

# Physics Graduate Student Information Meeting, 2016

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## Teaching Workshops and Credits

All Physics Teaching Assistants are required to sign up for 2 credits (only for this term - it will be for 1 credit in future terms) of PHYS 609, Practical Supervised Tutoring (CRN 15060).

(The extra credit is added for this term because of the extensive TA training you are involved in before term starts.)

Note that, when signing up on DuckWeb you will think it is only letting you sign up for one credit, but you should be able to reload the page (I think) and increase the number of credits to two. Jodi can help if you are having problems.

# Ph.D. Requirements (Roughly in Chronological Order)

First Year - take the graduate *core courses* (unless they are waived, because, for instance, you already have a master's degree).

PHYS 610 Mathematical Methods of Electricity and Magnetism  
(Prof Belitz)

PHYS 611, 612/613, 614 Theoretical Mechanics/Statistical  
Mechanics (Prof Noeckel)

PHYS 631, 632, 633 Quantum Mechanics (Prof Chang)

PHYS 622, 623 Electromagnetism (Prof Belitz?)

# Unified Graduate Exam

Master's and Ph.D. Exams are actually the same exam. The exam is offered in total twice a year, split into two parts, each covering two subject areas. Thus, there are four times during the year at which parts of the exam are offered. The exam emphasizes advanced undergraduate physics. However, up to a third of the material is at the level of the graduate core courses.

You CAN try half the exam right away – Friday, at the end of this week!

Friday morning is Quantum Mechanics

Friday afternoon is Statistical Mechanics & Thermodynamics

# Structure of Unified Graduate Exam

16 questions in four subject areas (i.e. four per area)

The four areas are:

1. Mechanics
2. Electromagnetism
3. Quantum Mechanics
4. Statistical Mechanics & Thermodynamics

## Pass Criteria for Unified Graduate Exam

*Top two scores counted for master's pass in an area.*

Must reach the master's pass level in three out of four areas before the master's level deadline (mentioned in the handbook and below).

*Top three scores counted for Ph.D pass in an area.*

Must reach the Ph.D. pass level in all four areas before the Ph.D. level deadline (mentioned in the handbook and below).

The percentage score for a pass at either the master's or Ph.D. level (with either 2 problems or 3 problems counting), is nominally 50%, but is adjusted slightly by the Exam Committee.

Each time the exam is offered, you can pass in some areas and then, in future attempts, retake only areas that you have not yet passed.

# Pass Deadlines

Can take the exam in the Fall of your first year. (This year, on Fri Sep 23rd.)

Must take the exam in the Spring of your first year and keep taking it until you pass.

## **Master's Level:**

Need to pass at the master's level after the results of the exam areas taken at the beginning of Summer Term of the 2nd year of graduate studies are announced. (4 possible attempts)

## **Ph.D Level:**

Need to pass at the Ph.D. level after the results of the exam areas taken at the beginning of Winter Term of the 3rd year of graduate studies are announced. (5 possible attempts)

## Ph.D. Breadth Requirements

You are required take least six graduate physics courses, or other approved (by Grad Director) graduate science courses - excluding the “core” courses.

Breadth courses are not necessarily taught every year, so you may have to wait an extra year to take something you particularly want. Because we realize this, you only need to have  $\geq 3$  courses completed at the time you take your Comprehensive Exam and are “advanced to candidacy”.



## First Year Advisory Committee

This committee is formed from 3 active faculty on the Graduate Studies Committee in addition to the Graduate Director. It reads the “Checkpoint Document” (see below) and briefly meets with each first-year student at the end of Winter Term or start of Spring Term to assess progress toward finding a research home.

Continued departmental financial support may depend on adequate progress. The committee also meets with the student in the second year.

# Checkpoint Document

This document is the first thing that you will do that officially tells the department that you are making progress in your search for a research area in which to work. It is recognized that first year students are very busy with coursework and teaching and typically will not be very actively involved in research.

By the end of Week 5 of Winter Term a student must submit a short (approximately half a page) report describing one-on-one meetings with at least three faculty. Mention should also be made of useful discussions with at least one senior grad student and attendance at group meetings and seminars.

## Ph.D. Advisory Committee

By June 30th of 2nd year or within one term of passing the qualifying exam (Ph.D. level pass of unified grad exam) you (in consultation with the Graduate Director) should create a "Ph.D. Advisory Committee" :

- ▶ Chair (in your research area but not your advisor)
- ▶ (Potential) Advisor
- ▶ Another faculty member from your area (usually a theorist if you are an experimentalist or an experimentalist if you are a theorist)

This committee will meet with you right away and then once a year until the Comprehensive Exam, which **MUST be passed by the end of Fall term in your 4th year.**

# Full-Time Load

Definition of a “Full-Time Load”:

9-16 graduate credit hours.

MINIMUM of 9hrs required for graduate teaching fellows, research assistants, and to maintain visa status. (Audits don't count.)

The Physics Department would like students to take 16 hrs.

## Typical First-Year Load

	Credit Hours
3 courses in "Core" Physics	12
PHYS 607 Physics Colloquium	1
PHYS 607 Research Seminar	1
PHYS 609 Pract Superv Tutoring	1 or 2 *
Total	16

Remember: In first (Fall) term of PHYS 609 you should sign up for 2 credits, but only for 1 credit in future terms.

# The First Fall Term

## “Core Courses”:

- ▶ PHYS 610 Mathematical Methods
- ▶ PHYS 611 Theoretical Mechanics
- ▶ PHYS 631 Quantum Mechanics

## Research Seminars (Choose from):

- ▶ Theoretical Science
- ▶ Materials Science
- ▶ Optics
- ▶ High Energy Physics
- ▶ Molecular Biology
- ▶ Physical Chemistry
- ▶ Graduate Students

## About Seminars

You can sign up for any seminar series. It isn't essential that you go to every seminar but you should make an effort to attend regularly.

Sometimes you won't have time, or you may decide you are more interested in something else. You can also go to seminars other than the ones for which you signed up.

The seminar organization is pretty informal. There won't necessarily be one every week.

## A Note about GPA

The Graduate School has recently become more of a pain about GPAs. (Strictly interpreted, the GTFF contract requirements will not allow students with GPAs below 3.0 to hold GTF appointments.)

Although there is usually a bit of leeway in the interpretation, the Grad School will block registration and make the Grad Director (me) create a “plan” for increasing a student’s GPA and issue threats about consequences. So... I would like you to pay attention to your GPA and where you might otherwise choose to do research, party more etc, instead try to keep up your grades.

Remember, the longer a GPA is allowed to stay low, the heavier it gets. In the end it MUST get above 3.0 for you to be able to advance to candidacy.

**Tell me if you are having difficulties.** Sometimes it might be necessary to drop a course rather than get a low grade.



# References

Physics Graduate Student Handbook  
([physics.uoregon.edu/grad\\_studies/handbook](https://physics.uoregon.edu/grad_studies/handbook))  
Fall 2016 Schedule of Classes  
2016-2017 University of Oregon Catalog  
DuckWeb ( <https://duckweb.uoregon.edu/> )