

Biology Associate of Science

Effective beginning Academic Year 2019-20 (Last revised May 18, 2021)

GENERAL E	DUCATION REQUIREMENTS/OHIO TRANSFER 36	Course Number	Credit Hours
ENGLISH CO	MPOSITION AND ORAL COMMUNICATION:		3
Course 1:	Any Ohio Transfer 36 approved First Writing (TME001) course	ENGL 1110 or ENGL 1111	3
MATHEMATI	CS, STATISTICS, AND LOGIC:		5
Course 1:	Calculus I (TMM005) ¹	MATH 2500	5
ARTS AND F	IUMANITIES:		6
+ Course 1:	Any Ohio Transfer 36 approved Arts and Humanities course	A&H Elective (see page 4)	3
+ Course 2:	Any Ohio Transfer 36 approved Arts and Humanities course	A&H Elective (see page 4)	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]	PSYC 1500	3
+ Course 2:	Any Ohio Transfer 36 approved Social and Behavioral Sciences course [Introduction to Sociology (OSS021) recommended for pre-medicine]	SOCY 1150	3
NATURAL SO	CIENCES:		10
Course 1:	General Chemistry I with lab (OSC008)	CHEM 1500	5
Course 2:	General Chemistry II with lab (OSC009)	CHEM 1600	5
ADDITIONA	L CREDITS: ²		6
Course 1:	Any Ohio Transfer 36 approved Second Writing (TME002) course	ENGL 1120 or ENGL 1121	3
Courses:	Up to 7 additional hours of Ohio Transfer 36 approved courses	Elective	3
GENERAL ED	DUCATION/OHIO TRANSFER 36 TOTAL:		36

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.

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 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.

¹ A prerequisite, such as College Algebra (TMM001), may be needed for a student to reach Calculus I (TMM005). 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.

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 Ohio Transfer 36.



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PRE-MAJOR	/BEGINNING MAJOR	Course Number	Credit Hours
Course 1:	Biology I (OSC003)	BIOL 1510	4
Course 2:	Biology II (OSC004)	BIOL 1520	4
Course 3:	Calculus-based Physics I with lab (OSC016) or Algebra-based Physics I with lab (OSC014) or biology course ¹	PHYS 2410, PHYS 1610, BIOL 2210, or BIOL 2700	4-5
PRE-MAJOR/BEGINNING MAJOR TOTAL:			12-13

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.

OTHER REQ	UIREMENTS	Course Number	Credit Hours
Courses 1 and 2:	Full-Year Sequence of Organic Chemistry with lab (OSC010) ¹ [Not required but highly recommended for pre-medicine]	CHEM 2500 and CHEM 2600	10
Electives	General Electives as needed (May include FYE or Orientation course) ²	FYEX 1000	1
Electives:	General Electives as freeded (way include Fife of Orientation Course)	Elective	2
OTHER REQUIREMENTS TOTAL:3			13

Advising Notes:

³ Lakeland Community College requires a minimum of 61 hours to earn an Associate of Science degree.

ASSOCIATE DEGREE	Total Credit Hours
ASSOCIATE DEGREE TOTAL:	61-62

SPECIAL NOTES

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.

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.

¹ 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.

² 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.



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SPECIAL NOTES

For additional information, please contact: Barbara Friedt, Director of Articulation and Transfer Articulation and Transfer (440) 525-7510 bfriedt@lakelandcc.edu

SAMPLE DEGREE MAP

FIRST YEAR

SEMESTER 1		
Course Name & Number	Credit Hours	
BIOL 1510 Principles of Biology I	4	
CHEM 1500 General Chemistry I	5	
ENGL 1110 English Composition I (A) or ENGL 1111 English Composition I (B)	3	
FYEX 1000 First Year Experience	1	
MATH 2500 Calculus and Analytical Geometry I	5	
Total Semester 1 Credit Hours	18	

SEMESTER 2	
Course Name & Number	Credit Hours
BIOL 1520 Principles of Biology II	4
CHEM 1600 General Chemistry II	5
ENGL 1120 English Composition II or ENGL 1121 English Composition II - Technical Focus	3
Arts and Humanities Ohio Transfer 36 Elective	3
Total Semester 2 Credit Hours	15

SECOND YEAR

SEMESTER 3		
Course Name & Number	Credit Hours	
CHEM 2500 Organic Chemistry I*	5	
BIOL 2210 Anatomy and Physiology or BIOL 2700 Microbiology or PHYS 1610 General Physics I* or PHYS 2410 Science and Engineering Physics I*	4-5	
PSYC 1500 Introduction to Psychology	3	
Elective	2	
Total Semester 3 Credit Hours	14-15	

SEMESTER 4		
Course Name & Number	Credit Hours	
CHEM 2600 Organic Chemistry II*	5	
Arts and Humanities Ohio Transfer 36 Elective	3	
SOCY 1150 Principles of Sociology	3	
Macro-Social Sciences Ohio Transfer 36 Elective	3	
Total Semester 4 Credit Hours	14	

*These courses are not always offered every semester. Please work closely with your academic advisor to develop your program of study.



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OHIO TRANSFER 36 ELECTIVES

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ARTS & HUMANITIES	Course Number	Credit Hours
Art Appreciation	ARTS 1120	3
Survey of Art I	ARTS 2220	3
Survey of Art II	ARTS 2230	3
Introduction to Humanities	HUMX 1100	3
The American Experience in the Arts	HUMX 1200	3
Human Issues: Choices in Contemporary Society	HUMX 1300	3
Culture and Civilization of the Spanish Speaking World	IDST 2400	3
Intro to Fiction	ENGL 2210	3
Intro to Poetry	ENGL 2220	3
Intro to Graphic Fiction & Narrative	ENGL 2230	3
Contemporary Global Fiction	ENGL 2235	3
Children's Literature	ENGL 2240	3
Science Fiction	ENGL 2245	3
Literature by Women	ENGL 2248	3
Survey of American Literature I	ENGL 2250	3
Survey of American Literature II	ENGL 2260	3
American Cinema	ENGL 2263	3
Literature of Contemporary Global Conflict	ENGL 2270	3
Multicultural Literary Studies	ENGL 2275	3
African-American Literature	ENGL 2276	3
Survey of British Literature I	ENGL 2280	3
Survey of British Literature II	ENGL 2290	3
Fantasy	ENGL 2296	3
Music Appreciation	MUSC 1200	3
World Music	MUSC 1215	3
Popular Music Rock, Jazz, Country, Folk, Soul	MUSC 1800	3
Music History and Literature I	MUSC 2200	3
Music History and Literature II	MUSC 2250	3
Thinking Critically	PHIL 1300	3
Introduction to Philosophy	PHIL 1500	3
Comparative Religion	PHIL 2000	3
Logic	PHIL 2600	3
Ethics	PHIL 2700	3
History of Photography	PHOT 1000	2

NATURAL SCIENCES	Course Number	Credit Hours
Introductory Biology I: Cells, Genetics and Evolution	BIOL 1010*	3
Introductory Biology II: Organismic Biology and Ecology	BIOL 1020*	3
Environmental Issues and Solutions	BIOL 1030*	3
Human Biology	BIOL 1140*	3
Plant Biology	BIOL 1150	4
Animal Biology	BIOL 1160	4
Ecology and Environmental Biology	BIOL 1170	4
Introduction to Evolutionary Biology	BIOL 1190	4
Fundamentals of Biology for the Health Technologies	BIOL 1200	4
Principles of Biology I	BIOL 1510	4
Principles of Biology II	BIOL 1520	4
Anatomy and Physiology I	BIOL 2210	4
Anatomy and Physiology II	BIOL 2220	4
Microbiology	BIOL 2700	4
Chemistry in the Everyday World	CHEM 1050	3
Elementary Chemistry	CHEM 1100	4
Introduction to Organic Chemistry	CHEM 1150	4
General Chemistry I	CHEM 1500	5
General Chemistry II	CHEM 1600	5
Quantitative Analysis	CHEM 2000	5
Organic Chemistry I	CHEM 2500	5
Organic Chemistry II	CHEM 2600	5
Physical and Environmental Geography	GEOG 1550	3
Introduction to Physical Geology	GEOL 1100	4
Introduction to Historical Geology	GEOL 1200	4
Intro to Stream System Analyses	GEOL 1300	3
Earth Science	PSCI 1300	3
Introduction to Meteorology	PSCI 1400	3
Astronomy	PHYS 1500*	4
Everyday Physics	PHYS 1550*	3
General Physics I	PHYS 1610	5
General Physics II	PHYS 1620	5
Science and Engineering Physics I	PHYS 2410	5
Science and Engineering Physics II	PHYS 2420	5
*Indicates non-lab courses		



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OHIO TRANSFER 36 ELECTIVES

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SOCIAL AND BEHAVIORAL SCIENCES	Course Number	Credit Hours
BEHAVIORAL SCIENCES LIST	<u>'</u>	
Introduction to Women's Studies	IDST 1200	3
Human Sexuality	PSYC 1400	3
Introduction to Psychology	PSYC 1500	3
Psychology of Gender	PSYC 1700	3
Personality Theory	PSYC 2300	3
Child Psychology	PSYC 2400	3
Adolescent Psychology	PSYC 2500	3
Adult Development and Aging	PSYC 2600	3
Introduction to Psychopathology	PSYC 2700	3
Social Psychology	PSYC 2800	3
Principles of Sociology	SOCY 1150	3
Chemical Dependency and Society	SOCY 1190	3
Ethnic Minorities in the U.S.	SOCY 2000	3
Introduction to Social Work	SOCY 2250	3
Sociology of Family	SOCY 2260	3
Sociology of Aging	SOCY 2270	3
Social Problems	SOCY 2280	3
Deviance in American Society	SOCY 2290	3

SOCIAL AND BEHAVIORAL SCIENCES	Course Number	Credit Hours
MACRO-SOCIAL SCIENCES LIST		
Intro to Geography	GEOG 1500	3
World Regional Geography	GEOG 1600	3
Geography of U.S. and Canada	GEOG 1800	3
Economic Geography	GEOG 2000	3
World Cultural Geography	GEOG 2500	3
Western Civilization I	HIST 1150	3
Western Civilization II	HIST 1250	3
World Civilization I	HIST 1450	3
World Civilization II	HIST 1550	3
U.S. History: Colonization through Reconstruction	HIST 2150	3
U.S. History: Reconstruction to the Present	HIST 2250	3
Women in U.S. History	HIST 2450	3
Ohio History	HIST 2600	3
Vietnam Era and Its Legacy	HIST 2700	3
U.S. National Government	POLS 1300	3
State and Local Government	POLS 2100	3
Introduction to International Relations	POLS 2200	3
Introduction to Comparative Politics	POLS 2300	3
Women and Politics	POLS 2400	3
Modern Political Ideologies	POLS 2500	3
Introduction to Urban Studies	URST 2000	3