Engineering physicists are involved in designing, developing and supervising the creation of new, and often unique, devices utilizing basic scientific principles.
ENGINEERING PHYSICS

ENGINEERING PHYSICS AT SLU
The Engineering Physics program at SLU is designed for students who have a strong interest in physics and a desire to acquire the skills and perspective of an engineer. The program gives undergraduates a broad-based background in physics and engineering, and with that, the versatility to adapt to the rapidly changing world of high technology. Beyond receiving an outstanding technical education, students will also learn to use their knowledge to improve the world around them. At SLU, one the nation’s premier Jesuit institutions, professors seek to educate the student and the individual, instilling principles of social responsibility and professional ethics.

INDUSTRY INTERACTION
Engineering Physics alumni can be found working in applied research, at the intersection of physics and engineering. They are employed by a range of organizations, from major corporations to high-tech start-ups, from prestigious universities to leading manufacturers. The program provides students with the foundation to apply the principles and problem-solving approaches of physics in order to develop dynamic solutions to engineering challenges. The ability to cross disciplines makes graduates highly desirable to potential employers. One of the advantages SLU students have is their undergraduate research experience. Professors are continuously engaged in the exploration of new ideas in physics and engineering and most of their projects involve student participation. This hands-on, real-world experience provides students entering industry and those seeking graduate assistantships for master’s or doctoral work with an advantage, as many programs only provide meaningful research opportunities at the graduate level.

PROGRAM FEATURES
Engineering Physics at SLU is recognized for its many student and alumni accomplishments, as well as its unique program features:

- The curriculum satisfies the requirements for a minor in Engineering Mathematics and has essentially the same physics content as a traditional physics degree, ensuring students do not sacrifice a sound physics foundation.
- Students can customize their degree by selecting a concentration in aerospace, biomedical, computer, electrical or mechanical engineering or choosing the interdisciplinary option, instead of having to complete a rigid set of courses.
- Undergraduate students have the opportunity to conduct research with faculty members and publish their research findings in conference journals.
- Students work in the Low-Temperature Physics Laboratory, which contains a high field-superconducting magnet and a helium cryostat for reaching temperatures close to absolute zero (-273° C). Computer software is used to automate the experiments and to analyze the data.
- A low student-to-faculty ratio ensures undergraduates the opportunity for meaningful interaction with their professors.
- The Summer Undergraduate Research Experience (SURE) allows students to study specific topics of interest under the direction of a faculty member, while receiving a stipend.
- Competitive summer internships and cooperative education programs are available within the industry and with government agencies, plus, independent study can be arranged under the direction of a faculty member.
- Students conduct experiments in the state-of-the-art Parachute Data Analysis Lab, which allows them to look at flight data acquired during test drops and wind tunnel experiments, using software developed by the parachute research group. This work often involves sophisticated image processing hardware and software.
- The SLU Society of Physics Students was recently named an Outstanding Chapter by the national organization.
WHY I CAME TO PARKS

“At age 33, I am getting my first degree. I chose Parks College because I am interested in both physics and mechanical engineering. When I had my first meeting with my academic advisor, she told me about the Engineering Physics program, which unites both of my interests into one four year degree. I knew Parks College was the right choice for me. I was anticipating a good challenge. All of the professors are first-rate; their help and enthusiastic personal tutelage cannot be overstated. In all departments, in every class, the professors are available for one-on-one meetings with students during office hours. I have even gotten help from professors with whom I have never taken a class.

The cooperative nature of the student body is something that I didn't foresee. From the first time I walked into McDonnell Douglas Hall, every person I've met has been intelligent, disciplined and eager to offer whatever assistance they could. It is this community effort that makes excellence possible.

At Parks College, whatever the challenge is that you set for yourself, you will be provided with every resource to achieve it.”

-Sean Ehle, engineering physics major

FEATURED FACULTY ORGANIZATION

The Center for Fluids at all Scales (CFAS) is a Physics Department organization, which promotes research and dissemination of knowledge on the study of fluids at all physical scales, from the microscopic to the macroscopic.

Examples of current research include studies of the micron-sized channels in microfluidic devices and blood vessels, the turbulence found behind parachutes and aircraft and the superfluid interiors of neutron stars.

CFAS is inherently a multidisciplinary enterprise that groups researchers and students from SLU and other organizations. The group sponsors seminars, highlighting research conducted by group members and experts in the field. Members include faculty from the Physics, Aerospace Engineering, Biomedical Engineering, Mechanical Engineering and Chemistry departments. Dr. Mark McQuilling (pictured above) brings his expertise as an Aerospace Engineering Professor to the diverse group.

FEATURED STUDENT ACTIVITY

Every October, Parks students launch pumpkins across Tegeler Field, during the annual Pumpkin Launch, an event that has become a Parks tradition. It is more than just fun and games; it is a competition that puts students’ engineering skills and design creativity to the test. In this competition, students build mechanically propelled pumpkin launchers and compete to see which team can launch a pumpkin the farthest.

The Society of Physics Students takes the event very seriously and assembles a skilled team to design their launcher each year. Numerous other student groups from across Parks participate as well, knowing they are competing for more than bragging rights, they are also competing to see which group has the greatest craftsmanship and skill.
ABOUT PARKS COLLEGE

Several global challenges have emerged as opportunities for engineering and aviation students of Saint Louis University to make a difference, to apply their education in a context that is technically brilliant, socially responsible and uniquely enterprising, and to ultimately make the world a better, more inclusive place.

As technology alters every facet of our lives, aviation scientists, computer specialists and engineers are more in demand than ever. SLU’s Parks College of Engineering, Aviation and Technology has a worldwide reputation for its aviation and engineering programs. Our alumni have touched every NASA mission, developed patented technology for wind energy and won national and international awards.

“I invite you to make an appointment for a personal tour. Our faculty, staff and students will be delighted to show you around and answer your questions.”

K. Ravindra, Ph.D., Interim Dean

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