Procedures for the Ph.D.

Courses
To earn a Ph.D. in the Department of Planetary Sciences, students must complete 63 units of academic credit:

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Units</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CORE</td>
<td>12</td>
<td>12 units of core courses, consisting of 2 courses from the Physics group, and one each from the Chemistry and Geology groups:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>PHYSICS (PTYS 505A; PTYS 505B; PTYS 517; PTYS 553)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>CHEMISTRY (PTYS 510A; PTYS 510B)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>GEOLOGY (PTYS 512; PTYS 554)</td>
</tr>
<tr>
<td>MINOR</td>
<td>9</td>
<td>9 units of minor courses (for a PTYS minor; other minors may have higher unit requirements that students must fulfill; minor units may NOT be applied toward any other degree requirement)</td>
</tr>
<tr>
<td>ABC GRADED ELECTIVES</td>
<td>12</td>
<td>12 units of elective coursework (graded ABCDE) numbered PTYS 500 or above</td>
</tr>
<tr>
<td>OTHER ELECTIVES</td>
<td>12</td>
<td>12 additional units of elective courses numbered 500 and above (including research, field trips, independent study, PTYS elective courses, seminars, and courses offered in other departments) as approved by advisor</td>
</tr>
<tr>
<td>DISSERTATION CREDIT</td>
<td>18</td>
<td>18 units of dissertation credit (920 units)</td>
</tr>
<tr>
<td></td>
<td>63</td>
<td>Students may not enroll in 920 units until after passing the Oral Comprehensive Examination.</td>
</tr>
</tbody>
</table>
Students are encouraged to consult with their advisors and with the Graduate Admissions and Advising Committee (GAAC) to select courses that complement their research interests.

**Graduate Student Colloquia**
Students are required to present three Graduate Student Colloquia. This is usually done in the second, third, and fourth semesters after admission to the Ph.D. program. Exceptions must be agreed to by the Graduate Admissions and Advising Committee (GAAC). At least one presentation should be on an article in a peer-reviewed journal and at least one presentation on the student’s research.

Audience evaluations of the presentation will be relayed to the student by the faculty chair of the Graduate Student Colloquium. The faculty member will notify the Academic Office when each presentation has been completed. No further action by the student is required.

**Minor Program of Study**
The [Minor Program Approval](#) form must be filed with the Department of Planetary Sciences Academic Office by the end of the second semester. The minor requirements must be completed before the Oral Comprehensive Exam.

**Degree Audit Forms.** Students must initiate and complete the following forms, available through UAccess Student/GradPath, as part of the degree auditing and monitoring process:

1. [Responsible Conduct of Research Statement](#)
2. [Plan of Study](#) (filed no later than the third semester)
3. [Comprehensive Exam Committee Appointment Form](#)
4. [Announcement of Doctoral Comprehensive Exam](#)
5. [Prospectus/Proposal Confirmation](#)
6. [Doctoral Dissertation Committee Appointment](#)
7. [Announcement of Final Oral Defense](#)

For assistance in completing or routing these forms, students should see PTYS graduate advisor (Kuiper 333).

Faculty advisors will initiate the [Results of Comp Exam](#) and [Results of Final Oral Defense](#) forms.

**Written Comprehensive Examination**
- Students must pass the Written Comprehensive Examination before sitting for the Oral Comprehensive Examination.
- Written exam will be offered at the end of each spring semester.
- Written exam will consist of 3 sections (physics, chemistry, geology); each section will include 2 questions from each of the core course offerings for that discipline. In total, there will be 8 physics questions, 4 chemistry questions, 4 geology questions.
- Students must answer 4 physics questions, 2 chemistry questions, and 2 geology questions. Students choose which questions to answer within each section and indicate which questions are to be graded.
- Written exam consists of 2 sessions of 3 hours each, separated by a break.
- Passing grade is 60% across all sections. If a student passes the exam, but scores <60% in any of the three subject areas, the student must take and pass graded course(s) in that subject area(s) within two
years. Course(s) will be selected by the student in consultation with his/her advisor and with approval of the Written Exam Committee.

- Students may elect to take the written exam whenever it is offered (not necessary to wait until end of second year).

More information about the Written Exam is available in the document titled PTYS Requirements.

**Oral Comprehensive Examination**

- Students must take the Oral Comprehensive Examination before the end of the 6th semester.
- Students must complete all PTYS core courses and minor requirements before applying to take the Oral Comprehensive Examination.
- The **Minor Program Approval** form must be completed before application to take the Oral Comprehensive Examination.
- The Graduate Student Colloquium presentations must be completed before the student takes the Oral Comprehensive Examination.

**In advance of the oral exam:**

1. Student must complete the online **Comprehensive Exam Committee Appointment Form** (GradPath) **at least 3 weeks prior to the exam date**.
2. Student must complete the online **Announcement of Doctoral Comprehensive Exam Form** (GradPath).
3. **At least 3 weeks prior to the oral examination**, the student must supply the following to their Preliminary Examination Committee:
   - a written proposal outlining the primary proposed dissertation research
   - a second written proposal presenting an alternate dissertation project.

**Both proposals should include:**

- a clear statement of the problems to be investigated
- a description of the proposed research objectives
- a description of prior results
- a description of the suitability of the methods proposed for carrying out the proposed investigation, and the significance of the proposed work as it relates to broader issues in planetary science.

It is essential that both proposals present a clear work plan as to how the project will be implemented. In addition, the proposals should include a description of the appropriate skills and techniques necessary for project success as well as how they will be developed or acquired by the student.

**The proposal for the primary research project** should be 2 to 3 single-spaced pages in length plus supporting figures, tables, and references. **The proposal outlining the alternate** project should be 1 to 2 single-spaced pages, plus figures, tables, and references. Font size should be no larger than 12 pt and no smaller than 10 pt, in Times New Roman or similar. Margin sizes should not exceed 1” on all sides. The entire package must be submitted to the exam committee no later than three weeks prior to the scheduled exam date.
The oral exam is closed to the public and generally begins with a presentation of the primary research proposal that lasts no more than 15 minutes. The student may be asked to present the second proposal at the discretion of the committee. Following this, the examination is open to questions by the committee. The purpose of the exam is to determine the ability of the student to pursue independent research leading to a Ph.D.

Advancement to Candidacy
When the student has an approved Plan of Study on file, has satisfied all course work, and has passed the written and oral portions of the Comprehensive Examination for Advancement to Candidacy, he or she must file the Comp Exam Committee Appointment Form (GradPath) no later than six months before the Final Oral Defense Examination is scheduled. Upon completion of the Oral Comprehensive Examination, the student may register for PTYS 920 Dissertation units in order to satisfy the requirement of eighteen (18) PTYS 920 units before the Final Oral Defense Examination.

Dissertation Progress Reports
Students are required to file Dissertation Progress Reports with the Academic Office annually for 3 years after successful completion of their Oral Comprehensive Exam and every 6 months thereafter. Reports are due by the anniversary date of the Oral Comprehensive Exam and (when required) on the anniversary date plus 6 months.

Academic Standing
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.

Final Oral Defense Examination
• All other **Ph.D. Degree Requirements** must be completed prior to scheduling the Final Oral Defense Examination.

• Students must defend their dissertation within 5 years of passing the Oral Comprehensive Examination.

• Copies of the dissertation must be distributed to the Dissertation Committee 4 weeks prior to the Final Oral Defense Examination. At this time the dissertation must be complete, containing all figures and references in addition to the text.

• Upon completion of the examination and satisfaction of all requirements, the committee chair will initiate and complete the [Results of Final Oral Defense form](GradPath).

• Information about formatting and submitting the dissertation is available [online from the Graduate College](Graduate).  

• The student must submit **one** print copy of the dissertation to the PTYS/LPL library. Upon receipt of the finalized dissertation, the Dean of the Graduate College will recommend conferral of the doctoral degree by the Arizona Board of Regents.

*Approved by the PTYS/LPL Faculty on July 13, 2018.*