

# COMPUTER SCIENCE

Computers are a part of almost every facet of everyday life. They're used to make life easier – programming automation or helping run a business. If you're ready to be immersed in the world of computers, you should consider a Computer Science degree from Wayne State. In computer science, you'll learn to understand the "why" and the "how" of computer programs and hardware. You'll learn fundamental programming languages and mathematical concepts required to build software and operating systems. You'll also gain practical skills in the areas of introductory networking and server security and management. With a Computer Science degree, you'll be able to make sense of computer code and know how computer components work together. This will prepare you for careers in systems and software development, web development, or even research and development of the newest computer technology and equipment.

## fast facts

**Hours:**

57 hours for concentration  
30 hours in general education

*At least 120 hours are required for graduation from Wayne State College.*

**Degrees offered:** B.A. or B.S.

**Department:** Computer Technology and Information Systems

**School:** Business and Technology

**Internship:** Strongly encouraged but not required

**Popular minors:** Mathematics, Geospatial Technology, Criminal Justice, Web and Mobile App Development, Computer Information Systems

## focus on results

### Skills Learned

- Computer hardware and architecture
- Scientific principals and scientific method
- Mathematic essentials for the field
- Software analysis, and design
- Object-oriented programming
- Server security and management
- Database design and development using SQL
- Critical thinking and analysis
- Computer troubleshooting
- Networking concepts and technologies

### Possible Careers

- Software developer
- Application developer
- Computer systems engineer
- Computer programmer
- Web developer
- Systems analyst
- IT administrator
- IT project manager
- Database administrator
- Computer repair technician
- Computer forensics specialist
- Chief technology officer

### Types of Employers

- Software companies
- Computer companies
- IT development companies
- Manufacturing companies
- Banking and financial institutions
- Data warehouse companies
- Government / federal agencies
- Businesses and corporations
- Schools, colleges, and universities
- Technical support centers

## outside the classroom



Visit [www.wsc.edu/clubs](http://www.wsc.edu/clubs) to learn more about clubs and organizations on campus.

### Activities / Opportunities

- Programming and robotics competitions
- Guest speaker events
- IT facility tours
- Workshops and presentations
- Peer tutoring and mentoring
- Service-Learning
- Study Abroad

### Clubs / Organizations

- Association for Computing Machinery (ACM)
- Upsilon Pi Epsilon (International Computing Honorary)
- SkillsUSA

# Sample program of study

2024-25 Academic Year

Every effort is made to ensure this information is current, but please be aware that some content may have changed. There is no substitute for developing a careful course registration plan in consultation with your advisor. The class sequence listed is suggested only. The final decision rests with the student and academic advisor.

## Freshman - 1st semester

CIS 132 Principles of Computing and Information Systems.....	3
CNA 100 Principles of Human Communication.....	3
CSC 150 Programming Fundamentals I.....	3
CSC 165 Intro to Web Development.....	3
ENG 102 Composition Skills.....	3

## Freshman - 2nd semester

CSC 160 Programming Fundamentals II.....	3
MAT (General Studies CAT 3)*.....	3-5
General Studies.....	9

## Sophomore - 1st semester

CIS 171 Networking I.....	3
CSC 310 Data Structures.....	3
CIS 366 Introduction to Database.....	3
Mathematics elective (MAT 180 recommended).....	3
General Studies.....	3

## Sophomore - 2nd semester

CSC 320 Computer Organization.....	3
CSC 345 Computer Graphics.....	3
PHY 326 Electronics**.....	3
General Studies.....	6

## Junior - 1st semester

CIS 360 Computer Information Systems: Analysis and Design.....	3
CIS 372 Computer Hardware.....	3
CSC 380 Operating Systems.....	3
MAT 305 Discrete Mathematics***.....	3
General Studies.....	3

## Junior - 2nd semester

CIS 361 Software Engineering.....	3
CIS 472 Advanced Computer Hardware and Embedded Systems or CSC 390 Computer Science Practicum or CSC 397/497 Internship.....	3
Mathematics elective.....	3
Electives/minor.....	3
General Studies.....	3

## Senior - 1st semester

CSC 363 Human-Computer Interaction.....	3
Electives/minor.....	9
General Studies.....	3

## Senior - 2nd semester

CSC 450 Server Security and Management.....	3
CSC 480 Seminar in Computer Science.....	3
Electives/minor.....	9

Note: Students in the Growing Together program should follow advisor recommendations to save room for required cooperative education credit hours and complete CSC 363 and CSC 450 one year early.

## CSC/CIS electives (choose one of the following):

CIS 271 Networking II (approved elective, but NOT 300 level).....	3
CIS 352 Introduction to Enterprise Computing.....	3
CIS 371 Networking III.....	3
CIS 375 Intro to E-Commerce.....	3
CIS 430 Management Information Systems.....	3
CIS 466 Advanced Database.....	3
CIS 471 Networking IV.....	3
CIS 475 Topics in Computer Information Systems.....	3
CIS 477 Project Management.....	3
CSC 365 Scripting Languages.....	3

\*MAT 140 Calculus I is the required mathematics for computer science majors and meets CAT 3 of the General Studies requirements. Students who need to take prerequisites to be eligible to take MAT 140 should discuss the timing of taking MAT 140 with their advisors.

\*\*Important: PHY 326 is offered in spring semester of even-numbered years and must be taken as the CAT 7 General Studies requirement.

\*\*\*MAT 305 Discrete Math is offered on a one-year rotation. Please plan accordingly.

## computer science faculty



Visit [www.wsc.edu/ctis](http://www.wsc.edu/ctis) to learn more about the Department of Computer Technology and Information Systems.

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