

# Mathematics

## Associate of Science to Bachelor of Science

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

| 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  | ENGL 1110 or ENGL 1111                      | 3            |
| MATHEMATICS, STATISTICS, AND LOGIC:   |  |   | 5            |
| Course 1:   | Calculus I (TMM005) <sup>1</sup>   | MATH 2500                                   | 5            |
| ARTS AND HUMANITIES:  |  |   | 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                                  | Behavioral Sciences Elective (see page 5)   | 3            |
| + Course 2:   | Any Ohio Transfer 36 approved Social and Behavioral Sciences course                                  | Macro-Social Sciences Elective (see page 5) | 3            |
| NATURAL SCIENCES:   |  |   | 10           |
| Course 1:   | Calculus-based Physics I with lab (OSC016)   | PHYS 2410                                   | 5            |
| Course 2:   | Calculus-based Physics II with lab (OSC017) or any Ohio Transfer 36 approved Natural Sciences course | PHYS 2420                                   | 5            |
| ADDITIONAL CREDITS: <sup>2</sup>  |  |   | 8            |
| Course 1:   | Any Ohio Transfer 36 approved Second Writing (TME002) course   | ENGL 1120 or ENGL 1121                      | 3            |
| Course 2:   | Calculus II (TMM006)   | MATH 2600                                   | 5            |
| <b>GENERAL EDUCATION/OHIO TRANSFER 36 TOTAL:</b>  |  |   | <b>38</b>    |
| <p>Advising Notes:<br/>           Where it indicates "Any Ohio Transfer 36 approved," students should work closely with their advisors.<br/>           (+) indicates that the courses chosen should be from two different areas within that category.<br/> <sup>1</sup> A prerequisite, such as College Algebra (TMM001), may be needed for a student to reach Calculus I (TMM005).<br/> <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.</p> |  |   |              |

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| PRE-MAJOR/BEGINNING MAJOR        |  | Course Number | Credit Hours |
|----------------------------------|--|---------------|--------------|
| Course 1:                        | Calculus III (OMT018)                      | MATH 2700     | 5            |
| Course 2:                        | Elementary Linear Algebra (OMT019)         | MATH 2800     | 4            |
| Course 3:                        | Elementary Differential Equations (OMT020) | MATH 2850     | 4            |
| PRE-MAJOR/BEGINNING MAJOR TOTAL: |  |               | 13           |

| OTHER REQUIREMENTS                     |  | Course Number | Credit Hours |
|--|--|---------------|--------------|
| Electives:                             | General Electives as needed (May include FYE or Orientation course) <sup>1</sup> | FYEX 1000     | 1            |
|  |  | Electives     | 9            |
| OTHER REQUIREMENTS TOTAL: <sup>2</sup> |  |               | 10           |

**Advising Notes:**

<sup>1</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 a course in programming or proofs. Consult with your academic advisor and your receiving institution to determine an appropriate program of study.

<sup>2</sup> 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                 |

### 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.

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.

For additional information, please contact:

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### SAMPLE DEGREE MAP

#### FIRST YEAR

| SEMESTER 1  |              | SEMESTER 2   |              |
|---|--------------|--|--------------|
| Course Name & Number  | Credit Hours | Course Name & Number   | Credit Hours |
| ENGL 1110 English Composition I (A) or<br>ENGL 1111 English Composition I (B) | 3            | ENGL 1120 English Composition II or<br>ENGL 1121 English Composition II - Technical<br>Focus | 3            |
| FYEX 1000 First Year Experience   | 1            | MATH 2600 Calculus and Analytical<br>Geometry II   | 5            |
| MATH 2500 Calculus and Analytical<br>Geometry I                               | 5            | Arts and Humanities Ohio Transfer 36 Elective  | 3            |
| Arts and Humanities Ohio Transfer 36 Elective                                 | 3            | Macro-Social Sciences Ohio Transfer 36<br>Elective   | 3            |
| Behavioral Sciences Ohio Transfer 36 Elective                                 | 3            |  |              |
| <b>Total Semester 1 Credit Hours</b>  | <b>15</b>    | <b>Total Semester 2 Credit Hours</b>   | <b>14</b>    |

#### SECOND YEAR

| SEMESTER 3                                      |              | SEMESTER 4                                       |              |
|---|--------------|--|--------------|
| Course Name & Number                            | Credit Hours | Course Name & Number                             | Credit Hours |
| PHYS 2410 Science and Engineering Physics I*    | 5            | PHYS 2420 Science and Engineering Physics<br>II* | 5            |
| MATH 2700 Calculus and Analytic<br>Geometry III | 5            | MATH 2800 Linear Algebra*                        | 4            |
| Elective  | 3            | MATH 2850 Differential Equations*                | 4            |
| Elective  | 3            | Elective   | 3            |
| <b>Total Semester 3 Credit Hours</b>            | <b>16</b>    | <b>Total Semester 4 Credit Hours</b>             | <b>16</b>    |

\*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            |

\*Indicates non-lab courses

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| SOCIAL AND BEHAVIORAL SCIENCES  | Course Number | Credit Hours |
|---------------------------------|---------------|--------------|
| <b>BEHAVIORAL SCIENCES LIST</b> |               |              |
| 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 |
|---|---------------|--------------|
| <b>MACRO-SOCIAL SCIENCES LIST</b>                 |               |              |
| Basic Economics                                   | ECON 1150     | 3            |
| Principles of Macroeconomics                      | ECON 2500     | 3            |
| Principles of Microeconomics                      | ECON 2600     | 3            |
| Intro to Geography                                | GEOG 1500     | 3            |
| World Regional Geography                          | GEOG 1600     | 3            |
| Geography of U.S. and Canada                      | GEOG 1800     | 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            |