

Department of the Geophysical Sciences: PhD Graduate Student Handbook

Revised December 2024

The purpose of this Handbook is to provide guidance to help you through your degree program. Please read it early and often. The principal aims of a PhD education are to train students in advanced, specialized scholarship and to prepare them for a variety of careers that benefit from that training. The principal role of the faculty is to help you design, carry out, and disseminate your research, and to advise you on securing a professional position upon completion of the PhD. What is laid out below is deliberately kept as general as possible; the program of study is to be arranged cooperatively between the student and their advisory committee. Certain formal requirements, for example the timing of candidacy exams, apply uniformly across the Department. Others, such as the form of exams, courses required by the advisory committee, and the nature of the research prospectus and of the research itself, vary among research groups.

Degree Program

The PhD is awarded for successful defense of a significant body of original research, with a public presentation followed by a closed examination with the advisory committee. Students must also be registered full-time throughout the duration of their program, meaning 300 course units per quarter, including the summer. The selection of courses is arranged with the consultation and approval of the advisory committee. Typically, students will take more formal courses at the outset and will gradually shift toward a balance of more reading and research courses. Courses can be at the graduate or advanced undergraduate level and should be chosen in consultation with the advisory committee. The only specific course requirement for the PhD is GEOS 30200, Introduction to Research in the Geophysical Sciences, taken during the student's first quarter in the program. PhD students must be registered for at least nine quarters. Students must maintain an average grade of B or better in all courses and no grade less than a C. Failure to meet these grade standards may result in academic probation.

An important part of training to become a scientist is gaining an appreciation and understanding of research disciplines outside one's own specialization. Accordingly, PhD students, especially in their first few years, are strongly encouraged to regularly attend departmental functions that offer these opportunities throughout the academic year, including Department Seminars, Noon Balloon presentations, and student-led DoGS Lunches.

Here's a link to get you started on applying to the PhD program:

<https://geosci.uchicago.edu/academics/graduate-program-and-admissions/deadlines-and-how-to-apply/>

MS Degree Option

The Department does not have a separate program for the MS in Geophysical Sciences, though some students take this degree on the way to the PhD. Academic requirements for the MS are:

1. A minimum of nine courses: At least three must be graduate level courses in the Department, including the required first-year course GEOS30200; at least three additional graduate level courses in either the Physical Sciences Division or the Biological Sciences Division; and at

least one reading and research course. The balance of course work can be at either the graduate or advanced undergraduate level.

2. An average grade of B or better and no grade less than C in courses used toward the degree.
3. An original research paper, approved by the student's advisory committee. The structure and content of the paper are arranged with the student's committee.
4. A seminar on the research paper, delivered to a general departmental audience and announced at least one week in advance.

The minimum time for completion of the MS is three quarters, but with allowance for research and writing, the more usual time to completion is four to seven quarters. A student seeking the MS degree must submit an Application to Graduate by the first day of the quarter in which they expect to graduate. Additionally, the student's principal advisor must submit a signed Master's Degree Form stating that all requirements will have been met prior to the final Convocation deadline of the quarter in which the student will receive the degree.

The Advisory Committee

Students should have been assigned an interim advisor upon matriculation. If that is not the case, please see the Student Affairs Administrator (SAA) right away. During their first year, students should meet with their interim advisor at least once per quarter to discuss research interests and course registration. Students are also strongly encouraged to discuss research interests with a broad range of scientists in this and other departments. In most cases, but not always, the interim advisor continues to serve as the long-term principal advisor.

The committee consists of at least three members. The principal advisor must be a member of the Department's academic faculty (tenure-track professors and professors part-time). The other members on the committee can be academic faculty or research professors from within the Department; other academic faculty or research professors from elsewhere in the University or affiliated institutions (Argonne, Fermi, Field Museum, etc.); and faculty from other institutions. At least three members of the advisory committee must be University of Chicago faculty members, and at least half of the committee must be faculty of the Department. The composition of the committee, which may change during a student's tenure, is arranged between the student and their principal advisor. Exceptions to the standards of committee composition are rare and must be justified by the student and approved in advance by the Director of Graduate Studies. In the unusual case that the principal advisor is not a member of the Department's faculty, the student must recruit a pro-forma advisor from the Department's academic faculty to work with the principal advisor in overseeing academic progress. If a student wants to switch principal advisors, it is the responsibility of the student to recruit a new advisor and to inform the previous advisor and the Student Affairs Administrator of the change.

Milestones

Students must recruit a principal advisor and an advisory committee by the end of their third quarter in the program (typically spring quarter of the first year).

By the end of their seventh quarter in the program (typically spring quarter of the second year), students must take qualifying exams to enter PhD candidacy. Requests for exceptions must be justified by the student and approved in advance by the advisory committee and the Director of Graduate Studies. The exam requirements are: (1) a written research prospectus, laying out a proposed course of research that may lead to the PhD; (2) an oral defense of that prospectus with the advisory committee; and (3) a written exam, with questions posed by the advisory committee. The structure of these requirements varies among research groups within the Department and is set by the advisory committee. Typically the committee requires that the prospectus be provided at least two weeks prior to the written exam, and that the oral exam follow within four weeks of the written exam. Upon passing exams and filing relevant paperwork with the Student Affairs Administrator, the student becomes a PhD candidate.

In the event of an unsuccessful candidacy exam, the advisory committee will establish a timeline for next steps, which can include termination from the program, a repeat examination, or other requirements. A student who fails to pass the candidacy examination the first time it is taken may continue in the graduate program by consent of their advisory committee, or the student may petition the Director of Graduate Studies to form a new advisory committee. If the student is allowed to retake any part of the exam, this must be done no later than their eleventh quarter in the program (typically spring quarter of the third year). Two failures on any part of the candidacy exam will bar the student from further efforts to gain admission to candidacy.

Students in the Department typically complete the PhD in five to six years. By departmental and divisional policy, students must finish their PhD program within seven years of matriculating. In rare cases, this limit may be extended with approval of the principal advisor, the Director of Graduate Studies, the Department Chair, and the Dean of the Physical Sciences Division. Petitions must be sent to the PSD Dean of Students well in advance. Approval of exceptions is not automatic; exceptions typically involve factors outside the student's control, such as shutdown of lab facilities or lack of access to museums and other research institutes.

Students are encouraged to meet at least once per quarter with their interim advisor or principal advisor. Students must meet at least annually with their advisory committee. Following such a meeting, students must submit an annual progress report (appended at the end of this handbook), showing that they are moving well toward their degree requirements or, if not, what needs to be done to get back on track and remain in good academic standing. Failure to submit a satisfactory progress report may result in the student being placed on academic probation. The annual meeting is a minimum requirement. Students should feel free to request a committee meeting at any time. Likewise, the committee may require additional meetings.

A PhD dissertation, approved in the manner described below, is the key requirement for the PhD degree. When the advisory committee agrees that the thesis work has advanced to a point suitable in scope and completion, or will do so with a limited number of specific additions or revisions, then the candidate may be given approval to schedule a dissertation defense. This defense must be scheduled and announced to the Department at least one week in advance.

The dissertation defense consists of a public presentation of the subject and major conclusions of the dissertation, followed by a closed examination to be attended by the advisory committee. Any other member of the academic faculty may attend the closed examination, in a nonvoting capacity. Upon successful completion of the dissertation defense, including any revisions to the dissertation

required by the advisory committee, the Report of Final Examination is signed by members of the committee and returned to the SAA. It is common for the advisory committee to require changes to the dissertation after the defense; it is therefore wise to consult the committee in advance about likely revisions, so that the student can budget sufficient time. The University's Dissertation Secretary must approve the format of the dissertation. It is therefore a good idea to give a copy of the dissertation to the Secretary prior to the defense, so that formatting changes after the defense can be minimized.

Advisory committees typically reach a consensus on matters such as the satisfactory completion of candidacy exams, required revisions to the dissertation, and final approval of the dissertation. If there is disagreement among committee members, outcomes are determined by majority vote of the committee.

The University sets requirements regarding the application for the PhD degree, the dissertation formatting requirements, and the timing of the approved, submitted dissertation with respect to dates of graduation and convocation. These can be found via the Academic Policies page of the University's Student Manual: <https://studentmanual.uchicago.edu/academic-policies/>

For both the MS and the PhD, it is the responsibility of the student to check with the SAA regarding all relevant deadlines to apply for a degree.

Failing to meet any of the milestones above may be an indication that the student is not making sufficient research progress and so may be placed on academic probation.: A student who is deemed not to be in good standing will be informed of this in writing, along with expectations and a timeline for what must be done to return to good standing. This policy provides due process to protect the student. For details, see: <https://studentmanual.uchicago.edu/academic-policies/registration-for-students-in-phd-programs/good-academic-standing-policy-for-phd-programs/>.

More information is also available on the PSD website:
<https://physicalsciences.uchicago.edu/current-students/policies/>

Milestone checklist

__ Year 1, first quarter: take GEOS 30200.

__ Year 1, by end of third quarter in program: recruit principal advisor and advisory committee.

__ By end of seventh quarter in program: pass candidacy exams.

__ Every year: Meet at least once with advisory committee and file progress report.

__ Before end of seventh year in program: Defend dissertation and submit relevant paperwork. (As stated above, seven years is an upper limit; students in our department typically finish in five to six years, and we strongly encourage keeping that as a target.)

Financial Support

The Department ensures that PhD students have financial support, including primary funding, tuition, student fees, and health insurance. The main purpose of this financial support is to enable progress toward the student's degree, but the support often also requires that a portion of the student's effort be committed to specific teaching or research obligations. The details are mandated by the University and will be included in your initial offer of admission and in subsequent assignment notifications. The balance between teaching and research assistantships (TAs and RAs) varies from student to student, with a maximum of three TA quarters per year and four RA quarters per year. Admitted students may want to discuss the matter with their prospective advisors.

- The foregoing paragraph reflects departmental practice. The University requires that we include some additional standardized language: *“Our PhD students typically serve as TAs for 8 quarters, and a student may be required to hold up to 3 quarters of teaching each year over the course of their program to satisfy Primary funding requirements. Students who do not hold research assignments or fellowship stipend positions are required to hold 3 teaching assignments each academic year. Students who are required to hold more than 3 teaching assignments in an academic year will receive additional compensation above their Primary funding amount.”*

Students are encouraged to apply for research fellowships from NSF, NASA, and other governmental and private organizations. Your advisory committee is a good source of information on relevant fellowships. UChicagoGRAD also keeps a list of fellowships and can help with applications (<https://grad.uchicago.edu/>).

People to See for Help

Students sometimes encounter problems and setbacks on their way to the PhD. These may involve the common situation of uncertainty about the direction of research, to less common and more serious issues such as not remaining in good academic standing (i.e., being placed on academic probation); research interests that don't fit well with those of the principal advisor; or losing a key member of the advisory committee (perhaps because they have left the University).

It is important to bear in mind that it is the responsibility of the student to recruit a principal advisor and advisory committee, though of course members of the faculty are available to give advice in reaching that goal. Faculty are not assigned to committees by the Department, nor are they obligated to serve on any particular committee. Changes in research direction, principal advisor, or committee composition do not reset key milestones such as the times by which students must attain candidacy and defend the dissertation. Nonetheless, students may petition the Director of Graduate Studies to modify the expected timeline of academic progress.

For academic matters, the first person to talk to should be your principal advisor. If that proves unsatisfactory, try other members of your committee, other trusted faculty not on your committee, or senior graduate students in your research area. If you're still having trouble, speak with the Director of Graduate Studies or the PSD Dean of Students.

For infrastructure (office space, furniture, etc.), see the Building Manager, Victor Gavin: vgavin2@uchicago.edu

For administrative matters (registration, financial aid, reimbursements, room reservations, etc.), see the Student Affairs Administrator, Adelaide Grosse: adelaidel@uchicago.edu

For network problems, contact the Physical Sciences Division Desktop Support group: psdds@uchicago.edu

You can always contact the Director of Graduate Studies (mfoote@uchicago.edu) or the PSD Dean of Students (psd-dos@lists.uchicago.edu) if you're not getting the help you need.

Other Resources

The PSD Dean of Students maintains a list of student resources related to health, safety, disability accommodations, leaves of absence, immigration, and many other matters, as well as links to university and divisional policies of which you should be aware: <https://physicalsciences.uchicago.edu/current-students>.

The PSD Dean's Student Advisory Committee (DSAC) fields questions and concerns from graduate students in the Division. The current liaison from Geophysical Sciences is Chris Greidanus (cgreidanus@uchicago.edu). For more detail, see: <https://physicalsciences.uchicago.edu/current-students/professional-leadership-development/dsac/>

UChicagoGRAD (<https://grad.uchicago.edu>) provides advice on writing, fellowship applications, interviews, presentations, and other career-related matters.

The Chicago Center for Teaching and Learning (CCTL) offers resources and training related to teaching: <https://teaching.uchicago.edu/>.

PhD students at the University serving as teaching assistants or research assistants, and any PSD PhD students in years two and above, are unionized Graduate Student Employees (GSEs). A collective bargaining agreement has been reached: <https://provost.uchicago.edu/initiatives/graduate-student-unionization>. Currently, the union stewards from Geophysical Sciences are Amanda Doyle (amandad@uchicago.edu) and Eric Van Clepper (ericvc@uchicago.edu).

Registration deadlines can be found at: <https://registrar.uchicago.edu/calendars/registration-dates-deadlines>

The University has established a grievance policy: <https://studentmanual.uchicago.edu/university-policies/graduate-student-grievance-policy/>

Students with questions may contact Michael Foote, Director of Graduate Studies in the Department. For non-academic concerns and any other matters, students may contact Bahareh Lampert, Dean of Students in the Division (psd-dos@lists.uchicago.edu), or Amanda Young, Director of Graduate Student Affairs in UChicagoGRAD (amanday@uchicago.edu).

THE UNIVERSITY OF CHICAGO
DEPARTMENT OF THE GEOPHYSICAL SCIENCES

Annual Report to the Advisory Committee

NAME: _____ University ID: _____ YEAR: _____

For the student: Please complete sections 1-10 to the extent that the information is available and attach a one- or two-page summary of your research progress and plans. **Sign on the final page after your committee meeting and submit the completed form to the Student Affairs Administrator.**

1. I entered the Geophysical Sciences graduate program in the _____ quarter of _____.

2. I (circle one) passed / will take the candidacy examination in the _____ quarter of _____.

3. I expect to take the Final Examination (thesis defense) in the _____ quarter of _____.

4. Date of committee meeting: _____.

5. Career goals: _____

6. Committee:

Principal adviser: _____

Committee members: _____

7. Courses taken or in which you are currently enrolled for this academic year.

Course Number and Name	Instructor	Quarter
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

8. Thesis topic: _____

9. List any publications, national/international presentations, and manuscripts/abstracts in progress.

NAME: _____ University ID: _____ YEAR: _____

10. Please rate your own progress and list any notes, special considerations, or concerns that you have:

STUDENT: SIGN ON THE FINAL PAGE AFTER YOUR COMMITTEE MEETING.

NAME: _____ University ID: _____ YEAR: _____

3. If the student is late in their fourth year or early in their fifth year of study, please fill out this additional section. There is no need to do this every year, just once. Check one:

- The student is on track to complete their remaining degree requirements, including submission and defense of the dissertation, by the end of their seventh year of study, consistent with PhD registration limits in the Physical Sciences Division. The student is making satisfactory academic progress and is in good academic standing.

Quarter and year the student is expected to complete all degree requirements and receive their PhD:

- The student is not on track to complete their remaining degree requirements, including submission and defense of the dissertation, by the end of their seventh year of study.

If the student is **not** on track to finish within seven years, please use the space below to describe concerns, goals, deadlines, etc. not already covered in item (2) above. By indicating that the student not on track to complete degree requirements on time, you are indicating that the student may not be in good academic standing and that there may be a need for academic probation. The Dean of Students office will reach out to discuss possible next steps, as determined by the faculty advisor and committee.

Comments:

Committee signatures:

Principal
advisor

Student signature: I have met with my committee and understand their comments on my progress as entered above.

Signed: _____ Date: _____