



# Liberal Arts: Mathematics and Science

■ CAREER CERTIFICATE  
 ◆ TRANSFER DEGREE  
 M MIDDLETOWN CAMPUS  
 DL DISTANCE LEARNING

## Program Description

The Associate in Science degree program in Liberal Arts and Sciences with a Mathematics and Natural Science emphasis is designed specifically for students to transfer, with junior status, to the appropriate upper-level college or university of their choice, where they can complete the B.S./B.A. degree in their chosen field of study. As such, the program provides core courses and general education requirements that would be included in the first two years of study at four-year institutions. This degree gives mathematics/science students the flexibility to match a program to their individual goals, backgrounds and talents. The various curricula provide the opportunity to pursue a variety of academic and career interests in mathematics and in the natural/physical sciences.

The course distribution in mathematics and science is designed to provide a solid foundation in the basics of natural and physical sciences/mathematics: future advanced coursework will build on this foundation. The general education elective credits round out the curriculum in this degree program. Students should consult the appropriate department chairperson and faculty for specific advice about pursuing a particular discipline within this area. Such consultation will facilitate the correct level of course choice and rigor required to match the student's transfer plans as they work toward a bachelor's degree.

*This degree has been approved by SUNY and NYS Education Department for online distance learning delivery. This does not mean that SUNY Orange offers every course in the program online; however, many are offered in this format. Please check the current credit course schedule for online DL virtual course listings offered each semester.*

## Program Outcomes

Students will:

- demonstrate essential and foundational knowledge in the natural sciences and liberal arts
- demonstrate understanding of the methods scientists use to explore natural phenomena, including observation, hypothesis development, measurement and data collection, experimentation, evaluation of evidence, and employment of mathematical analysis
- perform mathematically with proper notation and vocabulary commensurate with chosen field of study
- demonstrate ability to apply systematic reasoning and critical thinking skills
- demonstrate effective communication both oral and written

## Admission Criteria

Admission to this program requires that students be high school graduates or have high school equivalency diplomas (HSEs). If students are home schooled, they may be eligible for admission.

Before initiating study for this A.S. degree a student must have achieved a mathematical proficiency which includes intermediate level algebra. At SUNY Orange, this means that a student must have tested beyond Intermediate Algebra (MAT 102) to begin progress toward this degree. If this is not the case the student must speak with an advisor in order to choose the proper preparatory courses.

For students with more defined career goals, see the four-semester course sequences for Chemistry and Math.

## Transfer Options

SUNY Orange has special relationships with upper-level colleges and universities for transfer. Students regularly transfer with junior status to colleges and universities in the State University of New York System as well as to private and state colleges and universities across the country.

## Your Career Coach

Career opportunities exist in the following areas:

- professional degrees or working in private sector firms in the various fields
- R&D or laboratory opportunities in private and public sector
- positions in education on primary or secondary level
- chemistry
- geology
- mathematics
- physics/astronomy
- excellent background for other fields requiring mathematics/science proficiency, including:
  - biology
  - pre-professional training for medicine, dentistry, veterinary science, pharmacy, etc.
  - environmental sciences
  - Teaching or research

# SUNY Orange

## Liberal Arts: Mathematics and Science Gateway Courses:

- Gateway courses: MAT 205
- Key courses: MAT 205, MAT 206, MAT 207

A minimum of 30 credits of math and science combined is required for this degree. At least 6 credits of math must be College Algebra (MAT 121) or higher, at least 3 credits of which must be a G1A (SUNY Mathematics) course and at least 6 credits of science must be from the G2A (SUNY Natural Sciences) list.

*Courses above have been recommended by the department to help introduce you to the program (Gateway courses) and guide you in selecting courses that will provide you with the best academic experience (Key courses and suggested Electives).*

### First Semester

Course #	Course Name	P, C, P/C	Cr
ENG 101	Freshman English 1 (G10A [w] & G11A)	P	3
_____	SUNY Social Sciences (G3A)		3
_____	SUNY Natural Sciences* (G2A)		3
_____	MAT 111 or higher or Computer Science or Liberal Arts Science*		3
_____	MAT 121 or higher* (G1A)		3
	Total Semester Credits		15

### Milestones

#### During this semester, students should:

- Talk to your advisor about career plans
- Join a club
- Consider opportunities for research

### Second Semester

Course #	Course Name	P, C, P/C	Cr
ENG 102	Freshman English 2 (G7A & G12A)	P	3
HIS_____	Restricted History Elective**		3
_____	SUNY Natural Sciences* (G2A)		3
_____	Restricted Mathematics and Science Elective***		3
MAT _____	MAT 122 or higher* (G1A)		3
	Total Semester Credits		15

### Milestones

#### During this semester, students should:

- Visit Transfer Fair and speak with potential transfer schools
- Seek out scholarship opportunities

### Third Semester

Course #	Course Name	P, C, P/C	Cr
COM 101	Foundations of Communication (G10A [o] & G11A)		3
_____	Restricted Mathematics and Science Elective***		3
_____	Restricted Mathematics and Science Elective***		3
_____	Restricted SUNY Elective****		3
_____	Elective		3
	Total Semester Credits		15

### Milestones

#### During this semester, students should:

- Apply to transfer school(s)
- Seek guidance on resume development

### Fourth Semester

Course #	Course Name	P, C, P/C	Cr
_____	Restricted Mathematics and Science Elective***		3
_____	Restricted Mathematics and Science Elective***		3
_____	SUNY Diversity@ (G6A)		3

Course #	Course Name	P, C, P/C	Cr
	Elective		3
	Elective		3
	Total Semester Credits		15

**Milestones**

During this semester, students should:

- Seek out scholarship opportunities
- Apply for graduation

**TOTAL DEGREE CREDITS: 60****Notes:**

\*Minimum credit value for this course is 3 credits. Students may fulfill this requirement with a course of a higher credit value.

\*\*Select from G4A (SUNY US History & Gov) or G5A (SUNY World History)

\*\*\*MAT 111 or higher, AST, BIO, CHM, CSC 101, CSC 102, CSC 138, CSC 201, GEO 101, GLG, MLT 101, MLT 106, MLT 110, MLT 209, PHY, PSC

\*\*\*\*Select from G8A (SUNY Arts) or G9A (SUNY World Languages)

@Can be an elective if G6A (SUNY Diversity) has already been met

See [SUNY Transfer Path link](#) for information about recommended courses