



Biology A.S.

Career Community: Science and Mathematics

Curriculum Code: 0221

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 baccalaureate degree in Biology with a variety of concentrations. Students completing this curriculum will also satisfy Michigan Transfer Agreement (MTA) between two-year and four-year institutions in Michigan and qualify for an LCC Transfer Studies Certificate of Achievement (1482). This degree includes a set of courses common to all Science and Mathematics majors and many 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 BIOL 127 and 128, and CHEM 151 and CHEM 161 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.
- Note: the electives BIOL 260 and BIOL 275 are only offered in Fall semester

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, or the Academic Advising Department, Gannon Building - StarZone, telephone number 517-483-1904.

General Education – Transfer Degrees (MTA) - Recommended Courses

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

- English Composition
Science and Math Career Community Courses meet this requirement.
- English Composition (second course)/Communication
Science and Math Career Community Courses meet this requirement.

- Humanities and Fine Arts.
Program of Study Required Courses meet this requirement.
- Mathematics
Science and Math Career Community Courses meet this requirement.
- Natural Sciences
Science and Math Career Community and Program of Study Required Courses meet this requirement.
- Social Sciences
Science and Math Career Community and Program of Study Required Courses meets this requirement.

Science and Math Career Community Courses – These courses are required for all Science and Math programs. 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 ECON 120 or ECON 201 or EDUC 204 or EDUC 220 or GEOG 120 or GEOG 200 or POLS 120 or POLS 240 or POLS 260 or PSYC 200 or SOCL 120	Cultural Anthropology Power, Authority and Exchange Principles of Economics: Micro Educational Psychology Introduction to Education Introduction to Geography World Regional Geography American Political System Introduction to Public Policy Comparative Political Systems Introduction to Psychology Introduction to Sociology	3 / 3 4 / 4 4 / 4 3 / 3 3 / 3 3 / 3 4 / 4 4 / 4 4 / 4 3 / 3 3 / 3 4 / 4 4 / 4
BIOL 120 or BIOL 127 or GEOL 221 or GEOL 230 or PHYS 251	Environmental Science Cell Biology Physical Geology Environmental Geology Physics I with Calculus	4 / 6 4 / 6 4 / 6 4 / 6 5 / 7
CHEM 151	General Chemistry Lecture I	4 / 4
CHEM 161	General Chemistry Lab I	1 / 3
COMM 120 or COMM 130 or ENGL 122 or ENGL 132	Dynamics of Communication Fundamentals Public Speaking Composition II Honors Composition II	3 / 3 3 / 3 4 / 4 4 / 4

Course Code	Course Title	Credit / Billing Hours
ENGL 121 or ENGL 131	Composition I Honors Composition I	4 / 4 4 / 4
MATH 120 or MATH 126 or MATH 151	College Algebra Precalculus 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 BIOL 127 for this degree.

Students considering adding Secondary Education Certification in Math or Science in order to teach in Michigan Public Schools are strongly encouraged to select EDUC courses as listed to meet the Michigan Transfer Agreement (MTA) Social Science requirement.

For future transfer (Secondary Education Certification) to:

- Central Michigan University, Ferris State University, or Michigan State University choose EDUC 204.
- Eastern Michigan University, Grand Valley State University, University of Michigan Flint, or Western Michigan University choose EDUC 220.

Program of Study Required Courses - Some courses meet General Education requirements for Michigan Transfer Agreement (MTA).

Course Code	Course Title	Credit / Billing Hours
BIOL 127	Cell Biology	4 / 6
BIOL 128	Organismal Biology	4 / 6
CHEM 152	General Chemistry Lecture II	4 / 4
CHEM 162	General Chemistry Lab II	1 / 3
CHEM 251	Organic Chemistry Lecture I	4 / 4
CHEM 252	Organic Chemistry Lecture II	4 / 4
CHEM 272	Organic Chemistry Laboratory	2 / 6
MATH 126	Precalculus	4 / 4

Note: If BIOL 127 and MATH 126 were completed as part of the Career Community block, do not repeat enrollment.

Program of Study Required Courses, Limited Choices – Humanities or Fine Arts -
Select two from two different disciplines.

Course Code	Course Title	Credit / Billing Hours
ARTH 120	Masterpieces of Art & Music	4 / 4
ENGL 220	Science Fiction	4 / 4
HIST 211	U.S. History to 1877	4 / 4
HIST 212	U.S. History: 1877 to Present	4 / 4
HUMS 160	Mythology	4 / 4
HUMS 223	The Western World to 1500	4 / 4
HUMS 224	The Western World since 1500	4 / 4
PHIL 151	Intro to Logic & Critical Think	4 / 4
PHIL 152	Introduction to Ethics	4 / 4
RELG 150	Intro to World Religions	4 / 4

Program of Study Required Courses, Limited Choices – Social Sciences - *Select one from a different discipline chosen for the Science and Math Career Community block of courses. Students considering adding Secondary Education Certification in order to teach in Michigan Public Schools are strongly encouraged to select PSYC 200.*

Course Code	Course Title	Credit / Billing Hours
ANTH 270	Cultural Anthropology	3 / 3
GEOG 200	World Regional Geography	4 / 4
POLS 120	American Political System	4 / 4
PSYC 200	Introduction to Psychology	4 / 4
SOCL 120	Introduction to Sociology	4 / 4

Note: For future transfer (Secondary Education Certification) choose PSYC 200.

Program of Study Required Courses, Limited Choices – *Select a minimum of three credits 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
BIOL 210	Natural Resources Conservation	3 / 6
BIOL 260	Botany	4 / 6
BIOL 265	Zoology	3 / 6
BIOL 270	Human Genetics	3 / 3
BIOL 275	Molecular Biology	4 / 6

Minimum Total Credit Hours

60 credits / 73 billing hours

Recommended Course Sequence

Semester I
ACAD 100
CHEM 151 – Milestone course
CHEM 161 – Milestone course
ENGL 121 or ENGL 131
MATH 126

Semester II
CHEM 152
CHEM 162
COMM 120 or COMM 130 or ENGL 122 or ENGL 132
Limited Choice – Humanities and Fine Arts

Semester III
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
BIOL 127 – Milestone course
CHEM 251
Limited Choices – Humanities and Fine Arts
Limited Choice as needed to complete 60 minimum degree credits

Semester IV
BIOL 128 – Milestone course
CHEM 252
CHEM 272
Limited Choices - Social Sciences
Limited Choice as needed to complete 60 minimum degree credits

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.