

**MASTER OF ARTS AND DOCTOR OF PHILOSOPHY IN PHYSICS WITH AN ASTROPHYSICS EMPHASIS – 2012-13**

*In addition to departmental requirements, candidates for graduate degrees must fulfill University requirements described in the “Graduate Education” section of the UCSB General Catalog.*

*The Department of Physics does not offer a terminal M.A. program. Admission is to the Ph.D. program only. Master’s degrees may be awarded only in the case of students who leave the Ph.D. program or for continuing students who have advanced to candidacy and request the M.A. degree. The requirements for the M.A. are:*

1. *Completion of 36 quarter units of coursework, with a minimum of 32 units of graduate-level courses and the rest approved by the student’s academic advisory committee; and*
2. *Successful completion of an M.A. examination administered by the student’s graduate advisory committee (successful completion of the advancement to candidacy exam fulfills this requirement).*

**CORE COURSES FOR THE PHD**

First year students will be required to pass five of the six following graduate physics courses with a grade of B or better. The departmental graduate advisor can exempt students from taking a required course, or may require other courses in addition to those listed here.

COURSE #	COURSE NAME	UNITS	GRADE
PHYS 232	Stellar Structure and Evolution		
PHYS 233	The Interstellar Medium		
PHYS 234	High Energy Astrophysics		
PHYS 235	Extragalactic Astrophysics		
PHYS 236	Cosmology		
PHYS 237	Galactic Dynamics		

**REQUIRED COURSE**

COURSE #	COURSE NAME	UNITS	GRADE
PHYS 215A	Quantum Mechanics		

**TWO OF THE FOUR CLASSES ARE REQUIRED**

COURSE #	COURSE NAME	UNITS	GRADE
PHYS 210A	Electromagnetic Theory		
PHYS 210B	Electromagnetic Theory		
PHYS 215B	Quantum Mechanics		
PHYS 219	Statistical Mechanics		

**ADDITIONAL COURSE REQUIREMENTS**

Theoretical physics students must complete a minimum of four advanced graduate courses, and experimental physics students must complete a minimum of two advanced graduate courses with a grade of B or better. For theoretical physics students, at least one of these courses must be in an area clearly distinct from the student’s field of specialization – such a determination will be made by the departmental graduate advisor.

COURSE #	COURSE NAME	UNITS	GRADE


### ADVANCEMENT TO CANDIDACY EXAM

Students are required to pass an oral advancement to candidacy exam, to be taken during winter quarter of their third year. Students should be able to discuss the key questions that need to be addressed in their field and propose a possible line of research. To ensure that the student and the committee agree on what constitutes an acceptably broad definition of *field*, the student will submit a brief synopsis of his/her presentation at the time the exam is scheduled. The synopsis must be approved by both the chair of the committee and the wiseperson assigned to the exam.

**Students will be evaluated on:**

1. whether the presentation addresses the underlying physics issues of the field and shows a reasonable understanding of the important problems;
2. whether the student is able to respond adequately to questions from the committee. Students must do well in both areas in order to pass.

Exam passed on (date): \_\_\_\_\_

### DISSERTATION

The final period of graduate study is primarily directed toward individual research and the preparation of a research-based dissertation. Research, either experimental or theoretical, is conducted under the supervision of a faculty member, normally in an area related to his or her own field of specialization. Students must pass an oral dissertation defense to be awarded the Ph.D.