

BIOLOGY

ASSOCIATE IN SCIENCE (AS) DEGREE BIOLOGY CONCENTRATION

For students considering a major in BIOLOGY upon transferring to a four-year institution, the Associate of Science degree with a BIOLOGY concentration from ACC offers a strong foundation, providing essential courses that serve as building blocks for advanced study.

A concentration in BIOLOGY can lead to diverse career opportunities, including healthcare, research, biotechnology, environmental science, and education, with roles such as biomedical scientists, laboratory technicians, ecologists, geneticists, healthcare professionals, natural resource professionals, and science educators.

Program Objectives

Upon graduating from ACC with an Associate of Science degree with a concentration in BIOLOGY, students will:

1. **Demonstrate** a foundational understanding of biological principles across molecular, cellular, organismal, and ecological levels.
2. **Apply** critical thinking, laboratory, and research skills to analyze data and solve scientific problems.
3. **Apply** scientific knowledge and communication skills to prepare for further academic study or careers in healthcare, biotechnology, environmental science, and related fields.

It is strongly recommended that students consult with an ACC Academic Advisor in BIOLOGY to ensure they meet specific program requirements, objectives, and transfer goals.

PROGRAM REQUIREMENTS (PR)

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| BIO 161 | GENERAL COLLEGE BIOLOGY I (4/5) |
| BIO 162 | GENERAL COLLEGE BIOLOGY II (4/5) |
| CEM 121 | GENERAL & INORGANIC CHEMISTRY (4/7) |
| CEM 122 | INORGANIC CHEM & QUALITATIVE ANALYSIS (4/7) |
| CEM 221 | ORGANIC CHEMISTRY (5/7) |
| CEM 222 | ORGANIC CHEMISTRY (5/7) |
| MTH 223 | STATISTICAL METHODS (4/4) |
| PHY 121 | GENERAL COLLEGE PHYSICS (4/6) |
| PHY 122 | GENERAL COLLEGE PHYSICS (4/6) |

GENERAL EDUCATION

DEGREE DISTRIBUTION REQUIREMENTS

GROUP 1 (G1) – ENGLISH COMPOSITION

Six (6) semester credits are required, including ENG 111 or 121 and 112, 122 or 123

GROUP 2 (G2) – SCIENCES/MATHEMATICS

Twenty (20) semester credits are required, including at least one laboratory science course. Courses will be taken in more than one academic discipline (course abbreviation/prefix). Note: Two (2) courses in Natural Sciences, including one with laboratory experience (from two disciplines), in addition to MTH 118 or MTH 121 or higher, are required to achieve the Michigan Transfer Agreement (MTA).

GROUP 3 (G3) – SOCIAL SCIENCES & HUMANITIES/FINE ARTS

Ten (10) semester credits are required in combination from both of these groups, with a minimum of three (3) credits from each group. Political Science or U.S. History courses used to satisfy the American Government requirement can be included. Courses will be taken in more than one academic discipline (course abbreviation/prefix). Note: Two (2) courses in Social Sciences (from two disciplines) and two (2) courses in Humanities and Fine Arts (from two disciplines and excluding studio and performance classes) are required for the Michigan Transfer Agreement (MTA).

ELECTIVE CREDITS (EC)

The remainder of credits for an AS degree with this concentration should be oriented toward additional courses in BIOLOGY with prefixes **CEM**, **MTH**, and **PHY** when available in consultation with an ACC Academic Advisor in BIOLOGY.

RECOMMENDED COURSES - SEQUENCE

GROUP 1-4 REQUIREMENTS + ELECTIVE CREDITS

Meets ACC graduation distribution and MTA requirements
60 CREDITS - 76 CONTACT HOURS

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| YEAR 1 FALL | 15 CREDITS |
| G1 | ENG 111 ENGLISH COMPOSITION I (3/3) |
| G2 PR | BIO 161 GENERAL COLLEGE BIOLOGY I (4/5) |
| G2 PR | CEM 121 GENERAL & INORGANIC CHEMISTRY (4/7) |
| G3 | MTH 123 COLLEGE ALGEBRA & ANALYTIC TRIG (4/4) |

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| YEAR 1 SPRING | 15 CREDITS |
| G1 | ENG 112 ENGLISH COMPOSITION II (3/3) |
| G2 PR | BIO 162 GENERAL COLLEGE BIOLOGY II (4/5) |
| G2 PR | CEM 122 INORGANIC CHEM & QUAL ANALYSIS (4/7) |
| G2 PR | MTH 223 STATISTICAL METHODS (4/4) |

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| YEAR 2 FALL | 15 CREDITS |
| G2 PR | CEM 221 ORGANIC CHEMISTRY (5/7) |
| G2 PR | PHY 121 GENERAL COLLEGE PHYSICS (4/6) |
| G3 | PLS 221 AMERICAN GOVERNMENT & POLITICS (3/3) |
| G3 | HUM/FA HUMANITIES/FINE ARTS (3/3) |

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| YEAR 2 SPRING | 15 CREDITS |
| G2 PR | CEM 222 ORGANIC CHEMISTRY (5/7) |
| G2 PR | PHY 122 GENERAL COLLEGE PHYSICS (4/6) |
| G3 | SOC SCI SOCIAL SCIENCE ELECTIVE (3/3) |
| G3 | HUM/FA HUMANITIES/FINE ARTS (3/3) |