MEDICAL PHYSICS, MS

The program is designed for full-time students who wish to pursue a career as a medical physicist either as a researcher, as a certified clinical profession, or in industry. The program will require successful completion of a minimum of 38 credits for Master's degree and completion of a research thesis (in conjunction with one or more of the faculty). Full-time master's students will complete the program in two years.

Admission Requirements

- B.S. degree or B.A. degree in physics, applied physics, or one of the physical sciences, including physics training at least equivalent to a minor
- Official transcript of school record, personal statement, three letters of recommendation, and curriculum vitae
- Demonstrated proficiency in written and spoken English (TOEFL/IELTS required for non-native English speakers)
- General GRE exam scores are required (physics GRE is recommended)

Resources

For more information on graduate education at the Johns Hopkins University School of Medicine, see: Johns Hopkins University School of Medicine Graduate Programs (https://www.hopkinsmedicine.org/som/education-programs/graduate-programs/)

Contact Information

Inquiries may be directed to MedPhysMS@jhmi.edu.

Program Requirements

This program consists of 38 credits (cr). There is also a research ethics and responsible conduct of research requirement.

Courses

Core Medical Physics Courses (20 Cr)

All Medical Physics students are required to take the following courses:

Course	Title	Credits
First Year		
Fall		
ME.420.702	Radiological Physics and Dosimetry	3
ME.420.705	Medical Physics Seminar [1]	0.5
ME.420.710	Medical Imaging Systems	3
PH.183.631	Fundamentals of Human Physiology	4
Professionalism and Ethics [2]		
Responsible Conduct of Research [3]		
	Credits	**10.5**
Spring		
ME.420.703	Radiation Therapy Physics	3
ME.420.704	Radiation Protection and MR Safety	3
ME.420.705	Medical Physics Seminar	0.5
Responsible Conduct of Research [3]		
	Credits	**6.5**
Second Year		
Fall		
ME.420.706	Radiation Biology	3
	Credits	**3**
	Total Credits	**20**

1 *Must be taken first three semesters, but only 1 credit can be counted toward degree requirement*

2 *Presented during first two medical physics seminars of the fall semester.*

3 (*CITI online tutorial*) (*Office of Research Integrity Colloquium*) (JH requirements for graduation; no credit)

OTHER REQUIRED COURSES (6 CR)

All MP students are required to take the following additional courses.

Code	Title	Credits
ME.420.707	Nuclear Medicine Imaging	3
ME.420.709	Radiopharmaceutical Therapy	3

RESEARCH PROJECT (6 CR)

Students are required to take at least 6 credits of independent research project or master's thesis research.

Code	Title	Credits
ME.420.708	Master's Research in Medical Physics (Summer)	6

SUGGESTED ELECTIVE COURSES (6 CR)

Students shall take 6 (or more) additional credit hours from the following list of courses or other courses as approved by the Program Director.

Code	Title	Credits
PH BIOSTATISTICS (EB CAMPUS)		
PH.140.615	Statistics for Laboratory Scientists I	4
BIOMEDICAL ENGINEERING (HOMEWOOD CAMPUS)		
EN.580.640	Systems Pharmacology and Personalized Medicine	4
EN.580.674	Introduction to Neuro-Image Processing	3
EN.580.679	Principles and Applications of Modern X-ray Imaging and Computed Tomography	3
EN.580.693	Imaging Instrumentation	4
ELECTRICAL AND COMPUTER ENGINEERING (HOMEWOOD CAMPUS)		
EN.520.623	Medical Image Analysis	3
EN.520.631	Ultrasound and Photoacoustic Beamforming	3
EN.520.659	Machine learning for medical applications	3