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### DOCTOR OF PHILOSOPHY (PHD) DEGREE IN THE FIELD OF PHYSICS

### **Program Learning Outcomes for the PhD Degree in the field of Physics**

Upon completing the PhD degree in the field of Physics, students will be able to:

- 1. Demonstrate advanced knowledge in foundational areas of physics and astronomy, and a mastery of their selected subfield.
- 2. Have the skills necessary to conduct independent research in physics and astronomy and become leaders in their chosen careers.
- 3. Have the ability to identify, formulate, and solve challenging scientific and technical problems as encountered in physics and astronomy.
- Be proficient in reading the scientific literature and in oral and written communication of scientific results.
- Make an original and significant contribution to knowledge in their discipline.

## **Requirements for the PhD Degree in the field of Physics**

For general university requirements, please see <u>Doctoral Degrees</u> (https://ga.rice.edu/graduate-students/academic-policies-procedures/ regulations-procedures-doctoral-degrees/). For additional requirements, regulations, and procedures for all graduate programs, please see <u>All</u> <u>Graduate Students (https://ga.rice.edu/graduate-students/academicpolicies-procedures/regulations-procedures-all-degrees/)</u>. To be eligible for the PhD degree, graduate students must demonstrate to the department their knowledge in the discipline and the ability to engage in advanced research.

The formal requirements for the PhD degree are:

- The student must complete all coursework specified for their matriculating class and any additional courses required by the thesis adviser.
- The transcript must show at least 90 semester hours of credit, including research and teaching, beyond the Bachelor's Degree. A total of at least four full semesters, not including summer terms, must be spent in full-time study at Rice.
- The student must successfully complete a research project involving independent and original work. The work must be reported in an approved thesis, and defended in a public oral examination.

Complete information about research opportunities, courses and other requirements can be found under the Department's website, on the *Graduate Program* link at <u>https://physics.rice.edu/</u>.

The requirements listed in the General Announcements (GA) satisfy the minimum requirements for this degree program. In certain instances, courses (or requirements) not officially listed here may be substituted upon approval of the program's academic advisor, or where applicable, the department or program's Director of Graduate Studies. Course substitutions or any exceptions to the stated official curricular requirements must be approved by the <u>Office of Graduate and</u> <u>Postdoctoral Studies (https://graduate.rice.edu/)</u>. Students and their academic advisors should identify and clearly document the courses to be taken.

### Summary

Code	Title	Credit
		Hours
		00

Total Credit Hours Required for the PhD Degree in the field of90Physics

### Coursework

All degree programs in Physics and Astronomy require students to complete certain courses with satisfactory grades.

- Completion of PHYS 710, Graduate Seminar in Physics and Astronomy, during the first Fall semester in residence.
- At least eight full (3-credit hour) graduate courses, other than teaching or research, in the Physics and Astronomy Department.

#### Research

The PhD in physics is awarded for original research in physics. The candidate must write a doctoral thesis and publicly defend it in the final oral examination, which is conducted by the PhD Examination Committee

### Teaching

The department considers teaching experience an essential part of graduate training. Thus, full-time graduate students should expect to assume some teaching duties (e.g., teaching labs, grading papers, grading exams, etc.) in addition to research. The department accounts for the labor effort in units of nominal 5 hour/week semester blocks. Assignments typically begin in the second semester at Rice, with one such unit that semester. A student is expected to complete a total of four of such units.

### Advancement to Candidacy for the PhD

By the end of the fifth week of the student's fifth semester, the student must complete (1) a Research Progress and Proposal (RPP) report and an oral research presentation of that report; and (2) an oral candidacy exam to the satisfaction of a faculty examining committee. If needed, a second attempt at the candidacy exam must be completed by the end of the student's fifth semester. The examining committee will certify the student as an acceptable candidate for the PhD in the research area covered by the RPP.

### Policies for the PhD Degree in the field of Physics

### Department of Physics and Astronomy Graduate Program Handbook

The General Announcements (GA) is the official Rice curriculum. As an additional resource for students, the department of Physics and Astronomy publishes a graduate program handbook, which can be found here: <u>https://gradhandbooks.rice.edu/2023\_24/</u> <u>Physics\_Astronomy\_Graduate\_Handbook.pdf</u>

### **Transfer Credit**

For Rice University's policy regarding transfer credit, see <u>Transfer Credit</u> (https://ga.rice.edu/graduate-students/academic-policies-procedures/ regulations-procedures-all-degrees/#transfer). Some departments and programs have additional restrictions on transfer credit. Students are encouraged to meet with their academic program's advisor when considering transfer credit possibilities.

### **Departmental Transfer Credit Guidelines**

Students pursuing the PhD degree in the field of Physics should be aware of the following departmental transfer credit guidelines:

• Requests for transfer credit will be considered by the program director on an individual case-by-case basis.

### **Additional Information**

For additional information, please see the Physics and Astronomy website: <u>https://physics.rice.edu/</u>

# **Opportunities for the PhD Degree in the field of Physics**

### **Additional Information**

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