

Manual For Physics and Astronomy Graduate Students

2026-27



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1. Welcome

Welcome to the Department of Physics and Astronomy at Purdue University. You just joined a community of scholars composed of distinguished faculty, outstanding postdoctoral fellows, and talented students. We are excited that you have chosen to join our department!

Whether you seek a career in academy, industry or in the service of the Nation, you are about to discover that graduate study is quite different from your undergraduate experience. At the beginning you will be busy taking coursework. Later, however, you will have a much narrower and deeper focus on a particular subject that you will become an expert in. You will have the chance to work with our internationally known faculty on a wide variety of topics of current interest. You will have access to state-of-the-art facilities and will publish your discoveries in leading journals.

Graduate programs also usually require much greater individual initiative than undergraduate courses of study, and you will be responsible for your own progress toward the degree. You will face many exciting and rewarding challenges. The relationship that you develop with your future advisor will be of the utmost importance to your successful pursuit of a graduate degree. While you are identifying your advisor, you will have mentors, both faculty and peer graduate students, who will help you along the way. This manual describes milestones in your expected progress with your studies and will guide your progress towards your degree.

Again, welcome to the Department! We wish you a successful, fun, and productive stay here!

2. Departmental Contacts

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3. Overview of PhD Timeline

The following is the typical timeline to complete your PhD degree. Next to each milestone along your path to PhD is a reference to the section of this document that explains that milestone in detail. Also, see section 13 for the timeline for specific deadlines throughout your PhD path.

Arrival: (Week prior to the start of classes, Fall Term a.k.a. Orientation Week)

- Welcoming of new students (Section 5)
- Decide on classes for fall term (Section 7)

First Year:

- Search for research group and begin research. (Section 9)
- Complete 4-5 of the classes required for your degree (Section 10)

Second Year:

- Complete rest of course work (Section 10)
- Find research group and begin research towards degree (Section 9, 11)

Third Year:

- Continue research towards degree
- Note that it is expected that from 3rd year on each student will be supported with an RA from the research group they join. TA's are not guaranteed past 2nd year.
- Pass preliminary exam (Section 12)

Fourth/Fifth Year:

- Continue research towards degree

Fifth or Sixth Year:

- Conclude research
- Write and defend your thesis (Section 10, 11)
- Graduate

Those planning on either a terminal MSc degree or those planning to obtain MSc on the path to PhD, see section 15.

4. Staying in Good Standing

To stay in good standing, a graduate student must progress in a timely manner towards completing their Doctoral degree. As such, certain milestones along the path to PhD must be met by specific times to show such progress. Below is a list of these milestones:

1. Complete core courses prior to the end of Spring term in 2nd year.

2. Begin research towards PhD (PHYS 69900) with a major Professor at the prior to the beginning of the Fall semester of your 3rd year. It is expected that the group you join will pay you for a research assistantship (RA). Only under exceptional circumstances will TA's be offered to 3rd year or more senior students in research groups.
3. Complete Preliminary Exam by end of Spring term in 4th year.
4. Defend Thesis prior to end of Summer Term in 6th year.

Students who fall out of good standing will be notified in the following term so they can remedy this. If a student remains out of good standing for two consecutive semesters, they **will not be permitted to enroll the next semester**.

Note, a student who is in jeopardy of being terminated from the graduate program because they have not made satisfactory progress toward completion of their degree has the right to appeal to the Graduate Oversight Committee.

5. Policy for Holding a TA position

Conditions to hold a TA: In order to secure a Teaching Assistant (TA) position with the Department, graduate students must satisfy PHYS 696 requirements. These requirements are:

1. If you are a TA, you must take the Pedagogical Methods for Physics Graduate Students course PHYS 60500 during your first semester of teaching. Failure to attend results in the loss of TA privileges.
2. All 1st and 2nd year graduate students must register for and pass PHYS 696. Failing to do so will result in the loss of TA privileges.
3. Senior graduate students, beginning with the summer semester between the 2nd and 3rd year, will only be considered for a TA position if 4 semesters of PHYS 696 are completed.

Your required availability: Please note that TAs need to be available **starting at 8am** on the Monday of the week before classes start. **At the end of the semester**, TAs need to be available until 5pm on Tuesday after the week of final exams, when grades are due at the end of the semester. The first violation results in loss of TA salary for the week. A second violation results in an immediate loss of TA privileges.

Any academic dishonesty regarding PHYS 696 attendance will result in a no-pass grade for the semester and a loss of TA privileges.

We are highly encouraging you to keep attending our Colloquia for your own professional growth, even after completing the maximum number of PHYS 696 required.

Regaining a lost TA privilege: If you lost your TA privilege, you may regain it in a subsequent semester, after you passed PHYS 696.

6. New Graduate Student Orientation

Most new graduate students begin their studies in the fall semester and must arrive at Purdue in time for an orientation meeting that begins at 9:00am EDT (Eastern Daylight Time) on the Monday before fall- semester classes begin. Its purpose is to introduce you to key faculty, staff and student representatives who will help you get ready to begin your work and study in the Department of Physics and Astronomy.

Some of those meetings will follow up on communications sent to you after being admitted to the graduate program. For example, you will schedule a meeting with your initial academic advisor later during orientation week. You will also learn about meetings that Purdue University requires of all new graduate students to attend and about practical matters like payroll signup. Finally, if you are paid to work as a Teaching Assistant, you will learn about required meetings for new instructional staff that will help you prepare for that work.

If you are the rare new graduate student who begins your studies in the spring semester, the chair of the Graduate Student Oversight Committee will facilitate your orientation.

As you begin your graduate studies you should be aware that your progress will be measured by your grades, the quality of research you do, and your performance as teaching or research assistants. The Graduate Student Oversight Committee evaluates each student's progress each semester to determine whether they should be permitted to continue graduate work.

7. The Diagnostic Test

New graduate students will be sent approximately one month prior to the start of classes a Diagnostic Test which consists of four consecutive exams, each 30 minutes long. The role of the Diagnostic Test is to guide, in consultation with an Academic Advisor, your choice of classes for your first year. These tests have been designed to let you know the level of physics knowledge the department expects prior to enrolling in our core courses of quantum mechanics, E&M and statistical mechanics as well as basic classical mechanics.

The examination tests knowledge of classical mechanics at the level of texts like *Classical Dynamics of Particles and Systems* by Marion and Thornton; of electricity and magnetism at the level of texts like *Introduction to Electrodynamics* by Griffiths; of quantum physics at the level of

texts like *Introduction to Quantum Mechanics* by Griffiths; and of thermal physics at the level of texts like *Thermal Physics* by Kittel and Kroemer.

Use the diagnostic test to determine if you need to refresh your memory of some topics prior to arriving for the Fall semester.

8. Your Academic Advisor and Selecting Courses

Later during orientation week, you will meet with your initial academic advisor to review your performance on the Diagnostic Test, discuss the appropriateness of requesting core course equivalences and complete a Departmental Plan of Study. Your initial academic advisor is the current Associate Head overseeing academic affairs.

Your Departmental Plan of Study must lay out a realistic course of study taking no more than two years for you to achieve either a terminal M.S. degree (see Section 15) or to complete the core courses on the path to PhD. The core courses consist of Statistical Mechanics (PHYS 61700), Advanced Theory of Electricity and Magnetism I (PHYS 63000) and Quantum Mechanics I and II (PHYS 66000 and 66100). A grade of B- or better in each of these courses is required to remain in the PhD program. Note that graduate courses may be taken a maximum of three times for credit. Satisfactory completion of the core courses is required before any student can finalize the selection of a Ph.D. major professor and register for Ph.D. research (PHYS 69900).

As you and your advisor prepare your Departmental Plan of Study, remember that you are required to register for at least two 500- or 600-level physics courses each semester until you earn a terminal M.S. degree, or you complete your core course requirements. To pursue a Ph.D. degree, you must complete all core courses at a grade of B- or better by the end of your second year as a graduate student.

If you are a Graduate Teaching Assistant (GTA), you must take the Pedagogical Methods for Physics Graduate Students course (PHYS 60500) during your first semester. It will help prepare you for your work as a GTA. The course is strongly recommended for all graduate students.

During your first two years as a GTA, you must also register for the Graduate Research Seminar course (PHYS 69600). This course consists of attending the weekly departmental colloquium. Its purpose is to acquaint you with the broader physics community and to aid you in determining the field of physics you wish to ultimately specialize in.

9. Course Equivalencies

Students who have passed a graduate course at another institution comparable to the core course with scores equivalent to grade point scores of 3.0/4.0, may file a request for core course equivalence. Each request must provide evidence of successful completion of the comparable course and will be evaluated by the current instructor of the core course. As part of the evaluation, questions related to the subject will be asked to ascertain competency. That evaluation will be reviewed by the Graduate Student Oversight Committee which will then decide whether equivalence should be granted. Equivalence requests for the courses Advanced Theory of Electricity and Magnetism I (PHYS 63000) and Quantum Mechanics I (PHYS 66000) must be submitted before the end of the first week of classes of your first semester at Purdue. Equivalence requests for the courses Thermal Physics (PHYS 61700) and Quantum Mechanics II (PHYS 66100) must be submitted before the end of the first week of classes of your second semester at Purdue.

10. Beginning Research

As a step toward research leading to the Ph.D. degree you must seek out a Ph.D. major professor. A major professor must have a Physics and Astronomy Department faculty appointment and agree to act as your academic advisor. The sooner you start this process, the higher the chances you will join a group you envision. Please note that if you are unable to join the research group you like by the end of your 3rd year (see 4. Staying in Good Standing of this Manual), you will either have to join a different group or leave the program.

Resources available to you in identifying a major professor, who will chair your PhD committee:

1. Check our website for who is offering RAs
2. Attend a presentation in the ShopTalk series. Faculty use this as a tool to recruit. These are advertised via email by fellow graduate students throughout the year.
3. Attend and engage with presenters at our yearly Departmental Poster Session – advertised via email by the Graduate Coordinator.
4. Attend weekly Seminars and Colloquia
5. Talk periodically to your faculty and/or graduate student mentor and ask for their guidance
6. Talk to senior grad students about their experiences in landing in their research group
7. Register for a Reading and Research course (PHYS 59000). This course allows one to work in a faculty member's group for one semester without committing to continuing towards a PhD degree on either party's part. Limit on PHYS 59000: You are expected to take no more than three PHYS 59000 courses before connecting with a faculty member willing to act as your Ph.D. major professor.
8. Ask a faculty of give you a 10 min pitch of what is interesting is their field. You may do this via email or by stopping by the faculty member's office.
9. Ask a faculty member if you could join their research group for a limited time to get immersed in a given subfield of physics

Once you have satisfactorily completed the core courses and a faculty member has agreed to act as your Ph.D. major professor, your major professor will direct you in preparing your Ph.D. Plan of Study for the Graduate School and direct your Ph.D. research (PHYS 69900).

NOTE about working for a faculty from other departments that hold Courtesy Appointments with the Department of Physics and Astronomy. Courtesy Faculty may co-supervise students from the Department of Physics and Astronomy. However, Courtesy Faculty have additional constraints: they may only co-supervise a maximum of two such students at any one time, and they must support you on an RA until your graduation. Once you start to work for a Courtesy Faculty member, the Department of Physics and Astronomy is not responsible for your salary, the Courtesy Faculty member is.

11. Ph.D. Degree Requirements

- (1) Completion (or equivalence, see Section 8) of each of the following core courses with a grade of B- or better: PHYS 61700 (Statistical Mechanics), PHYS 63000 (Advanced Theory of Electricity and Magnetism I) and PHYS 66000 and 66100 (Quantum Mechanics I and II).
- (2) Identify a major professor by the process discussed in section 9. In that process professors who agree to supervise you in Reading and Research courses (PHYS 59000) will be your academic advisor and help you select courses to meet requirement (6) below.
- (3) Having satisfied requirements (1) and (2) above, notify the Graduate Coordinator when you have identified a faculty member who agrees to be your major professor. It is expected that this will occur before the beginning of your third year as a student in the department. Research towards completion of your PhD (i.e., enrollment in PHYS 699) must be begun before the end of the spring term of your third year. A formal request for an extension of that deadline must be submitted to the Graduate Education Oversight Committee by a student before the end of the spring term of the third year. The Committee will evaluate the request and decide whether to grant it.
- (4) Identify, with the help of your major professor, a Ph.D. Advisory Committee as discussed in detail in section 11. Your Committee will help you select courses to meet requirement (5) below and guide your progress toward the timely submission of your Ph.D. Plan of Study to the Graduate School, your Ph.D. research (PHYS 69900) and the timely completion of your Ph.D. Preliminary and Ph.D. Final Examinations (see section 8 below).

The PhD Plan of Study lists the courses taken that will be used to satisfy the course requirements of your PhD degree. Your Ph.D. Plan of Study may list only 500-level physics courses with grades of B- or better and 600-level physics courses with grades of C- or better. The Plan of Study must

be signed (electronically) by your major professor, members of your Advisory Committee, the Head of the Department and, when approved by the Graduate School, the Dean of the Graduate School. Once a Plan of Study has been filed and approved, it can only be amended by written application to the Dean of the Graduate School.

Normally, your Advisory Committee will serve as your Ph.D. Preliminary Examination Committee and your Ph.D. Final Examination Committee. In the interest of transparency, you must submit requests to replace members of your Advisory, Preliminary Exam or Final Exam Committees to the Graduate Oversight Committee for approval. The request should clearly document the reasons you think the changes are necessary and justified.

(5) In addition to the core courses, each graduate student must take at least 3 Specialty Courses approved by the Physics and Astronomy Department. Almost all 500 and 600-level courses offered by the Physics and Astronomy Department are currently approved. The exceptions include remedial courses such as PHYS 51000, 51500, 53000 and 55000 and preparatory or skills courses such as 53600, 58000, 60000 and 60100. Your major professor must approve, through an e-mail to the Graduate Coordinator, the use of any course taken outside the Physics and Astronomy Department as a Specialty Course. A graduate level course taken in a department at Purdue other than the Physics and Astronomy Department must be approved by the Graduate Oversight Committee. While graduate level physics courses taken at other universities may be transferred to Purdue, they may not be used as Specialty Courses.

In addition to core and specialty courses, a student may take any 500 level courses that may be needed in order to achieve a level of proficiency adequate for good performance in the core courses, (b) laboratory courses needed in preparation for the thesis research, (c) any courses recommended by the Advisory Committee to broaden preparation in physics, and (d) an advanced course or courses in the field of specialization.

(6) Ph.D. research (PHYS 69900) encompasses work toward the research goals set and agreed to by you, by your major professor and the other members of your Advisory Committee. You must keep your major professor and Advisory Committee members informed of progress in your agreed research program and meet with them, either as a group or individually, at least once a year for that purpose, as required by the procedures of the College of Science. The guidance they provide while reviewing your progress will ensure the timely completion of your thesis and your Ph.D. Preliminary and Ph.D. Final Examinations (see section 12 below).

(7) The Graduate School must be notified of the time and place of your Ph.D. Preliminary Examination at least two weeks in advance. A student who fails the examination on the first attempt may be granted a second try by the Preliminary Examination Committee. Appeals of decisions made by that Committee may be made to the Graduate Oversight Committee.

The Graduate School must be notified of the time and place of your Ph.D. Final Examination at least two weeks in advance and it must be published within the department so that interested faculty members and students may attend. The Examination covers the content of the thesis research and related subject matter. The Dean of the Graduate School reserves the right to appoint additional members of your Ph.D. Final Examination Committee.

(8) Preparation of your Ph.D. thesis is one way in which you will disseminate the results of your research. Its content is subject to the approval of your major professor; its format is subject to the regulations of the department and the Graduate School (see the “Policies and Procedures Manual of the Graduate School”). The Thesis/Dissertation Office, Room 179, Young Hall, can provide useful guidance when preparing your thesis document and links to LaTeX and Microsoft Word thesis templates.

(9) The publication of at least one article on the results of your Ph.D. research in an appropriate, refereed scientific journal is a departmental requirement for the Ph.D. degree.

12. Your PhD Advisory Committee

You and your major professor must work together to prepare a Ph.D. Plan of Study to be filed with the Graduate School. Note that once a Plan of Study is filed with and approved by the Graduate School, any changes to the Plan of Study must be requested from and approved by the Graduate School. The form requesting changes must explain the reasons for making them and be signed by the student, their major professor, and the Head of the Department. In the case of changes to the Ph.D. Plan of Study, the form requesting changes must also be signed by members of the student’s Advisory Committee. At this time, you will also select the members of your Advisory Committee. Your major professor is the Chairman.

A Ph.D. Advisory Committee consists of at least three persons in addition to the Chairman. At least two of those three additional members of the Committee must have a regular appointment in the Physics and Astronomy department rather than an adjunct or courtesy appointment. The required third additional member may be a Physics and Astronomy Department faculty member or a professor from another department if they are working in a research field closely related to the student’s thesis research. The Committee must include a theoretical physicist, an experimental physicist and a member working outside the student’s field of research.

The functions of a Ph.D. Advisory Committee are to monitor the students’ progress, to approve the Ph.D. Plan of Study and, if possible, to serve as the examining committee for the Ph.D. Preliminary and Ph.D. Final Examinations.

13. Preliminary Exam

Within one year of forming your PhD Advisory Committee, but not later than the spring term of your fourth year, you must set your Preliminary Exam. Further, it is a rule of the Graduate School that the Preliminary Exam must be successfully completed at least one year prior to the PhD Thesis Defense. The intent of the Preliminary Exam is for your PhD committee to evaluate your proposed PhD research plan and to determine if you have the proper preparation to carry out the research plan in a timely manner. The exam typically consists of a short write-up (whose length depends on the research area, consult your major advisor for advice) distributed to the committee two weeks prior to a short meeting where the plan is presented in person. Based on the document, presentation, and responses to questions during the presentation, the committee will decide if this proposal is suitable for a PhD research plan. A student who fails the examination on the first attempt may be granted a second try by the Preliminary Examination Committee. Appeals of decisions made by that Committee may be made to the Graduate Education Oversight Committee.

The Graduate School must be notified of the time and place of your Preliminary Exam at least two weeks in advance.

14. Policy on Time to Ph.D. Degree

The College of Science mandates that seven years from entry into the graduate program (i.e., 14 semesters plus the intervening summer sessions plus a final summer session to finish, if necessary) is the maximum time allowed to complete a Ph.D. degree in the College of Science.

Each semester after 6 or more semesters in the Ph.D. program a student who has not submitted a Ph.D. Plan of Study to the Graduate School or not completed their Preliminary Examination will, along with their major professor, receive a letter from the Graduate Oversight Committee requesting that they send the Committee a co-signed letter laying out a realistic plan to pass those milestones on the road to timely completion of the Ph.D. degree. When necessary, the Committee will request clarification or modification of the proposed plan. Copies of this correspondence will be placed in the student's file. Cases of repeated failure to pass the Preliminary Examination milestone will be referred to the Head of the Department.

Each semester after 10 or more semesters in the Ph.D. program a student who has not completed their Ph.D. will, along with their major professor, receive a letter from the Graduate Oversight Committee requesting that they send the Committee a co-signed letter laying out a realistic plan for completing the Ph.D. degree by the College of Science deadline.

When necessary, the Committee will request clarification or modification of the proposed plan. Copies of this correspondence will be placed in the student's file.

After 14 semesters in the Ph.D. program, plus a final summer session, the Graduate Oversight Committee mandates that a student who has not completed their Ph.D. **will not be permitted to enroll**. The student's major professor and advisory committee can appeal this ruling to the Committee which will consider such appeals case-by-case.

15. International Students: Oral English Proficiency Program

The University has instituted an Oral English Proficiency Program (OEPP) to ensure that language and cultural barriers do not diminish the effectiveness of instructors whose native language is not English and who have not had experience in American undergraduate colleges.

Non-native English-speaking graduate teaching assistants (GTAs) are required to take the OEPP screening upon entrance and pass it at the level of contact teaching or, in case of failure, to register for the remedial oral English course in the first semester. Immediately after arrival on campus, international students should make arrangements with the Graduate Coordinator to schedule the OEPP screening during the orientation period. As a result of this evaluation registration may be required in a special course, English 620, "Classroom Communication in ESL for Teaching Assistants". The English 620 instructors can grant the OEPP certification at the end of semester. Please, remember that a passing grade for English 620 is not equivalent to the OEPP certification.

Satisfaction of the OEPP requirement is an important part of your job performance. It can affect the level of financial support you receive, including opportunities to teach during summer sessions. Students from India, Bangladesh and Pakistan are also required to take this test.

International students who would not get the OEPP certification within the first two years at Purdue are not eligible for a teaching assistantship. The two-year limit does not apply to research assistants. During this two-year period, international students without OEPP certification are eligible for GTA positions working as graders. Summer semesters are exceptions because there are almost no grading positions during summer semester.

International graduate students without OEPP certification should not expect any teaching position in summer (including their first two years at Purdue).

Any exceptions to this policy will require approval by the Department Head.

16. M.S. Degree Requirements

Most students receiving the M.S. degree do so via the non-thesis option. However, a thesis option is available for a student wanting research experience if a physics and astronomy faculty member agrees to supervise the work as their major professor.

Graduate students admitted to Purdue without a master's degree are encouraged to obtain the M.S. degree during their course of study here. For some students this will be a terminal degree, but most plan to continue working toward a Ph.D. degree. Continuing students can usually satisfy the non-thesis M.S. degree requirements without delaying their progress toward a Ph.D. degree. To do so the student must simply find an M.S. non-thesis option major professor, prepare an M.S. degree Plan of Study, and pass a course or two required by the M.S. degree program but not the Ph.D. degree program, e.g., a mathematics course or laboratory course. In the process, the continuing student profits by earning a graduate degree in physics just in case unforeseen circumstances cause an interruption or termination of their Ph.D. studies.

M.S. Degree Non-Thesis Option Degree Requirements:

(1) The satisfactory completion of 24 credit hours of 500- and 600-level physics courses, including one laboratory course, and in addition, 6 credit hours of 500- or 600-level mathematics courses (which may be replaced in whole or in part by PHYS 60000, 60100). To count toward this requirement the grades of 500-level physics courses must be B- or better, the grades of 600-level physics courses must be C- or better and the grades of 500- and 600-level mathematics courses must be C- or better. Note that all courses used towards a Master's degree must assign letter grades (i.e. no pass/fail or satisfactory/unsatisfactory graded courses are allowed). The student must file an M.S. non-thesis option Plan of Study with the Graduate School listing the courses taken. The Plan of Study must be signed by the student's major professor, the Head of the Department, and, when approved by the Graduate School, the Dean of the Graduate School. Once a Plan of Study has been filed and approved, it can only be amended by written application to the Dean of the Graduate School.

(2) A grade index of 2.80/4.0 or higher. The Registrar's Office deletes a first grade from a student's graduation index if that specific course was originally taken while the student was enrolled as a graduate student and is subsequently repeated for credit and a grade. The graduation index for graduate students will include all grades earned in 500- and 600-level courses taken while enrolled as a graduate student.

In addition, once approved by the Graduate School as a part of the M.S. non-thesis option Plan of study it is possible for the graduation index to include grades received in up to 6 hours of approved 300- and 400-level undergraduate courses taken while in the graduate program. To be clear, grades for such courses will be added into the graduation index only once they are listed on the approved plan of study.

Note: Satisfying the Laboratory Course Requirement for the M.S. Degree Non-Thesis Option

To fulfill the laboratory course requirement for the M.S. degree (Non-Thesis Option), students must satisfactorily complete one approved laboratory experience. This requirement can be met in one of the following two ways:

- 1) Completion of a recognized 500-level laboratory course with a B- or better grade. Qualifying courses include PHYS536 (Electronic Techniques for Research), PHYS570AI (AI and Physics), or PHYS580 (Computational Physics),
- 2) Completion of a PHYS590 research course with a faculty member in the Physics and Astronomy Department where experimental and/or computational techniques are taught.

If one plans to use a PHYS590 research course, the procedure is as follows. After completing the course, address a letter to the Graduate Oversight Committee outlining at least five experimental and/or computational techniques that were learned during the course. Examples of such techniques include:

- the correct use of a lock-in amplifier,
- laser system alignment techniques,
- coding, application and interpretation of the fast Fourier transform algorithm
- programming of Monte Carlo techniques

The letter must be signed by both the student and the supervising faculty member. Once complete, the letter should be submitted to the Graduate Coordinator, who will forward it to the Graduate Oversight Committee for evaluation. The Committee will determine whether the submitted work satisfies the laboratory requirement for the M.S. degree.

M.S. Thesis Option Degree Requirements:

(1) The satisfactory completion of 21 credit hours of 500- and 600-level physics courses, including 6 credit hours of 500- or 600-level mathematics courses (which may be replaced in whole or in part by PHYS 60000, 60100). In addition, 9 credit hours of physics research supervised by the student's major professor (PHYS 69800) is required. To count toward this requirement the grades of 500-level physics courses must be B- or better, the grades of 600- level physics courses must be C- or better and the grades of 500- and 600-level mathematics courses must be C- or better. Students engaged in PHYS 698 research are to set research goals with their major professor. The procedures of the College of Science require that the student meet annually with their Advisory Committee to assess their progress toward those research goals and, when appropriate, amend them. The student must file an M.S. thesis option Plan of Study with the Graduate School listing the courses taken. The Plan of Study must be signed by the student's major professor, members of their Advisory Committee, the Head of the Department and, when approved by the Graduate School, the Dean of the Graduate School. Once a Plan of Study has been filed and

approved, it can only be amended by written application to the Dean of the Graduate School, see section 5.

(2) A grade index of 2.80/4.0 or higher. The Registrar's Office deletes a first grade from a student's graduation index if that specific course was originally taken while the student was enrolled as a graduate student and is subsequently repeated for credit and a grade. The graduation index for graduate students will include all grades earned in 500- and 600-level courses taken while enrolled as a graduate student.

In addition, once approved by the Graduate School as a part of the M.S. thesis option Plan of study it is possible for the graduation index to include grades received in up to 6 hours of approved 300- and 400-level undergraduate courses taken while in the graduate program.

Grades for such courses will be added into the graduation index only once they are listed on the approved plan of study.

(3) An M.S. thesis-option Advisory Committee will be chosen that consists of at least three persons, one of which will be the Chairman of the committee. The Chairman and at least one of the other two members must hold Physics and Astronomy Department faculty appointments. The third member must be a faculty member in the Physics and Astronomy Department or in a department in which the student takes a minor program of six or more credit hours. The functions of a M.S. thesis-option Advisory Committee are to monitor the student's progress, to approve the M.S. thesis-option Plan of Study and, if possible, to serve as the examining committee for the M.S. thesis-option Final Examination.

(4) The final oral examination covers thesis research and the content of courses on the student's M.S. thesis-option Plan of Study. The Examination Committee consists of at least three members and will usually consist of members of the student's Advisory Committee.

17. Mentoring

Mentors can be a valuable resource throughout your graduate studies. During your first semester here, you will be assigned a faculty mentor and a peer (student) mentor. Their role is to help you navigate through the graduate program and living in West Lafayette, Indiana. As a further resource, the Graduate Coordinator can answer any departmental and graduate school policy related questions.

18. Graduate Student Ombudspersons

The Department of Physics and Astronomy has two faculty members who serve as Ombudspersons (See section 2). It is their responsibility to help graduate students with problems due to interactions with other graduate students, faculty, or staff and with problems involving their teaching duties, or academic work, that cannot be resolved with the help of others, e.g., their academic advisor or the course instructor. If the ombudspersons are unable to resolve a problem, please bring the matter to the attention of the Department Head.