OPTICAL ENGINEERING

The Physics and Optical Engineering Department offers a terminal master's degree in Optical Engineering which prepares students for jobs in industry. A bachelor of science in science or engineering is required for admission to this program. The program of study includes five core courses in Optical Engineering, four elective courses, a thesis project, and an oral thesis defense. The thesis project will, as far as possible, address a "real-world" problem that would be of mutual interest to an industrial sponsor, the student, and the student's advisory committee chairperson. Normally, it takes a student five quarters to complete the requirements for the M.S. (Optical Engineering) degree.

The objective of the Master of Science in Optical Engineering program is to prepare graduates for early career advancement in the field of Physics or Optical Engineering by building upon their undergraduate training with advanced coursework and concentrated study of problems and topics relevant to the field.

List of completed master's topics for Optical Engineering thesis (https://www.rose-hulman.edu/academics/degrees-and-programs/graduate-programs/programs-of-study/program-brochures/PHOE-Thesis-Listing.pdf)

Requirements

Master of Science in Optical Engineering Requirements

- 36 credit hours of course-work (24 credit hours of required courses and 12 credit hours of elective courses)
- 12 credit hours of thesis-work
- Students are required to submit their plan of study for approval by their thesis advisor and their advisory committee.
- Students are required to successfully defend their M.S. thesis

Required Courses (Unless Already Taken [1])

Code	Title	Hours
OE 520	Principles of Optics [2]	2
OE 570	Special Topics	1-4
OE 580	Optical System Design	4
OE 592	Fourier Optics & Applications	4
OE 585	Electro Optics & Applications	4
OE 595	Optical Metrology	4
OE 594	Integrated Silicon Photonics	4

[1] Required credits must be replaced by 400- or 500-level OE/PH/EP courses.

[2] Unless have already taken PH 292 Physical Optics, OE 280 Geometrical Optics and OE 295 Photonic Devices and Systems

Elective Courses

Students are required to choose elective courses listed in the graduate studies web page

Learning Outcomes

Master of Science in Optical Engineering Student Learning Outcomes

- Students will demonstrate technical expertise in one or more specialized subjects of optical engineering.
- Students will demonstrate the ability to utilize advanced mathematical, computational, and/or experimental skills to solve complex problems in the area of optical engineering.
- Students will demonstrate the ability to effectively communicate technical ideas, design concepts, or research results.