Physics

+ Bachelor of Science (B.S.) in physics
+ Bachelor of Arts (B.A.) in physics
+ Minor in physics

Degree(s)

Program Overview

Saint Louis University’s Parks College of Engineering, Aviation and Technology offers a B.S. in physics, while the College of Arts and Sciences offers a B.A. in physics.

Physics is the branch of science that studies the nature of matter, energy and spacetime at the most fundamental level. It provides a foundation for all the natural sciences and engineering disciplines. Physics has brought such revolutions as relativity, quantum mechanics and the Big Bang theory, profoundly altering the way mankind views the universe.

Physicists have played a major role in the discovery of many phenomena leading to whole new technologies. The invention of the transistor, by physicists, has made the modern computer possible, while the development of lasers has led to diverse applications ranging from supermarket scanners to laser surgery. The physicist is a versatile problem solver and able to excel in many technical fields.

A training in physics leads to a broad-based understanding of natural phenomena, analytical and computer skills, experience with electronics and the operation of sophisticated equipment, an understanding of measurements and their limitations, and the ability to formulate and solve technical problems.

Physics students have a strong interest in mathematics, computers and science along with a desire to understand how the universe works. They are interested in questions such as “Why do elementary particles behave the way they do?”, “What is the nature of light?” or “How did the universe begin, and what will eventually happen to it?” Some of our students pursue double majors in mathematics, computer science or an engineering field.

Curriculum

The B.S. in physics from Parks College stresses physics and its applications in areas such as engineering, computers and the sciences, and also includes opportunities to participate in faculty research. The B.A. in physics from the College of Arts and Sciences combines a firm grounding in physics with a broad liberal education.

Students of the physics program gain a solid foundation in analytical, computational and laboratory skills through course work in mathematics, computer science and physics. The physics curriculum includes courses in classical mechanics, quantum mechanics, electricity and magnetism, thermodynamics and statistical mechanics, as well as optics, electronics and modern physics.

Special topics courses in subjects such as Einstein’s theory of general relativity and Nanoscience frontiers are also taught. Saint Louis University places a strong emphasis on the education of the whole person. In order to round out their education, all students at Parks College take courses in theology, humanities, ethics, social and behavioral sciences, and cultural diversity.

Contact

Parks College of Engineering, Aviation and Technology
314-977-8203
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Graduate Programs

For a full listing of graduate programs, visit graduate.slu.edu.

Learn More

For course listings and more information about our faculty, visit parks.slu.edu/departments/physics

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Admission Requirements
In addition to the general admission and matriculation requirements of the University, Parks College engineering programs have the following additional requirements:

- **GPA:** Minimum cumulative 3.00 high school GPA for freshmen applicants and 2.70 college GPA for transfer applicants.
- **ACT/SAT:** ACT composite score of 24 or higher, or SAT composite score of 1100 or higher. ACT sub scores minimums of 22 in English, 24 in Mathematics, 22 in Reading Comprehension and 22 in Scientific Reasoning, or SAT Math sub score of 600.
- **Coursework:** Fifteen total units of high school work are required: three or four units of English; four or more units of mathematics including algebra I and II, geometry and pre-calculus; three or four units of science including general science, introduction to physical science, earth science, biology, physics or chemistry; two or three units of social sciences including history, psychology or sociology; and three units of electives.

Internships and Careers
The physics department employs some of its students as teaching and research assistants during the summer. Students have held summer internships at NASA-Langley, the Argonne National Laboratory and other laboratories. They have worked both during the summer and during the year at local industries such as Boeing and Anheuser-Busch. Numerous opportunities exist for summer research in basic and applied physics in the Parks Summer Undergraduate Research Experience (SURE) program and in national laboratories and in National Science Foundation-sponsored programs at universities throughout the United States.

Graduates with a bachelor’s degree in physics enter a variety of careers that depend on the technical skills they have gained in college. They are employed in product development and quality control in large industries such as RCA, Boeing or Lockheed-Martin. They are computer specialists at Anheuser-Busch and other companies. Some are now involved in the marketing of technical products, while others are in management positions. A few graduates have entered military careers. Students frequently earn double majors, combining physics with mathematics, computer science or chemistry.

Approximately one-half of physics students go to top graduate schools in physics or in other fields such as nuclear engineering, applied mathematics, medical school or law school. Students initially study physics to learn the secrets of the universe, but they later find that a physics degree opens the door to a wide range of careers.

Scholarships and Financial Aid
There are two principal ways to help finance a Saint Louis University education:

- **Scholarships:** awarded based on academic achievement, service, leadership and financial need.
- **Financial Aid:** provided in the form of grants and loans, some of which require repayment.

For priority consideration for merit-based scholarships, applicants should apply for admission by Dec. 1 and complete a Free Application for Federal Student Aid (FAFSA) by March 1.

For information on other scholarships and financial aid, visit the student financial services office online at finaid.slu.edu.