PHYS 2320 Introductory Mechanics (CRN 29182)

CRN: 29182
Term: Spring 2022
Prerequisite: MATH 1411 (may be taken concurrently with PHYS2320)

Lecture
Lecture hours: MW 3:00 pm – 4:20 pm
Location: PSCI 208
Instructor: Prof. Yun-Pil Shim
Office: PSCI 121A
E-mail: yshim@utep.edu
Office hours: MW 1:00pm-2:00pm

Course Description and Objectives

In this course, you will learn basic concepts of mechanics, dynamics of particles and rigid bodies using vectors and calculus, conservation of energy and momentum, and kinetic theory. These concepts form the foundation of the physical sciences and engineering branches.

1) Learn to reason qualitatively and logically about physics phenomena.
2) Learn physical concepts from concrete real-world examples.
3) Learn how to set up and solve problems applying concepts and mathematical tools learned in class.

Communication

The main communication method is the Blackboard announcement and email. **Do NOT use the Course Messages in Blackboard. I am not checking it.**
When you email me, include the following:
- Your name and UTEP ID
- The course name and CRN

Seminars (Workshops)

You need to sign up for one of the seminar courses.

<table>
<thead>
<tr>
<th>CRN</th>
<th>Day</th>
<th>Time</th>
<th>Location</th>
<th>TA</th>
</tr>
</thead>
<tbody>
<tr>
<td>29183</td>
<td>M</td>
<td>12:00pm-12:50pm</td>
<td>UGLC 210</td>
<td>Philip Oyedele (<a href="mailto:paoyedele@miners.utep.edu">paoyedele@miners.utep.edu</a>)</td>
</tr>
<tr>
<td>29184</td>
<td>W</td>
<td>12:00pm-12:50pm</td>
<td>LART 210</td>
<td>Pema Dhendup (<a href="mailto:pdhendup2@miners.utep.edu">pdhendup2@miners.utep.edu</a>)</td>
</tr>
<tr>
<td>29207</td>
<td>F</td>
<td>8:00am-8:50am</td>
<td>UGLC 208</td>
<td>Robert Alveraz (<a href="mailto:rjalvarez@miners.utep.edu">rjalvarez@miners.utep.edu</a>)</td>
</tr>
<tr>
<td>29208</td>
<td>F</td>
<td>9:00am-9:50am</td>
<td>UGLC 208</td>
<td>Robert Alveraz (<a href="mailto:rjalvarez@miners.utep.edu">rjalvarez@miners.utep.edu</a>)</td>
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</tbody>
</table>

Seminars on Friday (29207, 29208) will begin in week 1 (January 21).
Other seminars will begin in week 2 (week of January 24).

Lab for PHYS2320

If you signed up for the associated lab course (PHYS2120), the lab is managed independently. Any questions about the lab should be sent to the lab coordinator, Karla Carmona (kcarmona@utep.edu).
This course is supported by the Miner Learning Center (MLC) with complimentary tutoring services. Our tutor is Carla Irigoyen Amparan (cwirigoyena@miners.utep.edu). Watch for announcements on Blackboard for details.

Grade

Grading Policy:

- Syllabus exam: 5%
- Attendance: 10%
- Mid-term exams: 30% (2 exams, 15% each)
- Final exam: 25%
- Homework: 20%
- Seminars: 10%

The final grade will be determined by your score and the overall performance of the class. If your final score is:
- 90 or above: your grade will be A.
- 80 or above and below 90: your grade will be B or better.
- 70 or above and below 80: your grade will be C or better.
- 60 or above and below 70: your grade will be D or better.

There is no extra credit in this course. Don’t ask for it.

Exams: Syllabus exam + 2 Midterm exams + 1 Final exam

- Syllabus exam (5%):
  The syllabus exam will be on Blackboard. Finish it by Feb. 5th.

- Midterm exams (2x15% = 30%):
  There will be 2 midterm exams, each covering 4 chapters.
  Midterm exam #1 will be on Feb. 21. It covers chapters 1-4.
  Midterm exam #2 will be on April 4. It covers chapters 5-8.
  Midterm exams will be taken during class hours.

- Final exam (25%):
  The final exam is on Monday, May 9, 1:00 pm – 3:45 pm.
  It will be a comprehensive exam (covering chapters 1-12).

More details about midterm and final exams will be announced before each exam.

Attendance

Attendance will be checked at the beginning of a class at random. If you can’t attend the class due to a legitimate reason, inform me before the class and get approval. If you miss a class due to an emergency, you need to provide documents to prove the emergent situation as soon as possible.
**Textbook and Homework**

**Textbook:**
Physics for Scientists & Engineers: A Strategic Approach (By Randall D. Knight, 4th Edition)

![Physics textbook image](image)

**Online homework:** Mastering Physics, Pearson
- Course name: PHYS2320_Shim_Spring2022
- Course ID: shim66887

Student Registration Instruction for Mastering Physics is on the Blackboard.

The class will follow the textbook, and homework problems will come from the problems at the end of the chapters. Renting or buying the textbook is strongly encouraged, and full access to the Mastering Physics website is required.

Homework will typically be available each Thursday and the due date is next Sunday.
(You will have about 10 days to finish each homework.)
Pay attention to the deadline. Late submission will be penalized by 10%/day.

**Technology Requirements**

Lectures are given person-to-person in the classroom unless there is a change in the COVID19 situation and the class is turned into online.

Lecture slides will be available on Blackboard after lectures.

Midterm and final exams will be in-person.
No use of anything that can access the internet is allowed.

Course communication will be via email and Blackboard.
Ensure your UTEP email account is working.
Check the Blackboard for announcements.

When having technical difficulties, update your browser, clear your cache, or try switching to another browser.

Homework is online at the Mastering Physics website.
You will have to get access to Mastering Physics and register for the course.
See the Registration Instruction on the course Blackboard page.

**IMPORTANT:** If you encounter technical difficulties beyond your scope of troubleshooting, please contact the UTEP Help Desk ([https://www.utep.edu/technologysupport/](https://www.utep.edu/technologysupport/)) as they are trained specifically in assisting with the technological needs of students. Please do not contact me for this type of assistance. The Help Desk is much better equipped than I am to assist you!

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**Course Policies**

**COVID-19 Precautions:**
Please stay home if you have been diagnosed with COVID-19 or are experiencing COVID-19 symptoms. If you are feeling unwell, please let me know as soon as possible, so that we can work on appropriate accommodations. If you have tested positive for COVID-19, you are encouraged to report your results to [covidaction@utep.edu](mailto:covidaction@utep.edu), so that the Dean of Students Office can provide you with support and help with communication with your professors. The Student Health Center is equipped to provide COVID 19 testing.

The Center for Disease Control and Prevention recommends that people in areas of substantial or high COVID-19 transmission wear face masks when indoors in groups of people. The best way that Miners can take care of Miners is to get the vaccine. If you still need the vaccine, it is widely available in the El Paso area, and will be available at no charge on campus during the first week of classes. For more information about the current rates, testing, and vaccinations, please visit [epstrong.org](http://epstrong.org)

**Students with Disabilities:**
If you have a disability and need classroom accommodations, please contact The Center for Accommodations and Support Services (CASS) at 747-5148, or by email to [cass@utep.edu](mailto:cass@utep.edu), or visit their office located in UTEP Union East, Room 106. For additional information, please visit the CASS website at [https://www.utep.edu/student-affairs/cass/](https://www.utep.edu/student-affairs/cass/). Accommodations might include but are not limited to note takers, readers, or extended time on exams and assignments. Please take care of this as soon as possible and before the first exam.

**Scholastic Integrity:**
Academic dishonesty is prohibited and is considered a violation of the UTEP Handbook of Operating Procedures. It includes, but is not limited to, cheating, plagiarism, and collusion. Cheating may involve copying from or providing information to another student, possessing unauthorized materials during a test, or falsifying research data on laboratory reports. Plagiarism occurs when someone intentionally or knowingly represents the words or ideas of another as ones’ own. Collusion involves collaborating with another person to commit any academically dishonest act. Any act of academic dishonesty attempted by a UTEP student is unacceptable and will not be tolerated. All suspected violations of academic integrity at The University of Texas at El Paso must be reported to the Office of Student Conduct and Conflict Resolution (OSCCR) for possible disciplinary action. To learn more, please visit HOOP: Student Conduct and Discipline.
Course Overview and Weekly Schedule

Course overview

Ch. 1 Concepts of Motion
Ch. 2 Kinematics in One Dimension
Ch. 3 Vectors and Coordinate Systems
Ch. 4 Kinematics in Two Dimensions
Ch. 5 Force and Motion
Ch. 6 Dynamics I: Motion Along a Line
Ch. 7 Newton’s Third Law
Ch. 8 Dynamics II: Motion in a Plane
Ch. 9 Work and Kinetic Energy
Ch. 10 Interactions and Potential Energy
Ch. 11 Impulse and Momentum
Ch. 12 Rotation of a Rigid Body

Weekly Course Schedule (subject to change)

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<th>Dates</th>
<th>Lecture</th>
<th>Homework</th>
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<tbody>
<tr>
<td>Week1</td>
<td>Jan 17 &amp; Jan 19</td>
<td>MLK day, Intro/Chapter 1</td>
<td>Homework #0</td>
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<tr>
<td>Week2</td>
<td>Jan 24 &amp; Jan 26</td>
<td>Chapter 1, Chapter 2</td>
<td>Homework #1</td>
</tr>
<tr>
<td>Week3</td>
<td>Jan 31 &amp; Feb 2</td>
<td>Chapter 2, Chapter 3</td>
<td>Homework #2</td>
</tr>
<tr>
<td>Week4</td>
<td>Feb 7 &amp; Feb 9</td>
<td>Chapter 3, Chapter 4</td>
<td>Homework #3</td>
</tr>
<tr>
<td>Week5</td>
<td>Feb 14 &amp; Feb 16</td>
<td>Chapter 4</td>
<td>Homework #4</td>
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<tr>
<td>Week6</td>
<td>Feb 21 &amp; Feb 23</td>
<td>Midterm 1, Chapter 5</td>
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<tr>
<td>Week7</td>
<td>Feb 28 &amp; Mar 2</td>
<td>Chapter 5, Chapter 6</td>
<td>Homework #5</td>
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<tr>
<td>Week8</td>
<td>Mar 7 &amp; Mar 9</td>
<td>Chapter 6, Chapter 7</td>
<td>Homework #6</td>
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<tr>
<td>Week9</td>
<td>Mar 14 &amp; Mar 16</td>
<td>Spring Break</td>
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<tr>
<td>Week10</td>
<td>Mar 21 &amp; Mar 23</td>
<td>Chapter 7, Chapter 8</td>
<td>Homework #7</td>
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<tr>
<td>Week11</td>
<td>Mar 28 &amp; Mar 30</td>
<td>Chapter 8</td>
<td>Homework #8</td>
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<tr>
<td>Week12</td>
<td>Apr 4 &amp; Apr 6</td>
<td>Midterm 2, Chapter 9</td>
<td>Homework #9</td>
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<tr>
<td>Week13</td>
<td>Apr 11 &amp; Apr 13</td>
<td>Chapter 9, Chapter 10</td>
<td>Homework #10</td>
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<tr>
<td>Week14</td>
<td>Apr 18 &amp; Apr 20</td>
<td>Chapter 10, Chapter 11</td>
<td>Homework #11</td>
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<tr>
<td>Week15</td>
<td>Apr 25 &amp; Apr 27</td>
<td>Chapter 11, Chapter 12</td>
<td>Homework #12</td>
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<tr>
<td>Week16</td>
<td>May 2 &amp; May 4</td>
<td>Chapter 12</td>
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<tr>
<td>Week17</td>
<td>May 9</td>
<td>Final Exam</td>
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