Physics Department Doctoral Degree Timeline

The Physics Department closely monitors that our Graduate students make satisfactory progress towards the degree. Details of this can vary between research areas and individuals, but can not deviate much from the following example time line.

- Pass the first year required Basic Core Courses: Phys 513-514 (E&M, Autumn & Winter), Phys 517-518 (Quantum, Autumn & Winter), Phys 524 (Stat Mech, Autumn), Phys 505 (Classical Mechanics, Spring), and Phys 528 (Introduction to Research, Autumn).
- Pass the Master's Review (MR). Many students pass the MR as early as the end of the Spring quarter of their first year by having passed all four so-called Master's Review Exams (MRE). They cover 4 topics: Electro-Magnetism (EM), Quantum Mechanics (QM), Statistical Mechanics (SM), and Classical Mechanics (CM). Those MRE's are integrated with the final exams of the following 4 Graduate Courses: Ph524 (SM, Autumn), Ph518 (QM, Winter), Ph514 (E&M, Winter), and Ph505 (CM, Spring). The QM an E&M MRE's cover all material of the Fall and Winter quarters of these two core Physics Course sequences.

A second common pathway to passing the MR, by as early as the start of the second year, is to pass 3 of the 4 MRE's and having documented established research.

The Master's Review must be passed before the start of the third year.

- Students who pass the MR are eligible for their Master's degree provided that Graduate School course credit and grade point average requirements have been satisfied. You must apply for this Non-Thesis Master's Degree yourself on the Graduate School Master's Degree Request web page in a quarter you are enrolled.
- Pass the first year required Advanced Required Core Courses: Phys 525 (Stat Mech, Winter), Phys 515 (E&M, Spring), and Phys 519 (Quantum, Spring).
- Search actively for a research home and faculty research advisor. This starts in the Fall of the first year with signing-up for the required course Phys 528, followed by the requirement to sign-up for one credit Physics 600 in the winter quarter with a research group of your choice, and proceeds with more credits of Physics 600 in the first year Spring and Summer quarters. Switching research groups during the first two years is not uncommon. Postponing more than one of the required first year Spring graduate courses for more Phys 600 independent research credits can be an option but needs to be approved by both your first year faculty advisor and the graduate program coordinator.
- Find a Research advisor and become fully established in a research group before the end of the 2nd year at the latest. This switch between highly structured classroom oriented undergraduate study and unstructured research oriented self study tends to be the most difficult task of your graduate career.
- Complete all required courses before the General Exam (See list below).
- Establish a Supervisory Committee within one year after finding your definite research advisor. The make-up of this committee requires approval of your research advisor and also of the graduate program coordinator.
- Take the General Examination in the third or fourth year in our program.
- Register for Physics 800 (Doctoral Thesis Research) instead of Physics 600 in the quarters immediately before/following passing the general examination.
- Establish a Reading Committee well in advance of planning the Final Examination.
- Submit your PhD thesis draft to the Reading Committee several weeks before the Final Examination.
• Take the Final Examination in the 5th or 6th year.
• Submit the PhD thesis (and the reading committee signatures form) to the Graduate school after your Final Exam typically before the end of the same quarter.

This timeline for competing the PhD applies to **students entering the program with a typical undergraduate preparation**, i.e., with 300 level undergraduate courses in Quantum Mechanics, Electricity and Magnetism, Classical Mechanics, Statistical Mechanics, Mathematical Physics, and a senior-level survey course. Significant deviations from this time line need to be approved by the Graduate Program coordinator. Two common scenarios for this are:

• **Entering Ph.D. Students with insufficient undergraduate course work preparation** typically require more time. It is crucial to identify this early. (Do not feel bad about this. It does not reflect on your abilities nor future success in our PhD program.) Discuss this with your first year faculty advisor, during orientation, and certainly again within the first few weeks of the first Autumn quarter.

  This can lead to deferring one or more of the first year required courses and corresponding Master's Review Exams. It can also involve taking junior or senior level physics courses before taking the first year graduate-level courses. These actions need to be discussed with your first year faculty advisor and then be approved by the Graduate Program Coordinator. You must not delay finding a research group and advisor. The final Master's Review decision still takes place at the start of the 3rd year and research is an important component in this decision.

• **Entering Ph.D. students with advanced standing**, with for example, a Master's degree in Physics or transferring from another university after completing one or more years in a Physics Ph.D. program, often graduate in their 3rd or 4th year in our program. Certain required classes can be waived (but typically not the corresponding Master's Review Exams) and credit might be transferred. These need to be discussed with your first year faculty advisor and then be approved by the Graduate Program Coordinator.

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

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