

Principles of Physics I

Physics 1408

Spring 2009

Section	PHYS 1408-002
Instructor	Dr. Sung-Won Lee
Class Time	TR 9:30-10:50
Classroom	SC 7
HW Course ID	LEE2009
Office	SC 117
Office Hours	TR 2-3, by appointment or open door
E-mail	Sungwon.Lee@ttu.edu
Phone	(806) 742-3730
Course Web page	http://highenergy.phys.ttu.edu/~slee/1408/

Texts: *Physics For Scientists And Engineers*, 4th edition, by Giancoli (ISBN 013-227559-7 or 978-013-227559-0) bundled with *Mastering Physics* student access kit. Comparison shop this text; it is way expensive. It is available at all 4 bookstores in town and on-line, prices vary.

Laboratory Manual Principles of Physics I, ISBN: 9780470478516 is available at all 4 bookstores, prices may vary.

Course Coverage: Time permitting; the course will cover material from the first 16 chapters in the text. We will cover kinematics, mechanics, statics, rotation, fluids, mechanical waves, and sound.

Grading Policy: The following scores will be accumulated during the semester: **Labs; On-Line Homework; Exam 1; Exam 2; Exam 3; Final**. The course grade will be based on the labs, on-line homework, two of your three exam scores, and the final. **NO MAKEUP EXAMS OR QUIZZES WILL BE GIVEN**. The lowest grade of the 3 in-class exams will be dropped. So, only the highest 2 of the 3 in-class exams will count in determining your course grade, but your final exam grade will count. Your letter grade will, tentatively, be determined according to the following scale: 50 D; 65 C; 80 B; 90 A.

Exam 1	25%
Exam 2	25%
Exam 3 (lowest of the 3)	0%
Final	25%
Lab, Homework	25%
Total	100%

Labs: Lab is a required portion of the course. In short, do the lab, write up the lab, attend recitation, learn how to do the problems. Recitation will help you with problems which figures into your homework grade and exam grades. Recitation is a very important part of the course.

Homework: Homework problems are assigned and graded on the web through the commercial site **MasteringPHYSICS**. Once you are registered at that website you will be able to download the assignments. The assignments and due dates are posted. You will be able to retrieve the answers after the due date. Pay attention to the instructions on the homework website about how the homework is scored.

To access **MasteringPHYSICS** you must register at the website <http://www.masteringphysics.com>. Instructions are in the Student Access Kit. Please do this ASAP. The HW course ID is listed on the front of the syllabus and there is no class password. If you do not have a Student Access Kit (part of the text for the course), you will need to purchase one through the **MasteringPHYSICS** website. This website is not at TTU and you should give yourself plenty of time to submit answers. Sometimes the network can be slow or down.

The value of the assigned homework problems is that they are the basis of the problems on your exams. Doing well on the homework is crucial to your success in the course. The single best indicator of success in the course is success with the homework. We've done the experimental study; you must do the homework in order to do well in the course. Do not let the small percentage weight delude you into thinking these homework problems are in some way optional. They are the single best factor in determining how you do in the course.

In-Class Exams: Three in-class exams will be given. The lowest of these 3 exams will be dropped from the calculation of your course grade. You may bring a 3x5 note card to the exams. This note card can be used to list any equations or words that help you in solving physics problems.

Final Exam: A comprehensive final exam will be given. You may bring a 3x5 to it as well.

Course Goals:

This course is intended to acquaint students with the basic laws of physics, to develop a better understanding of physical science in general, and help prepare you for other upper division science classes. To this end, the course will emphasize a mix of conceptual understanding and standard "end-of-chapter" homework solving skills.

Core Competency Statement: Students graduating from Texas Tech University 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 ethics.

Expected Learning Outcomes:

Upon successful completion of this course, students will be able to:

Describe the basis of the scientific method.

Distinguish between a scientific theory and speculation.

Explain at a quantitative level the fundamental elements of energy and motion.

Methods for Assessing the Expected Learning Outcomes:

The expected learning outcomes for the course will be assessed through: non-Graded Pre- and Post-Tests, Guided Classroom Discussion, Lab Exercises, Homework, In-class Exams, and the Final.

Important Notes:

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 any necessary arrangements. Students should present appropriate verification from Student Disability Services during the instructor's office hours. Please note instructors are not allowed to provide classroom accommodations to a student until appropriate verification from Student Disability Services has been provided. For additional information, you may contact the Student Disability Services office at 335 West Hall or 806-742-2405.

The faculty is strongly committed to upholding standards of academic integrity. These standards, at the minimum, require that students **never** present the work of others as their own.

Strategy for Success:

- Be prepared! Study your notes and read the material in the text *before* we cover it in class. This will help you keep up, will make for more productive classroom interaction.
- Begin all homework assignments as soon as possible. The assignments take time and thought. The homework isn't graded separately, but the test questions are based on the problems you do in the homework. Homework is essential to pass.
- Build a study group or join one. Students' helping each other is very effective. Do not join a study group because you all share an interest in a football team or a particular flavor of music. You need a mix of strong and weak students.
- Once you can work through a problem with your notes, book, study group, etc., write the question down on a blank sheet of paper and then try to rework it entirely on your own a day or so later.
- Never wait until the night before a test to "begin" studying.
- The course schedule is fast. Don't get left behind.
- Come see your instructor when you get stuck--that's why they pay me the big bucks! I am always willing to help anyone who tries.
- There are also TAs, SI instructors, and help sessions available. Avail yourself of all resources.

TENTATIVE SCHEDULE FOR Spring 2009 1408-002

	R January 8 Pre-Test, Syllabus 1. Measurement & Estimation
T January 13 2 1-D Kinematics	R January 15 2 1-D Kinematics 3 2-D & 3-D Kinematics
T January 20 3 2-D & 3-D Kinematics	R January 22 4 Dynamics & Newton's Laws
T January 27 4 Dynamics & Newton's Laws	R January 29 5 Using Newton's Laws
T February 3 5 Using Newton's Laws	R February 5 6 Gravity & Newton's Synthesis
T February 10 Exam 1 Chapters 1, 2, 3, 4, and 5	R February 12 6 Gravity & Newton's Synthesis
T February 17 7 Work & Energy	R February 19 7 Work & Energy 8 Conservation of Energy
T February 24 8 Conservation of Energy	R February 25 8 Conservation of Energy 9 Linear Momentum
T March 3 9 Linear Momentum 10 Rotational Motion	R March 5 10 Rotational Motion
T March 10 Exam 2 Chapters 6, 7, 8, and 9	R March 12 11 Angular Momentum
T March 17 SPRING BREAK	R March 19 SPRING BREAK
T March 24 11 Angular Momentum 12 Static Equilibrium	R March 26 12 Static Equilibrium
T March 31 12 Static Equilibrium 13 Fluids	R April 2 13 Fluids
T April 7 14 Oscillations	R April 9 Exam 3 Chapters 10, 11, 12, and 13
T April 14 14 Oscillations 15 Wave Motion	R April 16 15 Wave Motion
T April 21 16 Sounds	R April 23 16 Sounds
T April 28 Summary	R April 30 7:30 – 10:00 am FINAL EXAM