



UNIVERSITY OF CENTRAL FLORIDA

Graduate Program Handbook - 2023/24

[Physics MS and PhD]

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

[Graduate Program Team • June 6, 2023 • Department of Physics]



Last updated: [June 6, 2023]



UNIVERSITY OF CENTRAL FLORIDA

Dr. Joshua Colwell
Department of Physics

Welcome to the Graduate Program of the UCF Department of Physics! The Department of Physics has a broad array of research activities carried out by a large, diverse, and talented group of faculty and student researchers. This handbook includes detailed information on programs of study, policies, procedures, and helpful resources for you as you progress through your graduate career. If you don't find what you need in these pages, help is always available from the Department. We strive to have a strong sense of community in our program, with several student groups devoted to graduate student support and success, including the Graduate Society of Physics Students, the Women in Physics Society, and a chapter of the American Physical Society. Our faculty, staff, and students share a common mission to provide the highest quality education and research in physics with engagement with the university, local, national, and international community.

Our programs span the realms of space and time from the minuscule to the astronomical, with research efforts in nanoscience, biophysics, ultrafast atomic, molecular, and optical physics, planetary sciences, physics education research, condensed matter physics, and more. Our faculty are committed to working with our students as partners in the research enterprise, ensuring that upon graduation they are uniquely well prepared for the next step in their careers.

The department's research laboratories are housed in a new building with state-of-the-art facilities, enabling students access to the cutting edge of research. The Department of Physics faculty and students engage in collaborations with other departments and colleges at UCF, as many projects cut across traditional disciplinary boundaries bringing together physics, chemistry, engineering, materials science, and the College of Optics and Photonics. We also partner with national agencies and private industry, providing a wealth of opportunities for our students and faculty alike.

We are delighted you have chosen UCF Physics, and we look forward to working with you throughout your graduate career.

Sincerely,

Joshua Colwell
Pegasus Professor and Chair, Department of Physics
Director, Stephen W. Hawking Center for Microgravity Research and Education
407-823-1882
josh@ucf.edu

Table of Contents

Navigating Policy and Resources at the University of Central Florida.....	1
<i>How to Use This Handbook.....</i>	<i>2</i>
<i>Whom to Contact with Questions.....</i>	<i>2</i>
<i>Onboarding.....</i>	<i>3</i>
Introduction/Overview Section	4
<i>Student Learning Outcomes/Competencies.....</i>	<i>5</i>
<i>Student Expectations</i>	<i>5</i>
<i>Program Professional Conduct/Ethics Statement.....</i>	<i>6</i>
<i>Professional Development</i>	<i>6</i>
<i>Advising/Mentoring</i>	<i>7</i>
Finding & Selecting an Advisor.....	7
Changing Your Advisor	9
<i>Giving & Receiving Feedback</i>	<i>9</i>
<i>Program Costs and Fees.....</i>	<i>9</i>
<i>Organizational Chart.....</i>	<i>9</i>
<i>Program Assessment</i>	<i>9</i>
<i>How to Get Involved.....</i>	<i>10</i>
In Our Discipline/Program/Department	10
On Campus & In the Community	10
Curriculum Section	11
<i>Admission Requirements.....</i>	<i>11</i>
<i>Degree Requirements.....</i>	<i>11</i>
<i>Core Courses</i>	<i>12</i>
<i>Electives</i>	<i>12</i>
<i>General Physics</i>	<i>13</i>
<i>Recommended Courses</i>	<i>13</i>
<i>Condensed Matter Physics.....</i>	<i>13</i>
<i>Recommended Courses</i>	<i>14</i>

<i>Optical Physics</i>	14
<i>Master’s Degree En Route</i>	15
<i>Core Courses</i>	15
<i>Elective Courses</i>	15
<i>Materials Physics Specialization</i>	16
<i>Optical Physics Specialization</i>	16
<i>Space Physics Specialization</i>	17
<i>Theory/Computational Physics Specialization</i>	17
<i>Thesis Option — 6 Credit hours</i>	17
<i>Non-thesis Option — 3 Credit hours</i>	18
<i>Independent Study</i>	18
<i>Sample Plan of Study/Course Sequence/Completion Timeline</i>	18
<i>Statement of Graduate Research</i>	20
<i>Human Subjects</i>	21
<i>Animal Subjects</i>	21
<i>Ethics in Research</i>	22
<i>Patent and Invention Policy</i>	22
Examination Section	23
<i>Exam Introduction</i>	23
<i>Candidacy/Qualifying Exam</i>	23
Thesis and Dissertation Section	27
<i>Master’s Thesis - Overview</i>	27
<i>Master’s Thesis – Committees</i>	27
<i>Master’s Thesis – Defense</i>	28
<i>Doctoral Dissertation - Overview</i>	29
<i>Dissertation – Form and Content</i>	29
<i>University Dissertation Requirements</i>	29
<i>Doctoral Candidate</i>	30
<i>Dissertation – Deadlines</i>	30

<i>Dissertation – Committee Details</i>	31
<i>Dissertation – Proposal/Prospectus</i>	31
<i>Dissertation – IRB</i>	32
<i>Dissertation – Defense</i>	32
<i>Dissertation – Submission Procedures</i>	33
<i>Dissertation – Additional Relevant Information</i>	34
Program and Institutional Policies	36
<i>Absences</i>	36
<i>Academic Standards/Conduct/Integrity</i>	36
<i>Accommodations</i>	36
<i>Admission to Candidacy</i>	36
<i>Annual Review</i>	37
<i>Appeals/Grievances</i>	37
<i>Classroom/Laboratory Use</i>	37
<i>Communication</i>	38
<i>Continuous Enrollment</i>	38
<i>Disability Statement</i>	39
<i>Dismissal/Discipline</i>	39
<i>Diversity Statement</i>	40
<i>Enrollment in Thesis/Dissertation Hours</i>	40
<i>Full-time and Part-time Requirements</i>	41
<i>Golden Rule</i>	41
<i>Grading and Grading Procedures</i>	41
<i>Harassment</i>	41
<i>International Students</i>	42
<i>Plagiarism</i>	42
<i>Refer to the Academic Standards/Conduct/Integrity section of this handbook for additional information.</i>	42
<i>Privacy</i>	42
<i>Probation</i>	43

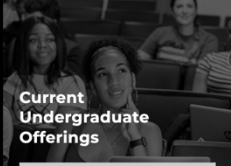
<i>Satisfactory Progress</i>	43
<i>Time Limits to Degree Completion</i>	43
<i>Transfer Credit</i>	43
<i>Turnitin/iThenticate</i>	43
<i>Other Relevant Program/Institutional Policies</i>	44
Additional Program Details	45
<i>Financial Aid Funding</i>	45
<i>Graduate Assistantship Details</i>	46
<i>Graduation Requirements</i>	47
<i>Job Search and Career Pathways</i>	47
<i>Student Associations</i>	48
<i>Graduate Student Center</i>	48
<i>Graduate Research Forum/Symposium</i>	48
<i>3MT</i>	48
<i>Forms</i>	48
<i>Useful Links/Resources</i>	49
<i>Graduate Faculty</i>	49
<i>Description of Core Courses</i>	49
<i>Appendices</i>	49

Navigating Policy and Resources at the University of Central Florida

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 the University of Central Florida.


ACADEMIC CATALOGS

These online catalogs can help you quickly locate and save details about our undergraduate and graduate programs. Whether you are a prospective student or already enrolled, you can easily see what the University of Central Florida has to offer!




Current Undergraduate Offerings

VISIT CATALOG




Latest Graduate Programs

VISIT CATALOG



Prior Years' Catalogs

VISIT ARCHIVES



THE GOLDEN RULE STUDENT HANDBOOK

STUDENT LIFE

ORLANDO, FL | 73°F

Student Handbook



Knight Life at UCF

Don't just go to college — get the most out of it. At UCF, you'll have many ways to get involved inside and outside of the classroom. From application to graduation, you'll be inspired to do amazing things. So whether you prefer academics and research or campus activities and athletics, we'll provide you with the tools and support you need to find your place and foster your purpose.

Discover your next adventure at UCF.

GRADUATE STUDENT HANDBOOK

[Student Handbook Intro](#)
[Financial Matters](#)
[Role of the College of...](#)

Understanding Your Graduate Experience

UCF Regulations



HOME NOTICE ARCHIVES SUBSCRIBE TO NOTIFICATIONS UCF POLICIES

Pathways to Success

Personal and Professional Development Opportunities



Chapter 5: Students

How to Use This Handbook

This handbook is one of many resources available to consult as you become familiar with the Physics graduate program policies and requirements.

Whom to Contact with 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 in this document. Several key personnel in the physics department and on campus are ready to answer your remaining questions:

Graduate Program Staff

Ms. Esperanza Soto
Graduate Admissions Coordinator
soto@ucf.edu
(407) 823-5146

Director of Graduate Studies

Dr. Abdelkader Kara
Professor and Graduate Program Director
Abdelkader.Kara@ucf.edu
(407) 823-5146

Dr. Daniel Britt
Pegasus Professor and Planetary Sciences Track Director
dbritt@ucf.edu
407-823-2600

Graduate School Services

For general graduate inquiries and graduate student services from the Graduate School, please review the [College of Graduate Studies](#) website as an additional resource.

Onboarding

New students will be required to complete the following requirements as part of their onboarding process:

- **Orientation** – New students must attend the Department of Physics Graduate Program Orientation prior to the first day of class. In addition, new students may attend the College of Graduate Studies Graduate Student Orientation. International students must also attend a mandatory check-in session with UCF Global.
- **Diagnostic Exam** - New Physics students must take a diagnostic exam (similar to the Physics GRE) prior to the first day of class. This test has placement purposes only, allowing the Graduate Program Director and academic adviser to identify possible weaknesses in the students' background and help devise a suitable plan of study. There is no passing or failure. (Note: Planetary Sciences Track students are exempt from taking this exam).
- **Meet with Graduate Program Director** – New Physics students will meet with the Graduate Program Director to review/discuss the results of the diagnostic exam prior to completing their enrollment. New Planetary Sciences Track students can meet with the Graduate Program Director, the Track Program Director, and/or their advisor to discuss/finalize their enrollment.
- **New Hire Paperwork** – If applicable, new students hired on Graduate Teaching Assistantships (GTAs) or Graduate Research Assistantships (GRAs) must complete new hire paperwork with the Department of Physics HR Team (for domestic students) or UCF Global Employment and Taxation Unit (for international students).
- **Required Training** – New students must complete a series of required trainings prior to the first day of class or soon after: FERPA Training (found online at <https://registrar.ucf.edu/training>), EHS Training (found online at the UCF Environmental Health & Safety website at <https://ehs.ucf.edu/training>), and GTA Training (found at the following website: <https://graduate.ucf.edu/graduate-teaching/#GTA-Training-Requirements/>). In addition to the GTA training, international students must demonstrate proficiency at speaking English, hence they must register for and take a Versant English Test (when applicable, students may request an exemption).
- **Enrollment** - New students must enroll by the academic calendar deadline.

Introduction/Overview Section

Complete Name of Degree

[Physics MS and PhD]

College

[College of Sciences]

Department

[Department of Physics]

Program Type

[Master and Doctoral]

Program Website

[\[Department of Physics, UCF\]](#)

Year of Program Inception

The Physics department did not have a well-defined mission until 1978 and did not assume responsibility for teaching physics to UCF undergraduates until 1982.

Program Overview Narrative

The University of Central Florida Physics Department offers degrees at the masters and doctoral level. Our department places a strong emphasis on research. Research opportunities are available in condensed matter physics, nanostructure devices, surface science, optical physics, complex systems, biophysics, atomic and molecular physics, quantum information, physics education, and planetary and space sciences. Intra-campus partnerships with other schools, departments, and centers provide additional academic and research benefits for Physics graduate students, as well as outstanding post-graduate employment opportunities in industry academia, and national laboratories.

The mission of the Department of Physics is to provide the highest quality education, research, outreach, and service in physics to the people of the state of Florida, the nation, and the world.

To accomplish this mission, the Department offers a broad range of courses in physics, as well as in related areas such as astronomy and planetary science, from introductory physical sciences to advanced topics at the graduate level. Undergraduate student development is enriched by a strong research component, with students encouraged

to engage in research projects with faculty members. Faculty in the Department carry out cutting-edge research in a variety of areas and have substantial productivity and external funding. The Department is also committed to reaching out to the Central Florida community to increase scientific literacy and to attract K-12 students to careers in science and engineering. Faculty members are strongly involved in service to professional societies, funding agencies, and other public and non-governmental entities.

Student Learning Outcomes/Competencies

During the first semesters in the program, the student will build a strong background on all the core physics disciplines, namely Classical Mechanics Quantum Mechanics, Statistical Mechanics, and Electrodynamics. The student will also build solid background knowledge of specialized areas of physics relevant to their research. Finally, the student will demonstrate their ability to conduct research by presenting their work in national and international meetings, as well as publications of their work.

Student Expectations

The student has seven years from the time of admission to the graduate program to complete their degree. Students are expected to attend class, abide by the UCF Golden Rule, and maintain good academic standing. There is a natural sequence of events that students would follow to accomplish the graduate program milestones:

- **Create a Plan of Study** – New students are expected to complete an initial plan of study by the summer of their first year in the graduate program.
- **Complete Core Courses** – New students are expected to complete their core courses within the first year in the graduate program.
- **Enroll in Directed Research** – New students are expected to enroll in directed research as early as their first year in the program (during the summer).
- **Complete Elective Courses** – New students are expected to complete formal and remaining electives by their second year in the graduate program.
- **Form an Initial Committee** – New doctoral (or MS Thesis) students are expected to seek an advisor during their first year in the program and form an initial committee as per the doctoral dissertation or master's thesis requirements.
- **Complete CITI Training & RCR Workshops** – New doctoral students are expected to complete the required CITI Training module and 4 RCR workshops (2 Core and 2 Elective) by the end of their second year in the program (before the oral component of the candidacy exam/dissertation proposal).
- **Obtain Candidacy Status** – New doctoral students are expected to pass the written component of the candidacy exam within two years of joining the program. Also, doctoral students are expected to pass the oral component of the candidacy exam (including their Dissertation Proposal) by the summer of their third year in the program. The Department Chair may grant extensions for documented exceptional reasons.

- **Enroll in Doctoral Dissertation (or MS Thesis)** – Once a doctoral student obtains candidacy status, they are expected to enroll in doctoral dissertation continuously every semester (including summers) until a minimum 15 hours are completed or graduation. For master’s students in the Thesis option, once the MS Thesis Committee is approved/in file, they are expected to enroll in Thesis and complete a minimum of 6 hours.
- **Poster/Oral Presentations at Conferences, and Publications** – Students are expected to present their research work as opportunities become available and participate in a minimum two professional conferences in their field of specialization. It is expected that the research carried out during a doctoral program result in publications in specialized, peer-reviewed journals and in technical communications during professional meetings and conferences. While there is no publication requirement for the dissertation defense, it is expected that graduate students will publish a minimum of two papers by the time the student graduates, hence it is expected that at least one major paper about the subject of the dissertation should appear in a reputable journal or in a peer-reviewed conference proceedings within a short period after graduation.
- **7-Year Rule Completion Plan** – Students in their 5th year (or above) will be expected to complete a 7-Year Rule Completion Plan detailing any remaining milestones and expected completion dates.
- **Graduation** – Students are expected to graduate after successfully defending their doctoral dissertation (or master’s Thesis), on or before their 7th year.

Program Professional Conduct/Ethics Statement

Refer to the [UCF Golden Rule](#) for additional guidance.

Professional Development

Students may take advantage of several professional development opportunities on campus, such as grant-proposal writing workshops, graduate research fair, and others. Information about available workshops can be found in the [Pathways to Success website](#).

The Faculty Center for Teaching & Learning (FCTL) promotes excellence in all levels of teaching at the University of Central Florida. To that end, they offer a voluntary program for the professional development of Graduate Teaching Assistants (GTAs) at UCF. Interested GTAs may enroll in “Preparing Tomorrow’s Faculty Program”. Additional information about this program can be found [here](#).

Also, every year the Office of Graduate Studies sponsors several graduate Award Recognitions. Nominations typically happen in January. For additional information go to <http://www.graduate.ucf.edu/GradAwards/>

Advising/Mentoring

Advising relationships are a central part of academia, important to both the experience and development of students and faculty members alike.

Your advisor has two main roles: 1) To assist you in acquiring the highest possible level of knowledge and competence in the field, and 2) to chair the committee that will determine whether you have performed at an acceptable level in each of your degree milestones. In addition to supervising your research work, other roles of your advisor may include tracking your progress in completing your degree, assisting with course selection, and planning your academic path, and helping you identify possible research mentors, committee members, and research opportunities.

It is the student's responsibility to perform the research and follow the guidance provided by the advisor as well as the recommendations of the thesis or dissertation committee.

Both the student and advisor are responsible for making their expectations clear to each other. Be sure to discuss this with your advisor.

Students with a Graduate Teaching Assistantship will be advised by the Graduate Program Director on academic issues, tuition, petitions, etc. For advice on their teaching duties and assignments, students will be advised by the Associate Chair, the Undergraduate Program Director, and/or the Introductory Lab Coordinator.

Finding & Selecting an Advisor

It is the student's responsibility to identify a Thesis or Dissertation Advisor.

Students are encouraged to contact faculty members of the Department of Physics to learn about their research projects and find out about research opportunities. All regular Physics faculty members, as well as joint and secondary joint faculty members affiliated to the Physics Department with Graduate Faculty standing at UCF can supervise thesis or doctoral dissertations. Graduate Faculty Scholars may only serve as member, Co-Chair or Vice-Chair of a thesis or a dissertation Committee.

It is expected that doctoral students will actively search for a Dissertation Advisor during their first year in the program, by the time they complete their core courses. All doctoral students must have a Dissertation Advisor and a Dissertation Committee in place within three months of passing the written component of the candidacy exam or completing 30 credit hours of formal course work, whichever comes first.

Students in the MS – Thesis option should identify an advisor and form their initial committee before enrolling in Thesis hours.

Your advisor should be a faculty member in the program whose expertise and project/research interests match closely with those that you intend to acquire. To learn more about the faculty in your program, consider consulting the following sources:

- Courses and seminars you attend.
- Our program website ([People - Physics \(ucf.edu\)](http://People-Physics.ucf.edu))
- Faculty publications
- Students currently in a prospective advisor's group/lab

Additionally, you may wish to have a discussion with a prospective advisor. Below are some questions to consider asking in this discussion, though it is not a complete list. You should spend some time identifying what is most important to you in your graduate training and ask questions accordingly.

Questions to Ask of Prospective Advisors

- What research projects would be available to me if I were to join your group?
- Would these projects expose me to a variety of different approaches?
- In general, how available will you be to answer questions I might have?
- What is your philosophy regarding the amount of guidance the advisor should provide to a student during preparation of the thesis proposal, literature seminars, thesis writing, etc.?
- What are your expectations for the amount of time I should spend each day/week for the research project?
- What regularly scheduled activities (e.g., group meetings, joint group meetings, research clubs) does your group participate in that provide an opportunity to get outside input on my research project and to hear about the work of other students and postdocs?
- Do you encourage your students to attend seminars and journal clubs, including those that may be outside of their narrow field of interest/research?
- Do students in your group/lab have the opportunity to attend professional meetings where they can interact with colleagues/researchers from other institutions?
- Do you include your graduate students in professional activities that will familiarize them with their field of interest/research, such as reviewing manuscripts and meeting with visiting speakers?
- How long do you think it should take me to get my degree?
- What are your former graduate students (if any) doing now?
- What is your general philosophy of graduate training and what goals do you have for your graduate students?

No faculty member is obligated to accept a student's request to serve as advisor, though invitations are often accepted unless the faculty member judges that a different advisor would serve your needs better.

Changing Your Advisor

As the advisor-student relationship is one of mutual agreement, it may be terminated by either party. If you decide that you would prefer working with a different advisor, discuss this with your prospective advisor to seek the change.

Permission from the Graduate Program Director must be obtained prior to changing a Dissertation or Thesis advisor. A new advisor must be identified by the student before the end of the term during which the change will take place.

Giving & Receiving Feedback

New students will meet with the Graduate Program Director during their orientation to receive feedback regarding their enrollment and again, by the end of their first year to discuss their progress and complete an initial plan of study.

After their first year in the program, the students' progress will be evaluated on an annual basis by the faculty advisor and/or the Graduate Program Director. This annual assessment reviews the student's performance in course work, in research work, in assistantship positions, and in completing other program requirements. This annual assessment may also include an update to the student's Plan of Study. Students that require an annual progress review will be notified to submit their annual progress report.

Program Costs and Fees

Refer to the College of Graduate Studies admissions cost website for the most updated information about graduate tuition and fees: <https://studentaccounts.ucf.edu/tf-graduate/>

Organizational Chart

Dr. Joshua Colwell
Pegasus Professor
and Department Chair
407/823-1882
josh@ucf.edu

Dr. Laurene Tetard
Associate Professor
and Associate Chair
407/882-0128
laurene.tetard.ucf.edu

Refer to the [Physics website – People](#) page for additional information.

Program Assessment

Students are assessed at different stages in the graduate program related to their academic progress, candidacy exam results, oral presentations, and final examinations.

These assessment results help determine the need for changes to processes, exam formats, and other improvements.

How to Get Involved

As a graduate student at UCF, you have a multitude of opportunities to become involved on campus and in your academic discipline. This involvement often enhances your academic, professional, and personal growth through developing advanced leadership, communication, and collaboration skills. It also provides opportunity for professional networking.

In Our Discipline/Program/Department

The department has various opportunities for you to get involved such as: joining a graduate student organization, volunteering for outreach events (STEM or Career Day), volunteering to assist other students (Open House, Grad Fairs, Orientation, etc.), and participating in graduate committees (student representative in the Graduate Curriculum & Affairs Committee, the Diversity Committee, as part of a student organization in the Academic Programs Team Committee and the Graduate Recruitment Committee, and in the Bridge Program Committee). For more information on how you can get involved, e-mail soto@ucf.edu or contact the corresponding organization below:

[Graduate Society of Physics Students \(GSPS\): ucf.gsp@gmail.com](mailto:ucf.gsp@gmail.com)

[Women in Physics Society \(WiPS\): ucfwips@gmail.com](mailto:ucfwips@gmail.com)

APS@UCF Chapter: ucfaps@gmail.com

On Campus & In the Community

UCF supports the reality that education should influence and improve people's lives beyond the university classroom. Since its inception, this idea has guided the university's work.

Each year, the Outreach Committee (or contact Dr. Ahlam Al-Rawi at Ahlam.Al-Rawi@ucf.edu) organizes activities and events involving K-12 students from local schools. These events involve the active participation of several Physics graduate students.

Curriculum Section

Admission Requirements

Students entering the Physics graduate program with regular status are normally expected to have completed coursework generally required for a bachelor's degree in physics, including classical mechanics, electricity and magnetism, thermal and statistical physics, and quantum mechanics.

In addition to the general UCF graduate application requirements, applicants to this program must provide:

- One official transcript (in a sealed envelope) from each college/university attended.
- The GRE is not required for admission to this program.
- The Physics Subject Test of the GRE is optional.
- Three letters of recommendation.
- Statement of goals. The final 1-2 paragraphs of each applicant's personal statement should make explicitly clear which research areas and faculty they have interest in working with within our program.
- Résumé.
- Applicants applying to this program who have attended a college/university outside the United States must provide a course-by-course credential evaluation with GPA calculation. Credential evaluations are accepted from [World Education Services \(WES\)](#) or [Josef Silny and Associates, Inc.](#) only.

Meeting minimum UCF admission criteria does not guarantee program admission. Final admission is based on evaluation of the applicant's abilities, past performance, recommendations, match of this program and faculty expertise to the applicant's career/academic goals, the applicant's potential for completing the degree, and the availability of funds to support the applicant.

Degree Requirements

PhD in Physics

The Physics doctoral program offers research opportunities in condensed matter physics, physics of nanostructured devices, surface science, optical physics, complex systems, biophysics, atomic and molecular physics, physics education and planetary/space science. The program intends to provide a broad base in experimental and theoretical physics.

The rules and recommendations below do not apply to the Planetary Sciences track of the Physics PhD program. Please refer to the Planetary Sciences Track handbook or the graduate catalog for further information.

The Physics PhD program requires a total of 72 credit hours beyond the bachelor's degree for completion. A specific set of six required core courses (18 credit hours), thirteen elective courses (39 credit hours, which may include directed research), and a minimum of 15 credit hours of dissertation are part of the 72 hours.

The courses offered in the doctoral program are divided into three groups: Core, Electives, and Doctoral Dissertation hours.

Core Courses

Students are required to complete six core courses totaling 18 credit hours. The typical term when the course is offered is indicated in italics. The courses are:

- PHY 5346 Electrodynamics I (3 credit hours). *Fall*
- PHY 5606 Quantum Mechanics I (3 credit hours). *Fall*
- PHY 6246 Classical Mechanics (3 credit hours). *Fall*
- PHY 5524 Statistical Physics (3 credit hours). *Spring*
- PHY 6347 Electrodynamics II (3 credit hours). *Spring*
- PHY 6624 Quantum Mechanics II (3 credit hours). *Spring*

The objective of the core courses is to provide a solid, general foundation in advanced physics. Most core courses are essentially theoretical, focusing on fundamentals but using a more sophisticated mathematical treatment than that usually seen in undergraduate physics courses.

Electives

Elective and research courses are determined by the student's chosen specialization. The doctoral program in Physics distinguishes three specializations, namely: General Physics, Condensed Matter Physics, and Optical Physics. Elective courses have a different objective than the core courses. They can either provide an in-depth view of a topic within the student's specialization area or help broaden the student's general education. Some are offered on a biannual basis and others are one-time opportunities that usually go under the denomination of "Special Topic". Students are required to complete a total of 39 credit hours in electives. In addition, students are required to complete a total of 27 credit hours of formal course work, which can be satisfied by core courses and formal electives (no Independent Study or Research).

Methods Course (Total 3 Credits) *

Complete at least 1 of the following:

PHZ 5156 Computational Physics (3 credit hours)

PHY 5937 Nano- Electronics (3 credit hours)
AST 5765C Advanced Astronomical Data Analysis (3 credit hours)

Note: Other courses must be approved by the Graduate Program Director.

Formal Courses (Total 9 Credits)

Complete 1 of the following specializations (or three formal courses from the recommended list.)

General Physics

The General Physics Specialization emphasizes strong preparation in physics fundamentals. It is intended to prepare students for careers in theoretical physics including teaching at the college level. Several active research programs exist in the department to accommodate such students.

Recommended Courses

COT 5600 Quantum Computing (3 credit hours)
PHY 5933 Selected Topics in Biophysics and Macromolecules (3 credit hours)
PHY 6600C Theory and Computation of Molecular Wave Functions (3 credit hours)
PHY 6667 Quantum Field Theory I (3 credit hours)
PHY 7669 Quantum Field Theory II (3 credit hours)
PHY 6938 Special Topics: Electrodynamics III (3 credit hours)
PHY 6938 Special Topics: Selected Topics in Scattering Theory (3 credit hours)
PHZ 5156 Computational Physics (3 credit hours)
PHZ 5304 Nuclear and Particle Physics (3 credit hours)
PHZ 5405 Condensed Matter Physics (3 credit hours)
PHZ 5505 Plasma Physics (3 credit hours)
PHZ 6426 Condensed Matter Physics I (3 credit hours)
PHZ 6428 Condensed Matter Physics II (3 credit hours)
PHZ 6234 Atomic Physics (3 credit hours)
PHZ 6420 First Principles Computational Methods in Condensed Matter Physics (3 credit hours)
OSE 5312 Light Matter Interaction (3 credit hours)
OSE 6347 Quantum Optics (3 credit hours)
Other courses from Physics, Math, Optics, Materials Science, and Engineering require approval by the student's adviser and the Graduate Program Director.

Condensed Matter Physics

The Condensed Matter Physics Specialization is intended to prepare students for careers in materials physics, nanoscale science and technology, semiconductors, and soft condensed matter physics. It emphasizes strong experimental preparation with hands-on courses in advanced materials characterization and processing instrumentation. Related research programs at UCF include magnetic nanostructures, soft condensed matter, electronic and optoelectronic devices, and nanoscale

characterization.

Recommended Courses

COT 5600 Quantum Computing (3 credit hours)
PHY 5933 Selected Topics in Biophysics of Macromolecules (3 credit hours)
PHY 6667 Quantum Field Theory I (3 credit hours)
PHY 6938 Selected Topics in Scattering Theory (3 credit hours)
PHY 7669 Quantum Field Theory II (3 credit hours)
PHZ 5156 Computational Physics (3 credit hours)
PHZ 5405 Condensed Matter Physics (3 credit hours)
PHZ 5432 Introduction to Soft Condensed Matter Physics (3 credit hours)
PHZ 6426 Condensed Matter Physics I (3 credit hours)
PHZ 6428 Condensed Matter Physics II (3 credit hours)
PHY 6420 First Principles Computational Methods in Condensed Matter Physics (3 credit hours)

Other courses from Materials Science, Physics, Optical Science and Engineering, Electrical Engineering, or Industrial Chemistry require approval of the student's adviser and the Graduate Program Director.

Optical Physics

The Optics Specialization coordinator is David Hagan, PhD, College of Optics and Photonics. Students are recommended to take at least one course from each of the two groups below:

OSE 5115 Interference and Diffraction (3 credit hours)
OSE 6111 Optical Wave Propagation (3 credit hours)

OSE 6455C Photonics Laboratory (3 credit hours)
OSE 6526C Laser Engineering Laboratory (3 credit hours)

The remaining courses (up to three) may be selected from other graduate courses in Optics www.creol.ucf.edu.

Remaining Electives (Total 27 Credits)

Students must complete 27 credit hours of unrestricted electives, which may consist of formal courses, directed research, and/or doctoral research. Students should consult with their advisor about selections for the remaining unrestricted electives.

1. Dissertation (Total 15 Credits)

Earn at least 15 credits from the following types of courses:

PHY 7980 - Dissertation Research

All students must complete a minimum of 15 credit hours of dissertation prepared in consultation with a dissertation adviser. A fifteen-page written proposal is presented orally to the student's dissertation committee by the summer of their third year in the program, after successful completion of the written candidacy exam requirement. The Department Chair may grant extensions for documented exceptional reasons. The final oral defense of the dissertation is administered by the student's dissertation committee following completion of a written dissertation describing the student's research.

Master's Degree En Route

MS in Physics

The University of Central Florida offers a Master of Science in Physics. Research opportunities are available in condensed matter physics, nanostructure devices, surface science, optical physics, complex systems, biophysics, atomic and molecular physics, physics education and planetary/space science.

The following applies to the regular Physics MS program, and not to the Planetary Science track. Please refer to the Planetary Sciences Track handbook or the graduate catalog for further information.

The program requires a minimum of 30 credit hours beyond the bachelor's degree and offers students a thesis and nonthesis option. All students take 12 credit hours of core courses, and then the remaining 18 credit hours consist of both electives and thesis or directed research according to the option chosen.

The Master of Science in Physics program is flexibly designed to prepare students for the widest possible range of industrial careers or for further study at the doctoral level.

The courses offered in the master's program are divided into two groups: Core and Electives.

Core Courses

All students are required to take these four courses (or 12 credit hours):

- PHY 5346 Electrodynamics I (3 credit hours). Fall
- PHY 5606 Quantum Mechanics I (3 credit hours). Fall
- PHY 6246 Classical Mechanics (3 credit hours). Fall
- PHY 5524 Statistical Physics (3 credit hours). Spring

Elective Courses

Both thesis and nonthesis students take electives in consultation with their advisers.

Out of the 18 elective credit hours at least 12 credit hours of formal course work are required and not more than 6 credit hours of 5000-level elective courses are counted toward the degree.

At least 6 credit hours of thesis or 3 credit hours of directed research for the nonthesis option are required.

Otherwise, elective selection is intended to be very flexible to meet student needs and interests. Electives may be chosen following one of the suggested specializations below, or a different program of study may be followed with academic adviser approval.

Complete 1 of the following specializations (Total of 12 credit hours, if in Thesis or 15 credit hours, if non-Thesis from the recommended list.)

Materials Physics Specialization

PHY 5715 Physical Basis of Life (3 credit hours)

PHY 5933 Selected Topics in Biophysics of Macromolecules (3 credit hours)

PHY 6347 Electrodynamics II (3 credit hours)

PHY 6624 Quantum Mechanics II (3 credit hours)

PHY 6938 Special Topics: Theory and Computation of Molecular Wave Functions (3 credit hours)

PHY 6938 Special Topics: Selected Topics in Scattering Theory (3 credit hours)

PHZ 5432 Introduction to Soft Condensed Matter Physics (3 credit hours)

PHZ 5505 Plasma Physics (3 credit hours)

PHZ 6420 First Principles Computational Methods in Condensed Matter Physics (3 credit hours)

PHZ 6426 Condensed Matter Physics I (3 credit hours)

PHZ 6428 Condensed Matter Physics II (3 credit hours)

EEE 5356C Fabrications of Solid-State Devices (4 credit hours)

Other courses from Physics, Math, Optics, Materials Science, and Engineering require approval by the student's adviser and the Graduate Program Director.

Optical Physics Specialization

PHY 6347 Electrodynamics II (3 credit hours)

PHY 6624 Quantum Mechanics II (3 credit hours)

PHY 6938 Special Topics: Theory and Computation of Molecular Wave Functions (3 credit hours)

OSE 5115 Interference and Diffraction (3 credit hours)

OSE 5312 Light Matter Interaction (3 credit hours)

OSE 6111 Optical Wave Propagation (3 credit hours)

OSE 6347 Quantum Optics (3 credit hours)

OSE 6455C Photonics Laboratory (3 credit hours)

OSE 6526C Laser Engineering Laboratory (3 credit hours)

Other courses from Physics, Math, Optics, Materials Science, and Engineering require approval by the student's adviser and the Graduate Program Director.

Space Physics Specialization

AST 6165 Planetary Atmospheres (3 credit hours)
AST 5151 Physics of Planetary Processes (3 credit hours)
AST 5334 Extrasolar Planets and Brown Dwarfs (3 credit hours)
AST 5038 Astrobiology (3 credit hours)
PHY 6347 Electrodynamics II (3 credit hours)
PHY 6624 Quantum Mechanics II (3 credit hours)
PHZ 5505 Plasma Physics (3 credit hours)
EAS 5315 Rocket Propulsion (3 credit hours)
EAS 6405 Advanced Flight Dynamics (3 credit hours)
EAS 6507 Topics of Astrodynamics (3 credit hours)
EEL 5820 Image Processing (3 credit hours)
EEL 6823 Image Processing II (3 credit hours)
OSE 5041 Introduction to Wave Optics (3 credit hours)

Other courses from Physics, Math, Optics, Materials Science, and Engineering require approval by the student's adviser and the Graduate Program Director.

Theory/Computational Physics Specialization

PHY 6347 Electrodynamics II (3 credit hours)
PHY 6624 Quantum Mechanics II (3 credit hours)
PHY 6667 Quantum Field Theory I (3 credit hours)
PHY 6938 Special Topics: Theory and Computation of Molecular Wave Functions (3 credit hours)
PHY 6938 Special Topics: Selected Topics in Scattering Theory (3 credit hours)
PHY 7669 Quantum Field Theory II (3 credit hours)
PHZ 5505 Plasma Physics (3 credit hours)
PHZ 6420 First Principles Computational Methods in Condensed Matter Physics (3 credit hours)
PHZ 6426 Condensed Matter Physics I (3 credit hours)
PHZ 6428 Condensed Matter Physics II (3 credit hours)
COT 5600 Quantum Computing (3 credit hours)
OSE 5312 Light Matter Interaction (3 credit hours)
OSE 6347 Quantum Optics (3 credit hours)

Other courses from Physics, Math, Optics, Materials Science, Engineering, and Computer Science require approval by the student's adviser and the Graduate Program Director.

Thesis Option — 6 Credit hours

The Master of Science in Physics candidate who has chosen the thesis option is

required to conduct a program of original scientific research or some investigation involving a creative element and to submit a written thesis detailing these investigations. An oral defense and examination of the thesis is required. These six credit hours count toward the 18 hours of required electives for the degree. An exit interview conducted by the Graduate Program Director is required after passing the thesis defense.

- PHY 6971 Thesis (6 credit hours)

Non-thesis Option — 3 Credit hours

The Master of Science in Physics candidate who has chosen the non-thesis option is required to take 15 credit hours of electives from the list of elective specializations shown above and a minimum of three (3) credit hours of directed research. The credit hours obtained in directed research count toward the 18 hours of required electives for the degree. In the directed research course, students work on a research project under the supervision of a faculty member and are required to present a final report as well as a written comprehensive exit examination*. The Graduate Program Director will arrange this exam. The exit exam is followed by an exit interview.

- PHY 6918 Directed Research (3 credit hours)

*Note: When applicable, students in the non-thesis MS degree program may request the Graduate Program Director's approval to satisfy the MS exit exam and final report with the completion of the Physics PhD written candidacy exam.

Independent Study

Students pursuing a non-thesis master's degree must take at least one directed research course as part of their elective work. In this course, students will work on a research project under the supervision of a faculty member and present a final report.

Sample Plan of Study/Course Sequence/Completion Timeline

Once the student enters the doctoral program, the student is required to develop a plan of study. Initially, the plan should be comprised of a sequence of courses, including core and electives that fits the student's interests. It should also be sufficiently flexible to accommodate some contact with research (through Directed Research) without delaying the completion of the core courses. Typically, students begin defining their interests and field of specialization after the first year. Thus, completing the maximum number of core courses during the first year gives the student more time to register into electives that are closer to their interests.

The plan of study should be developed in consultation with the student's academic adviser, as well as with the Graduate Program Director when necessary. Sometimes

the adviser or the Graduate Program Director may suggest that the student take an undergraduate course to overcome certain deficiencies in their background. A limit of 6 credit hours of undergraduate courses (4000 level, usually) can be incorporated into the doctoral program of study. They require the consent of the Graduate Program Director and cannot be counted towards the total of 72 required credit hours.

The table below shows the typical course sequence that a student entering the program in the fall term should follow.

Example Plan of Study

1st Year

Fall:	Spring:	Summer:
PHY 5606 Quantum Mechanics I (3) PHY 5346 Electrodynamics I (3) PHY 6246 Classical Mechanics (3)	PHY 6624 Quantum Mechanics II (3) PHY 6347 Electrodynamics II (3) PHY 5524 Statistical Physics (3)	PHY 6938 Graduate Seminar (3) PHY 6918 Directed Research (3) Or PHY 6918 Directed Research (6)
Term/Accumulated: 9/9	Term/Accumulated: 9/18	Term/Accumulated: 6/24

2nd Year

Fall:	Spring:	Summer:
Three Electives (9) OR PHY 6918 Directed Research (9) OR A combination of Electives and Directed Research (9)	PHZ 5156 Computational Physics or another Methods Course (3) Other Electives (3) PHY 6918 Directed Research (3)	PHY 6918 Directed Research (6)
Term/Accumulated: 9/33	Term/Accumulated: 9/42	Term/Accumulated: 6/48

3rd Year

Fall:	Spring:	Summer:
PHY 6918 Directed Research or PHY 7919 Doctoral Research (3)	PHY 6918 Directed Research or PHY 7919 Doctoral Research (3)	PHY 6918 Directed Research or PHY 7919 Doctoral Research (3)
Term/Accumulated: 3/51	Term/Accumulated: 3/54	Term/Accumulated: 3/57

4th Year

Fall:	Spring:	Summer:
PHY 7980 Doctoral Dissertation (3)	PHY 7980 Doctoral Dissertation (3)	PHY 7980 Doctoral Dissertation (3)
Term/Accumulated: 3/60	Term/Accumulated: 3/63	Term/Accumulated: 3/66

5th Year

Fall:	Spring:
PHY 7980 Doctoral Dissertation (3)	PHY 7980 Doctoral Dissertation (3)
Term/Accumulated: 3/69	Term/Accumulated: 3/72

Recommended Timeline to Graduation

Statement of Graduate Research

Research is a fundamental part of the Physics Doctoral Program. Starting with Directed Research hours and then continuing with Doctoral Dissertation courses, students gain a solid experience in how to conduct competitive research programs in their fields of specialization. It is expected that they will adhere to the highest standards of conduct and act responsibly. Academic dishonesty and plagiarism are sufficient for the dismissal of the student from the Program. For additional information, refer to the College of Graduate Studies [Academic Honesty flyer](#)

Students should also be aware that any laboratory or experimental work must comply with certain regulations and safety standards set by UCF. Students should discuss this subject with their research supervisor before starting any laboratory research activity. Additional information about required laboratory training and training registration may be found online at the UCF Environmental Health & Safety website at <https://ehs.ucf.edu/training>

It is expected that the research carried out during a doctoral program result in publications in specialized, peer-reviewed journals and in technical communications during professional meetings and conferences. While there is no publication requirement for the dissertation defense, it is expected that graduate students will publish a minimum of two papers by the time the student graduates, hence it is expected that at least one major paper about the subject of the dissertation should appear in a reputable journal or in a peer-reviewed conference proceedings within a short period after graduation. The dissertation committee may delay the defense until it is clear that the candidate is ready to submit his or her work to publication. Therefore, it is important that students try to publish not just major results, but also partial ones that are sufficiently novel and valuable contributions to their area of study.

The student is also expected to participate in a minimum of two professional conferences in their field of specialization. These events are important not just for communicating results, but also for making contacts that may help open future employment opportunities. Funding for participating in conferences, summer schools, and workshops is usually available from the supervisor's research grants. There are also some in-house sources, such as the events coordinated by the graduate student societies (GSPS and WiPS). Find out more about these events by visiting their websites at <https://sciences.ucf.edu/physics/gspgs/> and <https://sciences.ucf.edu/physics/wips/>

The College of Graduate Studies offers a Graduate Travel Award that provides funding for master's, specialist, and doctoral students to deliver a research paper or comparable creative activity at a professional meeting. Students must be the primary author and presenter. More information can be found on the Graduate Studies website: <https://graduate.ucf.edu/funding/> > Presentation Fellowship.

Graduate Students Travel Funding is available to pay transportation expenses for graduate students who are delivering a research paper or comparable creative activity at a professional meeting. Contact the Student Government Association at 407/823-3291 for more information or go to <http://ucfsga.com>.

Human Subjects

If the student chooses to conduct research that involves human subjects (i.e., surveys, interviews, etc.), he or she must gain Institutional Review Board (IRB) approval prior to beginning the study. Effective Summer 2020, the College of Graduate Studies will place **IRB submission** and **Closure checklists** on the GPS Degree Audit of all master's Thesis and Doctoral students for academic progress and degree certification purposes. If applicable, students who involve human participants in their research must show documentation from the IRB that their protocol was approved prior to data collection. In addition, students must show documentation that the thesis/dissertation study was properly closed before graduation. The documentation may be sent to the Graduate Admissions Coordinator at the time of filing their intent to graduate. If the student's research does not involve human participants, send an e-mail confirmation to soto@ucf.edu at the time of filing the intent to graduate. For access to the IRB submission form and sample consent forms, please visit the Office of Research website: http://www.research.ucf.edu/Compliance/IRB/Investigators/pi_manual.html

Animal Subjects

If a student chooses to conduct research that involves animal subjects, they must gain Institutional Animal Care and Use Committee (IACUC) approval prior to beginning the study. For access to the IACUC submission forms, please visit the Office of Research website: <https://www.research.ucf.edu/Research/AnimalWelfare.html>

If you have questions regarding human or animal subjects, please contact the UCF IRB Office at 407/823-2901 or IRB@ucf.edu or the Office of Animal Welfare at 407/266-2235 or 7012 or iacuc@ucf.edu

Ethics in Research

Researchers in every discipline have a responsibility for ethical awareness as the status of the profession rests with each individual researcher. It is important to be honest and ethical in conducting research as well as in taking classes. The ethical collection and use of information include, but is by no means limited to, the following: confidentiality, accuracy, relevance, self-responsibility, honesty, and awareness of conflict of interest. Find out more about the UCF Center for Ethics and their collaboration with the Pathways to Success Program to provide ethics-based workshops at <https://graduate.ucf.edu/academic-integrity-training/>

Patent and Invention Policy

UCF is authorized to manage, protect, and license inventions and work products developed by University Personnel. Per UCF Policy, "Graduate students are required to maintain accurate and complete laboratory notebooks and/or other written documentation of invention(s) and creations of work. Prior to leaving UCF, students must submit the original copy of all and any such documentation including any reports, software codes, and/or any other outstanding items to their mentor, although students may retain a copy for their files." The Office of Technology Transfer (OTT) identifies, assesses, protects, markets, and licenses commercially viable intellectual property developed at UCF. Refer to the [UCF Patent and Invention Policy](#) for additional information.

Examination Section

Exam Introduction

One or two exams are required upon entering the Physics doctoral program, depending on the student's background. Students who are non-native speakers of English and do not have a degree from a U.S. institution must pass the Versant English Test (or the SPEAK test prior to Spring 2018) before they will be permitted to teach as Graduate Teaching Associates, position code 1106 (previously 9183) or Graduate Teaching Assistants, position code 1107 (previously 9184). This test is offered by UCF Global – English Language Institute at least twice at the start of the Fall and Spring semesters and again mid-semester, and twice during the Summer semester. New graduate students who are required to pass the Versant English Test will register to take it before the beginning of their admission term. The score obtained in the test will dictate the type of teaching assistantship that the student will be permitted to accept and possibly the stipend. A low score bars the student from having direct instructional contact with students, and students with a low score therefore cannot be assigned as instructor of record or laboratory teaching assistant or hold office hours. The test can be retaken. Students who do not pass the Versant English Test might not be offered teaching assistantships for the second and following years. Refer to the “Additional Program Details – Graduate Assistantship Details” section of this handbook for additional information.

The second exam is taken by all incoming physics students and is a diagnostic test like the Physics subject GRE. This test has placement purposes only, allowing the Graduate Program Director and academic adviser to identify possible weaknesses in the students' background and help devise a suitable plan of study. There is no passing or failure.

Candidacy/Qualifying Exam

The purpose of the written PhD candidacy exam is to test students' knowledge of the fundamental concepts in physics and their ability to solve problems at the upper-division undergraduate core level, considering that this is a necessary basis to successfully conduct research in any area of physics. All PhD students are required to pass a written candidacy exam to advance to the oral doctoral candidacy exam.

The doctoral candidacy exam is divided into written and oral parts.

UCF Physics Written Candidacy Exam: Rules and Guidelines

1. **Subjects.** The written candidacy exam is comprised of four parts, one for each of the following subjects: 1) Classical Mechanics, 2) Statistical Physics, 3) Electromagnetism, and 4) Quantum Mechanics.

2. **Learning Objectives (LOs): content.** The topics that can be covered in the candidacy exam are specified by one document per subject, listing the books students can use as references, and a detailed list of learning objectives, grouped in categories.
3. **LOs: approval and publication.** The LO documents must be made available to all graduate students at least three months in advance to the subsequent exam. The documents can be amended and must be approved by the departmental faculty.
4. **Subject Exam.** At any given offering of the exam, each student will be offered four problems for each of the subject areas they are being tested on. The student must return the solution of three of these problems, of their choice.
5. **Passing Grade.** Students are allowed to retake the exam for any subject they want. To pass the exam, a student must score at least 60% in each subject. If a subject is taken multiple times, the highest score is used.
6. **Exam Frequency.** The candidacy exam is offered at least twice per year.
7. **Exam Duration and Availability.** The exam will be offered over four separate days: one subject per day.
Students will be allowed to attempt each subject within two years of joining the PhD program. Each problem should be solvable within 15 minutes by the responsible members of the committee. Students are given three hours to solve the three problems of their choice. In exceptional cases, the department chair may grant extraordinary attempts to PhD students or to prospective PhD applicants.
8. **Accessibility Services.** Students who qualify for extended time or alternative accommodations must notify SAS and the department sufficiently in advance, for appropriate measures to be taken.
9. **Problems Composition.** The problems in each subject are determined as follows. Half of the problems are chosen by the candidacy committee out of a pool of no fewer than 16 problems for each subject, which must be made available to the students at least three months in advance to the exam, along with their solutions and rubrics. The committee has the latitude to make modifications to these problems, as long as the learning objectives of the problems and the fundamental aspects of their solutions are unchanged. The suggested changes must be approved by a majority of the committee members. The other half of the problems are formulated by the committee, based on the subject learning objectives. These additional problems and their full solutions must be made available to all committee members at least two weeks in advance of the committee meeting, where they must be approved by a majority vote.
10. **Update of the problem pool.** At the end of the evaluation meeting that follows the exam, the new problems are included in the pool, and the modified old problems are appended to the original, as variants. The committee may also decide, by majority vote, to archive some of the pool problems. Archived problems and their solutions remain available to the students for training purposes. Any faculty member can recommend modifications to the existing problems in the pool or propose new problems, as long as they are accompanied by full solutions and conform to the required format. The committee will decide at

the earliest opportunity whether to include the suggested problems in the pool, possibly after having modified them, and whether to accept the recommended corrections to the existing problems.

11. **Problem Format.** To be considered for the exam, or to be added to the pool, any problem must be accompanied by its solution in an editable electronic form, LaTeX (preferred) or docx, using the templates provided in Annex I. The pool of each subject must be kept under revision control in a separate Git repository.
12. **Grading and Feedback.** Students' exams will be graded based on the solution and rubric associated with each problem. A subset of student's exams in each subject must be graded by more than one committee member, to promote the use of uniform grading criteria. The graded exams are made available online to all members of the candidacy committee. The committee must certify the grading by a simple majority vote. After their grades are certified, students receive, alongside their grade in each subject, a copy of their graded exams.
13. **Tutoring.** Students are offered a common space online to discuss pool problems with each other. Committee members may participate in the discussion. Committee members will offer at least two recitation sessions per subject prior to the administration of an exam and after the most recent exam offering. Students who do not pass one or more subjects in a written candidacy exam will be offered to meet with a committee member once, to make a study plan, and a second time to follow up on the student's progress, prior to the following offering of the exam.
14. **Bias Control.** To reduce any potential biases, each student will be assigned a written candidacy exam identification number (WCEID) the week after the registration email is sent. The student's WCEID will be assigned by the Graduate Candidacy Committee (GCC) support staff person and sent to the student via email. The student will use their assigned WCEID instead of their name in the written candidacy exam paperwork (and, if applicable, in the appeal).
15. **Master's Plus Publication Option.** Students who, **by the end of the third year in the graduate program**, certify to the Department Chair that they:
 - (i) Have **scored the minimum required threshold of 30% in each subject** of the written candidacy exam (WCE).
 - (ii) Have **obtained a M. S. in physics from UCF**, and
 - (iii) Have **published a peer-reviewed publication as a first-author**,
Pass the WCE.

Appeals: A student may appeal the results of the written candidacy exam. Appeals must include supporting documentation, if applicable, and will be reviewed. Appeals must be submitted within 1 week after distribution of exam scores. In general, research productivity will not be considered as a valid reason to appeal the results of the exam.

To appeal the results of the written candidacy exam, a student should:

1. Send an e-mail to soto@ucf.edu with subject title: "Appeal Written Candidacy Exam Results"
2. In the e-mail, include the assigned written candidacy exam identification number (WCEID), and petition (appeal)

3. Include supporting documentation, if any. The student must remove any personal identifiable information (name, UCFID, etc.) and instead, include the assigned written candidacy exam identification number (WCEID) at the top-right-hand corner of each page.
4. Allow the Graduate Curriculum & Affairs Committee (GCAC) 10 business days to review and respond to appeal.
5. After 10 business days from receipt of the appeal, the decision of the GCAC will be communicated in an e-mail to the student.

If for any reason the GCAC is unable to make a decision about the appeal and/or needs additional information, the student will receive an e-mail notification. Once the student provides the additional information, the GCAC will have ten business days to review and consider the additional information before a decision is made and communicated to the student. The decision of the GCAC after reviewing an appeal is final.

The **oral part** combines an examination of the student's command of physics and their written Dissertation Proposal. It should be completed by the summer of the student's third year in the doctoral program. The Department Chair may grant extensions for documented exceptional reasons.

In cases of failing the exam or when satisfying the exam with a master's plus publication is not an option, the Graduate Program Director may suggest to the student to pursue a terminal, non-thesis option master's degree. The student usually satisfies the course work for a MS degree with accumulated hours. In cases where a terminal, non-thesis master's degree is not an option, the student may be dismissed from the program and/or may seek other options such as applying to another graduate program.

Students who fulfill all candidacy requirements and pass the candidacy exam will gain post-candidacy status.

Thesis and Dissertation Section

Master's Thesis - Overview

The Master of Science in Physics candidate who has chosen the thesis option is required to conduct a program of original scientific research or some investigation involving a creative element and to submit a written thesis detailing these investigations. An oral defense and examination of the thesis is required.

Students are highly encouraged to enroll in the Thesis and Dissertation WebCourse to learn more about next steps in preparation for their final examination. Students should refer to the Graduate Catalog for the most current information related to the Thesis requirements.

The length of the Master's thesis will be dictated by the nature of research performed, and decided on by the supervisor. The students are advised to ask their supervisor for copies of thesis of previous Master's students.

Master's Thesis – Committees

A Thesis committee must be in place and approved by the Graduate Program Director, the Department Chair, and the Associate Dean of Graduate Studies prior to a student's enrollment into Thesis (PHY 6971).

The Thesis Advisory Committee must consist of at least three members. At least two members must be approved members of the Graduate Faculty, one of whom must serve as the chair of the committee. Graduate Faculty Scholars may serve as a member or co-chair of a thesis advisory committee but may not serve as the chair. All members must be in fields related to the thesis topic.

Programs may specify additional committee membership beyond the minimum of three. These committee members must also be approved members of the Graduate Faculty or Graduate Faculty Scholars, with the majority of members of any given committee being Graduate Faculty.

A student may request a change in committee membership with the approval of the program director and re-submission to the College of Graduate Studies. The UCF College of Graduate Studies reserves the right to review appointments to a Thesis Advisory Committee, place a representative on any Thesis Advisory Committee, or appoint a co-chair.

The committee will make recommendations to the Dean of the college regarding the student's program of study, provide guidance to the student, and be the principal

mechanism for the evaluation of the student's thesis and their performance in any examination. All committee members vote on acceptance or rejection of the final thesis. The thesis proposal and final thesis must be approved by a majority of the committee.

Master's Thesis – Defense

It is the student's responsibility to coordinate the details for their thesis defense with their chair and/or the committee. Once a date, time, and location are approved, the student can prepare the Thesis defense announcement and their presentation. Submit Thesis announcements at least 3 weeks in advance of the defense date. Students should refer to the UCF Academic Calendar for specific Thesis and Dissertation deadlines. It is important that the defense occurs within the deadline set by UCF for a certain term. Failure to comply with such deadline immediately sends the official graduation to the next term.

If a virtual defense is needed, they must be approved by the program director by the time the student files their intent to graduate. It is expected that at minimum the thesis committee chair will attend in-person at the campus location of the public defense.

The student's thesis must be submitted through iThenticate for advisement purposes and for review of originality. The thesis chair is responsible for scheduling this submission to iThenticate and for reviewing the results with the thesis advisory committee. The advisory committee will use the results appropriately to assist the student in preparing their thesis.

Thesis defenses are open to the public. The presentation can last about 3 hours. After the presentation, the committee members are allowed to ask questions and make comments about the Thesis work. After they are done, the candidate and the public are required to leave the room while the committee deliberates. The result, pass or fail, is then communicated in public to the candidate.

Students may access their myUCF account to complete their thesis release option form and access the Thesis and Dissertation website to review their committee, prior to printing their thesis defense approval form. Students may submit a revision to their committee, if needed. In addition, students must provide the departmental committee skills forms to their committee members prior to the date of the defense. Before the student may be approved for final submission to the university, the thesis chair must indicate completion of the Review of Original Work through iThenticate by signing the Thesis Approval Form. Other committee members must also sign the Thesis approval form. Send Thesis approval forms to Tonya.Walker@ucf.edu (copy to COS Graduate Services at cosgrad@ucf.edu) for further processing. A copy of the form will be e-mailed to you by final submission deadline.

The student is responsible to schedule an exit interview with the Graduate Program Director and complete the exit interview form.

All defense forms must be submitted to the Graduate Admissions Coordinator by final submission deadline.

Doctoral Dissertation - Overview

A doctoral dissertation is a comprehensive document detailing original research that was carried out by the student in order to earn a doctoral degree. The ultimate purpose of a doctoral dissertation is to present the details of how the research has been performed and conclusions that has been reached for their assigned projects.

Dissertation – Form and Content

Students are highly encouraged to enroll in the Thesis & Dissertation WebCourse to learn more about next steps in preparation for their final examination. Students should refer to the Graduate Catalog for the most current information related to the Dissertation requirements. The length of the Doctoral dissertation will be dictated by the nature of research performed and decided on by the supervisor. The students are advised to ask their supervisor for copies of dissertations of previous doctoral students.

University Dissertation Requirements

Students wishing to take dissertation credit hours must have successfully entered candidacy. That is, they have completed all course work, taken and passed all qualifying exams, completed all university mandated workshops, and have all associated documents submitted and approved prior to the first day of classes. Students will work with their graduate advisor to enroll in the relevant dissertation course. Doctoral candidates must be enrolled continuously (including summers). Exceptions to the continuous enrollment policy may be appealed to Graduate Studies. Students may not enroll in more than nine credits in any given semester and must enroll in at least three credits; full time is three credits each semester. Candidates that have met the 15 required dissertation hours but not yet defended must remain continuously enrolled. Graduate policy states students have seven years from beginning the program to complete the degree.

The College of Graduate Studies [Thesis and Dissertation page](#) contains information on the university's requirements for dissertation formatting, format review, defenses, final submission, and more. A step-by-step completion guide is also available on [Thesis and Dissertation Services Site](#).

All university deadlines are listed in the [Academic Calendar](#). Consult with graduate director or advisor for potential earlier deadlines.

The following requirements must be met by dissertation students in their final term:

- Submit a properly formatted file for initial format review by the format review deadline
- Submit the Thesis and Dissertation Release Option form well before the defense
- Defend by the defense deadline
- Receive format approval (if not granted upon initial review)
- Submit signed approval form by final submission deadline
- Submit final dissertation document by final submission deadline

Students must format their dissertation according to the standards outlined in [Thesis and Dissertation Webcourse](#). Formatting questions or issues can be submitted to the Format Help page in the [Thesis and Dissertation Services](#) site. Format reviews and final submission must be completed in the [Thesis and Dissertation Services](#) site. The Dissertation Approval Form is also available in the Thesis and Dissertation Services site.

The College of Graduate Studies offers several thesis and dissertation [Workshops](#) each term. Students are highly encouraged to attend these workshops early in the dissertation process to fully understand the above policies and procedures. The College of Graduate Studies thesis and dissertation office is best reached by email at editor@ucf.edu.

Doctoral Candidate

The following are required to obtain candidacy status and enroll in dissertation hours:

- Students must complete the majority of all course work prior to entering Candidacy Status. This includes: 18 Credit hours of Required Core Courses, 3 credit hours of a Methods course, 9 credit hours of Formal coursework, and 27 credit hours of Remaining Electives. Students can have no more than 6 credit hours of remaining coursework (outside of Dissertation hours) when applying for Candidacy.
- Successful completion of both part I (written exam) and part II (oral exam) of the candidacy exam.
- The dissertation advisory committee is formed, consisting of a chair, approved graduate faculty and graduate faculty scholars.
- Submittal of an approved program of study.
- Completion of CITI Training and RCR Workshops

Dissertation – Deadlines

Refer to the UCF Academic Calendar for applicable dissertation deadlines. All departmental dissertation forms are due to the Graduate Admissions Coordinator by final submission deadline.

Dissertation – Committee Details

A Dissertation Committee must be in place and approved by the Graduate Program Director, the Department Chair, and the Associate Dean of Graduate Studies prior to a student's dissertation proposal and enrollment into Dissertation (PHY 7980).

The Dissertation Committee must consist of at least four members (three members from the Physics Dept. and one external member that is from a different department or outside of UCF). At least three members must be approved members of the Graduate Faculty, one of whom must serve as the chair of the committee. Graduate Faculty Scholars may serve as a member or co-chair of a thesis advisory committee but may not serve as the chair. All members must be in fields related to the dissertation topic.

Programs may specify additional committee membership beyond the minimum of four. These committee members must also be approved members of the Graduate Faculty or Graduate Faculty Scholars, with the majority of members of any given committee being Graduate Faculty.

A student may request a change in committee membership with the approval of the program director and re-submission to the College of Graduate Studies. The UCF College of Graduate Studies reserves the right to review appointments to a Dissertation Committee, place a representative on any Dissertation Committee, or appoint a co-chair.

The committee will make recommendations to the Dean of the college regarding the student's program of study, provide guidance to the student, and be the principal mechanism for the evaluation of the student's dissertation and their performance in any examination. All committee members vote on acceptance or rejection of the final dissertation. The dissertation proposal and final dissertation must be approved by a majority of the committee.

Dissertation – Proposal/Prospectus

The dissertation proposal, included in the oral part of the candidacy exam, ensures a student has a reasonable project and plan, which can lead to a successful defense and degree, given reasonable time, effort, and resources.

This proposal is submitted either immediately after passing the written candidacy exam or by the summer of a student's third year in the program.

Students must find an advisor soon after passing the written candidacy exam. Committee members consider the originality and impact of the proposal, work plan feasibility, potential for publications and other factors.

A dissertation proposal **will not exceed fifteen (15) pages** all inclusive. A two-hundred (200) word *summary* will state expected discoveries/inventions, methods to be used,

and potential impact on the world. A *background* statement will identify the significance of the problem, state the Hypotheses, and present preliminary research results. An *objective* statement will outline the expected milestones and tasks. A *work plan* will adequately describe the approach and methods to be used in each task and how each milestone will be reached. A *timetable* will show when and for what duration each task will be undertaken, with the understanding that the entire project should be complete within 2 years of the proposal. Cited *references* should be given.

The **presentation will not exceed 1 hour**, and should contain about 20 overhead transparencies, with 2-3 minutes spent discussing each one. Each committee member must receive the written proposal before the presentation is scheduled.

The committee chair will note the results of the dissertation proposal on the departmental candidacy status form. Once this form has been completed, it must be submitted directly to the Graduate Admissions Coordinator for submission to the College of Graduate Studies (Refer to the UCF Academic Calendar for appropriate Dissertation Committee/Candidacy Forms deadline).

Once a student has passed the written candidacy exam, completed all candidacy requirements as specified in the doctoral candidate section, and their dissertation proposal is accepted, the student will obtain Candidacy Status.

Dissertation – IRB

If the student chooses to conduct research that involves human subjects (i.e., surveys, interviews, etc.), they must gain Institutional Review Board (IRB) approval prior to beginning the study. Effective Summer 2020, the College of Graduate Studies places **IRB submission** and **Closure checklists** on the GPS Degree Audit of all master's Thesis and Doctoral students for academic progress and degree certification purposes. If applicable, students who involve human participants in their research must show documentation from the IRB that their protocol was approved prior to data collection. In addition, students must show documentation that the thesis/dissertation study was properly closed before graduation. The documentation may be sent to the Graduate Admissions Coordinator at the time of filing their intent to graduate. If the student's research does not involve human participants, send an e-mail confirmation to soto@ucf.edu at the time of filing the intent to graduate.

For access to the IRB submission form and sample consent forms, please visit the Office of Research website:

http://www.research.ucf.edu/Compliance/IRB/Investigators/pi_manual.html

Dissertation – Defense

It is the student's responsibility to coordinate the details for their dissertation defense with their chair and/or their committee. Once a date, time, and location are approved, the student can prepare the dissertation defense announcement and their presentation.

Submit dissertation announcements at least 3 weeks in advance of the defense date. Students should refer to the UCF Academic Calendar for specific Thesis and Dissertation deadlines. It is important that the defense occurs within the deadline set by UCF for a certain term. Failure to comply with such deadline immediately sends the official graduation to the next term.

If a virtual defense is needed, they must be approved by the program director by the time the student files their intent to graduate. It is expected that at minimum the dissertation committee chair will attend in-person at the campus location of the public defense.

The student's dissertation must be submitted through iThenticate for advisement purposes and for review of originality. The dissertation chair is responsible for scheduling this submission to iThenticate and for reviewing the results with the dissertation committee. The dissertation committee will use the results appropriately to assist the student in preparing their dissertation.

Dissertation defenses are open to the public. The presentation can last about 3 hours. After the presentation, the committee members are allowed to ask questions and make comments about the dissertation work. After they are done, the candidate and the public are required to leave the room while the committee deliberates. The result, pass or fail, is then communicated in public to the candidate.

Students may access their myUCF account to complete their dissertation release option form and access the Thesis and Dissertation website to review their committee, prior to printing their dissertation defense approval form. Students may submit a revision to their committee, if needed. In addition, students must provide the departmental committee skills forms to their committee members prior to the date of the defense. Before the student may be approved for final submission to the university, the dissertation chair must indicate completion of the Review of Original Work through iThenticate by signing the Dissertation Approval Form. Other committee members must also sign the dissertation approval form. Send Dissertation approval forms to Tonya.Walker@ucf.edu (copy to COS Graduate Services at cosgrad@ucf.edu) for further processing. A copy of the form will be e-mailed to you by final submission deadline.

The student is responsible to schedule an exit interview with the Graduate Program Director and complete the exit interview form.

All defense forms must be submitted to the Graduate Admissions Coordinator by final submission deadline.

Dissertation – Submission Procedures

Refer to the Thesis & Dissertation WebCourse for final submission information.
[Electronic Thesis and Dissertation](#)

Dissertation – Additional Relevant Information

Research is a fundamental part of the Physics Doctoral Program. Starting with Directed Research hours and then continuing with Doctoral Dissertation courses, students gain a solid experience in how to conduct competitive research programs in their fields of specialization.

Students should also be aware that any laboratory or experimental work must comply with certain regulations and safety standards set by UCF. Students should discuss this subject with their research supervisor before starting any laboratory research activity. Additional information about required laboratory training and training registration may be found online at the UCF Environmental Health & Safety website at <https://ehs.ucf.edu/training>

It is expected that the research carried out during a doctoral program will result in publications in specialized, peer-reviewed journals and in technical communications during professional meetings and conferences. While there is no publication requirement for the dissertation defense, it is expected that graduate students will publish a minimum of two papers by the time the student graduates, hence it is expected that at least one major paper about the subject of the dissertation should appear in a reputable journal or in a peer-reviewed conference proceedings within a short period after graduation. The dissertation committee may delay the defense until it is clear that the candidate is ready to submit his or her work to publication. Therefore, it is important that students try to publish not just major results, but also partial ones that are sufficiently novel and valuable contributions to their area of study.

The student is also expected to participate in a minimum of two professional conferences in their field of specialization. These events are important not just for communicating results, but also for making contacts that may help open future employment opportunities. Funding for participating in conferences, summer schools, and workshops is usually available from the supervisor's research grants. There are also some in-house sources, such as the events coordinated by the graduate student societies (GSPS and WiPS). Find out more about these events by visiting their websites at <https://sciences.ucf.edu/physics/gsp/> and <https://sciences.ucf.edu/physics/wips/>

The College of Graduate Studies offers a Graduate Travel Award that provides funding for master's, specialist, and doctoral students to deliver a research paper or comparable creative activity at a profession meeting. Students must be the primary author and presenter. More information can be found on the Graduate Studies website: <https://graduate.ucf.edu/funding/> > Presentation Fellowship.

Graduate Students Travel Funding is available to pay transportation expenses for

graduate students who are delivering a research paper or comparable creative activity at a professional meeting. Contact the Student Government Association at 407/823-3291 for more information or go to <http://ucfsga.com>.

Program and Institutional Policies

Absences

Students who anticipate that they may not be able to enroll continuously due to external circumstances should apply for [Special Leave of Absence](#). Specifically, students who are taking courses should apply for a Special Leave of Absence when they cannot enroll in more than two consecutive semesters. Students who are in thesis/dissertation hours should apply for a Special Leave of Absence when they cannot enroll in every semester (including summer).

To qualify for a Special Leave of Absence, the student must demonstrate good cause (e.g., illness, family issues, financial difficulties, personal circumstances, recent maternity/paternity, employment issues). The specific reason for the Leave of Absence request must be indicated by the student on the [Leave of Absence Form](#). Due to current U.S. government regulations, international students must be enrolled every fall and spring semester. For students in this category, a Special Leave of Absence is only available for documented medical reasons.

Academic Standards/Conduct/Integrity

It is expected that students will adhere to the highest standards of conduct and act responsibly. Academic dishonesty and plagiarism are sufficient for the dismissal of the student from the Program. For additional information, refer to the College of Graduate Studies [Academic Honesty flyer](#) or to the UCF Golden Rule (link provided below).

Refer to the [Golden Rule](#).

Accommodations

Students requiring an accommodation may contact Student Accessibility Services at: <https://sas.sdes.ucf.edu/accommodations/>

Admission to Candidacy

A student must demonstrate their readiness for the PhD program by successfully completing the candidacy examination before admission to full doctoral status and enrollment into dissertation hours. The Candidacy Examination should be taken when the student is nearing the end of coursework. The exam is administered by the members of the student's dissertation advisory committee, or another appropriate committee appointed by the program. Admission to candidacy will be approved by the program director and the college coordinator and forwarded to the UCF College of Graduate Studies for status change. Only after admission to candidacy may a student register for doctoral dissertation hours (PHY 7980). Effective beginning Summer 2019, students must have passed candidacy and have the candidacy and dissertation

advisory committee documentation received and processed by the College of Graduate Studies by the date listed in the academic calendar in order to enroll in dissertation hours for that term.

Doctoral students admitted to candidacy are expected to enroll in dissertation hours and to devote full-time effort to conducting their dissertation research and writing the required dissertation document. Students in doctoral candidacy must continuously enroll in at least three hours of dissertation coursework (PHY 7980) each semester (including summer) until the dissertation is completed.

Refer to the Candidacy/Qualifying Exam section of this handbook for additional information.

Annual Review

At the beginning of each year, each student's progress will be evaluated by the faculty advisor and/or the Graduate Program Director. This annual assessment reviews the student's performance in course work, in research work, in assistantship positions, and in completing other program requirements. This annual assessment may also include an update to the student's Plan of Study.

The graduate student has seven years from the date of admission to the graduate program to complete their degree. Students nearing their 5th year will submit a 7-Year Rule Completion Plan upon request.

Appeals/Grievances

It is the student's responsibility to be cognizant of graduate policies and procedures; however, should a student wish to request an exception to a university or program policy, they must file a petition that outlines the nature of their request. Normally, a petition is presented to the Graduate Program Director and/or committee, the college's Director of Graduate Services and the Associate Dean for Graduate Studies, and the Graduate Council for consideration.

Should a student wish to file a grievance, they should first review UCF's Golden Rule (<http://www.goldenrule.sdes.ucf.edu/>) and the Academic Grievance Procedures in the Graduate Catalog <http://catalog.ucf.edu/index.php> > Policies > General Graduate Policies > Academic Grievance Procedure

Classroom/Laboratory Use

Students may gain access to PSB students offices and/or laboratories as approved by the Graduate Admissions Coordinator, the Department Chair, and/or their research

advisor. Requests for access to PSB student offices and/or laboratories may be sent to soto@ucf.edu.

Communication

Students may receive graduate program communication via their Knights e-mail, business (@ucf.edu) e-mail, and/or their WebCourses. If needed, students can access faculty contact information via the Physics website – People page.

Student Responsibility for University Communication

UCF uses email as the official means of notifying students of important university business and academic information concerning registration, deadlines, financial assistance, scholarships, student accounts (including tuition and fees), academic progress and problems, and many other critical items for satisfactory completion of a UCF degree program. The university sends all business-related and academic messages to a student's Knights Email address to ensure that there is one repository for that information. Every student must register for and maintain a Knights Email account at <https://extranet.cst.ucf.edu/kmailselfsvc> and check it regularly to avoid missing important and critical information from the university. Any difficulty with establishing an account or with accessing an established account must be resolved through the [UCF Computer Services Service Desk](#) so that a student receives all important messages. Additionally, each student must have an up-to-date emergency e-mail address and cell phone number by which to be reached in case of a crisis on campus. This emergency contact information will be used only for emergency purposes. Also, both permanent and local mailing addresses must be on the record, so that any physical documents that must be mailed can be delivered.

It is critical that students maintain and regularly check their Knights Email account for official announcements and notifications. Communications sent to the Knights Email address on record will be deemed adequate notice for all university communication, include issues related to academics, finances, registration, parking, and all other matters. The University does not accept responsibility if official communication fails to reach a student who has not registered for, or maintained and checked on a regular basis, their Knights Email account. Please ensure that this information is current and that any changes in contact information are made online through the myUCF portal at <https://my.ucf.edu/>.

Continuous Enrollment

Unless full-time enrollment is required, graduate students are required to enroll in at least one class over the span of the Academic year. Failure to enroll in 3 consecutive terms results in dismissal from the program. After candidacy exam is passed for doctoral students, they are required to enroll in dissertation hours every semester (including summers) until graduation. Refer to the institutional policy from the graduate

catalog for more information about continuous enrollment: [Continuous Enrollment](#) and [Continuous Enrollment and Active Students](#).

Disability Statement

ACCESS matters.

Purpose: We envision UCF to be a fully accessible campus and inclusive environment for people with disabilities. We do this by:

- **Acknowledging** disability as an aspect of human diversity;
- **Cultivating** awareness of the environment's disabling barriers;
- **Collaborating** on and proactively facilitating accessible environments and experiences;
- **Educating** faculty and staff to create and maintain access in their spheres of influence;
- **Shifting** to an inclusive-minded attitude;
- **Supplementing** with reasonable accommodations as a last resort measure to ensure access.

Dismissal/Discipline

Satisfactory performance involves maintaining the standards of academic progress and professional integrity expected in a particular discipline or program. Failure to maintain these standards may result in termination of the student from the program. Refer to the Graduate Catalog Policies for Academic Progress and Performance for additional information.

Students are required to maintain a minimum 3.00 GPA in all coursework included in the program of study. Be aware that a B- (2.75) does negatively impact a GPA. While students are allowed to have six hours C+ (2.33) grades or lower (including U and I) in their program of study, this is the limit. Grades of D+ and lower will count against a graduate GPA and cannot be used toward completion of a degree requirement.

A program GPA below 3.00 at the end of any semester will result in a student being placed on "academic probationary" status. The students are given the next eighteen (18) hours of their program coursework to improve their GPA to 3.00 or better. Furthermore, exceeding 6 hours of C or lower grades, or a program GPA of 2.00 or lower, may result in removal from the program.

4000-Level coursework is acceptable in a graduate program of study if taken while a graduate student but is limited to 6 hours and the grade must be a B- or higher. An approved 4000-level course cannot count toward completion of the program requirement, cannot be calculated in the graduate GPA, but can be used as an indication for good progress.

Diversity Statement

One way to promote a safe and caring classroom community is to encourage each student's unique voice, perspective, and presence. The following diversity statement gives professors language for explaining how students' contributions will be valued:

The University of Central Florida considers the diversity of its students, faculty, and staff to be a strength and critical to its educational mission. UCF expects every member of the university community to contribute to an inclusive and respectful culture for all in its classrooms, work environments, and at campus events. Dimensions of diversity can include sex, race, age, national origin, ethnicity, gender identity and expression, intellectual and physical ability, sexual orientation, income, faith and non-faith perspectives, socio-economic class, political ideology, education, primary language, family status, military experience, cognitive style, and communication style. The individual intersection of these experiences and characteristics must be valued in our community.

Title IX prohibits sex discrimination, including sexual misconduct, sexual violence, sexual harassment, and retaliation. If you or someone you know has been harassed or assaulted, you can find resources available to support the victim, including confidential resources and information concerning reporting options at <https://letsbeclear.ucf.edu> and <http://cares.sdes.ucf.edu/>.

If there are aspects of the design, instruction, and/or experiences within this course that result in barriers to your inclusion or accurate assessment of achievement, please notify the instructor as soon as possible and/or contact [Student Accessibility Services](#).

For more information on diversity and inclusion, Title IX, accessibility, or UCF's complaint processes contact:

- Title IX – OIE <http://oie.ucf.edu/> & askanadvocate@ucf.edu
- Disability Accommodation – Student Accessibility Services – <http://sas.sdes.ucf.edu/> & sas@ucf.edu
- Diversity and Inclusion Training and Events – www.diversity.ucf.edu
- Student Bias Grievances – Just Knights response team – <http://jkrt.sdes.ucf.edu/>
- UCF Compliance and Ethics Office – <http://compliance.ucf.edu/> & complianceandethics@ucf.edu
- Ombuds Office – <http://www.ombuds.ucf.edu>

Enrollment in Thesis/Dissertation Hours

The university requires all doctoral students to take a minimum of 15 credit hours of doctoral dissertation hours; however, specific programs may require more than this minimum. Dissertation research is considered to be a full-time effort, and post-candidacy enrollment in at least three doctoral dissertations (PHY 7980) credit hours

constitutes full-time graduate status. Doctoral students who have passed candidacy and have begun taking doctoral dissertation hours (PHY 7980) must enroll in at least three dissertation hours each semester (including summers, without skipping a semester) and continue doing so until they complete and successfully defend the dissertation. Students wishing to enroll in fewer than 3 credit hours must have approval from their advisor. Students who need to interrupt their dissertation work for extenuating circumstances must submit a [Leave of Absence Form](#) to the College of Graduate Studies. Submission and approval of the form must be obtained prior to the first day of classes for the term of non-enrollment.

Full-time and Part-time Requirements

Students should refer to the [UCF Graduate Catalog](#) for the most recent information regarding full-time or part-time enrollment.

Golden Rule

The Golden Rule is the university's policy regarding non-academic discipline of students and limited academic grievance procedures for graduate (grade appeals in individual courses, not including thesis and dissertation courses) and undergraduate students. Information concerning The Golden Rule can be found at www.goldenrule.sdes.ucf.edu/. Section 11, Student Academic Behavior, addresses appeals of graduate program actions or decisions.

Grading and Grading Procedures

Refer to the Dismissal/Discipline section of this handbook for additional information. Students can also refer to the [Grade System](#) section within General Graduate Policies of the grad catalog. As well as the Incomplete Grades Section within Academic Progress and Performance Policy under General Graduate Policies.

Harassment

The University of Central Florida values diversity in the campus community. Accordingly, discrimination on the basis of race, sex, national origin, religion, age, disability, marital status, parental status, veterans' status, sexual orientation, or genetic information is prohibited.

Sexual harassment, a form of sex discrimination, is defined as unwelcome sexual advances, requests for sexual favors, or verbal or physical conduct of a sexual nature including any of these three situations:

1. Submission to such conduct is made either explicitly or implicitly a term or condition of an individual's employment or enrollment.

2. Submission to or rejection of such conduct by an individual is used as the basis for employment or enrollment decisions affecting such individual.
3. Such conduct has the purpose or effect of substantially interfering with an individual's work performance or enrollment, or creating an intimidating, hostile, or offensive working or academic environment.

Sexual harassment is strictly prohibited. Occurrences will be dealt with in accordance with the guidelines above and university rules. Employees, students, or applicants for employment or admission may obtain further information on this policy, including grievance procedures, from the OIE Coordinator. The Director of the Office of Institutional Equity Programs is the campus Equity Coordinator responsible for concerns in all areas of discrimination. The office is located on the main campus, in Barbara Ying CMMS Building 81, Suite 101. The phone number is (407) 823-1336. Policies and guidelines are available online at <http://www.eeo.ucf.edu>.

International Students

Several types of employment are available to international students, including on-campus employment. For more information about the types of employment available to international students, and the requirements and restrictions based in visa-type, please see the UCF Global website: <http://global.ucf.edu/>

International students who will be hired in GTA positions must be proficient at speaking English. For GTA Associates, this is determined by successfully passing the Versant English test with a score of 69 or better. This is a new test effective Spring 2018, and it is administered by the English Language Institute (ELI). For international student to register for or inquire about the Versant English test, please contact ELI at UCF Global: 407/823-5515 or the College of Graduate Studies at 407/823-2766. When applicable, students may request an exemption.

Plagiarism

Refer to the Academic Standards/Conduct/Integrity section of this handbook for additional information.

Students can access the College of Graduate Studies website on this topic:

<https://graduate.ucf.edu/plagiarism/>

Also, students can refer to the College of Graduate Studies Webcourse: "Pressures to Plagiarize – Current Grad Students" offered through the Pathways to Success program.

Privacy

All student GTAs working with student records will be required to complete FERPA Training. Additional information about this requirement may be found online at <https://registrar.ucf.edu/training>

Probation

Refer to the Dismissal/Discipline section of this handbook for additional information. Students can also refer to the [Academic Progress and Performance](#) section from the Graduate Catalog.

Satisfactory Progress

Refer to the Dismissal/Discipline section of this handbook for additional information.

Time Limits to Degree Completion

Students have 7 years from the term of admission to complete their degree requirements and graduate. Students can also refer to the [Time Limitation and Continuous Enrollment Policy](#) in the Graduate Catalog.

Transfer Credit

Students that wish to transfer eligible graduate credit hours from another program or degree can complete the departmental credit hours transfer form and meet with the Graduate Program Director for his approval at the time of Orientation. If approved, we must have the final official transcript on file to proceed with the request. Refer to the graduate catalog Transfer of Credit Policy for additional information: [Transfer Credit](#)]

Turnitin/iThenticate

Review for Original Work

The university requires all students submitting a dissertation as part of their graduate degree requirements to first have their electronic documents submitted through iThenticate for advisement purposes and for review of originality. The dissertation chair is responsible for scheduling this submission to iThenticate and for reviewing the results from iThenticate with the student's advisory committee. The advisory committee uses the results appropriately to assist the student in the preparation of their dissertation. Before the student may be approved for final submission to the university, the dissertation chair must indicate completion of the Review for Original Work through iThenticate by signing the [Dissertation Approval Form](#).

Other Relevant Program/Institutional Policies

A shared office space is provided to all graduate teaching assistants. Students must keep their assigned offices/work areas neat and clean, or their office space assignment will be revoked. A few desktop computers are also available for their use.

All students admitted into the graduate program are required to create a Knights e-mail account. In addition, students employed by the department will be required to create an employee "@ucf.edu" e-mail account, which is listed on the departmental website directory.

All graduate students are assigned a mailbox in PSB 466.

Students need consent from the Department office manager to use the copy machine and to receive departmental stationery and supplies.

The Department of Physics runs a weekly colloquium series open to all faculty and students. The schedule is available on the Department web page at <http://physics.cos.ucf.edu/> > Colloquia. Attendance to weekly colloquia is highly recommended, and Graduate students are expected to attend. The department strives to bring speakers who can give a broad overview of a certain research area and talk in accessible terms about research in the forefront of their fields.

Several faculty members also run periodic group meetings and seminar series. Students are encouraged to contact faculty members to learn about their research projects and the positions they may have available in their groups.

Additional Program Details

Financial Aid Funding

The Physics Department offers financial support to incoming doctoral students in the form of Graduate Teaching Assistantships (GTAs). They are guaranteed in the Fall and Spring terms during the first year, provided the student maintains good academic standing. They may also be offered during summer terms depending on the availability of positions and departmental funds. All Graduate Teaching Assistants are required to be full-time students and that means enrolling in at least 9 credit hours during Fall and Spring terms and 6 credit hours in the Summer if they have not yet passed the candidacy exam. After being one year in the program, the GTA positions are not guaranteed, but typically second year students who did not receive a Graduate Research Assistantship (GRA) receive a GTA position.

The maximum FTE (Full-Time Employment) a GTA can take is 0.50, corresponding to 20 hours/week. The annual stipend is \$24,990.76 (or about \$23 hourly rate). All GTAs receive a full tuition waiver for matriculation fees up to 9 credit hours per term in Fall and Spring, up to 6 credit hours in Summer (when pre-candidacy) and up to 3 credit hours per term (post-candidacy). Non-matriculation fees are not included in the waiver. All graduate students with an assistantship and full-time status are considered in-state students. If a student does not maintain full-time status, they may no longer be eligible for a graduate assistantship and out of state fees will not be waived.

It is important that all students communicate their interest in renewing their GTA to the Graduate Admissions Coordinator as soon as possible, but no later than one month before the beginning of the next term.

GTA positions are assigned usually two months before the beginning of classes. The assignments are based on academic standing, past performance, and availability of funds. Students who want to be considered for these positions must register at least two months in advance to minimize conflicts between their course schedule and teaching assignments.

Regular and affiliated faculty members of the Physics Department often pay graduate research assistants to work in their projects. These positions go by the name of Graduate Research Assistantships (GRAs) and effective Fall 2023, include a minimum annual stipend of \$29,000 (or about \$27 hourly rate) for Physics students or \$35,088 (or about \$33 hourly rate) for Planetary Sciences Track students. Students are required to be in good academic standing to take GRAs. Tuition remission is provided by the hiring faculty as a tuition payment for matriculation fees for the GRAs, the advisor has the option to cover the non-matriculation fees, and the rules are like those mentioned above for the case of GTAs. GRA positions can be renewed,

depending upon mutual interest and the supervisor's funds availability.

Students are expected to make a transition from GTA to GRA by the time they pass the candidacy exam. In several cases this transition happens sooner when the student begins working with faculty member in a Directed Research course.

All prospective students who complete an application to the program by the applicable priority deadlines are automatically considered candidates for UCF-sponsored fellowship opportunities. The Graduate Admissions Committee along with the Graduate Program Director will submit their fellowship nominations of selected and eligible candidates to the College of Graduate Studies for consideration.

For additional funding information, go to the [College of Graduate Studies Funding Website](#)

Graduate Assistantship Details

If the student is hired in the position of Graduate Teaching Associate, Assistant or Graders, they must complete the required training to be eligible. More information can be found at the following website: <https://graduate.ucf.edu/graduate-teaching/#GTA-Training-Requirements/>

All students hired in a GTA position in which they will be the "primary" instructor for the course must complete all the training requirements for all three positions (1109 – Grader, 1107 – Assistant, and 1106 – Associate), since they will be interacting with students on a regular basis. GTA Associates must also complete a face-to-face workshop and have completed at least 18 hours of graduate courses in the discipline they will be teaching.

International students who will be hired in GTA positions must be proficient at speaking English. For GTA Associates, this is determined by successfully passing the Versant English test with a score of 69 or better. This is a new test effective Spring 2018, and it is administered during the GTA orientation by the English Language Institute (ELI). For international student to register for or inquire about the Versant English test, please contact ELI at UCF Global: 407/823-5515 or the College of Graduate Studies at 407/823-2766. When applicable, students may request an exemption.

All student GTAs will be required to complete FERPA Training. Additional information about this requirement may be found online at <https://registrar.ucf.edu/training>.

Student GTAs are required to attend meetings at least once prior to the start of classes for the semester the GTA is assigned TA duties and weekly thereafter. Student GTAs are required to be present for all assigned teaching duties and to make

advance arrangements with the GTA Coordinator in the event of unavoidable conflicts with teaching schedules.

At the completion of each semester the student is employed as a GTA, the student's performance will be evaluated by the faculty supervisor and/or the Lab Coordinator. The supervisor is typically the faculty member who coordinates the sections of the course where the student GTA is an instructor. These assessments will be used to review strengths and weaknesses in the student's performance in preparation for future employment. If applicable, Student Perception of Instruction forms will be reviewed before the completion of a GTAs Performance Assessment online.

Go to <https://graduate.ucf.edu/assistantships/> for more information.

Graduation Requirements

Student should apply for graduation by submitting an Intent-to-Graduate form via their myUCF account after completing all degree program requirements, obtaining a minimum of 69 credit hours, and registering for the last 3 credit hours.

Refer to the appropriate Thesis or Dissertation defense section of this handbook for additional information on final examination/defenses.

Refer to the Physics website, graduate forms, and links, for the final examination forms (committee skills and exit interview forms) needed on the day of the defense, the sample defense announcement, abstract requirements, and the Thesis and Dissertation Services link.

Refer to the academic calendar for applicable Thesis and Dissertation deadlines.

Click on the following link for additional [Commencement](#) details.

Job Search and Career Pathways

Students graduating from the Physics MS or PhD programs are prepared for employment in industry, academia, national labs, or related employment. Students are encouraged to seek internship opportunities early in the program and attend career fairs at various conferences. Additional information about Careers in Physics can be found at the APS website: <https://www.aps.org/careers/index.cfm>.

The [UCF Career Services](#) website also has information in preparing for your career after graduation. Graduate career development issues are unique and include evaluating academic and nonacademic career choices, discussing graduate school effect on career choices, as well as learning, evaluating, and refining networking and interviewing skills. Whatever your needs, Career Services offers resources to aid in the career exploration and job search of Master and Doctoral students in every academic discipline.

Students can access information on development training via the [UCF's Pathways to Success Program](#).

Student Associations

Get involved by joining one or more of our student organizations: [Student Societies - Physics \(ucf.edu\)](#).

You may also find the [Student Involvement](#) site to be helpful in identifying ways to get involved with other student groups.

Graduate Student Center

The UCF Graduate Student Center provides a space for graduate students to gather for professional development, attend workshops, practice their presentations, study, attend colloquia series, collaborate and more.

Go to: [Graduate Student Center](#) for additional information about the center, their operating hours, and to reserve rooms.

Graduate Research Forum/Symposium

Many of the graduate students who come to UCF will be involved in research. The College of Graduate Studies hosts an annual Research Forum to provide a conference setting for our own students to showcase their work either with poster presentations or a face-to-face presentation. More information can be found via the following link:

[Graduate Research Forum](#)

3MT

The College of Graduate Studies also hosts a 3MT competition for graduate students in both the Fall and Spring Semesters. More information can be found via the following link: [3MT](#)

Forms

Graduate students will complete many forms during their time in the graduate program. The various forms and a brief description can be found on the following websites:

Physics Graduate Program Website:

<https://sciences.ucf.edu/physics/graduate/forms-and-links/>

COS Graduate Services Website:

<https://sciences.ucf.edu/graduate/current-students/forms/>

The College of Graduate Studies: [Forms](#)

Useful Links/Resources

Click on the following links for additional information on a specific topic of interest to you:

- [Bookstore](#)
- [Campus Map](#)
- [Graduate Catalog](#)
- [Library](#)
- [Parking Services](#)
- [Shuttles](#)
- [Recreation Center](#)
- [Housing](#)
- [Counseling Center](#)
- [Writing Center](#)
- [Academic Calendar](#)

Graduate Faculty

Please refer to the graduate catalog for a list of approved [graduate faculty and scholars](#).
Department of Physics [people](#) webpage.

Description of Core Courses

Please refer to the Curriculum section of this handbook or the graduate catalog for additional information about Physics core courses.

Appendices

Refer to the Planetary Sciences Track handbook for additional information pertaining to the Planetary Sciences Track MS or PhD programs.