

**Department of Physics**  
**PhD Student Handbook**  
**Arizona State University**

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## INTRODUCTION

Welcome to the Physics PhD program. PhD programs are designed for students of **high ability** who show promise for **independent** research. The aim of the program is to prepare students for professional research careers in government, industrial or academic institutions, and for teaching at the university or college levels.

The intent of the Physics PhD is to provide a thorough course of instruction and research training/experience within the areas of professional interest of the faculty of the Department. A Physics PhD may incorporate courses from related fields (mathematics, chemistry, life sciences, engineering, etc.), as well as research done in collaboration with faculty from other relevant departments. However, it is understood that the major part of the program will be conducted within the Department of Physics. PhD advisors may be chosen from among the entire Physics Graduate Faculty ([http://graduate.asu.edu/graduate\\_faculty](http://graduate.asu.edu/graduate_faculty)). This allows Physics students considerable latitude in designing an area of emphasis for their PhD studies, ranging through Biological Physics, Condensed Matter and Materials Physics, Physics Education, Subatomic Physics, and Astrophysics and beyond.

This handbook attempts to provide guidelines for all aspects of your graduate studies in the Department of Physics. Please read this handbook carefully, as it is your responsibility to know and to observe all procedures and requirements as defined in this handbook, in the Graduate College Policies and Procedures Manual, and the Format Manual (a guide to assist students writing dissertations).

Students may obtain a copy of the Graduate Policies and Procedures manual at the following website: [http://graduate.asu.edu/faculty\\_staff/policies](http://graduate.asu.edu/faculty_staff/policies).

## ADMISSONS INFORMATION

The application deadline for full consideration for the fall semester is January 31<sup>st</sup>. Files completed after this date will be considered, but students should recognize that most of the financial resources will be committed by early spring. Applications are accepted for the fall semester only.

All application materials must be submitted online, do not mail any documents to the Department of Physics. All official documents transcripts and test scores should be sent to Graduate Admissions. For details, please visit <https://students.asu.edu/graduate/how-and-when-apply-graduate-admission>.

**Below, we provide a clarification and elaboration of the various steps involved. Your application MUST have all seven elements listed below.**

1. Complete and submit the online graduate [application](#).
2. Send *official* transcripts of educational work, to date from every college and university attended. International transcripts must be submitted in the original language accompanied by an official English translation. Transcripts should include the fall semester or winter quarter grades, if possible. Please visit the [Graduate Admissions](#) webpage for more information.
3. Write a statement of purpose. Include specific items that indicate your personal attributes of initiative, creativity, determination, flexibility, etc relating to research or personal interests.

4. Submit the names of three referees. You will be asked to enter the names and email addresses in the online application of three individuals who can recommend you to our graduate program. Referees should be faculty or professional colleagues who have supervised you for research or academic work. For international students, specific comments about ability with spoken English will be helpful. Once you submit the application and pay the fee, your recommenders will receive an email with submission instructions.
5. Submit general GRE scores (Verbal, Quantitative and Analytic). Exam must be taken within the last five years
6. Submit physics GRE subject exam score. Exam must be taken within the last five years.
7. Submit TOEFL (or equivalent) for non-native speakers. ASU requires international students to have minimum TOEFL scores of 515 (PBT), 213 (CBT), or 83 (iBT). At the department level, we look for scores 15% above the university minima.

To submit official test scores, use ASU code 4007.

## MILESTONES

The **major milestones** for the PhD program are listed below. Details about each milestone can be found in later sections of his handbook.

1. Complete core courses with a GPA of  $\geq 3.0$  and do two research rotation projects (PHY 500) during the first and second semester.
2. Pass the Oral Qualifying Exam.
3. Select a PhD dissertation advisor and assemble a PhD Supervisory Committee.
4. Complete and submit a plan of study (POS)
5. Pass the Written and Oral Comprehensive Examinations.
6. Present the Dissertation Prospectus.
7. Submit the PhD dissertation.
8. Pass the oral PhD defense.

## TIMELINE

**These milestones have to be passed in a defined order and in many cases within a certain amount of time. Furthermore, you must maintain a grade point average of at least 3.0 in courses that count toward the PhD degree in physics to remain in the program.**

1. **SEMESTERS 1+2:** In the first year you are required to successfully complete the core courses, which includes two research rotation projects. The research rotations should help you find a research group to carry out your PhD research. You should also
  - carefully consider your area of emphasis within physics, i.e. find out the area to work in (e.g. take additional classes in the area of interest, talk to faculty, attend colloquia and seminars)
  - start looking for an advisor for your PhD research (e.g. through the research rotations and talking to faculty)
2. **BEGINNING OF SEMESTER 3:** Select a PhD dissertation advisor and become an active member in your advisor's research group. Pass the Oral Qualifying

Examination. If you do not pass, you may petition for a second attempt at the beginning of the fourth semester. If you fail the second attempt you will be removed from the PhD program

3. **SEMESTER 3(4) if the oral qualifying exam was passed on the 1st (2nd) attempt:**
  - Advisor must be chosen and committee must be formed no later than the end of the semester after the oral qualifying exam is passed. Failure to meet this requirement by the specified time will lead to withdrawal of TA support.
  - File an interactive Plan of Study, carry out research in your advisor's group.
  - Prepare for the Written Comprehensive Examination.
4. **ONE (1) YEAR AFTER FORMING COMMITTEE:** Submit the written comprehensive to your PhD Supervisory Committee. The written comprehensive exam is a professional-level report of at least 10 pages. The written comprehensive exam is graded on a pass/fail basis by the student's PhD Supervisory Committee before the student takes the oral comprehensive exam. During this time, the oral comprehensive exam will be administered. The oral exam is also conducted by the student's PhD Supervisory Committee. This exam is an oral presentation of the background information and ideas in the written comprehensive. From the combination of written and oral comprehensive examinations, the Supervisory Committee will gauge your broad understanding and more-specific knowledge of specialized topics in the chosen research area. The Committee grades both exams on a pass/fail basis. If either exam is not passed one retake of the exam may be granted with a successful petition to the Department and the Graduate College. The oral and written comprehensive exams must be attempted no later than one (1) year after the advisor has been selected. If the second attempt is failed, you will be removed from the PhD program.
5. **ONE (1) YEAR AFTER PASSING THE COMPREHENSIVE EXAMS:** When it is clear what research will be included in your dissertation, write and present your dissertation prospectus to the PhD Supervisory Committee. After passing prospectus, you advance to candidacy. The prospectus should be delivered one year before the dissertation defense.
6. **AFTER PASSING DISSERTATION PROSPECTUS:** Carry out your PhD research; take additional courses and PHY-792 Research as appropriate. Be sure to include PHY-799 Dissertation at the proper time. Exactly 12 hours of PHY- 799 must be listed on your plan of study.
  - Apply for graduation prior to the deadline during the final expected semester.
  - Confirm your Supervisory Committee is accurate

To view the possible routes towards the PhD degree, refer to the flow chart under Appendix A.

### **CORE COURSES**

Six core courses totaling 18 hours of semester credit are required of all physics PhD students. The core courses should be completed within the first year of graduate study. The required core courses (and the semester they are normally offered) are:

- PHY-500 Research Rotation I (fall semester)
- PHY-521 Classical and Continuum Mechanics (fall semester)
- PHY-541 Statistical Physics (fall semester)
- PHY-500 Research Rotation II (spring semester)
- PHY-531 Electrodynamics (spring semester)
- PHY-576 Quantum Theory (spring semester)

The research rotations must be taken with specific faculty advisors, as requested by the student but assigned by the Graduate Program Director. Students will choose preferences from a list of rotation topics supplied by the Department. The Graduate Program Director will allocate students to rotation topics, and will aim to give students their highest preferences and most diverse experience, while not over-burdening individual faculty mentors. It is mandatory that each student complete a written report summarizing their research. This report should be similar to a brief communication that might be submitted for publication (if there was sufficient new material), including background information with references, and results with conclusions. Reports are due one week before the date when final grades are due. If the faculty advisor agrees to an extension the report is due three weeks after the date when final grades are due.

### **WAIVER OF COURSES**

The PhD graduate core curriculum, as delineated in the ASU Graduate Catalog, is an essential requirement of the Physics PhD program. Deviations will only be approved in exceptional circumstances. All waivers of core course requirements must be approved by the Graduate Program Committee. Petitions for such waivers must document clear evidence of equivalent coursework taken elsewhere and mastered at a high level of competence. Generally this will include: (1) the title, course number, instructor's name, syllabus or catalog description, and institution name of the equivalent course, (2) the name of the text(s) used in that course, and (3) an official transcript showing the grade received in the course. This request must be submitted during the semester before the course offering.

### **TRANSFER OF CREDITS**

Transfer credits are those accepted from another institution for inclusion on an ASU Plan of Study. Per the Graduate College, only 12 credit hours can be transferred for a PhD degree. The credits must have been earned in graduate level courses with grades equivalent to "A" or "B". Any credits that counted towards the minimum requirements of a previously-awarded degree may not be transferred towards the minimum requirements of an ASU degree. Within this restriction, up to 30 hours from a previous Master's degree may be transferred. Students with transferred MS degree must complete at least 54 hours of doctoral degree credits, including exactly 12 hours of PHY-799 Dissertation. In the special case of a student accompanying a newly hired faculty member to ASU, the student may list in the iPOS an additional 18 hours that have not been used in another degree program. Upon listing these 18 hours on the iPOS, the student will be prompted to complete a petition, in which they should provide the name and start date of the

## **ORAL QUALIFICATION EXAMINATION**

After successful completion of all six core courses, and near the beginning of the third semester, every student must take an oral qualifying exam. The intent of the oral qualifying examination is to assess the student's mastery of the core areas of fundamental physics, and his/her ability to communicate this knowledge.

A three-member Oral Exam Committee (OEC) will be convened for each student taking the oral qualifying exam. Two of these three examiners will be current members of the Graduate Exam Committee (GEC). The third examiner will be chosen by the GEC from among the remainder of the Physics Graduate Faculty, excluding only those on sabbatical leave or otherwise excused from service duties. One of the GEC members will act as chair, the others will take notes on the student's performance. During this oral exam, the committee will gauge the student's grasp of fundamental physics covering the core areas of classical mechanics, statistical mechanics, electrodynamics, and quantum mechanics.

The oral qualifying exam will last a minimum of one hour and a maximum of two hours.

Following the oral qualifying exam period, within two weeks after the first day of classes, the GEC will convene to review the results of the individual exams and to prepare pass/fail recommendations. These recommendations will be presented to the Physics Graduate Faculty, which will discuss, possibly alter, and vote upon the recommendations. This vote will mark the official date of completion of the oral qualifying exams for that examination period.

Should a student fail the oral qualifying exam, he/she may petition for a single re-examination during the immediately subsequent exam period (e.g., in January for an exam failed in August).

## **PETITION FOR REEXAMINATION OF THE QUALIFYING EXAMINATION**

To petition for reexamination of the qualifying exam, a student submits a written request to the Graduate Program Committee (GPC), briefly explaining why a reexamination is warranted.

When possible the same three-member examining committee will administer the repeat attempt unless the student requests otherwise, which he/she may do without stating a reason and without prejudice. In that case the GEC will select a new slate of three examiners.

The GPC then: (1) assembles the relevant information (student's petition, reports filed by qualifying exam graders and/or examiners, information on the student's performance in courses and research activities, etc.); (2) reviews the materials to verify that established procedures were followed in the exam; and (3) votes on a recommendation regarding the student. The GPC decision regarding the student's petition is final.

## **SECURING RESEARCH ADVISOR AND SUPERVISORY COMMITTEE**

Students should begin to explore and define their research interests as early in their graduate careers as possible. Once a student has chosen a research area of interest, an agreement must be reached with a faculty member to serve as the student's principal research advisor and Chair his/her Graduate Supervisory Committee known as the "PhD Committee". If two faculty members share this duty they may be appointed as co-chairs. The student and the principal research advisor will choose three additional members. The Chair and committee members must be identified and must agree to serve before the student files the iPOS. A PhD Committee must have at least four members. The Director of Graduate Studies is notified in writing of the choice of committee members through submission of a "Supervisory Committee Nomination Form"

(<https://physics.asu.edu/student-life/phd-experience/academic-advising>). The Chair, and normally most of the Committee members must be from the Physics Graduate Faculty. To find graduate faculty eligible to serve on Physics committees, visit <https://graduate.asu.edu/graduate-faculty>. If a prospective committee member is not a member of the Physics Graduate Faculty, he or she must apply to serve on an individual committee or to be listed on the Physics Graduate Faculty list. Members of a Supervisory Committee are subject to approval by the GPC director in consultation with GPC committee. For details on how to apply to be Graduate Faculty, visit <https://graduate.asu.edu/graduate-faculty/faq>. The Supervisory Committee assists the student in developing a suitable Plan of Study. For PhD students, the Committee also administers the comprehensive exams and dissertation prospectus. All committees provide general and specific supervision of the student's research program and development, leading to a dissertation. Finally, the Committee reads and critiques the written dissertation and administers the oral dissertation defense.

## PLAN OF STUDY

The [plan of study \(iPOS\)](#) is an official academic plan for the student that maps the requirements for the degree completion. It includes coursework, the students' committee and other additional milestones.

Doctoral students must file an **interactive Plan of Study (iPOS)** during their third semester, typically after passing the oral qualifying exam. The iPOS must be approved by the Graduate College prior to taking the comprehensive exam. Nevertheless, the iPOS must list all courses that the students plans to take to finish the PhD, including: the six core courses, the specialized courses chosen in consultation with the Supervisory Committee, 12 credit hours of PHY-799 Dissertation, and an adequate number of PHY-792 Research and other anticipated courses to meet minimum Graduate College requirements. At least 84 credit hours must be listed on the iPOS.

Once students have completed the iPOS online, the Graduate Academic Advisor will review it and forward it to the Graduate College for final approval. It can be amended at any later date under the same approvals. Indeed, an initial iPOS that is submitted and approved before the final sequence of courses is complete, is often modified in accordance with the student's goals and the Supervisory Committee's recommendations. Students may include up to 30 credit hours from a previously awarded master's degree (if approved by the Graduate Program Committee). All courses in a doctoral student's approved Plan of Study must have a course number of 500 or higher, subject to the additional restriction that at most six credit hours of 400-level coursework can be included. Course with grades with 'D', 'E' or 'I' grades cannot be listed on the iPOS. Instructions on how to enter an iPOS are available at: <https://graduate.asu.edu/completing-your-degree/how-to>.

## WRITTEN AND ORAL COMPREHENSIVE EXAMS

After selecting an advisor and committee, the student starts working on the written comprehensive examination. This written comprehensive is a professional-level report of at least 15-20 pages. The report should give a broad overview of background information for the general area of research chosen by the student, including a synthesis of relevant literature and additional details regarding specific topics that the student intends to work on for his/her PhD. The written comprehensive exam must contain a description, synthesis, and critical analysis of experiments and/or calculations in the published literature that bear closely upon the general area chosen by

the student for PhD research. Of course: any material not originating with the student must be properly cited. This includes all material taken from books, journals, and websites, grant proposals, etc. Plagiarism in any form or degree will be immediate and sufficient cause for a failing grade on the comprehensive exam. The written comprehensive exam is a formal university assessment and must therefore be each student's own work.

The report is to be prepared by the student only. The report must be submitted to the student's PhD Supervisory Committee which will grade the report on a pass/fail basis.

The oral comprehensive examination must be passed no later than one year after choosing an advisor and forming a committee. The oral exam is conducted by the student's PhD Supervisory Committee. This exam is an oral presentation of the background information and ideas in the written comprehensive. From the combination of written and oral comprehensive examinations, the Supervisory Committee will gauge the student's broad understanding and more-specific knowledge of specialized topics in the chosen research area.

The oral exam will normally last a minimum of one hour and a maximum of two hours. The student will be allotted up to 40 minutes (neglecting time for questions) to present a coherent summary of his or her written comprehensive exam. The members of the committee will ask questions relevant to the background material of the student's area of specialization (biological physics, nanoscale and materials, particle astrophysics or cosmology), seeking to probe how well the student understands the physics context and implications of the work.

At the end of the oral comprehensive exam, and with the student not present, the student's PhD Advisory Committee will attempt to reach a consensus pass/fail decision based on the student's performance. If no consensus can be reached, the decision will be made on the basis of a simple majority vote.

The written and oral portions of the comprehensive exam may be graded independently. Hence a student may fail one portion yet pass the other. Should a student fail one or both portions of the exam, he/she may petition for a single re-examination of the failed portion(s) during the semester of the first attempt. If the same PhD Advisory Committee is used, they will administer the repeat attempt. However, the student may choose to reconstitute his/her PhD Advisory Committee, which he/she may do without stating a reason and without prejudice.

If a student fails the comprehensive exams, a petition for reexamination must be submitted no later than one (1) month after the examination. The student submits a written request to the Graduate Program Committee (GPC), briefly explaining why a reexamination is warranted. A written endorsement by the student's PhD committee chair must accompany this petition. The GPC acts in an advisory role to the Department Chair to: (1) assemble the relevant information (student's petition, supporting letter from supervisory committee chair, reports filed by comprehensive exam graders and/or examiners, information on the student's performance in courses and research activities, etc.); (2) review the materials to verify that established procedures were followed in the exam; and (3) prepare a recommendation to be sent to the Graduate Program Director along with the assembled materials.

Only one reexamination is permitted. The Graduate College may withdraw a student from his/her degree program if the student's petition is not approved, or if the student fails to successfully pass the retake of the comprehensive exam. Students must have the Report of Doctoral Comprehensive Exams form completed on the day of their oral examination. This form is found here: <https://physics.asu.edu/student-life/phd-experience/academic-advising>. Once complete, the form should be submitted to the Graduate Program Coordinator who will enter the results on the student's iPOS.

## MASTER'S IN PASSING

Students who are enrolled in the Ph.D. degree program in Physics, but who do not hold a previously earned Master's degree, can obtain the Master's in Passing (MIP) upon completion of the requirements listed below. This degree is given so that students who wish to pursue the Ph.D directly can still earn an appropriate Master's degree in Physics.

The requirements for the Master's in Passing are:

- Have completed at least 30 credit hours of graduate level course work (500 level and above) that will count towards the PhD degree
- Have an approved PhD plan of study
- Have an advisor along with a supervisory committee
- Have passed the qualifying exam
- Passed the written comprehensive exam or submitted an equivalent written report examined by the Graduate Exam Committee
- A 3.0 GPA in courses counting toward the physics PhD degree.

Once these requirements have been met, students should notify the Program Coordinator that they want to apply for the MIP. The Graduate Coordinator will complete the *Request for Master's in Passing* form found on the Graduate College website. To receive the MIP, students must apply for graduation in the term they wish to receive it, as long as all requirements listed above have been met.

## DISSERTATION PROSPECTUS

No later than one (1) year after passing the comprehensive exams, the student will present a dissertation prospectus to their Supervisory Committee. The Supervisory Committee must be fully constituted at this time.

The prospectus consists of preparing and delivering a careful oral presentation that discusses in some detail the topic(s) of the proposed thesis work. It should include a thorough description of the proposed work, a survey of the literature and previous work on the topic, a discussion of why the research is of interest and use, a list of the resources that are needed to carry out the proposed work, and an outline of the dissertation. The Supervisory Committee should have written outline of the proposed plan.

Passing the prospectus confirms that the Committee supports the aims and proposed content of the proposed thesis work. The dissertation prospectus must be delivered two semesters before the planned defense. Students must have the Report of Dissertation Prospectus form completed on the day of their prospectus review. This form is found here:

<https://physics.asu.edu/student-life/phd-experience/academic-advising>. Once complete, the form should be submitted to the Graduate Program Coordinator who will enter the results on the student's iPOS.

## ADMISSION TO CANDIDACY

Doctoral students are admitted to candidacy after they have passed the qualifying and comprehensive examinations, and the dissertation prospectus. The student then performs the

research that is the basis of the dissertation, write the dissertation, and defends it. The letter of candidacy is generated and prepared by the Graduate College and posted in the student's MyASU account.

## **DISSERTATION DEFENSE**

After the research for a degree has been completed, it must be written and published as a dissertation. Normally the research also leads to one or more published articles in peer reviewed journals appropriate for the area of research.

Allowed formats of the dissertation are defined by the Graduate College in the Format Manual, <https://graduate.asu.edu/format-manual>, which must be followed exactly. It is also good practice for students to familiarize themselves with the American Institute of Physics (AIP) Style Manual, which gives information on figure preparation, including size of lettering, to meet the standards of most scientific journals. The AIP Style Manual serves as a useful guide for ASU thesis preparation to the extent that it is compatible with the ASU Format Manual. A thesis must be written in good English.

The dissertation defense has two parts: (i) Supervisory Committee members will read and approve the dissertation (or, in many cases, ask for modifications), and (ii) the Committee will conduct a final oral examination (dissertation defense). The defense normally consists of a public seminar in which the student presents the dissertation material and during which the audience may ask questions for clarification. After this initial discussion, the committee may excuse the public audience and proceed to a thorough examination of the details of the thesis. The Committee will then excuse the candidate and deliberate on its findings.

The Graduate College imposes stringent deadlines on submission of the thesis for format approval and on scheduling of the Final Examination. Oral dissertation defenses must be scheduled with the Graduate College (through the student's MyASU page) at least 10 working days in advance of the defense date. Note that certain days during the academic year, as specified on the Graduate College website, are excluded as dates for oral defenses. Students are required to submit a complete copy of their thesis or dissertation to the Graduate College for format review at least 10 working days before the proposed date of the defense.

Substantive format errors that require the thesis to be revised and resubmitted may force the oral defense to be rescheduled, with graduation possibly delayed by an entire semester. Specific graduation deadlines for each semester are published by the Graduate College on its website. Students who are approaching their degree completion should carefully consult those schedules. It is the student's responsibility to adhere to the deadlines set forth by the Graduate College for graduation: <https://graduate.asu.edu/completing-your-degree>. Failure to adhere to these strict deadlines will result in a delay of graduation and the need to register for the next term in order to graduate.

## **FINANCIAL SUPPORT**

The department offers a collection of scholarships for students pursuing a PhD in physics. The department scholarships reward based on merit, which can include a student's GPA, research contributions and involvement in ASU's physics community. Scholarship applications are available every spring semester, to be awarded for the upcoming academic year. Some awards are split between the fall and spring semesters. Students are notified by email when the application is available. Selections will be made by the Graduate Program Committee. To

view scholarship descriptions, visit <https://physics.asu.edu/student-life/phd-experience/scholarships>.

A limited number of University Graduate Fellowships are awarded to students over the summer period. This award may be in addition to a teaching or research assistant position. During the spring semester, students are emailed instructions on how to apply for these fellowships. Students must be in good academic standing in the PhD program. Application documents include:

- A one page typed proposal letter describing summer research activity and any progress made in the program.
- A curriculum vita
- A letter of support for the professor whom the summer research will be conducted.

The application materials are emailed to the Graduate Program Coordinator and selections will be made by the Graduate Program Committee.

The majority of PhD students are offered financial support for the academic year by means of a teaching or research assistant position. Financial support typically includes a stipend, tuition remission, and health insurance for the student. Students must enroll in [health insurance](#) via the Campus Services section of MyASU in order to have coverage. Tuition remission does not cover class fees or tuition-related fees and taxes. To view tuition/fees costs, visit <https://students.asu.edu/tuition>.

Teaching and research assistants must meet program requirements and be enrolled in a minimum of nine (9) credit hours every fall and spring semester.

During the summer, students can be supported as hourly employees or as TAs/RAs. Students supported as hourly employees during the summer should take the following into consideration:

- Hourly summer positions do not provide tuition remission and students do not need to register during that time. If a student in an hourly position does register for summer courses, the tuition will be out-of-pocket.
- If the student held a TA/RA position in the spring semester prior to the summer hourly position and received health insurance during this time, it should continue through the summer regardless of summer employment status.
- Hourly positions require submitting a time sheet

Summer RA/TAs should register for at least 1 credit per summer session (session A and session B) to avoid [FICA taxes](#) from being deducted each pay period. Students typically sign up for research, thesis, or dissertation over the summer depending on degree progress.

Students funded by the department or university may not hold additional employment of any kind. It is the responsibility of the student to be aware of their position (TA/RA vs. hourly) and any implications that the position has in terms of registration, tuition remission or lack of, etc.

## TEACHING ASSISTANTS

Most students will begin with a TA appointment, before moving into an RA. Newly admitted students appointed as TAs are guaranteed to receive at least two semesters of TA support, **provided they maintain satisfactory progress in the program and fulfill their TA**

**responsibilities to the fullest.** The TA appointment helps students to develop verbal communication skills and gives them valuable experience with teaching. It also provides an opportunity for them to review and solidify their knowledge of foundational physics material, which they will find useful in graduate courses and programmatic exams. TAs will assist faculty by handling recitations or lab sections. They are required to provide up to (but not exceeding) 20 hours per week. TAs must enroll for a minimum of nine (9) non-audit units every Fall and Spring semester during their assistantship appointment.

Each semester, students will need to apply for a TA position (if no RA support is being provided) by completing a departmental application. The Graduate Program Coordinator will send an email notification when the application is available. Applications for the fall semester are available late April. Spring applications are available in October. TA applications are also provided for summer sessions.

To be eligible for a TA appointment a student must be making satisfactory progress in the program, this will mean:

- B or above in **core courses**.
- Subsequently it will mean making progress in research as evidenced by:
  - (a) Favorable report from PhD advisor
  - (b) Publications, presentations at Conferences\

Teaching Assistants are expected to fulfill their responsibilities throughout the semester. A TA must show up on time, complete tasks by their assigned deadline, hold office hours when scheduled, and provide support to the instructor and students as needed. A TA should notify the instructor in advance of an absence and if possible, work with the instructor to find a replacement. Failure to fulfill these responsibilities is cause for a decrease in pay (TA stipend) or termination. Harassment of students, including sexual harassment is unacceptable and will lead to immediate termination.

Graduate Teaching Assistants (TA) whose native language is not English are required to take the SPEAK test and attend an International Student Orientation during their first semester. To assume primary teaching responsibilities, you must earn a minimum score of 55 on the test. For positions of tutor or lab assistant, a score of 50 on the SPEAK test is acceptable. With scores 45 or less, you will be required to enroll in the semester long International Teaching Assistants (ITA) seminar per the conditions of your TA employment.

A student will be ineligible for a TA appointment if they have not performed their duties to the satisfaction of their TA supervisor in a previous TA assignment. TA support will not be given to those who have been in the program for seven continuous year. However, the Graduate Program Committee will consider appeals for extensions.

## **RESEARCH ASSISTANTS**

PhD students are expected to progress into RA appointments as soon as practical, following their TA appointment. This requires finding a faculty mentor to sponsor the student on a funded project. Many will achieve this after two semesters (beginning of the first summer). Most will achieve this after three semesters. PhD students are required to make a formal association with a faculty mentor by the end of their fourth semester in the program, regardless of funding. The research rotations are designed to facilitate this process. In most cases, the faculty mentor will provide RA support for the student for the duration of their PhD, through external funded

research programs. If the faculty mentor does not have funding to support an RA, some additional semesters of TA appointment are generally available, subject to satisfactory performance in research.

Students must take the initiative to find a suitable faculty mentor by: browsing the department website, attending seminars and colloquia, by direct inquiry with individual faculty, etc. Indeed, this process can begin via email before a student decides to come to ASU! (Please understand, however, that few faculty can directly commit an RA to an incoming student). Be prepared to join faculty research group meetings (by invitation!) or possibly to “volunteer” in the lab for a brief period. RAs and their advisor must work with the department’s Human Resource Specialist to make sure hiring is complete in a timely manner.

Students should review the [TA/RA handbook](#) for more information regarding the policies and procedures of TA and RA positions.

### **PROGRAM AND ACADEMIC PERFORMANCE REQUIREMENTS**

The Graduate Program Committee and the Faculty of the Department of Physics have established specific policies that serve to implement the graduate programs. This section describes these policies, as well as those of general nature derived from the Graduate College.

ASU graduate students must maintain a grade point average (GPA) of 3.00 or higher in:

- All course numbered 500 or higher that appear on the transcript; and
- All courses that appear on the plan of study

To obtain graduate credit, the student must receive a grade of “C” (2.0) or higher in every course that is required for their degree program. Any required courses with grades of “D” or “E” must be repeated, and both the original grade and the new grade will be included in GPA calculations. In addition, the Graduate College and the Department of Physics requires that a GPA of 3.00 or higher must be achieved for all courses that will count towards the PhD degree (including up to 6 hours of 400-level courses) other than those designated as “research.”

If a cumulative GPA of 3.00 or higher is not maintained according to any of these requirements, the Graduate Program Committee will place the student on Academic Probation, and advise the student on means whereby such academic probation may be lifted. Per the Graduate College, if a student fails to satisfy these requirements the student may be dismissed from their program based on the academic unit’s recommendation to the Graduate College. The Graduate College policies and procedures can be found here:

<https://graduate.asu.edu/policies-procedures>.

### **ENROLLMENT REQUIREMENTS**

Graduate students must be enrolled in at least one credit hour every fall and spring semester. Failure to keep continuous enrollment will be considered lack of academic progress, and will lead to being withdrawn from the program. This means students will need to re-apply. Physics graduate students who obtain a Teaching Assistant or Research Assistant position must enroll in at least nine (9) credit hours every fall and spring. The majority of the courses enrolled in during the semester should be physics graduate courses, or graduate courses in other units related to your research. Summer registration (at least one credit hour, during either summer

session) is required for students who are employed as teaching or research assistants, are taking examinations, delivering their thesis prospectus, or defending their dissertation and graduating.

A graduate student is allowed to take a leave of absence of up to two semesters during their time in the graduate program. A Leave of Absence petition is required one semester before leave. You may contact the Graduate Program Coordinator by email for details, and you can access the LOA petition form here: <https://graduate.asu.edu/current-students/policies-forms-and-deadlines/student-forms-and-petitions>.

## **GRADES AND GRIEVANCES**

The final passing grade for research (PHY 792) and dissertation (PHY 799) is a Y. Research grades will be assigned at the end of each semester. Final dissertation grades will be assigned after the students last semester or after the student has successfully defended.

Students who are seeking to appeal a grade should refer to the [College of Liberal Arts and Sciences Academic \(Grade\) Grievance procedures](#). Grade appeals should be addressed by the student as soon as possible after the grade in question is awarded.

## **DROP/ADD AND WITHDRAWAL DEADLINES**

Registration deadlines determine the last day a student is able to [add, drop, withdraw](#) from classes. Each class has its own set of registration deadlines which are based on the length of the class as well as the session in which the class is held. The drop/add/withdrawal deadlines listed on the [Academic Calendar](#), apply to classes scheduled in the regular A/B/C sessions. If a class does not follow the A/B/C session timelines, the drop/add/withdrawal deadlines are prorated. The best way for a student to determine the registration deadlines for a class in which he/she is registered is to sign in to My ASU and click on the calendar icon next to the class in the My Classes box. To determine the registration deadlines of a class for which the student has not yet registered, students should use the online Class Search to search for the class and click on the Dates column in the search results.

## **MEDICAL/COMPASSIONATE WITHDRAWAL**

If a student experiences a serious illness, injury or other significant personal situation that is preventing progress in classes or research, and the standard withdrawal options for the student are not appropriate for the situation, the student may request a medical/compassionate withdrawal: <https://thecollege.asu.edu/resources/medical-withdrawal>. All applications for the medical/compassionate withdrawal require thorough and credible documentation and must be approved by the College of Liberal Arts and Sciences Dean's Office. The student must complete all of the required steps in order to be considered for a medical/compassionate withdrawal.

## **ANNUAL EVALUATION**

An evaluation of the progress of all graduate students is made during the summer of each year by the Graduate Program Committee. Satisfactory progress is defined as acceptable performance in course work, as defined in Academic Performance Requirements above, or

making progress in research to the satisfaction of the advisor. Evidence of satisfactory progress in research consists of, but is not limited to, publications in peer review journals and presentations in conferences.

Students whose progress is considered to be unsatisfactory are placed on probation. In the annual evaluation letter the student will be informed of the steps needed to return to good standing, and the time allowed for each of these steps. A student is not eligible for financial support from the department if they fail to do what is required to return to good standing. Failure by a student to do what is required will also lead to a recommendation for dismissal from the program by the Graduate Program Committee.

A student may appeal dismissal from the PhD program to the Department Chair within 10 days, who may at his or discretion appoint of committee of up to 3 members of the graduate faculty who are not members of the Graduate Program Committee to review the appeal. To view the Graduate College Policies and Procedures, visit <https://graduate.asu.edu/policies-procedures>.

### **STUDENT CODE OF CONDUCT/ACADEMIC INTEGRITY**

Graduate students are expected to be familiar with the Code of Conduct and to maintain the highest degree of academic integrity. Violations of the Code of Conduct or incidents of dishonesty such as cheating in examinations, cheating in laboratory work or plagiarism are subject to university discipline, whether committed by individuals or groups.

Plagiarism is copying publications, proposals or other written material without appropriate attribution for use in written examinations, articles for publication, theses or dissertations, or scholarship and fellowship applications and is explicitly prohibited.

The Code of Conduct can be found at: <http://students.asu.edu/srr/code> and the university academic integrity policy is available at <http://provost.asu.edu/academicintegrity>.

The department is committed to providing a safe work environment for faculty, staff and students. Students who refuse to maintain a safe working environment are subject to withdrawal from the graduate program.

### **HARASSMENT**

Harassment is unwelcome behavior which is sufficiently severe or pervasive as to create intimidating, hostile, or offensive environment for teaching, research and other scholarly activities. Sexual harassment includes all forms of unwelcome behavior of a sexual nature. If you feel you have been a victim of sexual harassment you should report it to the [Office of Equity and Inclusion/Title IX Coordinator](#). If you feel that your advisor's behavior constitutes harassment or bullying you should document the incidents and report them to the Program Coordinator or the Department Chair. Please refer to the ASU Policy on Harassment found here: <https://www.asu.edu/aad/manuals/acd/acd401.html>.

## **UNIVERSITY RESOURCES**

[Technical Support](#), [Counseling Services](#), [Health Services](#), [Disability Resource Center](#), [Title IX](#),

[International Students and Scholars Center \(ISSC\)](#), [Student Accounts/Student Business Services](#)

[Parking and Transit](#), [ASU Sun Card](#), [Dining](#), [Campus Bookstores](#)

Appendix A

