

Ph.D. Degree Requirements

General requirements for The University of Arizona Graduate Programs are described on the [Graduate College Program Requirements](#) web page. Below are listed specific requirements for doctoral degree from the Department of Planetary Sciences.

Program of Study

The program of study includes coursework in planetary science and a minor field of study, a qualifying examination, and a Ph.D. dissertation. All elements must be approved by the student's Ph.D. and minor committees, as appropriate, and must conform to Department of Planetary Sciences (PTYS) and University of Arizona Graduate College requirements. Students are guided through their program of study by their Dissertation Advisor and their Minor Advisor, who chair their Ph.D. Committee and Minor Committee, respectively. In addition, the Graduate Admissions and Advising Committee (GAAC) is available to assist students at any stage in their graduate careers.

Time Limits

The Ph.D. must be completed within 5 years of passing the Oral Comprehensive Examination. The Oral Comprehensive Exam must be attempted within 3 years of entering the program. In extraordinary cases exceptions may be granted following department approval and petition to the Graduate College.

Coursework

Students are required to complete 66 units of graduate coursework (500-level and above) consisting of

- Twenty-one units of core courses in Planetary Sciences:
 - PTYS 505A/505B Principles of Planetary Physics (6 units total)
 - PTYS 510A Cosmochemistry (3 units)
 - PTYS 510B Chemistry of the Solar System (3 units)
 - PTYS 512 Planetary Global Tectonics (3 units)
 - PTYS 517 Planetary Atmospheres and Remote Sensing (3 units)
 - PTYS 554 Evolution of Planetary Surfaces (3 units)

Exceptionally well prepared students may request to waive the requirement to take a core course. Waiver requests are reviewed by the core course instructor in consultation with the GAAC. The student is required to demonstrate adequate knowledge of the core course material.

- Nine units of coursework in the minor field of study.
- Three units of elective coursework (graded ABCDE) numbered PTYS 500 or above
- Fifteen additional units of elective courses numbered PTYS 500 or above (including research, field trips, and ABCDE graded courses) as approved by the Ph.D. committee
- Eighteen units of dissertation credit (PTY 920; PTYS 910 thesis units may not be substituted for 920).

At least one half the units used on the Doctoral Plan of Study must be in courses in which regular grades (ABC) have been earned. Students must maintain a GPA of 3.0 or better in the PTYS core

courses to be considered in good academic standing. Failure to maintain this standing results in dismissal from the Ph.D. program

Academic Standing and Academic Progress

Ph.D. students are expected to satisfy [Graduate College rules on academic standing](#) and [academic progress](#) with respect to course work. In addition, good academic standing in the Department of Planetary Sciences doctoral program requires that the Dissertation Progress Report indicate satisfactory progress toward completing the dissertation. A student's failure to meet with their committee within the required time frame is equivalent to an unsatisfactory progress report. In the event that the Dissertation Committee determines that satisfactory progress is not being made, the student is deemed to be on [academic probation](#). In this case, a second Dissertation Progress Report must be delivered within 6 months of the unsatisfactory report. If this second report is satisfactory, the student is once again considered to be making academic progress. However, if the Dissertation Committee reports unsatisfactory progress after this second Dissertation Progress Report, the student's participation in the doctoral program is terminated and the student reverts to non-degree status in the Graduate College. In this case, the student retains the option of applying to the department's M.S. program and completing a M.S. degree.

In the event of an unsatisfactory progress report, the Dissertation Committee chairman will deliver a letter to the student explaining the reason for the unsatisfactory report within 2 weeks of the Dissertation Progress meeting. The letter must also indicate how the student can return to satisfactory standing and the date by which these actions must occur. Copies of this letter must be filed with the Graduate College, the chairman of the GAAC, the department head and assistant department head. The student may appeal the Dissertation Committee's decision to the GAAC after receiving this letter, and the case will be reviewed by the GAAC.

Teaching Assistantships

Students are required to serve as teaching assistants in a course offered by PTYS at a minimum one-quarter time level for a minimum of two semesters. Students with teaching experience outside the PTYS department may petition the GAAC to waive this requirement.

Minor Requirements

All PTYS Ph.D. students are required to complete a minor program of study. The minor course of study is chosen in consultation with the student's Minor Advisor. There are two options to fulfill the minor requirement: (1) students may minor in Planetary Sciences; or (2) students may minor in any physical science through another department or approved program at the University of Arizona. Students taking the Planetary Sciences minor must construct a sequence of courses, approved by the Minor Committee, which includes a combination of graduate courses in the physical sciences that support a coherent theme relevant to planetary science. Students electing an outside minor are responsible for determining and fulfilling the requirements for a minor in an outside department or approved program.

A master's degree in a relevant scientific discipline from another university may satisfy the minor requirement. In this case the student petitions the GAAC, which serves as the minor committee. Documentation of the relevance and extent of the student's master's work is required.

- The University of Arizona Graduate College requirements for Minor Program of Study are available online at <http://catalog.arizona.edu/2009-10/policies/gradminor.htm> .
- All minors, regardless of department, consist of at least nine units of 500 or higher level courses.
- The minor course of study must be approved by the student's Minor Committee.

- The student may be required to take a Minor Exam, depending on area of study, requirements of departments outside PTYS, or the Minor Committee.
- The student must maintain a GPA of 3.0 or better in their minor coursework to be considered in good academic standing.

Graduate Student Colloquia

Students are required to present three Graduate Student Colloquia. The presentations are evaluated by the audience and the student will be informed of the results of those evaluations within one month of the presentation.

- The colloquia are given in the second, third, and fourth semesters of study.
- At least one colloquium must be a review of an article (not authored by the student) in a peer-reviewed journal.
- At least one colloquium must be a summary of the student's research.

Oral Comprehensive Examination

The UA Graduate College Policies and Procedures for the Oral Comprehensive Examination are here: http://grad.arizona.edu/system/files/Comp_Exam_Packet.pdf. The Oral Comprehensive Examination may not be less than two hours or longer than three hours. **NOTE:** The Graduate College requires only a one-hour examination. The PtyS/LPL requirement is that the Oral Comprehensive Examination **may not be less than two hours or longer than three hours**.

Failing the examination requires a negative vote of two or more committee members. An abstention counts as a negative vote.

Candidates must attempt the Oral Comprehensive Examination within 3 years of enrollment. The student must have completed all PTYS core courses and the minor requirements before taking the examination.

Candidates either pass the exam, fail with the opportunity to retake the exam not sooner than 6 weeks after the failed exam and not longer than 12 months afterward, or fail without the opportunity to retake the exam. In this last case the student is dismissed from the Ph.D. program. However, the student remains eligible for the M.S. degree program.

Dissertation

The University of Arizona Graduate College requirements for the dissertation are available online at <http://grad.arizona.edu/academics/program-requirements/doctor-of-philosophy/dissertation>.

Students must write a Ph.D. dissertation describing the significant results of their research. The results must be original and of high enough quality to merit publication in the peer-reviewed literature.

Reprints of published papers or preprints of manuscripts submitted for publication may be included as chapters in theses or dissertations if the student is the first or sole author and if the student's committee consents. Because the thesis or dissertation must represent an integrated body of original scholarly work, the relevance of the work to the thesis must be explained in the Introduction or elsewhere within the thesis. Reprints or preprints of papers on which the student is an author, but not the first author, may only be included as appendices, although the work that the student contributed may be included within the body of the thesis or dissertation. Written permission must be obtained for the use of any copyrighted material.

The dissertation must conform to the rules described in the [University of Arizona Manual for Electronic Submission of Theses and Dissertations](#). Two copies of the dissertation must be deposited with the PTYS library.

Final Oral Defense Examination

The Final Oral Defense Examination consists of two parts: (1) a public presentation during which the candidate describes the results of their research and satisfactorily addresses questions from the audience and (2) a closed examination, where the members of the Ph.D. Committee question the student to determine whether the dissertation meets the faculty's standards for independent intellectual and scholarly achievement. The entire proceedings may not exceed three hours. Members of the committee must be present for the entire examination.

The University of Arizona Graduate College requirements for the Final Oral Defense Examination are available online at <http://grad.arizona.edu/academics/program-requirements/doctor-of-philosophy/final-oral-defense-examination>.

All other requirements of the Ph.D. program must be completed prior to the Final Oral Defense.

Candidates must pass the Final Oral Defense Examination within 5 years of passing the Oral Comprehensive Examination.

The Ph.D. Committee may accept the dissertation as is, accept the dissertation subject to modifications, or reject the dissertation. In the latter case, the student is dismissed from the Ph.D. program.

Acceptance or rejection of the dissertation is decided by vote of the committee. In accordance with the [University of Arizona Graduate College requirements](#), if there is more than one dissenting vote then the dissertation is rejected.

Approved by the PTYS/LPL Faculty on April 25, 2009