Principles of Physics I  
PHYS 1408-001  Spring 2012  

Course:  Phys 1408-001 (CRN 45478)  
Meeting Time:  08:00-08:50 MWF  
Classroom:  SC 007  

Instructor:  Roger L Lichti  
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Hrs:  10-12  TR  

This is bundled with Mastering Physics for online homework.  Students need to sign on and enter their information:  (http://www.masteringphysics.com/) Course ID: MPLICHTI85323  

Topic Coverage:  If time permits, we will cover the first 16 Chapters of the listed text plus a few topics from 17-20.  Coverage includes kinematics, statics and dynamics, Newton’s Laws, rotation, mechanical waves and sound, plus selected topics in thermal physics.  

Course Goals:  This course is intended to acquaint students with the basic laws of physics, to help develop a better understanding of the physical sciences, and to prepare for upper level science and/or engineering courses.  The course will emphasize a combination of conceptual understanding and mathematical modeling of idealized problems, with a focus on developing problem solving skills.  

Core Competency Statement:  Students graduating from TTU should be able to explain some of the major concepts in the Natural Sciences and to demonstrate an understanding of scientific approaches to problem solving, including scientific ethics.  

Expected Learning Outcomes:  Upon completion of this course students should be able to:  
- Describe the basis of scientific reasoning and distinguish scientific theory from speculation.  
- Explain at a qualitative level the fundamental ideas of energy, momentum, force and motion.  
- Apply simple concepts and mathematical models to idealized problems in mechanics.  
- Discuss what is ignored in idealizing a problem and what effect additional features may have.  

Assessment Methods:  The expected learning outcomes are assessed through non-graded pre- and post-tests, classroom discussions, regular homework and quizzes, lab exercises, and four exams.  

Grading Policy:  The course grade will be calculated based on  
60% from Exams: 3 hour exams 14%+14%+7% (lowest); Comprehensive Final 25%  
20% from Homework and Discussion sections,  
20% from Labs.  

In general, homework or quizzes on Mastering Physics is not accepted after it is due.  Other work turned in late may be given a reduced maximum score and will not be accepted after any graded work is handed back.  Prior arrangements should be made if a due date or an exam will be missed due to other TTU related commitments, or illness, etc.  Contact the instructor as soon as possible when the circumstances do not allow such prior arrangements.  

Typical grade ranges are expected to be  
A > 86 < B > 74 < C > 62 < D > 50
Exams: All exams will contain both conceptual questions and problems for which you will be expected to show all work and in some cases explain your reasoning in some detail. Where possible, significant partial credit will be given for pursuing an appropriate approach even if final answers are not correct. The lowest of three hour exams counts less; but, it is to your advantage to do your best on every exam. Never count on doing better on a later exam. Expect Exam I after Chpt 4; Exam II after Chpt 9; Exam III after Chpt 13, The Final will be slightly weighted toward later material.

Homework will be assigned from each chapter (10-12 problems typical) with due dates roughly one week after coverage of that chapter. The Discussion (1 hr/week) is folded in with homework and quizzes. Showing up and participating counts toward this component; expect regular assignments and quizzes as part of the Discussion. This is where show-your-work and explain-your-reasoning type problems will be based since these mostly require grading by hand.

The lab part of the course is administered separately and grades are submitted to instructors by the TAs. The lab exercises are as closely connected to lecture topic coverage as we can manage but will sometimes precede the lecture. Occasionally we may jump ahead to a later chapter/section in order to cover topics coming up in the lab before you do that lab.

Strategies for Success:

- Always be prepared! Come to class having already read the material to be covered and with questions on what is not understood. This makes in-class discussions much more useful.
- Start homework early! Homework takes time and thought. Make an appropriate diagram. Write a short statement of the principle you are applying along with equations. These steps (even for online HW) help your thought process and provides excellent practice for exams.
- After working through a problem with your notes or using the text, redo it a day or so later with no notes. Better still, try a similar but different problem with no notes.
- Make every effort to keep up! This course is fast and like trying to drink from a fire hose.
- Ask questions and seek help when you need it! See me when you get stuck – make a real effort on your own before going to anyone for help. Take advantage of all resources.
- Form or join a study group. Groups should include students at various performance levels. Often helping someone else with a problem will strengthen your own understanding.

Any student who, because of a disability, may require special arrangements in order to meet the course requirements should contact the instructor as soon as possible to make the necessary arrangements. Students must provide appropriate verification from Student Disability Services (335 West Hall; 806-742-2405). Instructors are not allowed to provide accommodations until this official verification is provided.

The TTU faculty is strongly committed to upholding standards of academic integrity. As a minimum, this includes the requirement that a student never presents work of others as their own.