



## **Computer Science A.S.**

Career Community: Science and Mathematics

Curriculum Code: 0169

Effective: Fall 2023 – Summer 2028

### **Purpose of Major**

This degree is designed for students who plan to transfer to a four-year university to pursue a Bachelor's of Science degree in Computer Science with a variety of concentrations. Students completing this degree will also satisfy Michigan Transfer Agreement (MTA) requirements for General Education and may qualify for an LCC Transfer Studies Certificate of Achievement. This degree includes a set of courses common to all Science and Math majors and all transfer institutions. Students are encouraged to work with an academic advisor and program advisor to explore transfer opportunities.

Not all courses in this pathway transfer to all colleges. Students who wish to transfer to a four-year institution should select coursework indicated for that institution.

### **Milestone**

In addition to the required General Education courses in Math and English, completion of CPSC 230 and MATH 151 with a 2.0 or higher is a key component for success in completing this program. Knowledge obtained in these courses is the foundation for learning in other required courses. Students are encouraged to contact their faculty if they need additional assistance with learning the concepts presented in these courses.

### **Additional Information**

- A student must earn a minimum grade of 2.0 in all courses.
- PHIL 151 is strongly recommended as one of the Humanities and Fine Arts courses.
- It is highly recommended that transfer students wishing to pursue a degree in theoretical computer science take MATH 260, Linear Algebra, for one of the Program of Study Required Courses – Limited Choices selections.

### **Contact Information**

For further information, including career options, course substitutions and waivers, etc., contact the Science Department, Arts and Sciences Building, Room 3203, telephone number 517-483-1092.

### **General Education – Transfer Degrees (MTA) - Recommended Courses**

(For the full list of options, see [General Education](#))

- English Composition  
Science and Mathematics Career Community Courses meet this requirement.

- English Composition (second course)/Communication  
Science and Mathematics Career Community Courses meet this requirement.
- Humanities and Fine Arts.  
Program of Study Required Courses meets this requirement.
- Mathematics  
Science and Mathematics Career Community Courses meet this requirement.
- Natural Sciences  
Science and Mathematics Career Community Courses meet this requirement.
- Social Sciences  
Science and Mathematics Career Community Courses meet this requirement.

**Science and Math Career Community Courses** – *These courses are required for all Science and Math programs. They should be taken before other Program Required or Limited Choice Courses. Some courses meet General Education requirements for Michigan Transfer Agreement (MTA).*

Course Code	Course Title	Credit / Billing Hours
ACAD 100	First-Year Experience	1 / 1
ANTH 270 or	Cultural Anthropology	3 / 3
ECON 120 or	Power, Authority and Exchange	4 / 4
ECON 201 or	Principles of Economics-Micro	4 / 4
EDUC 204 or	Educational Psychology	3 / 3
EDUC 220 or	Introduction to Education	3 / 3
GEOG 120 or	Introduction to Geography	3 / 3
GEOG 200 or	World Regional Geography	4 / 4
POLS 120 or	American Political System	4 / 4
POLS 240 or	Introduction to Public Policy	3 / 3
POLS 260 or	Comparative Political Systems	3 / 3
PSYC 200 or	Introduction to Psychology	4 / 4
SOCL 120	Introduction to Sociology	4 / 4
BIOL 120 or	Environmental Science	4 / 6
BIOL 127 or	Cell Biology	4 / 6
GEOG 221 or	Physical Geology	4 / 6
GEOG 230 or	Environmental Geology	4 / 6
PHYS 251	Physics I with Calculus	5 / 7
CHEM 151	General Chemistry Lecture I	4 / 4
CHEM 161	General Chemistry Lab I	1 / 3
COMM 120 or	Dynamics of Communication	3 / 3
COMM 130 or	Fundamentals Public Speaking	3 / 3

Course Code	Course Title	Credit / Billing Hours
ENGL 122 or ENGL 132	Composition II Honors Composition II	4 / 4 4 / 4
ENGL 121 or ENGL 131	Composition I Honors Composition I	4 / 4 4 / 4
MATH 120 or MATH 126 or MATH 151	College Algebra Pre-calculus Calculus I	4 / 4 5 / 5 4 / 4

Notes:

ACAD 100 may be waived when students meet one of the following College-approved waiver criteria:

- Completion of 12 college-level credits with minimum grades of 2.0 shown on the LCC transcript (including transfer, if applicable), or
- Employment in the field of, or a field related to, the degree being sought, or
- For Health Careers students, successful completion of CHSE 100.

Students wishing to waive ACAD 100 should contact their advisor.

Choose MATH 151 for this degree.

**Program of Study Required Courses - Some courses meet General Education requirements for Michigan Transfer Agreement (MTA). A minimum of 2.0 is required to transfer to other colleges (some colleges, and some programs within colleges, require a higher grade in a course.)**

Course Code	Course Title	Credit / Billing Hours
CPSC 101	Intro to Computer Science	3 / 3
CPCS 230	Algorithms and Computing with C++	4 / 4
CPSC 231	Computing and Data Structures	4 / 4
CPSC 260	Computer Science Structures	4 / 4
MATH 151	Calculus I	4 / 4
MATH 152	Calculus II	4 / 4
MATH 253	Calculus III	4 / 4

Note: If MATH 151 was completed as part of the Career Community block, do not repeat enrollment.

**Program of Study Required Courses, Limited Choice – Humanities and Fine Arts - Select two from two different disciplines. Courses meet General Education requirements for Michigan Transfer Agreement (MTA).**

Course Code	Course Title	Credit / Billing Hours
HIST 211	U.S. History to 1877	4 / 4

Course Code	Course Title	Credit / Billing Hours
HIST 212	U.S. History: 1877 to Present	4 / 4
HUMS 224	The Western World since 1500	4 / 4
MUSC 240	Musical Cultures to 1750	4 / 4
MUSC 241	Musical Cultures 1750-Present	4 / 4
PHIL 151	Intro to Logic & Critical Think	4 / 4
PHIL 211	Philosophy: Ancient & Medieval	4 / 4
PHIL 212	Philosophy: Modern & Contemptry	4 / 4

**Program of Study Required Courses, Limited Choice – Social Sciences** - *Select one from a different discipline chosen for the Science and Math Career Community block of courses. Courses meet General Education requirements for Michigan Transfer Agreement (MTA). A minimum of 2.0 is required to transfer to other colleges (some colleges, and some programs within colleges, require a higher grade in a course.)*

Course Code	Course Title	Credit / Billing Hours
ECON 120	Power, Authority, and Exchange	4 / 4
GEOG 200	World Regional Geography	4 / 4
POLS 260	Comparative Political Systems	3 / 3
PSYC 200	Introduction to Psychology	4 / 4
SOCL 120	Introduction to Sociology	4 / 4

**Program of Study Required Courses, Limited Choice –** *Select a minimum of one course to meet the 60-credit minimum required for this degree. For information on preferred courses for specific concentrations identified by transfer institutions, consult with a Program Advisor.*

Course Code	Course Title	Credit / Billing Hours
CPSC 131	Numerical Methods with MATLAB	3 / 4
MATH 254	Intro to Differential Equation	4 / 4
MATH 260	Linear Algebra	4 / 4
STAT 215	Intro to Probability and Stats	4 / 4

### Minimum Total Credit Hours

60 credits / 65 billing hours

### Recommended Course Sequence

Semester I
ACAD 100
CHEM 151
CHEM 161
ENGL 121 or ENGL 131
MATH 151 – Milestone course

Semester II
ANTH 270, ECON 120, ECON 201, EDUC 204, EDUC 220, GEOG 120, GEOG 200, POLS 120, POLS 240, POLS 260, PSYC 200 or SOCL 120
COMM 120 or COMM 130 or ENGL 122 or 132
CPCS 101
MATH 152

Semester III
Limited Choices – Humanities and Fine Arts

Semester IV
CPSC 230 – Milestone course
MATH 253
Limited Choices – Social Sciences
Limited Choice as needed to meet degree requirements

Semester V
BIOL 120, BIOL 127, GEOL 221, GEOL 230 or PHYS 251
CPSC 231
CPSC 260
Limited Choices – Humanities and Fine Arts
Limited Choice as needed to meet degree requirements

*LCC makes every effort to limit revisions to the pathways during their effective timeframe. However, the College reserves the right to update certificate and degree title changes, and make course changes as needed, without prior notice.*