Mechanical engineers use the principles of energy, materials, and mechanics to design and manufacture machines and devices of all types. They create the processes and systems that drive technology and industry.
MECHANICAL ENGINEERING AT SLU

Mechanical Engineering students learn the design and creative process early in their undergraduate experience, focusing on the significance that design decisions have on products, machines and society. Design skills are carefully integrated into engineering courses from freshman year through graduation. The final two semesters include a sequence of capstone design courses, during which students work closely with faculty and industry to produce unique engineering design solutions to real-world problems. Often students are even able to secure funding from local companies.

The program objectives are to prepare graduates to practice the principles of engineering in mechanical or allied organizations, prepare graduates to pursue further learning in mechanical engineering or in allied disciplines and prepare graduates to function as effective engineers with professional knowledge, skills and values.

INDUSTRY INTERACTION

Students begin their professional development during their undergraduate academic career. Recognizing the importance of strong networking skills and real-world experience, the program integrates projects and events for students to further develop skills that give them a competitive advantage when applying for summer internships, jobs or graduate school.

Since mechanical engineering spans a wide area of application, students have unlimited career opportunities. Many alumni can be found working for companies such as Boeing, General Electric, Emerson Electric, Lockheed Martin, NASA, Pratt-Whitney, the U.S. Air Force and the U.S. Army Research Centers. Many go on to pursue advanced degrees at SLU and other prestigious academic institutions.

PROGRAM FEATURES

The Mechanical Engineering program at SLU is designed to provide students with a unique undergraduate experience and has many features that distinguish it as a premier program:

- Well-qualified students can earn both their bachelor’s and master’s degrees in five years.
- Undergraduates conduct research with faculty members and publish their research findings in journals.
- Students can take advantage of mentorship opportunities, pairing with local industry leaders through the St. Louis Regional Business Council or networking with successful alumni at the Parks Leadership Academy series.
- 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.
- Technical electives, such as propulsion, thermal design, composite structures and design, computational mechanics, digital systems, advanced mechatronics and microprocessors provide a variety of opportunities for greater depth of study.
- Well-equipped laboratory facilities emphasize measurement techniques and experimental methods that allow students to verify theory learned in the classroom.
- Teaching assistantships are available for advanced undergraduate students, which involve assisting faculty members or graduate students in engineering courses or labs.
- Mechanical engineering majors can obtain a dual B.S. degree in Mechanical and Aerospace Engineering by completing 32 additional credit hours.
- Students may customize their education with a minor, such as engineering mathematics, computer science or flight science.
- An undergraduate degree in Mechanical Engineering provides an opportunity for students to pursue pre-law or pre-med studies.
FEATURED FACULTY MEMBER

Sridhar Condoor, Ph.D., teaches design and entrepreneurship in the Department of Aerospace and Mechanical Engineering. His research interests are in the areas of design theory and methodology, entrepreneurship, and sustainability. Condoor is a Professor, Program Director for Mechanical Engineering, a KEEN fellow and a Coleman Fellow. He is also the editor of the Journal of Engineering Entrepreneurship.

Condoor authored several books and published several technical papers on topics focused on conceptual design, design principles, cognitive science as applied to design, and design education. VayuWind, a hubless wind turbine for urban environments, is one of his inventions. VayuWind deploys airfoils parallel to the rotational axis in such a way that, unlike other windmills, it rotates around a ring frame, leaving the central portion open for other uses. This enables VayuWind to extract wind power using existing structures such as commercial buildings and skywalks with minimal noise pollution.

WHY I CAME TO PARKS

“I graduated from Parks as a mechanical engineering major and now am enrolled in the graduate engineering program at SLU, where I will focus on sustainability. To me, the best thing about Parks is how the students become family and the professors become mentors, not just instructors. I am a student athlete, so finding a way to balance school with sports is essential for me. Every time I have to travel for soccer, my professors are accommodating and my classmates are supportive. They cheer for me on the field and work with me in the labs.

For our senior design project, my team spent so much time working together that we knew we had formed life-long friendships. The project gave me a strong foundation, personally, through the friendships formed, and professionally, through the real-world experience gained. We worked for two semesters trouble-shooting when issues came up, streamlining processes then designing solutions. We also had the chance to work with industry to fund our project. During this time I gained skills that I will use throughout my career.

Now I have graduated and am working on my master’s degree. I am excited to be entering a field where I can make a difference and find solutions to environmental challenges.”

-James Dice, mechanical engineering major

FEATURED STUDENT GROUP

The SAE Formula Parks Racing Team is an active student group at SLU. Members of the team attend racing seminars, conferences and trade shows throughout the year. Typically, the car goes through a two-year design and build process before entering the competition, where teams come from around the world to compete. The students prepare year-round, designing and building the vehicle.

“It is a very good program to show you how to use your engineering skills to make a product,” says Abigail Kuchen, mechanical engineering major and member of Parks Racing.
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.”

Theodosios Alexander, Sc.D.
Dean

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