

# PHY2048, Physics for Engineers & Scientists-I

Fall 2004, Tu-Th 9:00-10:15, Section 004, MAP 359

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- **Course Outline & Objectives:**

PHY 2048 (3-credit hours) is the first part of a three-semester sequence in introductory physics offered to engineering, other science and pre-professional majors who have the appropriate background in mathematics. The primary objective of the course is to prepare students with fundamental knowledge of physics and obtain skills for higher science and engineering courses. Mathematics is the language of Physics and is required for quantitative understanding and prediction of the world around us. The course uses algebra, trigonometry, and calculus. It is vital that you are familiar with these concepts and that you can apply them to problem solving!

- **Course Text & related materials:**

- Text: *Physics for Scientists & Engineers, Vol-I , Sixth Edition* (required)

Authors: Raymond A. Serway & John W. Jewett, Jr.

Publisher: Thompson Brooks/Cole.

- A **WebAssign homework access card** must be purchased and is available at the UCF Bookstore.

- **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 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 **WebAssign** ([www.WebAssign.net](http://www.WebAssign.net)). A new assignment will be posted approximately each week. There will be a small cost to get a **WebAssign Access Code**. You will be able to access WebAssign for the first 1-2 weeks of classes without the access code, but don't delay too long as there is a hard deadline to have it entered. Individual extensions for the homework can be given but will only be done rarely. Please drop by my office 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 quizzes will be given during the semester. The best 8 scores will be used to compute your quiz grade. There will be no **make-up quizzes**.

- **Examinations:**

There will be **3 mid-term exams** and a **final exam** in this course. Exams will be prepared with input from other faculty members. All exam grades count toward your final grade. The comprehensive final most likely to be combined with other sections (the time and venue will be announced and posted at the course

website later).

• **Methods of evaluation & Grades:**

The **final grade** will be based upon Homework, in class Quizzes, three Midterms, and the comprehensive Final examination. Tests and quizzes will assess student's grasp of physics concept and analytical problem solving skills, using basic concepts of algebra, trigonometry, geometry, and differential and integral calculus. Students are expected to be proficient in basic mathematics. The **final letter grade** (including  $\pm$  grades) will be determined based on the following proposed breakdown:

<b>Homework (WebAssign)</b>	<b>Quizzes</b>	<b>3 Midterms</b>	<b>Comprehensive Common Final</b>
10 %	15 %	45 %	30%

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

<b>A, A-</b>	<b>B+ , B, &amp; B-</b>	<b>C+, C &amp; C-</b>	<b>D</b>	<b>F</b>
85% and above	75-84 %	60-74%	50-59%	less than 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: August 22                      Withdrawl Deadline: October 14                      Classes end: December 03

• **Holidays:**

Labor Day : September 5                      Veteran's Day: November 11                      Thanksgiving: November 24-27

**Tentative Syllabus and Schedule**

August 23, 25	Chapter 2	1-D Motion
August 30, September 1	Chapter 3,4	Vectors, 2-D Motion
September 6, 8	Chapter 4	2-D and 3-D Motion (continued)
September 13, 15	Chapter 5	Force and Motion
<b>September 20</b>	<b>Midterm-I</b>	<b>Chapters 2, 3, 4, and 5</b>
September 22, 27	Chapters 6, 7	Force and Motion, Friction, Kinetic Energy
September 29, October 4	Chapter 7,8	Kinetic Energy, Work, Potential Energy
October 11, 13	Chapter 8	Potential Energy & Conservation of Energy
October 18,20	Chapter 9	Linear Momentum, Collisions
<b>October 25</b>	<b>Midterm-II</b>	<b>Chapters 6, 7,8, and 9</b>
October 27, November 1	Chapter 10, 11	Rotation & Angular Momentum
November 3, 8	Chapter 11, 12	Rolling, Torque, Equilibrium
November 10, 15	Chapter 12	Equilibrium
<b>November 22</b>	<b>Midterm-III</b>	<b>Chapters 10, 11, and 12</b>
November 29	Chapter 15,16	Oscillations & Waves
December 1	Exam Review	
To be determined	<b>Common Final Exam</b>	