

Astronomy PhD Requirements For the Incoming Class 2009-10

For the incoming class of 2009-10, the Department of Astronomy and Astrophysics has implemented revisions to the PhD requirements with the intent to improve upon:

- Time students take to complete the program
- Stronger student records at graduation
- Students who will be more competitive in the job market.

The formal requirements will be published in the [UCSC catalog](#) under the Astronomy and Astrophysics Graduate program link (refer to 2009-10 online catalog update). The requirements for each entering PhD class are the requirements that are published in the catalog when the class enters. This is sometimes referred to as “catalog rights.”

By the end of the second year:

1) Courses: Take and pass eleven courses including the seven required courses plus four electives. Students receive a Pass/No Pass plus a written evaluation in each course each quarter. This is in addition to the Seminar Course ASTR 292, which is the weekly Astronomy Colloquium.

Course listings and descriptions (required and electives) are published in the UCSC catalog and also posted at <http://www.astro.ucsc.edu/courses/graddesc.html>

2) Teaching: One quarter of teaching assistantship.

3) Independent Study & Department Talk: One quarter of Independent Study (ASTR. 297) with a faculty member. Normally, this is coordinated with the first-year project, which includes a required department talk by the end of the second year. Independent Studies are graded like regular courses and also have evaluations. Independent Study does not count towards the 11-course requirement.

4) Quarterly Advising Meeting: Students are expected to meet at least quarterly with their assigned faculty advisor to discuss progress. A form must be signed by both student and advisor to signify that the meeting occurred. This requirement is a minimum; you are strongly encouraged to meet more frequently with your advisor than once per quarter. The practice is required for students at all levels, not just for first and second year. First-year students are assigned advisors on entering the program who will see them through the first year.

In addition to your first-year advisor, you also need to find a research supervisor who will supervise your first year project. The Department will assist you in finding this person, but **YOU MUST BE PROACTIVE**. Consider the potential for funding at least through the second year when choosing your first research supervisor.

5) Prelim Exam: Preliminary Exam at the end of second year. Tests Astronomy course material, grad/undergraduate Physics relevant to Astronomy, and general astronomical knowledge. There are two parts, basic and advanced, both written. You are encouraged to take this exam also at the end of your first year for practice, and, depending on your score, it is possible that you may be excused from taking one or both parts again.

6) Research Paper: Submit one lead-author paper to a referred journal that is based on research conducted at UCSC. A one-year probation and extension will be allowed only by Department faculty vote at the Board Review meeting (see details below) and such extension will not be considered unless a reasonable first draft is submitted at the Board Review with an accompanying proposed completion strategy that has been approved by your advisor.

7) Board Review: held by the faculty in July-August to review second-year students who just took the Preliminary Exam. The Board Review discusses each student's performance over the whole first two years as judged by the Preliminary Exam scores, course evaluations, performance on the second-year departmental talk, submission of a lead-author paper to a referred journal, evaluations of research work by research supervisors that the student may have had, comments by the first and second-year faculty advisors, and performance as a TA.

There are three possible outcomes from the Board Review. Students with poor results may be asked to leave the program, usually with a terminal Masters degree. Students with excellent results are passed unconditionally and are permitted to pursue thesis research with no other requirements. Students may also be passed conditionally, in which case additional requirements may be imposed to fill in course deficiencies and/or knowledge deficiencies that were apparent on the Preliminary Exam. Another possible reason for a conditional pass applies to students who have not yet located thesis supervisors or who have done poorly in research. Any imposed requirements must be resolved by June 1 of the following academic year or else the student will be discharged.

The Board Review is a comprehensive review of student performance and potential to do the Ph.D. As such, it is larger than and distinct from the Preliminary Exam. Passing one does not necessarily mean passing the other. Students need to focus their efforts on the broad requirements of the first and second year program, not just passing the Preliminary Exam.

The top student(s) on the Board Review are awarded the Whitford Prize (cash prize of \$500) for all-around outstanding performance during the first and second years.

By the end of your third year:

8) Thesis Qualifying Exam (also called the Thesis Topic Defense): you will have ideally have found a thesis advisor by the end of your second year. During the third year, students are expected to have found a thesis topic and to have done some preliminary work to establish its viability. The plan and schedule for the thesis are presented to a faculty committee in the Qualifying Exam. If successful, students "advance to candidacy," at which point their GSR pay goes from Step V to Step VI (TA pay does not increase), and tuition for non-California residents is reduced. At least one member of the Qualifying Exam committee must be from outside the Astronomy Department and preferably should come from off campus. Your thesis advisor may chair the Exam Committee as allowed by departmental policy. Nominations for committee members must be forwarded to the Graduate Dean at least one month prior to the date of the examination for approval. It is important to note that the Qualifying Exam may not be held unless the Graduate Dean has approved the exam committee.

Note: because of the reduction in tuition, international students are strongly encouraged to take the Qualifying Exam in their second year and will be guided and supported to do so.

By the end of the fifth year:

9) Thesis Defense: once you have written your thesis, a committee of readers will read it. The majority of this committee must be comprised of UCSC faculty (from any department) but may contain some readers from off campus. The thesis defense must be held at least two weeks before the end of the quarter in which the thesis is to be submitted and the completed draft of the thesis must be submitted to the dissertation committee at least two weeks before the thesis defense to give your committee adequate time to read your thesis and get it back to you with comments and requested revisions. Thesis deadlines are firm; cases of students who fail to meet them will be

adjudicated by a Department Review Committee consisting of the Department Chair, Associate Chair and Graduate Advising Committee.

More detailed requirements on both the Qualifying Exam and Defense may be found on the Graduate Division website: <http://graddiv.ucsc.edu/regulations/handbook.php#dissertation>

Normative Time to Degree:

10) The Department has established five years as the normative time to degree. Normative time is the elapsed time in years that under normal circumstances is needed to complete all requirements for the Ph.D. Time on leaves of absence does not count toward the elapsed time. A one-year extension may be granted if progress warrants and funding is available. Funding will not in general be provided upon after six years. Extensions beyond six years will be granted only for exceptional extenuating circumstances and will be decided upon by the Department Chair, Associate Chair, and the Department Graduate Advising Committee.

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