PHYS1301 – Fall 2017 – Course Syllabus

**1. Course Information**

**Course Number / Section:** 1301-001
**Course Title:** College Physics I
**Term:** Fall 2017
**Days and Times:** TR 11:30am – 12:45 pm
**Location:** SLC 1.102
**Course pre-requisite:** MATH 1314
**Course co-requisite:** PHYS 2125

**2. Instructor Contact Information**

**Instructor:** Dr. Lunjin Chen
**Office Phone:** (972) 883 2891
**E-mail address: Lunjin.Chen@utdallas.edu**
**Office hours and location:**
14:00-17:00 Tuesday at WSTC 2.706, or by email appointment.

**Teaching Assistant (TA) hours and location:**

TBD

**3. Course Description**

An introductory course on the basic fundamentals of physics.
This is an algebra-based course.
Covered topics: mechanics, periodic motions, waves, heat and thermodynamics.

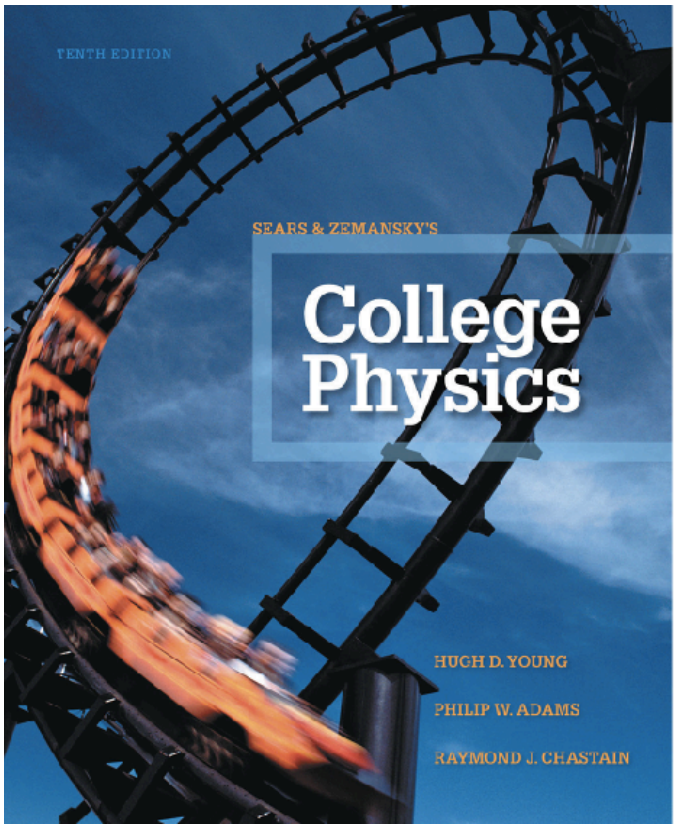
**4. Student Learning Objectives / Outcomes**

Upon completing this course, students will:
• Be able to compute the sum, scalar multiplication, and vector multiplication of vectors
• Be able to analyze and explain the components of linear and rotational motion (displacement, velocity, acceleration) including graphs and their interrelationships
• Be able to apply different forces and work force problems including the fundamental force of gravity and Newton's laws
• Be able to classify the different forms of energy and use the conservation of energy to work problems
• Be able to define momentum and collisions
• Be able to give examples of rotational variables and the relationship between linear and rotational variables
• Explain simple harmonic motion and waves including their properties.
• Identify and describe fluids in motion and at rest.
• Explain basic of thermodynamics.

**5. Required Textbooks and Materials**

College Physics, 10th edition, by Hugh D. Young (**with Masteringphysics.com access**)
MasteringPhysics course ID for this class is **F17PHYS1301LUNJIN**.
The 8th and 9th edition books are also good. Other texts at the same level are also OK. **BUT the access code for the 10th edition** is a must-have and can be purchased directly on the site. You will need to register at www.masteringphysics.com so that you can access the online homework web site for this class. MasteringPhysics course ID for this

class is **F16PHYS1301LUNJIN**.



## Mechanics



## Periodic Motion, Waves, and Fluids



## Thermodynamics

**6. Tentative Schedule**

| Date | Lectures | Reading Assignment | Homework | |
|---|---|---|---|---|
| | | | Released | Due |
| 8/22, 8/24 | Introduction and math review, models, measurements and vectors | Chp 0, 1 | HW1, 8/24 | 9/3 |
| 8/29, 8/31 | 1D kinetics | Chp 2 | HW2, 8/31 | 9/10 |
| 9/5, 9/7 | 2D kinetics | Chp 3 | HW3, 9/7 | 9/17 |
| 9/12, 9/14 | Newton's Laws of motion | Chp 4 | HW4, 9/14 | 9/24 |
| 9/19<br><br>9/21 | Application of Newton's Laws. Exam#1 review.<br>Exam #1 (9/21) on Chp 0-3 | Chp 5 | HW5, 9/21 | 10/1 |
| 9/26, 9/28 | Circular motion and gravitation | Chp 6 | HW6, 9/28 | 10/8 |
| 10/3, 10/5 | Work and energy | Chp 7 | HW7, 10/5 | 10/15 |
| 10/10<br>10/12 | Momentum. Exam#2 review.<br>Exam #2 (10/12) on Chp 4-7 | Chp 8 | HW8, 10/12 | 10/22 |
| 10/17, 10/19 | Rotational motion | Chp 9, 10 | HW9, 10/19 | 10/29 |
| 10/24, 10/26 | Rotational motion. Periodic motion. | Chp 9- 11 | HW10, 10/26 | 11/5 |
| 10/31, 11/2 | Periodic motion. Waves and sound | Chp 11-12 | HW11, 11/2 | 11/12 |
| 11/7<br>11/9 | Fluid. Exam#3 review.<br>Exam #3 (11/9) on Chp 8-11 | Chp 13 | HW12, 11/9 | 11/19 |
| 11/14, 11/16 | Fluid | Chp 13 | HW13, 11/16 | 12/4 |
| 11/21, 11/23 | No class (fall break, thanksgiving) | | NO HW. | |
| 11/28, 11/30 | Fluid, thermodynamics. Exam#4 review | Chp 13-15 | NO HW. | |
| 12/5<br>12/7 | Exam #4 (12/6) on Chp 12-15<br>No class on 12/7 (reading day) | | | |
| 12/8-12/14 | No more exams. | | | |

**7. Assessment**

Total grades are determined from a combination of the items below.

| | |
|---|---|
| Homework | 16 points (13 HW sets) |
| 4 Exams | 84 points (each exam 28 points. your score will be the sum of the top three grades of the four exams) |
| Quizzes/Attendance | 3 points (extra credits) |
| Pretest/posttest | 2 points (extra credits) |
| --- | --- |
| TOTAL | 105 points (with 5 extra credit points) |

**Explanation on Homework (16 points)**

**Homework** will be given through the website **http://www.masteringphysics.com**

- Go to the website, login as a student and follow the instructions.
- My course ID for this class is **F17PHYS1301LUNJIN**.
- The course title is: College Physics I, UTDallas, PHYS 1301.001, Fall 2017
- **Make sure the name you give the website matches your name of record.**
- No handwritten homework will be accepted.
- HW assignments are generally released on Thursday at 11:59pm and are due at 11:59pm on the Sundays of the following week. Therefore, you have about 11 days to finish each HW.
- Late submission penalty. Credit will be reduced by 1% for every hour that the homework is late.
- I strongly recommend you to print out your homework problems and do the work on your printouts. It is a convenient way to keep everything together. Successful students have done this in the past.
- You will be allowed to 20 (!) attempts per question.
- You are welcome to work together on homework but everyone must do your own problems. You will notice everyone has different numbers.

**Explanation on Quizzes/Attendance (3 points)**

There will be about 3 in-class quizzes as extra credit. Total 3 credit points will be given. The way how points are given will be up to the instructor.

**Explanation on 4 exams (84 points):**

The 4 exams will be given, including the final exam. Each exam will have 28 points. Your grade of the 4 exams will be the sum of the top 3 grades of them. Maximum possible point for the 4 exams is 84. For example, if your grades for the 4 exams are 10, 20, 25, and 22, then you will get 20+25+22=67 (out of 84 points).

If you miss one of the four exams, your grade will be the sum of the three exams taken.
If you miss two of them, your grade will be the grade of the two exams taken.
If you miss three of them, your grade will be the grade of the one exam taken.

The exams are based mainly on lectures and homework.

There will be no make-up exam!

* During exams.
- Please, be kind to your colleagues (and instructor) and avoid interruptions by **turning off** your cell phones, laptops, and other **electronics** during lectures. Also, you are asked to arrive and leave on time.
- Valid picture ID (Comet card or drivers license) must be on your desk during exams. These will be checked.
- Calculators will be necessary for all exams. Graphing calculators and programmable calculators will not be allowed in the exams. Calculators should not have text function. A little scientific calculator that has trig functions can be obtained very inexpensively ($10-$20) and should be all that is used on the exams.

* After exams.
Any question about an exam grade must be addressed within a week after the grade is posted. After that all grades are final.

**Explanation on Pretest/Posttest (2 credit points)**

In an effort to evaluate the effectiveness of our physics instruction, we are conducting two multiple-choice tests to probe student performance at the beginning and end of this course. The two tests are called pretest and posttest. There are two extra credit points associated with the two tests. You will receive a credit point by simply taking each test—your grade will NOT depend on your performance. Each test is a 50 minute, multiple choice exam.
**So I recommend you take the two tests.** There is no penalty for not taking these two quizzes.

## Note on pretest and posttest.

To be updated.

**8. Grading Explanation (Converting total grade to letter grade):**
A+ (> 97), A (93 - 96.9), A- (90 – 92.9), B+ (87 – 89.9), B (83 – 86.9), B- (80 - 82.9)
C+ (77 - 79.9), C (73 - 76.9), C- (70 - 72.9), D+ (67 – 69.9), D (63 – 66.9), D- (60- 62.9),
**F (< 60)**

Here is an example to illustrate how your letter grade will be determined.
If your grades break down as follows,

15 out of 16 points from the homework;
3 points by attending all the in-class quizzes;
The four exam scores are 18 20, 25 and 25, you will get 70 (out of 84 points);
2 points from pretest/posttest;

Then your total score will be 15+3+70+2 = 90 out of 105 and your letter grade will be A- (because 90 lies in the B+ range of 90-92.9).

Neighboring two categories only differ by < 3 points. So each point of 105 points matters.

**9. UT Dallas Syllabus Policies and Procedures**
The information in the link below constitutes the University's policies and procedures:
http://go.utdallas.edu/syllabus-policies

**10. Attendance, Homework, and Exams**

• Attendance is not mandatory but students missing class without documented reason automatically waive their right to any extra credit work and/or quizzes that might be offered during class.

• Please, be kind to your colleagues (and instructor) and avoid interruptions by **turning off** your cell phones, laptops, and other **electronics** during lectures. Also, you are asked to arrive and leave on time.

• **Announcements** about exams and quizzes will be made, primarily, in class.

• **Exams** will be in class and written.
Exams will involve multiple choice and long answer problems. To receive full credit for long answer problems, show all work instead of just the correct answer.
- Valid picture ID (Comet card or drivers license) must be on your desk during exams. These will be checked.
- Calculators will be necessary for all exams. Graphing calculators and programmable calculators will not be allowed in the exams. A little scientific calculator that has trig functions can be obtained very inexpensively and should be all that is used on the exams.
- You must show all work for exams. There will be no credit for just numbers (relevant equations are required). You will not receive full credit for correct answers without work.
- All exams will be closed book. Formulas will be provided with the exam. You must know the concepts and vocabulary for the exams. Exams will cover both in-class examples and homework.
- Exams must be done in ink.
- You will be responsible for all the reading assignments even if we do not discuss them in class. This includes the power point slides available on eLearning.
- Any question about an exam grade must be addressed in a week after the grade is posted. After that all grades are final.
- **Make-up exam:** There will be no make-up exams.

***These descriptions and timelines are subject to change at the discretion of the Professor.***