays:**

Labor Day: Mon, Sept 01  
 Veteran’s Day, Tuesday, Nov 11  
 Thanksgiving, Nov 27-29

## Tentative Syllabus and Schedule

<b>Week 1</b>	Aug 26- Aug 28	Chapter 17	Electric charge & Coulomb's Law
<b>Week 2</b>	Sept 02 - Sept 04	Chapter 17 Chapter 18 Chapter 18	Electric field, field lines, potential, dipole Potential energy, Capacitance, parallel plate capacitor Capacitors in series & parallel, dielectrics
<b>Week3</b>	Sept 9 - Sept 11	Chapter 19 Chapter 19	Current, Ohm's law, resistances in series & parallel Kirchhoff's rule, electric power
<b>Week 4</b>	Sept 16 - Sept 18	Chapter 19 Chapter 20	Magnetic field, force, charged particle in B-field Current carrying wires in B-field
<b>Week 5</b>	Sept 23 - Sept 25	Chapter 20 Chapter 20	Torque on a current carrying loop, solenoid Ampere's law, Exam Review
<b>Week 6</b>	<b>Sept 30</b> Oct 02	Chapter 21	<b>Test-I (covers chapters 17, 18, 19, and 20)</b> EM Induction, Faraday + Lenz's law
<b>Week7</b>	Oct 07 - 09	Chapters 21 Chapter 22	self & mutual inductance, magnetic field energy Alternating current R-L, R-C, and R-L-C circuits,
<b>Week 8</b>	Oct 14 - Oct 16	Chapter 22 Chapter 22	Resonance in AC circuit EM Waves, Sinusoidal waves, energy in EM wave
<b>Week 9</b>	Oct 21 - Oct 23	Chapter 23 Chapter 23	Light, Snell's law of reflection & refraction, Dispersion and polarization
<b>Week 10</b>	Oct 28 - Oct 30	Chapter 24 Chapter 24	Plane and Spherical mirror Concave and convex lenses
<b>Week 11</b>	Nov 04 - Nov 06	Chapter 25 Chapter 25	Optical instruments Human eye, Exam review
<b>Week 12</b>	Nov 11 <b>Nov 13</b>		Nov 11 - No classes <b>Test-II (covers chapters 21, 22, 23, 24, &amp; 25)</b>
<b>Week 13</b>	Nov 18 - Nov 20	Chapter 26 Chapter 28	Interference and diffraction The Photoelectric effect
<b>Week 14</b>	Nov 25 Nov 27	Chapter 26	The Hydrogen Atom No classes
<b>Week 15</b>	Dec 02 - Dec 04	Chapter 27	Einstein's Special Theory of Relativity <b>Comprehensive Final Exam Review</b>
<b>Week 16</b>	<b>Dec 11</b> <b>MAP 359</b>	<b>Final Exam</b>	<b>Covers Chapters 17 - 30</b> <b>1:00 PM - 3:50 PM</b>