The primary goal of the Liberal Arts—Mathematics curriculum is to prepare students to transfer to a four-year institution as third-year students in a mathematics or math-related program.

The Liberal Arts curriculum has a dual purpose. The courses provide students subject matter enabling them to transfer to a four-year college or university, but the curriculum is also designed to provide general education for those who desire it.

Requirements are listed on the following pages for programs granting Associate in Arts and Associate in Science degrees. The Associate in Arts requirements are designed to give students a balanced distribution of courses in English, humanities and social sciences. The Associate in Science requirements are designed to give a student a balance between mathematics and laboratory sciences. These programs have been formulated to ensure a maximum level of acceptance for the transfer student regardless of the program for which he/she applies at a four-year institution.

Students interested in a flexible, exploratory course of study and the option of a self-structured curriculum may pursue Liberal Arts-General Studies. This program offers the student a course of study leading to an Associate in Science degree and an opportunity to experience courses in other curricula.

Program Description
Mathematics is the foundation of many fields. Jobs for individuals with mathematical training are available in industry, education, and scientific research. The Mathematics Program is a liberal arts concentration, which provides the coursework necessary for the first two years of a four-year degree in mathematics or related areas such as statistics, mathematics education, actuarial science, applied technology, natural science or applied math.

The primary goal of the Liberal Arts-Mathematics curriculum is to prepare students to transfer to a four-year institution as third-year students in a mathematics or math-related program. In addition...
to the required mathematics courses, the program includes courses in English, science, humanities and social science, thereby giving the student a background in the different areas of liberal arts.

All Liberal Arts Mathematics students are required to study calculus and differential equations. Students interested in math education can apply to be tutors in the math lab. Articulation meetings are held with neighboring colleges and universities to ensure optimal transferability.

The two-year curriculum in Liberal Arts Mathematics is a liberal arts concentration, meaning that the successful student can transfer to a four-year school to complete the requirements of a Bachelor’s degree in Mathematics or a related field. For those students who are unable to continue their education, careful selection of electives under faculty advisement can make job market entry more viable.

**Admission Requirements**

Applicants should have previously taken pre-calculus and have at least an 85 percent (B) average in math. Those who do not meet these requirements may be provisionally accepted for an extended program to include math courses prerequisite to calculus.

**SUNY General Education Student Learning Outcomes**

The SUNY General Education knowledge and skills areas and the two competencies now function as the basis for the Liberal Arts Program outcomes. These General Education Requirements are detailed in the Academic Information section of this catalog.

**Program Competencies**

- Utilize limits, derivatives, and/or integrals to solve mathematics problems
- Utilize alternate coordinate systems to solve mathematics problems
- Utilize vector calculus to solve mathematics problems
- Model and solve mathematics problems using differential equations
- Utilize logical principles to solve higher order mathematics problems

**SUNY Transfer Path Requirement**

Students matriculating in this program are required to fulfill the SUNY Transfer Path Requirement that most closely aligns with the program. Speak to your adviser for details.

**REQUIRED COURSES**

**Total Degree Credits: 62.0**

- **MT 181** Calculus and Analytic Geometry I (4 cr)
- **MT 182** Calculus and Analytic Geometry II (4 cr)
- **MT 283** Calculus and Analytic Geometry III (4 cr)
- **MT 284** Introduction to Differential Equations (4 cr)
- **EN 110** College Composition (3 cr)
- **EN 111** Composition and Interpretation of Literature (3 cr)
  - (2) Mathematics Electives (8 cr)
  - (2) Sequential Laboratory Sciences (8-9 cr)
  - (2) Social Science Electives (6 cr)
  - (2) English/Humanities Electives (6 cr)
  - (2) Liberal Arts Electives (6-9 cr)
  - (2) Open Electives (6-9 cr)

**Note:**

All degree candidates must complete a minimum of 62 credit hours for graduation. An intended mathematics major who has a need for preparatory work before taking MT 181 should consider taking courses in the summer preceding the first semester.

Student should become aware of the course requirements of the college to which they are transferring. The final selection of courses is to be made after advisement by a faculty adviser of the mathematics department.

Secondary Mathematics Teacher Education degree - Erie Community College has completed or is in the process of completing Dual Admissions/Cooperative Degree programs with Western New York colleges for students wishing to pursue a Secondary Mathematics Teacher Education degree. Because course requirements vary somewhat within each four-year school, it is strongly recommended that prospective students contact the Department Head for Teacher Preparation Programs at (716) 270-5211 to discuss appropriate courses within this associate degree program to insure a seamless transfer to the four year college of choice.

**Mathematics Electives:** choose from MT 167, MT 191, or MT 292.

**Sequential Laboratory Sciences:** Lecture-laboratory combination courses count as single courses; i.e., CH 180 and CH 181 count as one unit. A two-semester sequence from Physics, Chemistry, or Biology is required. At least one of the courses must be on the approved list of SUNY General Education Natural Science courses.

**Humanities:** EN 114, 140, 141, 150, 151, and EN 205 or higher, music (MU), dance (DN), drama-theatre (DT), art (AT), philosophy (PY), French (FR), Sign Language (SL), Spanish (SP). The two courses must be from two SUNY General Education areas among Humanities, the Arts, or Foreign Language.

**Social Sciences:** One course must be from the SUNY General Education area of Social Sciences. The second course must be from the American History, Western Civilization, or Other World Civilizations SUNY General Education areas.

**Liberal Arts Electives:** MT 143 and CS 111 are recommended.