East Carolina University is committed to the equality of educational opportunity and does not discriminate against applicants, students, or employees based on race, color, national origin, religion, gender, age, creed, sexual orientation, or disability. An equal opportunity/affirmative action university, which accommodates the needs of individuals with disabilities.
Master of Science in Physics (MS)

About the Program/Concentrations

The master of science in physics offers specialized concentrations in applied physics, health physics, and medical physics.

The applied physics concentration is a 34-semester-hour, thesis-required program, which is built around a core curriculum designed to give the student a thorough foundation in the major fields of physics.

The health physics concentration is a 39-semester-hour program that requires a 10- to 16-week internship. It is designed to fill an urgent need for trained health physics professionals brought about by resurgence in the development of nuclear power, and an expansion of programs in national security. (Thesis is optional.)

The medical physics concentration is a 39-semester-hour program, accredited by the Commission on Accreditation of Medical Physics Education Programs (CAMPEP). It is designed as a terminal degree program that enables its graduates to move into a career in diagnostic or therapeutic medical physics. (Thesis is optional.)

Assistantship Funding

Approximately $11,000 in teaching assistantship support may be available to qualifying students within the MS program in physics. Research assistantships in the same amount also may be available from research grants. Priority is given to doctoral students and master's students in the applied physics concentration. In addition, a limited number of Graduate Scholar Awards of $4,000 per year, awarded through the Graduate School, have been available in the past for the strongest applicants. There is limited tuition support for master's students who receive assistantships. This tuition support is for out-of-state students, and allows for them to pay tuition at the in-state rate.

Research

The Department of Physics prides itself on the interdisciplinary nature of the programs offered, and contains many highly motivated faculty. Students in the programs have the opportunity to learn from a diverse faculty, and they are encouraged to become involved with faculty research. Areas of research interests include radiation physics, both experimental and theoretical; laser physics, both experimental and theoretical; photonics and spectroscopy; medical physics; and biomedical research. Other topics of interest include bioacoustics, solar physics, general relativity, black holes, biological processes on molecular levels, and applying physics principles to problems in biology and medicine.

Doctoral Program in Biomedical Physics (PhD)

About the Program

The doctoral program in biomedical physics is 48-semester-hours for students entering with a master's degree, and 76-semester-hours for students entering with a bachelor's degree. A written dissertation, presentation, and defense are required for all doctoral candidates. The primary objective of the doctoral program is to graduate scientists who can apply the tools and concepts of physics to solve significant biological and medical problems, and advance our understanding of fundamental biomedical processes.

Assistantship Funding

Approximately $19,000 to $21,000 in teaching assistantship support may be available to qualifying students within the doctoral program in biomedical physics. Research assistantships in the same amount also may be available from research grants. PhD students receiving assistantships will, in most cases, receive full tuition support and health insurance. This applies to both in-state and out-of-state PhD students.

Career Paths

Graduates of the doctoral program in biomedical physics secure careers performing biomedical research in a medical or clinical environment; teaching in high schools, community colleges, and universities; or as researchers within industry and laboratories.