

# Biology Associate of Science

Effective beginning Academic Year 2023-24 (Last revised January 29, 2024)

GENERAL EDUCATION REQUIREMENTS/OHIO TRANSFER 36		Course Number	Credit Hours
ENGLISH COMPOSITION AND ORAL COMMUNICATION:			3
Course 1:	Any Ohio Transfer 36 approved First Writing (TME001) course	ENG 1010/101H	3
MATHEMATICS, STATISTICS, AND LOGIC:			5
Course 1:	Calculus I (TMM005) <sup>1</sup> or Life Science Calculus I (TMM024) <sup>1</sup>	MATH 1610/161H	5
ARTS AND HUMANITIES:			6
+ Course 1:	Any Ohio Transfer 36 approved Arts and Humanities course	AH Elective (see page 4 for list)	3
+ Course 2:	Any Ohio Transfer 36 approved Arts and Humanities course	AH Elective (see page 4 for list)	3
SOCIAL AND BEHAVIORAL SCIENCES:			6
+ Course 1:	Any Ohio Transfer 36 approved Social and Behavioral Sciences course [Introduction to Psychology (OSS015) recommended for pre-medicine]	PSY 1010/101H	3
+ Course 2:	Any Ohio Transfer 36 approved Social and Behavioral Sciences course [Introduction to Sociology (OSS021) recommended for pre-medicine]	SOC 1010/101H	3
NATURAL SCIENCES:			10
Course 1:	General Chemistry I with lab (OSC008)	CHEM 1300 & 130L or CHEM 130H	5
Course 2:	General Chemistry II with lab (OSC009)	CHEM 1310 & 131L or CHEM 131H	5
ADDITIONAL CREDITS: <sup>2</sup>			6-8
Course 1:	Any Ohio Transfer 36 approved Second Writing (TME002) course	ENG 1020/102H or ENG 2151	3
Course 2:	Ohio Transfer 36 approved Mathematics course <sup>3</sup>	MATH 1400-level or above	3-5
<b>GENERAL EDUCATION/OHIO TRANSFER 36 TOTAL:</b>			<b>36-38</b>

**Advising Notes:**

Where it indicates "Any Ohio Transfer 36 approved," students should work closely with their advisors.

(+) indicates that the courses chosen should be from two different areas within that category.

<sup>1</sup> A prerequisite, such as College Algebra (TMM001), may be needed for a student to reach Calculus I (TMM005) or Life Science Calculus I (TMM024). The math requirement may vary by institution, and students planning to pursue a Bachelor of Arts in Biology may only need Pre-Calculus (TMM002). Check with your academic advisor and your receiving institution to determine the appropriate mathematics course.

<sup>2</sup> 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 Ohio Transfer 36.

<sup>3</sup> Students are required to earn 6 credits of Mathematics & Data Analysis coursework at MATH 1400-level or higher to earn an Associate of Science degree from Tri-C. If student does not test into MATH 1610, a prerequisite is required, either MATH 1540/154H or MATH 1580.

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PRE-MAJOR/BEGINNING MAJOR		Course Number	Credit Hours
Course 1:	Biology I (OSC003)	BIO 1500/150H	4
Course 2:	Biology II (OSC004)	BIO 1510/151H	4
Course 3:	Genetics (OSC028) or Calculus-based Physics I with lab (OSC016) or Algebra-based Physics I with lab (OSC014) or biology course <sup>1</sup>	PHYS 2310 or PHYS 1210	4-5
<b>PRE-MAJOR/BEGINNING MAJOR TOTAL:</b>			<b>12-14</b>
Advising Notes: <sup>1</sup> 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.			

OTHER REQUIREMENTS		Course Number	Credit Hours
Courses 1 and 2:	Full-Year Sequence of Organic Chemistry with lab (OSC010) <sup>1</sup> [Not required but highly recommended for pre-medicine]	CHEM 2300 and CHEM 2310	10
Electives:	General Electives as needed (May include FYE or Orientation course) <sup>2</sup>	Varies	0-3
<b>OTHER REQUIREMENTS TOTAL:</b>			<b>10-13</b>
Advising Notes: <sup>1</sup> 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. <sup>2</sup> 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
<b>ASSOCIATE DEGREE TOTAL:</b>	<b>60-64</b>

SPECIAL NOTES
<p>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 in order to adequately prepare themselves for those types of tracks. Some pre-professional degrees include pre-medicine, pre-veterinary, pre-law, and pre-dentistry.</p> <p>Some bachelor-degree granting programs may be competitive and admission into the program is not guaranteed. Students should check with individual institutions for their program admission requirements.</p> <p>Some bachelor-degree granting institutions require additional general education courses outside of the Ohio Transfer 36 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.</p>

## SPECIAL NOTES

For more information, please contact:  
(216) 987-6000, option 4  
<https://www.tri-c.edu/transfer>

## SAMPLE DEGREE MAP

### FIRST YEAR

SEMESTER 1		SEMESTER 2	
Course Name & Number	Credit Hours	Course Name & Number	Credit Hours
ENG 1010/101H College Composition I	3	ENG 1020/102H College Composition II or ENG 2151 Technical Writing	3
CHEM 1300 and 130L, or CHEM 130H General Chemistry I and Lab	5	CHEM 1310 and 131L, or CHEM 131H General Chemistry II and Lab	5
MATH 1400-level or above	3-5	MATH 1610/161H Calculus I	5
BIO 1500/150H Principles of Biology I	4	BIO 1510/151H Principles of Biology II	4
<b>Total Semester 1 Credit Hours</b>	<b>15-17</b>	<b>Total Semester 2 Credit Hours</b>	<b>17</b>

### SECOND YEAR

SEMESTER 3		SEMESTER 4	
Course Name & Number	Credit Hours	Course Name & Number	Credit Hours
PHYS 1210 College Physics I or PHYS 2310 General Physics I	4-5	CHEM 2310 Organic Chemistry II	5
CHEM 2300 Organic Chemistry I	5	SOC 1010/101H Introductory Sociology	3
Ohio Transfer 36 Arts and Humanities	3	Ohio Transfer 36 Arts and Humanities	3
PSY 1010/101H General Psychology	3	Elective	3
<b>Total Semester 3 Credit Hours</b>	<b>15-16</b>	<b>Total Semester 4 Credit Hours</b>	<b>14</b>

# Biology Associate of Arts

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## OHIO TRANSFER 36 ELECTIVES

Please work closely with your advisor when selecting courses.

ARTS AND HUMANITIES	Course Number	Credit Hours
Art Appreciation	ART 1010	3
Survey of Non-Western Art	ART 1040	3
Art History Survey: Prehistoric to Renaissance	ART 2020	3
Art History Survey: Late Renaissance to Present	ART 2030	3
Dance Appreciation	DANC 1100	3
Women Writers on the Experiences of Women	ENG 2020	3
American Literature I	ENG 2310	3
American Literature II	ENG 2320	3
British Literature I	ENG 2350	3
British Literature II	ENG 2360	3
Introduction to Literature: Poetry	ENG 2410	3
Introduction to Literature: Fiction	ENG 2420	3
Introduction to Literature: Drama	ENG 2430	3
Introduction to Literature: Science Fiction	ENG 2450	3
African-American Literature I	ENG 2510	3
African-American Literature II	ENG 2520	3
Literature for Children & Adolescents	ENG 2601	3
World Literature	ENG 2700	3
Shakespeare	ENG 2710	3
Survey of Biblical Literature	ENG 2720	3
Exploration of World Mythology	ENG 2730	3
Rhetorics of Gaming: Introduction to Video Game Analysis	ENG 2770	3
Islam to the Modern Middle East	HIST 2031	3
Women in American History	HIST 2660	3
Introduction to Humanities	HUM 1010	3
The Individual in Society	HUM 1020/102H	3
The Individual in the Cosmos	HUM 1030	3
Community Engagement Through the Humanities	HUM 2020	3
Film Appreciation	MJS 1310	3
Survey of European Classical Music	MUS 1010	3
Survey of Jazz	MUS 1020	3
Survey of Rock and Roll	MUS 1030	3
Survey of African-American Music	MUS 1040	3

ARTS AND HUMANITIES, CONTINUED	Course Number	Credit Hours
Survey of World Music	MUS 1050	3
Jazz History I	MUS 2520	3
Critical Thinking	PHIL 1000	3
Introduction to Philosophy	PHIL 1010/101H	3
Introduction to Logic	PHIL 1020	3
Ethics	PHIL 2020/202H	3
Philosophy of Science	PHIL 2031	3
Philosophy of Art	PHIL 2040	3
Bioethics	PHIL 2050/205H	3
Business Ethics	PHIL 2060	3
Honors Social Justice	PHIL 208H	3
Introduction to Religious Studies	REL 1010	3
Comparative World Religions	REL 2000	3
Religious Traditions of Western Christianity	REL 2010	3
African-American Religious Experience	REL 2060	3
Theatre Appreciation	THEA 1010	3
Survey and Appreciation of American Musical Theatre	THEA 1100	3
History of Theatre and Drama I	THEA 2210	3
History of Theatre and Drama II	THEA 2220	3

SOCIAL AND BEHAVIORAL SCIENCES	Course Number	Credit Hours
Cultural Anthropology	ANTH 1010	3
Peoples and Cultures of the World	ANTH 2010	3
Archaeology	ANTH 2110	3
Survey of Economics	ECON 1210	3
Principles of Microeconomics	ECON 2000	3
Principles of Macroeconomics	ECON 2010	3
Introduction to Geography	GEOG 1000	3
World Regional Geography	GEOG 1010	3
Africans in the Americas	GEOG 1050	3
Regional Geography of the US & Canada	GEOG 1510	3
Environmental Geography	GEOG 2030	3
History of Civilization I	HIST 1010/101H	3
History of Civilization II	HIST 1020/102H	3
United States History to 1877	HIST 1510/151H	3
United States History Since 1877	HIST 1520/152H	3

**OHIO TRANSFER 36 ELECTIVES**

Please work closely with your advisor when selecting courses.

SOCIAL AND BEHAVIORAL SCIENCES, CONTINUED	Course Number	Credit Hours
History of Immigration in America	HIST 1630	3
History of Africa	HIST 1700	3
African-American Women in History	HIST 2070	3
African-American History to 1877	HIST 2150	3
African-American History 1877 - Present	HIST 2160	3
Women in American History	HIST 2700	3
American National Government	POL 1010/101H	3
State and Local Government	POL 1020	3
Introduction to Conflict and Peace Studies	POL 2020	3
Comparative Politics	POL 2030	3
Political Systems of Africa	POL 2060	3
International Relations	POL 2070	3
Constitutional Law	POL 2100	3
Women and Politics	POL 2120	3
General Psychology	PSY 1010/101H	3
Intro to Industrial/Organizational Psych	PSY 1050	3
Child Growth and Development	PSY 2010	3
Life Span Development	PSY 2020	3
Social Psychology	PSY 2040	3
Psychology of Personality	PSY 2050	3
Adolescent Psychology	PSY 2060	3
Psychopathology	PSY 2081	3
Introduction to Aging	PSY 2100	3
Educational Psychology	PSY 2110	3
Introductory Sociology	SOC 1010/101H	3
Social Institutions	SOC 1020	3
Social Problems	SOC 2010/201H	3
Sociology of the Family	SOC 2020	3
Aging and Society	SOC 2100	3
Death and Dying	SOC 2110	3
Introduction to Criminology	SOC 2160	3
Contemporary American Black-White Relations	SOC 2310	3
Sociology of Gender	SOC 2410	3
Urban Sociology	SOC 2510	3
Race and Ethnic Relations	SOC 2550	3
Introduction to Urban Studies	UST 1010	3

SOCIAL AND BEHAVIORAL SCIENCES, CONTINUED	Course Number	Credit Hours
Urban Cultures	UST 2020	3
Urban Politics	UST 2070	3
American Urban History	UST 2640	3
Introduction to Women's Studies	WGS 1510/151H	3
Women in the World	WGS 2010/201H	3
Women and Politics	WGS/POL 2120	3

NATURAL SCIENCES	Course Number	Credit Hours
Human Evolution*	ANTH 1210*	4
The Cell and DNA*	BIO 1040*	3
The Cell and DNA Laboratory*	BIO 104L*	1
Human Biology*	BIO 1050*	3
Human Biology Laboratory*	BIO 105L*	1
Environment, Ecology, & Evolution*	BIO 1060*	3
Environment, Ecology, & Evolution Lab*	BIO 106L*	1
Insect Biology	BIO 1070	3
Introduction to Biological Chemistry*	BIO 1100*	3
Anatomy & Phys. of Domestic Animals I*	BIO 1410*	4
Anatomy & Phys. of Domestic Animals II*	BIO 1420*	4
Principles of Biology I*	BIO 1500/150H*	4
Principles of Biology II*	BIO 1510*	4
Principles of Genetics	BIO 2060	3
Environmental Science	BIO 2150	3
Microbiology*	BIO 2500*	4
Everyday Chemistry	CHEM 1000	3
Everyday Chemistry Laboratory*	CHEM 100L*	1
Introduction to Inorganic Chemistry*	CHEM 1010/101H*	4
Intro to Organic Chem and Biochem*	CHEM 1020/102H*	4
General Chemistry I	CHEM 1300	4
Honors General Chemistry I*	CHEM 130H*	5
General Chemistry I Laboratory*	CHEM 130L*	1
General Chemistry II*	CHEM 1310/131H*	4
Advising Note: * Please see <a href="#">Tri-C catalog</a> for approved modalities.		

## OHIO TRANSFER 36 ELECTIVES

Please work closely with your advisor when selecting courses.

NATURAL SCIENCES, CONTINUED	Course Number	Credit Hours
General Chemistry II Laboratory*	CHEM 131L*	1
Earth	ESCI 1030	3
Earth Laboratory*	ESCI 103L*	1
Introduction to Ocean Studies	ESCI 1050	3
Physical Geography	ESCI 1310	3
Laboratory in Physical Geography*	ESCI 131L*	1
Physical Geology	ESCI 1410/141H	3
Laboratory in Physical Geology	ESCI 141L	1
Historical Geology	ESCI 1510	3
Laboratory in Historical Geology*	ESCI 151L*	1
Geology of the National Parks	ESCI 1610	3
Lab in Geology of the National Parks*	ESCI 161L*	1
Astronomy	PHYS 1010	3
Astronomy Laboratory*	PHYS 101L*	1
Everyday Physics	PHYS 1050	2
College Physics I*	PHYS 1210*	4
College Physics II*	PHYS 1220*	4
General Physics I*	PHYS 2310*	5
General Physics II*	PHYS 2320*	5
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