

SCHOOL OF SCIENCE AND ENGINEERING

Leadership

Gregory Triplett, Ph.D.
Dean

Jenna Gorlewicz, Ph.D.

Associate dean for research and innovation, and special assistant to the vice president for research and partnerships for innovation

Scott Martin, Ph.D.

Associate dean for strategic initiatives

Scott Sell, Ph.D.

Associate dean for undergraduate education

Overview

Saint Louis University's School of Science and Engineering prepares students for careers in science, engineering and aviation. Satisfying this mission demands excellence in academic programs that integrate the education of the whole person, in the liberal and Jesuit traditions, with classroom and laboratory experiences in the major fields of study. SLU's degrees in the School of Science and Engineering allow students to develop intellectually, stay abreast of changing technology and prepare for a lifetime of learning.

Programs graduate technically proficient and socially responsible science, engineering and aviation innovators. Faculty prepare students to be practitioners, leaders and thinkers ready to change the world.

Accreditation

Aviation

The Department of Aviation Science's undergraduate curriculum is accredited by the Aviation Accreditation Board International (AABI) www.aabi.aero (<http://www.aabi.aero/>).

Chemistry

The Bachelor of Science in Biochemistry has been continuously certified by the American Chemical Society since 2004.

The Bachelor of Science in Chemistry has been continuously certified by the American Chemical Society since 1946.

Engineering

The Aerospace Engineering, B.S. is accredited by the Engineering Accreditation Commission of ABET, <http://www.abet.org> (<http://www.abet.org/>), under the commission's General Criteria and Program Criteria for Aerospace and Similarly Named Engineering Programs.

The Biomedical Engineering, B.S. is accredited by the Engineering Accreditation Commission of ABET, <http://www.abet.org> (<http://www.abet.org/>), under the commission's General Criteria and Program Criteria for Bioengineering and Biomedical and Similarly Named Engineering Programs.

The Civil Engineering, B.S. is accredited by the Engineering Accreditation Commission of ABET, <http://www.abet.org> (<http://www.abet.org/>), under the commission's General Criteria and Program Criteria for Civil and Similarly Named Engineering Programs.

The Computer Engineering, B.S. is accredited by the Engineering Accreditation Commission of ABET, <http://www.abet.org> (<http://www.abet.org/>), under the commission's General Criteria and Program Criteria for Electrical, Computer, Communications, Telecommunication(s), and Similarly Named Engineering Programs.

The Electrical Engineering, B.S. is accredited by the Engineering Accreditation Commission of ABET, <http://www.abet.org> (<http://www.abet.org/>), under the commission's General Criteria and Program Criteria for Electrical, Computer, Communications, Telecommunication(s), and Similarly Named Engineering Programs.

The Mechanical Engineering, B.S. is accredited by the Engineering Accreditation Commission of ABET, <http://www.abet.org> (<http://www.abet.org/>), under the commission's General Criteria and Program Criteria for Mechanical and Similarly Named Engineering Programs.

Undergraduate

A

- Aeronautics, B.S. (<https://catalog.slu.edu/colleges-schools/science-engineering/aviation/aeronautics-bs/>)
- Aerospace and Mechanical Engineering, B.S. Double Major (<https://catalog.slu.edu/colleges-schools/science-engineering/aerospace-mechanical/aerospace-engineering-bs-mechanical/>)
- Aerospace Engineering, B.S. (<https://catalog.slu.edu/colleges-schools/science-engineering/aerospace-mechanical/aerospace-engineering-bs/>)
- Aerospace Engineering, Minor (<https://catalog.slu.edu/colleges-schools/science-engineering/aerospace-mechanical/aerospace-engineering-minor/>)

B

- Biochemistry, B.A. (<https://catalog.slu.edu/colleges-schools/science-engineering/chemistry/biochemistry-ba/>)
- Biochemistry, B.S. (<https://catalog.slu.edu/colleges-schools/science-engineering/chemistry/biochemistry-bs/>)
- Biochemistry, B.S. to Chemical Biology, Master's Accelerated Program (<https://catalog.slu.edu/colleges-schools/science-engineering/chemistry/biochemistry-chemical-biology-abm/>)
- Bioinformatics and Computational Biology, Bachelor's to M.S. Accelerated Program (<https://catalog.slu.edu/colleges-schools/science-engineering/computer-science/bioinformatics-computational-biology-abm/>)
- Biomedical Engineering, B.S. (<https://catalog.slu.edu/colleges-schools/science-engineering/biomedical/biomedical-engineering-bs/>)
- Biomedical Engineering, Minor (<https://catalog.slu.edu/colleges-schools/science-engineering/biomedical/biomedical-engineering-minor/>)

C

- Chemical Biology and Pharmacology, B.S. (<https://catalog.slu.edu/colleges-schools/science-engineering/chemistry/chemical-biology-pharmacology-bs/>)
- Chemistry, B.A. (<https://catalog.slu.edu/colleges-schools/science-engineering/chemistry/chemistry-ba/>)
- Chemistry, B.A. and Chemical Engineering, B.S. (Washington University) Dual Degree (<https://catalog.slu.edu/colleges-schools/science-engineering/chemistry/chemistry-ba-dual-washu/>)

- Chemistry, B.S. (<https://catalog.slu.edu/colleges-schools/science-engineering/chemistry/chemistry-bs/>)
- Civil Engineering, B.S. (<https://catalog.slu.edu/colleges-schools/science-engineering/civil/civil-engineering-bs/>)
- Computer Engineering, B.S. (<https://catalog.slu.edu/colleges-schools/science-engineering/computer-electrical/computer-engineering-bs/>)
- Computer Science, B.A. (<https://catalog.slu.edu/colleges-schools/science-engineering/computer-science/computer-science-ba/>)
- Computer Science, B.A. to Artificial Intelligence, M.S. Accelerated Program (<https://catalog.slu.edu/colleges-schools/science-engineering/computer-science/computer-science-ba-ms-artificial-intelligence/>)
- Computer Science, B.A. to Computer Science, M.S. Accelerated Program (<https://catalog.slu.edu/colleges-schools/science-engineering/computer-science/computer-science-ba-ms-computer-science/>)
- Computer Science, B.A. to Software Engineering, M.S. Accelerated Program (<https://catalog.slu.edu/colleges-schools/science-engineering/computer-science/computer-science-ba-ms-software-engineering/>)
- Computer Science, B.S. (<https://catalog.slu.edu/colleges-schools/science-engineering/computer-science/computer-science-bs/>)
- Computer Science, B.S. to Artificial Intelligence, M.S. Accelerated Program (<https://catalog.slu.edu/colleges-schools/science-engineering/computer-science/computer-science-bs-ms-artificial-intelligence/>)
- Computer Science, B.S. to Computer Science, M.S. Accelerated Program (<https://catalog.slu.edu/colleges-schools/science-engineering/computer-science/computer-science-bs-ms-computer-science/>)
- Computer Science, B.S. to Software Engineering, M.S. Accelerated Program (<https://catalog.slu.edu/colleges-schools/science-engineering/computer-science/computer-science-bs-ms-software-engineering/>)
- Computer Science, Minor (<https://catalog.slu.edu/colleges-schools/science-engineering/computer-science/computer-science-minor/>)
- Computer Science, Minor to Artificial Intelligence, M.S. Accelerated Program (<https://catalog.slu.edu/colleges-schools/science-engineering/computer-science/computer-science-minor-ms-artificial-intelligence/>)
- Computer Science, Minor to Bioinformatics and Computational Biology, M.S. Accelerated Program (<https://catalog.slu.edu/colleges-schools/science-engineering/computer-science/computer-science-minor-ms-bioinformatics/>)
- Computer Science, Minor to Software Engineering, M.S. Accelerated Program (<https://catalog.slu.edu/colleges-schools/science-engineering/computer-science/computer-science-minor-ms-software-engineering/>)

D

- Data Science, B.S. to Artificial Intelligence, M.S. Accelerated Program (<https://catalog.slu.edu/colleges-schools/science-engineering/computer-science/data-science-bs-ms-artificial-intelligence/>)
- Data Science, B.S. to Bioinformatics and Computational Biology, M.S. Accelerated Program (<https://catalog.slu.edu/colleges-schools/science-engineering/computer-science/data-science-bs-ms-bioinformatics/>)

- Data Science, B.S. to Computer Science, M.S. Accelerated Program (<https://catalog.slu.edu/colleges-schools/science-engineering/computer-science/data-science-bs-ms-computer-science/>)
- Data Science, B.S. to Software Engineering, M.S. Accelerated Program (<https://catalog.slu.edu/colleges-schools/science-engineering/computer-science/data-science-bs-ms-software-engineering/>)

E

- Electrical Engineering, B.S. (<https://catalog.slu.edu/colleges-schools/science-engineering/computer-electrical/electrical-engineering-bs/>)
- Engineering, B.S. to Engineering, M.S. Accelerated Program (<https://catalog.slu.edu/colleges-schools/science-engineering/engineering-abm/>)
- Environmental Science, B.S. (<https://catalog.slu.edu/colleges-schools/science-engineering/earth-environmental-geospatial-sciences/environmental-science-bs/>)
- Environmental Science, Minor (<https://catalog.slu.edu/colleges-schools/science-engineering/earth-environmental-geospatial-sciences/environmental-science-minor/>)
- Environmental Studies, B.A. (<https://catalog.slu.edu/colleges-schools/science-engineering/earth-environmental-geospatial-sciences/environmental-studies-ba/>)

F

- Flight Science, Minor (<https://catalog.slu.edu/colleges-schools/science-engineering/aviation/flight-science-minor/>)
- Foundations of Biomechanics, Microcredential (<https://catalog.slu.edu/colleges-schools/science-engineering/biomedical/foundations-biomechanics-micro/>)
- Foundations of Tissue Engineering and Regenerative Medicine, Microcredential (<https://catalog.slu.edu/colleges-schools/science-engineering/biomedical/foundations-tissue-eng-regen-med-micro/>)

G

- Geographic Information Systems, Certificate (<https://catalog.slu.edu/colleges-schools/science-engineering/earth-environmental-geospatial-sciences/geographic-information-systems-certificate/>)
- Geoinformatics and Geospatial Analytics, B.S. (<https://catalog.slu.edu/colleges-schools/science-engineering/earth-environmental-geospatial-sciences/geoinformatics-geospatial-analytics-bs/>)

M

- Mathematics, B.S. (Harris-Stowe State University) and Aerospace Engineering, B.S. Dual Degree (<https://catalog.slu.edu/colleges-schools/science-engineering/aerospace-mechanical/math-hssu-aerospace-engineering-dual-bs/>)
- Mathematics, B.S. (Harris-Stowe State University) and Biomedical Engineering, B.S. Dual Degree (<https://catalog.slu.edu/colleges-schools/science-engineering/biomedical/math-hssu-biomedical-engineering-dual-bs/>)
- Mathematics, B.S. (Harris-Stowe State University) and Civil Engineering, B.S. Dual Degree (<https://catalog.slu.edu/colleges-schools/science-engineering/civil/math-hssu-civil-engineering-dual-bs/>)
- Mathematics, B.S. (Harris-Stowe State University) and Computer Engineering, B.S. Dual Degree (<https://catalog.slu.edu/colleges-schools/science-engineering/computer-electrical/math-hssu-computer-engineering-dual-bs/>)

[schools/science-engineering/computer-electrical/math-hssu-computer-engineering-dual-bs/](https://catalog.slu.edu/colleges-schools/science-engineering/computer-electrical/math-hssu-computer-engineering-dual-bs/))

- Mathematics, B.S. (Harris-Stowe State University) and Electrical Engineering, B.S. Dual Degree (<https://catalog.slu.edu/colleges-schools/science-engineering/computer-electrical/math-hssu-electrical-engineering-dual-bs/>)
- Mathematics, B.S. (Harris-Stowe State University) and Mechanical Engineering, B.S. Dual Degree (<https://catalog.slu.edu/colleges-schools/science-engineering/aerospace-mechanical/math-hssu-mechanical-engineering-dual-bs/>)
- Mathematics, B.S. (Harris-Stowe State University) and Physics, B.S. Dual Degree (<https://catalog.slu.edu/colleges-schools/science-engineering/physics/math-hssu-physics-dual-bs/>)
- Mechanical Engineering, B.S. (<https://catalog.slu.edu/colleges-schools/science-engineering/aerospace-mechanical/mechanical-engineering-bs/>)
- Mechanical Engineering, Minor (<https://catalog.slu.edu/colleges-schools/science-engineering/aerospace-mechanical/mechanical-engineering-minor/>)
- Meteorology, B.S. (<https://catalog.slu.edu/colleges-schools/science-engineering/earth-environmental-geospatial-sciences/meteorology-bs/>)
- Meteorology, Minor (<https://catalog.slu.edu/colleges-schools/science-engineering/earth-environmental-geospatial-sciences/meteorology-minor/>)

P

- Physics, B.S. (<https://catalog.slu.edu/colleges-schools/science-engineering/physics/physics-bs/>)
- Physics, Minor (<https://catalog.slu.edu/colleges-schools/science-engineering/physics/physics-minor/>)

Q

- Quantitative Physiology Concepts for Engineering, Microcredential (<https://catalog.slu.edu/colleges-schools/science-engineering/biomedical/quantitative-physiology-engineering-micro/>)

R

- Robotics, Minor (<https://catalog.slu.edu/colleges-schools/science-engineering/computer-electrical/robotics-minor/>)

Graduate

A

- Artificial Intelligence, M.S. (<https://catalog.slu.edu/colleges-schools/science-engineering/computer-science/artificial-intelligence-ms/>)
- Aviation, Doctor of (<https://catalog.slu.edu/colleges-schools/science-engineering/aviation/doctor-aviation/>)
- Aviation, M.S. (<https://catalog.slu.edu/colleges-schools/science-engineering/aviation/aviation-ms/>)
- Aviation, Ph.D. (<https://catalog.slu.edu/colleges-schools/science-engineering/aviation/aviation-phd/>)

B

- Bioinformatics and Computational Biology, M.S. (<https://catalog.slu.edu/colleges-schools/science-engineering/computer-science/bioinformatics-computational-biology-ms/>)

- Biomedical Engineering, M.S. (<https://catalog.slu.edu/colleges-schools/science-engineering/biomedical/biomedical-engineering-ms/>)
- Biomedical Engineering, Ph.D. (<https://catalog.slu.edu/colleges-schools/science-engineering/biomedical/biomedical-engineering-phd/>)

C

- Chemical Biology, M.A. (<https://catalog.slu.edu/colleges-schools/science-engineering/chemistry/chemical-biology-ma/>)
- Chemical Biology, M.S. (<https://catalog.slu.edu/colleges-schools/science-engineering/chemistry/chemical-biology-ms/>)
- Chemical Sciences, M.S. (<https://catalog.slu.edu/colleges-schools/science-engineering/chemistry/chemical-sciences-ms/>)
- Chemistry, M.S. (<https://catalog.slu.edu/colleges-schools/science-engineering/chemistry/chemistry-ms/>)
- Chemistry, Ph.D. (<https://catalog.slu.edu/colleges-schools/science-engineering/chemistry/chemistry-phd/>)
- Computer Science, M.S. (<https://catalog.slu.edu/colleges-schools/science-engineering/computer-science/computer-science-ms/>)
- Computer Science, Ph.D. (<https://catalog.slu.edu/colleges-schools/science-engineering/computer-science/computer-science-phd/>)

E

- Engineering, M.S. (<https://catalog.slu.edu/colleges-schools/science-engineering/engineering-ms/>)
- Engineering, Ph.D. (<https://catalog.slu.edu/colleges-schools/science-engineering/engineering-phd/>)

G

- Geographic Information Science, M.S. (<https://catalog.slu.edu/colleges-schools/science-engineering/earth-environmental-geospatial-sciences/geographic-information-science-ms/>)
- Geographic Information Science, Post-Baccalaureate Certificate (<https://catalog.slu.edu/colleges-schools/science-engineering/earth-environmental-geospatial-sciences/geographic-information-science-post-baccalaureate-certificate/>)
- Geoinformatics and Geospatial Analytics, Ph.D. (<https://catalog.slu.edu/colleges-schools/science-engineering/earth-environmental-geospatial-sciences/geoinformatics-geospatial-analytics-phd/>)
- Geoscience, M.S. (<https://catalog.slu.edu/colleges-schools/science-engineering/earth-environmental-geospatial-sciences/geoscience-ms/>)
- Geoscience, Ph.D. (<https://catalog.slu.edu/colleges-schools/science-engineering/earth-environmental-geospatial-sciences/geoscience-phd/>)

M

- Meteorology, M.S. (<https://catalog.slu.edu/colleges-schools/science-engineering/earth-environmental-geospatial-sciences/meteorology-ms/>)
- Meteorology, Ph.D. (<https://catalog.slu.edu/colleges-schools/science-engineering/earth-environmental-geospatial-sciences/meteorology-phd/>)

S

- Software Engineering, M.S. (<https://catalog.slu.edu/colleges-schools/science-engineering/computer-science/software-engineering-ms/>)
- STEM Entrepreneurship, M.S. (<https://catalog.slu.edu/colleges-schools/science-engineering/stem-entrepreneurship-ms/>)

Policies

Undergraduate Policies

Math for Entering Students

Applicants to the engineering or physics programs are encouraged to take mathematics with a focus on trigonometry, such as pre-calculus or analytical geometry, prior to or during their senior year of secondary (high) school. Students should be prepared to take MATH 1510 Calculus I in the first semester. Students not prepared to take MATH 1510 Calculus I may need to take MATH 1400 Pre-Calculus the first semester and MATH 1510 Calculus I the second semester, followed by MATH 1520 Calculus II and PHYS 1610 University Physics I during the summer, in order to graduate in four years.

Any student intending to major in engineering who is admitted or starts with a math course lower than Pre-Calculus will be considered an Engineering Deciding student. These students must successfully complete MATH 1510 Calculus I, demonstrated by receiving a "C-" or higher, before declaring an engineering major.

College Level Examination Program

The School of Science and Engineering accepts successfully completed CLEP results for credit. These, however, must be subject examinations. The school does not recognize the general CLEP for credit purposes. CLEP exams must be completed within one calendar year of initial registration at the University. More information about CLEP (<https://catalog.slu.edu/academic-policies/academic-policies-procedures/credit-exam/>)

Special Registration Procedures

Some special registration procedures apply to students enrolled in the School of Science and Engineering. To maintain our accreditation in each of our programs, all undergraduate students must meet with their SSE academic advisor prior to their registration date each semester. Undergraduate students are also assigned a faculty mentor from their program. These students are encouraged to meet with their faculty mentor at least once per semester to discuss progress in their program and career development.

Flight Instruction at Other Institutions

Once a student has enrolled in the School of Science and Engineering, all subsequent flight instruction must be completed in residence at the school. Flight instruction outside of the school's FAA-approved pilot instruction curricula is not permitted without prior written approval from the department chair (whether currently enrolled or not). Students who receive flight instruction outside the approved curricula without prior approval are subject to dismissal from the program.

Flight fees will be charged in addition to the regular tuition. Please contact the Department of Aviation Science (<https://www.slu.edu/science-and-engineering/academics/parks-aviation-science/>) for the current rates.

Students with prior flight experience/certification will be evaluated for proficiency at the corresponding flight certification level. Based on the results of such evaluation, the chief instructor will recommend either some remedial training or continuation to the next level of training. Ground school courses completed at a Part 141 flight school may be transferable; those completed at a Part 61 flight school may not be transferable. Early consultation with the department chair and/or the chief instructor is strongly recommended.

TSA Requirements

The Transportation Security Administration (TSA) requires any individual applying for flight training to provide proof of citizenship prior to beginning the training. New student pilots will be unable to begin flight training until the proof of citizenship requirement is met. Pilots typically provide:

1. the individual's valid, unexpired U.S. passport or
2. the individual's original or government-issued certified U.S. birth certificate, together with a government-issued picture identification of the individual.

Other TSA-specified documents may be accepted. Non-U.S. citizens must receive TSA approval prior to beginning any flight training. Please contact the Department of Aviation Science (<https://www.slu.edu/science-and-engineering/academics/parks-aviation-science/>) for additional information.

Attendance

Undergraduate students are expected to regularly attend all classes, laboratory sessions and examinations, as explained in the academic policy. (<https://catalog.slu.edu/academic-policies/academic-policies-procedures/attendance/>) Additionally, no absences are permitted in any course that is required for the Federal Aviation Administration (FAA) regulated pilot certification courses. FAA regulations specify the number of credits required in the approved programs. Students should contact the Department of Aviation Science for details of these regulations.

Academic Categories

Non-Degree

Anyone enrolled in the School of Science and Engineering who is not pursuing a program of study designed to obtain a degree from the college or university but who enrolls in one or more classes will be considered a nondegree student. Nondegree students who subsequently decide to pursue a degree must complete the entire process of applying for admission and must be admitted under the usual guidelines and procedures.

Students in Good Academic Standing

Students with a cumulative grade point average of 2.00 or higher are classified as students in good standing. Please refer to the academic policies on academic standing (<https://catalog.slu.edu/academic-policies/academic-policies-procedures/academic-standing-undergraduate/>) and time status (<https://catalog.slu.edu/academic-policies/academic-policies-procedures/time-status/>) for more information.

Students on Supervisory Status

Minimum satisfactory scholastic achievement in the School of Science and Engineering is represented by a 2.00 cumulative grade point average (a "C" average). Anyone whose current or term grade point average is below 2.00 and whose cumulative grade point average is above a 2.00 will be considered on supervisory status during the next term

in attendance. Such students must see their academic advisor prior to the third week of class of the next term of enrollment to create an individualized improvement plan.

Students on Contract Status

Students whose overall grade point average is below 2.0 will be considered on contract status (probation) during the next term in attendance. Please refer to the academic policies on academic standing (<https://catalog.slu.edu/academic-policies/academic-policies-procedures/academic-standing-undergraduate/>) for more information. Such students must see their academic advisor prior to the second week of class of next term of enrollment to create and individualized improvement plan.

Dismissed Students

The School of Science and Engineering enforces the University's policy on academic dismissal (<https://catalog.slu.edu/academic-policies/academic-policies-procedures/academic-standing-undergraduate/>). A student may be dismissed if he or she fails to reach a 2.0 cumulative GPA within two semesters subsequent to the assignment of probation status or reaches a grade point deficiency of more than 15 points. Any student on contract status who does not satisfy the contract or improvement plan they signed may be dismissed. In addition, any student who fails a course three times can be dismissed from the school.

Appeal Options for Dismissed Students

A dismissed student may attempt to again attend the School of Science and Engineering by appealing to the dean. Information regarding this appeal may be obtained from the dean's office.

Graduate Policies

Continuous Enrollment

Students are required to enroll each semester until the degree is received. Additional requirements are defined by each graduate program.

Graduate Independent Studies and Special Topics Course

Independent study courses are reserved for specialized topics individual to a graduate student that the student and advisor both agree fits into the program of study. Like independent study courses, special topics courses are not regularly offered courses in the catalog. Special topics courses, however, are not specially written to match a student's research interests, but rather a course the department offers to a limited number of students for one semester. Since both types of courses are not in the catalog, the graduate education office requires a copy of the outline or syllabus to be kept in the student's file. All independent studies and special topics courses must be submitted and approved by the mentor/advisor of students prior to registration.

Zero Hour Registration

After they have fulfilled the research hour requirement for their program (six hours for master's thesis students, 12 hours for doctoral students), students may register for zero hours of research until they reach the University's time-to-degree limit. If an extension on the time to degree is required, the student must complete a petition and may be required to register for one hour of research each semester until they graduate.

School Policies

Academic Integrity

Students, faculty and staff members share the responsibility to maintain a learning environment of mutual trust and integrity. Since the School of Science and Engineering seeks to prepare students for lives of integrity and for occupations of trust, it regards all acts of academic dishonesty as matters of serious concern. Dishonest conduct includes, but is not limited to, cheating, falsification, plagiarism, sabotage, concealment, collusion and conflicts of interest.

Grade Appeal

Students may appeal a grade only for one or more of the following reasons:

1. Miscalculation of grade.
2. The assignment of a grade to a particular student on some basis other than performance in the course.
3. The assignment of a grade to a particular student by more exacting or demanding standards than were applied to other equivalent students in that section.
4. The grade assigned results from different standards than the criteria for performance and evaluation outlined in the course syllabus.