



WESTERN
ILLINOIS
UNIVERSITY

MASTER OF SCIENCE IN PHYSICS

Higher Values in Higher Education

Academic Excellence • Educational Opportunity
Personal Growth • Social Responsibility

The Department of Physics at Western Illinois University offers a program of graduate study leading to the Master of Science degree in Physics. Our approach is designed to be flexible enough to allow students—even with different undergraduate backgrounds—the opportunity to prepare themselves for careers or further study in the field of physics. The program provides the advantage of a caring, small department atmosphere with very committed professors, together with the opportunity to participate in cutting-edge research projects that will prepare the graduate student for challenging PhD programs in top research universities or competitive jobs after graduation.



Macomb Campus

Admission Requirements

Candidates must meet the general admission requirements of the School of Graduate Studies and should have completed a bachelor's degree with a major in Physics. Students applying to the Physics graduate program who have not majored in Physics for their undergraduate degree may have to remedy some deficiencies in their undergraduate preparation depending on the recommendations of the Departmental Graduate Committee. Courses taken to make up deficiencies will not be counted toward the minimum hours required for the Master of Science in Physics degree. The Graduate Record Examination is not required.

Degree Requirements

The Master of Science degree in Physics requires 34 semester hours (SH) of graduate coursework and can be earned by one of three plans of study: (1) internship, (2) thesis, or (3) coursework. In each of these plans, students must complete at least the minimum required semester hours, including all of the core courses. For more information about the coursework in the different study plans, visit the department website at wiu.edu/physics.

Faculty Expertise

Our faculty members hold advanced degrees from prestigious universities and bring to our program a rich and varied experience in research and teaching. Our professors actively engage in research, seminar presentation, publication efforts, and educational outreach programs to the public. They share a strong commitment to our students and a promise to easy accessibility. They are dedicated to quality teaching and comprehensive training for all of our graduate students.

Ongoing Research Programs

Our active program includes experimental, theoretical, and computational physics. Experimental solid state physics research

involves the study of the effects of metal nano-particles on the fluorescence of rare earth ions in borate glasses, the size effects on the optical properties of semiconducting nano-particles confined in glass matrices, and the effects of carbon nanotube patterning and protein encapsulation using atomic and magnetic force microscopy. Other experimental research is in the area of atomic, molecular, and optical (AMO) physics, involving study and control of molecular dynamics in ultrafast, intense laser fields and high-resolution ultraviolet spectroscopy of bio-molecules and their hydrated clusters; and in the area of observational radio astronomy and star formation. The theoretical research involves the study of the fundamental light-matter interaction using tools of theoretical quantum optics, devising applications to metrology, quantum communication, and quantum information. The computational research involves design and characterization of Paul radio-frequency ion traps for AMO physics applications. Close collaborations with other nearby universities and national labs allow students to conduct internships, gain research experience, and even complete a thesis in areas not available within our department.

Assistantship Opportunities

Graduate assistantships provide a monthly stipend and a tuition waiver, as well as a small office within Currens Hall, and are awarded on an academically competitive basis. Work assignments for these awards involve both research and teaching experience. Experience is usually gained in working with and supervising undergraduate students in educational laboratory setup and by doing state-of-the-art research.

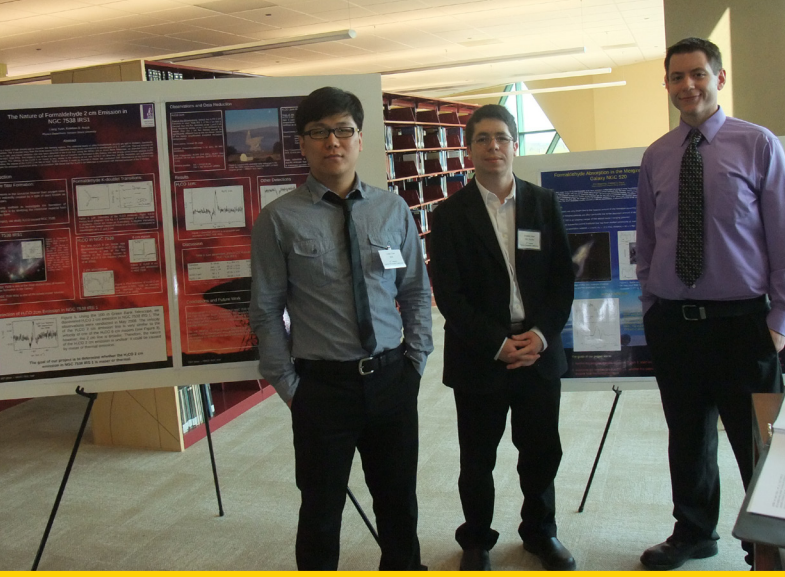
Western Illinois University is an Affirmative Action and Equal Opportunity employer with a strong commitment to diversity. In that spirit, we are particularly interested in receiving applications from a broad spectrum of people, including, but not limited to, minorities, women, and individuals with disabilities. WIU has a non-discrimination policy that includes sex, race, color, sexual orientation, gender identity and gender expression, religion, age, marital status, national origin, disability, and veteran status.

“The size of Western’s Physics graduate program and the friendliness and cooperative helpfulness of its faculty made for an excellent learning environment. . . . Friendliness and helpfulness among the students and faculty is a model I still hold up before my students even today.”

—Win Htwe,

Instructor of Physics/Junior College

WIU.EDU/PHYSICS



The Physics graduate program at Western was exactly what I needed to be able to quickly understand my potential buyers’ research or engineering programs and get them set up with the proper laboratory equipment in an efficient manner. I still use my notes from Physics courses to explain the terminology of some of our equipment to potential buyers. I couldn’t have done without the electronics and computer experience I gained at WIU. I wouldn’t even have been interviewed for this position. I owe my dream job to Western’s Physics graduate program.

— Anthony Zilic, Electronics/Electro-Optics
Application and Sales Engineer

Contact Information

For admissions process and general program information, contact the School of Graduate Studies, Western Illinois University, 1 University Circle, Macomb, IL 61455, (309) 298-1806, Grad-Office@wiu.edu, wiu.edu/grad.

For specific program questions, contact the Department of Physics, Western Illinois University, 1 University Circle, Macomb, IL 61455, (309) 298-1596, physics@wiu.edu, wiu.edu/physics.

Career Opportunities

Many Physics program graduates continue their education by pursuing doctoral programs. Other Physics graduates have secured positions such as the following:

- Instructor in physics and math at a community college
- Research engineer for high-tech manufacturing company
- Program officer in state government agency
- Vice-president of financial institution
- Instructor of AP physics at a high school
- Staff medical physicist within a university
- Lab associate in a university bio-physics laboratory
- Nuclear engineer within a university research department

Alumni Thoughts

The mathematical methods I learned in my Physics courses at Western and the experimental techniques in optics and solid state physics are something I use almost every day in my position here. Having worked in a closely interactive environment with the faculty there helps me even yet in my collaboration with other senior personnel at my institute. The computer skills I learned in the department’s computer and microcomputer applications courses helped me land this interview and a very rewarding salary.

— James J. Murray, Oceanography Programmer Analyst

