



Computer Science BS

The Bachelor of Science in Computer Science is designed for those interested in software and computer systems on the technical side. Graduating seniors can find fulfilling careers in many related areas, such as cybersecurity, networks, Internet programming, software and mobile app development, data science, AI, graphics, or pursue additional graduate studies in computer science or in a more specialized area. Some courses are available online, and the entire program can be completed in the evening.

Career Outlook

Our graduates find positions in various industries, and also in government and education. According to federal and local government statistics, the demand for computer science graduates exceeds supply and is expected to grow faster than average, with above average salaries. Our alumni can be found in virtually all large and medium size local companies, as well as throughout the country and overseas; for example, in companies such as Boeing, Google, Mastercard, Microsoft, USPS, and WWT.

Future Career Options

- Computer Network Architect
- Computer Programmer
- Computer Support Specialist
- Computer Systems Analyst
- Database Administrator
- Information Security Analyst
- Network and Computer Systems Administrator
- Software Developer
- Web Developer

Skills Developed By Degree Completion

- Create software systems
- Implement Internet applications on client and server sides
- Analyze and solve computing problems with varying size and scope
- Analyze, evaluate, and compare alternative solutions to computing problems
- Design, code, and document solutions to computational problems
- Work effectively in teams to design, implement, and evaluate solutions to computational problems

Successful alumni have gone on to fulfill many of the opportunities above. Additional possibilities are taken from the Bureau of Labor Statistics. Contact an advisor to discuss additional future career options.

2024-2025 4-YEAR ACADEMIC MAP

IT STARTS RIGHT NOW

This is a sample academic map for the courses to take each academic semester/session. This map is not a substitute for academic advisement. Contact your advisor when making final selections.

UNIVERSITY STUDIES
University studies is required for all first-year students and those with less than 24 credit hours.

MILESTONE COURSES
Milestone courses should be taken in the order shown to ensure you stay on a timely and accurate path toward graduation.

SUMMER AND INTERSESSION COURSES
Don't forget that summers and winter breaks are a way to fast-track your route to degree completion – and lighten your load during fall and spring!

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888-GO-2-UMSL
314-516-5451
admissions.umsl.edu

Bachelor of Science in Computer Science

Year 1

FALL SEMESTER (16 credit hours)

- CMP SCI 1000: Computer Science Experiences (1)
- ENGL 1100: First-Year Writing (3)
- MATH 1030: College Algebra (3)
- MATH 1035: Trigonometry (2)
- GEN ED EXPLORE: Humanities and Fine Arts (3)
- GEN ED EXPLORE: Social Sciences (3)
- INTDSC 1003: University Studies (1)

SPRING SEMESTER (17 credit hours)

- CMP SCI 1250: Introduction to Computing (3)
- MATH 1800: Analytic Geometry and Calculus I (5)
- GEN ED CORE: US History and Government (3)
- GEN ED EXPLORE: Humanities and Fine Arts (3)
- GEN ED EXPLORE: Social Sciences (3)

Year 2

FALL SEMESTER (17 credit hours)

- CMP SCI 2250: Programming and Data Structures (3)
- CMP SCI 2700: Computer Organization and Architecture (3)
- MATH 1320: Introductory Probability and Statistics (3)
- MATH 1900: Analytic Geometry and Calculus II (5)
- GEN ED EXPLORE: Humanities and Fine Arts (3)

SPRING SEMESTER (15 credit hours)

- CMP SCI 2261: Object-Oriented Programming (3)
- CMP SCI 2750: System Programming and Tools (3)
- CMP SCI 3010: Web Programming (3)
- MATH 3000: Discrete Structures (3)
- GEN ED CORE: Communication Proficiency (3)

Year 3

FALL SEMESTER (15 credit hours)

- CMP SCI 3130: Design and Analysis of Algorithms (3)
- CMP SCI 4250: Programming Languages (3)
- CMP SCI 3XXX: Computer Science Elective (3)
- ENGL 3130: Technical Writing (3)
- MATH 2450: Elementary Linear Algebra (3)

SPRING SEMESTER (15 credit hours)

- CMP SCI 4760: Operating Systems (3)
- CMP SCI 3XXX: Computer Science Elective (3)
- CMP SCI 3XXX: Computer Science Elective (3)
- GEN ED EXPLORE: Social Sciences (3)
- Elective (3)

Year 4

FALL SEMESTER (15 credit hours)

- CMP SCI 4500: Introduction to the Software Profession (3)
- CMP SCI 3XXX: Computer Science Elective (3)
- Cultural Diversity Requirement (3)
- Elective (3)
- Elective (3)

SPRING SEMESTER (12 credit hours)

- CMP SCI 4280: Programming Translation (3)
- CMP SCI 3XXX: Computer Science Elective (3)
- Elective (3)
- Elective (3)

		Check once completed	
Year 1	CMP SCI 1000: Computer Science Experiences (1)	<input type="checkbox"/>	
	ENGL 1100: First-Year Writing (3)	<input type="checkbox"/>	
	MATH 1030: College Algebra (3)	<input type="checkbox"/>	
	MATH 1035: Trigonometry (2)	<input type="checkbox"/>	
	GEN ED EXPLORE: Humanities and Fine Arts (3)	<input type="checkbox"/>	
	GEN ED EXPLORE: Social Sciences (3)	<input type="checkbox"/>	
	INTDSC 1003: University Studies (1)	<input type="checkbox"/>	
	SPRING SEMESTER (17 credit hours)		
	CMP SCI 1250: Introduction to Computing (3)	<input type="checkbox"/>	
	MATH 1800: Analytic Geometry and Calculus I (5)	<input type="checkbox"/>	
	GEN ED CORE: US History and Government (3)	<input type="checkbox"/>	
	GEN ED EXPLORE: Humanities and Fine Arts (3)	<input type="checkbox"/>	
	GEN ED EXPLORE: Social Sciences (3)	<input type="checkbox"/>	
	Year 2	FALL SEMESTER (17 credit hours)	
CMP SCI 2250: Programming and Data Structures (3)		<input type="checkbox"/>	
CMP SCI 2700: Computer Organization and Architecture (3)		<input type="checkbox"/>	
MATH 1320: Introductory Probability and Statistics (3)		<input type="checkbox"/>	
MATH 1900: Analytic Geometry and Calculus II (5)		<input type="checkbox"/>	
GEN ED EXPLORE: Humanities and Fine Arts (3)		<input type="checkbox"/>	
SPRING SEMESTER (15 credit hours)			
CMP SCI 2261: Object-Oriented Programming (3)		<input type="checkbox"/>	
CMP SCI 2750: System Programming and Tools (3)		<input type="checkbox"/>	
CMP SCI 3010: Web Programming (3)		<input type="checkbox"/>	
MATH 3000: Discrete Structures (3)	<input type="checkbox"/>		
GEN ED CORE: Communication Proficiency (3)	<input type="checkbox"/>		
Year 3	FALL SEMESTER (15 credit hours)		
	CMP SCI 3130: Design and Analysis of Algorithms (3)	<input type="checkbox"/>	
	CMP SCI 4250: Programming Languages (3)	<input type="checkbox"/>	
	CMP SCI 3XXX: Computer Science Elective (3)	<input type="checkbox"/>	
	ENGL 3130: Technical Writing (3)	<input type="checkbox"/>	
	MATH 2450: Elementary Linear Algebra (3)	<input type="checkbox"/>	
	SPRING SEMESTER (15 credit hours)		
	CMP SCI 4760: Operating Systems (3)	<input type="checkbox"/>	
	CMP SCI 3XXX: Computer Science Elective (3)	<input type="checkbox"/>	
	CMP SCI 3XXX: Computer Science Elective (3)	<input type="checkbox"/>	
GEN ED EXPLORE: Social Sciences (3)	<input type="checkbox"/>		
Elective (3)	<input type="checkbox"/>		
Year 4	FALL SEMESTER (15 credit hours)		
	CMP SCI 4500: Introduction to the Software Profession (3)	<input type="checkbox"/>	
	CMP SCI 3XXX: Computer Science Elective (3)	<input type="checkbox"/>	
	Cultural Diversity Requirement (3)	<input type="checkbox"/>	
	Elective (3)	<input type="checkbox"/>	
	Elective (3)	<input type="checkbox"/>	
	SPRING SEMESTER (12 credit hours)		
CMP SCI 4280: Programming Translation (3)	<input type="checkbox"/>		
CMP SCI 3XXX: Computer Science Elective (3)	<input type="checkbox"/>		
Elective (3)	<input type="checkbox"/>		
Elective (3)	<input type="checkbox"/>		