Computer Science

EECS Department
The Electrical Engineering and Computer Science (EECS) Department at WSU offers undergraduate degrees in electrical engineering, computer engineering and computer science. EECS offers a Master of Science degree in computer science, electrical engineering, and a computer networking, and a doctoral degree in electrical engineering and computer science. The EECS Department formed in 2008 as a result of the merger of the Electrical and Computer Engineering Department and the Computer Science Department.

What is Computer Science?
The professional organization of computer scientists defines computer science as “the systematic study of algorithmic processes that describe and transform information – their theory, analysis, design, efficiency implementation, and application.” Underlying all computing are the fundamental questions: “What can be automated?” and “How can the automation best be accomplished?”

Computer Science at WSU
The computer science program at WSU is accredited by ABET. The undergraduate program in computer science allows you to take a broad array of technical electives in computer science, computer engineering, and computer networking. In your senior year, you will work with a team of students on a two-semester real world project under the supervision of a faculty member. These projects are conducted in such a manner as to prepare you for a professional career with an emphasis on those skills required of computer science professionals.

Career Opportunities
Opportunities for computer science graduates are abundant in our modern, technologically based society. With a computer science degree, you will be qualified for many entry positions in business, industry, education, and government as a result of your broad technical background. A computer science degree opens the door to a satisfying and rewarding career. Computer science graduates have the potential to shape the future of society through creative problem solving, design, innovation, and discovery.

Engineer of 2020
To give our students the most complete education possible, we developed the Engineer of 2020 program. Through service learning, study abroad and global learning, undergraduate research, leadership, multidisciplinary education and internships and cooperative education, students make their computer science degree more meaningful, giving them an advantage in the job market and when applying to graduate school.

Internships & Cooperative Education
There are many opportunities for EECS students to obtain valuable work experience through the WSU Cooperative Education program. EECS students currently participate in the co-op program at Bombardier-Learjet, Cessna, Hawker Beechcraft, Integra Technologies, NetApp, Qualcomm and many more.

Advising
You will be assigned an EECS department advisor who will help you plan your course of study. It is important that you complete Calculus I, the EECS department’s Introduction to Programming course, and Introduction to Digital Design as soon as possible, since they are prerequisites for many EECS courses.

Laboratory and Computer Facilities
At Wichita State, you will have access to modern electrical, electronic, and computer laboratories required for course and project completion. As an engineering student, you will also have access to design and simulation software in our computer studios, computational hub and virtual instrumentation lab in the new Experiential Engineering Building on WSU’s Innovation Campus.

Engineering Student Engagement
As a computer science student, you are encouraged to participate in the student chapter of the Association of Computing Machinery. If you are eligible, you may be invited to join several academic honor societies including Eta Kappa Nu, Omicron Delta Kappa, Phi Kappa Phi, and Mortar Board.


**Education Requirements**

**Basic Skills (9 hours minimum)**
Must be completed in the first 48 college hours and a C or better.
1. College English Composition (Eng. 100 or 101 and 102) - 6 credit hours
2. Public Speaking (Communication 111) - 3 credit hours

**Mathematics and Natural Sciences**
1. Calculus I and II - 10 credit hours
2. Discrete Structures I and II - 6 credit hours
3. Physics for Scientists I and II - 6 credit hours
4. General Chemistry I - 5 credit hours
5. Linear Algebra - 3 credit hours
6. Engineering Probability & Statistics I - 3 credit hours

**Fine Arts, Humanities, and Social and Behavioral Sciences (18 hours minimum)**
1. One introductory course from a fine arts discipline - 3 credit hours
2. One introductory course from a humanities disciplines - 3 credit hours
3. One introductory course from a social and behavioral sciences discipline - 3 credit hours
4. One advanced further study course from humanities or social and behavioral sciences - 3 credit hours
5. Philosophy 354 Ethics and Computers - 3 credit hours

**Major Requirements**
1. Introduction to Programming - 4 credit hours
2. Formal Logic - 3 credit hours
3. Data Structures - 4 credit hours
4. Introduction to Digital Design - 3 credit hours
5. Engineering Economy - 3 credit hours
6. Design and Analysis of Algorithms - 4 credit hours
7. Assembly Language Programming - 3 credit hours
8. Programming Paradigms - 3 credit hours
9. Object-Oriented Programming - 3 credit hours
10. Computer Networks - 3 credit hours
11. Programming Language Concepts - 3 credit hours
12. Operating Systems - 3 credit hours
13. Introduction to Database Systems - 3 credit hours
14. Introduction to Software Engineering - 3 credit hours
15. Design Projects I and II - 4 credit hours
16. Technical Electives - 14 credit hours

**Faculty**

- Rajiv Bagai (PhD). Data Bases, Programming Languages.
- Animesh Chakravarthy (PhD). Dynamics and Controls.
- Debiswaona Bhattachary (PhD). Bioinformatics, machine learning.
- Ali Eslam (PhD). Error Correcting Codes.
- Yanwu Ding (PhD). Signal Processing.
- Keenan Jackson (MS). Programming Languages. Lecturer
- Preethika Kumar (PhD). Quantum Computing.
- Prakash Ramanan (PhD). Algorithms, Data Base Systems.
- Manira Rani (MS). FPGA Programming.
- Kaushik Sinha (PhD). Machine Learning and Data Mining.
- Steven R. Skinner (PhD). Optics.
- Perlekar Tamtam (PhD) Power Systems.
- Pu Wang (PhD). Modeling and Optimization of Data Networks.

**For more information**
If you have further questions or would like to schedule a campus visit, please contact the Office of Admissions.

Marcus Welcome Center
Office of Admissions
1845 Fairmount
Wichita, KS 67260-0124
wichita.edu/admissions
wichita.edu/visit

KSState.edu

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For more information on Computer Science at WSU visit wichita.edu/engineering or call (316) 978-3156.