Doctoral Degree Milestones

Master's Review

The Master's Review Committee (MRC) reviews the progress of first year graduate students at the end of the Spring quarter of the first year. The MRC decides whether students can continue towards a PhD or not. This review, if needed, continues throughout the second year. A final decision must be made before the start of the third year at the latest and will be based on an evaluation of the comprehensive record of the student.

The Master's Review includes the performance in the 4 Master's Review Exams (MRE). These MRE exams are integrated with the final exams of the four corresponding first year graduate courses: Phys 524 (in the autumn), Phys 514 and Phys 518 (in winter), Phys 505 (in spring). The exams are written and graded by the course instructors and the exam committee. These final exams test the doctoral candidate's competency across a broad spectrum of core subjects.

Students who pass all four MRE's automatically pass the Master's Review. A significant fraction of the first year graduate students therefore pass the Master Review automatically as early as the start of their first year Summer Quarter.

Students who pass three of the four final exams can pass the Master's Review as early as the Fall of their second year based on a strong comprehensive record (typically strong research and strong class grades).

Students can retake specific exams during their second year. A special second year preparatory graduate course is being offered in the Winter quarter for second year students who need to retake exams.

The Master's Review Committee evaluates the students performance in a comprehensive manner. Research potential/achievements, MRE performance and course grades play a central role while all other relevant aspects are considered too.

Students who do not pass the Master's Review before the start of their third year are required to leave our PhD Graduate program. They are typically allowed to earn a thesis-based terminal Master's degree, provided their research warrants this and that their grade point average is above 3.0 or close enough to this Graduate School requirement that it can be raised to a 3.0 within one quarter.

Students who pass the Master's Review receive their Master's degree provided that Graduate School course credit and grade point average requirements have been satisfied. This will not happen by itself however. \textit{You must apply for this so-called “non-thesis Master's Degree” yourself on the Graduate School Master's Degree Request web page.}

Additional Master's Review Information

The following document specifies the topics covered in the MRE exams,

- \textit{Qualifying Exam Topics (PDF)}
Here are compendia of previous MRE exam problems since Autumn 2011 and old format qualifying exam problems from before Autumn 2011

- Archived MRE Exam Problems 2017 - 2019 (PDF)
- Archived MRE Exam Problems 2012 - 2017 (PDF)
- Archived Qualifying Exam Problems (PDF)
- Exam Info Sheet (PDF)

Research, Advisors, General and Final Examinations

Finding a Research Group

Every student is expected to find a research advisor before the end of the second year, preferably much sooner, and commence independent Ph.D. research under his or her supervision. A student informs the graduate program coordinator when she/he has established a research home.

Your first-year faculty advisor remains your main faculty consultation resource until you find your research advisor. After your first year, you select also a faculty mentor, a person different from your research advisor, who can assist and advise you with issues not immediately related to your specific research.

The graduate program coordinator is always available for advice. This becomes important in particular if you find yourself still unsure about your research direction during the second year or when you need to switch research groups then or even later.

Research advisors beyond the Physics Department

Physics graduate students typically have regular Physics faculty members or adjunct faculty as their research advisors, but you can start research also with any faculty member on campus in any department. It is strongly advised to consult and inform the PGC and GPA of this immediately. The following special rules apply. The student needs to identify, in consultation with the GPC, his/her Faculty Mentor immediately upon starting research with this non-Physics faculty member. The Faculty Mentor must be a regular Physics faculty member who is already knowledgable or willing to become so about the type of research the student wants to pursue. The Faculty Mentor discusses the proposed research with both the student and the outside Faculty member at the start of the project, and reports to the GPC. The Faculty Mentor stays in touch with both the student and the advisor and reports to the GPC on a quarterly bases about student progress as well as the prospects of this research leading to a Physics PhD.

Composition of the Doctoral Supervisory Committee

Every student is expected to establish a doctoral supervisory committee within one year of finding the research advisor and when the research is well on its way.

The doctoral supervisory committee guides and assists a student in working towards a doctoral degree and is expected to evaluate the student's performance throughout the program. The roles and responsibilities of voting members, chair, graduate school representative (GSR) and student are specified in the Graduate School document "Doctoral Supervisory Committee Roles and Responsibilities".

The Graduate School Memorandum No.13, “Supervisory Committee for Graduate Students” contains details regarding the composition of a doctoral supervisory committee. The Physics Department has adopted its own policy regarding the standard composition of the committee:
The standard composition of a Physics supervisory committee includes at least:

- The Committee Chair, typically your research advisor.
- Another faculty member in the same research field.
- A theorist from the same flavor as your own experimental research, or an experimentalist of the same flavor when you are a theorist.
- A faculty member from another area of physics (can be a theorist or experimentalist).
- At least three committee members should be regular Physics department faculty (i.e., not adjuncts or affiliates).
- One member, other than your Research Advisor, should be designated as your Faculty Mentor. This can be one of the members listed above or an additional member of the committee.
- The Graduate School Representative (GSR), who cannot have a faculty appointment in the Physics Department. It is your responsibility to find a GSR for your committee. The process of finding a GSR can take a few hours or a few weeks. This often depends on contacts that your Committee Chair or other committee members have with faculty from other departments.

It is common practice to add more members to your committee than mentioned in the above list. At least three committee members should be regular Physics department faculty (i.e., not adjuncts or affiliates).

In case your research advisor is from a different Department at the UW, and does not hold Adjunct status in our department, then your faculty mentor must be a regular Physics Faculty member, and will be the one who acts as official Chair of your Supervisory Committee.

Your faculty advisor and your mentor form the core of your doctoral supervisory committee. The Department encourages you to select your mentor well before you setup your doctoral supervisory committee. Make sure this faculty member agrees to be your mentor.

**Doctoral Committee for Students with Non-regular Physics Ph.D. Advisors**

The chair of the Physics Doctoral Committee can be a non-Physics faculty member of the UW who holds a graduate faculty appointment. The student must form her/his Doctoral Committee well before the General Exam. The student’s Faculty Mentor must be a regular physics faculty member and must be a member of the Doctoral Committee. The Doctoral Committee must include at least 3 regular physics faculty members and they must be present at the General and Final Exams.

**Steps in Establishing a Doctoral Supervisory Committee**

You discuss with your research advisor and mentor which other faculty should be on your doctoral supervisory committee. You ask all these faculty members in person whether they are willing to serve on your committee.

After gaining consent from the faculty members to serve on your committee, you complete the online Supervisory Committee Form on the Physics Department WEB site and submit it electronically to the graduate program coordinator. The graduate program coordinator (1) checks that all required courses have been taken, (2) approves the committee, and (3) informs the graduate program advisor, who creates the committee at MyGrad (the Graduate School administrative system). Once this has been processed, the student, the committee members, and the graduate program assistant receive an email from the Graduate School confirming the doctoral supervisory committee has been officially established. The Graduate School suggests your committee to be created at least four months before the General Examination be scheduled.

**Report on Progress**

The doctoral supervisory committee is responsible for monitoring student progress. Every member of the supervisory committee is
responsible for the progress of the student and for the quality of the degree being sought. The graduate program coordinator checks on the progress at least once a year, in the Spring, at the time of the Annual Activities Report.

The Physics Department expects students enrolled for fewer than five years to meet annually with their research advisor, mentor, and a quorum (at least two voting members) of their doctoral supervisory committee. The GSR is not expected to attend the meeting. Students are not required to submit a report, but are strongly recommended to combine this requirement for an annual meeting with their Annual Activities Report.

Students enrolled for five or more years are required to meet annually with their research advisor, mentor, and a quorum (at least two voting members) of their doctoral supervisory committee. The GSR is not expected to attend the meeting. Students are required to submit a report signed by those committee members to the department chair and the graduate program coordinator. A failure to meet annually represents unsatisfactory progress.

The General Examination counts as an annual meeting of the doctoral supervisory committee.

Special Reporting Requirements for Students with Non-physics Ph.D. Advisors

The student must meet quarterly with the Faculty Mentor. The student must meet annually with the full Doctoral Committee. The three regular Physics Faculty members on the committee must report in the Student Annual Report on the progress of the research and how it fits within Physics. The Reading Committee must include 2 regular physics faculty members and they must report to the GPC in the “Draft of Thesis Report” not only on the status of the draft but also comment on and concur that in their opinion the thesis represents Physics Research.

The General Examination

The usual form of a General Examination in the Physics Department is a public presentation of research already completed and research proposed, followed by a closed examination with only members of the graduate faculty. A student should schedule the General Examination at the earliest time agreeable with the Supervisory Committee.

Sequence of steps to set-up the General Examination

1. The student arranges with the members of the supervisory committee, the date, time, and location of the exam (often room C520 in the Physics Tower).
2. The student reserves the room (and visual equipment such as a projector) himself/herself with the Physics Main office.
3. The student applies for the General Examination on the MyGrad WEB site. The Graduate School must receive requests to schedule exams 3 weeks beforehand.
4. Hold the exam. You are strongly advised to send reminders to all members of your committee the day before, and also immediately beforehand, including details of the location.

Research credits after passing the General Examination

Students need to register for Physics 800 instead of Physics 600. A minimum of 27 dissertation credits (Physics 800) over a period of at least three quarters must be completed in which at least one quarter comes after the student passes the General Examination. With the exception of summer, students are limited to a maximum of 10 dissertation credits (Physics 800) per quarter. This implies that the Final Examination can not take place until 3 quarters after the General Exam, unless pre-planned with taking 800 credits before the General Exam.

Reading Committee
The reading committee consists traditionally in the Physics Department of three members of the doctoral supervisory committee. The research advisor acts as reading committee chairperson. The Graduate School Representative cannot be a member of the reading committee.

Establishing a Reading Committee

After gaining the consent of the faculty to serve on the reading committee, the student completes the online Departmental Reading Committee Form and submits it electronically to the graduate program coordinator, who approves the committee, informs the graduate advisor, who sets-up the Reading Committee in MyGrad (the Graduate School administrative system). Once this has been processed, the student, the committee members, and the graduate program assistant receive an email from the Graduate School confirming the reading committee has been officially established.

The Final Examination and the Ph.D. thesis

The Final Examination is an oral presentation and defense of a student's dissertation. In the Physics Department, the format is similar to that of the General Examination.

The PhD thesis must be almost completed and this draft must be accessible during the Final Exam. The dissertation must be in a state that ensures it can be submitted within the time frame required by the Graduate School.

Sequence of steps in setting-up the Final examination

1. The student prepares a draft of the PhD thesis in consultation with the Research Advisor.
2. The student arranging with the members of the supervisory committee, the date, time, and location of the Final Examination (often room C520 in the Physics Tower).
3. The student reserves the room (and visual equipment such as a projector) him/herself with the Physics Main office.
4. The student submits the final draft of the PhD thesis to all reading committee members.
5. The student applies for the Final Examination on the Graduate MyGrad WEB site.
6. The reading committee must inform the graduate program coordinator about the current status of the thesis by means of a completed Departmental Thesis Draft Report Form, or by individual e-mails from every member of the reading committee. The graduate program coordinator approves the Final Examination Request only when the dissertation can be expected to be submitted within the time frame required by the Graduate School.
7. Hold the Final exam. You are strongly advised to send reminders to all members of your committee the day before and also immediately beforehand, including details of the location.
8. The completed dissertation must be submitted to the Graduate School by the last day of the quarter to have the degree conferred in the same quarter as the Final Examination.

You must be enrolled both at the time of your Final Examination and at the time you submit the thesis.

Dissertation submission is done electronically. Be aware that this requires also electronic submission of handwritten signatures on the Graduate School Reading Committee Form.

For a complete PDF version of Physics Ph.D. Program Information, Policies, and Procedures

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