Department of Physics
UNIVERSITY OF WISCONSIN–MADISON

Program Handbook

PhD – Physics
MA – Physics
MS – Physics

(https://www.physics.wisc.edu/graduate/phd-program/phd-handbook/)

Reference this handbook to learn about the unique policies, requirements, procedures, resources, and norms for graduate students in the Physics PhD Program

Version 24-25.0 – Fall 2024

Navigation tips:

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Most recent major revision: 9/28/2023 – smk
Additional updates: 2/14/2025 -- smk

I. NAVIGATING POLICY AND RESOURCES AT UW-MADISON

This handbook is one of many sources to consult as you become familiar with the policies, procedures, requirements, resources, and norms of graduate education at UW-Madison:

Ctrl-Home will take you back to the top of the document

II. PROGRAM OVERVIEW

Intention/Role of Handbook

This handbook is intended for graduate students who are pursuing the PhD-Physics. While the MS-Physics and MA-Physics degrees are not often awarded, information about those degrees is also included. The MS-Physics, Quantum Computing program maintains a separate handbook. The UW-Madison Graduate School is the ultimate authority for granting graduate degrees at the University. The Department of Physics administers these degree programs under the authority of the Graduate School. The Graduate School's Academic Policies and Procedures provide essential information regarding general University requirements. Program authority to set degree requirements beyond the minimum required by the Graduate School lies with the Department of Physics faculty. The policies described in this handbook have been approved by the Department faculty as a whole. Degrees and course requirements may change over time. However, students must meet the degree and course requirements in effect when they entered the Program. In addition, administrative procedures and processes can change over time. Students are required to follow the procedures and processes listed in the current handbook. The information in this handbook should also be supplemented by individual consultation with a student's advisor and committee so that individual needs/interests and all degree requirements are met. Additional information is available via the Physics web page. Students may also wish to consult the Graduate School's Web page.

Who to Contact for Questions

Many of your questions about how to meet expectations and thrive as a graduate student will be answered by the various sources of policies, procedures, requirements, resources, and norms listed below. Several key positions in this department and on campus are ready to answer your remaining questions:

Associate Chair, Graduate Program: Associate Professor Keith Bechtol, 6203 Chamberlin kbechtol@wisc.edu or 608-265-5815

Graduate Program Manager: Sharon Kahn, 2320f Chamberlin smkahn@wisc.edu or 608-262-9678

Graduate School Services

For general inquiries and graduate student services from the Graduate School, see the operations and front desk contact information on the Graduate School contact page.

PhD Program statistics – Fall 2024

Student enrollment: 206

Typical time to degree:

For PhD-Physics: 5.1 years

Program defined in relation to the department, the school/college, and/or the university.

The Department of Physics is housed within the College of Letters and Science and, therefore, is governed by the Dean of the College. Our graduate program is also governed by the Dean of the Graduate School.

General steps to the PhD-Physics

The PhD is at its core a research degree. The degree requires substantial original research, presented in the form of a dissertation. The path to the PhD consists of two stages. In the first (pre-dissertator) stage, the student passes the department's Qualifying Examination, completes required coursework (core and minor), and starts research with their faculty research advisor in preparation for the Preliminary Examination. Once the student completes all departmental and Graduate School requirements and passes the Preliminary Examination, the student has achieved dissertator status. In this stage of the program, the student focuses on thesis research and completes a dissertation. The student defends the dissertation in a public thesis defense. The student then deposits the dissertation with the Graduate School, which is the final step to the degree. The requirements for the PhD are in accordance with the department's learning goals of the program, and UW-Madison Graduate School policy.

1. Pass the departmental Qualifying Examination
2. Complete the required core coursework
3. Complete the minor requirement
4. Acquire a faculty research advisor and begin research
5. Pass the Preliminary Examination
6. Complete thesis research and defend the dissertation
7. Deposit the dissertation with the Graduate School

Many of these steps progress simultaneously. Details about degree requirements can be found in *Guide*.

III. ADVISING

Faculty Research Advisor

All Physics faculty are listed here: https://www.physics.wisc.edu/people/faculty/

The responsibility to acquire and be accepted by a faculty research advisor, is entirely with the student. Acceptance for PhD research by a faculty member depends on the professor's appraisal of the student's potential for research and on the ability of the professor to accept a student at that time. All incoming students are assigned members of the First Year Committee to help oversee their progress in the first few semesters in the program.

To aid incoming students in selecting a research area and faculty advisor, Physics 701: Introductory Seminar, is offered each fall semester. In this course, professors from each of the research groups describe their research, show their laboratories, and discuss matters of general interest to graduate students. First-year students are required to enroll in Physics 701.

Graduate students should begin research work as early as possible. Ideally students make progress in acquiring a faculty research advisor and joining a research group in a timely fashion, preferably by the beginning of the summer after the first year. The summer after the first year is the ideal time to focus on research.. It is also very important to determine summer funding support options as soon as possible. Ideally, most students will have begun a trial project with an advisor or at least made the necessary introductions and have at least one solid prospect by the end of the first year.

The advisor provides support to students in many ways.: Advisors are responsible for directing, mentoring and supervising the student as they work to acquire the highest level of knowledge and competence in the field that is possible. The advisor or co-advisor must be Graduate Faculty from the student's program. Advisors may often play a role in tracking the student's progress toward degree completion, assisting with course selection and academic planning, and helping students identify possible committee members, and postdoctoral opportunities. Further definition can be found in the UW Policy Library

Knowing the procedures and requirements of the University is the student's responsibility. Students should discuss roles and expectations with their advisors or prospective advisors. Both the student and the advisor have a responsibility to make their expectations clear to each other.

In the course of the PhD, students sometimes change advisors. The advisor-student relationship is one of mutual agreement, it may be terminated by either party. In particular, students are allowed to change advisors at any time. However, it is important to note that Graduate School policy states that students must have an advisor at all times, and Department policy aligns with that. Students who do not have an advisor may face a range of consequences, including suspension of funding, suspension from graduate study, program suspension, or program dismissal.

For students early in the PhD program, change is normal and even expected, and connecting to a new advisor can be accomplished fairly easily. Later in the PhD program, it can be very difficult to find a new dissertation advisor,

and such a change can represent a significant loss of progress. Therefore, dissertators are strongly encouraged to carefully consider all possible options before changing advisors.

It is also possible for an advisor to break off an advising relationship with a student. In such cases, the Department will work with the student to transition to another advisor. In early to mid-program stages, such situations, while less common, do happen, and students are generally able to move on to a better fit. At later program stages, such cases are exceedingly rare. In the unlikely event that a student does face such a situation, the student is encouraged to seek advice and support from campus resources, including the Physics Graduate Program Manager and/or the Associate Chair for Graduate Studies,

If a student does shift to a new advisor, the Graduate Program Manager must be notified. The Graduate Program Manager will verify the change with the new advisor.

Advising Resources
There are many advising resources available to students. Students can refer to the Department's website, this Handbook, the Graduate School's website, and the Graduate School's Academic Policies and Procedures. However, when students need further clarification on any of these policies or procedures, they should contact the Graduate Program Manager. The Graduate Program Manager may play a role with issues including satisfactory academic progress, academic deadlines, degree completion, Program-related forms, advising/course holds and permissions, and course offerings. Generally, faculty and staff are best able to assist students when they have researched a topic (using the resources mentioned above).

First Year Committee
A committee of 6-10 faculty serve, in pairs, in the capacity as advisors for 1st year grad students. The purpose of the committee is to provide consistent guidance on 1st year courses, student specific qualifying exam guidance, and to provide mentorship before students establish a long-term thesis advisor.

Each incoming student will have an opportunity to meet with their assigned First Year Committee faculty pair in advance of the fall semester. Committee members will meet again with students before the start of the second semester and at the end of the second semester to check on progress and advise students on future course work, qualifying exam progress, and guidance finding a permanent thesis advisor.

A Graduate Student Guide to Working with Faculty Advisors
Through this interactive, self-paced micro-course, graduate students learn about the characteristics of functional and dysfunctional relationships with faculty advisors, strategies for communicating effectively and aligning expectations, as well as program grievance processes and Hostile and Intimidating Behavior resources. Completion of the micro-course takes about 20 minutes and is optional but encouraged for all graduate students.

IV. PhD-PHYSICS DEGREE REQUIREMENTS

Please refer to the Graduate Guide for Program basics such as credits and courses, breadth/doctoral minor requirements, milestone requirements, and learning outcomes.

All requirements of the Graduate School must be met.

The *Graduate School Academic Policies and Procedures* includes information about the Graduate School's administrative and academic policies which apply to all graduate students regardless of their field. Students are responsible for being familiar with and abiding by the *Graduate School Academic Policies and Procedures*. The Graduate School is the final authority in determining compliance.

Enrollment requirements

Minimum credits

Students must complete 51 credits, 32 of which must be completed "in residence" (i.e., while enrolled as a UW-Madison graduate student). At least 50% (26 credits) must be "graduate coursework" credits. Such credits are earned by taking any course numbered over 699 or any course with a "graduate coursework" attribute in the Course Guide.

The Graduate School policy indicates the minimum enrollment requirements each semester.

Physics PhD students must enroll in at least 2 credits of Physics coursework each semester until the Preliminary Exam is completed. Individual 1 credit courses or a combination of 1 credit courses, such as Physics 701 and 801, do not count towards this requirement.

It is often suggested that students who hold teaching assistant (TA) appointments take only 6 credits during their first semester, as more than this may affect performance in both teaching and coursework as students become acquainted with the demands of the program. After the first semester, students are encouraged to take three courses per semester until they reach dissertator status. All students are encouraged to consult with the faculty advisor and/or First Year Committee (FYC) to discuss the course schedule each semester.

Total Credits

The Physics PhD degree includes a number of coursework and credit requirements. The PhD degree itself requires 51 credits in total to align with the Graduate School minimum graduate degree credit requirement.

Credits Before Dissertator Status

The Graduate School minimum graduate residence requirement requires that at least 32 credits towards the doctoral degree must be completed prior to achieving dissertator status:

The 32 credits are achieved via the core coursework sequence, the PhD minor, and a combination of other coursework and Physics 990 research. 15 of the credits will be accumulated from the Physics core coursework and a minimum of 9 credits will be accumulated from the minor. The remaining 8 credits can include research or other coursework.

Graduate Level Credits

The Graduate School minimum graduate coursework (50%) requirement states that at least 50% of the 51 credits must be at least 700 and above or courses with the Graduate Coursework (G50%) attribute.

To determine which courses can be used to satisfy the graduate level (G50%) credit requirement, please consult Course Search & Enroll (Search: "Other Options", check the box "50% Graduate Coursework Requirement"). This will provide accurate results of which courses have been approved through the University to count towards the G50% requirement.

GPA requirement

Students must maintain a grade point average of 3.0.

Coursework

Core Course Sequence

All physics PhD students must take the Physics core course sequence and achieve a grade of B or better in each core course or repeat these courses until a B grade is achieved. The core courses are as follows:

- Physics 711 (Dynamics) (offered Fall only)
- Physics 715 (Statistical Mechanics) (offered Spring only)
- Physics 721 (Electrodynamics) (offered Fall and Spring)
- Physics 731 (Quantum Mechanics) (offered Fall only)
- Physics 732 (Quantum Mechanics) (offered Spring only)

To avoid scheduling problems, the core courses are typically taught on M/W/F in the mornings. The detailed timeline for completing the core course sequence depends on individual students' preparation, but students are encouraged to complete the core courses within their first two years of the PhD program.

As a general guideline, core courses should be taken as soon as possible in the graduate career. Finishing the core courses allows the most rapid entry into research, and much of the material is required background for more advanced work in each student's research specialty. Students should be aware that each research group may also have a recommended sequence of core courses, a recommended timeline for completing core coursework requirements, and/or additional required coursework.

Course Waivers: Prior Coursework

Students who have completed graduate-level work in one or more of the core course subjects prior to starting the UW-Madison Physics PhD program may be eligible for course waivers. Waivers of core courses can be granted for credits earned at other universities in equivalent graduate-level courses, pending approval by the Associate Chair for Graduate Studies. Course waiver requests or a request to test out of one or more courses should be requested within the first month of the graduate program by submitting the required course waiver form

The Graduate School will allow these credits to count towards the graduate degree at UW-Madison only if they were earned post-baccalaureate as outlined in the Graduate School Prior Coursework policy:

Students who believe that they have had graduate level coursework in a subject or subjects comparable to what is covered in the core courses, but who do not clearly qualify for a waiver of any specific courses, have the option of trying to test out of the course. At a minimum, this typically requires passing the final exam for the course at a level that would clearly lead to a grade of B or better in the course. Testing is to be completed during the first semester in the graduate program. Testing out of a course does not include any credits towards a graduate degree at UW-Madison. Requests to test out of core courses should be made to the Associate Chair for Graduate Studies during the first month in the graduate program by submitting the required test out form

Minor

Breadth is a required component of graduate study at UW-Madison. In the physics department, the breadth requirement is satisfied through the completion of a doctoral minor. The aim of the minor is to broaden students' knowledge of physics or related fields, and/or to support their research and prospective professional activities. The Graduate School policy outlines the minimum requirements for all doctoral minors.

Students have two options for completing the minor – Option A: External or Option B: Distributed. Minors must be approved by the faculty advisor and the Associate Chair for Graduate Program. Option A: External minors must also be approved by the appropriate channels in the external department. The PhD Minor Form must be completed, signed, and submitted to the Graduate Program Manager at or before the time the warrant for the Preliminary Exam is requested. In addition, all Graduate School students must access the Graduate Student Portal to add/change their doctoral minor. (NOTE: Physics students will not be allowed to select a Physics GMIN. If completing a Distributed minor (see below), select Distributed GMIN.) Students should upload the signed minor form as part of the "add a doctoral minor" online process.

Option A Minor: External

- Minimum of 9 credits in an external department at the graduate level
- Consists of coursework in one single department outside of the Department of Physics and is named accordingly
- Consult with the minor department for specific minor requirements and the processes to declare an external minor in another department
- A list of all external doctoral minors and the Graduate School external minor requirement

Option B Minor: Distributed

- Minimum of 9 credits of minor coursework taken in one or more departments
- Must include a minimum of 3 credits in Physics at or above the 500 level
- Coursework must be outside of the student's area of specialization, form a coherent theme, and provide breadth in programmatic or professional development
- Physics core coursework may NOT be counted towards the minor
- Additional coursework relevant to the student's area of specialization may NOT be counted towards the minor
- Up to 3 credits of the 9 credits may be satisfied by Physics 900 (Colloquium) which is a 1 credit course offered every semester
- 1 credit of the 9 credits may be satisfied by Physics 701 (First Year Seminar)

Physics Minor for Non-Physics Students

The doctoral minor requirement in Physics for non-physics graduate students is 9 credits numbered above 300, each passed with a B or better. The program must be approved by the Associate Chair for Graduate Studies before it is completed:

Qualifying Examination
The qualifying exam requirement is designed to verify that any student leaving UW-Madison with a PhD in physics has a sophisticated understanding of undergraduate physics. Undergraduate physics is a body of knowledge that is critical to experimentalists and theorists.

The qualifying exam is a written exam that assesses students' understanding of core physics topics at the undergraduate level. The exam helps to ensure the strong foundation that is needed for demonstrating mastery of core physical concepts in Classical Mechanics, Electricity and Magnetism, Quantum Mechanics, and Statistical Mechanics, which is one of the learning outcomes for the physics PhD program.

The exam is separated into four sections:

- Classical Mechanics (CM)
- Electricity and Magnetism (EM)
- Statistical Mechanics/Thermodynamics (SM)
- Quantum Mechanics (QM)

The nominal PhD passing score for each section is 60% and the nominal Master's passing score for each section is 50%. Each exam section can be passed independently. If a student receives a failing score on one or more sections of the exam, the student only needs to take the section(s) of the exam that remain to be passed in subsequent attempts.

The qualifying exam is held twice a year, just before the start of every fall and spring semester. The dates will be posted on the Graduate Program Events calendar: https://www.physics.wisc.edu/twap/?name=grad. Students with testing accommodations must consult with the Graduate Program Manager in advance (at least two weeks before the exam).

All physics PhD students have four consecutive opportunities within the first two years of the program to pass the exam in its entirety (all four sections) at the PhD level. Students who pass all sections of the exam at the PhD level within the four allowed attempts have fulfilled the department's qualifying exam requirement.

Exam Structure

Each of the four sections of the exam is 1.5 hours long and consists of five problems. Students are to do the first two problems, which are at the calculus-based introductory level, and to do two other problems (out of three offered) at the intermediate/advanced level. Students must only submit answers to these four problems for each section of the exam. The first two problems comprise one-third of the total score, and the second two chosen problems comprise the remaining two-thirds of the total score.

The exam covers standard topics as included in undergraduate physics courses in CM, EM, QM, and SM at both the introductory and intermediate/advanced levels. These topics may include:

- CM: motion in electromagnetic and gravitational fields, rigid bodies, coupled oscillations, and continuum vibrations;
- EM: statics, fields in matter, time-dependent fields, Maxwell's equations, light and radiation (with optics and circuits covered at the introductory level);
- QM: wave mechanics, matrix mechanics, observables and measurements, angular momentum, perturbation theory, elementary atomic physics, and elementary scattering theory;
- SM: thermodynamics and statistical mechanics of matter and radiation.

Grading Policies

The exam is graded anonymously by faculty and reviewed in detail by the Qualifying Exam Committee. Once this review has been performed, the results are unblinded and distributed to the students and faculty. Students receive their results and the grading rubrics used by faculty in grading the exam.

Students may request a review of their grades for specific exam problems to the chair of the Qualifying Exam Committee at any point within two weeks after the exam is returned. The committee chair consults with the faculty who graded the problems in question and returns the final grade determination to the student. Students should be aware that the grading rubrics used for assigning partial credit, which are also reviewed by the Qualifying Exam Committee prior to the unblinding of the scores, are generally respected unless there are obvious inconsistencies or errors.

Appeal/Final Review Process

If a student does not pass all four topical areas of the written qualifying exam at the PhD level after four exam attempts, the student can request an "appeal." Here "appeal" means a final review of the students' overall progress in the program after the four exam attempts. The review is a broad assessment that includes the student's prior qualifying exam results, performance in graduate courses, and progress to date in research.

The review is carried out by a review committee chaired by the Associate Chair for the Graduate Program. The review committee further consists of a faculty member of the student's choosing, such as the student's faculty advisor, and one additional faculty member determined on a case-by-case basis.

Further information about this process will be provided on an individual basis, when relevant, at the time when qualifying exam scores are returned.

Preliminary Examination
The Preliminary Exam must be passed for admission to candidacy for the PhD and to achieve dissertator status through the Graduate School. It should be taken no later than the end of the fifth semester in the program, unless a student has received approval for an extension. If the Preliminary Exam not passed on the first attempt, it may be repeated once before the end of the sixth semester.

The Preliminary Exam is intended to test whether the student has mastered the physics and technology necessary for research in the proposed general area of study, and to assess whether the student is on track to satisfying the department's learning goals for the PhD degree. The Preliminary Exam is held before the student's Preliminary Exam Committee, which typically consists of four members:

- Faculty research advisor, who serves as the chair of the committee
- Faculty representative from the departmental Preliminary Exam Committee (student should contact the current Prelim Committee Chair to obtain this member)
- Two additional committee member(s) typically chosen by the student in consultation with their advisor. Typically, a UW-Madison faculty either in physics or another related department.

The exam is typically scheduled during a two-hour time block. The student gives a presentation aimed at a general physics audience and should be understandable for a physicist working in an entirely different area. The format can vary slightly depending on the research advisor and research group, but it typically begins with a one-hour presentation covering a subject in the student's chosen area of research, and is followed by a question-and-answer period designed to assess the student's background knowledge and research potential. The committee will ask questions to clarify points made in the talk and determine if the student adequately understands the physics behind the topics that were discussed. The question-and-answer period typically takes place both in open session (in front of a general audience) and in closed session (just in front of the committee). The committee will deliberate the exam outcome in closed session, and communicate the result to the student once the decision is made. The committee will indicate the result of pass by signing the Preliminary Exam warrant.

A student planning to take the Preliminary Examination will need to upload a completed and signed Minor Form and submit a Preliminary Examination warrant request to the Graduate Program Manager at least three weeks prior to the date of the examination. After the exam, the Graduate Program Manager will route the warrant for digital signatures and, once signed, will submit it to the Graduate School for processing of dissertator status. Students will receive an email confirmation from the Graduate School once the signed warrant has been submitted confirming dissertator status for the next semester.

Individual Development Plan (IDP)
Students are encouraged, but not required, to maintain and Individual Development Plan (IDP). An IDP is a planning tool designed to help students identify annual progress, professional development needs, and career objectives. The IDP also serves as a communication tool between student, mentor, and advisory committee. The responsibility for writing, maintaining, and implementing the plan belongs to the student, although conversations with and feedback from the mentor(s) and advisory committee are essential.

The Graduate School offers a collection of IDP resources to support graduate students, postdoctoral researchers, mentors, PIs, grants administrators, and Graduate Program Managers.

An Individual Development Plan (IDP) is an essential tool to help students:

1) Assess current skills and strengths
2) Make a plan for developing skills that will help meet academic and professional goals
3) Communicate with advisors and mentors about evolving goals and related skills.

The IDP is a document to revisit again and again, to update and refine as goals change and/or come into focus, and to record progress and accomplishments. It also serves to start – and maintain – the conversation with a student's faculty advisor about career goals and professional development needs.

The onus to engage in the IDP process is on the student, although the Primary Advisor (also known as mentor or PI), or others may encourage and support the student in doing so. The IDP itself remains private to the student, who chooses which parts to share with which mentors. Through the IDP process, a student may decide to identify various mentors who are good sources of expertise and advice.

We recommend using one of the following two IDP tools. Each tool will include a self-assessment of skills, interests, and values; goal-setting guidelines; and reference to skill building and career exploration resources.

IDP tool for all graduate students and postdocs: UW-Madison IDP template, which includes instructions and examples, is flexible and appropriate for all disciplines. https://grad.wisc.edu/professional-development/individual-development-plan/

IDP tool for sciences and engineering: For graduate students in the natural sciences and engineering, the American Association for the Advancement of Science (AAAS) online tool "myIDP" provides a comprehensive set of materials and exercises that will guide the student through the process of self-assessment, career exploration, goal-setting, and implementation of the degree plan. Students can set up a free account and create and monitor their IDP at myidp.sciencecareers.org.

DiscoverPD is an innovative online tool for UW-Madison graduate students to match their skill development needs with upcoming campus events, self-guided activities, online training, and more. This is a great tool to incorporate with the IDP to help students develop the skills needed to be successful in graduate school and beyond.

Dissertator Status

The Graduate School sets the minimum requirements and deadlines each semester for dissertator status.

Dissertator status is effective at the start of the semester immediately following the completion of these requirements. In addition to the Graduate School requirements for dissertator status, the Physics program also requires students to:

- Pass the Qualifying Exam at the PhD level
- Complete the required core coursework with a grade of B or better
- Complete 32 UW-Madison graduate level credits (courses numbered 300 and above)
- Satisfy the minor requirement
- Clear all Incomplete (I) or Progress (P) grades in non-research classes
- Pass the Preliminary Exam

After completing all requirements for the PhD degree, except for the dissertation, students are classified by the Graduate School as a dissertator (also known as "ABD" = all but dissertation).

The Graduate School dissertator status policy requires dissertators to maintain continuous enrollment of exactly 3 credits through submission of the dissertation and graduation. Dissertators who hold RA appointments in summer are required to enroll for 3 credits in the 8-week summer session, as well. Dissertators who wish to register for more than 3 credits in a specific semester may be able to do so. Students in this situation should consult with the Graduate Program Manager.

Completing the Doctoral Degree

Thesis Defense

The doctoral thesis defense is an oral defense of the dissertation. The thesis defense includes both a presentation of the dissertation material, and a question-and-answer sessions that can take place both in open session (in front of a general audience) and closed session (only the doctoral thesis committee). Graduate School policy requires that the thesis defense must be completed within five years of passing the Preliminary Examination. The Graduate School provides details about the final oral examination (thesis defense).

The thesis defense also requires a warrant. Student must submit a warrant request form at least three weeks prior to the date of the thesis defense. The date, time, and location of the defense, as well as the dissertation title and committee members, must be finalized before requesting the warrant.

Thesis Committee

Thesis committee composition must align with the Graduate School policy, as follows.

- The chair or one of the co-chairs of the committee must be graduate faculty from the student's program. Affiliate appointments may be used to satisfy this requirement. While an advisor may serve as chair, it is not a requirement. Advisors and chairs are to be designated in the dissertation
- The committee must be comprised of at least four members representing more than one UW-Madison graduate program. Affiliate appointments may be used to satisfy this requirement.
- Three of the committee members must be UW–Madison graduate faculty or former UW–Madison graduate faculty within one year of resignation or retirement.
- At least three committee members must be designated as readers.
- The fourth member and any additional members may be from any of the following categories, as approved by the program's executive committee (or its equivalent): graduate faculty, faculty from a department without a graduate program, academic staff (including emeritus faculty), visiting faculty, faculty from other institutions, scientists, research associates, and other individuals deemed qualified by the executive committee (or its equivalent).
- All committee members have voting rights. To receive a doctoral degree, students cannot receive more than one dissenting vote from their committee on the final degree warrant.

Formatting

The Graduate School doctoral guide outlines the specific formatting requirements for the dissertation as well as the steps to deposit the dissertation.

Deadlines

Degrees at UW-Madison are conferred three times during the year by academic term: Fall, Spring, & Summer. The date the dissertation is deposited to the Graduate School determines the degree term. Students should take note of the relevant Graduate School deadlines for each term.

Degree Conferral & Payroll End Dates

The Graduate School policy on degree conferral and payroll end dates explains how students maintain tuition

Commencement

Once a student meets the degree requirements, students may choose to attend a fall or spring commencement ceremony. Commencement occurs in May and December each year and is coordinated by the Office of the Chancellor. There is no summer commencement ceremony. A student who completes the degree in August may attend either the May or the December ceremony. For a student to have their name printed in the

commencement program, the student must submit and Apply to Graduate application by the deadline each semester. The Graduate School provides instructions and information about graduation. Students may attend the commencement ceremony even if not included in the commencement program. See commencement.wisc.edu for more information.

V. ENROLLMENT

The Graduate School has minimum requirements for enrollment each semester. Programs may only need to reference the enrollment requirements below that pertain to the Program (summer enrollment, dissertator, non-dissertator, full time, part time, TA/PA/RA). All of the credit requirements (except F-1 and J-1 visa requirements) must be satisfied by graded, graduate-level courses; courses numbered below 300, audit, and pass/fail do not satisfy the minimum requirement.

Students are responsible for following Graduate School policies related to course enrollment requirements and limitations:

- Adding / Dropping Courses
- Auditing Courses
- Canceling Enrollment
- Continuous Enrollment Requirement for Dissertators
- Enrollment Accountability
- Minimum Enrollment Requirements

Residence for Tuition Purposes
Residency is used to determine tuition rates on campus. The details of the Graduate School Residency for Tuition Purposes and the full Registrar's Office policy are relevant for students interested in pursuing Wisconsin residency for tuition purposes.

VI. MASTER'S DEGREES

The Physics Department offers two master's degrees, master of arts (MA) and master of science (MS), for work leading to the PhD. These are non-admitting programs in that students may not apply directly for admission to the MA or MS. Note that the MS-Physics, Quantum Computing is a separate program and is not covered in this handbook."

Master of Arts (MA)
The master of arts degree is a purely academic degree, requiring 30 credits of graduate course work, completion of the core graduate coursework and passage of the qualifying exam at the master's level. It is designed to strengthen the student's physics background and enhance the opportunities for employment as a physicist or in physics education.

To earn the MA degree in the Department of Physics, a student must

- Satisfy the department's minimum graduate-level credit requirement
- Pass the qualifying exam at the master's level.
- Complete 30 credits at the 500 level or above.
    - 15 of the 30 credits must be earned from taking the physics core graduate courses, each passed with a grade of B or better. These courses are Physics 711 (Dynamics), 715 (Statistical Mechanics), 721 (Electrodynamics), and 731 and 732 (Quantum Mechanics).
    - The remaining 15 credits may be earned through a combination of coursework, directed study, and research to be determined in consultation with the student's faculty advisor. The courses

should be selected in consultation with the student's faculty advisor to best meet the student's professional objectives.

The MA degree requires the student to complete the add/change program/plan process through the Graduate School. In this case, the student must request to "add" the MA plan to their student record. Once the MA plan has been added to the student record, and all MA degree requirements have been met, a warrant request can be made to the Graduate Program Manager, allowing at least three weeks for the warrant to be processed.

Master of Science (MS)
The master of science degree in Physics requires the completion of a directed master's project and thesis in the student's area of interest, completion of the core graduate coursework, and passage of the qualifying exam at the master's level. It is designed to strengthen the student's background and experience in physics, and enhance the opportunities for employment as a physicist or in physics education.

To earn the MS degree in the Department of Physics, a student must

- Satisfy the department's minimum graduate level credit requirement.
- Pass the Qualifying Exam at the Master's level
- Complete 30 credits at the 500 level or above.
    - 15 of the 30 credits must be earned from taking the core graduate courses, each passed with a grade of B or better. These courses are Physics 711 (Dynamics), 715 (Statistical Mechanics), 721 (Electrodynamics), and 731 and 732 (Quantum Mechanics).
    - The remaining 15 credits may be earned through a combination of coursework, directed study, and research to be determined in consultation with the student's academic advisor. The courses should be selected in consultation with the student's advisor to best meet the student's professional objectives.
- The student must present satisfactory evidence of scientific research, writing, and presentation skills. This will usually be done through a master's research project that results in the submission of a master's thesis written at a satisfactorily professional level, together with an oral presentation of the project in a master's thesis defense.

The MS degree requires the student to complete the add/change program/plan process through the Graduate School. In this case, the student must request to "add" the MS plan to their student record. Once the MS plan has been added to the student record, a warrant request can be made to the Graduate Program Manager, allowing at least three weeks for the warrant to be processed.

VII. SATISFACTORY PROGRESS – ACADEMIC EXPECTATIONS

Continuation as a graduate student in the UW-Madison Physics PhD program is subject to the Criteria for Satisfactory Progress as outlined in this departmental policy.

VIII. SATISFACTORY PROGRESS - CONDUCT EXPECTATIONS

Professional Conduct
The Office of Student Conduct and Community Standards maintains detailed guidance on student rights and responsibilities related to learning in a community that is safe and fosters integrity and accountability. You are responsible for keeping aware of their policies and procedures.

Academic Misconduct
Academic misconduct is governed by state law, UW System Administration Code Chapter 14. For further information on this law, what constitutes academic misconduct, and procedures related to academic misconduct, see:

- The Graduate School Academic Policies & Procedures: Misconduct, Academic
- Office of Student Conduct and Community Standards Academic Misconduct Website

Non-Academic Misconduct
Non-academic misconduct is governed by state law, UW System Administration Code Chapters 17 and 18. For further information on these laws, what constitutes non-academic misconduct, and procedures related to non-academic misconduct, see:

- The Graduate School Academic Policies & Procedures: Misconduct, Non-Academic
- Office for Student Conduct and Community Standards Non-Academic Misconduct Information
- University of Wisconsin System Chapter UWS 17: Student Non-Academic Disciplinary Procedures
- Chapter UWS 18: Conduct on University Lands

Research Misconduct
Trust in the accuracy and veracity of the scholarly record are fundamental to science. When that record is tainted, whole fields of study can be set back or questioned. Moreover, when scientists have been found to engage in misconduct, partners and the public lose faith in the ability of all scientists to address society's grand challenges.

Per the UW-Madison policy, "research misconduct is defined as fabrication, falsification, or plagiarism in proposing, performing, or reviewing research, or in reporting research results." The policy applies to all those involved in the research process including graduate students.

For more information, please visit the Office of the Vice Chancellor for Research research misconduct page.

If you have questions or concerns about research misconduct or integrity, this can be discussed confidentially with the Research Integrity Officer (rio@research.wisc.edu).

Hostile and Intimidating Behavior (Bullying)
Hostile and intimidating behavior (HIB), sometimes referred to as "bullying," is prohibited by university policy applicable to faculty, academic staff, and university staff. If you are a student who is experiencing HIB, you are entitled to support as a university employee through the Ombuds office, the Office of Student Assistance and Support, and (if a grad student) the Graduate School. Graduate student workers should also consult with Graduate Coordinators and/or the Graduate School.

Students who feel they have been subject to HIB are encouraged to review the informal and formal options on the "Addressing HIB" page.. Additional information about HIB-related definitions, policies and processes can be found here. Information about reporting bullying incidents can be found here.

IX. ACADEMIC EXCEPTION PETITION

The Department Chair has the authority to make individual exceptions to policies found in the PhD program handbook. Exceptions must involve extenuating and/or unique individual circumstances. Requests for such exceptions should be made in writing to the Associate Chair for Graduate Program from the student and/or faculty advisor.

X. GRIEVANCE PROCESS

Graduate students should consult their faculty advisor, First Year Committee faculty, the Associate Chair for Graduate Program, and/or the Graduate Program Manager about any concerns related to academic issues or the academic environment. Graduate students may also reach out directly to the Department Chair as an alternate approach. The hope is that this will result in the development of a working environment that all will find supportive. If graduate students have a question of whether or not a situation or discomfort should be discussed, the answer is YES! Any issue that is troubling should be addressed and, if it is within the Department's authority, it will be resolved.

If a graduate student feels unfairly treated or aggrieved by faculty, staff, or another student, it is recommended that the concerns are first handled directly with the person responsible for the objectionable action, if possible. If the student is uncomfortable making direct contact with the individual(s) involved, the student should contact the faculty advisor or the person in charge of the unit where the action occurred (program or department chair, section chair, lab manager, etc.), and/or contact the people mentioned above.

The Department of Physics and/or College of Letters and Science academic grievance process should be used to resolve academic issues or disputes. Examples of matters suitable for this process may include a qualifying exam failure, author dispute, or concerns regarding advising/mentoring, to name a few. Graduate Assistants in TA, PA and/or RA appointments may utilize the Graduate Assistantship Policies and Procedures (GAPP) grievance process to resolve employment-related issues. Examples of matters appropriate for the GAPP grievance process include allegations of violation of GAPP, including allegations excessive work hours, violations of sick days or vacation policies, or disputes regarding the assignment of duties.

If a student has questions about whether the grievance policy at the Program level or GAPP procedure would be suitable for the concern, students are encouraged to reach out to the college, school or division human resources representative.

In addition, the following administrative offices have procedures available for addressing various concerns:

- Office of Student Assistance and Support
  - (for all grievances involving students)
  - 70 Bascom Hall 608-263-5700
- Division of Diversity, Equity & Education Achievement
  - (for discrimination or harassment issues)
  - 109 Bascom Hall 608-265-5228
- Employee Assistance
  - (for conflicts involving graduate assistants and other employees)
  - 256 Lowell Hall 608-263-2987
- Ombuds Office for Faculty and Staff
  - (for graduate students and post-docs, as well as faculty and staff)
  - 523-524 Lowell Center 608-265-9992
- Graduate School
  - (for informal advice at any level of review and for official appeals of program/departmental or school/college grievance decisions)
  - 217 Bascom Hall, 500 Lincoln Drive, Madison, WI 53706-1380, 608-262-2433

The Graduate School has procedures for students wishing to appeal a grievance decision made at the school/college level. These policies are described in the Graduate School's Academic Policies and Procedures.

XI. INCIDENT REPORTING (HATE, BIAS, SEXUAL ASSAULT, HAZING, STUDENTS OF CONCERN, BULLYING)

The Office of Student Assistance and Support maintains a portal to report incidents of hate, bias, sexual assault, hazing, dating/domestic violence, stalking, missing students, and students displaying other concerning behaviors at UW-Madison. Students who feel they have been subject to hostile and/or intimidating behavior (i.e., bullying) are encouraged to review the informal and formal options for addressing this behavior (including filing complaints when desired).

XII. FUNDING AND FINANCIAL INFORMATION

The Graduate School provides information on graduate assistantships, benefits, minimum stipend levels, and stipend levels by program. Stipend rates for graduate assistantships are set by the University. Minimum rates for TAs, PAs, RAs and LSAs are set by the Graduate School. Programs may set their own minimum rates, which are approved by the Graduate School.

The Graduate School maintains policies related to graduate student funding/employment:

- Maximum Levels of Appointments
- Concurrent Appointments for Fellows/Trainees
- Enrollment Requirements for Graduate Assistants
- Eligibility for Summer RA, TA, PA, and LSA Appointments

The Graduate Assistantship Policies and Procedures (GAPP) document outlines campus level policies and procedures for Project (PA), Teaching (TA), and Research (RA) Assistants.

Teaching Assistantship (TA)
Many Physics PhD students will hold a teaching assistantship (TA) at some point during the program. A TA is both a job and a means of financial support for graduate study. Because of the coexistence of these two functions, the relationship between the department and the individual teaching assistant (TA) is complex. The advantages of holding a teaching assistantship for at least one semester during graduate studies are that teaching activities solidify and deepen the teaching assistant's undergraduate education in physics, help improve communication skills, and help prepare for a possible career in teaching. Because teaching is a job, the Department of Physics conducts regular TA evaluations. TAs are evaluated by their students at the middle and end of each semester. The purpose of the mid-term evaluation is for the TA to get feedback from the students (who remain anonymous), while there is still time to change teaching practices. The mid-term evaluations are not part of the TA's permanent record. The final evaluation results in a letter, which does remain on the TA's record, in which the TA's performance is classified as either Excellent, Very Good, Good, Satisfactory, Marginally Satisfactory, or Unsatisfactory.

Because teaching is a means of financial support for graduate study, the Department of Physics typically admits graduate students with a guarantee of support which takes the form of a TA. This guarantee is described in each student's offer of admission. During the time covered by the funding guarantee, students who are not supported as RAs or Fellows, and who remain in good standing and making satisfactory progress, are guaranteed by the department to be supported as TAs during the academic year.

After the natural expiration of the funding guarantee, students who need TA positions during the academic year may apply for them, but cannot be assured of receiving them. The number of TA positions available depends on the number of undergraduates who enroll in physics classes that use TAs, as well on the percentage time of each position. Whereas guarantees of support typically specify 50%-time appointments, the minimum percentage required for a TA to receive a tuition remission and benefits eligibility is 33%. On occasion students have

requested 33% positions rather that 50% positions in order to free up more time for research. If a TA in the Physics PhD program transfers to another graduate program on campus, the physics department's commitment to continuing support is terminated.

There are a small number of TA positions available in the summer term. Please note that the support guarantee does not extend into the summer. Depending on the number of requests, TA positions may or may not be available for all who request them. For further information about summer TA positions, please consult the Director of Undergraduate Studies. The majority of TA positions are in large general Physics classes for non-physics-majors. TAs in these classes lead both discussion sections and laboratory sections. There are also a few TA positions in smaller, more advanced classes for physics majors. These are usually (although not always) given to experienced Tas Some involve discussion only (no lab), others involve lab only (no discussion).

Research Assistantship (RA)
Many Physics PhD students will hold a research assistantship (RA) at some point during the program. RA positions are made available by individual professors to students who have decided on their field of research. Students who wish to be considered for an RA appointment should contact the faculty directly.

Campus-Wide and External Funding
Fellowship opportunities for graduate students include external fellowships, as well as supplemental fellowship opportunities that are available through the UW-Madison campus or the Department of Physics. UW campus fellowship opportunities include Advanced Opportunity Fellowships (AOF), which are awarded during the admissions process. The Department may also have fellowships available for incoming first-year graduate students. Funding for graduate student fellowship support is made possible by generous endowments from Physics Department alumni and other donors.

We encourage all students to seek out and apply for funding from sources external to the university (e.g., federal agencies, professional organizations, private foundations). The Graduate School provides a comprehensive overview of the funding process on campus as well as descriptions of the types of funding available, sources of funding, minimum stipend rates and benefits, and links to applicable human resources policies (e.g., GAPP) at:

- Graduate School: Funding and Financial Aid
- External Fellowship Database
- UW-Madison Libraries Grants Information Collection

Tuition Remission and Payment of Segregated Fees
TAs, PAs, RA, and Lecturers (Student Assistants) with appointments of 33.3% or higher (approximately 13 hrs/week) receive remission of their full tuition (in- and out-of-state, as applicable). Students with these appointments are still responsible for paying segregated fees. Graduate Assistants have a deferred due date for fall and spring semester segregated fees.

Health Insurance Benefits
TAs, PAs, RA, and Lecturers (Student Assistants) with appointments of 33.3% or higher (approximately 13 hrs/week) for at least the length of a semester are eligible to enroll in a health insurance program.

Loans
The Office of Student Financial Aid (OSFA) assists graduate students whose personal and family resources are not adequate to cover the expenses involved in attending the University of Wisconsin-Madison. The office also provides counseling to help students manage their money effectively, information on other potential sources of financial assistance (such as employment), debt management counseling, and small short-term loans for emergency situations.

The Office of Student Assistance and Support additionally provides short term loans through its Crisis Loan initiative.

Taxes
Students who are appointed as a Trainee or a Fellow, will not have taxes withheld from paychecks by the University. However, the support received is considered taxable income. The University provides trainees and fellows with a summary of stipend payments each January. Students may need to file an estimated quarterly tax return with the federal and/or state government. For students who are appointed as Research Assistants, the University is required to withhold State and Federal income taxes on the entire stipend based on a student's W-4 information. Please note that students may change the number of exemptions on the W-4 at any time. The IRS website is a good resource for federal tax questions. The State of Wisconsin Department of Revenue is a good resource for state tax questions.

*Please note that the Department cannot offer tax advice. Some tax filing resources are provided by the University.

Additional Policies & Resources

- Graduate School Policy: Residence for Tuition Purposes
- Employee Disability Resources
- Graduate Assistantship Policies and Procedures (GAPP)

XIII. LEAVE OF ABSENCE

While in most cases participation in the program is continuous over time, students sometimes find it necessary to take a temporary leave of absence. Graduate students may request a leave of absence for one semester or for one year by submitting a leave of absence request outlining the timeline for the leave and general reasons. The faculty advisor must agree that the student is leaving in good standing and may re-enter the program in a reasonable stated length of time. The Department Chair, in consultation with the Associate Chair for Graduate Program, will review all leave of absence requests.

If a student is granted a one semester leave of absence, the milestone due dates and terminal deadlines are pushed back one semester. If a student is granted a full year leave of absence, all due dates and deadlines are pushed back one year. Students may be granted a leave of absence for no more than one year at a time. Students who do not register for more than one semester (Fall or Spring) will be considered inactive by Graduate School standards and must apply for re-entry. Students who take a leave of absence and are in good standing are likely to be approved for re-entry upon return. Prior funding guarantees may or may not continue to be in effect and will be decided in a case-by-case basis. A leave of absence is not required for summer term as summer term is not a required term of enrollment if a student is not being paid as a graduate assistant or fellow.

Re-entry
Graduate students who leave the program in good standing for more than one term (not including summer) may request re-entry to the program by completing the Graduate School application for re-admission. Department leadership will review the request based on the information provided at the time the student plans to return.

The Graduate School outlines the policy for readmission for previously enrolled graduate students:

Time Limits
In addition, the Graduate School specifies time limits for completion of current coursework and research. Students who take a leave of absence or re-enter into the program should be aware of these policies.

XIV. PROFESSIONAL DEVELOPMENT AND CAREER PLANNING

Participation in professional development is an excellent way to build skills needed to succeed academically and thrive in a future career. The following are recommended professional development activities:

Local Resources for Professional Development and Career Planning
The Graduate School develops and curates a wide variety of resources for professional development, including a tool to assess skills, set goals, and create a plan with recommended activities on campus (e.g., the popular "Individual Development Plan" or IDP) as well as programming to help students explore careers, prepare for a job search, build a network and learn from alumni, manage projects, communicate about research, and much more.

DiscoverPD helps master's and doctoral students at UW-Madison advance their academic and professional goals with customized recommendations based on a skills self-assessment. The 400+ professional development recommendations available in the DiscoverPD database are available in a range of formats to best meet diverse needs, including in-person, virtual, asynchronous, and synchronous opportunities.

The Graduate School communicates professional development opportunities through an e-newsletter, *GradConnections*, that all graduate students receive at their wisc.edu email. Graduate students in traditional graduate degree programs receive the newsletter weekly during the academic year and every other week in the summer. An up-to-date list of events is available online.

Travel to Meetings and Conferences
An important part of the professional development of graduate student is the participation in professional meetings and conferences. Advisors should be consulted about the appropriate venues for students to attend. Some advisors may have access to funds to help support travel costs. Students should also explore volunteer opportunities at conferences to offset registration costs. Students should keep the Graduate School's Student Research Grants Competition in mind as a resource if funding is an obstacle to conducting or presenting their research.

Campus-wide Resources for Professional Development
Be sure to take advantage of professional development opportunities and programs offered by the following campus services as well.

- Writing Center
- Grants Information Collection
- Software Training for Students
- Delta Program
- UW Teaching Academy
- Morgridge Entrepreneurial Bootcamp

XV. DIVERSITY, EQUITY AND INCLUSION

The Physics Department strives to establish, maintain, and improve an open-minded and supportive community in which to work, teach and learn. In accordance with these goals, the Physics Department affirms that all community members are to be treated with dignity and respect and that discrimination and harassment will not be tolerated. Moreover, the department is dedicated to partnering with other campus organizations, including those listed below, to develop policies and practices to promote these goals. We further commit ourselves to making the department a supportive, inclusive, and safe environment for all students, faculty, staff, and visitors,

regardless of race, religion, national origin, sexual orientation, gender identity, disability, age, parental status, or any other aspect of identity.

Learn more about Department climate initiatives as well as campus resources.

XVI. OPPORTUNITIES FOR STUDENT INVOLVEMENT

Graduate students at UW-Madison have a multitude of opportunities to become involved on campus and in each academic discipline. This involvement often enhances academic, professional, and personal growth through developing advanced leadership, communication, and collaboration skills. It also provides opportunity for professional networking.

Wonders of Physics Outreach Fellows
The Wonders of Physics Outreach Fellows program accepts up to 10 first-year PhD students who are interested in and committed to conducting physics outreach. Fellows will receive mentoring in outreach from professional outreach staff, including an in-person outreach training session. They will then participate in one or more outreach events over the course of the year and document their fellowship following best practices in CV building. Following completion of the fellowship, fellows will receive a certificate, and their name and activities will be posted on the Outreach Fellows website.

Department of Physics Committees
Each spring everyone in the Department of Physics is invited to express interest in committee service. See the Physics Committee Assignments for current committee rosters.

Associated Students of Madison (ASM)
The Associated Students of Madison (ASM) is composed of roughly 50 elected or appointed students, 50 student employees, 12 professional staff members, and 200 student appointees on committees that hold legal rights to recommend university policies, budgets, and candidates for UW employment. ASM allocates approximately $51 million in segregated university fees each year and is responsible for management of the Student Activity Center, distribution of the student bus pass, and the day-to-day operations of StudentPrint.

Teaching Assistants' Association (TAA)
The Teaching Assistants' Association is the labor union representing all graduate student workers at UW–Madison (TAs, PAs, RAs, GAs, and Fellows). The TAA is the oldest graduate employee union in the world. Organizing began in 1966 and the first contract with the university was completed in 1970.

Registered Student Organizations
There are more than 750 student organizations on campus. The best way to seek out current organizations is to visit the Center for Leadership and Involvement (CFLI) website, and visit the Registered Student Organization directory. This list will not include unregistered student organizations, and students may find that there are departmental groups to get involved with as well. Students interested in officially registering an organization must register through CFLI. Once registered through CFLI, registered student organizations are eligible for funding from ASM, and the group can reserve rooms in the Union and access other resources.

The Department of Physics is home to 2 Registered Student Organizations.

- PGSC (Physics Graduate Student Council)
- GMaWiP (Gender Minorities and Women in Physics).

Outreach and Community Connections
The Wisconsin Idea is the principle that education should influence and improve people's lives beyond the university classroom. For more than 100 years, this idea has guided the university's work. The Morgridge Center

for Public Service connects campus with community through service, active civic engagement, community-based learning and research, and more.

A list of ways to engage in campus and local community life are available on The Graduate School's Current Student Page

Students actively involved in leadership and service activities should consider self-nomination for membership in the Edward Alexander Bouchet Graduate Honor Society

XVII. STUDENT HEALTH AND WELLNESS

Graduate students who pay segregated fees and are currently enrolled, but do not have an assistantship or fellowship can use the services of University Health Services (UHS), the campus health clinic. Many services are provided at no extra cost, including counseling and outpatient medical care during regular business hours, Monday through Friday. UHS is located in the Student Services Tower at 333 East Campus Mall, 608-265-5000.

Prescription medications, emergency room visits, and hospitalization are not included in UHS benefits. Therefore, supplemental insurance covering these drugs and services is recommended for all students and is required for international students.

Disability Information
Students with disabilities have access to disability resources through UW-Madison's McBurney Disability Resource Center. As an admitted student, you should first go through the steps to "apply for accommodations."

Mental Health Resources on and Off Campus
University Health Services (UHS) is the primary mental health provider for students on campus. UHS Mental Health Services offers a wide range of services to the diverse student population of UW-Madison. They offer immediate crisis counseling, same day appointments and ongoing treatment. Go to https://www.uhs.wisc.edu/mental-health/ or call 608-265-5600.

UHS service costs are covered for students through tuition and segregated fees.

XVIII. MISCELLANEOUS INFORMATION FOR NEW STUDENTS

The Graduate School maintains a checklist for new graduate students

Activate the NetID
Students will need their NetID and password to access the My UW-Madison portal at my.wisc.edu. Find step by step instructions online here or can find additional help at the DoIT Help Desk.

Tuition Account Refunds
Set up e-Refund for direct deposits of refunds that post to the bank account in 1-3 business days. Students may enroll and manage their eRefund status/bank information on their MyUW Student Center.

Get a UW Photo ID Card (Wiscard)
Get a UW ID card photo taken at the Wiscard Office in Union South, room 149, M-F 8:30 am - 5:00 pm. You must be enrolled and have valid identification, such as a valid driver's license, passport, or state ID

Pick up a free Madison Metro bus pass
UW students can pick up a bus pass at no charge at the beginning of the fall and spring semesters. Visit the ASM Web site for more information on Madison Metro bus services: Be sure to bring your UW Photo ID card. Prerequisite: current/future term enrollment.

Graduate Student Life

The Guide to Graduate Student Life is published annually by the Graduate School and contains a wealth of essential information for new graduate student. It covers information about the city of Madison, student services, finances, employment, housing, transportation, shopping, local services, recreation, and healthy living.

XIX. ADDITIONAL INFORMATION FOR INTERNATIONAL STUDENTS

International Student Services (ISS)

International Student Services (ISS) is the main resource on campus and has advisors who can assist you with visa, social and employment issues. International students can reach out to ISS via Terra Dotta or can drop in for advising, as needed. New students will likely find the International Student Resource Guidebook useful. In addition, refer to the Resources Hub for New Global Badgers for links and resources about transitioning to Madison.

Mandatory Orientation

The U.S. Department of Homeland Security requires international students to register with UW-Madison prior to starting a program of study in the United States. By completing the Immigration Check and attending International Student Orientation (a mandatory virtual orientation program for new students), this obligation is fulfilled.

Students with ESL requirements

Any student who was admitted with a TOEFL score below 92, or an IELTS score below 6.5 will be required to take the English as a Second Language Assessment Test (ESLAT) and any required English course during their first semester.

Funding for International Students

International students are eligible for Graduate Assistantships on campus. They may not be employed more than 20 hours per week on campus while enrolled full-time. New international students with assistantships should work with ISS to obtain a social security number. New students with fellowships and no other appointment types are not considered employees and are not eligible for social security numbers. These students should work with ISS to obtain an International Taxpayer Identification Number.

XX. APPENDIX: – Recommended Timetable for Student Progress

Departure from the timetable may occur, but this timetable is the norm that is expected

Year 1	Year 2	Year 3	Year 4 and beyond	Year 5 or 6
Fall: • Qualifying Exam (1/4) • 1-2 core courses • PHYSICS 701 (Intro Seminar) • PHYSICS 900 (Physics Colloquium) • Possible elective course • Meet with First Year Committee.	**Fall**: • Qualifying Exam (3/4) • 1-2 core courses • Possible elective course or minor course • PHYSICS 990 (Research and Thesis)	**Fall**: • Complete minor coursework • PHYSICS 990 • Prepare for Preliminary Exam	**Fall** (**DISSERTATOR**): • PHYSICS 990 – 3 cr -	• Most students finish in this timeframe. • Dissertators must be continually enrolled in 3 credits each semester including the semester in which the dissertation is deposited. • Complete online warrant request 3 weeks in advance of defense. • Deposit dissertation digitally to the Graduate School.
Spring: • Qualifying Exam (2/4) • 1-2 core courses • PHYSICS 900 (Physics Colloquium) • Possible elective course • Select major professor.	**Spring**: • Qualifying Exam (4/4) • Finish core coursework • Possible elective course or minor course • PHYSICS 990	**Spring (DISSERTATOR)** • PHYSICS 990 • Complete Preliminary Exam	**Spring (DISSERTATOR)** • PHYSICS 990 – 3 cr -	
Summer: • PHYSICS 990* (Research and Thesis) with PI (or prospective PI)	**Summer**: • PHYSICS 990 with PI	**Summer** (**DISSERTATOR**): • PHYSICS 990 – 3 cr	**Summer** (**DISSERTATOR**): • PHYSICS 990 – 3 cr	

*Note that Research occasionally begins earlier.

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XXI. **APPENDIX –Satisfactory Progress Policy**

Department of Physics
UNIVERSITY OF WISCONSIN–MADISON

CRITERIA FOR SATISFACTORY PROGRESS – Physics PhD
Adopted January 22, 2025

From the Graduate School: (https://policy.wisc.edu/library/UW-1218)

Continuation in the Graduate School is at the discretion of the Graduate School, the student's program, and the student's faculty advisor as defined in this policy. A student may be placed on academic probation or dismissed from the Graduate School for not maintaining satisfactory progress. In special cases, the Graduate School permits students who do not meet these minimum standards to continue on probation upon recommendation and support of their advisor.

Satisfactory Progress

While the Graduate School sets minimum standards that all graduate students in the university must meet, many departments and programs have additional requirements that exceed the Graduate School's standards. The definition of satisfactory progress therefore varies by program.

Most programs require satisfactory progress to continue guaranteed funding support.

The Graduate Guide includes the Graduate School's minimum degree requirements and satisfactory progress chart, as well as each program's minimum degree requirements and satisfactory progress chart.

In determining satisfactory progress, the Graduate School monitors the following: cumulative grade point average, incomplete grades, English as a second language for some international students, the Five Year Rule, the grades of students admitted on probationary status, enrollment in minimum required credits (underload), and unsatisfactory (U) grades.

Low Cumulative GPA

The Graduate School requires students maintain a cumulative GPA of 3.00 or greater for all graduate courses (excluding research). Some probationary admission conditions may require a greater GPA. When a graduate student's cumulative GPA drops below 3.00 , the student is placed on academic probation the following term and is notified via email (with a copy to the graduate coordinator). The student will not be allowed to enroll in classes beyond the probationary term until such time final grades for the probationary term are reported, and the student's cumulative GPA is 3.00 or greater.

Detailed information for Satisfactory Progress as defined by the Graduate School is here.

Department of Physics Requirements

Satisfactory progress is important for staying on track and completing the PhD in a timely manner. Graduate students who do not achieve satisfactory progress are considered not in good standing and may not be allowed to continue in the PhD program. The Department expects graduate students to progress through a sequence of benchmarks within prescribed time periods. These benchmarks constitute a reasonable rate of accomplishment for full-time students holding teaching or research appointments. We recognize that individual circumstances vary, and not all students progressing toward their academic goals will hit the benchmarks exactly. A student not making satisfactory progress based on these benchmarks is not in good standing and will be placed on probation. Benchmarks and triggers for probationary status are shown in the following table. Note: Summer terms are automatically excluded in computing elapsed time. Fall and Spring semesters with no enrollment require an approved leave of absence to be excluded in computing elapsed time.

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Steps to the PhD	Expected Progress	Not in good standing (probationary status*; enrollment hold placed)	Student may be dismissed
Acquire a faculty research advisor	End of 2nd semester	End of 3rd semester	End of 4th semester
Pass Qualifying Exam	Start of 4th semester	Start of 4th semester	End of 4th semester
Dissertator status**	End of 6th semester	End of 7th semester	End of 8th semester
Satisfactory progress in research***	assessed every semester	assessed every semester	assessed every semester
Dissertation Deposit	4 years after Prelim	4 years after Prelim	5 years after Prelim

*Probationary status and enrollment holds are ephemeral and do not appear on official transcripts once removed.

**Dissertator status is defined by the Graduate School here: https://policy.wisc.edu/library/UW-1247

***Satisfactory progress in research is judged by the faculty advisor and demonstrated by earning a P (Progress) or S (Satisfactory) in 990 research each semester. The Graduate School monitors grades of U (Unsatisfactory), which are considered unsatisfactory, and reserves the right to place a graduate student on probation and prohibit registration in future terms until such time the matter is resolved.

A student's annual degree plan will provide information about any upcoming benchmarks. The graduate program manager will formally notify a student who misses a benchmark. The graduate program manager will formally notify a student who is not in good standing and, therefore, enters probationary status. The consequences of not being in good standing are as follows:

a) The student is required to submit a plan for completion of the relevant benchmark(s) and remaining program requirements by the start of the following semester. This plan requires approval of the student's advisor and the Associate Chair for Grad Studies and should be submitted to the Graduate Program Manager. A hold will be placed on enrollment until the plan is approved.
b) The student will be placed on probation until the benchmark is achieved.
c) Unless a funding guarantee is active, the student will have a lower priority for departmental funding than students in good standing. That is, everything else being equal, a student in good standing will be appointed before a student on probation.
d) A student may be dismissed from the program if the relevant benchmarks are not completed as indicated above.

Once the benchmark is met, timing of subsequent benchmarks may be reset. Timing expectations of remaining benchmarks shall be clearly communicated to the student by the Graduate Program Manager.

In the course of the PhD, students sometimes change advisors for a variety of reasons. For students early in the PhD program, change is normal and even expected, and connecting to a new advisor generally does not have a significant impact on the student's satisfactory progress. Later in the PhD program, a change of advisor – especially if it results in a change of project – can have a distinct impact on the student's progress. In this instance, the student may work with the new advisor, Associate Chair for Graduate Studies and the Graduate Program Manager to develop a revised schedule of benchmarks. In the absence of a revised schedule, the student will be expected to meet the remaining benchmarks as described above.

Students may request exceptions for extenuating circumstances by contacting the Graduate Program Manager or the Associate Chair for Graduate Studies. Students wishing to appeal a decision should request reconsideration by the full PhD Graduate Committee, and then the Department Chair (if necessary), and finally the Graduate School as a last resort.

This policy will be in effect for all students entering the graduate program in or after Summer/Fall 2024. Students who began the Physics PhD program prior to Summer/Fall 2024 will be reviewed under this policy in Fall 2026.

XXII. **APPENDIX: – Minor Form**

PhD MINOR FORM

Student Name: _____ **Faculty Advisor Name**: _____

Area of specialization within Physics: _____

Option A is an external minor, a minimum of 9 credits in an external department at the graduate level. Example: Astronomy, Computer Science, Mathematics, etc. The Graduate GUIDE lists all available external minors and the requirements for each. https://guide.wisc.edu/graduate/#doctoralminorstext

Option B is a distributed minor with a minimum of 9 credits taken in one or more departments, which must include a minimum of 3 credits in Physics at or above 500-level in areas outside of the area of specialization. These courses should form a coherent programmatic theme and must demonstrate breadth, a Graduate School requirement.

Minor Choice:

- ☐ **Option A: External Minor** List Name of External Minor: _____
- ☐ **Option B: Distributed Minor**
  State how the distributed minor fulfills the requirement of breadth imposed by the Graduate School and forms a coherent programmatic theme:

Subject-Catalog	Course Title	Credits	Grade	Semester/Year	Completed or Planned

Faculty Advisor Signature: _____ Date: _____

Director of Graduate Study Signature: _____ Date: _____

Option A-Minor Department Signature: _____ Date: _____

Once completed, the student must "add" the minor at my.grad.wisc.edu. (NOTE: Physics students will not be allowed to select a Physics GMIN. If completing Option B, select Distributed GMIN.) This form should be uploaded in the grad portal as part of that process.

XXIII. **APPENDIX – Leave of Absence Form**

LEAVE OF ABSENCE FORM

Student Name: _____

Faculty Advisor Name: _____

I am requesting a leave of absence effective: (semester/year) _____

Reason:

I expect to return to the program: (semester/year) _____

- I understand that I will need to request re-entry with the Graduate School by completing a re-entry application which must be approved by the Physics PhD Program. I will contact the Graduate Program Manager at least 6 weeks before the beginning of the semester of re-entry to initiate the process of returning to the PhD program.

Comments:

Student Signature: _____ Date: _____

Faculty Advisor Signature: _____ Date: _____

Director of Graduate Study Signature: _____ Date: _____

Department Chair Signature: _____ Date: _____

XXIV. **APPENDIX – Required Course Waiver/Test Out Form**

COURSE WAIVER / TEST OUT FORM

The Associate Chair for Graduate Studies will need a copy of the syllabus and/or the course catalog from the institution where the prior graduate courses were taken. The syllabus must indicate that the relevant topics covered in each course are similar to the topics covered in the graduate courses here at UW-Madison. The syllabus or course catalog from the prior institution must indicate that the course was graduate level for it to be considered as a waiver.

Student's Name: _____ **Faculty Advisor's Name:** _____

For each course waiver requested, indicate equivalent course work completed (list course number, title, and institution):

UW course	Institution	Course # and title
PHYSICS 711 (Classical Mechanics		
PHYSICS 715 (Stat Mech)		
PHYSICS 721 (E&M)		
PHYSICS 731/732 (Quantum Mechanics I and II)		

TO BE COMPLETED BY ASSOCIATE CHAIR FOR GRADUATE STUDY

RESPONSE TO WAIVER/TEST OUT REQUEST:

Associate Chair for Graduate Study Signature: _____ **Date:** _____

XXV. APPENDIX – Sharon's guide to How to Finish your PhD

How To Finish your Physics PhD

Finishing your PhD requires several steps which should be completed in a particular order.

- Present/defend your dissertation
- Complete any edits required/requested by your Committee.
- Deposit/submit/turn in your dissertation

Note that you must defend BEFORE you deposit. Once you deposit, the dissertation is out of your hands and you will make no more edits on it in that form. You might edit a future journal article, for instance, but the dissertation, itself, is published as you deposited it.

The Graduate School provides plenty of information about defending and depositing your dissertation.

What does the Final Defense look like? The student typically gives a 45–60-minute presentation which is open to the public. This is followed by a short Q&A with the general audience and a closed session Q&A with the Final Defense Committee (more about that below).

Who is on the Final Defense Committee? The committee consists of the student's faculty advisor and three other committee members. The chair or one of the co-chair's must be graduate faculty from the Department of Physics. At least three of the members must be graduate faculty; at least one of the faculty must be from another graduate program. Further details are available here: https://grad.wisc.edu/documents/committees/

How do I know if I passed? The Committee will deliberate at the conclusion of the Defense and give the student immediate feedback. The Grad Program Manager will circulate a Final warrant for the committee to sign indicating their approval.

How do the deadlines work? The Graduate School establishes degree deadlines each semester. This is a **deposit** deadline, NOT a defense deadline. Here's how the deadlines are set:

- Fall degree: deposit by midnight on the Fall grading deadline (December 22, 2024)
- Spring Window: If you deposit between the day after the Fall grading deadline and the day before the start of the Spring semester, you'll have a May degree, but will NOT need to enroll in Spring. (December 23, 2024 – January 20, 2025
- Spring degree: deposit by midnight before the Spring grading deadline (May 11, 2025)
- Summer Window: If you deposit between the Spring grading deadline and the day before the start of the Summer term, you'll have an August degree, but will NOT need to enroll in Summer. (May 12-June 15, 2025)
- Summer degree: deposit by end of Summer term (August 24, 2025)
- Summer Window: if you deposit between the Summer deadline and the day before the start of the Fall semester, you'll have a December degree, but will NOT need to enroll in Fall (Aug 25, 2025 – Sept 2, 2025)

How do I set this up? Once you have set your committee and agreed to a time/day for your defense, complete the departmental warrant request: This will prompt dept staff to reserve a room, post it on the Physics event calendar and request your warrant from the Graduate School. (***This should happen at least 3 weeks in advance of your final defense.)***

What about Commencement? The Department will host a PhD hooding ceremony on same day as the campus PhD commencement ceremony. Students are welcome to attend the UW Commencement ceremony in December or May. Information about cap and gown rental is provided automatically to students who "Apply to Graduate" in the Student Portal in MyUW. Note that this is independent of the warrant request and your degree completion but is required in order to have your name printed in the program.

Other considerations: Your timing for finishing will affect your TA/RA appointment and, therefore, your paycheck, your health insurance, and your visa status. Watch for an invitation to schedule an exit interview with the Graduate Program Manager.

XXVI. APPENDIX – Sharon's guide to How to Prelim

How To Prelim

What does it mean to "Pass Prelims"? "Passing Prelims" generally refers to the completion of 4 milestones:

- Complete the core coursework (grades of B or better)
- Complete the 9 credits of minor coursework
- Pass all 4 sections of the qualifying exam.
- Pass the Preliminary Exam (more about this below)

Once all 4 are completed, a student is considered a Dissertator (aka ABD – "all but dissertation").

The Physics Department officially expects students to reach dissertator status by the end of the 5th semester. Extensions are routinely considered, especially if a student has a plan to complete all 4 milestones.

How do I record my minor coursework? Submit your approved minor form to the Grad Program Manager AND add the minor in the Grad Portal.

What's the purpose of the Prelim Exam? The Preliminary Exam is intended to test whether the student has mastered the physics and technology necessary for research in the proposed general area of study, and to assess whether the student is on track to satisfying the department's learning goals for the PhD degree.

What does the Prelim Exam look like? The student typically gives a 45–60-minute presentation which is open to the public. This is followed by a short Q&A with the general audience and a closed session Q&A with the Prelim Committee (more about that below).

Who is on the Prelim Committee? The Prelim Committee is comprised of the student's advisor + 2 other faculty chosen by the student (typically in consultation with the advisor). A 4th member of the committee is assigned by the Department's Prelim Committee.

How do I know if I passed? The Committee will deliberate at the conclusion of the Prelim Exam and give the student immediate feedback. The Grad Program Manager will circulate a Prelim warrant for the committee to sign indicating their approval.

How do I get it set up? Here are the steps:

1. Your first task is to identify 3 of the members of your prelim committee (your advisor and 2 others).
2. Send that information along with the subject of your exam to Prof. Aki Hashimoto (Chair of the Dept. Prelim Committee). Prof. Hashimoto will coordinate with the prelim committee to assign a 4th prelim committee member.
3. Coordinate with all 4 faculty to set a time/day for your exam.
4. Complete the departmental warrant request: This will prompt dept staff to reserve a room, post it on the Physics event calendar and request your warrant from the Graduate School. (***This should happen at least 3 weeks in advance of your prelim exam.)***
5. Finally, be sure to send a reminder to all 4 faculty on your committee a week in advance of your prelim.

What changes as a result of Passing Prelims? Once a student is a dissertator, they are required to continuously enroll for 3 credits, no more, no less. As a result of the lower credit requirement, the cost of segregated fees is reduced.

Dissertator status is dependent on the status on the first day of a given term. A student who passes prelims in the middle of a semester will be considered a Dissertator at the start of the subsequent semester.

What are the Graduate School guidelines about Prelims? Students are responsible for reviewing the Graduate School guidelines for Completing Your Preliminary Examinations.

XXVII. APPENDIX – Graduate School Degree and Dissertator Eligibility Deadlines

Graduate School Degree and Dissertator Eligibility Deadlines 2024 – 2025

Fall 2024 (1252)

September 3	**Fall** degree window period deadline*
September 3	Dissertator Eligibility for **fall 2024**
November 29	Request for all Master's and Doctoral Degree Warrants
December 20	Master's Degree Deadline. Degree candidates must complete all steps: https://grad.wisc.edu/current-students/masters-guide/
December 22	Doctoral Degree Deadline. Degree candidates must complete all steps: https://grad.wisc.edu/current-students/doctoral-guide/

Spring 2025 (1254)

December 23	Spring Degree Window Period begins*
January 17	**Spring** Degree Window Period deadline for master's students*
January 17	Dissertator Eligibility for **spring 2025**
January 20	**Spring** Degree Window Period deadline for doctoral students*
April 18	Request for all Master's and Doctoral Degree Warrants
May 9	Master's Degree Deadline. Degree candidates must complete all steps: https://grad.wisc.edu/current-students/masters-guide/
May 11	Doctoral Degree Deadline. Degree candidates must complete all steps: https://grad.wisc.edu/current-students/doctoral-guide/

Summer 2025 (1256)

May 12	**Summer** Degree Window Period begins*
June 13	**Summer** Degree Window Period deadline for master's students*
June 13	Dissertator Eligibility for **summer 2025**
June 15	**Summer** Degree Window Period deadline for doctoral students*
August 1	Request for all Master's and Doctoral Degree Warrants
August 22	Master's Degree deadline. Degree candidates must complete all steps: https://grad.wisc.edu/current-students/masters-guide/
August 24	Doctoral Degree Deadline. Degree candidates must complete all steps: https://grad.wisc.edu/current-students/doctoral-guide/

Fall 2025 (1262)

August 25	**Fall** Degree Window Period begins*
September 2	**Fall** Degree Window Period deadline*
September 2	Dissertator Eligibility for **fall 2025**

*Important Note: The "Window Period" is the time between the end of one degree period and the beginning of the next. **You must have been registered for the previous semester (Fall, Spring, or Summer).** If all degree requirements are met by the end of the window period, your degree will be granted for the **following** semester. However, you will not have to register or pay fees for the next semester.

XXVIII. **APPENDIX – Physics PhD Degree Progress Report Template**

UW-Madison PhD Physics Degree Plan -

Name:
Advisor:
Campus ID:
Cum GPA
Spring 2025 Support:
Spring 2025 is X semester of funding
Years Pre ABD: 1
Started PhD:
MS Degree:
Credits >= 30 for MS
BS/BA Degree:
Qualifying Exam Status:
Student Comments:

Core Courses: __ in progress; __ remaining
Minor:
Major requirements:
Credits earned >= 51:
In-residence credits >= 32:
Prelim Exam:
Prelim Warrant: warrant request form - request 3 weeks before you need it!
Phd Warrant: warrant request form - request 3 weeks before you need it!
before you need it!

Advisor Comments:

Upload CV

Attach additional files