Doctor of Philosophy in Physics and Applied Physics

About This Program

The Doctor of Philosophy in Physics and Applied Physics combines the traditional elements of a science doctoral program with courses in specifically applied topics. It is designed to produce highly trained professionals with a broad perspective of the subject which may prepare them equally well for careers in academia or government or industry. Current research in the department is predominantly in the areas of condensed matter physics, medical biophysics, astrophysics, space physics, and high-energy and nuclear physics.

Competencies

1. PhD graduates will demonstrate a comprehensive and in-depth understanding of physics, particularly in the area of their dissertation research and related subfields.
2. PhD graduates will demonstrate advanced proficiency in experimental and/or theoretical methods. This includes, as relevant to their research, the use of specialized instrumentation, computational tools, advanced theoretical frameworks, and other techniques central to their area of study.
3. PhD graduates will be able to communicate complex physics concepts and original research findings clearly and effectively to both expert audiences in the field and the broader scientific community.
4. PhD graduates will be capable of independently formulating research questions, developing testable hypotheses, designing and conducting investigations, and critically evaluating results within the framework of scientific inquiry.

Admissions Criteria

UNCONDITIONAL ADMISSION

For unconditional admission to the Doctor of Philosophy program, an applicant must have a bachelor's degree in physics or a closely related field and satisfy the general admission requirements of the University, including a minimum graduate coursework GPA of 3.0 on a 4.0 scale, as calculated by Graduate Admissions and favorable letters of recommendation from individuals able to assess the applicant's potential for success in a PhD program. In addition, the applicant should have minimal GRE scores of 143 in Verbal and 151 in Quantitative.

Applicants not meeting the minimum requirements of the department or the University for either program may still be considered for unconditional acceptance if other information in their application indicates a reasonable probability of success in graduate studies in physics.

PROBATIONARY ADMISSION

If an applicant does not meet a majority of standards for unconditional admission outlined above, they may be considered for probationary admission after careful examination of their application materials. Probationary admission requires that the applicant receive a B or better in their first 12 hours of graduate coursework at UT Arlington.

DEFERRED AND PROVISIONAL ADMISSION

A deferred application decision may be granted when a file is incomplete or when a denied decision is not appropriate. An applicant unable to supply all required documentation prior to the admission deadline but who otherwise appears to meet admission requirements may be granted provisional admission.

DENIAL OF ADMISSION

A candidate may be denied admission if he or she have less than satisfactory performance on the admission criteria described above.

SCHOLARSHIPS AND FELLOWSHIPS

Students who are admitted will be eligible for available scholarship and/or fellowship support. Award of scholarships or fellowships will be based on consideration of the same criteria utilized in admission decisions. To be eligible, candidates must be new students coming to UT Arlington in the Fall semester, must have a GPA of 3.0 in their last 60 undergraduate credit hours plus any graduate credit hours as calculated by the Graduate School, and must be enrolled in a minimum of 6 hours of coursework in both long semesters to retain their fellowships.

Curriculum

Foundations

Select 39 hours from the following under the guidance of the supervising committee:		39
Traditional Core		
PHYS 5306	CLASSICAL MECHANICS	
PHYS 5307	QUANTUM MECHANICS I	

PHYS 5308	QUANTUM MECHANICS II	
PHYS 5309	ELECTROMAGNETIC THEORY I	
PHYS 5313	ELECTROMAGNETIC THEORY II	
PHYS 5310	STATISTICAL MECHANICS	
PHYS 5311	MATHEMATICAL METHODS IN PHYSICS I	
PHYS 5312	MATHEMATICAL METHODS IN PHYSICS II	
PHYS 5315	SOLID STATE I	
PHYS 5316	SOLID STATE II	
Applied Physics Core		
PHYS 5314	ADVANCED OPTICS	
PHYS 5319	MATHEMATICAL METHODS IN PHYSICS III	
PHYS 6301	METHODS OF APPLIED PHYSICS I--ELECTRONICS	
PHYS 6302	METHODS OF APPLIED PHYSICS II--COMPUTERS IN PHYSICS	
PHYS 6303	METHODS OF APPLIED PHYSICS III--SPECTROSCOPY	
Computer Science as required by the supervising committee.		
Additional courses approved by Graduate Studies Commitee.		
Dissertation		**9**
Complete at least 9 hours in the following. Students will enroll in dissertation hours after completing their comprhensive exams until the disseration is ready to defend.		
PHYS 6399	DISSERTATION	
PHYS 6699	DISSERTATION	
PHYS 6999	DISSERTATION	
Total Hours		**48**

Requirements may be waived for students entering with a master's degree and demonstrating competence in specific areas.

Advising Resources

Graduate student advising questions should be directed to the graduate student advisors using the information found here.

Location:

Chemistry & Physics Building (CPB) Room 339 / 337

Email:

zhang@uta.edu

Phone:

817-272-2020

Web:

Graduate Advising Information (https://www.uta.edu/academics/schools-colleges/science/departments/physics/advising/)