COMPUTER SCIENCE

SIUe

School of Engineering • Department of Computer Science

Degrees Available at SIUE
• Master of Science in Computer Science
• PhD in Computer Science, a cooperative program with SIU Carbondale

Combined Program
• 3 + 2 BS and MS in Computer Science

Computer Science at SIUE
The Master of Science in Computer Science program in the School of Engineering includes applied and theoretical aspects of advanced computing topics. Courses within the Department of Computer Science include advanced operating systems, computer architecture, computer networks, bioinformatics, artificial intelligence, database systems and information assurance. Students who choose to complete a thesis directly engage with faculty to develop a deep understanding of the research topic.

Career Opportunities
Graduates with a degree in computer science frequently earn positions as software engineers. Graduates also pursue careers as research scientists, technology infrastructure specialists or technology consultants. The U.S. Bureau of Labor Statistics predicts continued high demand and high salaries well into the next decade for computer scientists and software engineers. Students who choose to complete the thesis program during their course of study will be well-prepared to enter a PhD program.

Admission Requirements
1. Graduate School application and $40 fee
2. Submission of all academic transcripts
3. A bachelor's degree from an accredited college or university. An undergraduate major in science, engineering, mathematics, or computing is desirable, but individuals with other backgrounds who are interested in the program are invited to discuss their career objectives with the program director.
4. An undergraduate grade point average (GPA) of 2.75 or above on a 4.0 scale.
5. Graduate Record Examination (GRE) general test scores taken within five (5) years from the term for which admission is sought. An applicant should have a minimum of 650/800 in the Quantitative section. Under some circumstances, this requirement may be waived in lieu of extensive work experience in the computer science field. To apply for a GRE waiver, an applicant should submit letters of recommendation and evidence of work experience in the field. Completion of prerequisite and required courses with grades of B or better within two (2) years prior to the term for which admission is sought may also be considered in place of the GRE scores as supporting eligibility to enter the program.
6. An international applicant whose native language is not English is required to demonstrate adequate proficiency in English. Applicant should have scored at least 550 on the Test of English as a Foreign Language (TOEFL) paper exam with a minimum of 50th percentile in all three (3) sections, or at least 217 on the TOEFL computer exam. TOEFL scores older than two (2) years from the term for which the admission is sought are not valid.
7. Submission of a statement of purpose detailing the applicant's background and career plans

Program application materials may be uploaded during the application process, but official transcripts must be sent directly from the school attended, and test scores must be verifiable with the appropriate testing service. Please contact the Graduate Admissions office with questions regarding the application submission process at graduateadmissions@siue.edu.

Review the SIUE Admissions Policy for more information

Prerequisite Courses
Students entering the program will need the specific background detailed below. Normally, a grade of B or above is required in each of the prerequisite courses. For those students who do not have all of the necessary background, some of the prerequisite courses may be completed after enrolling in the program. Students
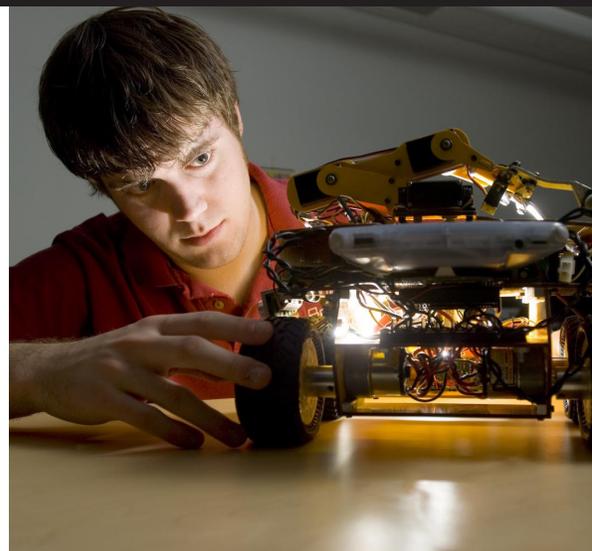
Faculty

Graduate Program Director
Xudong W. Yu, PhD
1992, Vanderbilt University

Dennis J. Bouvier, PhD
1994, University of Louisiana at Lafayette

Igor Crk, PhD
2010, University of Arizona

Gunes Ercal, PhD
2008, University of California-Los Angeles

Hiroshi Fujinoki, PhD
2001, University of South Florida

Thoshitha Gamage, PhD
2011, Missouri University of Science and Technology

Gary R. Mayer, PhD
2009, Arizona State University

Mark McKenney, PhD
2008, University of Florida

Jerry B. Weinberg, PhD
1996, Vanderbilt University

William W. White, PhD
1989, Ohio State University

SOUTHERN ILLINOIS UNIVERSITY
EDWARDSVILLE
GRADUATE SCHOOL

Curriculum

The program requires 34 semester hours and consists of four (4) core courses and completion of either a thesis option, a Master of Science (MS) project, or passing of the final exam.

The thesis option requires six (6) elective courses with six (6) semester hours of thesis. The MS project option requires seven (7) elective courses and three (3) semester hours of MS project. The final exam option requires eight (8) elective courses and successfully passing the final exam. At least 19 of the 34 hours must be 500-level courses or above. For the purposes of assessment, students are also expected to complete two (2) anonymous graduation surveys at the conclusion of their graduate program here.

Students in the program must maintain a grade point average (GPA) of at least 3.0 on a 4.0 scale in all graduate courses. Any course in which a grade below C has been earned will not count toward the graduate degree.

Core Courses (10 hours)
- (3) CS 456 Advanced Algorithms
- (1) CS 500 Graduate Seminar in Computer Science
- (3) CS 514 Operating Systems
- (3) CS 516 Computer Architecture

Total Hours (by option)
- 24 hours are required for the final exam option
- 21 hours with three (3) hours of CS 596 are required for the MS project option
- 18 hours with six (6) hours of CS 599 are required for the thesis option

Up to six (6) hours of courses not listed below may be taken for graduate credit with the approval of the Computer Science (CS) Program Director.

Elective Courses
- (3) CS 423 Compiler Construction
- (3) CS 434 Database Management Systems
- (3) CS 438 Artificial Intelligence
- (3) CS 447 Networks and Data Communications
- (3) CS 454 Theory of Computation
- (3) CS 482 Computer Graphics
- (3) CS 525 Principles of Simulation
- (3) CS 530 Software and Systems Management
- (3) CS 535 Software Engineering
- (3) CS 547 Network Programming
- (3) CS 550 Object Oriented Design and Programming
- (3) CS 582 Advanced Computer Graphics
- (3) CS 583 Topics in Programming Languages
- (3) CS 584 Topics in Artificial Intelligence
- (3) CS 587 Topics in Computer Networking
- (3) CS 590 Topics in Computer Science
- (3) CS 595 Independent Study
- (3) CS 596 MS Project
- (6) CS 599 MS Thesis

A student may take two (2) elective courses (see list below) from outside the CS department. He/she can take an additional outside elective if the course is considered part of the concentration, as approved by the graduate program director.
- (3) ECE 438 Computer Vision
- (3) ECE 439 Digital Image Processing
- (3) ECE 577 Advanced Network Engineering
- (3) ECE 592 Topics in Electrical Engineering
- (3) CMIS 540 Management of Information Systems Development
- (3) CMIS 565 Oracle Database Administration

This information is concurrent with the 2017-2018 Academic Catalog. Courses are subject to change at any time.

who have completed these courses but received their undergraduate degree from a non-ABET-accredited program will be required to take CS 501. Please note that none of the prerequisite courses actually count toward the Master of Science in Computer Science (MS in CS).

Proficiency in CS Courses:
- CS 140, CS 150, and CS 240 C + + Language
- CS 340 Algorithms and Data Structures
- CS 312 Computer Organization
- CS 314 Operating Systems

Math Courses:
- MATH 150 Calculus I
- MATH 224 Discrete Mathematics
- Two Additional Math Courses Selected from:
  - MATH 152 Calculus II
  - MATH 321 Linear Algebra
  - STAT 244 Statistics
  - MATH 423 Combinatorics and Graph Theory
  - or other approved courses

Graduation Requirements

Thesis Option

The thesis will normally be completed during the last semester or two in the program, but selection of the advisory committee and the approval of thesis proposal must be completed before the final semester. The final examination will include an oral presentation of the thesis and an oral examination on the thesis conducted by the advisory committee.

Non-thesis Option

Students must complete one of the following two options:
- Final Exam-This is a non-credit exam, given once each semester (fall and spring), for students who have completed at least 21 hours of graduate credit. Refer to the Final Exam Guideline for additional information.
- Master of Science (MS) Project (CS 596): This is a three (3) credit-hour elective course whose oral exam will serve as the MS exit exam. Please refer to the MS project document for additional information.

Review the graduation policy for more information.

Contact Information

Xudong Yu, Graduate Program Director
Department of Computer Science
School of Engineering
Southern Illinois University Edwardsville
Phone: 618.650.2321 or 618.650.2386
xyu@siue.edu