

PHY 598: Graduate Seminar I, Spring 2024

Date of this version of the Syllabus: 01/17/2024. Modifications marked with green font

Course Description:

Special research topics centered on monographs, conference proceedings, or journal articles. Topics include solid-state physics, atomic physics, quantum optics and applications of synchrotron radiation. Required for all first-year graduate students.

*Fall and Spring, 0-1 credits, Letter graded (A, A-, B+, etc.)
May be repeated for credit.*

Class Meeting: Tuesday and Thursday 1:00-2:20 PM in Physics P113

First Class: Jan 23rd

Last Class: May 2nd

Course Instructors: Prof. Qiang Li

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Prof. Harold Metcalf

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Prof. Navid Vafaei-Najafabadi,

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Office: Physics D-101

Requirements:

- Pick a topic within the first week (see “list of topics”).
- Choose a date for your presentation and put your name and topic on the shared document (see “list of topics” below for more info)
- You will be assigned a mentor (one of the three instructors)
- Contact your professor to arrange for talk preparation meetings.
- Give a 25-minute presentation on the day assigned.
- Attend all seminars and ask relevant questions.
 - Note: Attendance will be taken in all classes. Poor attendance will result in a poor grade

Class Timeline:

Initial Meeting: January 23

Pick a topic (no class): January 29 (week 2)

Meet with instructors (no class): February 5 (week 3)

Student Presentations Start: February 12 (week 4)

From week 4, we will have two presentations per class until the end of the semester.

You are responsible for selecting the topic and paper to present in the class and for discussing it with the class instructors beforehand.

Grade Breakdown:

Presentation: 80%

The three professors in the class will assign each presentation a grade of 1-10. Your presentation grade will be the average of the three grades. You will be judged on content (comprehension of topic, flow of content between slides, slide organization, etc) and delivery (clarity of communication eye contact, etc).

Attendance & Participation: 20%

You are expected to attend all presentations. If you miss a class without a valid excuse communicated to the instructors, you will lose the attendance points for that specific class.

Resources:

- "Designing and Delivering an Effective Research Talk" by Prof. Meigan Aronson ([slides](#), [movie](#)[wmv;285MB])
- Read the "[Advice to beginning Physics Speakers](#)" by James Garland, in *Physics Today*, July, 1991.
- See a [workshop talk given by Dr. Barbara Gross Levi](#) (who is a science writer for *Physics Today*) on how to give good talks. See also [the work by Prof. \(Emeritus\) Edward Tufte](#) on the all-too-often misuse of *Powerpoint* for scientific presentations. Make sure you follow the link(s) there to his and other example(s) of such misuse.
- Stony Brook subscribes to many research databases and online journals. Particularly valuable are the [Web of Science](#) and some [APS journals](#) including *Reviews of Modern Physics*.

A Few Comments on Giving Talks:

The purpose of this course is to give graduate students early in their career experience with the vital skill of giving professional talks. One very important aspect of this is to choose the level of your talk based upon your own level of knowledge and the level expected of your audience. As (mostly) first year graduate students, we expect that you are not at a level of preparation that you would have giving a talk at a professional conference. You will be graded on content and presentation, but the grade on content is more on consistency and "absence of holes" than on the level per se (high school – college – graduate student – faculty – world expert). Do not include in your talk any material that you do not actually understand.

Rule of thumb: If **you** don't mention something in your talk, it is impolite for someone in the audience to ask you a question about it. Whatever **you** do mention in your talk is fair game for questions. If you mention something you do not understand, you are opening *Pandora's Box* and should expect to run into trouble. This happens all the time at professional meetings.

Your talk (Powerpoint or pdf) should be planned to take 20 minutes. Five more minutes will be used for questions and comments. Make sure to rehearse your talk (several times!) so that you know your timing is right. **It is a cardinal sin of giving a talk to run over time.**

To use the projector in the seminar room, you may bring your own laptop computer. A desktop computer is there permanently hooked up to a computer projector. It may **not** connect to the internet, so you should bring the file of your talk to it on a USB stick.

You must make an appointment to **meet with your instructor (as assigned) a few weeks prior to the day you are scheduled to give your talk** in class. At that meeting you will be expected to show a preliminary version of your talk to the instructor. Before that, you should already have given a (pre-)preliminary version of your talk to a trial audience, e.g., fellow students. The comments you get from both your trial audience and the instructor will be helpful for making changes before you give your talk "for real."

List of Topics:

The topics are selected for you by the instructors to give you a sense of important work going on in each field:

<https://docs.google.com/spreadsheets/d/1uO3eTieYH7kN2qUjcHeb5tNurtB7vhmb9e2C32RQ04g/edit?usp=sharing>

Choose a topic by *February 1*, and enter your name and topic in the "Student/dates" tab in a cell adjacent to the date you want to present.

Choice of topics will be first come – first served. Two students may not choose the same topic.

If the day you want is already occupied, it is your responsibility to negotiate with the person already in that spot. Contact Prof. Vafaei-Najafabadi for conflict resolution.

University Policies

Student Accessibility Support Center (SASC) Statement:

If you have a physical, psychological, medical or learning disability that may impact your course work, please contact the Student Accessibility Support Center (SASC), ECC (Educational Communications Center) Building, room 128, (631) 632-6748. They will determine with you what accommodations, if any, are necessary and appropriate. All information and documentation is confidential.

Students who require assistance during emergency evacuation are encouraged to discuss their needs with their professors and the staff at the Student Accessibility Support Center (SASC). For procedures and information go to the following website: <http://www.stonybrook.edu/ehs/fire/disabilities>

Academic Integrity Statement:

Each student must pursue his or her academic goals honestly and be personally accountable for all submitted work. Representing another person's work as your own is always wrong. Faculty are required to report any suspected instances of academic dishonesty to the Academic Judiciary. Faculty in the Health Sciences Center (School of Health Technology & Management, Nursing, Social Welfare, Dental Medicine) and School of Medicine are required to follow their school-specific procedures. For more comprehensive information on academic integrity, including categories of academic dishonesty, please refer to the academic judiciary website at http://www.stonybrook.edu/commcms/academic_integrity/index.html

Critical Incident Management Statement:

Stony Brook University expects students to respect the rights, privileges, and property of other people. Faculty are required to report to the Office of Judicial Affairs any disruptive behavior that interrupts their ability to teach, compromises the safety of the learning environment, or inhibits students' ability to learn. Faculty in the HSC Schools and the School of Medicine are required to follow their school-specific procedures.

Regarding Equivalent Opportunity/Religious Absences:

https://www.stonybrook.edu/sb/bulletin/current/policiesandregulations/policies_expectations/equivopportunity_religiousabsences.php

Student Participation in University-Sponsored Activities:

By their participation in campus-related activities such as research conferences, dramatic or musical performances, intercollegiate athletic competitions, or leadership meetings, students make contributions to the University. In recognition of the students' commitment both to their regular academic programs and to related activities, the University makes every effort to accommodate unique situations.

Students are responsible for presenting a printed copy of semester obligations to all their professors at the beginning of the semester to alert them to activities that may present conflicts. Instructors are required to make arrangements for students to complete examinations, quizzes, or class assignments early or late if the student's participation in a University-related activity results in the student's absence from the class when such work is due. Some events occur only by invitation during the semester, and instructors should make accommodations for these students.