

# APPLIED PHYSICS (APPL)

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## APPL 490 - RQI - REU SUMMER RESEARCH PROGRAM

**Short Title:** UNDERGRAD SUMMER RESEARCH-REU

**Department:** Applied Physics

**Grade Mode:** Standard Letter

**Course Type:** Research

**Credit Hours:** 1-6

**Restrictions:** Enrollment is limited to Undergraduate, Undergraduate Professional or Visiting Undergraduate level students.

**Course Level:** Undergraduate Upper-Level

**Description:** Research experience under supervision of graduate students and faculty. Summer semester only. Department Permission Required.

## APPL 500 - INTRODUCTION TO APPLIED PHYSICS

**Short Title:** INTRO APPL PHYS

**Department:** Applied Physics

**Grade Mode:** Standard Letter

**Course Type:** Lecture/Laboratory

**Credit Hours:** 3

**Restrictions:** Enrollment is limited to Graduate level students. Enrollment limited to students in the Applied Physics department.

**Course Level:** Graduate

**Description:** This is a required course for first-year students in the Applied Physics Graduate Program (APP), introducing them to the multidisciplinary research field of applied physics and facilitating their laboratory affiliation process. Through a series of tutorial lectures, students will acquire familiarity with cutting-edge research topics in various subfields of applied physics, including quantum information engineering, low-dimensional materials, ultracold atoms, nanophotonics, plasmonics and metamaterials, and neuroengineering. Furthermore, students will gain hands-on research experience in trial projects provided by different laboratories in APP through mini-rotations (3 weeks per laboratory). The primary goal of this course is to assist first-year APP students to find Ph.D. advisors by the end of the fall semester so they can start Ph.D. research in the spring semester. Additionally, this course aims to provide first-year APP students with an opportunity to develop a genuine camaraderie within the cohort by spending time together. Furthermore, each first-year student will be mentored by a senior APP student throughout the semester to get fully integrated into the program and the Rice community. Recommended Prerequisite(s): Understanding of undergraduate-level classical and quantum mechanics, electromagnetism, statistical mechanics, and solid-state physics

## APPL 677 - SPECIAL TOPICS

**Short Title:** SPECIAL TOPICS

**Department:** Applied Physics

**Grade Mode:** Standard Letter

**Course Type:** Independent Study, Internship/Practicum, Laboratory, Lecture, Seminar, Lecture/Laboratory

**Credit Hours:** 1-4

**Restrictions:** Enrollment is limited to Graduate or Visiting Graduate level students.

**Course Level:** Graduate

**Description:** Topics and credit hours may vary each semester. Contact department for current semester's topic(s). Repeatable for Credit.

## APPL 750 - INTERNATIONAL RESEARCH INTERNSHIP

**Short Title:** INTERNATIONAL RESEARCH INTERN

**Department:** Applied Physics

**Grade Mode:** Standard Letter

**Course Type:** Internship/Practicum

**Credit Hours:** 3

**Restrictions:** Enrollment is limited to Graduate level students.

**Course Level:** Graduate

**Description:** Research internship in a foreign laboratory at institutes and universities in Mainz, Germany and Toulouse, France. Department Permission Required.

## APPL 800 - RESEARCH AND THESIS

**Short Title:** RESEARCH AND THESIS

**Department:** Applied Physics

**Grade Mode:** Standard Letter

**Course Type:** Research

**Credit Hours:** 1-15

**Restrictions:** Enrollment is limited to Graduate level students.

**Course Level:** Graduate

**Description:** Thesis research under the supervision of faculty. Repeatable for Credit.