

Note: This syllabus is meant to serve as an outline and guide for our course. Please note that I may modify it with reasonable notice to you. I may also modify the Course Schedule to accommodate the needs of our class. Any changes will be announced in class and posted appropriately.

Course Information

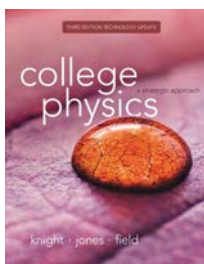
PHYS 2010	General Physics I	Spring Semester	2018
Lecture Section 0001	MW 3:00-4:20 p.m.	James Fletcher Building JFB 103	Adam J. Beehler (he/him)
class number 9626	credits/units 4	Department of Physics & Astronomy (JFB 201)	Important Academic Dates

Instructor Information

Adam J. Beehler (he/him)	beehler@physics.utah.edu	JFB B8 (please ring doorbell)	work 801-581-6602
Office hours: by appointment (<i>Please make appointments! I am very available to support you.</i>)			

Assistant Instructors			Neda Lotfizdah	Course Marshall
Discussion Section 002	MW 4:35-5:25	CSC 205	Sam Cloud	Teaching Assistant
			Maria Stokes	Learning Assistant
Discussion Section 003	MW 4:35-5:25	WEB 1250	Taylor Buckway	Teaching Assistant
			Franco Jin	Learning Assistant
Discussion Section 004	TR 3:05-3:55	CSC 208	Jack Hendershott	Teaching Assistant
			Bashar Al-Habash	Learning Assistant

Required Text (An e-text comes with access to MasteringPhysics.)



[College Physics: A Strategic Approach; 3rd Edition](#)

by Knight, Jones, Field
published by Pearson

[Here is a link to an optional hardcopy on Amazon.com](#), or you can obtain a loose leaf version from the bookstore.

I like this text a lot, but I chose it because I think you will like it a lot, too! I will use it constantly and I expect you too as well. It is your friend.

Prerequisites

I will assume that you have not had a previous physics course, but that you do have a mathematics background at the level of basic algebra and trigonometry (MATH 1050 and 1060). You will be expected to use both to solve physical problems.

Course Description

This course's requirement designation is Physical/Life Science Exploration. From the [General Catalog](#): An algebra based physics course on the study of motion and heat. The course includes one-dimensional and two-dimensional kinematics, Newton's three laws of motion, circular motion, work and energy, momentum, rotational kinematics and dynamics, periodic motion, the three laws of Thermodynamics, temperature, and heat transfer. ~~Three~~ two lectures and two recitations weekly. Intended for students seeking to enter medicine, dentistry, pharmacy, humanities, and behavioral and social sciences. Those wishing to take this course as a lecture-laboratory course should register concurrently for PHYS 2015.

My Course Philosophy

How does it work? This question is the essence of science, whether it is applied to an atom, to a solar system, to a DVD player, or to a cell phone. Chances are, when you were a small child, you asked this question of your parents about basically everything you saw, heard, or otherwise experienced in the new and exciting world that was unfolding before you. This class is ultimately about learning how to find *that* answer for yourself by developing an understanding of the basic physical principles that underlie the world around us.

Physics is a way of thinking about the physical aspects of nature. Physics is not about *facts*. It is far more focused on discovering *relationships* between facts and the *patterns* that exist in nature than on learning facts for their own sake. Our emphasis will be on thinking and reasoning. We are going to look for patterns and relationships in nature, develop the logic that relates different ideas, and search for the reasons why things happen as they do. In the process, we will...

- develop quantitative reasoning skills and solid conceptual understanding
- develop problem-solving skills and confidence in a systematic manner
- integrate real-world examples relevant to your majors and build upon your everyday experiences

I would like you to learn how to critically think and apply general physical laws to specific phenomena. This typically requires thinking in a different way. You will need to spend time outside of class contemplating this stuff because simply regurgitating information back on assignments and exams will not work. You will be expected to reason and apply this knowledge. Demonstrations of many of the phenomena will be performed in class. Physical and conceptual understanding will be emphasized rather than memorization.

Class Time (Lecture)

The lecture period will be occupied with demonstrations, class discussion, and problem solving. Come to class! You will hear and see things in class that you will not find in the text. Much of your conceptual understanding may be acquired during the lecture periods, and I reserve the right to test you on material that has only been encountered during class! I also strongly encourage you to come to class prepared by reading the relevant material beforehand. If you find that you are not understanding this stuff as well as you would like, I promise you will improve by reading it before I discuss it. I reserve the right to quiz you to see how prepared the class is.

Class Participation

Everything works better when there is good communication between individuals, so I will do my part at making folks feel comfortable during class time. This class is for you – not me. If you are not proactive about it, then I cannot help you. Help me help you. Commit to answers when I ask questions. Usually I am just probing and do not expect folks to actually know the correct answers yet. It is all right to be wrong, but it is not all right to never even try or guess. Studies show that those who honestly try to make predictions learn and remember material better.

Discussion Sections

The discussion sections will be administered by Teaching Assistants (TAs) and Learning Assistants (LAs). This is where you will be given the opportunity to work through problems while having access to support (the TA, the LA, and your classmates). I believe that many epiphanies will occur for you during this process. I strongly encourage you to utilize this resource to its fullest. Discussion group assignments will be given and graded. You are required to attend the discussion section in which you are enrolled.

MasteringPhysics (MP)

[MasteringPhysics](#) is an online homework, tutorial, and assessment program designed to improve results by engaging students with powerful content. MasteringPhysics brings learning full circle by continuously adapting to each student and making learning more personal than ever - before, during, and after class. We still have a Canvas course page setup, and it should be used to access MasteringPhysics. Within MasteringPhysics, we will have assignments, announcements, etc. I even have the option to email the whole class as well. The sender address is *mastering@pearsoncmg.com*. I suggest that you add this address to your list of approved senders so your mail is not blocked.

MP - PreLecture

PreLecture assignments are to encourage you to study lecture material *before* class. These will be due *before* we cover the same material in lecture. Class participants (and myself) agree that class time is more valuable and effective when students have first looked at the material beforehand. No, I do not expect you to be experts; otherwise, you would not need me and lecture. But these questions will hopefully force you to think about this stuff before hearing it from me for the very first time. I would like class time to be spent clearing up confusions, answering questions, clarifying concepts, and completing your understanding. At the end of the semester, I will drop your lowest scoring prelecture assignment.

MP - Homework

The essence of understanding is in the application of learned principles to new situations. Your success as a student in this course, and mine as an instructor will be measured by your obtaining the ability and confidence to do so. This can only be accomplished with ample practice. The assignments will include qualitative questions as well as quantitative problems involving the application of physics concepts. A lot of your problems will require you to think, not just do math. I want to teach you how to think and appreciate the world around you better. At the end of the semester, I will drop your lowest scoring homework.

MP - Adaptive Follow-Up

Adaptive follow-up activities provide a learning experience that continuously adapts to study needs. The activities are selected *specifically for each student* and are presented immediately following the regular homework assignment. The activities are recommended on an ongoing basis for you based on your response to items in the current and previous assignments. The more activities you complete, the more the adaptive learning engine learns about you, and the more valuable the follow-up recommendations become. These activities are provided for your practice and learning only. Points may be awarded as extra credit.

MP - Dynamic Study Modules

Dynamic study modules work by continuously assessing your performance and activity, then using data and analytics to provide personalized content in real-time to reinforce concepts that target your particular strengths and weaknesses. Using a highly-personalized, algorithmically-driven process, dynamic study modules continuously assess your performance and provide additional practice in the areas where you struggle the most. Dynamic Study Modules are always available and allow you to earn points for mastering the questions by the assigned due dates.

MP - Learning Catalytics (“Clickers”)

Learning catalytics is an interactive, student response tool that uses students’ mobile devices (such as smartphones, tablets, and/or laptops) to engage you in more sophisticated tasks and thinking. I can pose questions that help you develop critical thinking skills, while monitoring responses to find out where you are struggling, allowing me to adjust my instructional strategy and allowing you to focus on your shortcomings. Learning catalytics can be accessed through MasteringPhysics. You will need to use your own mobile device that can connect to the internet. If you do not participate, then you will miss a vital stage of learning. I reward 80% credit simply for participating (to encourage participation) and 20% for correctness (to encourage preparation and seriousness).

MP - Electronic or Equipment Failure

It is your responsibility to maintain your computer and related equipment in order to participate in the online portion of the course. Equipment failures will not be an acceptable excuse for late or absent assignments. I strongly suggest you start your assignments early so that in the unfortunate event that you do experience electronic or equipment failure, it will not keep you from missing an assignment deadline.

Quizzes

Every appropriate Wednesday/Thursday there will be a quiz given in your Discussion Section. These quizzes will serve as a type of “inventory check” to ensure that the most fundamental concepts are understood. The first part of the quiz will be taken individually; whereas, the second part of the quiz will be taken in groups.

Midterm Exams (4 of them)

- All midterm exams are from 3:00-4:20 p.m. in JFB 103.
Midterm Exam 1 (Ch. 1-5) = Wed., Feb. 7
Midterm Exam 2 (Ch. 6-8) = Mon., Mar. 5
Midterm Exam 3 (Ch. 9-11) = Mon., Apr. 2
Midterm Exam 4 (Ch. 12-14) = Mon., Apr. 23
- Midterm exam questions will be similar to all other questions given in this course (MasteringPhysics, textbook, discussion sections, lectures, etc.).
- At the end of the semester, the lowest midterm exam score will be dropped. You may not make-up a missed exam.

What to Bring

- You must bring a picture ID to all exams.
- You may use a reference sheet during the midterm exam. It may be up to the size of an 8.5”x11” sheet of paper (one side or both).
- You may use a calculator on a midterm exam; however, calculators with connective capability will not be allowed.
- Cell phones must be silenced and stored at all times.

Corrections

You may choose to earn extra credit on your midterm exams by correcting certain missed problems, yet it will be to your advantage to earn as many points as you can the first time taking each exam. Your midterm exam corrections will be due one week after you receive your graded exam. You will turn in a separate corrections form (found in MasteringPhysics) for each problem you are correcting for extra points.

Appeals

IF you feel an error was made in grading part of your exam, you may request a regrading of problems. This means that your grade on the problem could be raised or lowered; thus, it is highly recommended that you only use this option if there is a clear and egregious error in the grading.

- [Exams must be done in blue or black ink in order to be eligible for a regrade. Exams done in pencil will not be considered for regrading.](#)
- You must completely fill out a regrade form (found in MasteringPhysics) and attach it to the entire problem to be regraded. The entire problem will be regraded. Use a separate regrade form for each problem. Do not submit problems that you are not asking to be regraded.
- Be specific as to why you would like the problem regraded. The more specific and relevant to the physics of the problem your statement is, the more likely you are to be awarded more points; however, it does not guarantee that you will be awarded more points.
- Submit the completed regrade form to Adam Beehler. Any request for regrading on an exam must be made within one week after you receive your graded exam. It is advised that you submit your form as soon as possible to ensure that your appeal will be considered.

Final Exam

The final exam will cover material from the entire semester. It will follow the same format as midterm exams, except that you will not be able to correct it or request a regrade. It will be held on **Friday, April 27, 2018 from 3:30-5:30 p.m.** The room location will be announced (and updated right here, for your reference). There will be no make-up exam. Here is the university's [official final exam schedule](#) (please scroll to the bottom to the departmental exam exceptions).

Approximate Grading Scheme

In Class - "Clicker" Participation	9%	50%	Effort & Practice	%		%	Grade
PreLecture (MasteringPhysics)	9%			90	to	100	A
Homework (MasteringPhysics)	14%			80	to	89	B
Adaptive Follow-Up (MasteringPhysics)	extra			70	to	79	C
Dynamic Study Modules (MasteringPhysics)	9%			60	to	69	D
Discussion Group Assignments	9%			0	to	59	F
<hr/>							
Quizzes	9%	50%	Assessment				
Midterm Exams	31%						
Final Exam	10%						

Study Resources

MasteringPhysics

- **Study Area** - Access the Study Area to watch videos and animations, take practice quizzes, and more. Your work in the Study Area does not report to your instructor's grade book.
- **e-Text** - I expect you to be reading and studying the textbook. It presents the same material in another way that may resonate better with you. You are only with me for a brief time, yet you have significantly more time with the textbook.

Canvas Chat Room

Canvas has a "Chat" room where you can start and hold class discussions. This forum area is where students can post questions or comments. Other students, teaching assistants, learning assistants, or the instructor may respond. If this forum feature is used often, then it can be a great resource for students.

Each Other

Find some people to work with at the beginning of the semester and exchange contact information. Classmates are often excellent sources for help, clarification of notes, updating, items missed, a shoulder to cry on, etc. Group study has been shown in a large number of studies to be an effective method for students to be successful learners in a demanding subject.

Concept Mapping

A concept map is a diagram that helps show connections and relationships between different concepts. It can be a way to organize thoughts, build foundations, and review material. The University of Utah provides a [Concept Mapping Library Guide](#) to get you started. Software and tutorials can be downloaded at [CMapTools](#). I strongly encourage you to try them and give them a chance.

Physics 2010 Help Lab

The **Physics 2010 Help Lab** is located in **JFB 211** and maintained by course instructors. Hours will be posted in the lab and as an announcement in MasteringPhysics. I will even place a printable copy of the help lab schedule in MasteringPhysics' "Document Sharing." Think of the HELP Lab as a tutoring center just for Physics 2010 students. This is not only a wonderful study area for which it is possible to get instructors to answer questions, but also a place where students can interact with each other and help each other. I STRONGLY encourage you to take advantage of it!

Tutoring Services

- **ASUU (Associated Students of the University of Utah) Tutoring Center:** <http://tutoringcenter.utah.edu/>
- **Non-endorsed physics tutors:** <http://www.physics.utah.edu/index.php/undergraduate-program/getting-help> (See the main office (JFB 201) for a list of possible tutors.)
- **eTutoring:** <https://www.etutoring.org/login.cfm?institutionid=416>

University Computer Labs and Services

Here is a list of [computer labs and services](#) open to University of Utah students with valid ID numbers and computer accounts.

Instructor and Student Responsibilities

All students are expected to maintain professional behavior in the classroom setting, according to the [Student Code](#), spelled out in the [Student Handbook](#). Students have specific rights in the classroom as detailed in Article III of the Code. The Code also specifies proscribed conduct (Article XI) that involves cheating on tests, plagiarism, and/or collusion, as well as fraud, theft, etc. Students should read the Code carefully and know they are responsible for the content. According to Faculty Rules and Regulations, it is the faculty responsibility to enforce responsible classroom behaviors, beginning with verbal warnings and progressing to dismissal from class and a failing grade. Students have the right to appeal such action to the Student Behavior Committee. Faculty must strive in the classroom to maintain a climate conducive to thinking and learning. Students have a right to support and assistance from the University in maintaining a climate conducive to thinking and learning.

Cheating

Cheating will not be tolerated. I strongly encourage you to study together and ask each other questions about homework and anything else you are having problems with, but do not copy directly from other people's homework, tests, websites, etc. If you need clarification on what exactly cheating is, then please come and see me. ***If you are caught cheating...***

1. for the first offense, you will receive a zero on the assignment/test
2. for the second offense, you will be dropped a letter grade at the end of the semester
3. for the third offense, you will fail the course and receive university disciplinary action

Students Needing Special Accommodations

Americans with Disabilities Act Statement: The University of Utah seeks to provide equal access to its programs, services and activities for people with disabilities. If you will need accommodations in the class, reasonable prior notice needs to be given to the [Center for Disability Services](#) (CDS), 162 Union Building, 581-5020 (V/TDD). CDS will work with you and the instructor to make arrangements for accommodations. All written information in this course can be made available in an alternative format with prior notification to the Center for Disability Services.

Wellness Statement

Personal concerns such as stress, anxiety, relationship difficulties, depression, cross-cultural differences, etc., can interfere with a student's ability to succeed and thrive at the University of Utah. For helpful resources, contact the [Center for Student Wellness](#); 801-581-7776.

Addressing Sexual Misconduct

Title IX makes it clear that violence and harassment based on sex and gender (which includes sexual orientation and gender identity/expression) is a civil rights offense subject to the same kinds of accountability and the same kinds of support applied to offenses against other protected categories such as race, national origin, color, religion, age, status as a person with a disability, veteran's status or genetic information. If you or someone you know has been harassed or assaulted, you are encouraged to report it to the Title IX Coordinator in the [Office of Equal Opportunity and Affirmative Action](#), 135 Park Building, 801-581-8365, or the Office of the Dean of Students, 270 Union Building, 801-581-7066. For support and confidential consultation, contact the Center for Student Wellness, 426 SSB, 801-581-7776. To report to the police, contact the Department of Public Safety, 801-585-2677 (COPS).

Student Names and Personal Pronouns Statement

Class rosters are provided to the instructor with the student's legal name as well as "Preferred first name" (if previously entered by you in the Student Profile section of your CIS account). While CIS refers to this as merely a preference, I will honor you by referring to you with the name and pronoun that feels best for you in class, on papers, exams, group projects, etc. Please advise me of any name or pronoun changes (and update CIS) so I can help create a learning environment in which you, your name, and your pronoun will be respected. If you need assistance getting your preferred name on your uID card, please visit the [LGBT Resource Center](#) Room 409 in the Olpin Union Building, or email bpeacock@sa.utah.edu to schedule a time to drop by. The LGBT Resource Center hours are M-F 8am-5pm, and 8am-6pm on Tuesdays.

Veterans Center

If you are a student veteran, the University of Utah has a [Veterans Support Center](#) located in Room 161 in the Olpin Union Building. Hours: M-F 8-5pm. Please visit their website for more information about what support they offer, a list of ongoing events and links to outside resources. Please also let me know if you need any additional support in this class for any reason.

Learners of English as an Additional/Second Language

If you are an English language learner, please be aware of several resources on campus that will support you with your language and writing development. These resources include: the [Writing Center](#); the [Writing Program](#); and the [English Language Institute](#). Please let me know if there is any additional support you would like to discuss for this class.