Graduate Engineering Programs

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Why Consider Graduate Engineering?

- Depth of knowledge and specialized skills
- Networking with students and faculty
- Potential for higher level position, starting salary
- Career advancement and future education

Evaluating Graduate Engineering Paths

- Talk to your academic advisor
- Look at programs of interest based on discipline/subdiscipline, faculty, institution resources and special programs
- Take GRE if it is recommended
  - be sure to check deadlines - e.g. UCs are early
  - check if subject test required
- Arrange for faculty and others to write reference letters
  - start well in advance of deadline so they can write a good letter
  - prepare short statement of purpose and CV for reference letter writers

SCU Graduate Engineering Programs

Degree Programs

- Master's (46 units)
  - **B.S./M.S. Dual Degree Program**
- Engineer's (46 units beyond M.S.)
- Ph.D. (72 units beyond M.S.)

Other Programs

- Certificates (16-20 units)
- Open University (up to 16 units)

School of Engineering M.S. Degree Programs

- Aerospace Engineering
- Applied Mathematics
- Bioengineering
- Civil, Environmental, and Sustainable Engineering
- Computer Science and Engineering
- Electrical and Computer Engineering
- Engineering Management and Leadership
- Mechanical Engineering
- Power Systems and Sustainable Energy
- Robotics and Automation

Graduate Engineering Program Design

- Degree requirements are determined by each program
  - Tracks/concentrations/focus areas
  - Core courses and other requirements (e.g., AMTH courses)
  - Directed research, independent study
  - Thesis/capstone/culminating exper.
  - Seminars, electives
- Enrichment Experience
  - Graduate Core
  - Electives or cooperative education
- Classes are scheduled around business hours
  - 7:10-9:00 AM; 5:10-7:00/7:10-9:00 PM
  - Flexibility for employment, internships
- Courses are taught by a mixture of SCU faculty and adjunct lecturers

B.S./M.S. Dual Degree Program

Benefits

- Allows SCU undergraduate students to begin taking graduate-level courses in their senior year, and transfer up to 20 units into the graduate program
- Easy online application; the application fee and the GRE General Test requirement are waived

Requirements

- Conditional admission into the B.S./M.S. program is based on a minimum GPA of 3.0 for math, science, and engineering classes
  - Programs may have specific requirements for admission
- Transfer units must be in graduate engineering courses not used toward the undergraduate degree

Taking Courses Towards the M.S. as a Senior

1. Submit the Engineering Graduate Programs online application no later than end of junior year
2. To register for graduate courses, complete and submit the Permission to Take Graduate Classes form
   - Only graduate courses (those listed as 200 and above) are eligible for transfer into M.S. programs
   - Cross-listed-courses (courses assigned both undergraduate and graduate numbers) may be taken only one time, either as an undergraduate or graduate student
3. Upon matriculation into M.S. program, graduate units will be transferred

For more information

- Graduate Engineering Programs: https://www.scu.edu/engineering/graduate/
- Application information: https://www.scu.edu/engineering/graduate/apply-here/
- Admission, application questions: gradengineer@scu.edu
- Speak to your advisor or professors!

Program Tracks, Concentrations, Focus Areas

- Applied Mathematics
  - Mathematical Finance
- Bioengineering
  - Biomolecular Engineering/Biotechnology
  - Biomaterials and Tissue Engineering
  - Microfluidics/Biosensors and Imaging
  - Computational Bioengineering
  - Translational Bioengineering
- Civil, Environmental, and Sustainable Engineering
  - Structural Engineering
  - General Civil Engineering
  - Construction Engineering and Management
  - Water and Environmental Engineering
- Electrical and Computer Engineering
  - Power and Control Systems
  - IC Design and Technology
  - RF and Applied Electromagnetics
  - Signal Processing and Machine Learning
  - Digital Systems
  - Communications
- Mechanical Engineering
  - Dynamics and Controls
  - Design and Manufacturing
  - Mechanics and Materials
  - Mechatronic Systems Engineering
  - Thermofluids and Energy

Interdisciplinary/“Other” Program Focus Areas

- Aerospace Engineering
  - Aerodynamics
  - Flight dynamics and control
  - Propulsion systems
  - Structures
- Engineering Management and Leadership
  - Project/Program/Product Management
  - Operations Management
  - Systems Engineering
  - Accounting and finance; marketing
  - Organizational behavior and leadership
- Power Systems and Sustainable Energy
  - Fundamentals of power systems
  - Different types of renewable energies
  - Storage systems
  - Public policy
  - Economics of energy
- Robotics and Automation
  - Mechatronic devices
  - Dynamics and control of robotic manipulators/vehicles/systems
  - Advanced perception, e.g., vision processing and machine learning