*Ohio Consortium for Transfer Pathways to the Liberal Arts*

# Biology Transfer Pathway

## for Ohio Community College students transferring to Muskingum University

**November 2022**

MUSKINGUM UNIVERSITY

This document outlines the statewide Ohio Guaranteed Transfer Pathway (OGTP) in Biology that has been designed to provide clarity and consistency for college courses transferring between Ohio 2-year and 4-year public institutions.

This same transfer pathway in biology is now approved for students transferring to Muskingum University, through a partnership between 11 Ohio community colleges and 14 private colleges called the Ohio Consortium for Transfer Pathways to the Liberal Arts, and whose faculty and administration have collaborated to expand access and credit clarity for students transferring with an associate's degree from an Ohio community college to an Ohio private college or university.

Pages 1 & 2 of this document outline **community college courses that are approved statewide** for transfer credit toward the bachelor of science degree in biology at an approved 4-year institution. Pages 3-5 show how these courses transfer to Muskingum University to meet bachelor degree requirements.

| **COMMUNITY COLLEGE – ASSOCIATE DEGREE COURSEWORK – TOTAL 60-65 CREDITS**<br>**GENERAL EDUCATION REQUIREMENTS/OHIO TRANSFER 36** | | **Minimum Credit Hours** |
|---|---|---|
| ENGLISH COMPOSITION AND ORAL COMMUNICATION: | | 3 |
| Course 1: | Any OT36 approved First Writing course | 3 |
| MATHEMATICS, STATISTICS AND LOGIC | | 4-5 |
| Course 1: | Calculus I [1] | 4-5 |
| ARTS AND HUMANITIES (Two courses from two different areas) | | 6 |
| Course 1: | Any OT36 approved Arts and Humanities course | 3 |
| Course 2: | Any OT36 approved Arts and Humanities course | 3 |
| SOCIAL AND BEHAVIORAL SCIENCES (Two courses from two different areas) | | 6 |
| Course 1: | Any OT36 approved Social and Behavioral Sciences course [Introduction to Psychology recommended for pre-medicine] | 3 |
| Course 2: | Any OT36 approved Social and Behavioral Sciences course [Introduction to Sociology recommended for pre-medicine] | 3 |
| NATURAL SCIENCES | | 8-10 |
| Course 1: | General Chemistry I with lab | 4-5 |
| Course 2: | General Chemistry II with lab | 4-5 |
| ADDITIONAL CREDITS | | 10 |
| Course 1: | Any OT36 approved Second Writing course | 3 |
| Course 2: | Up to 7 additional hours of OT36 approved courses[2] | 7 |
| GENERAL EDUCATION/OHIO TRANSFER 36 TOTAL: | | 37-40 |

**Advising Notes:**

Where it indicates "Any OT36 approved," students should work closely with their advisors.

[1] A prerequisite, such as College Algebra, may be needed for a student to reach Calculus I. The math requirement may vary by institution, and students planning to pursue a Bachelor of Arts in Biology may only need Pre-Calculus. Check with your academic advisor and your receiving institution to determine the appropriate mathematics course.

[2] Due to the variability across institutions, students should work with their academic advisor to determine an appropriate program of study and appropriate amount of additional credits to satisfy the OT36.

| COMMUNITY COLLEGE – ASSOCIATE DEGREE COURSEWORK – *Continued from page 1* | | Minimum credit hours |
|---|---|---|
| **PRE-MAJOR/BEGINNING MAJOR** | | |
| Course 1: | Biology I | 4-5 |
| Course 2: | Biology II | 4-5 |
| Course 3: | Calculus-based Physics I with lab or Algebra-based Physics I with lab or biology course[1] | 4-5 |
| PRE-MAJOR/BEGINNING MAJOR TOTAL: | | 12-15 |
| **OTHER REQUIREMENTS** | | |
| Courses 1 and 2: | Full-Year Sequence of Organic Chemistry with lab[2]<br>[Not required but highly recommended for pre-medicine] | 8-12 |
| Electives: | General Electives as needed (May include FYE or Orientation course)[3] | 4-5 |
| OTHER REQUIREMENTS TOTAL: | | 8-18 |

**Advising Notes:**

[1] The amount and type of physics (calculus or non-calculus-based) required in the biological sciences varies from institution to institution. Many institutions require at least one semester of physics, others none. If physics is not a program requirement, an appropriate biology course should be selected with the guidance of your academic advisor. Please consult with your academic advisor and your receiving institution within the first year of study to determine an appropriate course of study.

[2] The statewide transfer guarantee applies to the full-year sequence. All non-sequence coursework will be reviewed on a course-by-course basis by the receiving institution for transfer and application to the major. Not all institutions require Organic Chemistry, although it may be required for students who are pre-medicine. Consult with your academic advisor and your receiving institution.

[3] Certain institutions may require two semesters or more of foreign language for Bachelor of Arts and Bachelor of Science degrees. If so, foreign language should be taken – check with your receiving institution.

Additional recommended pre-major/major coursework may include courses in cell biology, microbiology, or genetics. Consult with your academic advisor and your receiving institution to determine an appropriate program of study.

| Associate Degree | Total Credit Hours |
|---|---|
| **ASSOCIATE DEGREE TOTAL:** | **60-65** |

## SPECIAL NOTES

Students with plans of pursuing a pre-professional or graduate studies track in the future should work closely with their academic advisor and receiving institution starting in the first year of their program to adequately prepare themselves for those types of tracks. Some pre-professional degrees include pre-medicine, pre-veterinary, pre-law, and pre-dentistry.

Students should check with individual institutions for their program admission requirements.

Some bachelor-degree granting institutions require additional general education courses outside of the OT36 and students may be required to take these courses in their junior or senior year. Students will still be able to follow this pathway and complete their bachelor's degree in approximately 60 additional credit hours.

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## How Biology Pathway Courses Transfer to Muskingum University

A student transferring to Muskingum University with the associate of science degree and biology transfer pathway completed will receive maximum credit, placing them at or near junior standing with introductory coursework in the biology major completed. Most or all of the Muskingum University general education requirements can be completed as part of the associate degree, through planning with a transfer advisor. Students interested in transferring to Muskingum University should meet with an admission counselor regarding optimal course selection and admission requirements.

The following table outlines how transfer credits from the biology transfer pathway and associate's degree will be applied to the Bachelor of Science in Biology degree at Muskingum University.

| **MUSKINGUM UNIVERSITY**<br>**COURSE EQUIVALENCIES FROM THE ASSOCIATE DEGREE PATHWAY** | **Course Number** | **Credit Hours** |
|---|---|---|
| GENERAL EDUCATION REQUIREMENTS/OHIO TRANSFER 36 | | |
| Any OT36 approved First Writing course | ENGL 121 | 3 |
| Any OT36 approved Second Writing course | ENGL 2XX | 3 |
| Calculus I or Pre-Calculus | MATH 190 or 180 or 170 | 3-4 |
| Any OT36 approved Arts and Humanities course | OT36 A&H Elective | 3 |
| Any OT36 approved Arts and Humanities course | OT36 A&H Elective | 3 |
| Any OT36 approved Social and Behavioral Sciences course (Introduction to Psychology recommended for pre-medicine) | PSYC 101 or OT36 S&BS Elective | 3 |
| Any OT36 approved Social and Behavioral Sciences course (Introduction to Sociology recommended for pre-medicine) | SOCI 101 or OT36 S&BS Elective | 3 |
| General Chemistry I with lab | CHEM 111 | 4 |
| General Chemistry II with lab | CHEM 112 | 4 |
| Up to 7 additional hours of OT36 approved courses | OT36 Electives | 7 |
| PRE-MAJOR/BEGINNING MAJOR | | |
| Biology I | BIOL 112 + BIOL 108 | 3+1 |
| Biology II | BIOL 111 + BIOL 107 | 3+1 |
| Calculus-based Physics I with lab or Algebra-based Physics I with lab or biology course | PHEN 121 or PHEN 115 | 4 |
| OTHER RECOMMENDATIONS | | |
| Full-Year Sequence of Organic Chemistry with lab | CHEM 213<br>CHEM 214 | 4<br>4 |
| Electives | OT36 Electives | |
| TOTAL HOURS FROM ASSOCIATE DEGREE: | | 60-65 |

**Advising Notes:**

This Transfer Pathway completes the Associate of Science degree, which must total at least 60 semester credits and includes 36 credits of the Ohio Transfer 36 (OT36), which are approved general education requirements. OT36 details can be found at https://transfercredit.ohio.gov/initiatives-upd/ohio-transfer-36.

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# Biology Transfer Pathway

## Remaining Courses to Complete at Muskingum University

This table outlines the remaining coursework required for the bachelor of science in biology degree at Muskingum University.

| REMAINING COURSEWORK TO COMPLETE THE BACHELOR'S DEGREE AT MUSKINGUM UNIVERSITY | Course Number | Credit Hours |
|---|---|---|
| INSTITUTIONAL DEGREE REQUIREMENTS | | |
| Muskingum Experience for Transfer Students | MUXP 101 | 1 |
| Moral Inquiry Course | Many Options | 3 |
| Upper-Level Writing Unit Course | Many Options | 3 |
| MAJOR REQUIREMENTS | | |
| Intro to Cell & Molecular Biology | BIOL 226 | 3 |
| Genetics | BIOL 306 | 4 |
| General Ecology | BIOL 308 | 4 |
| Cell Physiology | BIOL 336 | 4 |
| Senior Seminar | BIOL 420 | 3 |
| | | |
| 12 credits of elective courses | Many options | 12 |
| | | |
| OTHER BACHELOR DEGREE REQUIREMENTS | | |
| Electives | | Varies |
| A total of 40 upper-level credits must be completed | | |
| TOTAL REMAINING COURSEWORK TO COMPLETE BACHELOR'S DEGREE | | 60-65 |

**Advising Notes:**

The number of credit hours vary depending on whether the student has completed the organic chemistry sequence. The chemistry minor presents the best pathway to completion of the academic minor for those students seeking admission to medical school.

# Sample Degree Map for Biology Transfer Pathway

## Muskingum University

MUSKINGUM UNIVERSITY

### THIRD YEAR

#### SEMESTER 5

| Course Name & Number | Credit Hours |
|---|---|
| Introduction to Cell & Molecular Biology (BIOL 226) | 3 |
| Muskingum Experience-Transfers (MUXP 101) | 1 |
| Genetics (BIOL 306) | 4 |
| General Elective Course | 3 |
| General Elective Course | 3 |
| | |
| **Total Semester Credit Hours** | **14** |

#### SEMESTER 6

| Course Name & Number | Credit Hours |
|---|---|
| Cell Physiology (BIOL 336) | 4 |
| Biology Elective Course | 3-4 |
| General Elective Course/Biology Elective | 3 |
| General Elective Course | 3 |
| General Elective Course | 3 |
| | |
| **Total Semester Credit Hours** | **16-17** |

### FOURTH YEAR

#### SEMESTER 7

| Course Name & Number | |
|---|---|
| General Ecology (BIOL 308) | 4 |
| Biology Elective Course | 3-4 |
| Biology Elective Course | 3-4 |
| General Elective Course | 3 |
| General Elective Course | 3 |
| | |
| **Total Semester Credit Hours** | **16-18** |

#### SEMESTER 8

| Course Name & Number | |
|---|---|
| Senior Seminar (BIOL 420) | 3 |
| Biology Elective | 4 |
| General Elective Course | 3 |
| General Elective Course | 3 |
| Biology Topics Course (BIOL 385) | 1-3 |
| | |
| **Total Semester Credit Hours** | **14-16** |