

PHYS 2425-3660 General Physics

Cedar Valley College

Most of you taking this class don't realize that you are beginning a journey. In fact, you probably think you're taking this class to complete a requirement, address a pre-requisite, or meet hot chicks or ripped studs. While all of these reasons for taking this course might be valid, the underlying reason for taking this course is to discover how the physical world works and your place in it.

On this journey of discovery, as with any journey, you will need a map and a guide. This syllabus will be your map and as the course instructor, I will be your guide.

GENERAL INFORMATION

College Name	Cedar Valley College
Division, Telephone & Office Number	Math, Science and Allied Health, 972-860-5212, M217
Semester/Term & Year	Fall 2011

INSTRUCTOR INFORMATION

Name	Christina Reeves-Shull
DCCCD E-mail address	CReeves-Shull@dccd.edu
Telephone	972-860-8168
Office Number	M225I
Office Hours	M & W 3:30 PM – 4:30 PM T & R 12:30 PM – 1:30 PM F By appointment E-mail All the time

NOTE: In e-mails, please **IDENTIFY** yourself as a **PHYS 2425 STUDENT – UNIVERSITY PHYSIC I** so that I will answer your e-mail promptly and correctly!

For additional HELP, please **ASK** questions before class & after class, during class breaks, and during Lab sessions.

COURSE INFORMATION

Course Number	PHYS 2425
Section Number	3660
Credit Hours	Four (4)
Class Meeting Time	<u>Lecture</u> T M215 1:30 PM – 4:20 PM <u>Lab</u> R M160 1:30 PM – 4:20 PM
Course Title	University Physics I

Physics Quote 1: *“It is a capital mistake to theorize before one has data.”*

Course Description

The first semester of a calculus-based physics sequence for science, computer science, and engineering majors. Topics include classical mechanics and harmonic motion with emphasis on problem solving. Laboratory experiments supporting the topics are required.

Course Prerequisites

Mathematics 2513 or concurrent enrollment in Mathematics 2513. Developmental Reading 0093 or English as a Second Language (ESOL) 0044 or have met the Texas Success Initiative (TSI) standard in Reading.

Exemplary Educational Objectives

The objective of the study of a natural sciences component of a core curriculum is to enable the student to understand, construct and evaluate relationships in the natural sciences and to enable the student to understand the bases for building and testing theories.

The exemplary educational objectives are:

- To understand and apply method and appropriate technology to the study of natural sciences.
- To recognize scientific and quantitative methods and the differences between these approaches and other methods of inquiry and to communicate findings, analyses and interpretation both orally and in writing.
- To identify and recognize the differences among competing scientific theories.
- To demonstrate knowledge of the major issues and problems facing modern science, including issues that touch upon ethics, values, and public policies.
- To demonstrate knowledge of the interdependence of science and technology and their influence on, and contribution to, modern culture.

Intellectual Competencies

This course reinforces the six (6) Core Curriculum Intellectual Competencies required by the Texas Higher Education Coordinating Board or THECB.

1. **READING:** Reading at the college level means the ability to analyze and interpret a variety of printed materials--books, articles and documents
2. **WRITING:** Competency in writing is the ability to produce clear, correct and coherent prose adapted to purpose, occasion, and audience.
3. **SPEAKING:** Competence in speaking is the ability to communicate orally in clear, coherent and persuasive language appropriate to purpose, occasion and audience.
4. **LISTENING:** Listening at the college level means the ability to analyze and interpret various forms of spoken communication.
5. **CRITICAL THINKING:** Critical thinking embraces methods of applying both qualitative and quantitative skills analytically and creatively to subject matter in order to evaluate arguments and to construct alternative strategies. Problem solving is one of the applications of critical thinking, used to address an identified task.
6. **COMPUTER LITERACY:** Computer Literacy at the college level means the ability to use computer-based technology in communicating, solving problems and acquiring information.

Student Learning Outcomes

1: Scientific Method; Belief System; Process of doing Science

Describe and apply the concepts that serve as the basis of the Scientific Method as well, use these concepts to distinguish between a Belief System and the process of doing Science.

2: Kinematics and Dynamics

Apply appropriate mathematical techniques, equipment, and principles to analyze and solve a variety of real-world problems demonstrating the application of force on one or more objects in one or more physical dimensions.

3: Force, Work, and Energy Relationships

Apply appropriate mathematical techniques, equipment, and principles to analyze and solve a variety of real-world problems demonstrating the relationships among force, work, and energy.

4: Conservation Laws

Apply appropriate mathematical techniques, equipment, and principles to analyze and solve a variety of real-world problems demonstrating the conservation of various physical properties.

5: Simple Harmonic Motion/Physical Deformation of Matter

Apply appropriate mathematical techniques, equipment, and principles to analyze and solve a variety of real-world problems demonstrating Simple Harmonic Motion (SHM) and/or physical deformation of matter.

Physics Quote 2:

“You cannot teach a man anything; you can only help him discover it in himself.”

Course Outline

ONLINE PRE-CLASS START (8/29 – 9/27)		Course Logistics, Expectations, Introductions; Math Review; Read in this order – Chs. 3 & 1; Review Online Course Material for Chs. 3 & 1; Complete Chs. 3 & 1 Online Pre-Labs; Complete Homeworks – Math Review, Ch. 3, Dimensional Analysis; Complete Learning Styles/Multiple Intelligences Quiz
Week 1	9/27 & 9/29	All Ch. 3 & Ch. 1; Lab 1
Week 2	10/4 & 10/6	All Ch. 2; Labs 2
Week 3	10/11 & 10/13	All Ch. 4; Lab 3; UT1 (10/14 – 10/18)
Week 4	10/18 & 10/20	UT1 DUE; All Ch. 5 & Start Ch. 6, Ch. 13:13.1 – 13.4; Lab 4
Week 5	10/25 & 10/27	Ch. 6 continued; Lab 5; UT2 (10/28 – 11/1)
Week 6	11/1 & 11/3	UT 2 DUE; All Ch. 7 & All Ch. 8
Week 7	11/8 & 11/10	Ch. 12: 12.1, 12.2, 12.4 – 12.10; Lab 6; UT 3
Week 8	11/15 & 11/17	UT 3 DUE; All Ch. 9, Ch. 10: 10.6, Ch. 12: 12.10, 12.11; Lab 7; UT3 (11/18 – 11/22)
Week 9	11/22 & 11/24	Ch. 10: 10.1 – 10.3 & Ch. 13: 13.5, 13.6, Ch. 10: 10.4, 10.5, 10.7; Lab 8
Week 10	11/29 & 12/1	Ch. 11: 11.1 – 11. 6, 11.8, 11.9 & Ch. 12: 12.3; UT4 (12/2 – 12/6)
Week 11	12/ 6 & 12/8	UT4 DUE; Ch. 14: 14.1 – 14.6 & Ch. 15: 15.6; Labs 9 & 10
Week 12	12/13 & 12/15	Final – 12/15

NO LATE ASSIGNMENTS ACCEPTED unless the student provides a **documented** valid reason (illness, accident, sports team commitment, religious holiday observance, and so forth) for the assignment being late!

Required Course Materials

- ✓ **Textbook** *Physics for Scientists and Engineers: A Strategic Approach with Modern Physics (2nd Edition)*
Knight
©2008| Pearson Addison-Wesley | Hardcover; 1464 pp
ISBN-13: 978-0805327366 | ISBN-10: 0805327363
- ✓ **eCampus** – Online Course material
- ✓ **Supplements** – Material provided by Instructor on an “as needed” basis
- ✓ **Calculator**
- ✓ **Pencil & Notebook**

Physics Quote 3: “Study as if you were going to live forever; live as if you were going to die tomorrow.”

Evaluation Procedures

- **Ten Lab Reports:** Each worth 100 points → total of **1000** points
- **Mini Research Projects:** **400** points
- **Cornell Note:** **400** points
- **Participation:**
 - Problem Solving – **400** points
 - Group Discussions – **200** points
 - Attendance – **100** points
 - Asking/Answering Questions – **200** points
 - Assignments in on time – **100** points
- **Four Unit Tests:** Each worth 200 points → total of **800** points
 - ↳ **Ten Topic Quizzes:** Each worth 20 points → total of **200** points – used to replace lowest Unit Test Score or lowest Lab Report Score (whichever applies).
- **FINAL Exam:** **600** points

Grading Scale

4400 total points available for course

A → 3800 – 3420 D → 2622 – 2280
B → 3382 – 3040 F → Below 2259
C → 3002 – 2660

Attendance Policy

ALL STUDENTS need to be in the classroom, **prepared to participate, by POSTED CLASS START TIME.**

ABSENCES: Arrivals after **10 minute GRACE PERIOD** are marked as **ABSENT**, except if Instructor notified **BEFORE** posted class start time.

CERTIFICATION Day: **12th Class Day, Monday, September 12, 2011,** Financial Aid Recipients **MUST ATTEND** class at least once by this date.

Physics Quote 4: “*I think physicists are the Peter Pans of the human race. They never grow up and they keep their curiosity.*”

ADA Statement

If you are a student with a disability and/or special needs who requires accommodations, please contact the college Disability Services Office at 972-860-8119.

Religious Holidays

Absences for observance of a religious holy day are excused. A student whose absence is excused to observe a religious holy day is allowed to take a make-up examination or complete an assignment within a reasonable time after the absence.

Academic Honesty

Academic honesty is expected, and integrity is valued in the Dallas County Community Colleges. Scholastic dishonesty is a violation of the Code of Student Conduct. Scholastic dishonesty includes, but is not limited to, cheating on a test, plagiarism, and collusion.

Cheating on examinations or assignments will result in a score of zero (0) for that activity. Consultation with other students during class discussions and lab activities is expected. However, all work submitted must be written in one's words. Copying another student's work (examinations, lab reports, presentations, journals, and other applicable assignments) **IS NOT ACCEPTABLE.**

As a college student, you are considered a responsible adult. Your enrollment indicates acceptance of the DCCCD Code of Student Conduct published in the DCCCD Catalog. More information available at <https://www1.dcccd.edu/cat1011/ss/code.cfm>?

Withdrawal Policy (with Drop Date)

If you are unable to complete this course, **it is your responsibility to withdraw formally.** The withdrawal request must be received in the Registrar's Office by **Thursday, November 17, 2011. Failure to do so will request in your receiving a performance grade, usually an "F".**

If you drop a class or withdraw from the college before the official drop/withdrawal deadline, you will receive a "W" (Withdraw) in each class dropped.

More information available at <https://www1.dcccd.edu/cat1011/ss/oep/dw.cfm>

STOP BEFORE YOU DROP

For students who enrolled in college level courses for the first time in the fall of 2007, Texas Education Code 51.907 limits the number of courses a student may drop.

You may drop no more than six courses during your entire undergraduate career unless the drop qualifies as an exception. Your campus counseling/advising center will give you more information on the allowable exceptions.

Remember that once you have accumulated six non-exempt drops, you cannot drop any other courses with a "W". Therefore, please exercise caution when dropping courses in any Texas public institution of higher learning, including all seven of the Dallas County Community Colleges. For more information, see <https://econnect.dcccd.edu/eConnect/droppingfacts.html>

BEFORE DROPPING → TALK with ME – TOGETHER WE can find a SOLUTION!

Repeating this Course

Effective for Fall Semester 2005, the Dallas County Community Colleges will charge additional tuition to students registering the third or subsequent time for a course. This class *may not* be repeated for the third or subsequent time without paying the additional tuition. Third attempts include courses taken at any of the Dallas County Community Colleges since the Fall 2002 semester. More information available at: https://www1.dcccd.edu/cat1011/ss/oep/third_attempt.cfm

Financial Aid

If you are receiving any form of Financial Aid, you **MUST BEGIN ATTENDANCE** in **ALL** classes prior to the semester Certification date (**12th day of the semester – 9/12/2011**). **DO NOT** drop or stop attending any class without first consulting the Financial Aid Office.

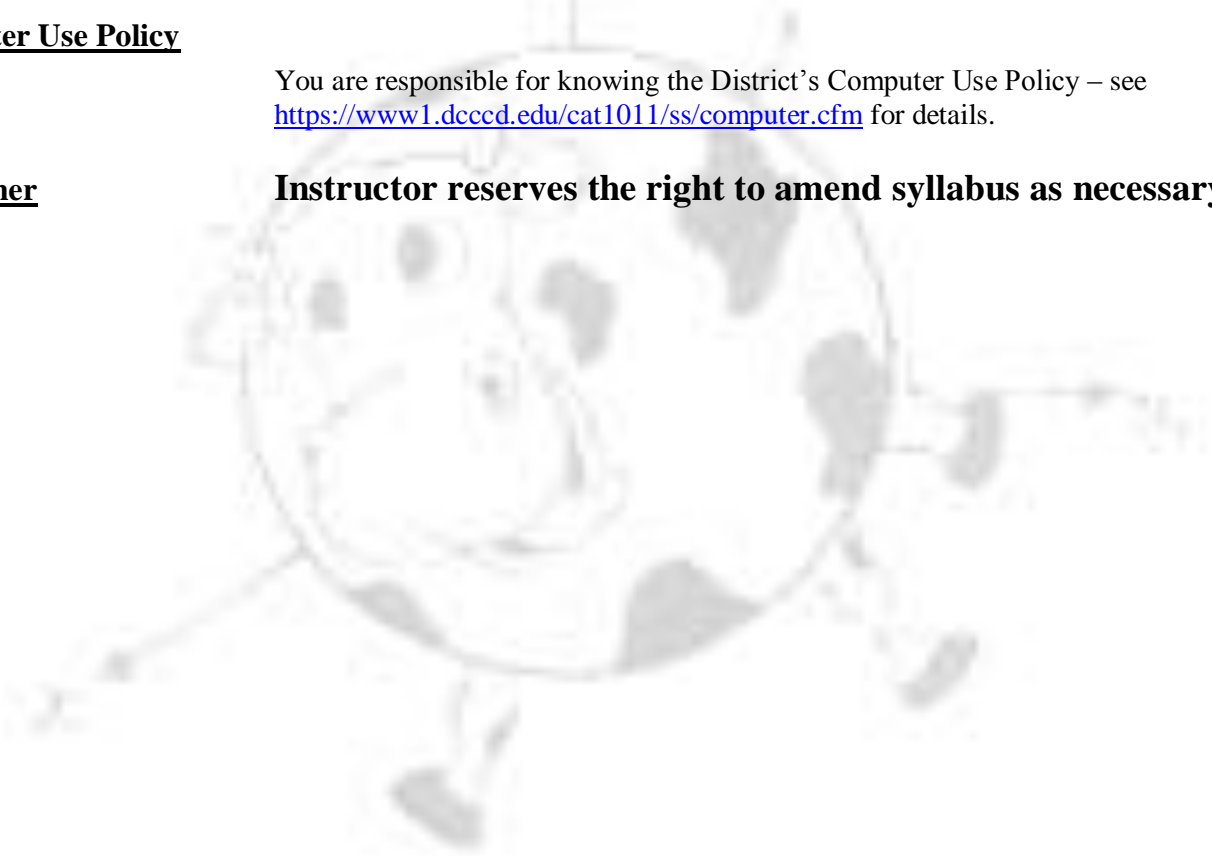
Additionally, students who are receiving any form of Financial Aid should check with the Financial Aid Office prior to withdrawing from classes. **WITHDRAWALS MAY EFFECT** your **ELIGIBILITY** to receive further aid and could cause you to be in a position of **REPAYMENT** for the current semester. **Students who fail to attend or participate after the drop date are also subject to this policy.**

Computer Use Policy

You are responsible for knowing the District's Computer Use Policy – see <https://www1.dcccd.edu/cat1011/ss/computer.cfm> for details.

Disclaimer

Instructor reserves the right to amend syllabus as necessary.



CLASSROOM POLICIES

Cell Phones

- ⇒ Please **put on SILENT** in consideration of your classmates and Instructor.
- ⇒ Please **put away** in backpack, purse, or other similar item.
- ⇒ **NO** texting allowed during class (lecture, lab, group activity) allowed.
 - **Offenders lose 50 points** for every texting offense.
- ⇒ You may text during breaks.
- ⇒ Phone may be set to **vibrate** if anticipating an **Emergency Call** (see below).

Answering your phone:

- ↳ **EMERGENCY** – Please let the Instructor know at the beginning of class that you may be receiving an EMERGENCY phone call or that you have to be “**on-call**”. **Emergency calls/On-call** types of calls include calls concerning a sick family member, calls from work, and so forth. If you do receive such a call, please LEAVE the room QUIETLY to engage in conversation. When you have completed your phone call, QUIETLY return to your place in class.
- ↳ **NON-EMERGENCY** – If you receive this type of call and decide to talk, please LEAVE the room QUIETLY to engage in conversation. When you have completed your phone call, QUIETLY return to your place in class.
 - **Offenders lose 50 points** for every non-emergency offense.

Portable Music/Video Players – **DO NOT USE** during class (lecture, lab, group activity) in consideration of your classmates and the Instructor. If you are **working by yourself**, you may use the device **QUIETLY**, but please be considerate of those around you.

- **After second warning, offenders will no longer** be able to **bring** portable music/video players for to class.

You may use during breaks.

Portable Computers/PDAs – May be used for taking notes or documenting lab information. Other uses prohibited.

- **After second warning, offenders will no longer** be able to **use** portable computers/PDAs **during class**.

Food & Drink – **NO** food or drink in lab areas; **water only** in classrooms and hallways. Food and drink **ONLY** in the Student Lounge, M227.

Physics Quote 5:

"In the matter of physics, the first lessons should contain nothing but what is experimental and interesting to see. A pretty experiment is in itself often more valuable than twenty formulae extracted from our minds."