Dallas County Community College  
Mountain View College  
Science, Allied Health & PE Division  
4849 W. Illinois Ave. 
Dallas, TX 75012  
Tel#(214) 860-8649  Fax# (214)860-8836  

Course Number: PHYS 2425  
Section Number: 65001  
Course Title: University Physics I  
Credit Hours: 4  Lecture Hours: 3  Lab Hours: 3  
Lecture: MTWR 8:00 AM – 10:20 AM  
Lab: MTWR 10:30 AM – 12:50 PM  
Physics Classroom and Lab: W16  

Instructor: Bimal Pandey  
Email: bpandey@dcccd.edu

The mystery of being!

A quote by Steven Hawking:

We each exist for but a short time, and in that time explore but a small part of the whole universe. But humans are a curious species. We wonder, we seek answers. Living in this vast world that is by turns kind and cruel, and gazing at the immense heavens above, people have always asked a multitude of questions: How does the universe behave? What is the nature of reality? Where did all this come from? Did the universe need a creator? Most of us do not spend most of our time worrying about these questions, but almost all of us worry about them some of the time. Why is there something rather than nothing? Why do we exist? Why this particular set of laws and not some other

And a quote by Paul Hewitt:

Physics is about the rules of the physical world. Just as you can’t enjoy a ball game, computer game, or party game until you know its rules, so it is with nature. Nature’s rules are beautifully elegant and can be neatly described mathematically. That’s why many physics texts are treated as applied mathematics. But too much emphasis on computation misses something essential - comprehension - a gut feeling for concepts.
We enjoy physics, and you will too - because you'll understand it. Just as a person who knows the rules of botany best appreciates plants, and a person who knows the intricacies of music best appreciates music, you'll better appreciate the physical world around you when you learn its rules.

*Enjoy Your Physics!*

**Course description:**

**Prerequisite:** 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.

**Course Description:**

In Lecture: Fundamental principles of physics, using calculus, for science, computer science, and engineering majors; the principles and applications of classical mechanics, including harmonic motion, physical systems and thermodynamics; and emphasis on problem solving.

In Lab: Basic laboratory experiments supporting theoretical principles presented in PHYS 2425 involving the principles and applications of classical mechanics, including harmonic motion and physical systems; experimental design, data collection and analysis, and preparation of laboratory reports.

**Course Material:**


Lab Manual: No lab manual is required. Labs will be posted on eCampus.

**Course Outlines:**

Ch1. Measurements  
Ch2. Motion along a straight line  
Ch3. Vectors  
Ch4. Motion in Two and Three Dimensions  
Ch5. Force and Motion I  
Ch6. Force and Motion II  
Ch7. Kinetic Energy and Work  
Ch8. Potential Energy and Conservation of Energy  
Ch9. Center of Mass and Linear momentum  
Ch10. Rotation  
Ch11. Rolling, Torque and Angular Momentum  
Ch12. Equilibrium and Elasticity  
Ch13. Gravitation  
Ch14. Fluids  
Ch15. Oscillations
Ch16. Wave I  
Ch17. Wave II  
Ch18. Temperature, Heat and The First law of Thermodynamics  
Ch19. The Kinetic theory of Gases  
Ch20. Entropy and The Second Law of Thermodynamics

**Evaluation Procedures:**

1) Exams = 50%  
2) Labs = 25%  
3) Assignments: HW Problems = 15%  
   Class participation and quizzes = 10%  
4) Extra Credit: 0-10 points

**Grading Scale:**

90-above = A, 80-89 = B, 70-79 = C, 60-69 = D, 59 and below = F

Late work and Attendance Policy:

No late submission is accepted / graded.

**Course Procedures:**

1. **Textbook**
   You need a hard copy of the textbook or electronic version of the book to read the contents of each chapter. **Yes! You need a textbook.**

2. **eCampus (EC)**
   You need to login on eCampus in order to view your weekly assignments and also the instruction on each assignment. There are various TABS for each category of assignments. For example: After you click on a tab Called LABS, you will find the lab assignments for each week.
   
   For short I will use the two letters EC for eCampus.

**Accessing eCampus:**
How do I login to eCampus?  
eCampus is the web interface used to access Internet-based distance education courses.  
Go to [http://ecampus.dcccd.edu](http://ecampus.dcccd.edu) and press “Click here to login”. Type your Student ID# with a lower case “e” in front of the number. This is used for both the Username and the Password. Please change your Password after your initial login.  
Example:  
Username: e3456789  
Password: e3456789  
If you still cannot login, here are a few tips that may help you gain access:
1. Use Internet Explorer 6.0 or Netscape 7.0 or higher
2. Have all JAVA script settings enabled in your browser
3. Set your browser to accept all cookies

If you are unsure how to do any of these things or you still cannot login, please contact us at ecampus.support@dcccd.edu or call (972) 669-6402.

**Availability:**

Remember I am here to teach and help you learn to the best of my ability. So please do not hesitate to discuss any academic problems. You may email me to set up an appointment or simply visit me in my office during my office hours.

**Core Curriculum Intellectual Competencies objectives:**

a) **Reading:** the ability to analyze and interpret a variety of printed materials-books, documents, and articles.
b) **Writing:** the ability to produce clear, correct and coherent prose adapted to purpose, occasion of audience.
c) **Speaking:** the ability to articulate ideas and communicate effectively before various audiences in an academic setting
d) **Listening:** analyze and interpret various form of spoken communication, possess sufficient literacy skills of writing, reading
e) **Critical Thinking:** think and analyze at a critical level. To recognize scientific and quantitative methods and the differences between these approaches and the other methods of inquiry and to communicate findings, analyses, and interpretation both orally and writing
f) **Computer Literacy:** To understand and apply method and appropriate technology to the study of Physics., use computer based technology in communication, solving problems, acquiring information

**The course also provides an opportunity to achieve the following Core Area Exemplary Educational Objectives:**

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

Upon successful completion of this course, students will:
1. Determine the components of linear motion (displacement, velocity, and acceleration), and especially motion under conditions of constant acceleration.
2. Solve problems involving forces and work.
3. Apply Newton’s laws to physical problems.
4. Identify the different types of energy.
5. Solve problems using principles of conservation of energy.
6. Define the principles of impulse, momentum, and collisions.
7. Use principles of impulse and momentum to solve problems.
8. Determine the location of the center of mass and center of rotation for rigid bodies in motion.
9. Discuss rotational kinematics and dynamics and the relationship between linear and rotational motion.
10. Solve problems involving rotational and linear motion.
11. Define equilibrium, including the different types of equilibrium.
12. Discuss simple harmonic motion and its application to real-world problems.
13. Solve problems involving the First and Second Laws of Thermodynamics.
14. Prepare laboratory reports that clearly communicate experimental information in a logical and scientific manner.
15. Conduct basic laboratory experiments involving classical mechanics.
16. Relate physical observations and measurements involving classical mechanics to theoretical principles.
17. Evaluate the accuracy of physical measurements and the potential sources of error in the measurements.
18. Design fundamental experiments involving principles of classical mechanics.
19. Identify appropriate sources of information for conducting laboratory experiments involving classical mechanics.

Student Expectations:

Students will be able to discuss scientific advancements in classical mechanics, and the influence of social, cultural, economic, political, and ethical factors on scientific thought and discovery through history.

Students will develop personal responsibility and good work ethic reflected by regular, on-time attendance, participation in class activities, completion of assignments on time, and by studying 10-15 hours per week outside of class.

Institutional Policies:

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 6 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 6 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, you may access: https://www1.dcccd.edu/coursedrops

**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 **June 26**. Failure to do so will result in your receiving a performance grade, usually a grade of "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. **I strongly encourage you to talk to me before making your final decision**

**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/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 is available at:
https://www1.dcccd.edu/cat0506/ss/oep/third_attempt.cfm

**Financial Aid:**
Students who are receiving any form of financial aid should check with the Financial Aid Office prior to withdrawing from classes. Withdrawals may affect 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. For further information, please contact Financial Aid at 214-860-8688, 8834, or 8826

**The Texas Success Initiative (TSI):**
The Texas Success Initiative (TSI) is a statewide program designed to ensure that students enrolled in Texas public colleges and universities have the basic academic skills needed to be successful in college-level course work. The TSI requires assessment, remediation (if necessary), and advising of students who attend a public college or university in the state of Texas. The program assesses a student's basic academic skills in reading, writing, and math. Passing the assessment is a prerequisite for enrollment in many college level classes. Students who do not meet assessment standards may complete prerequisite requirements by taking developmental courses in the deficient area and passing them with a grade of C or higher. Additional information is available at https://www1.dcccd.edu/cat0506/admiss/tsi_requirements.cfm
**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. 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 is available at https://www1.dcccd.edu/cat0406/ss/code.cfm

**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 (214)860-8691, room W-145.

**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.

**Inclement weather:**
In the event of severe weather conditions, please listen to local radio or television stations for information concerning official closing of Mountain View College facilities. You can also call the information line at 214.860.8680, or check for updates on this web site. Decisions for evening classes will be made by 4:00 pm.
http://www.mountainviewcollege.edu/1weather.aspx

**Final Course Grade:**
Final grades are available only on eConnect and touchtone telephone at 972-613-1818 you will need your student ID number and use your birth date as your password.
http://econnect.dcccd.edu/econnect/st/stmenu.html

**SUMMER-I 2013**

June 4 (W)       Classes Begin
June 7 (S)       4th Class Day
June 25 (W)      Last Day to Withdraw
July 3 (R)       Final Exams/Summer I Ends
July 4 (F)       Fourth of July Employee Holiday
July 8 (T)       Last day for faculty to submit grades electronically through eConnect to the Registrar's Office

**Disclaimer Reserving Right to Change Syllabus:**
The instructor reserves the right to amend this syllabus as necessary.