**PHYS1301 – Spring 2013 - Course Syllabus**

**Please, read the information in this document very carefully!**

## 1. Course Information

**Course Number / Section:** 1301-001
**Course Title:** College Physics I
**Term:** Spring 2013
**Days and Times:** TR 11:30 – 12:45 pm
**Location:** SLC 1.102
**Course pre-requisite:** MATH 1314
**Course co-requisite:** PHYS 2125

## 2. Instructor Contact Information

**Instructor:** Dr. Fabiano Rodrigues
**Office Phone:** (972) 883 4526
**E-mail address:** fabiano@utdallas.edu
**Office hours and location:** Tuesday and Thursday / 9:30am – 11:00am / ECSN 2.932
**Teaching Assistant (TA) hours and location:** Mike Nimmo
Monday and Wednesday / 9:00am – 11:00am / ECS 2.930
Call 214-702-6187 if TA is not in the office during office hours
Or by appointment (E-mail him at mnimmo@utdallas.edu)

## 3. Course Description

- An introductory course on the basic fundamentals of physics.
- This is an algebra-based course.
- Students will learn about the following topics: mechanics, 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 impulse, momentum and collisions, center of mass and rigid body motion
- 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.
- Classify heat absorption and heat transfer mechanisms
- Interpret the three laws of thermodynamics and classify the heat absorption and transfer mechanisms

## 5. Required Textbooks and Materials

College Physics, 9th edition, by Hugh D. Young (**with Masteringphysics.com access**)

**6. Tentative Schedule**

| Date | Reading Assignment | Material | Homework | |
|---|---|---|---|---|
| | | | **Released** | **Due** |
| Week 1 | Chapter 0 | Math review | 01/15 | 01/26 |
| | Chapter 1 | Models, measurements and vectors | | |
| Week 2 | Chapter 2 | Motion along a straight line | 01/24 | 02/02 |
| | Chapter 3 | Motion in a plane | | |
| Week 3 | Chapter 4 | Newton's laws of motion | 01/31 | 02/09 |
| Week 4 | Chapter 5 | Applications of Newton's laws | 02/07 | 02/16 |
| | | | | |
| | | Exam #1 02/12 – 02/15 | | |
| | | | | |
| Week 5 | Chapter 6 | Circular motion and gravitation | 02/14 | 02/23 |
| Week 6 | Chapter 7 | Work and Energy | 02/21 | 03/02 |
| Week 7 | Chapter 8 | Momentum | 02/28 | 03/09 |
| Week 8 | Chapter 9 | Rotational motion | 03/07 | 03/23 |
| | | | | |
| Week 9 | | SPRING BREAK | | |
| | | | | |
| | | Exam #2 03/19 – 03/23 | | |
| | | | | |
| Week 10 | Chapter 10 | Dynamics of rotational motion | 03/21 | 03/30 |
| Week 11 | Chapter 11 | Elasticity and periodic motion | 03/28 | 04/06 |
| Week 12 | Chapter 12 | Mechanical waves and sound | 04/04 | 04/13 |
| Week 13 | Chapter 13 | Fluid mechanics | 04/11 | 04/20 |
| | | | | |
| | | Exam #3 04/16 – 04/19 | | |
| | | | | |
| Week 14 | Chapter 14 | Temperature and heat | 04/18 | 04/27 |
| Week 15 | Chapter 15 | Thermal properties of matter | 04/25 | 05/04 |
| Week 16 | Chapter 16 | The second law of thermodynamics | 04/30* | 05/07* |
| | | | | |
| | | Final exam 05/07 – 05/10 | | |

**7. Assessment**

Final grades are determined from a combination of the items below. **There will be no curving**.

| Homework | Quizzes | Exam 1* | Exam 2* | Exam 3* | Final Exam* | Total |
|---|---|---|---|---|---|---|
| 25% | 5% | 25% | 25% | 25% | 25% | 105% |

* Lowest grade will be dropped.

**8. Grading Explanation:**

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)**

**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. Homework, Exams and Quizzes**

- Homework, exams and quizzes will be given through the website **http://www.masteringphysics.com**
- Just go to the website and login as a student following the directions.
- Be aware my course ID for this class is **S13PHYS1301RODRIGUES**.
- Make sure the name you give the website matches your name of record.
- **No handwritten homework will be accepted.**
- You are welcome to work together on homework but everyone must do their own problems. You will notice everyone has different numbers.
- As expected, mid-terms and final exam are individual tests and collaborative work is not allowed,
- We will use **UT Dallas Testing Center** for the exams. Mid-term and final exams are scheduled on Tuesdays. You will have until Friday of that week to finish your exam (Approximately 4 days!). I**t is your responsibility to make sure you find time available at the Testing Center to complete your exam.** Directions to the Testing Center and policies can be found in the following link:

http://www.utdallas.edu/studentsuccess/testingcenter/index.html

**Testing Center**
Location:
McDermott Library MC1.304
Hours of Operation:
Monday - Wednesday and Friday 9:00am — 10:00pm
Thursday 8am — 10pm
Saturday 10:00am — 2:00pm
Closed on Sunday

**11. Additional Assistance for Student Success**

In addition to **instructor office hours** and **TA office hours**, there will be also **Peer-Lead Team Learning (PLTL) sessions** available for PHYS1301. These will be 80-minute sessions held once a week that are organized by the Student Success Center and instructor to help students to succeed in this class. Students (8 or less) work together during these sessions on problems that are similar (not the same) to those presented in homeworks and/or exams. The sessions are lead by a student who has excelled in this class in previous semesters. Interested students will have to sign up for it. Note that there will be a limited number of seats available. Participation in the PLTL program is **highly recommended** by the instructor since the number of lectures and office hours for this class are limited.

*The material and dates presented in this syllabus can be changed at instructor's discretion.*