

Program Articulations:
**Metropolitan State University, Department of Information and Computer
 Sciences and**
**Minneapolis Community and Technical College, Department of Computer
 Science**

Bachelor of Arts in Computer Information Systems (59 credits)

Degree Requirement	MCTC Course(s)	Metro State Course(s)
Foundation Courses (20-23 credits)		
College Algebra or Pre-calculus	MATH 1110 College Algebra (5 cr) and Math 1120 Trigonometry	(Math 115 College Algebra (4 cr) and Math 116 Trigonometry) or Math 120 Pre-Calculus
Discrete Mathematics	CSCI 2011 Discrete Mathematics (4 cr)	Math 215 Discrete Mathematics (4 cr)
One course in probability, statistics or calculus	MATH 1170 Calculus for Business & Social Sciences (4 cr) or MATH 1180 Calculus 1 (5 cr) or Math 1140 Introductory Statistics or Math 1150 Statistical Analysis	Math 210 Calculus I (4 cr)
Programming Fundamentals	CSCI 1500 Introduction to Programming and Problem Solving (3 cr)	ICS 140 Programming Fundamentals (4 cr)
	CSCI 1700 Introduction to Computer Programming in Java (3 cr)	ICS 180 Java for Transfer Students (4 cr)
	CSCI 1902 Structure of Computer Programming II (4 cr)	ICS 240 Programming with Elementary Data Structures (4 cr)
Web Programming		ICS 225 Web Design and Implementation (4 cr)
Core Courses (19-20 credits)		
		ICS 311 Database Management Systems (4 cr)
		ICS 370 Software Design Models (4 cr)
		ICS 325 Internet Application Development
		ICS 499 ICS Capstone Project (4 cr)
Electives (15 credits)		
15 credits—may include a maximum of 6 lower-division credits not previously used to meet other major requirements. Lower division electives require advisor's approval	MATH 1170 Calculus for Business & Social Sciences (4 cr) MATH 1180 Calculus 1 (5 cr) MATH 1190 Calculus 2 (5 cr) MATH 2210 Linear Algebra and Differential Equations (5 cr) MATH 2229 Multivariable Calculus (5 cr)	Students are encouraged to choose a set of elective courses which form a cohesive package related to their particular interests or career goals. Choices must include a Group 1 elective.

Bachelor of Science in Computer Science (60 credits, not including prerequisites)

Degree Requirement	MCTC Course(s)	Metro State Course(s)
Prerequisites		
Pre-Calculus	MATH 1110 College Algebra (5 cr) and Math 1120 Trigonometry	Math 120 Pre-Calculus (4 cr)
Programming Foundation Courses (16 credits)		
Programming Foundation	CSCI 1500 Introduction to Programming and Problem Solving (3 cr)	ICS 140 Programming Fundamentals (4 cr)
	CSCI 1700 Introduction to Computer Programming (3 cr)	ICS 180 Java for Transfer Students (4 cr)
	CSCI 1902 Structure of Computer Programming II (4 cr)	ICS 240 Programming with Elementary Data Structures (4 cr)
		ICS 340 Data Structures (4 cr)
Mathematics Foundation Courses (12 credits)		
Discrete Mathematics	CSCI 2011 Discrete Mathematics (4 cr)	Math 215 Discrete Mathematics (4 cr)
Calculus	MATH 1180 Calculus 1 (5 cr)	Math 210 Calculus I (4 cr)
One additional approved mathematics course	MATH 1190 Calculus 2 (5 cr) MATH 2210 Linear Algebra and Differential Equations (5 cr) MATH 2229 Multivariable Calculus (5 cr)	Math 211 Calculus II (4 cr) Math 251 Introduction to Probability and Statistics (4 cr) Math 315 Linear Algebra and Applications (4 cr) Math 340 Mathematical Modeling (4 cr) Math 360 Operations Research (4 cr)
Core Courses (20 credits—must be upper-division)		
		ICS 362 Computer Organization and Architecture (4 cr)
		ICS 370 Software Design Models (4 cr)
		ICS 440 Sequential and Parallel Algorithms (4 cr) or ICS 441 Foundations of Computing Theory (4 cr)
		ICS 462 Operating Systems (4 cr)
		ICS 499 Information and Computer Sciences Capstone Project (4 cr)
Additional Requirements		
Second Programming Language (may be fulfilled by completing a course or demonstration of proficiency)	One of the following: CSCI 1901 Structure of Computer Programming I (4 cr) CSCI 1730 Introduction to Object-Oriented Programming with C++ (4 cr) CSCI 1630 C Programming and Problem Solving (in C) (4 cr)	One of the following: ICS 265 C Programming (3 cr) ICS 266 Object-Oriented Programming with C++ (3 cr) ICS 365 Comparative Programming Languages (4 cr)

Electives (12 credits)		
12 credits—may include a maximum of 4 lower-division credits not previously used to meet other major requirements. Lower division electives require advisor's approval	<i>Group I electives</i> MATH 2210 Linear Algebra and Differential Equations (5 cr)* MATH 1190 Calculus 2 (5 cr)* MATH 2229 Multivariable Calculus (5 cr)* *If not used to fulfill Mathematics Foundation requirement	Students are encouraged to choose a set of elective courses which form a cohesive package related to their particular interests or career goals. Choices must include a Group 1 elective.

CAS 1/26/04