

SYLLABUS – PHYSICS 218 - UP: Mechanics

Fall 2016

Course Description: *Newtonian Mechanics* for students in science and engineering. This is the first semester of a two-semester sequence in introductory physics. Topics covered include Newton's Laws, the concepts of energy and work, conservation of energy and momentum, rotational motion, gravity, and simple harmonic motion.

Course Objectives: Conceptual knowledge to gain: Understanding of the physical laws of motion, static and dynamical Newtonian mechanics, and harmonic motion; the scientific approach.
Skills to gain: Learning to think more critically and scientifically, and developing the skills need to attack difficult problems.

Instructor and Webpage Information:

Name: Prof. Ralf Rapp

Office: CYCL-335

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Class times: Lectures: Mon+Wed 4:10-5:25PM, MPHY 203; one weekly Recitation and Lab session.

Office hours: Mon+Tue+Fri 10:00-11:00am in CYCL-335, or by appointment.

FlipItPhysics course access key: **rapp218f16**

Web Pages:

- physics218.physics.tamu.edu: info for all PHYS 218 sections using the 'University Physics' textbook
- cyclotron.tamu.edu/rapp/218/phy218f16.html: homepage for sections 544, 546-548, 569
- ecampus.tamu.edu: eCampus site with grade info, HW access, etc.
- pearsonmylabandmastering.com: Modified Mastering Physics site (register via **eCampus**) for alternative HW access
- www.flipitphysics.com: access to pre-lectures and checkpoints
- www.webassign.net/tamu/login.html: needed for laboratory experiments (labs)

Co-Requisite: MATH 151 or 171. You must 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).

Text and Required Materials:

Primary text	Volume 1, University Physics, Young and Freedman 14th edition. From the TAMU bookstore you can buy the loose-leaf book or the bound book. The version bundled with Modified MasteringPhysics enables access to the online homework. The more economic option is the loose-leaf book. Do NOT get the LAB book.
Homework (Mastering)	All 218 sections use the ModifiedMastering on-line homework system. You do not need a course access code; you should go to eCampus , login with your net id and password, and click the link on the left menu under "Homework (Mastering)", which will automatically be linked with the correct course.
Clicker	Get the iClicker2 from your bookstore. The iClickers will be used for in-class conceptual testing and polling. To encourage class participation, credit for iClickers will be based in part on participation, as well as additional points based

on correct answers. To gain participation credit you must pre-register your device, and answer all of the questions in class. *Cheating by bringing a friend's clicker is a violation of the Aggie Honor Code, and will result in loss of all clicker points, as well as disciplinary action.*

To register the iClicker, follow the instructions given [here](#). Please direct all technical issues to the support team at iclicker.com.

**Pre-Lectures
(FlipItPhysics)**

All 218 sections use the <http://www.flipitphysics.com> on-line pre-lecture system (formerly known as SmartPhysics). Follow the [instructions](#) to setup your login and subscribe to this course using the course access key quoted on the first page of this syllabus. The FlipItPhysics website will allow you to subscribe without paying for the first 30 days. **DO NOT BUY THEIR BOOK.**

You are required to view the pre-lectures (narrated slides including a few online questions) **ahead** of the lectures; the pre-lectures will include quizzes to test if you have gained a basic understanding. The remainder of the pre-lecture will focus more on problem-solving. The FlipItPhysics site also includes "Checkpoints" following most pre-lectures, which are short quizzes to test for understanding.

**Labs
(WebAssign)**

All 218 sections use the [WebAssign](#) on-line laboratory system. Follow the [instructions](#) to set up your login. By following the WebAssign link above (notice the link's ending in tamu/login.html) and login in with your TAMU netid the system will take you to the section that they are registered for and they can join the course. Some of you already gotten WebAssign access for you math class, but you do need to also have an access code for your physics work. After subscription the webAssign website will allow you 14 days of grace before actually paying.

Calculator

You should have a pocket calculator capable of calculating arithmetic, trigonometric and exponential/logarithmic functions for exams.

Laboratory: The Lab is a part of this course, not treated as a separate grade. The Lab Schedule is posted on the web-page. The labs, along with pre- and post-lab assignments, will be obtained through the online WebAssign package. Note that you must attend Recitation each week, even if no lab experiment is scheduled (see the Lab Schedule for details). The policy for absences in Lab and Recitation is the same as for the Exams, and you must consult first with your TA in the case that you have an excused absence.

Homework and Recitation: Homework assignments are posted online from links that are posted on the eCampus course site. You are responsible for completing and understanding these problems in preparation for exams. By the end of the first week you should complete the first homework assignment.

You must work the online problems on your own, and keep up with the deadlines--see the MyLab&Mastering site for posted due dates. Late submissions **are** accepted; however full credit will not be given. The penalty is 2% per hour past the deadline. To encourage doing the homework (which is necessary to succeed in the course!), the maximum penalty -- no matter how late -- is 50%. Details about the grading policy for individual homework problems can be found on the online site -- for example, in some cases you get several attempts to key in the correct answer, with a 3% penalty for unsuccessful attempts.

Exams: There will be 3 midterm exams and one comprehensive (final) exam, all of which are common to all 218 sections. Each of these will be given in the evenings as listed in the course schedule. The midterm exams start at 7:30 PM, and are expected to last 1.5 hours. The comprehensive (final) exam is the Friday (Dec. 02), before finals week and will last 2 hours. Exams generally consist of problems similar in content and difficulty

to the homework, and they include both multiple-choice and free response questions. [Formula sheets](#) will be provided for each exam. You will need to bring your TAMU ID, a pen/pencil and hand-held calculator. Concerns about the grading of an exam must be brought to the attention of your course instructor within 1 week of them being returned to you.

Absences: If you miss an exam due to an [authorized excused absence](#) as outlined in the *University Regulations* (Rule 7.1.6.2a is not acceptable), you should attempt to **contact your course instructor prior to the exam but no later than the end of the week of the missed exam** to arrange for a way to make up the score. Instead of taking a make-up exam the final cumulative exam grade will be based on a set of tested objectives in the other exams.

Note: Few conditions qualify as an authorized excused absence, so you are strongly advised to avoid missing exams except for really serious circumstances.

Identification: You *must* bring your TAMU student ID with you to all exams for identification purposes.

Course Grade:

The final letter grade in the course is based upon the final numerical course score as detailed in the table below:

Course Score	Final Letter Grade
≥ 90 %	A
≥ 80 %	B
≥ 70 %	C
≥ 60 %	D
< 60 %	F

The left column shows the minimum scores necessary to achieve the final letter grade shown in the right column. These minimum scores *might* be lowered (“curved”) at the end of the semester for all 218 sections teaching University Physics.

The numerical score is computed as a weighted average over all different components of the course with the weights as given in the table below. With the exception of the clicker quizzes all components of the course, such as tests/labs/recitation/homework/etc., are common across all sections¹ of 218-UP.

Course Component	All 500 sections	Sections 201–203
Exams (Three Midterms + Comprehensive one)	75%	75%
Laboratory	9%	5%
Recitation	4%	3%
Online homework	4%	3%
Pre-lectures and Checkpoints	4%	3%
In-class clicker quizzes	4%	3%
Extra activities for honor students	Not applicable	8%
Total:	100%	100%

The “exams” portion includes the three midterm exams as well as the comprehensive one. Exams are graded in terms of **learning objectives**. The complete list of learning objectives that you are supposed to master at the end of the semester is posted at physics218.physics.tamu.edu/los.html

¹ The honors sections (201-203) will have a slight modification of the non-exam portions of the course as shown.

Each exam tests several different learning objectives and may test the same learning objective more than once. The grading keeps track of every instance in which a learning objective is tested and whether in that particular instance the objective was judged as passed or failed. Learning objectives will likely be tested multiple times across exams.

At the end of the semester **achieved objectives** are those which pass either of the following 2 criteria:

- were marked as passing **strictly more than 50%** of the tested times in the comprehensive exam.
- were marked as passing **strictly more than 50%** of the tested times in all exams in which they were tested, including the comprehensive one.

The fraction of achieved objectives at the end of the semester out of the number of tested objectives gives the numerical grade in the “exams” portion of the table above. For example, if a student has achieved 60 objectives out of the total of 70 objectives tested, he/she has earned 86% of the exams portion of the course grade.

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 Disability Services, currently located in the Disability Services building at the Student Services at White Creek complex on west campus or call (979)845-1637. For additional information see <http://disability.tamu.edu>. All information and documentation concerning disabilities is kept confidential.

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 under <http://aggiehonor.tamu.edu>.