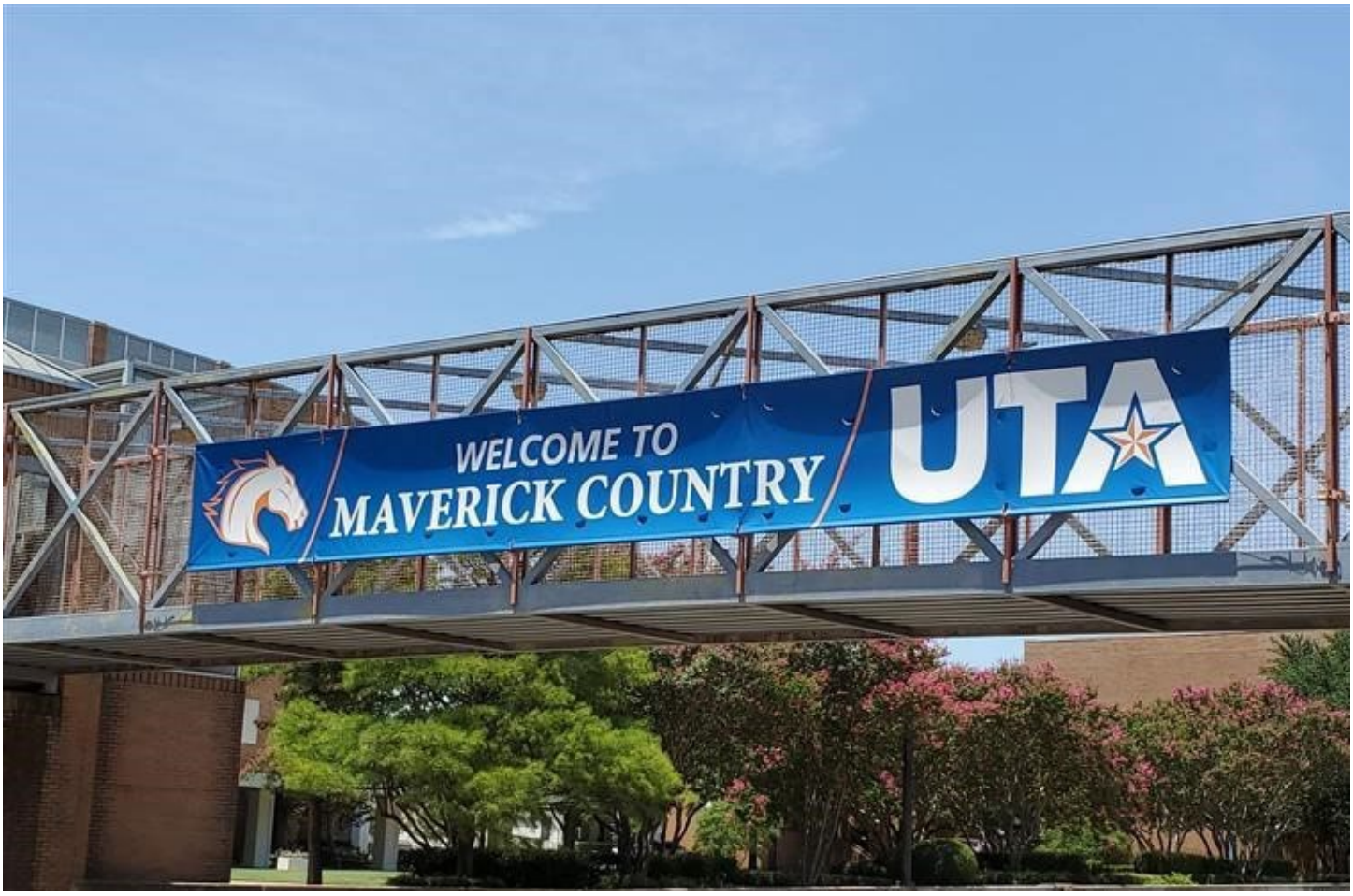
Graduate Handbook
Department of Physics

Academic Year 2022-2023



UNIVERSITY OF TEXAS ARLINGTON

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Ramon Lopez Faculty Advisor for APS chapter.
https://mavorgs.campuslabs.com/engage/organization/physics-grad

Physics Graduate Student Association

President – Nick Byrnes byrnes.nicholas@mavs.uta.edu
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Official University Academic Calendar 2022-2023

For the most current information go to https://www.uta.edu/uta/acadcal.php?session=20197
Graduating students should see the final semester checklist. The Graduate School may change this calendar if conditions warrant. Note: Some graduate programs may have earlier application deadlines, please check with your specific program for exact dates.

	Fall 2022	Spring 2023	Summer 2023
International Student and Legal Permanent Resident Application and Readmission Deadline	April 4	September 15	February 1
U.S. Student Application Deadline and Readmission Deadline	June 15	October 15	April
Registration Begins	April 4 (Fall Term)	Nov 7	April 4 (Summer Term)
First Day of Classes	August 22	January 17	1st 5-wk, 11-wk: June 6 2nd 5-wk: July 11
Late Registration	August 22-26	January 17-20	1st 5-wk, 11-wk: June 6-7 2nd 5-wk: July 11-12
Census Date	September 7	February 1	1st 5-wk: June 9,11-wk: June 23 2nd 5-wk: July 17
Deadline for Graduation: Last Date to File Application for Graduation	October 1	March 1	July 1
Last Date to Drop or Withdraw	October 28	March 31	1st 5-wk: June 27 11-wk: July 21 2nd 5-wk: Aug 1
Final Date to Hold Master's Exam/Dissertation Defense	December 19	TBD	TBD
Final Date to Submit Approved Thesis/Dissertation to Graduate School and Submit Report of Final Master's Examination/Dissertation Defense	December 19	TBD	TBD
Final Exams	December 8-14	May 4-10	1st 5-wk: July 8 11-wk: Aug 11-12 2nd 5-wk: Aug 11
Graduation Exercises	December 15-17	May 11-13	August 13

To see the Graduate School deadlines visit the Office of Records and Registration website at http://www.uta.edu/records/graduation/deadlines.php

Holidays

Labor Day	September 5, 2022
Thanksgiving	November 24-25, 2022
Martin Luther King Day	January 16, 2023
Spring Vacation	March 14-20, 2022
Memorial Day Emancipation Day	May 29, 2023 June 19, 2023
Independence Day	July 4, 2022

Graduate Mission Statement

The objective of graduate work in physics is to prepare the student for continued professional and scholarly development as a physicist. The Physics Master of Science Degree Programs are designed to give the student advanced training in all fundamental areas of physics through formal courses and the options of some degree of specialization or participation in original research in one of a variety of projects directed by the faculty. The Physics Bachelor's to Ph.D. Bound Program is designed to allow students with bachelor's degrees to proceed as directly as possible toward satisfying all the course and research requirements necessary for the Ph.D. degree (students may still obtain a MS degree in the process of obtaining a Ph.D.). By entering this program, students are indicating their intent to proceed onto their Ph.D. degree. The Doctor of Philosophy in Physics and Applied Physics Program combines the traditional elements of a science doctoral program with courses in specifically applied topics and internship in a technological environment. It is designed to produce highly trained professionals with a broad perspective of the subject which may prepare them equally well for careers in academic or in government or industrial laboratories. Current research in the department is conducted in the areas of condensed matter physics and materials science, nano-bio physics, astrophysics and space physics, high-energy physics, optics, and Physics education.

Physics Graduate Student Association (PGSA) and American Physical Society Chapter

The PGSA is a student organization that address topics of interest and concern to the graduate students and conveys that information to the faculty. The PGSA also helps incoming students transition to graduate student life in the Physics department. All graduate students are encouraged to participate in PGSA activities. The American Physical Society has begun a new program of APS Chapters, and the UTA Chapter is one of the inaugural Chapters. The Chapter connects graduate students and PostDocs to APS resources and professional development opportunities. The APS Chapter and the PGSA work closely together.

Graduate Student Senate

The Graduate Student Senate understands the needs and concerns of graduate students here at UT Arlington. Members are appointed to serve on over 20 university-wide committees, insuring graduate students a voice in the university community. The Graduate Student Senate passes resolutions to improve graduate student life on campus, hosts guest speakers to discuss current issues at the university, creates ad-hoc committees to research potential changes in university policy that may impact graduate students, and assists with Graduate Forums, the ACES research symposium, and campus advertising.
To learn more about the Graduate Student Senate visit their website at https://www.uta.edu/studentgovernance/student-government/legislative-branch/graduate-student-senate/index.php

Financial Support

Financial support is available to qualifying students in the form of Graduate Teaching Assistantships (GTA), Graduate Research Assistantships (GRA), Fellowships, scholarships or a combination. Most students in their first and second years serve as Teaching Assistants. This requires about 20 hours per week of teaching undergraduate laboratories or assisting faculty with class preparations and grading. Beyond the first one or two years, students are encouraged to find support as Research Assistants with faculty in their area of interest.

Select students are eligible to participate in the STEM or DDA fellowship programs, designed for doctoral degree seeking students, which will afford them significantly, reduced tuition and fees. To be eligible, the student must be a Ph.D. bound or Ph.D. level Graduate Research or Teaching Assistant employed 20 hours per week at the university (in the College of Science) and enrolled full time (9hrs in a long semester and 6hrs in the summer) with a minimum GPA 3.0. The STEM and COSA fellowships may be held for a maximum period of three years for a student started from Ph.D. program or five years for a student started from Ph.D. Bound program. For the DDA fellowship the maximum period is 3yers for all BS-to-PhD. No renewals after this period are possible. Students for whom the following two conditions apply are ineligible for the fellowships: 1) prior enrollment as a graduate student for 14 or more long semesters, AND, 2) more than 99 semester credit hours of doctoral study at UTA. Prospective STEM students must be unconditionally admitted in academic good standing, and must remain in academic good standing for the duration of the program.

Master's and doctoral students can be nominated by their Graduate Advisor for annual fellowships. Students from out-of-state who receive fellowships will have their tuition reduced to in-state rates, providing a significant reduction in tuition costs. You should discuss the nomination procedure for these fellowships with your Graduate Advisor.
Students may be funded by the department for up to two full years for an M.S. or up to three full years for a Doctoral degree (including any support during an M.S.) Further funding may be obtained from the thesis/dissertation supervisor. According to University regulations, a student must be unconditionally admitted or, if continuing, in good standing (not on academic probation) to receive either a teaching or a research assistantship. In exceptional circumstances, a student not in good standing may petition the Physics Department Graduate Studies Committee and the graduate School for continued support. Students receiving GTA's or GRA's from the Physics Department will be expected to complete a graduate degree program in Physics before they transfer to a program in another department at the University.

English Proficiency for Graduate Teaching Assistants

An applicant who is a non-native speaker of English must submit a score on the Speaking section of the TOEFL of at least 23 or a score of at least 7 on the Speaking section of the IELTS. Alternatively, students who have failed to attain a score of 23 on the Speaking section of the TOEFL or a score of 7 on the Speaking section of the IELTS, may satisfy the English proficiency requirement by taking the course of Developmental English and pass it. The English proficiency requirement will be waived for non-native speakers of English who possess a Bachelor's degree from an accredited US institution.

Graduate Assistant Health Insurance

The University accepts the student insurance that is offered by contract with UT System as an optional health coverage to enrolled students. UT Arlington will claim this insurance for any covered expenses incurred by the patient. They also accept UT Select for GRAs and GTAs, (you MUST show a copy of your insurance card before they can claim your treatment charges). Unfortunately, they are unable to provide services to your family unless they also have faculty/staff employment status. If they are UT Arlington students, they do provide services to them, but are not able to claim your insurance for treatment. In the Pharmacy, they accept both the Student Insurance and the employee insurances for pharmaceuticals.

If students have other health insurance, UT Arlington will not accept or file claims for those other policies; however, if students incur out of pocket charges at the UTA Health Services Center, receipts for those services may be submitted to that health insurance company for possible reimbursement.

Graduate Student Enrollment Requirements

Graduate assistants seeking more than 20 hours of employment:

The Graduate School will no longer require funded graduate students to seek the Graduate Program's approval to work more than 20 hours during a semester. Employment exceeding 20 hours may be the only means by which some students can continue their studies and complete their degrees. Graduate Advisors, academic departments, and the Office of International Education (OIE) can ensure that students are not employed at levels that will impact degree completion negatively or exceed employment limits allowed by law. Federal law states that international students may not work more than 20 hours a week in long semesters. OIE notifies international students about this requirement at their mandatory orientation. Academic departments wishing to hire an international student in a long semester are responsible for determining if the student already holds other forms of employment. Please note that current CPT and OPT policies are not affected by this change.

Funded and unfunded thesis and dissertation students in final semester:

Whether funded and unfunded, master's thesis students must enroll in 5698 and doctoral students must enroll in the appropriate 6699, 6999, or 7399 in their final semesters.. Please note that international students must still secure permission from the OIE for less than nine hours of enrollment in this situation. (See Graduate Catalog for details and consult your graduate advisor).

Funded and unfunded non-thesis students in final semester:

Because funded and unfunded non-thesis master's students in their final semesters may enroll in master's comprehensive courses or equivalents if required by the student's program or at least one graduate course in the student's program, these students may enroll in as few as three graduate hours to complete their degree requirements. Funded students in this situation will no longer need to request approval from the Office of Graduate Studies for less than nine hours enrollment. Please note that international students must still secure permission from the OIE for less than nine hours of enrollment in this situation.

Transfer Credit

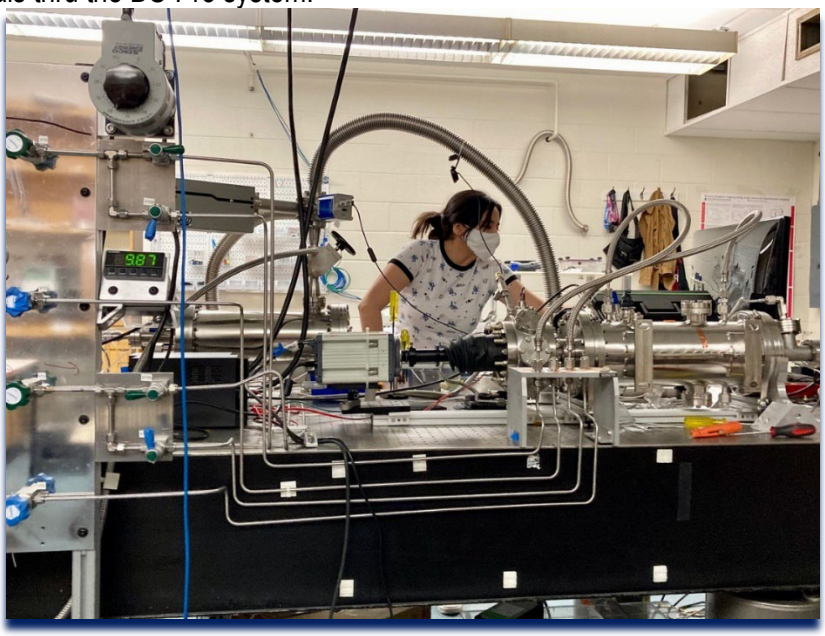
Credit may be transferred from other universities subject to the following restrictions: Only graduate level courses with grades of B or better and approved by the Graduate Studies Committee will be considered for transfer of credit and transfer of credit will be limited to nine hours, or 25% of total units required for the degree, for M.S. students from U.S. universities or a foreign institute (subject to the Graduate School's approval). All transfer courses must have the UT Arlington equivalent course listed. Doctoral students should talk to their advisor on this issue.

Grades

To graduate with any post-baccalaureate degree, a student must have a minimum grade-point average of 3.0 with no more than one C in the list of Physics courses given in the students' final program of work.

Research Advisor

Ph.D., Ph.D. bound, and MS students will be expected to choose a research advisor at the end of their first year, preferably before the beginning of the summer semester. Generally speaking students should expect to transition from TA funding to RA funding in their second year. Students must seek permission from their proposed research advisor before signing up for a research course. Both TA and RA funding will be contingent upon the recommendation of the student's research advisor on the Assistantship renewal form. After their first year, students will be expected to work with their research advisor in setting yearly research goals thru the DS-Pro system.



The Master's Program

Degree Plans and Hours Required:

Two degree plans (thesis and non-thesis) leading to the master's degree are available. A student may follow a non-thesis degree plan upon recommendation of the appropriate Committee on Graduate Studies and approval by the Program of Graduate Studies.

The **thesis degree plan** requires a minimum of 30 semester hours, of which at least 24 must be in coursework and six in a thesis course. The Thesis must be approved by the thesis advisor and by a supervising committee of three or more

members appointed by the Program of Graduate Studies. The thesis is subject to final approval by the Program of Graduate Studies. Students receiving advice and assistance from a faculty member in the preparation of a thesis must register for the appropriate course even it they are not on campus. Each semester, after consulting with their Graduate Advisor, students must register for the amount of thesis credit commensurate with the efforts to be expended by the student and the thesis advisor in the preparation of the thesis. Once the student is enrolled in the thesis course, continuous enrollment is required. The student must be enrolled in six hours of thesis during the semester the student finishes the semester in which the thesis is successfully defended and the final Master's Examination is unconditionally passes. The degree candidate must defend the thesis in a final oral examination open to all members of the faculty.

The **non-thesis degree plan** requires a minimum of 36 semester hours of course work, of which at least 27 must be in physics.

Master of Science Degree in Physics: Thesis Option

(a) A minimum of 30 hours is required for this degree.
(b) 24 hours will be in physics. The 24 hours in physics include all Group I courses, a choice of two courses from Groups 2 and 3, and Thesis 5698. (The remaining six hours may be selected form physics, mathematics, chemistry, geology, biology, or engineering as approved by the Graduate Advisor).
(c) There are no entry exams, but there is an oral thesis defense.
(d) Students in the M.S. (thesis option) must complete a thesis, and must enroll in Thesis (5698) in their final semester.

Master of Science Degree in Physics: Non-Thesis Option

(a) A minimum of 36 hours is required for this degree.
(b) 27 hours will be in physics. The 27 hours in physics include all Group I courses, and a choice of five courses from Group 2 and Group 3. (The remaining 9 hours may be selected from physics, mathematics, chemistry, geology, biology, or engineering as approved by the Graduate Advisor).
(c) In addition to course requirements, all candidates for the M.S. program (non-thesis option) will be required to pass an exam similar to the Doctoral Qualifying Exam.

Residence

Master's degree candidates are expected to spend the equivalent of two semesters of full-time study in residence at UT Arlington.

Supervising Committees

The program of Graduate Studies will appoint for each master's student a supervising committee upon recommendation by the Graduate Advisor and the appropriate Committee on Graduate Studies. The committee will normally consist of at least three members of the graduate faculty and will be responsible for the design of the student's program. One qualified external person who is not a member of the graduate faculty may serve as a voting member of a supervising committee following a request accompanied by documentation, such as a vita, from the appropriate Committee on Graduate Studies to the program of Graduate Studies and approval by the program of Graduate Studies via a nomination form available from the Graduate School. Any external, non-voting members must be in addition to the three voting members and must be approved by the program of Graduate Studies. The supervising committee conducts the final thesis examination for thesis degree plan candidates and determines scope, content and form of the final master's comprehensive examination for thesis substitute and non-thesis degree plan candidates.

Tentative Program of Work

A Tentative Program of Work listing all accomplished courses, courses in progress and courses required by the student's committee or department may be filed with the Graduate Advisor. This is typically done before a student completes 12 hours of graduate study. If students desire approval to apply up to nine semester hours of transfer credit to their degree program, the Tentative Program of Work may be used to make the request and establish that those courses will satisfy degree requirements at UT Arlington. In all degree plans, the entire degree program must be approved by the appropriate Committee on Graduate Studies and the Program of Graduate Studies.

Final Master's Examination

A final program examination is required for all master's degree candidates. The final master's examination can result in: 1) an unconditional pass with a recommendation to the program of Graduate Studies that the candidate be certified to receive the earned degree; 2) a conditional pass with the requirement that additional conditions be met, which may include further work on the thesis or thesis substitute, additional coursework with a minimum specified grade-point average, or both (in all cases, the final master's examination must be repeated within a specified period); 3) failure, with permission to be re-examined after a specified period; or 4) failure, with recommendation to the program of Graduate Studies that the candidate be dismissed from the program.

For **thesis degree plan** candidates, the examination will be an oral defense of the thesis. The examination will be conducted by all members of the student's supervising committee but will be open to all members of the faculty. The thesis examining committee must have copies of the thesis at least two weeks prior to the thesis defense.

For **non-thesis degree plan** candidates, the final examination will be a comprehensive examination that is written and/or oral. The scope, content and form of the examination(s) shall be determined and administered by all members of the student's supervising committee.

The Final Master's Examination Report must be filed in the Graduate School no later than three weeks before the date on which the candidate expects the degree to be conferred. Thesis degree plan candidates must each submit one electronic or three unbound paper copies of the unconditionally passed thesis that has been approved for final submission by the Graduate School following all procedures for electronic or paper submission. Details of the submission process and all forms are available through the Virtual Graduate School Advisor.

Master's Thesis

All master's students must be aware of requirements, components and deadlines associated with the thesis, final defense and submission of the thesis to the Graduate School. Thesis format review and approval by the Graduate School are mandatory.

Enrollment Requirement

A thesis degree plan students must be enrolled in the appropriate thesis course (PHYS 5698) in the semester in which the thesis is defended.

Final Submission

Once the student has unconditionally passed the thesis defense, the student may submit the final copy of the thesis. Upload the final copy here: https://uta-etd.tdl.org/. The library will check the front matter, making sure the title, author, abstract and copyright statement is included. When the manuscript is submitted the student will need to complete some paperwork, specifically a non-exclusive license that retains your copyright called an Intellectual Property Statement. The library will note your milestone in MyMav and Records will receive a confirmation that you have submitted your document.

Time Limit

Programs for the master's degree must be completed within six years (time in military service excluded) from initial registration in the Graduate School.

The Bachelor's to Ph.D. Bound Program

This program is designed to allow a student with a bachelor's degree to proceed as directly as possible toward satisfying all the course and research requirements necessary for the Ph.D. degree (a student may still obtain a MS degree in the process of obtaining a Ph.D.). By entering this program, students are indicating their intent to proceed onto their Ph.D. degree.
The Graduate Studies Committee will conduct an evaluation of the students in the program at the end of the first year to determine if a student should be allowed to continue in the B.S.-Ph.D. bound program and to continue to receive a STEM Fellowship. A minimum GPA of 3.0 is required. A student in the program will be expected to complete a minimum of 30 graduate level credit hours, including 12 hours of the group-one core courses listed in the Graduate Catalog, in the first two years.

Along the way to their Ph.D., a student in this program has the option to obtain a Non-Thesis Master degree without changing the program to MS-Non-Thesis after a successful pass of the Ph.D. qualifying examination. The student choosing this option must fulfill all the requirements for the degree of MS-Non-Thesis. Diagnostic Evaluation is described in the Doctoral Program below in details.

The Doctoral Program

Degree Requirements and Academic Performance Standards

The Doctor of Philosophy (Ph.D.) is the highest degree offered by The University of Texas at Arlington. The degree is awarded only for academic work of distinction through which the student demonstrates superior scholarship and capacity for original work. Requirements for the doctoral degree listed below are the minimum required by the Graduate School. Meeting all of these requirements does not result automatically in the awarding of the doctoral degree. All departments and programs have additional requirements for a high level of scholarly achievement that must be met by successful doctoral candidates. In all doctoral programs, the basic requirements are that a student 1) attain mastery of a field of knowledge as determined by the appropriate Committee on Graduate Studies and demonstrated in a general examination; and 2) present evidence of a capacity to complete a significant program of original research by preparation of a dissertation.
To be admitted to a doctoral program, an applicant must have completed a master's degree or at least 30 semester credit hours of graduate coursework.

Degree Requirements:

(a) The Physics Department requires a minimum of 39 hours of organized/ graded courses, three hours of internship and nine hours of dissertation.
(b) Of the 39 hours, at least 30 hours will be in physics. The 30 hours in physics include all Group 1 and Group 2 courses, and elective courses from Group 3. (The remaining nine hours may be selected from physics, mathematics, chemistry, geology, biology, or engineering as approved by the Graduate Advisor).
(c) Each student is required to pass the Qualifying Exam to enter the program, the Comprehensive Exam to continue in the program, and the Dissertation Defense.
(d) A student in the Ph.D. program must complete a dissertation. Students must be enrolled in a three-semester hour dissertation course (7399) in the semester.
(e) A Ph.D. student should perform an internship. A final report must also be submitted before a final grade of P is given. Students on an internship must be registered in 6304, 6604, or 6904. For an alternative to the internship, students should consult the Graduate Advisor so they can enroll in the proper course.

Diagnostic Evaluation

During the student's first year of doctoral or Ph. D. bound program work, the student must demonstrate potential to successfully complete a degree program. The method of assessing the student's potential will be determined by the Graduate Studies Committee and will consist of written and oral exam. All students entering the program will be required to take a Diagnostic/Qualifying Examination starting from their first year in the program..

An oral exam may be given to the students who fail to unconditionally pass the written exam on an individual subject in their second trial. The Graduate Studies Committee will decide the eligibility for the oral exam. Students failing any part of the examination at their first attempt will be required to pass that part the next time the examination is offered to continue in the program. To continue the doctoral program, students are required to pass all parts of the examination in two consecutive attempts, even if the first attempt started earlier than the required deadline.

The Diagnostic Evaluation Report must be filed in the Graduate School by the student's Graduate Advisor.

After the student successfully completes the Diagnostic Evaluation, the program of Graduate Studies will assign an examining committee, members of which are recommended by the Graduate Advisor and appropriate Committee on Graduate Studies. The committee will consist of at least five members, four of whom must be from the student's major area, including at least one from each minor field. One qualified external person who is not a member of the graduate faculty may serve as a voting member of a committee following a request accompanied by documentation, such as a vita, from the appropriate Committee on Graduate Studies to the Program of Graduate Studies via the nomination form available form the Graduate School for this purpose and approval by the Program of Graduate Studies. In interdisciplinary programs, at least two members must represent each field concerned, but in no case will the committee consist of fewer than five members. The committee is responsible for design and direction of the student's program. After the student has passed the comprehensive examination, the doctoral supervising committee may be altered or expanded to accommodate the dissertation research needs of the student, but the committee must continue to include at least five voting members. Any external, non-voting members in addition to the five voting members of the committee must be approved by the Program of Graduate Studies.

Comprehensive Examination

Students are eligible to take the Comprehensive Examination after giving evidence to their doctoral committees of adequate academic achievement by having completed all or most coursework requirements. The comprehensive examination usually marks the end of formal coursework and the beginning of concentrated work on dissertation research and preparation. The student must be enrolled in the Graduate School in the semester in which he/she takes the comprehensive examination

The physics graduate comprehensive exam is a two-hour oral examination that is held after completion of graduate classes and at least one year before the dissertation defense. It is recommended that most students take the exam during their third year. If a candidate fails the exam, they must retake the exam within one semester and can expect their defense to be delayed so that it will follow in no less that one year's time.

The exam is assessed by a doctoral committee of five faculty members including the PhD advisor. At least four of the committee must be UTA faculty, with one external member allowed but not required.

Students should prepare a 45-minute presentation, with a recommended balance of 1/3 scientific background and methodology, 1/3 research progress to date, and 1/3 plans for PhD project. The target audience is the doctoral committee, and the level of material should be chosen appropriately. The committee may interrupt with questions, and in practice the presentation can take much longer than the prepared time.

A period of audience Q&A follows, after which the audience will leave for a closed session with the candidate by the committee. After the committee has exhausted their questions, the student will exit while the committee deliberates. In most cases the student will be informed of the result and any committee recommendations shortly after the end of the exam.

The criteria used to determine whether a student has passed the exam are:

1. A suitable PhD dissertation project has been identified.
2. The goals of the research project are well defined.
3. The results of the work will be novel and contribute new knowledge to the research area.
4. The work is achievable on a suitable timescale and with available resources.
5. Preliminary studies are under way and early results show promise.
6. Work to date displays basic competence as a researcher, including (but not limited to) understanding the limitations of their methodology and identifying alternative methodologies should they be presented with an insurmountable obstacle.
7. Prior relevant work by others has been reviewed and presented.
8. An understanding of relevance of the work in the context of the field is conveyed.

In addition to a decision, the committee may also provide recommendations on aspects of professional and academic development including but not limited to: publications, collaborative work, career guidance, breadth of research skills, pursuit of professional opportunities, etc.

Students should think of the comprehensive exam not as a test of physics knowledge, but as a research proposal. The primary goal is to convince the committee that the chosen project is suitable for a PhD dissertation and that the student is equipped to pursue it to a satisfactory conclusion.

The comprehensive examination may result in: 1) unconditional pass and recommendation to proceed to the next phase of the program; 2) approval to remain in the program but a requirement to meet certain specified additional criteria; 3) failure, but with permission to retake the examination after a period specified by the examining committee; or 4) failure with recommendation not to continue in the program.

Application for Graduation

Upon receiving an unconditional pass on the Comprehensive Examination, the student becomes eligible for application for candidacy. The Application for Graduation must be filed in the Graduate School and approved by the Program of Graduate Studies by the deadline specified in the Graduate School Catalog. Check your GMAP to make sure that course requirements have been satisfied.

Time Limit

All requirements for the doctoral degree must be completed within four years after the student unconditionally passes the comprehensive examination.

Dissertation

A doctoral candidate/student must be enrolled in a three-semester hour dissertation course (7399 cannot be repeated) or a six-semester dissertation course (6699 can be repeated) in the semester in which the dissertation is defended. The dissertation represents the culmination of the student's academic efforts and so is expected to demonstrate original and independent research activity and be a significant contribution to knowledge.

Once the student is enrolled in the dissertation course, continuous enrollment is required. A student receiving advice and assistance from a faculty member in the preparation of a dissertation must register for the appropriate course even if the student is not on campus.

Registration in Doctoral Courses

1. Registration in an individual study, research or similar course implies an expected level of effort on the part of the student that is at least equivalent to that of an organized course of the same credit value.
2. Doctoral students shall not be required to register for more than nine credit hours during any long semester or summer, except that:
    a. Doctoral students who are enrolled in nine credit hours of organized courses and are also doing research related to their dissertation may be required to register for up to three hours of research for a total of 12 credit hours.
    b. Doctoral students supported as graduate research or teaching assistants may be required to register for 12 credit hours (no more than nine credit hours to be in organized courses), as determined by the students' graduate program.
3. Doctoral students who are required to register solely to satisfy a continuous enrollment requirement shall register for no more than three credit hours during each term.
4. Doctoral students may not register for more than 12 semester hours in a semester or summer session unless such registration is approved in advance by the Program of Graduate Studies.

Dissertation Manuscript Preparation

Students pursuing a Ph.D. must have the format of the dissertation manuscript approved by the U.T. Arlington Graduate School before the degree can be conferred. The Graduate School specifically checks the document for conformity to U.T. Arlington formatting requirements. Details regarding U.T. Arlington's dissertation formatting requirements are available online through the Virtual Graduate School Advisor. The Graduate School offers all doctoral students the opportunity to attend Thesis and Dissertation Seminars each semester. These seminars provide attendees with detailed explanations of the style guides and hands-on experience with the RAFT Template. In addition, all graduation procedures and requirements are covered in the seminars. Reservations are required and can be made online through the Virtual Graduate School Advisor.

Dissertation Manuscript Format Review

The format of all dissertations must be reviewed and approved by the Graduate School before the dissertation will be accepted as satisfying the dissertation requirement of the Doctoral degree. Students may submit dissertations to the Graduate School for checking as an electronic file using the electronic thesis and dissertation submission process or as hard-copy.

Final Copies and Submission

Once the Thesis and Dissertation specialist has approved the dissertation and the student has unconditionally passed the dissertation defense, the student may submit the final copy of the dissertation to the Graduate School for approval by the Program of Graduate Studies. Students submitting electronically need only submit one copy through the electronic thesis and dissertation process. All dissertations must be submitted by the deadline for final three submission and must be prepared according to regulations described in the current edition of *The UTA Thesis and Dissertation Guide: Requirements, Style, and RAFT Template* available online through the Virtual Graduate School Advisor and Turabian's *A Manual for Writers of Term Papers, Theses, and Dissertations* (6th ed.). All dissertation students must also submit the UMI microfilm agreement, Thesis and Dissertation Data Sheet, and the Intellectual Property Statement. These forms are available online through the Virtual Graduate School Advisor.

The final copy or copies of the dissertation are University property and a student may make no private agreements with employers, funding sources, or others that restrict or infringe upon University rights. Copyrights, where applicable, are held by the student author. Dissertation fees are explained in the Tuition and Fees section of the Graduate Catalog.

Dissertation Defense

An application for the dissertation defense must be filed in the Graduate School by the student no later than three weeks before the final date for submission of approved dissertations and dissertation defense reports and at least two weeks before the scheduled defense. The dissertation supervising committee must have copies of the dissertation at least two weeks prior to the dissertation defense.

The dissertation defense will be a public oral examination open to all members (faculty, students and invited guests) of the University community. Questioning of the candidate will be directed by the student's dissertation supervising committee. All members of the student's committee must be present at the defense. Although the defense is concerned primarily with the dissertation research and its interpretation, the examining committee may explore the student's knowledge of areas relevant to the core of the dissertation problem.

The dissertation defense may result in a decision that the candidate has 1) passed unconditionally; 2) passed conditionally with remedial work specified by the committee; 3) failed, with permission to be re-examined after a specified period; or 4) failed and dismissed from the program. The dissertation must be approved unanimously by the student's dissertation supervising committee and by the Program of Graduate Studies.

Regardless of the outcome of the defense, the Dissertation Defense Report must be submitted to the Program of Graduate Studies within five working days after the examination. When a scheduled defense is postponed or canceled, the Program of Graduate Studies must receive written notice of this postponement or cancellation and a new application for the dissertation defense must be filed in the Graduate School in accordance with the Graduate School requirements specified above.

The final approved electronic copy or the final three approved unbound paper copies of the approved dissertation must be submitted to the Program of Graduate Studies by the date specified in the Graduate School Calendar. When the final copy or copies are deposited with the Graduate School, the student will be billed for the required fees.

Graduate Courses

Group 1: Required for all graduate students

5307 Quantum Mechanics I
5309 Electromagnetic Theory I
5310 Statistical Mechanics
5311 Mathematical Methods in Physics I

Group 2: Required for all doctoral students

5308 Quantum Mechanics II
5312 Mathematical Methods in Physics II
5313 Electromagnetic Theory II

Group 3: Electives for students in all programs

5306 Classical Mechanics
5314 Advanced Optics
5315 Solid State I
5316 Solid State II
5317 Statistical Mechanics II
5319 Mathematical Methods in Physics III
5320 Quantum Mechanics III
5325 Introduction to Elementary Particle Physics I
5326 Introduction to Elementary Particle Physics II
5328 Surface Physics
5391 Special Topics
6301 Methods in Applied Physics I – Electronics
6302 Methods in Applied Physics II – Computers
6303 Methods in Applied Physics III - Spectroscopy

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