

## Associate of Science Degree (9100)

### Associate of Science Degree

The associate of science (AS) degree program is normally pursued by students intending to transfer to a senior institution for the completion of a bachelor of science degree. Typical areas of study may include engineering, earth sciences, mathematics, physics, biology, chemistry, computer science, or pre-medicine. Students who complete this degree will also satisfy all requirements for the Ohio Transfer 36. See "Ohio Transfer 36 (<https://catalog.lakelandcc.edu/degree-certificate-programs/gnst/9099/>)."

The associate of science degree (AS) requires successful completion of 61 semester credits with a 2.0 minimum grade point average (GPA). Students must have been enrolled in and earned at least 20 semester credits at Lakeland Community College. Courses below the 1000 level are not applicable to degree requirements, e.g., ENGL 0111 Fundamentals of College Literacy, MATH 0745 Essential Skills for Algebra, etc.

Students must earn the 61 semester credits as listed below. **Students must successfully complete at least 36 of the total minimum 61 credits required from the degree from the courses listed in the Ohio Transfer 36 (<https://catalog.lakelandcc.edu/degree-certificate-programs/gnst/9099/>):**

Course	Title	Credit Hours
<b>First Year Experience</b>		
FYEX 1000	First Year Experience <sup>1</sup>	1
<b>Communications</b>		
ENGL 1110 or ENGL 1111	English Composition I (A) <sup>2</sup> English Composition I (B)	3
ENGL 1120 or ENGL 1121	English Composition II English Composition II-Technical Focus	3
<b>Arts and Humanities</b>		
Select 6 credits from Arts and Humanities		6
<b>Social and Behavioral Sciences</b>		
Select 6 credits from Social and Behavioral Sciences		6
<b>Mathematics and Natural Sciences</b>		
Select 18 credits from Mathematics and Natural Sciences		18
<b>Electives</b>		
Select 24 credits through consultation with a counselor to select electives that will support your educational objectives. Elective credits should be focused for the most part in the Mathematics and Natural Sciences categories. (See below for more information about elective requirements.)		24
<b>Total Credit Hours</b>		<b>61</b>

### Arts and Humanities

Course	Title	Credit Hours
Select at least 6 credits from at least TWO disciplines from the following:		
Arts:		
ARTS 1120	Art Appreciation	3
ARTS 2220	Survey of Art I	3
ARTS 2230	Survey of Art II	3
Humanities:		
HUMX 1100	Introduction to Humanities	3
HUMX 1300	Human Issues: Choices in a Contemporary Society	3
Interdisciplinary Studies:		
IDST 2400	The Spanish Speaking World	3
Literature:		
ENGL 2210	Introduction to Fiction	3
ENGL 2220	Introduction to Poetry	3
ENGL 2225	Graphic Fiction and Narrative	3

ENGL 2230	Introduction to Drama	3
ENGL 2235	Contemporary Global Fiction	3
ENGL 2240	Children's Literature	3
ENGL 2245	Science Fiction	3
ENGL 2248	Literature by Women	3
ENGL 2250	Survey of American Literature I	3
ENGL 2260	Survey of American Literature II	3
ENGL 2263	American Cinema	3
ENGL 2270	Literature of Contemporary Global Conflict	3
ENGL 2275	Multicultural Literary Studies	3
ENGL 2276	African American Literature	3
ENGL 2280	Survey of British Literature I	3
ENGL 2290	Survey of British Literature II	3
ENGL 2296	Fantasy	3
Music:		
MUSC 1200	Music Appreciation	3
MUSC 1215	World Music	3
MUSC 1800	Popular Music: Rock, Jazz, Country, and Hip-Hop	3
MUSC 2200	Music History and Literature I	3
MUSC 2250	Music History and Literature II	3
Philosophy:		
PHIL 1300	Thinking Critically	3
PHIL 1500	Introduction to Philosophy	3
PHIL 2000	Comparative Religion	3
PHIL 2600	Logic	3
PHIL 2700	Ethics	3
PHOT 1000	History of Photography	3

## Social and Behavioral Sciences

Course	Title	Credit Hours
Select at least ONE Behavioral Science and at least ONE Macro-Social Science from the following:		
<b>Behavioral Sciences</b>		
IDST 1200	Introduction to Women's Studies	3
PSYC 1400	Human Sexuality	3
PSYC 1500	Introduction to Psychology	3
PSYC 1700	Psychology of Gender	3
PSYC 2300	Personality Theory	3
PSYC 2400	Child Psychology	3
PSYC 2500	Adolescent Psychology	3
PSYC 2600	Adult Development and Aging	3
PSYC 2700	Abnormal Psychology	3
PSYC 2800	Social Psychology	3
SOCY 1150	Principles of Sociology	3
SOCY 1190	Drug Use and U.S. Society	3
SOCY 2000	Race and Ethnic Relations in the U.S.	3
SOCY 2250	Introduction to Social Work	3
SOCY 2260	Sociology of the Family	3
SOCY 2270	Sociology of Aging	3
SOCY 2280	Social Problems	3
SOCY 2290	Deviance in American Society	3
<b>Macro-Social Sciences</b>		
ECON 1150	Basic Economics	3
ECON 2500	Principles of Macroeconomics	3

ECON 2600	Principles of Microeconomics	3
GEOG 1500	Introduction to Geography	3
GEOG 1600	World Regional Geography	3
GEOG 1800	Geography of US and Canada	3
HIST 1150	Western Civilization I: Antiquity Through the Reformation	3
HIST 1250	Western Civilization II: Age of Revolution Through the Present	3
HIST 1450	World Civilization I: The Ancient and Medieval World	3
HIST 1550	World Civilization II: The Modern World	3
HIST 2150	U.S. History: Colonization Through Reconstruction	3
HIST 2250	U.S. History: Reconstruction to the Present	3
HIST 2450	Women in U.S. History	2
HIST 2600	Ohio History	3
POLS 1300	U.S. National Government	3
POLS 2100	State and Local Government	3
POLS 2200	Introduction to International Relations	3
POLS 2300	Introduction to Comparative Politics	3
POLS 2400	Women and Politics	3
POLS 2500	Modern Political Ideologies	3
URST 2000	Introduction to Urban Studies	3

## Mathematics and Natural Sciences

Course	Title	Credit Hours
<b>Mathematics</b>		
Select at least 3 credits from the following: <sup>3</sup>		
MATH 1650	College Algebra (A)	4
MATH 1700	Trigonometry	3
MATH 1890	Finite Mathematics	4
MATH 2400	Calculus for Business, Social, and Life Sciences	5
MATH 2500	Calculus and Analytical Geometry I <sup>4</sup>	5
MATH 2600	Calculus and Analytical Geometry II <sup>4</sup>	5
MATH 2700	Calculus and Analytical Geometry III <sup>4</sup>	5
MATH 2800	Linear Algebra	4
MATH 2850	Differential Equations	4
<b>Natural Sciences</b>		
Select one sequence of courses (minimum 8 credits) from the following discipline areas:		
BIOL 1510 & BIOL 1520	Principles of Biology I and Principles of Biology II <sup>5</sup>	8
BIOL 2210 & BIOL 2220	Anatomy and Physiology I and Anatomy and Physiology II	8
CHEM 1500 & CHEM 1600	General Chemistry I and General Chemistry II <sup>6</sup>	10
PHYS 1610 & PHYS 1620	General Physics I and General Physics II	10
PHYS 2410 & PHYS 2420	Science and Engineering Physics I and Science and Engineering Physics II <sup>7</sup>	10
Select remaining 7 credits from the following:		
MATH 1330	Statistics for the Health Sciences	3
MATH 1550	Statistics (A)	4
MATH 1650	College Algebra (A)	4
MATH 1700	Trigonometry	3
MATH 1890	Finite Mathematics	4
MATH 2400	Calculus for Business, Social, and Life Sciences	5
MATH 2500	Calculus and Analytical Geometry I	5
MATH 2600	Calculus and Analytical Geometry II	5

MATH 2700	Calculus and Analytical Geometry III	5
MATH 2800	Linear Algebra	4
MATH 2850	Differential Equations	4
BIOL 1030	Environmental Issues and Solutions	3
BIOL 1140	Human Biology	3
BIOL 1150	Plant Biology	4
BIOL 1160	Animal Biology	4
BIOL 1170	Ecology and Environmental Biology	4
BIOL 1190	Introduction to Evolutionary Biology	4
BIOL 1200	Fundamentals of Biology for the Health Technologies <sup>8</sup>	4
BIOL 1510	Principles of Biology I <sup>9</sup>	4
BIOL 1520	Principles of Biology II <sup>9</sup>	4
BIOL 2210	Anatomy and Physiology I	4
BIOL 2220	Anatomy and Physiology II	4
BIOL 2700	Microbiology	4
CHEM 1050	Chemistry in the Everyday World	3
CHEM 1100	Elementary Chemistry I: Intro to Inorganic Chemistry	4
CHEM 1150	Elementary Chemistry II: Intro to Organic and Biochemistry	4
CHEM 1500	General Chemistry I <sup>10</sup>	5
CHEM 1600	General Chemistry II <sup>10</sup>	5
CHEM 2000	Quantitative Analysis	5
CHEM 2500	Organic Chemistry I	5
CHEM 2600	Organic Chemistry II	5
GEOG 1550	Physical and Environmental Geography	3
GEOL 1100	Introduction to Physical Geology	4
GEOL 1200	Introductory Historical Geology	4
GEOL 1300	Introduction to Stream System Analyses	3
PSCI 1300	Earth Science	3
PSCI 1400	Introduction to Meteorology	3
PHYS 1500	Astronomy	4
PHYS 1550	Everyday Physics	3
PHYS 1610	General Physics I	5
or PHYS 2410	Science and Engineering Physics I	
PHYS 1620	General Physics II	5
or PHYS 2420	Science and Engineering Physics II	

<sup>1</sup> FYEX 1000 First Year Experience is a degree requirement for all new first time in college students.

<sup>2</sup> English course selection is based on placement test results (ENGL 1111 English Composition I (B) is 4 credits, only 3 credits apply to the degree).

<sup>3</sup> Placement in the appropriate Mathematics course is required. See here (<https://catalog.lakelandcc.edu/general/admission-registration-information/>).

<sup>4</sup> MATH 2500 Calculus and Analytical Geometry I, MATH 2600 Calculus and Analytical Geometry II and/or MATH 2700 Calculus and Analytical Geometry III are recommended for Physics, Chemistry and Engineering majors.

<sup>5</sup> BIOL 1510 Principles of Biology I and BIOL 1520 Principles of Biology II are recommended for Biology majors.

<sup>6</sup> CHEM 1500 General Chemistry I and CHEM 1600 General Chemistry II are recommended for Chemistry majors.

<sup>7</sup> PHYS 2410 Science and Engineering Physics I and PHYS 2420 Science and Engineering Physics II are recommended for Physics, Chemistry, or Engineering majors.

<sup>8</sup> BIOL 1200 Fundamentals of Biology for the Health Technologies is best suited for health technology students.

<sup>9</sup> Students who have completed the BIOL 1510 Principles of Biology I and BIOL 1520 Principles of Biology II sequence and wish to fulfill their natural science requirement with additional biology courses should select from the following courses: BIOL 1170 Ecology and Environmental Biology, BIOL 1190 Introduction to Evolutionary Biology, BIOL 2210 Anatomy and Physiology I, BIOL 2220 Anatomy and Physiology II, BIOL 2700 Microbiology.

- <sup>10</sup> Students who have completed the CHEM 1500 General Chemistry I and CHEM 1600 General Chemistry II sequence and wish to fulfill their natural science requirement with additional chemistry courses should select from the following courses: CHEM 2000 Quantitative Analysis, CHEM 2500 Organic Chemistry I, CHEM 2600 Organic Chemistry II.

## Electives

Students should consult with a counselor to select electives that will support their educational objectives. Elective credits should be focused for the most part in the Mathematics and Natural Sciences categories.

Students may apply excess credits from each of the degree areas shown above to the Electives area.

Students should complete the remaining credits for the degree from either additional Ohio Transfer 36 courses or from any college-level courses as general electives.

(NOTE: The one-credit physical activity courses (PEHR 1101 Aerobic Conditioning through PEHR 1126 Suspension Training and DANC 1108 Basic Ballet through DANC 1110 Basic Modern Dance) cannot be applied to the degree requirements.)

Some four-year colleges require a course in public speaking, which is COMM 1000 Effective Public Speaking at Lakeland. Students should check to see if the institution to which they plan to transfer requires this Ohio Transfer 36 course.

Some four-year colleges require completion of one or two years of course work in Modern/Foreign Languages. Students should check to see if the institution to which they plan to transfer includes this requirement.

Students seeking to improve their computer skills/knowledge needed at Lakeland and elsewhere are encouraged to take ITIS 1000 Basic Computer Skills or ITIS 1005 Computer Essentials, which meets the Transfer Assurance Guide (TAG) requirement for Ohio's Articulation and Transfer Policy.

## Ohio Guaranteed Transfer Pathways

The Ohio Guaranteed Transfer Pathways (OGTPs) enable students to streamline credit transfer among the state's public institutions of higher education to find the best pathways to degree completion and launch successful careers.

The OGTPs are designed to provide a clearer path to degree completion for students pursuing associate degrees who plan to transfer to an Ohio public university to complete their bachelor's degree. The OGTPs also constitute an agreement between public community colleges and universities confirming that community college courses meet major preparation requirements and will be counted and applied toward the bachelor's degree. Students still must meet all university program admission requirements.

A student who completes all of the coursework within a major-specific Ohio Guaranteed Transfer Pathway (OGTP) will be eligible to earn an Associate of Arts, Associate of Science, or Associate of Applied Science degree from an Ohio public community college. The completion of the OGTP will be recorded on the student's transcript, and upon transfer to an Ohio public university, all coursework taken as part of the pathway will transfer to the university toward the completion of a bachelor's degree in an equivalent field.

Students are encouraged to communicate transfer plans early and consult with a counselor to discuss the options available through the Ohio Guaranteed Transfer Pathways.

### Associate of Science Ohio Guaranteed Transfer Pathways at Lakeland

- Biology: AS (p. 5)
- Chemistry: AS (p. 6)
- Geology: AS (p. 7)
- Mathematics: AS to BA (p. 8)
- Mathematics: AS to BS (p. 9)
- Physics: AS (p. 10)
- Psychology: AS to BS (p. 11)

### Biology Associate of Science Pathway

Course	Title	Credit Hours
<b>First Semester</b>		
BIOL 1510	Principles of Biology I	4
CHEM 1500	General Chemistry I	5
ENGL 1110 or ENGL 1111	English Composition I (A) <sup>1</sup> or English Composition I (B)	3
FYEX 1000	First Year Experience	1

MATH 2500	Calculus and Analytical Geometry I	5
<b>Credit Hours</b>		<b>18</b>
<b>Second Semester</b>		
BIOL 1520	Principles of Biology II	4
CHEM 1600	General Chemistry II	5
ENGL 1120 or ENGL 1121	English Composition II or English Composition II-Technical Focus	3
Select course(s) from the Ohio Transfer 36 Arts and Humanities Electives list		3
<b>Credit Hours</b>		<b>15</b>
<b>Third Semester</b>		
BIOL 2210 or BIOL 2700 or PHYS 1610 or PHYS 2410	Anatomy and Physiology I <sup>2</sup> or Microbiology or General Physics I or Science and Engineering Physics I	4-5
CHEM 2500	Organic Chemistry I <sup>2</sup>	5
PSYC 1500	Introduction to Psychology	3
Select course(s) from the Ohio Transfer 36 Electives list <sup>3</sup>		2
<b>Credit Hours</b>		<b>14-15</b>
<b>Fourth Semester</b>		
CHEM 2600	Organic Chemistry II <sup>2</sup>	5
SOCY 1150	Principles of Sociology	3
Select course(s) from the Ohio Transfer 36 Arts and Humanities Electives list		3
Select course(s) from the Ohio Transfer 36 Macro Social Sciences Elective list		3
<b>Credit Hours</b>		<b>14</b>
<b>Total Credit Hours</b>		<b>61-62</b>

<sup>1</sup> English course selection is based on placement test results (ENGL 1111 English Composition I (B) is 4 credits, only 3 credits apply to the degree).

<sup>2</sup> The following courses are not always offered every semester: CHEM 2500 Organic Chemistry I, CHEM 2600 Organic Chemistry II, PHYS 1610 General Physics I, and PHYS 2410 Science and Engineering Physics I.

<sup>3</sup> Select credits through consultation with a counselor to select electives that will support your educational objective. Elective credits should be focused for the most part in the Ohio Transfer 36 Natural Sciences categories.

### Electives

Students should consult with a counselor when setting their degree pathway.

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

Ohio Transfer 36 elective lists are located in the Ohio Transfer 36 (<https://catalog.lakelandcc.edu/degree-certificate-programs/gnst/9099/>).

Students may apply excess credits from each of the degree areas shown above to the Electives area.

Students should complete the remaining credits for the degree from Ohio Transfer 36 courses to assure maximum transfer to an Ohio four-year college.

### Chemistry Associate of Science Pathway

Course	Title	Credit Hours
<b>First Semester</b>		
CHEM 1500	General Chemistry I	5
ENGL 1110 or ENGL 1111	English Composition I (A) <sup>1</sup> or English Composition I (B)	3
FYEX 1000	First Year Experience	1
MATH 2500	Calculus and Analytical Geometry I	5
Select course(s) from the Ohio Transfer 36 Arts and Humanities Electives list		3
<b>Credit Hours</b>		<b>17</b>

**Second Semester**

CHEM 1600	General Chemistry II	5
ENGL 1120 or ENGL 1121	English Composition II or English Composition II-Technical Focus	3
MATH 2600	Calculus and Analytical Geometry II	5
Select course(s) from the Ohio Transfer 36 Arts and Humanities Electives list		3
<b>Credit Hours</b>		<b>16</b>

**Third Semester**

CHEM 2000	Quantitative Analysis <sup>2</sup>	5
CHEM 2500	Organic Chemistry I <sup>2</sup>	5
PHYS 2410	Science and Engineering Physics I <sup>2</sup>	5
Select course(s) from the Ohio Transfer 36 Behavioral Sciences Elective list		3
<b>Credit Hours</b>		<b>18</b>

**Fourth Semester**

CHEM 2600	Organic Chemistry II <sup>2</sup>	5
PHYS 2420	Science and Engineering Physics II <sup>2</sup>	5
Select course(s) from the Ohio Transfer 36 Macro Social Sciences Elective list		3
<b>Credit Hours</b>		<b>13</b>
<b>Total Credit Hours</b>		<b>64</b>

<sup>1</sup> English course selection is based on placement test results (ENGL 1111 English Composition I (B) is 4 credits, only 3 credits apply to the degree).

<sup>2</sup> The following courses are not always offered every semester: CHEM 2000 Quantitative Analysis, CHEM 2500 Organic Chemistry I, CHEM 2600 Organic Chemistry II, PHYS 2410 Science and Engineering Physics I, and PHYS 2420 Science and Engineering Physics II.

**Electives**

Students should consult with a counselor when setting their degree pathway.

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

Ohio Transfer 36 elective lists are located in the Ohio Transfer 36 (<https://catalog.lakelandcc.edu/degree-certificate-programs/gnst/9099/>).

**Geology Associate of Science Pathway**

Course	Title	Credit Hours
<b>First Semester</b>		
CHEM 1500	General Chemistry I	5
ENGL 1110 or ENGL 1111	English Composition I (A) <sup>1</sup> or English Composition I (B)	3
FYEX 1000	First Year Experience	1
MATH 2500	Calculus and Analytical Geometry I	5
<b>Credit Hours</b>		<b>14</b>
<b>Second Semester</b>		
BIOL 1020 or BIOL 1170	Introductory Biology: Organismic Biology and Ecology or Ecology and Environmental Biology	3-4
CHEM 1600	General Chemistry II	5
ENGL 1120 or ENGL 1121	English Composition II or English Composition II-Technical Focus	3
Select course(s) from the Ohio Transfer 36 Arts and Humanities Electives list		3
Select course(s) from the Ohio Transfer 36 Behavioral Sciences Electives list		3
<b>Credit Hours</b>		<b>17-18</b>
<b>Third Semester</b>		
GEOL 1100	Introduction to Physical Geology <sup>2</sup>	4
PHYS 1610	General Physics I <sup>2</sup>	5
Select course(s) from the Ohio Transfer 36 Arts and Humanities Electives list		3

Select course(s) from the Ohio Transfer 36 Macro Social Sciences Electives list	3	
<b>Credit Hours</b>	<b>15</b>	
<b>Fourth Semester</b>		
GEOL 1200	Introductory Historical Geology <sup>2</sup>	4
GEOL 1300	Introduction to Stream System Analyses	3
PHYS 1620	General Physics II <sup>2</sup>	5
Select course(s) from Ohio Transfer 36 Elective lists <sup>3</sup>		3
<b>Credit Hours</b>	<b>15</b>	
<b>Total Credit Hours</b>	<b>61-62</b>	

<sup>1</sup> English course selection is based on placement test results (ENGL 1111 English Composition I (B) is 4 credits, only 3 credits apply to the degree).

<sup>2</sup> The following courses are not always offered every semester: GEOL 1100 Introduction to Physical Geology, GEOL 1200 Introductory Historical Geology, PHYS 1610 General Physics I, and PHYS 1620 General Physics II.

<sup>3</sup> Select credits through consultation with a counselor to select electives that will support your educational objective. Elective credits should be focused for the most part in the Ohio Transfer 36 Natural Sciences categories.

### Electives

Students should consult with a counselor when setting their degree pathway.

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

Ohio Transfer 36 elective lists are located in the Ohio Transfer 36 (<https://catalog.lakelandcc.edu/degree-certificate-programs/gnst/9099/>).

Students may apply excess credits from each of the degree areas shown above to the Electives area.

Students should complete the remaining credits for the degree from Ohio Transfer 36 courses to assure maximum transfer to an Ohio four-year college.

### Mathematics Associate of Science to Bachelor of Arts Pathway

Course	Title	Credit Hours
<b>First Semester</b>		
ENGL 1110 or ENGL 1111	English Composition I (A) <sup>1</sup> or English Composition I (B)	3
FYEX 1000	First Year Experience	1
MATH 2500	Calculus and Analytical Geometry I	5
Select course(s) from the Ohio Transfer 36 Arts and Humanities Electives list		3
Select course(s) from the Ohio Transfer 36 Social & Behavioral Sciences Electives list		3
<b>Credit Hours</b>		<b>15</b>
<b>Second Semester</b>		
ENGL 1120 or ENGL 1121	English Composition II or English Composition II-Technical Focus	3
MATH 2600	Calculus and Analytical Geometry II	5
Select course(s) from the Ohio Transfer 36 Arts and Humanities Electives list		3
Select course(s) from the Ohio Transfer 36 Social & Behavioral Sciences Electives list		3
<b>Credit Hours</b>		<b>14</b>
<b>Third Semester</b>		
BIOL 1510 or BIOL 2210 or CHEM 1500 or PHYS 1610 or PHYS 2410	Principles of Biology I <sup>2,3</sup> or Anatomy and Physiology I or General Chemistry I or General Physics I or Science and Engineering Physics I	4-5
MATH 2700	Calculus and Analytical Geometry III	5
Select course(s) from Ohio Transfer 36 Electives list <sup>4</sup>		7
<b>Credit Hours</b>		<b>16-17</b>



**Fourth Semester**

BIOL 1520 or BIOL 2220 or CHEM 1600 or PHYS 1620 or PHYS 2420	Principles of Biology II <sup>2,3</sup> or Anatomy and Physiology II or General Chemistry II or General Physics II or Science and Engineering Physics II	4-5
MATH 2800	Linear Algebra <sup>3</sup>	4
MATH 2850	Differential Equations <sup>3</sup>	4
Select course(s) from Ohio Transfer 36 Electives list <sup>4</sup>		4
<b>Credit Hours</b>		<b>16-17</b>
<b>Total Credit Hours</b>		<b>61-63</b>

- <sup>1</sup> English course selection is based on placement test results (ENGL 1111 English Composition I (B) is 4 credits, only 3 credits apply to the degree).
- <sup>2</sup> Students should select one sequence of courses for the third and fourth semesters as follows:
- If BIOL 1510 is selected, then enroll in BIOL 1520 in the subsequent semester.
  - If BIOL 2210 is selected, then enroll in BIOL 2220 in the subsequent semester.
  - If CHEM 1500 is selected, then enroll in CHEM 1600 in the subsequent semester.
  - If PHYS 2410 is selected, then enroll in PHYS 2420 in the subsequent semester.
  - If CHEM or PHYS sequence is chosen, two credits may be applied to electives.
- <sup>3</sup> The following courses are not always offered every semester: MATH 2800 Linear Algebra, MATH 2850 Differential Equations, PHYS 2410 Science and Engineering Physics I, and PHYS 2420 Science and Engineering Physics II.
- <sup>4</sup> Select credits through consultation with a counselor to select electives that will support your educational objectives. Elective credits should be focused for the most part from the Ohio Transfer 36 Natural Sciences categories.

**Electives**

Students should consult with a counselor when setting their degree pathway.

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

Ohio Transfer 36 elective lists are located in the Ohio Transfer 36 (<https://catalog.lakelandcc.edu/degree-certificate-programs/gnst/9099/>).

Students may apply excess credits from each of the degree areas shown above to the Electives area.

Students should complete the remaining credits for the degree from Ohio Transfer 36 courses to assure maximum transfer to an Ohio four-year college.

**Mathematics Associate of Science to Bachelor of Science Pathway**

Course	Title	Credit Hours
<b>First Semester</b>		
ENGL 1110 or ENGL 1111	English Composition I (A) <sup>1</sup> or English Composition I (B)	3
FYEX 1000	First Year Experience	1
MATH 2500	Calculus and Analytical Geometry I	5
Select course(s) from the Ohio Transfer 36 Arts and Humanities Electives list		3
Select course(s) from the Ohio Transfer 36 Social & Behavioral Sciences Electives list		3
<b>Credit Hours</b>		<b>15</b>
<b>Second Semester</b>		
ENGL 1120 or ENGL 1121	English Composition II or English Composition II-Technical Focus	3
MATH 2600	Calculus and Analytical Geometry II	5
Select course(s) from the Ohio Transfer 36 Arts and Humanities Electives list		3
Select course(s) from the Ohio Transfer 36 Social & Behavioral Sciences Electives list		3
<b>Credit Hours</b>		<b>14</b>
<b>Third Semester</b>		
MATH 2700	Calculus and Analytical Geometry III	5

PHYS 2410	Science and Engineering Physics I <sup>2</sup>	5
Select course(s) from Ohio Transfer 36 Electives list <sup>3</sup>		6
<b>Credit Hours</b>		<b>16</b>
<b>Fourth Semester</b>		
MATH 2800	Linear Algebra <sup>2</sup>	4
MATH 2850	Differential Equations <sup>2</sup>	4
PHYS 2420	Science and Engineering Physics II <sup>2</sup>	5
Select course(s) from Ohio Transfer 36 Electives list <sup>3</sup>		3
<b>Credit Hours</b>		<b>16</b>
<b>Total Credit Hours</b>		<b>61</b>

<sup>1</sup> English course selection is based on placement test results (ENGL 1111 English Composition I (B) is 4 credits, only 3 credits apply to the degree).

<sup>2</sup> The following courses are not always offered every semester: MATH 2800 Linear Algebra, MATH 2850 Differential Equations, PHYS 2410 Science and Engineering Physics I, and PHYS 2420 Science and Engineering Physics II.

<sup>3</sup> Select credits through consultation with a counselor to select electives that will support your educational objectives. Elective credits should be focused for the most part from the Ohio Transfer 36 Natural Sciences categories.

### Electives

Students should consult with a counselor when setting their degree pathway.

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

Ohio Transfer 36 elective lists are located in the Ohio Transfer 36 (<https://catalog.lakelandcc.edu/degree-certificate-programs/gnst/9099/>).

Students may apply excess credits from each of the degree areas shown above to the Electives area.

Students should complete the remaining credits for the degree from Ohio Transfer 36 courses to assure maximum transfer to an Ohio four-year college.

### Physics Associate of Science Pathway

Course	Title	Credit Hours
<b>First Semester</b>		
CHEM 1500	General Chemistry I	5
ENGL 1110 or ENGL 1111	English Composition I (A) <sup>1</sup> or English Composition I (B)	3
FYEX 1000	First Year Experience	1
MATH 2500	Calculus and Analytical Geometry I	5
<b>Credit Hours</b>		<b>14</b>
<b>Second Semester</b>		
CHEM 1600	General Chemistry II	5
ENGL 1120 or ENGL 1121	English Composition II or English Composition II-Technical Focus	3
MATH 2600	Calculus and Analytical Geometry II	5
Select course(s) from the Ohio Transfer 36 Arts and Humanities Electives list		3
<b>Credit Hours</b>		<b>16</b>
<b>Third Semester</b>		
MATH 2700	Calculus and Analytical Geometry III	5
PHYS 2410	Science and Engineering Physics I <sup>2</sup>	5
Select course(s) from the Ohio Transfer 36 Arts and Humanities Electives list		3
Select course(s) from the Ohio Transfer 36 Social & Behavioral Sciences Electives list		3
<b>Credit Hours</b>		<b>16</b>
<b>Fourth Semester</b>		
MATH 2800	Linear Algebra <sup>2</sup>	4
MATH 2850	Differential Equations <sup>2</sup>	4

PHYS 2420	Science and Engineering Physics II <sup>2</sup>	5
Select course(s) from the Ohio Transfer 36 Social & Behavioral Sciences Electives list		3
<b>Credit Hours</b>		<b>16</b>
<b>Total Credit Hours</b>		<b>62</b>

<sup>1</sup> English course selection is based on placement test results (ENGL 1111 English Composition I (B) is 4 credits, only 3 credits apply to the degree).

<sup>2</sup> The following courses are not always offered every semester: MATH 2800 Linear Algebra, MATH 2850 Differential Equations, PHYS 2410 Science and Engineering Physics I, and PHYS 2420 Science and Engineering Physics II.

### Electives

Students should consult with a counselor when setting their degree pathway.

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

Ohio Transfer 36 elective lists are located in the Ohio Transfer 36 (<https://catalog.lakelandcc.edu/degree-certificate-programs/gnst/9099/>).

## Psychology Associate of Science to Bachelor of Science Pathway

Course	Title	Credit Hours
<b>First Semester</b>		
ENGL 1110 or ENGL 1111	English Composition I (A) <sup>1</sup> or English Composition I (B)	3
FYEX 1000	First Year Experience	1
MATH 1550	Statistics (A)	4
PSYC 1500	Introduction to Psychology	3
Select course(s) from the Ohio Transfer 36 Arts and Humanities Electives list		3
<b>Credit Hours</b>		<b>14</b>
<b>Second Semester</b>		
BIOL 1010	Introductory Biology: Cells, Genetics, and Evolution	3
ENGL 1120 or ENGL 1121	English Composition II or English Composition II-Technical Focus	3
MATH 1650	College Algebra (A)	4
PSYC 2400 or PSYC 2500 or PSYC 2600	Child Psychology or Adolescent Psychology or Adult Development and Aging	3
Select course(s) from the Ohio Transfer 36 Macro Social Sciences Elective list		3
<b>Credit Hours</b>		<b>16</b>
<b>Third Semester</b>		
BIOL 1510 or CHEM 1500	Principles of Biology I <sup>2</sup> or General Chemistry I	4-5
PSYC 2300	Personality Theory	3
PSYC 2800	Social Psychology	3
SPAN 1001	Elementary Spanish I	4
Select course(s) from the Ohio Transfer 36 Arts and Humanities Electives list		3
<b>Credit Hours</b>		<b>17-18</b>
<b>Fourth Semester</b>		
BIOL 1520	Principles of Biology II	4
PSYC 2700	Abnormal Psychology	3
SPAN 1002	Elementary Spanish II	4
Select course(s) from the Ohio Transfer 36 Electives list		3
<b>Credit Hours</b>		<b>14</b>
<b>Total Credit Hours</b>		<b>61-62</b>

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- 1 English course selection is based on placement test results (ENGL 1111 English Composition I (B) is 4 credits, only 3 credits apply to the degree).
- 2 If CHEM 1500 General Chemistry I is selected, 1 credit may be applied to electives.

### **Electives**

Students should consult with a counselor when setting their degree pathway.

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

Ohio Transfer 36 elective lists are located in the Ohio Transfer 36 (<https://catalog.lakelandcc.edu/degree-certificate-programs/gnst/9099/>).

Students may apply excess credits from each of the degree areas shown above to the Electives area.

Students should complete the remaining credits for the degree from Ohio Transfer 36 courses to assure maximum transfer to an Ohio four-year college.