MEDICAL PHYSICS (SPECIALIZED MS)

The Specialized Master of Science degree in Medical Physics prepares students for a clinically-oriented career as a medical physicist in a healthcare environment, a clinical support research laboratory or a clinical support industry. A graduate of the program would also be prepared for entry into a PhD program in medical physics or into a clinical medical physics residency program. The program curriculum educates the student in the areas of radiation oncology physics, diagnostic imaging physics, and medical health physics related to both ionizing and non-ionizing radiation. The area of radiation oncology physics emphasizes radiotherapy; the area of diagnostic imaging physics includes both diagnostic radiology and nuclear medicine; and the area of medical health physics includes protection from ionizing and non-ionizing radiation. The program requirements entail coursework and thesis research that total 43semester credit hours for completion.

The MS Program in Medical Physics is accredited by the Commission on Accreditation of Medical Physics Education Programs, Inc., located at:

1631 Prince Street
Arlington, VA 22314
Telephone: (571) 298-1239; Fax: (571) 298-1301
Commission on Accreditation of Medical Physics Education Programs, Inc. Website (https://www.campep.org/)

Coursework

The students in this program must complete 42 hours of required courses:

Code	Title	Hours
GS02 1052	Imaging Science	2
GS02 1072	Statistics for Medical Physicists	2
GS02 1103	Introduction to Medical Physics II: Medical Imaging	3
GS02 1093	Introduction to Medical Physics I:Basic Interactions	3
GS02 1113	Introduction to Medical Physics III: Therapy	3
GS02 1193	Introduction to Medical Physics IV: The Physics of Nuclear Medicine	3
GS02 1213	Therapy Medical Physics II	3
GS02 1223	Diagnostic Medical Physics II	3
GS02 1202	Electronics for Medical Physics	2
GS02 1053	Radiation Detection, Instrumentation, and Data Analysis	3
GS02 1063	Fundamental Anatomy, Physiology, and Biology for Medical Physics I	3
GS02 1073	Fundamental Anatomy, Physiology, and Biology for Medical Physics II	3
GS02 1133	Introduction to Radiation Protection	3
GS02 1731	Medical Physics Seminar	1
GS21 1051	Ethical Dimensions of the Biomedical Sciences	1
GS00 1910	Thesis for Master of Science	1-9

The students in this program must complete a minimum of one credit hour of electives. The available electives include:

GS02 1021	Supervised Clinical Experience in Radiation Therapy Physics	1
	Various Medical Physics Special Project Courses	
	Other electives from the GSBS, Rice University, or the University of Houston	

MS Thesis

A thesis of a quality sufficient for the work to be publishable in a refereed journal is required. The student is admitted to candidacy upon approval by the Program and the GSBS Academic Standards Committee of the planned program of coursework, the abstract of the proposed research, and a list of proposed members of the Advisory Committee. The student must be admitted to candidacy before receiving credit for the first semester of *Thesis*. The student must register for *Thesis* credit for at least one semester. The MS thesis is considered complete when the final thesis has been approved by all members of the student's Advisory Committee and after the student has presented a public seminar and passed an oral examination on the thesis by the members of the Advisory Committee and other interested faculty. The student is expected to submit at least one manuscript based on the thesis work to an appropriate peer-reviewed scholarly journal.

Prerequisites

A bachelor's degree in physics or in another basic science or in engineering with the equivalent of a minor in physics is required. The physics background may be demonstrated by completion of upper-level courses in atomic and nuclear physics, electromagnetism, quantum mechanics, classical mechanics, and thermodynamics. Additional requirements are calculus and differential equations. A year of chemistry and a semester of biology are highly desirable. Applicants are expected to have a grade point average of at least 3.0 on a scale of 4.0 on all undergraduate and graduate level work taken previously, particularly in the prerequisite areas.

The GRE is not required. Foreign nationals whose native language is not English and who have not attended an English-speaking university must take the Test of English as a Foreign Language (TOEFL).

Further information may be obtained by writing to:

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Department of Radiation Physics
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