

PHY451: Contemporary Problems in Physics

Fall 2022

General Information

Course Time and Place: Fridays from 12:45-1:40PM EST in PB 203 or via Zoom
Instructor: Professor J. M. Schwarz, aka Professor Jen
Office: 229a Physics Building
Phone: 607-342-0876
Slackpage: PHY451 Fall 2022
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Office Hours: By appointment

About the course

You are a physicist. A physicist is (or at least should be always) learning whether young or old. In your standard courses, you learn about classical mechanics, electricity and magnetism, quantum mechanics—the four pillars of physics. In this course, you will learn about other aspects of what it means to be a physicist, such as how to put together the strongest possible application for graduate school, expose you to some physics-related careers outside of academia (to boarden your horizon), how to read recently published papers or pre-prints (as opposed to simply sticking to the textbooks with older material), and how to ask questions and find answers to those questions through the lens of a physicist. All in all, I hope this course adds to your toolkit for what it means to be a physicist beyond the usual material and empowers you to be the best physicist that you can be.

To be able to achieve this goal, the class will ultimately will consist of discussion each week followed by an assignment pertaining to the discussion. No textbook will be assigned, however, a published paper or pre-print may looked at from to time. I will provide that reading material.

Assessment of Your Work

(1) Class participation (50 percent): Please attend class, please ask questions in class and via slack/email, and please participate in our discussion during class.

(2) Assignments (50 percent): After each class, there will be assignment to be completed by the beginning of the next class. Please complete them to the best of your ability.

Prerequisites

Officially, one is supposed to take PHY361 before signing up for this class. In other words, some familiarity with some physics is assumed.

Meeting Logistics

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We will be meeting in classroom PB203. However, should there be an emergency something or so, we will meet on Zoom. In the event that we hold class via Zoom, please keep your microphone muted unless you are actively talking to your fellow classmates (myself included); this is especially important if you are in a noisy place, or if you are using a built-in microphone on a laptop or cellphone. *Please introduce yourself before speaking.*

Should you have to miss class due to COVID-19, to access the homework and any additional reading material, please visit the course Slackpage.

Public Health

While we have discussed the nuts and bolts of the course, my highest priority this semester is the preservation of your health (and mine). The University has already sent you the general things we expect students to do to protect public health, so please follow their mask policy. In the event that you need to wear a mask, your mask should cover both your mouth and your nose and have at least three layers of material such that you cannot blow out a candle. N95 and KN95 masks are recommended. If you have a medical reason that you cannot wear a mask, please notify me ASAP.

The campus mask status may change during the semester to reflect changing conditions and knowledge; I will let you know if any changes in class safety guidelines are about to occur.

Given the in-person classes, if you are not feeling well, one of the most important things you can do is to stay home. All of the components of our class can be done remotely, and if you are feeling unwell – particularly if your symptoms involve nausea, cough, fever, or others common in COVID-19 – you should connect to our class remotely, and inform us that you are working remotely because you are ill. We often have a culture of trying to “push through” when we are not feeling well, saying things like “Yeah, I am sick, but I will be okay – I can still go to class”. While this sort of perseverance in general is a good thing, coming to class when you are sick puts other people’s health at risk. So, if you have any symptoms at all, stay home.

If you have an illness or injury that interferes with your ability to do work in our class, i.e. you are seriously sick, please communicate with me! The Center for Disability Resources also helps students with short-term injuries and illnesses – concussions, broken bones, etc. If you are sick or hurt, I will work with you and with CDR to do whatever I can to accommodate your condition.

If you are too sick to participate in class, even remotely, do not worry! I want you to focus on taking care of yourself rather than on classes. If you are sick and miss things, I will be flexible with deadlines to allow you to catch up. If you miss a large amount of class (two weeks or more), you may be eligible to take an “incomplete grade” in the course. This is a “grade pending” status that means that you were not able to finish all your work during the semester. Once you finish up your work in the spring, I can go back and give you your final grade. If you think you might need to use this option, it is important to talk to me as early as possible so we can discuss arrangements. In general, only students who have completed a meaningful amount of classwork with a passing grade are eligible to take an incomplete.

Should I contract COVID-19 and am too sick to teach, the department will do their best to find a substitute instructor for you as soon as possible. If I am not too sick to teach, the class will go remote for my quarantine duration.

Equality and Inclusiveness

Everyone in this class is an equally-valued member of this university and our community. I expect you to treat your classmates as honored colleagues in the collective endeavor we are all involved in: to understand the natural world, both living and nonliving matter, and use that understanding to improve our society.

In particular, bias against or denigration of anyone in our class because of their gender or how they express it, their sexual orientation, their religion, their national origin, their race or ethnicity, or a disability they may have will not be tolerated. If you are the target of this sort of bias or if you witness it, please report it directly to me and I will take swift action. If you don't feel comfortable talking to me, you may report it anonymously via a Qualtrics form: https://syracuseuniversity.qualtrics.com/jfe/form/SV_887GdNpfn3C77U.

Syllabus Statement Regarding Disability-Related Accommodations

Students who are in need of disability-related academic accommodations must register with the Office of Disability Services (ODS), 304 University Avenue, Room 309, 315-443-4498. Students with authorized disability-related accommodations should provide a current Accommodation Authorization Letter from ODS to the instructor and review those accommodations with the instructor. Accommodations, such as exam administration, are not provided retroactively; therefore, planning for accommodations as early as possible is necessary. For further information, see the ODS website, Office of Disability Services <http://disabilityservices.syr.edu/>.

SU Religious Observances Policy

The policy, found at http://supolicies.syr.edu/emp_ben/religious_observance.htm, recognizes the diversity of faiths represented among the campus community and protects the rights of students, faculty, and staff to observe religious holy days according to their tradition. Under the policy, students are provided an opportunity to make up any examination, study, or work requirements that may be missed due to a religious observance provided they notify their instructors before the end of the second week of classes. For both fall and spring semesters, an online notification process is available through MySlice/Student Services/Enrollment/My Religious Observances from the first day of class until the end of the second week of class.