Doctoral

Engineering Science

SIUe

SIUC College of Engineering
SIUE School of Engineering

Degrees Available
- Doctor of Philosophy

Areas of Concentration
- Civil, Environmental and Geotechnical Engineering
- Computer Science
- Electrical and Computer Engineering
- Mechanical Engineering

Engineering Science – Cooperative PhD at SIUE
The School of Engineering at Southern Illinois University Edwardsville participates in the Doctor of Philosophy in engineering science offered by the College of Engineering at SIUC. A memorandum of understanding exists between the campuses that designates SIUE as an approved residence center. As a result, the coursework completed at SIUE is applicable toward SIUC's residency requirements.

The collaborative PhD program is supported by research activities and projects of the SIUE School of Engineering faculty. The School is currently housed in the 190,000-square-foot Engineering Building that also includes state-of-the-art laboratories for research and instruction.

The School of Engineering also administers the Environmental Resources Training Center (ERTC), and ENGTEC, a cross-disciplinary business, manufacturing and technology incubator, fabrication and proof-of-concept facility. Additionally, the National Corn to Ethanol Research Center (NCERC) is housed on the SIUE campus. With its resources and facilities, the SIUE School of Engineering is strategically well-positioned to provide the best educational experience for our students.

Admission Requirements
Applicants must meet the admission requirements of the SIUE and SIUC Graduate Schools and must be approved by the Graduate Studies Committee of the SIUC College of Engineering. Admission requirements include:
- Master's degree or its equivalent in an engineering discipline with thesis
- Master's degree GPA of 3.5 on a 4.0 scale is ordinarily required
- GRE scores submitted to SIUE (institution code 1759)
- Minimum TOEFL scores for non-native speakers of English submitted to SIUE (institution code 1759): 550 (paper score), 213 (computer score), or 80 (internet-based score)
- Minimum of funding for international students of U.S. $42,500 for each year of the proposed course of study, including funds from a graduate assistantship

For information about GRE and/or TOEFL, or to register for either test, please contact Educational Testing Service.

Application Process
Some application materials must be sent to SIUE while some must be sent to SIUC. Follow the instructions below to ensure your application review is not delayed. Documents under each institution must be received by that institution before applications will be reviewed by that institution.

SIUE Application
- Applicants must complete the online application
- Official bachelor's transcript
- Official master's transcript
- Official GRE Score (institution code 1759)
- Three letters of recommendation
- 1.5 page statement of objectives
- Master's Thesis Abstract
- Current SIUE non-refundable application fee in U.S. dollars
- International students
  - Official TOEFL Score (institution code 1759)

Official transcripts must be sent electronically to siueapps@siue.edu directly from the institution or mailed to:

SIUE Graduate and International Admissions
Co-op PhD Application
Campus Box 1047
Edwardsville, IL 62026-1047

SIUC Application
- Applicants need to submit an electronic application
  - Create an account
  - Program selection will be Engineering Science
  - Degree selection will be PhD
  - Enter your area of concentration
  - When asked to provide letters of recommendation, enter SIUE as the recommender with the email address of siueapps@siue.edu
    - This will allow SIUE to attach the letters of recommendation already submitted to SIUE to SIUC.

Administrator
Jeff Darabi, PhD
2000, University of Maryland

SOUTHERN ILLINOIS UNIVERSITY EDWARDSVILLE
SCHOOL OF ENGINEERING

SIUC Application cont.

- International Students
  - Copy of Passport showing your name, date of birth, and country of citizenship
  - Financial Statement
    - This document is found at the end of the SIUC application. It must be completed even if you have been promised an assistantship.
    - Before you can be admitted, it is necessary for you to indicate that a minimum of U.S. $42,500 will be available to you for each year of your proposed course of study.
    - Be sure to indicate if your studies are totally dependent upon an assistantship or if you have personal funds to fulfill this requirement.
    - If you have personal funds, be sure to submit official documentation of funds and amounts via a recent bank statement
- Current SIUC non-refundable application fee in U.S. dollars (credit card only)

Admission Process

Your application will be reviewed by the SIUE School of Engineering and the SIUE department you plan to work with. If the application receives approval from these two entities, it will be reviewed by the appropriate SIUC college and department. If it receives approval from these two entities, it will be reviewed by the SIUC Graduate School. Your application can only be deferred one time. Therefore, your application does not receive approval in time for the semester you apply, it must be approved in time for the next or it will be withdrawn and you will have to reapply. SIUC grants or denies final admission to the program.

Requirements for Retention

The rules of the SIUC Graduate School apply. In addition, students holding graduate assistantships are required to carry no more than two incomplete grades at any given time to be eligible to continue their assistantship appointments.

Graduation Requirements

In order to graduate, students of the PhD program must have successfully completed the following requirements:

- All requirements of the Southern Illinois University Carbondale Graduate School must be satisfied.
- A minimum of 26 hours of doctoral-level coursework must be completed. The GPA must be 3.25 or higher on a scale of 4.00.
- An acceptable dissertation must be completed within five years after admission to candidacy. In the event the dissertation is not completed in the set time frame, the student will be required to take and pass the candidacy exams again.

The doctoral degree is conferred by SIUC. Students must apply for graduation and pay application fees by the deadline via Salukinet..

Curriculum

The PhD program requires a minimum of 26 semester hours of coursework and 24 semester hours of dissertation research. The coursework is comprised of the program core requirements and additional courses taken in the student's selected area of specialty. Students are encouraged to complete a Plan of Study form in cooperation with their faculty advisor at the start of the program.

Core Requirements

Each student must complete the core course requirements of the program totaling 11 credit hours. The program core has the following components:

- Mathematics: Six credit hours
- Engineering or Science: Three credit hours approved by both the SIUE and SIUC advisors
- Seminar: Two credit hours
  - The two credit hours for the seminar, ENGR 580, must be taken over two semesters, one credit hour at a time. One of the two seminar credit hours must be taken before admission to candidacy and one after admission to candidacy.

Area of Concentration

In addition, a minimum of 15 credit hours is required in the selected area of concentration to provide substantial depth relevant to the student's research interests.

No more than two courses or six credit hours of 400-level courses can be counted toward the requirements of the PhD.

ENGR 590-Special Investigations course can only be used once for a maximum of three credit hours.

Applicants with a master's degree in computer science are encouraged to choose the computer engineering specialization in the co-op PhD program.

For questions related to transfer credit please contact the associate dean for research and development.

Approved Mathematics Courses for the Program Core

- MATH 420-3 Abstract Algebra
- MATH 421-3 Linear Algebra II
- MATH 423-3 Combinatorics and Graph Theory
- MATH 435-3 Foundations for Euclidian and Non-Euclidian Geometry
- MATH 437-3 Differential Geometry
- MATH 450-3 Real Analysis I
- MATH 451-3 Introduction to Complex Analysis
- MATH 462-3 Engineering Numerical Analysis
- MATH 464-3 Partial Differential Equations
- MATH 465-3 Numerical Analysis
- MATH 466-3 Numerical Linear Algebra with Applications
- MATH 501-3 Differential Equations and the Fourier Analysis
- MATH 502-3 Advanced Calculus for Engineers
- MATH 545-3 Real Analysis II
- MATH 552-3 Theory of Ordinary Differential Equations
- MATH 555-3 Functional Analysis with Applications
- MATH 563-3 Optimal Control Theory (Same as ECE 563 and ME 563)
- MATH 565-3 Advanced Numerical Analysis

Engineering or Science Courses for the Program Core

Core courses are approved on a case-by-case basis. Courses may be taught by faculty at SIUC and made available at SIUE through distance education and other means. Other courses may also be taken to satisfy the engineering or science core requirements subject to approval of the advisor.

This information is concurrent with the 2020-2021 Academic Catalog.
Courses are subject to change at any time.

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