

PH.D. IN PHYSICS

Department of Physics and Applied Physics
Kennedy College of Sciences



Learning with Purpose



Ph.D. in Physics

“My experience at UMass Lowell has helped me pursue my career as a researcher in physics. As an international student, I had lots of questions, but the department was very supportive. The course curriculum is excellent. I enjoyed the colloquium and seminars held by the department as part of the curriculum. They helped me enhance my knowledge and get connected with up-to-date research topics. I strongly recommend UMass Lowell’s graduate program in physics for those who aspire to a career in the field.”

—Sandeep Inampudi ‘14

Why Choose the Ph.D. Program in Physics at UMass Lowell?

Research lies at the heart of our Ph.D. in Physics program, with research expenditures totaling more than \$10 million annually. Students in our program receive comprehensive training that allows them to advance their careers toward rewarding jobs in academia and industry.

Application Requirements

For admission into the Ph.D. program, both the GRE and its correlating physics subject test are required. Candidates must pass a written and oral comprehensive examination and a doctoral research admission examination.

Who Should Apply?

We are looking for talented, highly motivated candidates with passion for research, for improving our understanding of the world around us and for advancing the leading edge of science.

Which Courses Will You Take?

This program includes a mix of required courses in fundamentals of physics and electives. A thesis is also required.

Required courses are:

- Mechanics
- Electromagnetism
- Quantum Mechanics
- Computational Science

Our research directions include:

- Experimental nuclear science
- Materials science
- Semiconductor technology
- THz science
- Optics and spectroscopy
- Space physics
- Astronomy and astrophysics
- Soft condensed matter
- Quantum information
- Cosmology



For More Information

Contact Prof. Viktor Podolskiy,
Graduate Coordinator
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How to Apply

Graduate Admissions
Cumnock Hall, Suite 110
One University Avenue
Lowell, MA 01854-3931
Graduate_Admissions@uml.edu
978-934-2390

uml.edu/Grad
uml.edu/Sciences/physics/Programs-of-
Study/Graduate-Program.aspx



Elective courses include:

- Astronomy and Astrophysics
- Physics of Quantum Information
- Theoretical Cosmology
- Nonlinear Optics
- Plasma Physics
- Space Science Mission Design
- Nuclear Physics
- Solid State Electronic and Optoelectronic Devices

What Financial Aid is Available?

Students admitted to the program are typically supported with teaching assistantships for two years, followed by research assistantships for the remainder of the program. Both TA and RA opportunities offer full tuition waivers and subsidized health care, with total compensation of up to \$25,000 for 12 months.

Exceptional Research Facilities and Equipment

Our program includes the radiation laboratory with a 1-MW research reactor, an intense Cobalt-60 gamma source and a 5.5-MV Van de Graaff accelerator. Our photonics laboratory hosts equipment for fabrication and characterization of photonic and electronic devices, including molecular beam epitaxy and lithographic systems. In addition, the advanced biophotonics laboratory operates confocal microscopy and MRI systems. Our submillimeter-wave technology laboratory is a leader in terahertz transmitter and receiver technologies, making it a pioneer in design and fabrication of broadband solid-state multiplier sources. The department also has several high-performance computing facilities, as well as access to the Massachusetts Green High-Performance Computing Center.

Job Market

The majority of our graduates find jobs in the high-tech industry, in research laboratories or in academic institutions across the country, including:

- Argonne National Lab
- Boston University
- City University of New York
- Duke University
- DuPont
- Harvard University
- Idaho National Lab
- Lockheed Martin Corp.
- Los Alamos National Lab
- Northeastern University
- Pacific Northwest National Lab
- Passport Systems, Inc.
- Radiation Monitoring Devices, Inc.
- Schlumberger
- U.S. Department of Energy
- U.S. Naval Research Lab
- Westinghouse Electric Corp.
- Yale University