Why Physics with Teacher Licensure?
If you enjoy helping others learn and you find learning about how the physical world works fascinating, then teaching science just might be for you. Physics plays a basic role in science, engineering, and technology. It deals with the physical world all around us at the most fundamental level, seeking to understand the energy transformations of physical processes and the forces that bind the most basic constituents of matter into more complex systems. Given the technological nature of our world today, the job of the high school physics teacher has become increasingly critical.

Major Program of Study
Students combine a study of physics, chemistry, biology, and the earth and space sciences with a study of teaching foundations and various field and clinical experiences as they complete the major. Successful completion of this program leads toward a Bachelor of Science in Physics, as well as an Illinois teaching license for grades 9-12 science. The culminating experience for this program is a 16-week student teaching experience. Students considering a physics major should take four years of mathematics, four years of English, and at least one year of physics in high school as preparation for college. If available, a year of chemistry is also recommended. Enriched or advanced courses in physics and/or mathematics are also highly recommended.

Unique Aspects of WIU’s Program
Faculty from across the University have joined together to create a state-of-the-art teacher preparation program in science, which is nationally recognized by the National Science Teachers Association. Among the unique opportunities for WIU students seeking teacher licensure in science include:
• Being part of a cohort as they seek teacher licensure in one or more of the sciences;
• Taking part in a number of integrated science and research-based courses taught in a manner consistent with the national standards for teacher preparation and for K-12 student learning;
• Gaining a broad-based understanding of concepts across all the sciences that often leads to more than one area of specialty on their license;
• Engaging in a variety of professional development activities to learn as much about the teaching profession as possible prior to student teaching; and
• Opportunities to participate in projects through the Research Inspiring Student Excellence (RISE) Program.

Faculty
Students will work with faculty across the various science departments including the Departments of Physics; Chemistry; Biological Sciences; and Earth, Atmospheric, and Geographic Information Sciences, as well as faculty in the College of Education and Human Services, including the Department of Curriculum and Instruction and the Department Educational Studies. Faculty hold degrees from institutions around the United States and the world. The faculty working with our teacher education students are deeply committed to their teaching responsibilities and work diligently to model good instructional practices. Since the faculty are also active in research, they are able to provide students with opportunities to engage in a variety of types of projects, including research projects, to deepen their understanding of the nature of science and the most effective means of teaching scientific concepts.
Scholarships
The Department of Physics offers a number of scholarships for physics majors for which they apply on a competitive basis, including several designated for Teacher Licensure students. Detailed information on scholarships is available at wiu.edu/cas/physics/scholarship.php.

Physics at Western
The Department of Physics is committed to offering every undergraduate and graduate student the opportunity to fully realize his or her potential in an environment dedicated to excellence. The department has a history of teaching excellence and a tradition of involving its students in the excitement and challenges of physics research. The department offers four-year programs in standard physics and physics teacher licensure, a 3+2 dual degree in engineering physics and engineering, a minor in physics, and a pre-engineering program. The department also offers the Master of Science degree in Physics for physics teachers desiring to further their education in the discipline and thereby improve their teaching career opportunities.

Research Opportunities
The Department of Physics has research programs that span from very applied to very fundamental problems in experimental and theoretical physics. Current active areas of research in the department are in experimental condensed matter physics, experimental and theoretical atomic-molecular-optical physics, nanoscale materials, and astrophysics.

Physics faculty are very committed to providing exciting and unique research opportunities for both undergraduates and graduates and to work with them on a one-on-one basis as needed. Physics majors regularly present their results at University, regional, and national student research conferences. Students who carry out original research projects develop critical thinking skills and learn how to work independently as well as in teams. These are precisely the qualities that employers and graduate schools seek in their applicants, and our majors have been very successful in securing good teaching jobs after graduation or in continuing their education at prestigious graduate programs. Several have also won prestigious national fellowships in their junior or senior years.

Student Activities
Physics students in the teacher licensure program participate in a number of activities through their program, including high school physics class visits, judging science fairs, coordinating events for Science Olympiad, and attending the WIU Secondary Science Education Conference and the Chemistry and Physics Demonstration Show. They are also highly encouraged to participate in professional organizations such as the Illinois Science Teachers Association, the National Science Teachers Association, and the American Association of Physics Teachers. In addition, students can participate in several organizations, such as the Society of Physics Students and the Student Education Association. Also, a wide variety of student activities and organizations are available to all Western students. Learn more at wiu.edu/osa.

Career Opportunities
The most popular career option selected by students seeking this degree option is teaching at the high school level. In addition to careers in teaching at public and private schools, graduates are also sought as corporate trainers; education specialists in nontraditional settings, such as parks, museums, zoos (may require a zoo and aquaria certificate depending upon the site); tutors; and on-line teachers, as well as other positions needing an individual who possesses excellent people skills, ability to educate others, and a strong content background.

For Your General Outlook
Students seeking to certify for secondary teaching take the four-semester University physics calculus-based lecture and laboratory sequence (PHYS 211, 212, 213, and 214) during their first two years, which provides them with a combined theoretical and experimental introduction to all basic areas of physics. They also complete introductory courses in astronomy and earth science. During their third and fourth years, they take physics laboratory courses in electronics (PHYS 427) and optics (PHYS 428) and at least two additional upper-division physics courses of their choice. These students are also expected to take courses that prepare them in chemistry, mathematics, and biology.

For More Information
The department welcomes visitors at any time. Call the Department of Physics at (309) 298-1596 or e-mail the science educator advisor, Jennifer Sandrik-Rubio, at JL-Sandrik@wiu.edu, director of Secondary Science Education, L. M. Barden-Gabbei, at LM-Barden@wiu.edu, or the chair, Kishor Kapale, at KT-Kapale@wiu.edu. You can also learn more about the department by visiting wiu.edu/physics.