

Graduation Planner

Program: *Computer Science BS*
Total Credits: 128
Catalog: *Fall 2025-Summer 2026*

This planning guide is intended to assist students along a recommended pathway towards their bachelor degree in Computer Science based on the students' academic goals, pace and prior college or work experience.

This guide is NOT intended to take the place of meetings with academic advisors or intended to take the place of the Degree Audit System (DARs) which is unique to when the student has been admitted and declared their major program.

Metro students vary widely in their exposure and experience to computer science knowledge, prior college and work experience. This guide provides four examples a student might identify themselves as, and can help planning your pathway to a degree.

- » [Full-time freshman student](#) who has not earned any college credit prior to admission to Metro.
- » [Full-time student with a Minnesota State Computer Science Transfer Pathway AS degree](#) at a participating community college and seeking to transfer to Metro to earn a Bachelor of Science degree.
- » [Part-time student with a Minnesota State Computer Science Transfer Pathway AS degree](#) at a participating community college and seeking to transfer to Metro to earn a Bachelor of Science degree while often working or have other obligations outside of college.
- » [Student seeking a second bachelor's degree](#) often to make a career shift or re-enter the workforce to advance their educational and work background to incorporate advanced math and computing coursework required.

Academic Planning and Sequencing Notes

The Department of Computer Science and Cybersecurity (CSC) offer Information and Computer Science (ICS) premajor and core required courses all three semesters (Fall, Spring, and Summer). The majority of courses meet just once a week and offered in the evening (6:00 – 9:20 PM). Day-time options vary based on instructor availability and student demand.

CSC faculty teach using D2L Brightspace digital learning platform and utilize various delivery methods including in-person, online synchronous, flexible and blended hybrid. The course schedule and registration system in e-Services will reflect course options and details around delivery methods and student technology needs, seat or proctor test requirements.

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Students are responsible to both be aware of and abide by prerequisites for ICS courses for which they enroll, and will be administratively dropped from a course if they have not met prerequisites.

Traditional, full-time 4-year degree (128 credits)

For freshman or students prepared to take college algebra and without AS degree. This guide is in sequence of the required course prerequisites for a student to progress in the program with a full-time (FT) course load (12-16 credits) each semester.

Key

- **Elective:** student selected course credits for major.
- **GELS:** General Education Liberal Studies Goal Area.
- **Premajor:** foundation course needed prior to declaring major.

First Year-Traditional FT

Fall

Course	Course Title	Credits
MATH 115	College Algebra	4
WRIT 131	Writing I	3
METR 101	Your Academic Journey	3
GELS	Student choice of GELS course	4

Spring

Course	Course Title	Credits
ICS 140	Computational Thinking with Programing	4
MATH 120	Pre-Calculus	4
WRIT 132	Writing II	3
GELS	Student choice of GELS course	4

Second Year-Traditional FT

Remaining pre-major requirements to declare the major.

Fall

Course	Course Title	Credits
ICS 141	Problem Solving with Programming	4
MATH 215	Discrete Mathematics	4
GELS	Student choice of GELS course	4
GELS	Student choice of GELS course	4

Spring

Course	Course Title	Credits
ICS 232	Computer Organization and Architecture	4
ICS 240	Introduction to Data Structures	4
MATH 210	Calculus I	4
GELS	Student choice of GELS course	4

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Third Year-Traditional FT

Once pre-major courses are completed, students declare the major and are advised to begin the process to secure an internship the summer between their third and fourth year.

Fall

Course	Course Title	Credits
ICS 311	Database Management Systems	4
ICS 340	Algorithms and Data Structures	4
GELS	Student choice of GELS course	4
GELS	Student choice of GELS course	4

Summer

Course	Course Title	Credits
ICS 350I	ICS Internship or elective	4

Fourth Year- Traditional FT

Fall

Course	Course Title	Credits
ICS 440	Parallel and Distributed Algorithms	4
ICS 460	Networks and Security	4
CS Elective	Student choice of major elective	4
GELS	Student choice of GELS course	4

Spring

Course	Course Title	Credits
ICS 365	Organization of Programming Languages	4
ICS 372	Object-Oriented Design and Implementation	4
GELS	Student choice of GELS course	4
GELS	Student choice of GELS course	4

Advising notes

Course	Course Title	Credits
Advising notes as needed:		

Spring

Course	Course Title	Credits
ICS 462	Operating Systems	4
ICS 499	Software Engineering & Capstone Project	4
GELS	Student choice of GELS course	4
GELS	Student choice of GELS course	4



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Full-time student with a Minnesota State Computer Science Transfer Pathway Associates of Science degree (60 credits)

This sequence is for students transferring from one of our community college partners with an Associates of Science (AS) degree and seeking to transfer to Metro to earn a Bachelor of Science degree attending fulltime (FT) with a course load of 12-16 credits each semester.

Students with an AS degree are prepared for 300-level and 400-level “upper division” courses, the core major requirements of ICS courses often serve as a prerequisite to other “upper division” elective courses that a student can select based on their interests. Because students have elective options and prerequisites may vary, this guide has listed them in numeric order.

Key

- **Elective:** student selected course credits for major.
- **GELS:** General Education Liberal Studies Goal Area.
- **Premajor:** foundation course needed prior to declaring major.

First Year-Transfer Pathway FT

Once admitted and the calculus requirement is satisfactory completed, students declare the major.

Fall

Course	Course Title	Credits
MATH 210	Calculus I	4
ICS 311	Database Management Systems	4
ICS 340	Algorithms and Data Structures	4
GELS	Student choice of GELS course	4

Spring

Course	Course Title	Credits
ICS 365	Organization of Programming Language	4
ICS 372	Object-Oriented Design and Implementation	4
GELS	Student choice of GELS course	4
GELS	Student choice of GELS course	4

Summer

Course	Course Title	Credits
ICS 350I	ICS Internship or elective	4

Advising notes

Course	Course Title	Credits
	Advising notes as needed:	

Second Year-Transfer Pathway FT

Once admitted and the calculus requirement is satisfactory completed, students declare the major.

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Fall

Course	Course Title	Credits
ICS 440	Parallel and Distributed Algorithms	4
ICS 460	Networks and Security	4
CS Elective	Student choice of major elective	4
GELS	Student choice of GELS course	4

Spring

Course	Course Title	Credits
ICS 462	Operating Systems	4
ICS 499	Software Engineering and Capstone Project	4
GELS	Student choice of GELS course	4
GELS	Student choice of GELS course	4

Advising notes

Course	Course Title	Credits
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Part-time student with a Minnesota State Computer Science Transfer Pathway AS degree (60 credits)

This sequence is for students transferring from one of our community college partners with an Associates of Science (AS) degree and seeking to transfer to Metro to earn a Bachelor of Science degree part-time (PT) while often working or have other obligations outside of college.

Students with an AS degree are prepared for 300-level and 400-level “upper division” courses, the core major requirements of ICS courses often serve as a prerequisite to other “upper division” elective courses that a student can select based on their interests. Because students have elective options and prerequisites may vary, this guide has listed them in numeric order.

Key

- **Elective:** student selected course credits for major.
- **GELS:** General Education Liberal Studies Goal Area.
- **Premajor:** foundation course needed prior to declaring major.

First Year-Transfer Pathway PT

Once admitted and the calculus requirement is satisfactory completed, students declare the major.

Fall

Course	Course Title	Credits
MATH 210	Calculus I	4
ICS 311	Database Management Systems	4

Summer

Course	Course Title	Credits
ICS 365	Organization of Prog. Lang.	4
GELS	Student choice of GELS course	4

Second Year - Transfer Pathway PT

Fall

Course	Course Title	Credits
ICS 440	Parallel and Distributed Algorithms	4
GELS	Student choice of GELS course	4

Spring

Course	Course Title	Credits
ICS 340	Algorithms and Data Structures	4
ICS 372	Object-Oriented Design and Implementation	4

Advising notes

Course	Course Title	Credits
	Left for advising notes:	

Spring

Course	Course Title	Credits
ICS 460	Networks and Security	4
CS Elective	Student choice of major elective	4

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Summer

Course	Course Title	Credits
ICS 350I	ICS Internship or elective	4

Advising notes

Course	Course Title	Credits
Advising notes as needed:		

Third Year-Transfer Pathway PT

Fall

Course	Course Title	Credits
ICS 462	Operating Systems	4
GELS	Student choice of GELS course	4

Spring

Course	Course Title	Credits
ICS 499	Software Engineering and Capstone Project	4
GELS	Student choice of GELS course	4

Advising notes

Course	Course Title	Credits
Advising notes as needed:		


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Student seeking a second bachelor's degree (72 credits)

This sequence guides students making a career shift or re-enter the workforce to advance their educational and work background to incorporate advanced math and computing coursework required for the major.

Key

- **Elective:** student selected course credits for major.
- **CELS:** General Education Liberal Studies Goal Area.
- **Premajor:** foundation course needed prior to declaring major.

First Year-Career shift

Fall

Course	Course Title	Credits
MATH 115	College Algebra	4
Left for advising notes:		

Spring

Course	Course Title	Credits
ICS 140	Computational Thinking with Programing	4
MATH 120	Precalculus	4
MATH 215	Discrete Mathematics	4

Summer

Course	Course Title	Credits
ICS 141	Problem Solving with Programing	4
MATH 210	Calculus I	4

Advising notes

Course	Course Title	Credits
Advising notes as needed:		

Second Year-Career shift

Once admitted and calculus requirement satisfactory completed, students declare the major.

Fall

Course	Course Title	Credits
ICS 232	Computer Organization and Architecture	4
ICS 240	Introduction to Data Structures	4
ICS 311	Database Management Systems	4

Spring

Course	Course Title	Credits
ICS 340	Algorithms and Data Structures	4
ICS 365	Organization of Programming Languages	4
ICS 372	Object-Oriented Design and Implementation	4

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Summer

Course	Course Title	Credits
ICS 350I	ICS Internship	4
ICS 440	Parallel and Distributed Algorithms	4
ICS 460	Networks and Security	4

Third Year-Career shift

Fall

Course	Course Title	Credits
ICS 462	Operating Systems	4
ICS 499	Software Engineering and Capstone Project	4
CS Elective	Student choice of major elective	4

Advising notes

Course	Course Title	Credits
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