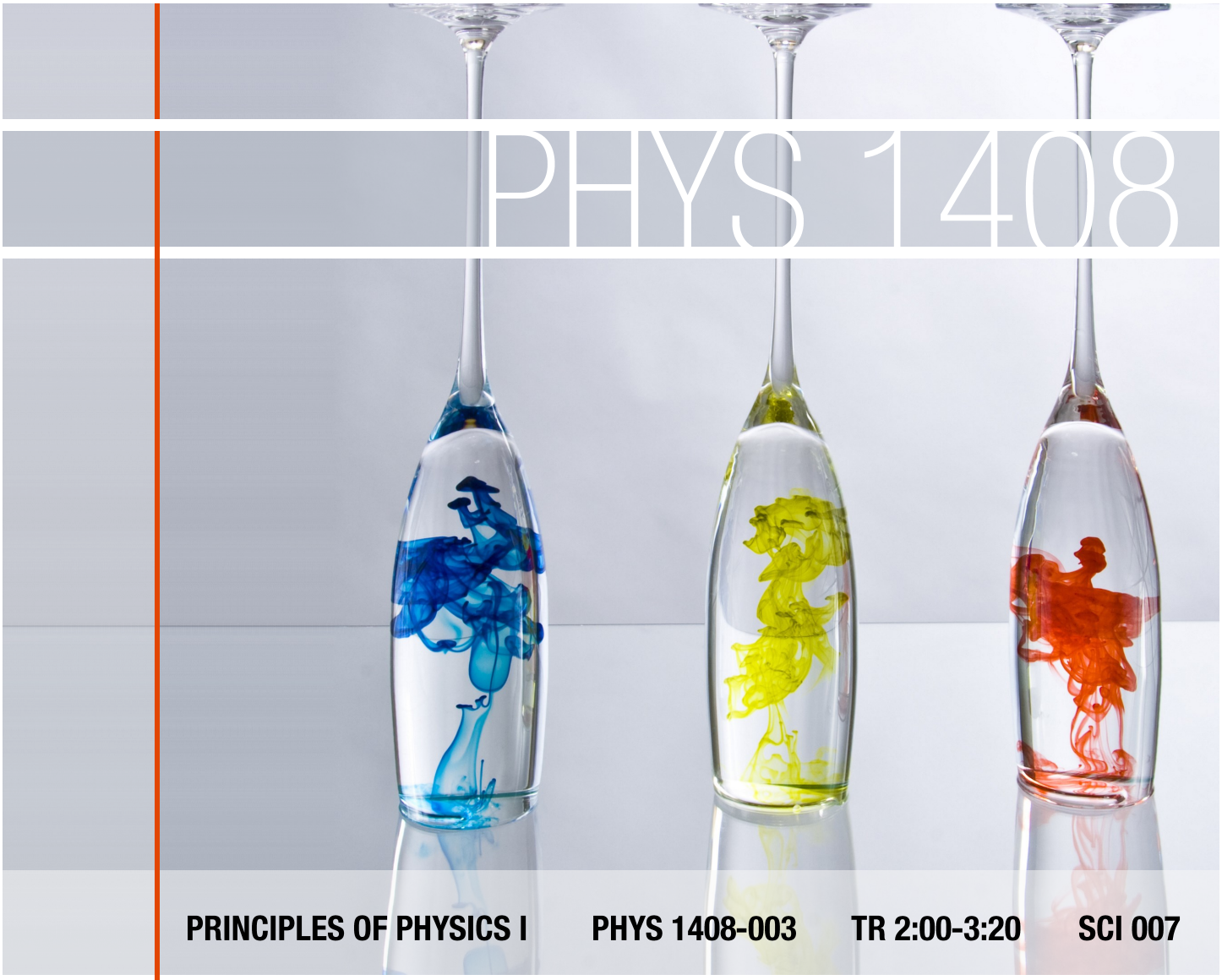
PHYS 1408



PRINCIPLES OF PHYSICS I **PHYS 1408-003** **TR 2:00-3:20** **SCI 007**

FALL 2014

Instructor | Michael Holcomb

michael.holcomb@ttu.edu | 806.834.0217

Office Hours | SCI 122

TR 3:50-4:50 *or by appointment*

This course will cover kinematics, mechanics, statics, rotation, fluids, gravity, and some thermodynamics. The depth of coverage will not be deep in parts, particularly thermodynamics.

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

Required Texts

- Physics for Scientists and Engineers with Modern Physics,
  9th edition by Serway and Jewett with access to WebAssign (ISBN for bundle is 9781133947271)
  We will cover material from chapters 1-22 in the text, time permitting.
- Laboratory Manual for Physics 1408 Principles of Physics I
  You must have your laboratory manual before *you will be admitted to lab. It is available for purchase by SPS in the lab room during the first two weeks of the term—buy it before your first laboratory session.*

Course Components

Homework

Online homework from the WebAssign website will be assigned and graded roughly weekly. You must register yourself using your purchased access code. Use both your legal name and your TTU ID (ex: R12345678) when setting up your account. Be sure to select the correct section of PHYS 1408, section 003. The class key is ttu 9997 1481.

Even though the homework is weighted lightly in your final grade, it is not in any way optional; it is crucial for your understanding of the course material. Homework will be made available before the material is covered in lecture and will be due on the posted date before the exam covering that material.

Discussion and Laboratory

You will receive one grade for the lecture, discussion, and laboratory combined. They are not separate courses and they are not optional. The course grading policy on the opposite page describes how each will be weighted in your final grade.

Discussion will help you understand and practice problems related to homework and exams. Laboratory is an opportunity to learn the material from a hands-on perspective. The laboratory section of this course has a separate syllabus which you will receive during your first laboratory session. Laboratory and discussion will be conducted during the assigned periods for those components of the course.

Attending your laboratory and discussion sections is the only way to get credit for those components of this course. *The laboratory component is essential for your success in this course; if you fail the laboratory portion of this course, you will fail the whole course.*

Lecture

Attendance will be taken but will not affect your grade in the lecture portion of the class. A spirit of honesty will be maintained in the attendance policy. Note that you are responsible for everything that we do in lecture, so it is to your advantage to attend.

Lecture Preparation

You are expected to bring your assigned texts, paper for notes, and a suitable writing utensil (preferably a pencil with an eraser), a scientific or graphing calculator, and your Texas Tech Student ID with you to every class meeting. You will likely find it helpful to read ahead in the textbook before each class.

Exams

Three (3) in-class exams will be administered as scheduled. No makeup exams will be given, so please plan accordingly. You are permitted to bring one (1) 3x5 notecard to each exam, on which you may list any desired information. You may bring three (3) notecards to the final exam. All exams will be given in our normal classroom. Please see the course schedule on the last page of this syllabus for the scheduled dates.

Exam Rules

Calculators are permitted; however, the memory of programmable calculators must be cleared before testing begins. Due to the variance between manufacturers' proprietary software, you as the student will be expected to know how to clear the memory and provide confirmation to the instructor. If you are unable to provide confirmation that the memory has been cleared, then you will be unable to use the calculator during the examination.

All other electronics must be stowed out of sight during the exams. Cell phones are not considered to be calculators regardless of what apps may have been installed. If you are seen attempting to use a cell phone during the exam, you will be asked to leave and issued a zero for the exam without exception.

Policies and Grading

Expected Learning Outcomes

The expected learning outcomes for the course, listed below, will be assessed through performance on guided classroom discussions, lab exercises, homework, and embedded questions within the in-class exams.

1. Describe the basis of the scientific method
2. Distinguish between a scientific theory and speculation
3. Quantitative understanding of energy and motion

Academic Integrity

It is the aim of the faculty of Texas Tech University to foster a spirit of complete honesty and high standard of integrity. The attempt of students to present as their own any work not honestly performed is regarded by the faculty and administration as a most serious offense and renders the offenders liable to serious consequences, possibly suspension. For details, see TTU OP 39.12.

Accommodations

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 in 335 West Hall (806-742-2405).

Religious Holidays

A student who intends to observe a religious holy day should make that intention known in writing to the instructor prior to the absence. A student who is absent from classes for the observance of a religious holy day shall be allowed to take an examination or complete an assignment scheduled for that day within a reasonable time after the absence.

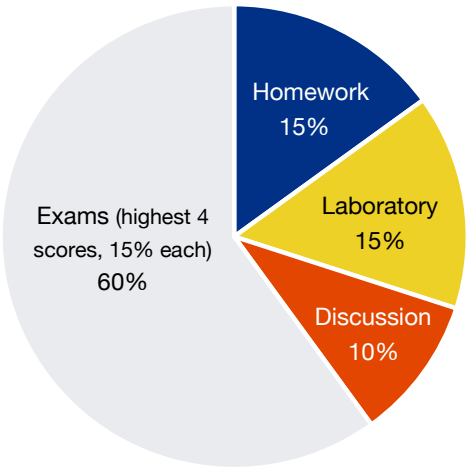
Grading Scale

Your letter grade will be determined on the following scale: F (≤ 49), D (50-64), C (65-79), B (80-89), A (90-100).

Grades which are two points on either side of a grade boundary will receive the appropriate +/- qualifier. For example, grades of 78 or 79 earn a C+ while grades of 80 or 81 earn a B-.

Grading Policy

The following scores will be accumulated during the course of the semester: Homework, Laboratory, Discussion, Exam 1, Exam 2, Exam 3, Final Exam, Final Exam. The course grade will be the weighted average of Homework at 15%, Laboratory at 15%, Discussion at 10%, and the four highest exam scores of the five listed above at 15% each. *No make up exams will be given.*



Course Components

Homework	15%
Laboratory	15%
Discussion	10%
Exam	15%
Exam	15%
Exam	15%
Exam	15%
TOTAL	**100%**

Reminder: *even though the combined laboratory and discussion sections of the course are worth a total of 25% of your grade, failing the laboratory portion will result in a failing grade for the whole course.*

Policies and Grading, con't.

Classroom Etiquette

Although attending lecture is highly recommended, whether you choose to take that recommendation seriously is optional. Leaving lecture early or arriving late is considered both rude and distracting. If you have an expected reason to depart early, please inform the lecturer at the beginning of class and sit in a convenient location for leaving without disturbing the class.

All students are expected to be respectful of their peers during lecture by not becoming a distraction. If you become a distraction to other students, then you will be dismissed from class for the day. Some actions, including but not limited to the following, will result in you being considered a distraction to your peers: repeatedly arriving late, reading unrelated material, using your cell phone in any way, visiting with your neighbor, sleeping, eating, "vaping," and the use of any and all tobacco products. No laptops or any other electronic devices are allowed in class unless the need for such a device for reason of a disability is documented by Access TECH.

Strategies for Success

Be prepared! Study your notes, read the material in the text before we cover it in class, and take advantage of the online resources. This will help you keep up, make for more productive classroom interaction, and help keep you prepared for homework, labs, and exams that make up your semester grade. Pay special attention to examples worked in class.

Begin all homework assignments as soon as possible. Don't get behind or wait until the due date to begin. If you are stuck, use available department resources including your course instructor, TAs, and SI.

Don't "blow off" any exam just because there is a dropped score. The purpose of the dropped score is in case of illness or other extenuating circumstances.

Use pencil and paper to do homework problems and keep your solutions for reviewing prior to exams. The online homework might not be viewable after the due date. Once you can work through a problem with your notes, book, study group, etc., be sure you can rework it entirely on your own.

Tentative Course Schedule

Week of	Chapter	Lecture	Laboratory
Aug. 25	1-2	Tuesday, Aug. 26th - First class day	*Experimental Uncertainty*
Sept. 01	3	*Monday, Sept. 1st - Labor Day*	
08	4	Wednesday, Sept. 10th - Last day to drop *without academic penalty*	*1-D Motion Part I*
15	5		*1-D Motion Part II*
22	6	**Thursday, Sept. 25th - Exam 1 (Ch. 1-5)**	*2-D Projectile*
29	7-8		*Vector Forces*
Oct. 06	8-9		*Force and Momentum*
13	9-10		*Work and Energy*
20	11	**Thursday, Oct. 23rd - Exam 2 (Ch. 6-9)**	*Collisions*
27	12	Monday, Oct. 27th - Last day to drop	*Rotation*
Nov. 03	12		*Statics*
10	14		*Gravity*
17	13	**Thursday, Nov. 20th - Exam 3 (Ch. 10-12, 14)**	*Buoyancy*
24	19-20	Tuesday, Nov. 25th - Last day to withdraw from the university	
		Nov. 26-30 - Thanksgiving Holiday - No class	
Dec. 01	20-22	Dec. 2nd - Last class day	
Dec. 08		**Comprehensive Final Exam - Monday, Dec. 8th, SCI 007, 1:30-4:00 p.m.**	