

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:

- ME.420.702 Radiological Physics and Dosimetry fall Yr 1
- ME.420.703 Radiation Therapy Physics spring Yr 1
- ME.420.704 spring Yr 1
- ME.420.705 Medical Physics Seminar *must be taken first three semesters, but only 1 credit can be counted toward degree requirement*
- ME.420.706 Radiation Biology fall Yr 2
- ME.420.710 Medical Imaging Systems fall Yr 1
- PH.183.631 Fundamentals of Human Physiology (4 cr) fall Yr 1 - Public Health crs
- Professionalism and Ethics (0 cr) fall Yr 1
- Responsible Conduct of Research (0 cr)* fall and spring Yr 1

*University requirement for graduation; no credit

OTHER REQUIRED COURSES (6 cr)

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

- ME.420.707 Nuclear Medicine Imaging fall Yr 2
- ME.420.709 Radiopharmaceutical Therapy spring Yr 2

Research Project (6 Cr)

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

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.

SOM Medical Physics (EB campus)

- ME.420.xxx Advanced Image Reconstruction (3 cr)
- ME.420.xxx Quantitative Imaging Analysis (3 cr)
- ME 420.xxx Molecular Imaging (3 cr)

PH Biostatistics (EB campus)

- PH.140.615 Statistics for Laboratory Scientists I (4 cr)

Biomedical Engineering (Homewood campus)

- EN.580.640 Systems Pharmacology and Personalized Medicine (4 cr)
- EN.580.674 Introduction to Neuro-Image Processing (3 cr)
- EN.580.679 Principles and Applications of Modern X-ray Imaging and Computed Tomography (3 cr)
- EN.580.693 Imaging Instrumentation (4 cr)

Electrical and Computer Engineering (Homewood campus)

- EN.520.623 Medical Image Analysis (3 cr)
- EN.520.631 Ultrasound and Photoacoustic Beamforming (3 cr)
- EN.520.659 Machine learning for medical applications (3 cr)