PHYS 2425 University Physics I Syllabus
Dallas College Eastfield Campus

Contacting Your Instructor
Instructors typically respond to emails from students with 24 hours. However, over the weekend and holiday periods responses may be delayed. Find out more about contacting your instructor.

Instructor Contact Information
Name: Dr. Uma Choppali
DCCCD Email: uchoppali@dcccd.edu
Office Phone: 972-860-7343
Office Location: C218
Office Hours: Monday, Tuesday, Wednesday, Thursday: 2:00 pm– 4:00 pm
Division Office and Phone: STEM Division, C-Building, Room 202 | 972-860-7297

Course Information
Course Title: University Physics I
Course Number: PHYS 2425
Section Number: 41001
Semester/Year: FALL 2020  (Harvester Term- 1)
Credit Hours: 4
Class Meeting Time/Location: INET -- M T W R F S U
Certification Date: August 29 (Saturday), 2020
Last Day to Withdraw: September 30 (Wednesday), 2020

Course Prerequisites
MATH 2413.
Course Description
The first semester of calculus-based physics sequence for science, computer science, and engineering majors. The principles and applications of classical mechanics, including harmonic motion, physical systems and thermodynamics are studied with emphasis on problem solving. Performance of basic laboratory experiments supporting theoretical physics principles and applications of classical mechanics, including harmonic motion, physical systems and thermodynamics. Also includes experimental design, data collection and analysis, and preparation of laboratory reports. (3 Lec., 3 Lab.)

Coordinating Board Academic Approval Number 4001015403

Student Learning Outcomes
Upon successful completion of the course, the students will:
- Convert units by using conversion factors and unit analysis
- Distinguish between vector and scalar quantities
- Use the equations of motion with constant acceleration in one and two dimensions
- State Newton's laws of motion and the law of universal gravitation
- Resolve vector diagrams on static and dynamical systems.
- Define and use the concepts of energy and momentum
- Use the equations of angular motion with constant angular acceleration.
- Define and use the concepts of pressure, density, and the ideal gas law.
- Define and use the concepts of density, pressure exerted by a fluid, and the buoyant force.
- Define and use the first and second laws of thermodynamics.

Texas Core Objectives
The College defines essential knowledge and skills that students need to develop during their college experience. These general education competencies parallel the Texas Core Objectives for Student Learning. In this course, the activities you engage in will give you the opportunity to practice two or more of the following core competencies:

1. **Critical Thinking Skills** - to include creative thinking, innovation, inquiry, and analysis, evaluation and synthesis of information
2. **Communication Skills** - to include effective development, interpretation, and expression of ideas through written, oral, and visual communication
3. **Empirical and Quantitative Skills** - to include the manipulation and analysis of numerical data or observable facts resulting in informed conclusions
4. **Teamwork** - to include the ability to consider different points of view and to work effectively with others to support a shared purpose or goal
5. **Personal Responsibility** - to include the ability to connect choices, actions, and consequences to ethical decision-making

6. **Social Responsibility** - to include intercultural competence, knowledge of civic responsibility, and the ability to engage effectively in regional, national, and global communities

**Required Course Materials**

If your Dallas College course requires learning materials they will be provided as part of the IncludED program (see [dcccd.edu/included](dcccd.edu/included)) or as free materials you can access in your online course shell.

If you opt out of the IncludED program, you are responsible for obtaining all your required learning materials by the first day of the class (for more details: [Institutional Policies](#)).

- Computer w/ Internet access, Internet browser, CamScanner App
- A scientific calculator (one that does trigonometric and logarithmic functions, as well as scientific notation) and a ruler.
- Lecture notes and lab manual can be found on eCampus.

**Graded Work**

The tables below provide a summary of the graded work in this course and an explanation of how your final course grade will be calculated.

**Summary of Graded Work**

<table>
<thead>
<tr>
<th>Assignments</th>
<th>%</th>
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</thead>
<tbody>
<tr>
<td>Orientation Quiz</td>
<td>1 %</td>
</tr>
<tr>
<td>Chapter Quizzes</td>
<td>20 %</td>
</tr>
<tr>
<td>Homework</td>
<td>15 %</td>
</tr>
<tr>
<td>Discussion Board</td>
<td>4 %</td>
</tr>
<tr>
<td>Lab</td>
<td>20 %</td>
</tr>
<tr>
<td>Tests</td>
<td>40 %</td>
</tr>
</tbody>
</table>

**TOTAL: 100 %**
Final Grade

<table>
<thead>
<tr>
<th>Percentages</th>
<th>Letter Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>90-100%</td>
<td>A</td>
</tr>
<tr>
<td>80-89%</td>
<td>B</td>
</tr>
<tr>
<td>70-79%</td>
<td>C</td>
</tr>
<tr>
<td>60-69%</td>
<td>D</td>
</tr>
<tr>
<td>0-59%</td>
<td>F</td>
</tr>
</tbody>
</table>

**Orientation Activities**: All students must read the orientation information and complete the Orientation Quiz posted in “Getting Started” by the assigned due date.

**Quizzes**: There is a quiz for each chapter. Late assignments will not be graded, unless you have made arrangements with the Instructor. A 10-point orientation quiz is also required, to familiarize you with the various components of the website.

**Tests**: There will be four tests, each worth 100 points. Tests will be multiple choice, true false, short answers, and problem solving. All tests are taken on-line and are open-book, but are timed for 120 minutes. You will receive instructions and passwords prior to the test in the weekly emails.

**General Instructions for Taking Online Tests**
1. You will receive a password by email on the day the test begins. Please make sure you read the email and do not forget the password!
2. You have two hours (120 minutes) to complete the test.
3. Once you enter the test the clock will start. If you take more than two hours, the test will continue, but I will be informed you took longer. After 10 extra minutes, I will use my judgment to deduct points.
4. The test is open-book and notes. However, you need to study before hand!
5. You can enter the test ONLY ONCE. Begin the test only when you are ready.
6. Do not wait until the last minute to take the test! The test deadlines at 11:59 p.m. You must enter by 9:59 p.m. at the latest to give yourself the full two hours you are allowed.
7. If you do have problems, please send me an email.

**Discussion Board**: A discussion topic will be posted on the Discussion Board every other week. Post your frank and thoughtful responses to the original topic and at least twice to another classmate for each forum. Follow the rules for online etiquette. Your participation on the discussion board will be graded for 4% of overall grade.
Lab exercises: All the labs will be done online. Lab handouts will be posted on eCampus every week. You will answer the questions included in the lab and submit the completed lab via eCampus. Lab is worth 20% of the grade. If you have any difficulty completing any of the labs, please email the instructor for help. A student must make a passing grade in lab to pass the course. This course satisfies the core curriculum requirement for scientific discovery and sustainability. A minimum lab average of 60 is required in order to pass the course. If your lab average is below 60, regardless of your course average, your course grade will be changed to be equal to your lab average.

Homework

The homework problems for this class will be accessed online via the Mastering Physics assignment system. There will be homework every week. Each homework will be on chapter/material covered in class. Late assignments will not be accepted.

Late Work Policy

It is in each student's best interest to submit work in a timely fashion. As this is an accelerated course, late work will not be accepted without the instructor's permission.

Other Course Policies

Incompletes

An incomplete grade of "I" may be given when an unforeseen emergency prevents you from completing the work for this class. Make contact with the instructor immediately if there is a situation preventing you finishing the course.

Email

The primary means of communication for this class is email. The instructor will reply to all emails sent in the proper format within 24 hours on weekdays, so double check your format and re-send your email if you do NOT hear back from the instructor within this time frame. Do NOT assume that an unanswered email was received – ALWAYS RESEND if you do not receive a reply in 24 hours on weekdays.

Required Subject Line Format: When contacting the instructor, the SUBJECT LINE must contain the course ID (PHYS 2425-41001) AND the student's first and last name. The email itself (the body/message) must ALSO contain course ID and the student's first and last name at the end of the message. Emails sent without this format will either receive no reply or a reply telling the student to re-send in proper format, which slows down response time.
Institutional Policies

Institutional Policies include information about tutoring, Disabilities Services, class drop and repeat options, Title IX, and more.

Course Schedule

Listing of Topics by Week

<table>
<thead>
<tr>
<th>Week</th>
<th>Topic</th>
<th>Readings &amp; Assignments</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Foundations, Motion in 1 D, Motion in 2 D</td>
<td>Chapter 1, 2, 3</td>
</tr>
<tr>
<td>2</td>
<td>Newton’s Law</td>
<td>Chapters 4, 5</td>
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<tr>
<td></td>
<td>Review – 1 + Test - 1</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Work, Energy Conservation, Momentum</td>
<td>Chapters 6, 7, 8</td>
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<tr>
<td>4</td>
<td>Rotation of Rigid Bodies, Rotational Motion</td>
<td>Chapters 9, 10</td>
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<tr>
<td></td>
<td>Review – 2 + Test - 2</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Fluid Mechanics, Gravitation</td>
<td>Chapters 12, 13</td>
</tr>
<tr>
<td>6</td>
<td>Periodic Motion, Waves, Sound</td>
<td>Chapters 14, 15, 16</td>
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<tr>
<td></td>
<td>Review – 3 + Test - 3</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Temperature and Heat, First Law of Thermodynamics</td>
<td>Chapters 17, 19</td>
</tr>
<tr>
<td>8</td>
<td>Second Law of Thermodynamics</td>
<td>Chapter 20</td>
</tr>
<tr>
<td></td>
<td>Review – 4 + Test - 4</td>
<td></td>
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</tbody>
</table>