

MASTER OF SCIENCE IN MEDICAL HEALTH PHYSICS

The Master of Science in Medical Health Physics degree program trains students to: (1) administer radiation protection programs; (2) monitor ionizing radiation exposure of workers, providers, patients, and visitors to the facility; (3) establish radiation safety procedures; and (4) evaluate the compliance of a medical facility with state and federal radiation safety regulations. Students also are trained to anticipate, recognize, evaluate and control the potential hazards of non-ionizing radiation including microwaves and laser-emitting equipment. In addition, students are prepared to teach courses in radiation physics and biology and to review research projects involving radiation work of various scientific disciplines.

The curriculum provides an opportunity for students to acquire a core of fundamental knowledge through a synergistic program of formal courses, seminars, teaching opportunities, and hands-on research experience. Each student is encouraged to design, with the assistance of a research advisor, an individual course of study consistent with their professional career goals.

Admissions Requirements

Graduate Record Exam (GRE) general test and a minimum GPA of 3.0/4.0 are required. Three letters of recommendation are required. During the application process, essays stating (1) the reasons for your interest in Medical Health Physics, (2) a description of professional goals and (3) an outline of your undergraduate, industrial or summer research, as well as teaching experience and clinical experience are required.

Students accepted into the CAMPEP-accredited (www.campep.org (<http://www.campep.org/>)), M.S. in Medical Health Physics degree program shall have acquired a strong foundation in basic Physics. This should be documented by either an undergraduate degree in physics or a degree in a related engineering or physical science with coursework that is equivalent to a minor in Physics (includes at least three upper-level undergraduate physics courses). Applicants also must have undergraduate credit for the following courses: 1) Chemistry: One semester of general chemistry; 2) Mathematics: through calculus and ordinary differential equations; 3) Computer Science or Programming: One semester. The program requires a bachelor's degree in natural science or engineering. The admission process includes review of academic history as well as experience and goals of the applicant. Virtual and on-campus interviews are conducted for qualified applicants selected by the Admissions Committee. International applicants must meet all international applicant requirements (<https://www.uthscsa.edu/academics/biomedical-sciences/admissions/international-applicants/>).

Applicants from countries where English is not the native language must submit test scores from either the Test of English as a Foreign Language (TOEFL: minimum score of 84 on the internet version), a band score of 7.0 on the academic version of the International English Language Testing System (IELTS), or a minimum score of 115 on the Duolingo English Test. Scores on TOEFL, IELTS, or Duolingo tests taken more than two years prior to the date of matriculation will not be accepted.

International applicants who have completed or will complete their degree prior to matriculation at an accredited US Institution may be exempted from the TOEFL, IELTS, or Duolingo requirement.

All transcript from foreign institutions must be evaluated by an accredited credentialing service (<https://www.naces.org/>) Evaluations must include 1.) A listing of all courses in English; and 2.) A final grade point average (4.0 scale) for all courses taken (not just science courses).

Degree Requirements

A minimum of 48 credit hours and a minimum overall GPA of 3.0 is required for the M.S. degree. In addition, all master's candidates must register for Thesis for at least one semester in order to graduate. The student must successfully defend a thesis and be recommended by their program COGS for approval of their degree to the Dean of the Graduate School of Biomedical Sciences.

Plan of Study

First Year

| Fall | | Credit Hours |
|----------------------------|-------------------------------------|--------------|
| RADI 5001 | Basic Radiation Safety | 1 |
| RADI 5005 | Fundamentals Of Radiation Dosimetry | 3 |
| RADI 5015 | Physics Of Diagnostic Imaging 1 | 3 |
| RADI 6030 | Physics Of Radiotherapy | 3 |
| RADI 7077 | Ethics, Leadership and Vision | 2 |
| Total Credit Hours: | | 12.0 |

First Year

| Spring | | Credit Hours |
|----------------------------|---|--------------|
| RADI 5007 | Statistics in the Radiological Sciences | 2 |
| RADI 5020 | Principles of Health Physics 1 | 3 |
| RADI 5090 | Radiological Sciences Seminar | 1 |
| RADI 6012 | Phys Nuclear Medi Imaging | 3 |
| RADI 6024 | Radiological Anatomy & Physiology | 3 |
| Total Credit Hours: | | 12.0 |

Second Year

| Fall | | Credit Hours |
|----------------------------|-----------------------------------|--------------|
| RADI 5025 | Molecular Oncology & Radiobiology | 3 |
| RADI 6021 | Prin/Health Physics 2 | 3 |
| RADI 6097 | Research | 3 |
| RADI 5090 | Radiological Sciences Seminar | 1 |
| RADI 6049 | Intro To Magnetic Resonance | 2 |
| Total Credit Hours: | | 12.0 |

Second Year

| Spring | | Credit Hours |
|----------------------------|-------------------------------------|--------------|
| RADI 5018 | Physics Measurements In Imaging Lab | 2 |
| RADI 6098 | Thesis | 6 |
| RADI 6016 | Physics of Diagnostic Imaging 2 | 3 |
| RADI 6071 | Supervised Teaching | 1 |
| Total Credit Hours: | | 12.0 |

Objectives/Program Outcomes

1. Proficiency in Core Biomedical and Medical Health Physics Principles
2. Capacity to Conduct Biomedical Research
3. Critically Review and Interpret Research Literature
4. Demonstrate Competence in Written Communication
5. Demonstrate Competence in Verbal Communication
6. Conduct Research in an Ethical Manner