Spring 2016 Physics 1310 Section 253 CRN 32939

Instructor:  Dr. Susan Holtz
Lecture:  MW 3:30 to 4:50 pm in Supple 112
Office:  S. Holtz: RFM 3238

Contact Information:  Email: susan.holtz@txstate.edu  Office Phone: 512-245-2413 (sorry, my voicemail does not work)

Office Hours:  MW 2 pm to 3 pm and TR 3:30 pm to 4:30 pm.  Other office hours by appointment. Please email or see me after class and we will arrange a time to meet that fits your schedule or feel free to drop by my office at any time.

Textbook or etext:  Conceptual Physics, 12th Edition, Paul G. Hewitt
Required Web Access:  We will be using an online utility www.masteringphysics.com to complete homework and in-class activities as part of your grade. If you previously purchased the course materials for this course or Physics 1320, your access is likely still valid. Otherwise, the MasteringPhysics homework resource can be purchased bundled with an etext, paper text, or as a stand alone if you already have a text. You will also need to access Learning Catalytics, which is a link in your MasteringPhysics account.

Purchase options are:

- Purchase bundle containing etext and MasteringPhysics homework resource access at www.masteringphysics.com using a credit card for $110. This bundle contains Learning Catalytics access.
- If you already have a paper text (older edition is OK), purchase MasteringPhysics homework resource access alone at www.masteringphysics.com using a credit card for $66. For this option you will also need to purchase Learning Catalytics for an additional $12, to do so click on the Learning Catalytic link on your MasteringPhysics home page once you purchase MasteringPhysics.
- Purchase a new paper text, which will come with a MasteringPhysics access code at a Texas State bookstore. The access code may be a cardboard folder—be sure not to throw it away by mistake. This purchase also contains Learning Catalytics.

Information on enrolling in the MasteringPhysics homework resource and Learning Catalytics:

- If you purchased access at the web site www.masteringphysics.com you will be asked to select your textbook—be very careful to pick the correct textbook and edition as there are many textbooks to select from and you can only use the utility for the text and edition listed above.
- Always use your Texas State email address (for example, zzz99@txstate.edu) as your email for both MasteringPhysics and LearningCatalytics.
- Use your NET ID when prompted for your Student NET ID (Example zzz99). Please enter your NET ID exactly as you would to log into TRACS because it will be used to upload your homework score to TRACS, and will not be recognized if entered wrong.
- When prompted, the course ID for your section is S16PHYS1310SECTION253HOLTZ
  NOTE: if you copy and paste the course ID to register and it does not accept it, please type it in instead.
- Learning Catalytics will show up as a link on the left hand side of your home page in MasteringPhysics.
- When you click on Learning Catalytics, you will be prompted to pay $12 for access if access was not part of a bundle listed above.
- Once purchased, when you click on Learning Catalytics, you are directed to a window that says Enter a class session ID to join a session: this is a unique ID you will enter each day in class when we use Learning Catalytics. On this page, click on your username to access your Learning Catalytics Account Profile, then enter your Student NET ID (example: zzz99, which you use to log into TRACS) for your Student ID and click update.
- A page giving help signing up for masteringphysics is at the end of this syllabus.
Smart Device: During class we will be using Learning Catalytics software to facilitate instant feedback and small group discussions, which will require each student to have a Wi-Fi enabled device. Please bring a laptop, smartphone, or tablet to each class. Please contact me if you have any problems. (Note there is no additional data cost to cell phone plans when using Wi-Fi.)

Objectives and Outcomes: This is a conceptual survey of topics in physics, including the fundamentals of motion, forces, energy and momentum, and the nature of matter. We will cover what it means for a discipline to be science, and what physics is in particular. The course is intended for liberal arts majors who want an understanding of how physics can explain everyday phenomena. In addition to relating physics to everyday life, we will consider its impact on global issues. Perhaps the best perk of taking a class in Physics is that it helps develop critical thinking.

Course Objective: Upon completion of this course, you should be able to:

- Understand what it means for a discipline to be labeled as science.
- Answer the question “What is Physics?”
- Interpret your daily experiences and observations within the framework of physics principles.
- Develop critical thinking by asking questions, making observations and solving problems.
- To obtain a belief in one’s ability to learn and apply Physics.
- Become aware of how our multicultural backgrounds have shaped our perspective of science.
- Appreciate the role of Physics in addressing relevant global issues.
- Advance intellectual tolerance and integrity.
- Work cooperatively in a group, listen and learn from peers, and value others.

COURSE CONTENT: Note topics covered as time permits

**KINEMATICS**
1. Understand and use the relationship between displacement, velocity, and acceleration in solving problems.
2. Distinguish between average and instantaneous concepts.
3. Recognize and apply the equations of kinematics when motion occurs under constant acceleration.
4. Distinguish between vector and scalar quantities.
5. Understand and be able to apply the basic properties of vectors, including addition of vectors, components of vectors, and unit vectors.
6. Recognize and apply the equations of kinematics when motion occurs under constant acceleration in two (or more) directions.

**FORCES AND FORCE AND MOTION**
1. Write, in one's own words, a description of Newton's laws of motion and give physical examples of each law.
2. Discuss the concept of a force and the effect of an unbalanced force on the motion of a body.
3. Discuss the concepts of mass and inertia and understand the difference between mass (a scalar) and weight (a vector).
4. Be able to apply Newton's laws of motion to various mechanical systems using a systematic approach for both one-body problems and two-or more-body problems.
5. Realize that the laws of static and kinetic friction are empirical in nature that is, based on observations), and recognize that the maximum force of friction and the force of kinetic friction are both proportional to the normal force on a body.
6. Distinguish the two different equilibriums, static and dynamic.

**IMPULSE, MOMENTUM, WORK AND ENERGY**
1. Understand the concept of linear momentum of a particle and the relation between the resultant force on a particle and the time rate of change of its momentum.
2. Recognize the implications of impulse.
3. Understand and apply the Conservation of Linear Momentum.
4. Describe and distinguish the two types of collisions that can occur between two particles, elastic and inelastic.
5. Recognize that work is a scalar and that work done by a force can be positive, negative, or zero.
6. Describe the work done by a force which varies with position.
7. Relate the work done by the net force to the change in either the kinetic energy and/or the potential energy.
8. Understand the Conservation of Energy and be able to solve problems using the Conservation of Energy.
9. Understand the distinction between kinetic energy (energy associated with motion), potential energy (energy associated with position), and the total mechanical energy of a system.
ROTATIONAL MOTION AND GRAVITY
1. Understand the relationships between the linear and angular quantities of displacement, speed, and acceleration.
2. Understand the nature of the acceleration of a particle moving in a circle with constant speed.
3. Describe the differences between centripetal and centrifugal forces.
4. Be able to write the definition of torque and understand its three-dimensionality.
5. Be able to state, explain and give examples of the conservation of angular momentum.
6. Analyze problems of rigid bodies in static equilibrium.
7. Be familiar with the gravitational force and be able to do calculations with this force.
8. Understand the meaning of Kepler's three laws of planetary motion.
9. Understand the concept of the gravitational field and the gravitational potential.

PROPERTIES OF MATTER, AND OSCILLATORY MOTION
1. Describe the general characteristics of simple harmonic motion and be able to relate SHM to circular motion.
2. Understand the relationship between force, acceleration, velocity, position, period, and energy of a mass-spring system, and a simple pendulum system.
3. Be able to work a variety of problems involving springs and/or pendulums.
4. Define the density of a substance and understand the concept of pressure of a point in a fluid, and the variation of pressure with depth.
5. Understand the origin of buoyant forces, state and explain Archimedes' principle, and be able to work problems involving buoyant forces.
6. Understand Pascal's principle and Bernoulli's equation.
7. Present a qualitative discussion of some application of Bernoulli's equation, such as air lift and available energy from winds.

HEAT AND THERMODYNAMICS
1. Understand the concepts of the thermal equilibrium and thermal contact between two bodies, and state the zeroth law of thermodynamics.
2. Understand thermal expansion of solids and liquids
3. Understand the concepts of heat, internal energy, and thermodynamic processes.
4. Provide a qualitative description of different types of phase changes which a substance may undergo, and the changes in energy which accompany such processes.
5. Discuss the possible mechanisms that can give rise to heat transfer between a system and its surroundings: that is, heat conduction, convection and radiation.
6. Recognize that the temperature of an ideal gas is proportional to the average molecular kinetic energy.
7. Understand the basic principle of the operation of a heat engine, and be able to define and discuss the thermal efficiency of a heat engine.
8. State the second law of thermodynamics.
9. State the first law of thermodynamics and explain the meaning of the three forms of energy contained in the statement.

MECHANICAL WAVES
1. Identify categories of waves and types of waves.
2. Discuss the basic properties of a wave.
3. Discuss the factors determining the propagation speed of a wave for different systems.
4. Be able to apply the basic wave equation $v=\lambda f$ and the mathematical representation of a harmonic wave.
5. Discuss the interference of waves with each other and beat notes.
6. Identify the various aspects of the Doppler phenomenon.

STANDING WAVES AND SOUND
1. Be able to identify the conditions that produce standing (stationary) waves.
2. Discuss the reflections that occur at different boundary conditions.
3. Sketch the displacement of the wave as a function of distance along the system and from the boundary conditions determines the fundamental wavelength.
4. Recognize the frequency response of the ear.
5. Recognize decibel notation and some of the musical aspects of sound.

Learning Environment:
Since students are individuals and learn in a variety of ways we have integrated a variety of learning activities and assessment tools into the course. We will use demonstrations, video, and PowerPoint in the lecture, and we will use several different kinds of assessment tools, some individual and others group-based. In group-based activities we must all strive to be
open-minded and respectful of others’ viewpoints in order to foster a positive learning environment. This will create a culture of caring for everyone in our learning group so that everyone feels free to contribute—we will focus on science, but we are people first. Students from diverse backgrounds have had success in this course, and as I firmly believe that any motivated student can be successful, I will do my best to facilitate an engaging and positive learning environment.

If you have a problem with any grade in this course, you must see me within a week from when the time the grade was taken for the grade to be changed. The nature and weighting of each graded assessment follows:

Grade weighting:

<table>
<thead>
<tr>
<th>Assessment</th>
<th>Points assigned</th>
</tr>
</thead>
<tbody>
<tr>
<td>Three Semester Exams (25 points each)</td>
<td>50 points total</td>
</tr>
<tr>
<td>Final Exam (comprehensive over homework, and material in lecture and text)</td>
<td>27 points</td>
</tr>
<tr>
<td>MasteringPhysics (Homework)</td>
<td>10 points + 4 extra-credit</td>
</tr>
<tr>
<td>Learning Catalytics (In-class)</td>
<td>10 points + 3 extra-credit</td>
</tr>
<tr>
<td>TRACS Writing Reflections</td>
<td>3 points + 3 extra-credit</td>
</tr>
<tr>
<td>In-Class Research Survey Participation</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>100 points + 10 extra-credit</td>
</tr>
</tbody>
</table>

Grading scale:

<table>
<thead>
<tr>
<th>Grade</th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>89.5 to 100</td>
</tr>
<tr>
<td>B</td>
<td>79.5 to 89.4</td>
</tr>
<tr>
<td>C</td>
<td>69.5 to 79.4</td>
</tr>
<tr>
<td>D</td>
<td>59.5 to 69.4</td>
</tr>
<tr>
<td>F</td>
<td>0 to 59.4</td>
</tr>
</tbody>
</table>

Three Semester Exams and Final:
There will be 3 semester exams during the semester covering the material from the homework, lectures and text. Of these three test grades, the two highest will each be worth 24 points and the lowest dropped. **There will be no make-up for missed semester tests after one day from the time the test is given.** If possible please let me know early if you are going to miss a test since there is a possibility that you may take the test in advance. If you take a test and believe there is a problem with the grade you received, see me within one week of the exam date as after that the score will be not be changed. **There is a final exam worth 26 points that is required and cannot be dropped.** The final is not optional. It is comprehensive over the semester and covers homework, material in the text, and in-class coverage. You may use a 4-function calculator. Cell phone, IPAD, laptop or graphing calculators will not be allowed on semester exams or the final. Remember to bring a 4-function calculator and your ID on days of the semester exams and the final.

Tentative Semester Test dates:
- Semester Exam 1: Feb 17th
- Semester Exam 2: March 23th
- Semester Exam 3: April 20th

Final exam: Wednesday May 11th at 2:00 pm

MasteringPhysics:
MasteringPhysics is graded on a point system with each question worth one point. You must check your MasteringPhysics account to find due dates as you receive less credit for submissions past the due date. Points from all homework sets will be added to give your homework sum. To determine the contribution of the homework to your final grade, calculate the following fraction and multiply it by 14 (note 14 points is the maximum you can earn):
- \( \text{Fraction} = \frac{\text{(Your homework sum)}}{\text{(Total number of homework points)}} \)

Learning Catalytics:
Learning Catalytics is an in-class graded activity that requires a smart device (smart phone, ipad or laptop). Learning Catalytics is graded on a point system with each question worth one point. No credit will be given to students that are not in class. Points from all in-class activities will be added to give your sum. To determine the contribution of learning catalytics to your final grade, calculate the following fraction and multiply it by 13 (note 13 points is the maximum you can earn):
- \( \text{Fraction} = \frac{\text{(Your learning catalytics sum)}}{\text{(Total number of learning catalytics points)}} \)
TRACS Writing Reflection

Writing about physics can help you learn and appreciate it more. In this vein, there is one writing reflection and it will be posted in the “Writing Reflection” tab on TRACS. It is worth 3 points of your final course grade. In order to reap the learning benefits from this assignment, it will be important for you to think critically about the assignment and write a thoughtful, detailed, and organized response that includes examples. In addition, you must generate your own original response and use your own wording. It should take approximately 1-1.5 hours to complete.

*Writing Reflection Dates (please note that late work will not be accepted):*

- Writing Reflection Assignment (in TRACS)
  - Available: Wednesday, 04/06/2016
  - Due: Sunday, 04/17/2016

Research Survey Participation (Extra Credit)

Near the beginning of the semester, you will be asked to take part in a research project. Your participation in the project will help provide important information that we can use to inform the development of this course and that researchers can use to help enhance our understanding of science learning. The details of the project are provided in the consent form that will be posted in the “Resources” tab on TRACS. Please check it out, but you do not need to print it.

A researcher will come to class to present the project, hand out and go over the consent form, and answer any questions. In brief, you will be asked to complete two surveys online and permit the researchers to obtain your course and demographic data. A link to each survey will be sent to you via email and also posted in the “Resources” page in TRACS.

For participating in the project, you will be able to earn up to 3 points as extra credit toward your course grade. For each survey you complete, you will receive 1 point extra credit. If you complete both surveys, you will receive an additional 1 point extra credit toward your total course grade. Three alternative essay assignments will be made available to students who are unwilling to participate but still want to receive extra credit. These will be due at the same time as the surveys. Your participation is voluntary and will not affect your standing in this class or your relationship with me.

*Survey and Consent Form Dates (please note that late work will not be accepted):*

- Consent Form Administration (in class)
  - Wednesday, 02/10/2016
- Survey 1 / Alternative Essay 1 (online, sent via email and posted in TRACS)
  - Available: Monday, 03/28/2016
  - Due: Sunday, 04/03/2016
- Survey 2 / Alternative Essay 2 (online, sent via email and posted in TRACS)
  - Available: Monday, 04/25/2016
  - Due: Sunday, 05/01/2016

How to succeed in this class:

- I have a variety of contact options to meet student’s diverse needs. Always feel free to come see me or email me if you are having any difficulties or concerns in this class. Remember do not wait until the end of the semester if you are having difficulties!
- Establish and keep up your Texas State email address, TRACS course site, and MasteringPhysics and Learning Catalytics web access.
- **MasteringPhysics:** Announcements and homework assignments will be posted on MasteringPhysics. Check the masteringphysics web site to see when the homework sets are due. No other notice will be given. You must also check each homework set after you finish it to see if you received credit for that homework set and find your score. If there are any computer problems with your homework grade you must see me within one week of the due date of the homework set, as after that no changes will be made to your homework grade.
- Read the chapter before we cover it in class and before you attempt the homework. Some homework is due before we cover the material in class in order to promote familiarity with the material so that it can be discussed in class.
- Come to class. You must come to class in order to get credit for in-class activities (Learning Catalytics). Also, all concepts pertaining to the tests are discussed in class.
- Homework and in-class learning catalytics can be revisited (for no credit) as practice before tests.
- Take advantage of all extra-credit options you are given. Note these options are all listed in the grade weighting section.
- Set the grade you want as a goal at the beginning of the semester and work toward it every day.

Attendance:

Attendance will be taken. A spirit of honesty will be maintained in the attendance policy: if the **number of people in the class always equals the number of people checked off on the attendance sheet** and the **number who summit answers on Learning**
**Catalytics.** 2 points will be added to everyone’s grade on the next semester test. If more people are checked off than actually are in class, no points will be added. You are responsible for everything that we do in class, so it is to your advantage to attend. *Everyone* looses if you check off someone who is not actually there. (Also the only way to get credit for Learning Catalytics portion of your grade is to attend class.)

**Class Policy for PHYS 1310:**
- We will be respectful of others, their viewpoints, their cultural backgrounds so that we create a supportive learning environment where people feel to discuss science topics and learn from each other.
- Irrelevant activities are not allowed in this class because it distracts your instructor and the other students and diminishes the environment of learning.
- **During the lecture portion of the class,** no laptops or cell phones or tablets are allowed in use unless need for such device for reason of a disability is documented. If you have an *emergency* situation that requires you to take a cell phone call or text during the lecture leave the room to take the call or text and return when you are finished.
- **During Learning Catalytics,** you can use a laptop, cell phone, or tablet.
- Please come see or ask in class if you have a question about a particular homework problem. Sorry I do not address homework problems by email.

**Note:** The syllabus, dates, and coverage are subject to change. Any changes will be announced in class.

**TEXAS STATE UNIVERSITY POLICIES:**
All faculty, staff and students are responsible for supporting the principles of conscientiousness, respectfulness and honesty and demonstrating a commitment to the university’s Academic Honor Code. Plagiarism and other forms of academic dishonesty undermine the very purpose of the university and diminish the value of an education. It includes but is not limited to cheating on a test by portraying the work of others as your own and plagiarism in which written work is copied from the web or other source and portrayed as your own work. A lack of understanding does not excuse academic dishonesty, so please acquaint yourself with the Texas State policies regarding these issues. Specific expectations for academic integrity and sanctions for academic dishonesty are outlined on the Honor Code Council website: [http://www.txstate.edu/honorcodecouncil/](http://www.txstate.edu/honorcodecouncil/) and in UPPS No. 07.10.01. [http://www.txstate.edu/effective/upps/upps-07-10-01.html](http://www.txstate.edu/effective/upps/upps-07-10-01.html).

**Texas State Academic Honor Code**
As members of a community dedicated to learning, inquiry and creation, the students, faculty and administration of our university live by the principles in this Honor Code. These principles require all members of this community to be conscientious, respectful and honest.

WE ARE CONSCIENTIOUS. We complete our work on time and make every effort to do it right. We come to class and meetings prepared and are willing to demonstrate it. We hold ourselves to doing what is required, embrace rigor, and shun mediocrity, special requests, and excuses.

WE ARE RESPECTFUL. We act civilly toward one another and we cooperate with each other. We will strive to create an environment in which people respect and listen to one another, speaking when appropriate, and permitting other people to participate and express their views.

WE ARE HONEST. We do our own work and are honest with one another in all matters. We understand how various acts of dishonesty, like plagiarizing, falsifying data, and giving or receiving assistance to which one is not entitled, conflict as much with academic achievement as with the values of honesty and integrity.

**Email Communication at Texas State:**
A Texas State email address is a course requirement. Use your Texas State email address (for example, zzz99@txstate.edu) to email your instructor. Messages from other email services **usually cannot be replied to.** Emails can be sent via Texas State Bobcat Mail (go to www.txstate.edu and select bobcatmail). University policy discourages sending grade information through emails. Please use office hours to discuss grading and to go over exams.

**Special Needs:**
If you are a student with a disability who will require an accommodation(s) to participate in this course, please contact me as soon as possible. You will be asked to provide documentation from the Office of Disability Services. Note failure to set this up with the Office of Disability and me in a timely manner will delay your accommodations.
Multicultural Policy Statement
Texas State believes that freedom of thought, innovation and creativity are fundamental characteristics of a community of scholars. To promote such a learning environment, the university has a special responsibility to seek diversity, to instill a global perspective in its students, and to nurture sensitivity, tolerance and mutual respect. Discrimination against or harassment of individuals on the basis of race, color, national origin, religion, sex, sexual orientation, age, or disability are inconsistent with the purposes of the university.

A table with a tentative schedule and a page with help for registering for MasteringPhysics follows.
Tentative schedule: Note it will change as we go along.

<table>
<thead>
<tr>
<th>Week beginning on Sunday …</th>
<th>Approximate Coverage</th>
<th>Special Dates</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jan 17th</td>
<td>Chapter 1 and 2</td>
<td></td>
</tr>
<tr>
<td>Jan 24th</td>
<td>Chapter 2 and 3</td>
<td></td>
</tr>
<tr>
<td>Jan 31st</td>
<td>Chapter 4 and 5</td>
<td></td>
</tr>
<tr>
<td>Feb 7th</td>
<td>Chapter 5 and 10</td>
<td>Consent Form Wednesday in class</td>
</tr>
<tr>
<td>Feb 14th</td>
<td>Chapter 6</td>
<td>Test 1 Wednesday</td>
</tr>
<tr>
<td>Feb 21st</td>
<td>Chapter 7</td>
<td></td>
</tr>
<tr>
<td>Feb 28th</td>
<td>Chapter 8</td>
<td></td>
</tr>
<tr>
<td>Mar 6th</td>
<td>Chapter 9</td>
<td></td>
</tr>
<tr>
<td>Mar 13th</td>
<td>No Classes</td>
<td>Spring Break</td>
</tr>
<tr>
<td>Mar 20th</td>
<td>Chapter 11</td>
<td>Test 2 Wednesday</td>
</tr>
<tr>
<td>Mar 27th</td>
<td>Chapter 12</td>
<td>Survey 1 available 3/28</td>
</tr>
<tr>
<td>Apr 3rd</td>
<td>Chapter 13</td>
<td>Survey 1 due 4/3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Writing Reflections open 4/6</td>
</tr>
<tr>
<td>Apr 10th</td>
<td>Chapter 14</td>
<td></td>
</tr>
<tr>
<td>Apr 17th</td>
<td>Chapter 14 and 15</td>
<td>Writing Reflections due 4/17</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Test 3 Wednesday</td>
</tr>
<tr>
<td>Apr 24th</td>
<td>Chapter 15 and 16</td>
<td>Survey 2 available 4/25</td>
</tr>
<tr>
<td>May 1st</td>
<td>Last day of Texas State classes is May 2nd</td>
<td>Survey 2 due 5/1</td>
</tr>
<tr>
<td>May 8th</td>
<td>Final Exams</td>
<td>Final Exam: Wednesday at 2 pm</td>
</tr>
</tbody>
</table>
First, make sure you have these 3 things...

**Texas State Email:** You'll get some important emails from your instructor at this address, sign up with only your TX State email address.

**Course ID:**

F15PHYS1310SECTION001HOLTZ

**Access code or credit card:** The required access code comes either with your book or by itself at your bookstore. Alternatively, you can buy instant access with a credit card or PayPal account during registration.

Next, get registered!

1. Go to [www.masteringphysics.com](http://www.masteringphysics.com). Under the large Register Now section on the right side of the page, click the Student button.

2. Read the onscreen instructions and select your location.

3. Next, check off whether or not you have a Course ID. If you have a Course ID code provided by your instructor, type it in and Click Go. If your course does not require an ID, Click on that radio button next to it and Click Next. Check with your professor to be sure.

4. Next, check off whether or not you have an Access Code. If you don’t have an access code and want to purchase access, select your textbook and whether you want to purchase an eText. If purchasing access online, it is important to check with your professor to make sure you select the correct title, author, and edition so you can enroll successfully into the course.
5. Before continuing, make sure you read and accept the License Agreement. After this, either Create a new Pearson username/password, or, if you've already registered for another Pearson product (i.e. MyMathLab), enter that username/password. If you have an Access Code, enter it on the bottom of the page.

6. On the next page, fill out the appropriate information fields then click Next. If you entered an Access Code, you will be brought to a page from which you can access your product. If not, enter your payment information so that you can Purchase Access, after which you'll be granted access.

7. You are now registered! Now, it's time to enroll in your course. Click Log In Now. Enter your course ID. Enter your student ID if prompted. That's it!

**Need help?**

Visit [www.masteringphysics.com](http://www.masteringphysics.com) for:

- Helpful videos
- Frequently Asked Questions
- Set Up Your Computer

Or visit our 24/7 Technical Support site at [http://247pearsoned.custhelp.com](http://247pearsoned.custhelp.com)
Enjoy the Course!