

# SYLLABUS

## Phys 2210

### Physics for Scientists and Engineers I Fall 2010

#### TECHNICAL DETAILS

**Instructor:** Ludger Scherliess

**Office:** SER 316 (due to COVID-19 please use email)

**Phone:** 797-7189 (due to COVID-19 please use email)

**Email:** ludger.scherliess@usu.edu

**TAs:** Jared Arnell, jared.arnell@gmail.com

Jake Ciafre, jakeciafre@outlook.com

Tom Keaton, tomkeaton1@gmail.com

Jawon Jo, jawon22c@gmail.com

Charlotte Johnson, charlotte.johnson.k@gmail.com

Tyler Markham, Tyler.markham@aggiemail.usu.edu

**Undergraduate Teaching Fellow:** Lydia Neeley, lydia8neeley@gmail.com

**Course Website:** The official course website is on Canvas, <https://canvas.usu.edu/>.

**Office Hours:** 3:00–4:00 pm W via Zoom with Dr. Scherliess  
otherwise an appointment can be made with the TA's or Dr. Scherliess (see Rules of the Road). TAs also have Zoom office hours that are posted on the respective recitation Canvas sites.

**Prerequisites:** Math 1210

**Text: Auto Access eBook: Modified Mastering Physics for Essential University Physics, 3e by Wolfson**

This course requires all-inclusive digital materials that are provided to you at a lower price than traditional printed materials. These materials are paid for through an “Auto Access Digital Materials” charge placed on your student account when you registered for the course. **To access the materials, visit the Canvas course site.** For more details, including dates, deadlines, and opt-out info, visit your student Auto Access Portal: <https://portal.verba.io/usu/login>

**Credits:** 4 semester credit hours

## Components

There are two scheduled components to the course: lecture and recitation. You must be enrolled in both components of the course.

**I. Lecture:** MWF, Broadcasted via Zoom, 1:30 – 2:20 pm

The main purpose of the lectures is to give you a conceptual understanding of the material.

**To prepare for lectures, you must read the text ahead of time.** This will provide an

introduction to new vocabulary and important ideas, which we will discuss in an interactive

fashion during lecture. Lecture notes will be available under the Modules Tab for the course website found at <https://canvas.usu.edu>.

## II. Recitation: all recitations are on Thursdays.

Recitations will be provided in hybrid mode with one half of the class attending in person (face-to-face) and the other half attending via Zoom. Two TAs will team teach the recitations. One TA will lead the recitation and the 2<sup>nd</sup> TA will answer the questions in the Zoom Chat or direct the question to the leading TA.

A weekly “signup sheet” to attend the recitation in person will be available on the respective Recitation Canvas site each Tuesday before the weekly recitations and spots will be distributed on a first-come-first-served basis.

During recitation you will be able to ask questions about work on homework problems, exam like questions, and review prior to an exam. For those attending via Zoom questions can be directly asked or submitted via the Chat feature in Zoom.

### The following rules will apply for recitations:

1. You will only be able to attend the Recitation Section for which you are enrolled. For example, if you are enrolled in the 9:00 AM Recitation Section you cannot attend recitation sessions at 7:30 AM, 12:00 PM, etc.
2. To attend a specific recitation session in person you are required to register each week. To join the *recitation group* associated with the recitation session of the specific week.
3. The following University COVID-19 requirements apply:
  1. Only ½ of the class is able to attend a specific recitation session in person
  2. The other ½ of the class will watch the recitation session remotely via Zoom
  3. An additional Teaching Assistant will monitor Zoom Chat for questions
  4. The recitation session will be recorded and posted to Canvas for later viewing
5. If you attend a recitation session in person you are expected to:
  - a. Wear an appropriate face covering
  - b. Observe appropriate social distancing
  - c. Abide by all University COVID-19 restrictions
  - d. Abide by any COVID-19 related instructions given by the Teaching Assistant

### Recitation Schedule:

501	R 7:30-8:45	Jared Arnell/Jawon Jo	ESLC 046
502	R 9:00-10:15	Tyler Markham/Tom Keaton	ENGR 103
503	R 10:30-11:45	Jared Arnell/Jawon Jo	ENGR 108
504	R 12:00-1:15	Tyler Markham/Tom Keaton	ENGR 108
505	R 1:30-2:45	Jake Ciafre/Charlotte Johnson	HH 222
506	R 3:00-4:15	Jake Ciafre/Charlotte Johnson	ENGR 201

## **HOMWORK**

In addition to attending and participating in lectures, you will be expected to put significant effort **into the** homework assignments (approximately 11 assignments), which represents **30% of your grade**. Doing homework is crucial to learning physics. **YOU WILL LEARN THE MATERIAL MOST EFFICIENTLY IF YOU (1) PREPARE FOR LECTURE BY READING THE TEXT, (2) PARTICIPATE IN LECTURES, AND (3) START EARLY AND WORK STEADILY ON THE HOMEWORK ASSIGNMENTS.**

The homework for this course is administered through an online homework system at **www.masteringphysics.com/** which you will gain access to via Canvas.

**Information about how to log on to Mastering Physics can be found on Canvas in the file *Mandatory-Homework-and-Recitation.***

### **Important:**

Due dates for homework vary. Carefully check the class schedule and/or check the assignment schedule at [masteringphysics.com](http://masteringphysics.com). **The time when they are due will always be 23:59 pm (i.e., just before midnight) of the day they are due.** Homework can earn 100% credit if completed before the due date. Late homework receives lesser credit. Absolutely no written homework is accepted.

## **EXAMS**

### **I. Overview**

Four exams will be given this semester. Three are midterms and one is a cumulative final exam. Each of the 3 midterm exams covers only the material since the prior exam.

- Your **three highest exam scores** will count (i.e., we drop one exam grade). Yes, your final exam can be your dropped grade! The lowest score will automatically drop. Your exam score counts for **70% of your total grade**. At each exam you may use the following: (1) a pen or pencil, (2) a calculator, (3) scratch paper, and (4) an equation sheet provided at the exam.

### **Exams are administered through the on-line Proctorio system.**

The computer requirements for Proctorio are listed at <https://www.usu.edu/academic-support/technology/index>

For each of the 3 midterm exams there will be a four day window (Saturday, Sunday, Monday, Tuesday). There will be no lecture on the Monday of the exam window. The Friday before the exam will be used to review the material.

The official date for the cumulative final exam is Monday, December 14. The final exam will also be administered through the on-line Proctorio system and will be open from Saturday, December 12<sup>th</sup> to Tuesday, December 15<sup>th</sup>.

## II. Rescheduling

There are **only** two valid reasons for rescheduling one of the first three exams. Documentation must be provided for both reasons, as described below. The instructor must be notified **before** the exam.

(1) **Medical.** You may reschedule an exam if you are too sick to take the exam. If you are too sick to take the exam, then you are sick enough to visit the infirmary and obtain a note explaining the extent of your illness. **You must provide the instructor with such a note in order to reschedule an exam for medical reasons.**

(2) **University business.** If you are on travel for university business, then you may reschedule an exam. **Again, you must provide written documentation from the sponsoring organization of your participation in said university business.**

## III. Exam Questions

Each exam will consist of a combination of True/False and multiple-choice questions. Exam questions will be split between more conceptual versus more quantitative problems. The number of questions is chosen as a balance between a number of simple questions and a small amount of more difficult questions. Reviewing lecture notes and homework problems is critical preparation for the exam.

## **LEARNING ASSESSMENT (GRADING)**

The assessment of your learning will be done via the homework assignments and the exams.

### I. Homework Assignments (30% of grade)

Most problems are worth 5 point toward your total homework score. Some multiple part problems may be worth more. You will get five attempts to get a problem correct. There is no penalty for incorrect attempts.

### II. Exams (70% of grade)

The four exams will test on material in the lectures, text, and homework assignments.

### III. Pre/Post Quizzes (1% of grade)

The pre/post quizzes are ungraded and points will be given for participation in the quizzes.

### IV. IDEA Survey (2% of grade)

## **GRADING BREAKDOWN**

USU's grading scale is shown below to give you a rough indication of your final letter grade. The instructor reserves the right to lower any of the stated percentages.

A $\geq$ 93%,	B $\geq$ 79%,	C $\geq$ 64%,	D $\geq$ 49%
A- $\geq$ 89%,	B- $\geq$ 74%,	C- $\geq$ 59%,	
B+ $\geq$ 84%,	C+ $\geq$ 69%,	D+ $\geq$ 54%	

## **NEED HELP?**

If you find yourself confused or stuck on a particular topic, or are spending too much time on a given homework problem, you should try one or more of the following.

- (1) Ask questions in recitation (be prepared to show your work and explain where the problem arises). This will lead to a better understanding for you and will result in a positive discussion for the whole class.
- (2) Try to solve a similar problem. The solutions to odd numbered problems are given in the back of the textbook.
- (3) Review the relevant chapter and/or lecture notes, noting any relevant example problems.
- (4) “Talk” with other students in your class via the discussion link in Canvas. Ask them to explain things to you (rather than solving the problem for you).

## **EXPECTATIONS**

### **I. What to expect from the course**

**A. Content.** This course is the first part of a BASIC PHYSICS COURSE. This course covers the study of motion and thermal physics including vectors, kinematics, forces, Newton's three laws of motion, circular motion and rotations, harmonic motion, momentum, energy and work, gravity, fluids, and thermodynamics.

**B. Level of Difficulty.** Although this is a 2000 level course, do not expect it to necessarily be easy. First, there is a lot of material to learn. Second, physics requires you to be able to apply the principles and concepts to a variety of situations. This requires a level of logical thinking that is not required in many classes at USU.

**C. Extra Credit.** Submitting IDEA evaluations for this class will provide 2 percent of extra credit. The pre/post quizzes are ungraded and 1 percent of extra credit will be given for participation in both quizzes (0.5% per quiz). Also your lowest exam score will be dropped, so you can use the final examination to make up a “bad” score from the prior exams. Beyond this, no extra credit will be given!

### **III. What the instructor expects from you**

**A. Participation.** The instructor expects you to participate in all aspects of the course. This includes preparing for lecture by reading the text, actively participating in lecture, working hard on the homework and attending recitation either in person or via Zoom.

**B. Effort.** The instructor expects you to put in the requisite effort to learn the material in the course so that you are prepared to pass the exams. In addition to the items listed under A. Participation, this includes the steps listed below to get additional help, if needed.

**C. Ownership of Learning.** The instructor expects you, the student, to take ownership of the learning process. You are ultimately responsible for what you learn.

## II. What to expect from the instructor

**A. Facilitator.** Expect the instructor to be prepared for each lecture, which is where you will be introduced to the different topics in this course. Expect the instructor to answer your questions regarding the material, during class, after class, or during office hours.

**B. Evaluator.** Expect the instructor to prepare exams that will test you on the material. Do not expect the instructor to be a facilitator during these exams.

## TOP TEN LIST

The following are the top ten items that will help you succeed in the course.

10. **Start with a positive attitude!**
9. READ the text BEFORE the lecture.
8. ACTIVELY LISTEN AND PARTICPATE during lectures.
7. READ the text again soon after the lecture.
6. Use the homework as an opportunity to INTERNALIZE the material.
5. GO TO recitation.
4. Ask Questions / GET HELP when you need it.
3. Work with your classmates on homework.
2. Use the equation sheet provided to internalize exam material.
1. **Finish up with a positive attitude!**

## Possible Errors

The instructor reserves the right to correct any possible errors to this syllabus.

## Fees

There is a \$128.00 fee for this class. It covers classroom supplies, as well as equipment, maintenance and supplies for demonstrations. (Note: some scholarships will not pay for this fee, even though they pay full tuition costs. Scholarship students have been dropped from this class without notice for not paying the fee.)

## Nonattendance Policy

### Students May Be Dropped For Nonattendance

If a student does not attend a class during the first week of the term or by the second class meeting, whichever comes first, the instructor may submit a request to have the student dropped from the course. *(This does not remove responsibility from the student to drop courses which*

*he or she does not plan to attend.*) This option is typically used for classes that are full and the instructor is trying to make a seat available for another student, but may be considered for other courses. Requests must be made during the first 20 percent of the course and will be considered on an individual student basis. Students who are dropped from courses will be notified by the Registrar's Office through their preferred e-mail account (see [2018-2019 General Catalog](#)).

## **Assumption of Risk**

All classes, programs, and extracurricular activities within the University involve some risk, and certain ones involve travel. The University provides opportunities to participate in these programs on a voluntary basis. Therefore, students should not participate in them if they do not care to assume the risks. Students can ask the respective program leaders/sponsors about the possible risks a program may generate, and if students are not willing to assume the risks, they should not select that program. By voluntarily participating in classes, programs, and extracurricular activities, a student does so at his or her own risk. General information about University Risk Management policies, insurance coverage, vehicle use policies, and risk management forms can be found at: <http://www.usu.edu/riskmgmt/>

## **Library Services**

All USU students attending classes in Logan, at our Regional Campuses, or online can access all databases, e-journals, and e-books regardless of location. Additionally, the library will mail printed books to students, at no charge to them. Students can also borrow books from any Utah academic library. Take advantage of all library services and learn more at [libguides.usu.edu/rc](http://libguides.usu.edu/rc).

## **Classroom Civility**

Utah State University supports the principle of freedom of expression for both faculty and students. The University respects the rights of faculty to teach and students to learn. Maintenance of these rights requires classroom conditions that do not impede the learning process. Disruptive classroom behavior will not be tolerated. An individual engaging in such behavior may be subject to disciplinary action. Read [Student Code Article V Section V-3](#) for more information.

## **University Policies & Procedures**

### **COVID-19 Classroom Protocols**

In order to continue to provide a high standard of instruction at USU, and to limit the spread of COVID-19 during the pandemic, students are asked to follow certain classroom protocols during the fall 2020 semester. These protocols are in place not only for your safety but also the safety of the rest of the campus community. You will be asked to clean your desk area at the start of each class, sit in designated seats, wear face coverings, and follow dismissal instructions. There may be individual medical circumstances that prevent some students from using face coverings. These circumstances will be rare, but if they do exist, we ask that everyone be respectful. It is imperative that we each do our part so that on-campus instruction can continue.

### **Academic Freedom and Professional Responsibilities**

Academic freedom is the right to teach, study, discuss, investigate, discover, create, and publish freely. Academic freedom protects the rights of faculty members in teaching and of students in learning. Freedom in research is fundamental to the advancement of truth. Faculty members are

entitled to full freedom in teaching, research, and creative activities, subject to the limitations imposed by professional responsibility. [Faculty Code Policy #403](#) further defines academic freedom and professional responsibilities.

### **Academic Integrity – "The Honor System"**

Each student has the right and duty to pursue his or her academic experience free of dishonesty. To enhance the learning environment at Utah State University and to develop student academic integrity, each student agrees to the following Honor Pledge:

*"I pledge, on my honor, to conduct myself with the foremost level of academic integrity."*

A student who lives by the Honor Pledge is a student who does more than not cheat, falsify, or plagiarize. A student who lives by the Honor Pledge:

- Espouses academic integrity as an underlying and essential principle of the Utah State University community;
- Understands that each act of academic dishonesty devalues every degree that is awarded by this institution; and
- Is a welcomed and valued member of Utah State University.

### **Academic Dishonesty**

The instructor of this course will take appropriate actions in response to Academic Dishonesty, as defined the University's Student Code. Acts of academic dishonesty include but are not limited to:

- **Cheating:** using, attempting to use, or providing others with any unauthorized assistance in taking quizzes, tests, examinations, or in any other academic exercise or activity. Unauthorized assistance includes:
  - Working in a group when the instructor has designated that the quiz, test, examination, or any other academic exercise or activity be done "individually;"
  - Depending on the aid of sources beyond those authorized by the instructor in writing papers, preparing reports, solving problems, or carrying out other assignments;
  - Substituting for another student, or permitting another student to substitute for oneself, in taking an examination or preparing academic work;
  - Acquiring tests or other academic material belonging to a faculty member, staff member, or another student without express permission;
  - Continuing to write after time has been called on a quiz, test, examination, or any other academic exercise or activity;
  - Submitting substantially the same work for credit in more than one class, except with prior approval of the instructor; or engaging in any form of research fraud.
- **Falsification:** altering or fabricating any information or citation in an academic exercise or activity.

- **Plagiarism:** representing, by paraphrase or direct quotation, the published or unpublished work of another person as one's own in any academic exercise or activity without full and clear acknowledgment. It also includes using materials prepared by another person or by an agency engaged in the sale of term papers or other academic materials.

For additional information go to: [ARTICLE VI. University Regulations Regarding Academic Integrity](#)

### **Sexual Harassment/Title IX**

Utah State University is committed to creating and maintaining an environment free from acts of sexual misconduct and discrimination and to fostering respect and dignity for all members of the USU community. Title IX and [USU Policy 339](#) address sexual harassment in the workplace and academic setting.

The university responds promptly upon learning of any form of possible discrimination or sexual misconduct. Any individual may contact USU's [Office of Equity](#) for available options and resources or clarification. The university has established a complaint procedure to handle all types of discrimination complaints, including sexual harassment ([USU Policy 305](#)), and has designated the Office of Equity Director/Title IX Coordinator as the official responsible for receiving and investigating complaints of sexual harassment.

### **Withdrawal Policy and "I" Grade Policy**

Students are required to complete all courses for which they are registered by the end of the semester. In some cases, a student may be unable to complete all of the coursework because of extenuating circumstances, but not due to poor performance or to retain financial aid. The term 'extenuating' circumstances includes: (1) incapacitating illness which prevents a student from attending classes for a minimum period of two weeks, (2) a death in the immediate family, (3) financial responsibilities requiring a student to alter a work schedule to secure employment, (4) change in work schedule as required by an employer, or (5) other emergencies deemed appropriate by the instructor.

### **Students with Disabilities**

USU welcomes students with disabilities. If you have, or suspect you may have, a physical, mental health, or learning disability that may require accommodations in this course, please contact the [Disability Resource Center \(DRC\)](#) as early in the semester as possible (University Inn # 101, (435) 797-2444, [drc@usu.edu](mailto:drc@usu.edu)). All disability related accommodations must be approved by the DRC. Once approved, the DRC will coordinate with faculty to provide accommodations.

Students who are at a higher risk for complications from COVID-19 or who contract COVID-19 may also be eligible for accommodations.

### **Diversity Statement**

Regardless of intent, careless or ill-informed remarks can be offensive and hurtful to others and detract from the learning climate. If you feel uncomfortable in a classroom due to offensive language or actions by an instructor or student(s) regarding ethnicity, gender, or sexual orientation, contact:

- Division of Student Affairs: <https://studentaffairs.usu.edu>, (435) 797-1712, [studentservices@usu.edu](mailto:studentservices@usu.edu), TSC 220
- Student Legal Services: <https://ususa.usu.edu/student-association/student-advocacy/legal-services>, (435) 797-2912, TSC 326,
- Access and Diversity: <http://accesscenter.usu.edu>, (435) 797-1728, [access@usu.edu](mailto:access@usu.edu); TSC 315
- Multicultural Programs: <http://accesscenter.usu.edu/multiculture>, (435) 797-1728, TSC 315
- LGBTQA Programs: <http://accesscenter.usu.edu/lgbtqa>, (435) 797-1728, TSC 3145
- Provost's Office Diversity Resources: <https://www.usu.edu/provost/diversity>, (435) 797-8176

You can learn about your student rights by visiting:  
The Code of Policies and Procedures for Students at Utah State University: <https://studentconduct.usu.edu/studentcode>

### **Grievance Process**

Students who feel they have been unfairly treated may file a grievance through the channels and procedures described in the Student Code: [Article VII](#).

**Full details for USU Academic Policies and Procedures can be found at:**

- [Student Conduct](#)
- [Student Code](#)
- [Academic Integrity](#)
- [USU Selected Academic Policies and Procedures](#)
- [USU Academic Policies and Procedures](#)
- [Academic Freedom and Professional Responsibility Policy](#)

### **Emergency Procedures**

In the case of a drill or real emergency, classes will be notified to evacuate the building by the sound of the fire/emergency alarm system or by a building representative. In the event of a disaster that may interfere with either notification, evacuate as the situation dictates (i.e., in an earthquake when shaking ceases or immediately when a fire is discovered). Turn off computers and take any personal items with you. Elevators should not be used; instead, use the closest stairs.

### **Mental Health**

Mental health is critically important for the success of USU students. As a student, you may experience a range of issues that can cause barriers to learning, such as strained relationships, increased anxiety, alcohol/drug problems, feeling down, difficulty concentrating and/or lack of

motivation. These mental health concerns or stressful events may lead to diminished academic performance or reduce your ability to participate in daily activities. Utah State University provides free services for students to assist them with addressing these and other concerns. You can learn more about the broad range of confidential mental health services available on campus at [Counseling and Psychological Services \(CAPS\)](#).

Students are also encouraged to download the [“SafeUT App”](#) to their smartphones. The SafeUT application is a 24/7 statewide crisis text and tip service that provides real-time crisis intervention to students through texting and a confidential tip program that can help anyone with emotional crises, bullying, relationship problems, mental health, or suicide related issues.