

SYLLABUS

Fall Semester 2020

MWF at 11:30-12:20 *via Web Broadcast*

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Physics 2220 is the second semester of the 2-semester introductory course of calculus-based physics for engineers and scientists. During this course we cover a wide variety of material such as electromagnetism, optics, and modern physics, including special relativity and quantum mechanics. Since this is a survey course, we will need to be selective in the amount of time spent on various topics. For example, we'll spend a great deal of time on electromagnetism, but we'll barely scratch the surface of molecules and solids.

Things will be a little different this semester due to COVID-19. Lectures will still take place as scheduled, but they will be delivered via live web broadcast (Zoom). Recitations will take place weekly, but there will be limits set on the number of students that can attend recitation in-person each week. Recitation will also be made available via web broadcast. Lecture and recitation will be archived in Canvas.

Physics 2220 and COVID-19 (Fall 2020)

It's critical that you are aware of the course structure in light of the ongoing COVID-19 pandemic. There are three critical components of the course that may be affected by COVID-19 measures:

- **Homework**
- **Lecture**
- **Recitation**

Homework

Homework (HW) is pretty much unaffected by COVID-19 precautions. However, your options for getting help with HW problems may be impacted. HW will be done using Mastering Physics via the "MyLab and Mastering link" within the Canvas environment. There will be HW assignments due each week. TA's will be able to answer HW questions during Thursday's recitation sessions (see below), and may be available to offer assistance via email throughout the week. Other COVID-19 compatible methods to assist students with HW are being reviewed by

the physics department. At present the status of the Physics Resource Learning Center (Tutoring Center) is unknown.

Lecture

Lectures will be broadcast to the entire class via Zoom on the appointed day/time: Monday, Wednesday, and Friday from 11:30 AM – 12:20 PM. There will be a Zoom link for each lecture. All are expected to attend. **There will be no “in-person” lecture.** All lectures will be via Zoom web broadcast. Lectures will be recorded and uploaded to Canvas for later review. TA’s will monitor “Zoom Chat” during each lecture to address any student questions that arise.

Recitation

Each of you has enrolled in a specific recitation section, all held on Thursday of each week. Recitation will be broadcast to the entire cohort enrolled in that specific section during the appointed time (9:00, 10:30, etc.). In addition, about half of the students enrolled in each recitation section will be allowed to attend recitation in-person each week in a COVID-19-compliant setting. Early each week a sign-up sheet will be generated in Canvas, allowing up to about 20 students to sign-up to attend their recitation session the following Thursday. Provisions will be made to ensure that all students who wish to attend recitation will be able to do so at least every other week. Those students attending recitation are expected to follow all COVID-19 precautions including wearing a proper face covering, observing proper social distancing, etc. If more than the allotted number of students show up to participate in a particular session, or if one or more students are not in compliance with University COVID-19 precautions, it may necessary to cancel that session. Hence, it is imperative that only those students who signed-up in advance plan to attend, and that all students in attendance comply with COVID-19 precautions.

During recitation the TA will cover a set of practice problems that will help solidify key concepts covered in previous lectures. There will usually be ample time to review HW problems as well. A second TA will monitor Zoom Chat, allowing students viewing remotely to ask questions, request assistance with HW, etc.

After Thanksgiving Break

Beginning the week of November 30 all course material will be delivered remotely (Zoom web broadcast, Canvas, email, etc). This includes recitation sessions. Students are encouraged not to return to campus after Thanksgiving Break if at all possible.

Generally, the purpose of each lecture is to introduce topics and provide a big-picture view. Recitation provides an opportunity to do physics. Each recitation session will include a review of practice problems that will help solidify concepts covered in previous lectures and are similar to questions you will see on the exams. There will also be ample time to review homework problems.

Class Schedule

Here’s a basic schedule of lecture topics (Chapter) and exam dates. The schedule is subject to revise. Students will be notified promptly should this schedule change significantly.

Week #	Date	Monday	Wednesday	Friday	HW Due
1	08/31	20	20	21	09/06
2	09/07	Labor Day	21	22	09/13
3	09/14	22	23	23	09/20
4	09/21	24	24/25	Exam 1	09/27
5	09/28	26	26	26	10/04
6	10/05	27	27	27	10/11
7	10/12	28	29	29	10/18
8	10/19	Extra	Extra	Exam 2	10/25
9	10/26	30	30	31	11/01
10	11/02	31	32	32	11/08
11	11/09	33	33	Exam 3	11/15
12	11/16	34	34	35	11/22
13	11/23	Extra	--	--	--
14	11/30	36	36	37	12/06
15	12/07	37	38	39	12/13
16	12/14	Exam 4	--	--	

Grade Determination

Your grade in the course will be based primarily on exams and homework. There will be 4 *non-cumulative* exams throughout the semester as well as weekly homework assignments. Homework is accessed via Canvas using the "MyLab and Mastering" link. The best way to *learn* physics is to *do* physics. Hence, doing your homework and participating in recitation are two simple keys to being successful in the class. Your final grade consists of the following components:

Component	Weight
Exams	60%
Homework	38%
GE Assessment	1%
IDEA Survey	1%
Total	100%

The USU standard breakpoints are as follows:

A=100 - 93.0; A-=<93.0 - 90.0; B+=<90.0 - 87.0; B=<87.0 - 83.0; B-=<83.0 - 80.0;
 C+=<80.0 - 77.0; C=<77.0 - 73.0; C-=<73.0 - 70.0; D+=<70.0 - 67.0; D=<67.0 - 60.0; F=<60.0 - 0.0

Since this course typically has hundreds of students, requests for "grade bumping" when close to a breakpoint are not accepted.

Exams

There are 4, non-cumulative exams throughout the semester. Each is equally weighted and is worth 15% of your final grade. Hence, exams make up 60% of your final grade. Each exam will include a series of questions probing your qualitative understanding of important physics principles covered during the module as well as quantitative problems to assess your ability to "do physics." Typically each exam will consist of about 25 problems. Due to COVID-19 measures, the USU testing center is not available to our class for exam purposes. Hence, we will be using Proctorio. Please ensure Proctorio is activated on your system. It is expected that students will take the exam remotely via Proctorio during the normal lecture time on the scheduled day of the exam. Each exam will be open for a full 24 hours, allowing some flexibility. *It is up to you to be sure the exam is completed on time.* As we all know, "stuff happens," and you don't want to find yourself in a situation where you don't have internet access, have connectivity issues, etc, etc, and can't take the exam within the allotted time frame. Please be sure to notify the instructor as early as possible if you need to reschedule an exam due to a University-approved absence (<https://catalog.usu.edu/content.php?catoid=12&navoid=3160> (Links to an external site.)) and be prepared to provide appropriate documentation to justify the absence.

Following is the anticipated exam schedule:

	Date	Chapters
Exam 1	09/25	20-25
Exam 2	10/23	26-29
Exam 3	11/13	30-33
Exam 4	12/14 (Set by University)	34-39

Homework

Homework accounts for 38% of your final score. As stated previously, homework is due weekly and is accessed via Canvas using the "MyLab and Mastering" link. For most problems you have up to 6 attempts to get it right for full credit. For certain multiple choice and True/False questions you have a limited number of attempts and lose points for each wrong attempt. However, these types of problems are in the vast minority. Each weekly homework assignment is due by 11:59 PM Sunday evening; dates are listed in the table above. All homework completed by the due date will receive full credit. Assignments completed after the due date (late), but before the end of the course will receive partial credit, up to 50%. It is always worth submitting homework assignments even if they're late. All homework will be available until approximately 9:00 PM on Sunday December 13, 2020.

If you're stuck on a problem after 2-3 attempts it's usually a good idea to get some help. Just because you think you're doing it right doesn't mean you ARE doing it right. Ask the TA to go over the problems in recitation. If you're stuck chances are several other students are stuck too. It's good to form study groups to work on problems together.

The Physics Department is attempting to staff a tutoring center to assist physics students with homework. This is normally your best option for in-depth assistance with homework. The Learning Resource Center (LRC) will be staffed with graduate students who are well-versed in the homework problems for this class. As more information becomes available this section will be updated.

Anticipated Homework Schedule. Assignments are due by 9:59 PM on the due date. "Time" indicates the average completion time of the assignment.

Week	Chapters	Due Date	Time (Min)
1	20/21	09/06	106
2	21	09/13	68
3	22/23	09/20	101
4	24/25	09/27	32
5	26	10/04	106
6	27	10/11	67
7	28	10/18	57
8	29	10/25	48
9	30	11/01	33
10	31/32	11/08	106
11	33	11/15	129
12	34/35	11/22	121
13	--	--	--
14	36	12/06	49
15	37/38	12/13	61

General Education Assessment

There is a GE assessment associated with this course. It accounts for 1% of your final grade. It is available during the first week of course. It should take you about 5-10 minutes to complete. Participating students receive a score of "1," non-participating students receive a score of "0."

IDEA Survey

The IDEA Survey is an important feedback-tool used by USU. To encourage student participation, the Survey accounts for 1% of your final grade. At the end of the course the instructor will receive a report showing student participation. Participating students receive a score of "1," non-participating students receive a score of "0."

Extra Credit: Pre-quiz and Post-quiz

To assist the physics department with internal evaluation, a pre-quiz and post-quiz have been developed to assess student learning. To encourage participation, each student taking the pre-quiz will receive a 1% bonus to their final grade; students taking the post-quiz will also receive a 1% bonus. Hence, students taking both the pre-quiz and post-quiz will receive a 2% bonus to their final grade. The pre-quiz is available during the first week of instruction; the post-quiz is available during the last week of instruction.

Instructor Availability

I will be available for in-person office visits Monday and Wednesday from 1:00-2:00 PM. This will take place in my office, SER 216. COVID requirements will be enforced. First-come, first-served, only 1 person in the office at a time, face coverings are required, etc. This is not a time for homework questions. Your first-line of defense when it comes to homework should be the LRC. After that, recitation and your TA.

I also do my best to be available via E-mail for questions regarding class standing, absences, etc. No homework questions please.

University-Specific Syllabus Information

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. ([Links to an external site.](#))

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](#) ([Links to an external site.](#)) 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 \(Links to an external site.\)](#) 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 \(Links to an external site.\)](#)

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 \(Links to an external site.\)](#) 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 \(Links to an external site.\)](#) 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 \(Links to an external site.\)](#)), 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 \(DRC\) \(Links to an external site.\)](#) as early in the semester as possible (University Inn # 101, (435) 797-2444, 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 \(Links to an external site.\)](https://studentaffairs.usu.edu), (435) 797-1712, studentservices@usu.edu, TSC 220

Student Legal Services: <https://ususa.usu.edu/student-association/student-advocacy/legal-services> (Links to an external site.), (435) 797-2912, TSC 326,
Access and Diversity: <http://accesscenter.usu.edu> (Links to an external site.), (435) 797-1728, access@usu.edu; TSC 315
Multicultural Programs: <http://accesscenter.usu.edu/multiculture> (Links to an external site.), (435) 797-1728, TSC 315
LGBTQA Programs: <http://accesscenter.usu.edu/lgbtqa> (Links to an external site.), (435) 797-1728, TSC 3145
Provost's Office Diversity Resources: <https://www.usu.edu/provost/diversity> (Links to an external site.), (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> (Links to an external site.)

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 \(Links to an external site.\)](#).
Full details for USU Academic Policies and Procedures can be found at:
[Student Conduct \(Links to an external site.\)](#)
[Student Code \(Links to an external site.\)](#)
[Academic Integrity \(Links to an external site.\)](#)
[USU Selected Academic Policies and Procedures \(Links to an external site.\)](#)
[USU Academic Policies and Procedures \(Links to an external site.\)](#)
[Academic Freedom and Professional Responsibility Policy \(Links to an external site.\)](#)

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 \(CAPS\) \(Links to an external site.\)](#).
Students are also encouraged to download the [“SafeUT App” \(Links to an external site.\)](#) 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.