



**GRADUATE ASSESSMENT PLAN**

**ASTRONOMY**

**Ph.D.**

(Program of Study / Major / Degree Level, etc.)

Program Contact: Massimo Ricotti Phone: ext. 5-5097 E-mail: ricotti@astro.umd.edu

Date submitted to Academic Unit Head: 1/23/12

Program Goals: The Department of Astronomy PhD program educates graduate students toward achieving an advanced-level understanding of modern astronomical concepts, applying technology in the field, performing original thesis research, and communicating research results to the professional astronomical community.

Relevance of goals to the mission statements and/or strategic plans of the University, College, or Program as applicable:

These goals are aligned with the strategic plans of the Program and College to offer a program that reflects modern developments in science, provides opportunities to work on cutting edge research, and provides our graduates with the skills of modern technology.

<b>Assessment benchmarks to track student progress</b>	<b>Assessment Measures and Criteria</b>	<b>Assessment results as feedback</b>
<p>1. Qualifier Exam Objective: Student is expected to demonstrate advanced-level knowledge of astronomy.</p>	<p>The Qualifier exam is given after students complete two years of course work. Performance on the Qualifier exam is evaluated as excellent, very good, good, adequate, and not adequate.</p> <p>The Graduate Education Committee reviews syllabi for required courses on which the Qualifier is based and the results on the Qualifier to assess whether course work adequately prepares students for the Qualifier.</p> <p>Eighty percent of students should receive an adequate or better grade on the Qualifier.</p>	<p>The Graduate Education Committee (GEC) will review syllabi from courses on which the Qualifier is based and results from the Qualifier and make recommendations to the Chair once every four years beginning in 2013.</p>

<p>2. Second year research project</p> <p>Objective: Student is expected to be able to design a scientific project, complete the research, and communicate the results in an oral presentation and a scholarly work.</p>	<p>It is required that students design and complete a research project that includes an oral presentation and written document during their second year of graduate school. A faculty committee evaluates the overall research project as excellent, very good, good, adequate, or not adequate.</p> <p>Eighty percent of students should receive an evaluation of good or better.</p>	<p>Each student receives a second year project review letter, which describes the strengths and weaknesses of the work.</p> <p>The GEC periodically will compare the quality of second year projects to those of previous years to assure that departmental standards are maintained. Second year project review letters and project abstracts will be used in this evaluation.</p> <p>The GEC will compare the quality of second year projects over a four-year period and make recommendations to the Chair once every four years beginning in 2013.</p>
<p>3. Yearly progress report</p> <p>Objective: Student is expected to show progress toward completion of the dissertation and develop expertise in an area of modern astronomy.</p>	<p>Each student in their 3<sup>rd</sup> year and beyond is expected to present annually a report on his/her progress toward the thesis objectives outlined in the thesis proposal.</p> <p>The report consists of a written document and a presentation of the work performed during the past year, and a timeline toward completion of the PhD thesis.</p>	<p>The student is given a report with feedback from the thesis committee and chair, on whether the level of progress is adequate and suggestions on what are the most interesting aspects to pursue with further research.</p> <p>The GEC will compare the quality of yearly progress reports over a four-year period and make recommendations to the Chair once every four years beginning in 2015.</p>
<p>4. PhD thesis</p> <p>Objective: Student is expected to make original contributions to the field of astronomy at the international level.</p>	<p>Students propose, design, complete, and successfully defend before a faculty committee original thesis research.</p> <p>By the end of their program, ninety percent of PhD graduates will submit at least one refereed journal article for publication and make at least one presentation at a professional conference.</p>	<p>The GEC will review publication and conference presentation records of students completing the Ph.D., and make recommendations to the Chair once every four years beginning in 2015.</p>