PHYS 1401: College Physics Syllabus
Dallas College Richland Campus

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

Instructor Contact Information
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Email: zzhuang@dcccd.edu
Division Office and Phone: S205, 972-238-6248

Course Information
Course Title: College Physics
Course Number: PHYS 1401
Section Number: 81003
Semester/Year: Fall/2020
Credit Hours: 4
Class Meeting Time/Location: Online via eCampus
Certification Date: Saturday, September 5, 2020
Last Day to Withdraw: Thursday, November 12, 2020

Course Prerequisites
MATH 1314 and MATH 1316 or MATH 2412.
Course Description

The first semester of an algebra and trigonometry-based fundamentals of physics sequence. The principles and applications of classical mechanics and thermodynamics, including harmonic motion, mechanical waves and sound, physical systems, Newton’s Laws of Motion, and gravitation and other fundamental forces are studied with emphasis on problem solving. Laboratory experiments supporting the topics are included. (3 Lec., 3 Lab.)

Student Learning Outcomes

- Determine the components of linear motion (displacement, velocity, and acceleration), and especially motion under conditions of constant acceleration.
- Apply Newton’s laws to physical problems including gravity.
- Solve problems using principles of energy.
- Use principles of impulse and linear momentum to solve problems.
- Solve problems in rotational kinematics and dynamics, including the determination of the location of the center of mass and center of rotation for rigid bodies in motion.
- Solve problems involving rotational and linear motion.
- Describe the components of a wave and relate those components to mechanical vibrations, sound, and decibel level.
- Demonstrate an understanding of equilibrium, including the different types of equilibrium.
- Discuss simple harmonic motion and its application to quantitative problems or qualitative questions.
- Solve problems using the principles of heat and thermodynamics.
- Solve basic fluid mechanics problems.
- Demonstrate techniques to set up and perform experiments, collect data from those experiments, and formulate conclusions from an experiment.
- Record experimental work completely and accurately in laboratory notebooks, and communicate experimental results clearly in written reports.
- Determine the components of linear motion (displacement, velocity, and acceleration), and especially motion under conditions of constant acceleration.
- Apply Newton’s laws to physical problems including gravity.
- Solve problems using principles of energy.
- Describe the components of a wave and relate those components to mechanical vibrations, sound, and decibel level.
- Use principles of impulse and linear momentum to solve problems.
• Solve problems in rotational kinematics and dynamics, including the determination of the location of the center of mass and center of rotation for rigid bodies in motion.
• Solve problems involving rotational and linear motion.
• Demonstrate an understanding of equilibrium, including the different types of equilibrium.
• Discuss simple harmonic motion and its application to quantitative problems or qualitative questions.
• Solve problems using the principles of heat and thermodynamics.
• Solve basic fluid mechanics problems.

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](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, see Institutional Policies.


Sapling Learning online homework and tutorial system account

Lab manual on eCampus (free)

Scientific calculator

Computer with internet

**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>Work</th>
<th>Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>HW</td>
<td>15%</td>
</tr>
<tr>
<td>Labs</td>
<td>20%</td>
</tr>
<tr>
<td>Term Tests</td>
<td>45%</td>
</tr>
<tr>
<td>Final Exam</td>
<td>20%</td>
</tr>
<tr>
<td><strong>TOTAL:</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

**Final Grade**

<table>
<thead>
<tr>
<th>Percentages</th>
<th>Letter Grade</th>
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<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>
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</table>
Description of Graded Work

**Homework:** We will be utilizing Sapling Learning for online homework, and is part of your tuition. To login, always use the link found on eCampus.

**Labs:** Each lab will consist of a virtual experiment and a submitted, written/typed lab report, which is due at the end of the due day (11:59 p.m.). The report must include a completed cover sheet, and pre-lab work completed, and the lab results with math work shown and questions answered.

**Exams:** There will be 3 term exams. The scores will be used for grade calculation.

**Final Exam:** The final exam is comprehensive and required.

**Late Work Policy**
Late work will only be accepted on rare occasion, with permission, and will not be accepted once it has been graded and returned to the rest of class.

**Other Course Policies**

**Etiquette:** Professional and mature behavior is expected and required at all times, both in and out of class, towards all members of the class.
Collaboration, either with one other student or with a small group, is encouraged when studying, completing lab activities, or working on homeworks. Tests are to be completed independently.

**Institutional Policies**

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

**Course Schedule**

<table>
<thead>
<tr>
<th>Week #: Dates</th>
<th>Lab #</th>
<th>Readings &amp; Assignments</th>
<th>Test – Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>1: 8/24 – 28</td>
<td></td>
<td>Intro., Ch. 1, Ch 2</td>
<td></td>
</tr>
<tr>
<td>2: 8/31 – 9/4</td>
<td>1</td>
<td>Ch. 2, Ch 3</td>
<td></td>
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<tr>
<td>3: 9/8 – 11</td>
<td></td>
<td>Ch. 3, Ch4</td>
<td></td>
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<tr>
<td>4: 9/14 – 18</td>
<td>2</td>
<td>Ch. 4, Ch5</td>
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<tr>
<td>5: 9/21 – 25</td>
<td></td>
<td>Ch. 5, Ch6, Unit 1</td>
<td>9/22</td>
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<tr>
<td>6: 9/28 – 10/2</td>
<td>3</td>
<td>Ch. 6, Ch7</td>
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<tr>
<td>7: 10/5 – 9</td>
<td>4</td>
<td>Ch8</td>
<td></td>
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<tr>
<td>8: 10/12 – 16</td>
<td>5</td>
<td>Ch. 9, Ch 10</td>
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<td>9: 10/19 – 23</td>
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<td>Ch. 10, Ch 11,</td>
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<td>10: 10/26 – 30</td>
<td>6</td>
<td>Ch. 11, Ch 12</td>
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<tr>
<td>11: 11/2 – 6</td>
<td></td>
<td>Ch. 12, Ch13</td>
<td>11/3</td>
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<td>12: 11/9 – 13</td>
<td>7</td>
<td>Ch. 13, Ch14</td>
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<td>13: 11/16 – 20</td>
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<td>Ch. 15, Ch 16</td>
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<tr>
<td>14: 11/23 – 25</td>
<td>8</td>
<td>Ch. 16</td>
<td></td>
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<tr>
<td>15: 11/30 – 12/4</td>
<td></td>
<td>Ch. 17</td>
<td>12/4</td>
</tr>
<tr>
<td>16: 12/9</td>
<td></td>
<td><strong>FINAL EXAM</strong></td>
<td>12/9</td>
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8/1/20 Version