PHYS 1211 Syllabus
Introductory Physics for Scientists and Engineers I
CRN 30231
University of Georgia, Fall 2017

Instructor Information:
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Course Description

This is the first of a two course sequence on introductory physics, with the first semester focusing on Mechanics, the study of motion. Understanding the motions of objects and their interactions is one of the principal goals of physics. You will learn about fundamental concepts of motion such as velocity, acceleration, force, momentum, and energy. We will also examine natural laws including Newton's laws and conservation principles. Most importantly, we will develop a "toolbox" of techniques for solving problems involving motion.

Physics is a quantitative science. We will address the qualitative and conceptual aspects of Mechanics, however, much of the work in this course involves mathematics and solving mathematical problems. You will be asked to communicate your understanding of the material in many ways – mathematically, graphically, visually. You are expected to have a working knowledge of college algebra, trigonometry, basic geometry, and differential calculus (a co-requisite to this course). Please let me know if you are concerned about your preparation for this course.

This course also requires a laboratory component, PHYS 1211L, that will account for a portion of your grade (you sign up for the laboratory section separately). No course grade will be assigned until the laboratory requirement is completed. See the lab syllabus for more information: http://www.physast.uga.edu/courses.

Basic Class Information
- MWF 12:20-1:10 PM (Period 5) : Room 202
- Lab: 314 Physics Building or 116 Science Learning Center (Various times)
- Final Exam: Friday, Dec. 8 12:00 - 3:00 PM
- Office Hours: Thursdays 3:00-5:00 PM (otherwise TBD)

Required Course Materials
- *Physics for Scientists and Engineers: A Strategic Approach*, vol. 1, 3rd ed. by Randall Knight (Pearson Addison-Wesley). You may use older editions if you wish, but you are responsible for knowing any content changes.
- Laboratory Manual: *Experiments for an Introductory Physics Course,* 2016 ed., Hayden-McNeil Publishing. Visit https://www.physast.uga.edu/courses for the lab syllabus.
- A *simple scientific calculator* for exams, which must be *non-programmable, non-graphing, and non-symbolic*. Calculator graphing, algebra-solving, or programming functions will NOT be permitted on the exams. Cellphones will not be allowed during exams.

- Homework assignments will be performed online and are necessary to develop understanding throughout the course. You will access them with an account on LON-CAPA at http://spock.physast.uga.edu/ and http://tuvok.physast.uga.edu/.
- Please check your *UGA email* daily. The UGA email system will be used (infrequently) for announcements.

Optional Course Resources
- The eLearning Commons (http://www.elc.uga.edu/) will serve as a repository for homework solutions, grades, practice problems, and tutorials.
- *Tutoring:* Tutors are available either through the Academic Resource Center at Milledge Hall and Miller Learning Center or through the Department of Physics and Astronomy (http://www.physast.uga.edu/tutors/).
- If you cannot come to my regular office hours, or need additional help, please set up an appointment (by email, by phone, or in person) to see me outside of class. For email correspondence, include your class and time in the subject line.
- *The Student Workbook*, R. D. Knight, Pearson. Additional problems and solutions in this student study guide.

Grading Policy

Your overall grade will be weighted as follows:
25%	Cumulative final exam grade
45%	Three in-class exams
15%	Laboratory grade
15%	Homework grade

Letter grades will be assigned following:
A	93.0 – 100.0
A-	90.0 – 92.99
B+	86.0 – 89.99
B	83.0 – 85.99
B-	80.0 – 82.99
C+	76.0 – 79.99
C	73.0 – 75.99
C-	70.0 – 72.99
D	60.0 – 69.99
F	less than 60.0

Regrade requests:
Any requests for a regrade of an assignment or an exam must be made no later than one week after the item is returned. For a regrade, I will look at the entire assignment/exam, not just one problem, and it may raise *or lower* your score. Arithmetic errors in adding up points will be handled separately. Regrade requests should be accompanied by all your work.

Withdrawal and Incomplete:
The Undergraduate Bulletin and the Registrar's Office website describe the University policies regarding withdrawals and incomplete (http://reg.uga.edu/policies/withdrawals). If you don't complete

the initial required administrative tasks of the course (e.g. the questionnaire), or are demonstrably not attending class and completing work, you may be withdrawn from the class for "excessive absence".

A grade of Incomplete is not appropriate for a student who has missed a large portion of the course assessments, for whatever reason.

The *Withdrawal Deadline* is October 19, 2017.

Exam Policy

There will be three in-class exams and a cumulative final exam. All exams are closed-book, closed-notes exams. The format of the exams will be discussed in class but will include qualitative as well as quantitative problems. There will be no make-up midterm exams; if you do not take an exam, you get a zero. However, if you miss a midterm exam for a *serious, documentable reason*, the grade of your final exam may be used to replace your lowest in-class exam score (this would make your final exam worth 40% of your grade). You must contact me as soon as you possible and submit documentation of your absence *within a week*. Do not simply presume that your situation or documentation merits an excused absence; that determination is not your prerogative. Make-up final exams will be given only for students with legitimate, documentable reasons and MUST be arrange PRIOR to the final exam.

You must bring a non-programmable calculator to each exam and be comfortable with its functions. If you bring a programmable calculator, you will be asked to exchange it for another that I will provide. A formula sheet will be provided for each exam. This sheet will be updated and posted to the ELC for viewing before the exam day. The class should be familiar with the formulas before taking each exam.

Unless told otherwise, you must show your work on each problem in order to receive full credit. Therefore, it is in your best interest to show all of your work and thought processes in the exam answer area provided. An incorrect answer without any accompanying work will be given zero points. A correct answer without any work will not receive full credit.

Solutions:
Solutions to the exam will be posted on the ELC after every student has taken the exam.

Final Exam Scheduled Date: Friday, December 8, 12:00 - 3:00 PM
Location: TBA

Homework Policy

Homework is an essential part of the learning and understanding physics. Working through problems enables you to practice problem solving techniques, apply the methods you learn in class, and recognize areas that you may struggle with the material. Homework assignments will be assigned weekly to keep up with the pace of the class and ensure you master the concepts before moving to the next.

Logistics:
Weekly problems sets will generally be due at midnight (11:59 pm) on (FILL IN HERE) online through the LON-CAPA system. Occasionally, the homework will require a written response to be handed directly to me or placed in my office mailbox (**before 5 PM**). I *will not accept* written

homework responses that are slid under my door. Responses will be graded for correctness, although for some problems, incorrect responses may earn partial credit. Your best preparation for the exams will be to complete the homework assignments. You can access the homework sets through spock.physast.uga.edu or tuvok.physast.uga.edu and login with your UGA ID.

Dropping the lowest two:
*In the case that you **complete the online course evaluation** at the end of the semester,* I will drop your two lowest homework grades. If you do not fill out the course evaluation, then all of your homework scores will be included in your average. The intent of this policy is to encourage you to fill out the evaluation, but also to compensate for unavoidable circumstances (e.g. illness, emergency, etc.). *Late problem sets will not be accepted or excused.*

Teamwork vs. Plagiarism
Working together with your fellow classmates is *strongly* encouraged. However, your goal should be to attempt every problem on your own and then turn to your classmates for a team effort, and not plagiarism. The answers you submit should be your own! Discussing physics is a great way to learn, but simply asking someone how they solved a certain problem is not effective, will not help you prepare for the individual exams, and is in fact a form of plagiarism. Copying from someone else's work, or other homework solutions, is a form of plagiarism and a violation of academic honesty policies.

Attendance and Reading Quiz Policy:

The reading assignments are your responsibility to read *before* you attend class. Your time spent in class will be much more meaningful and beneficial if you have viewed the material beforehand. The schedule contains the reading assignment for each specific class period. We will often have a short, multiple-choice quiz at the beginning of class using the "clickers".

In addition, we will have several activities during class that will require the use of the "clickers". As a reward for your pre-class preparation and attentiveness in class, I will be giving a **bonus of 3 points added to your FINAL CLASS GRADE if you answer 50% of all in class clicker questions correctly.** Any less than 50% correct will be scaled according using the rule that 50% => 3 points (so 43% correct would give you 2.58 points). It is in your best interest to attend class regularly and participate. Please note that this is enough to raise your grade from an A- to an A, a B- to a B, etc.

I don't expect you to understand everything in the text. However, a good study tip is to outline the reading sections in anticipation for the material we will cover during class. You can also record any questions or clarifications you may need to bring up during class. If you have read this far, enter "*stellar*" in question number 8 (Additional Comments) of the introductory physics survey for one bonus point applied to your first homework assignment.

Labs

Labs begin the second week of classes, August 21-25. Attendance is mandatory. Please visit https://www.physast.uga.edu/courses/ to read thoroughly the lab syllabus for the section in which you enrolled.

Technology Policy

During class, cellphones, iPads, iPods, and laptops need to be turned off or silenced. Devices that use a stylus are permitted for *note-taking purposes*. Standard laptops will not be useful for taking notes during class, due to the large number of diagrams, equations, and graphs required. Texting, checking email, Facebook, etc. can be distracting to you and those behind you. Please be respectful to your fellow students.

Academic Honesty

The University of Georgia has a comprehensive policy on academic honesty, described in a document entitled A Culture of Honesty. This document is available through the Office of the Vice President for Instruction or online at https://ovpi.uga.edu/academic-honesty. This policy covers all academic work.

As a UGA student, you are responsible for knowing and understanding this policy. If you have any question about the appropriateness of your actions or your work, you are obligated to ask me for clarification.

I take the issue of academic honesty very seriously, and it is my responsibility to uphold the University's policy. This means, among other things, that I won't hesitate to report my suspicions of dishonesty to the Office of the Vice President for Instruction. Typical consequences of cheating on homework or an exam range from receiving a zero for that grade, to failing the course.

Student Responsibilities

- You are responsible for all material: homework problems, assignments given in class, and assigned readings.
- You are responsible for all announcements made in class.
- Read the assigned portions of the textbook before class.
- Do all homework assignments.
- Attend ALL laboratory sessions in your assigned laboratory section.
- Know the University's policies concerning withdrawals and incompletes.
- Ask me if you do not understand **anything.** There is no dumb question.
- Physics is fun and everywhere!

The course syllabus is a general plan for the course; deviations announced to the class by the instructor may be necessary.

Tentative Course Schedule
Any modifications to this schedule will be announced during class.

Class	Date	Chapter	Reading	Topic
1	M 8/14	1	Chapter 1 (full)	Course Intro, Significant Figures
2	W 8/16	1,2	2.1-2.3	Motion
3	F 8/18	2	2.3-2.7	1D Kinematics
4	M 8/21	NO CLASS	Chance to SAFELY VIEW SOLAR ECLIPSE	
5	W 8/23	2,3	Chapter 3 (full)	1D Kinematics, Vectors
6	F 8/25	4	4.1	1D Kinematics, 2D Kinematics
7	M 8/28	4	4.1-4.4	Relative Motion, 2D Kinematics
8	W 8/30	4		2D Kinematics, Projectile Motion
9	F 9/1	4,5	5.1-5.4	Forces
10	M 9/4	NO CLASS	LABOR DAY	
11	W 9/6	5	5.5-5.7	Identifying Forces, *Review*
12	**F 9/8**			**EXAM CH. 1-4.4**
13	M 9/11	5,6	6.1-6.2	Newton's Laws and Forces
14	W 9/13	6	6.3-6.5	Dynamics, Friction, Gravity
15	F 9/15	6	6.6	Dynamics, Springs
16	M 9/18	7	7.1-7.2	Newton's 3rd Law
17	W 9/20	7	7.3-7.5	Interacting Objects
18	F 9/22	7		Interacting Objects
19	M 9/25	8	8.1-8.3	Circular Motion
20	W 9/27	8	8.4-8.5	Summary Newton's Laws
21	F 9/29	9	9.1	Momentum and Impulse
22	M 10/2	9	9.2-9.3	Conservation of Momentum
23	W 10/4	9	9.4-9.6	Collisions
24	F 10/6	9		*Midterm*
25	M 10/9	10	10.1-10.2	Kinetic Energy
26	W 10/11	10	10.3-10.5	Conservation of Energy, *Review*
27	**F 10/13**			**EXAM CH. 5-8**
28	M 10/16	10,11	10.6-10.7	Conservation of Energy, Collisions
29	W 10/18	11	11.1-11.2	Work and Kinetic Energy
30	F 10/20	11	11.3-11.7	Work and Potential Energy
31	M 10/23	11,12	11.8-11.9, 12.1	Conservation of Energy, Rotation
32	W 10/25	12	12.2-12.3	Rigid Body Rotation
33	F 10/27	NO CLASS	FALL BREAK	
34	M 10/30	12	12.4-12.8	Rotational Dynamics
35	W 11/1	12,13	12.9-12.11, 13.1	Newton's Theory of Gravity
36	F 11/3	13	13.2-13.4	Newton's Theory of Gravity
37	M 11/6	13	13.5-13.6	Gravitational Potential Energy
38	W 11/8	14	14.1-14.2	Simple Harmonic Motion
39	F 11/10	14	14.3	Simple Harmonic Motion, Energy

40	M 11/13	14	14.4-14.8	Pendulum, Damped Oscillations
41	W 11/15	20	20.1-20.3	Waves, *Review*
42	**F 11/17**			**EXAM CH. 9-13**
	M-F	**11/20-11/24**		**THANKSGIVING BREAK**
43	M 11/27	20	20.4-20.7	Sound and Light
44	W 11/29	21	21.1-21.3	Standing Waves
45	F 12/1	21	21.4-21.7	Interference
46	M 12/4	TBA	TBA	
47	Tues. 12/5			*Review all material.*
	FRI. DEC 8	**12:00-3:00 PM**		**CUMULATIVE FINAL EXAM**