

PHYSICS 218: Mechanics (Fall 2006), Sections 525-528

Corequisites: MATH 151. You are expected to have a working knowledge of plane geometry, trigonometry, and algebra. As the semester progresses you will also be expected to have a working knowledge of derivatives and integrals, and be proficient in the use of vectors (addition, subtraction, dot and cross products).

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Textbooks: "University Physics", 11th ed. by Young and Freedman, **Lectures in Chemical engineering building 106**
"Laboratory Experiments for Physics 218", 8th ed., by Ramirez, Seidel, and Hiebert (Hayden-McNeil Publishing)

Recitation /Lab: Recitation meets in 118 Heldenfels Hall for the first hour, and is followed by a Laboratory session the remaining two hours
No Lab sessions or Reports will be dropped. **Students retaking the course should contact me immediately in order to get credit for Lab if passed in a previous semester with a grade of 80 or better.** Students retaking the course do not have to repeat the Lab but they are required to attend Recitation and take weekly quizzes. **Note: There will be no recitation or lab meetings during the first week of the semester.** Secs. 525 & 528 labs are in Held 205; 526 & 527 labs in Held 204.

Quizzes /
Homework: Homework assignments and math quizzes will be turned in using webCT (<http://webct.tamu.edu/masteringphysics> (www.masteringphysics.com)). Instructions on using webCT for Physics 218 may be found at <http://faculty.physics.tamu.edu/toback/WebCT/>. Homework assignments are for you to practice problem-solving techniques. Homework will be graded weekly by webCT/mastering physics. About 10 quizzes will be given in Recitation. Each quiz will test your ability to work one of the assigned homework problems. There may also be unannounced pop quizzes during Lecture. Further info on home work assignments will be posted on my web site.

Exams: There will be three midterm exams and one final exam. (a) The midterms will last 50 minutes, while the final exam is comprehensive and lasts for 2 hours. Each exam will generally consist of problems similar in content and difficulty to the homework. The entire solution will be graded and partial credit given if merited. Your work must show the steps toward the solution; the answer alone is not sufficient. The grader will judge your use of physics in arriving at the solution. Exams may also include examples worked in the lecture but not appearing in the text nor assigned as problems. (b) Formula sheets will be provided for each exam and the final. (c) You will need to bring a simple calculator to the exams (programmable calculator is not needed). (d) If you miss an exam due to an **authorized excused absence** as outlined in the *University Regulations*, then you must **contact me no later than the next class meeting** following the missed exam to arrange for a makeup exam. There will be a **single course-wide makeup exam** for those missing an exam. This makeup exam will be written by a committee of Physics 218 lecturers and administered outside normal class time within 7-10 class days following the missed exam. Note: Very few conditions qualify as an authorized excused absence, so avoid missing an exam at all costs. (e) You must bring your student ID with you to all exams for identification purposes.

Course Grade: The total course grade consists of 700 points distributed as follows:

| | |
|--------------------------------|--------------------|
| 3 Exams | 275 (75, 100, 100) |
| Final Exam | 200 |
| Laboratory | 100 |
| Recitation and Lecture Quizzes | 100 |
| Homework and Math Quizzes | 75 |
| Total | 750 |

NOTE: If your final exam grade is higher than your 3-exam average, then the final will count 275/750 points toward your final grade and your midterm exam average will count just 200/750. You must pass both the lecture (3 midterm exams, final exam, homework, recitation lecture quizzes) and laboratory $\geq 70\%$ parts of the course **separately** in order to pass the course.

ADA Policy: The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you believe you have a disability requiring an accommodation, please contact the Department of Student Life, Services for Students with Disabilities, in Room 126 of the Koldus Building or call 845-1637.

Honor Code: The Aggie Honor Code states, "An Aggie does not lie, cheat, or steal or tolerate those who do." Further information regarding the Honor Council Rules and Procedures may be found on the web At <http://www.tamu.edu/aggiehonor>.

Tentative Class Schedule

| Week | Chapters | Topics/Homework Assignment (Q-Questions, P-Problems) |
|--|--------------------------------------|---|
| Aug 28 - Sep 1 | 1 (1-10) | Introduction; vectors / 1:Q: 10,12,13,16,18,19 1:P: 5,10,13,32,35,40,41,47,50,52,56,72,74,89 |
| Sept. 1 last day to drop with no record | | |
| Sep 4 - 8 | 2 (1-6) | Motion along a straight line/ 2:Q: 2,4,8,12,14,16 2:P: 4, 9,11,18,21,36,40,49,50,61,76,80,83,92 |
| Sep 11 -15 | 3 (1-5) | Motion in two or three dimensions/ 3:Q: 3,5,6,9,12,16 3:P: 9,10,18,32,33,38,40,47,52,54,64,81 |
| Sep 18 - 22 | 4 (1-6) | Newton's laws of motion/ 4:Q: 2,5,15,25,28 4:P: 12,14,22,24,31,35,37,44 |
| Sep 25 - 29 | Exam 1 (Chap. 1-3) 5 (1-4) | Sep 25 (Mon) Further application of Newton's laws/ 5:Q: 1,10,20,21 5:P: 3,8,13,15,30,31,44,49,56,62,84,89,90,111,113,114,115 |
| Oct 2 - 6 | 6 (1-4), 7 (1,2) | Work, kinetic energy, and potential energy/ 6:Q: 2,5,11,12 6:P: 3,18,24,27,34,39,40,48,61,62,69,70,76,81,82 7:P: 9,14,16,18 |
| Oct 9 - 13 | 7 (3-5), 8 (1,2) | Force and energy; Momentum 7:P: 29,38,42,46,54,56,62,66,67,69,74 / 7:Q: 2,5,6,10 8:P: 4,8,16,27 |
| Oct 16 - 20 | 8 (3-5) | Momentum and collisions 8:P: 34,36,40,43,46,47,61,70,94 / 8:Q: 2,5,7,13 |
| | Exam 2 (Chap. 4-7) | Oct 21 (Fri) |
| Oct 23 - 27 | 9 (1-5), 10 (1,2) | Rotation of rigid bodies; Torque / 9:Q: 8,10,12,14 9:P: 1,6,10,19,25,30,36,37,47,53,85,86 10:P: 1,2,5,8,13 |
| Oct 30 - Nov 3 | 10 (3-7) | Dynamics of rotational motion / 10:Q: 3,6,7,12 10:P: 19,22,27,29,34,35,39,41,63,70,91 |
| ** Nov 3 (Fri): | | Last day to drop course with no penalty (Q-drop). |
| Nov 6 - 10 | 11 (1-3), 12 (1-5) | Static equilibrium; Gravitation 11:P: 7,10,11,13,14,18,41,42,52,66,73 12:P: 3,5,16,24,29,53,73,75 |
| Nov 13 - 17 | 13 (1-8) | Periodic motion 13:P: 1,2,7,8,12,13,19,27,32,36,41,43,48,49,51,54,63,66,69,88,90 |
| Nov 20 - 22 | Exam 3 (Chap. 8-11) | Nov 21 (Mon) |
| ** Nov. 24-25 (Thu-Fri): | | Thanksgiving holidays |
| Nov 27 - Dec 1 | 15 (1-8) | Mechanical waves 15:P: 1,4,6,7,10,15,20,26,28,31,37,39,43,47,48,49 |
| Dec 4 - 5 Review | | |
| **Dec 4 (Mon): | | Attend Friday classes. |
| ** Dec 5 (Tue): | | Attend Thursday classes, including Recitation; last day of classes. |
| Dec 8 Final Exam | 10:00am- noon | Final Exam (Chap.1-13, 15) |

General information

This course could be challenging for some students. Reading the chapters in advance will immensely help you to stay on top. Here are some tips that would help to succeed in learning the material.

- 1) Attend and participate in **EVERY** class.
- 2) Visit professor during the office hours and **ask questions**.
- 3) Refer often to your course syllabus.
- 4) Use campus resources, your TA, Prof. and help desk if available.
- 5) Use a planner
- 6) Form a study group.

As a courtesy and respect to other students and the class, please do not read news papers and have your cell phones turned off during the lectures. If you already know the material and want to do something else during the lecture, you may do your home work.

Student ID may be checked during the exams. Programmable calculators are not needed for exams. Your work and steps must be shown in answering the exam questions. Answer alone to a question will not earn you credit unless the question is a multiple choice.