

# Biological Sciences

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**Description:** The Associate in Arts Degree in Biological Sciences is a non-select two-year program in the Science and Technology academic pathway primarily intended to prepare students for transfer to four-year programs in science and technology related fields, including but not limited to pharmaceuticals, biotechnology, elementary and middle school education. Students in this program include those interested in non-allied health STEM-related fields, those who wish to build prerequisites for select programs in the Science and Technology academic pathway, and those who wish to obtain a two-year Science and Technology degree with the intention of transfer into a related field.

## Student Learning Outcomes:

Upon successful completion of this program, students will be able to:

- Demonstrate an understating of the Scientific Method and utilize it for the development of hypotheses, the collection and analysis of data, and the presentation of results.
- Effectively communicate, in a classroom setting, scientific information via written and graphical methods.
- Summarize the major biological and chemical concepts and processes essential to the living organism.
- Explain the hierarchy of organization in living things, from the chemical level to the biosphere.

**Program Entry Requirements:** This program is open to all interested students. New students are normally required to take College's placement tests at their time of entry. Students who are identified as needing developmental course work must satisfactorily complete the appropriate English and mathematics courses as part of their degree program.

**Program of Study and Graduation Requirements:** Students in the Biological Sciences program are required to enroll in BIOL 100: Introduction to Life Sciences within the first 18 credits. To qualify for the Associate in Arts (AA) degree in Biological Sciences, a student must complete a minimum of 61 credits as prescribed and attain a minimum grade point average of 2.0 ("C" average).

## Semester 1

Course Number and Name	Prerequisites and Corequisites	Credits	Gen Ed Requirements
<a href="#">BIOL 106 - General Biology I</a>		4 credits	Scientific Reasoning
<a href="#">ENGL 101 - English Composition</a>		3 credits	Writing, Research, Info Lit 1

Course Number and Name	Prerequisites and Corequisites	Credits	Gen Ed Requirements
<a href="#">FNMT 118 - Intermediate Algebra</a>	FNMT 017 or FNMT 019 completed or FNMT 118 (or higher) placement	3 credits	Quantitative Reasoning
<a href="#">SOC 101 - Introduction to Sociology*</a> or <a href="#">ANTH 101 - Introduction to Anthropology</a> or <a href="#">ECON 181 - Principles of Economics (Macroeconomics)</a> or <a href="#">POLS 111 - American Government</a>		3 credits	Cultural Analysis & Interpretation
<a href="#">BIOL 100: Introduction to Life Sciences</a>	FNMT 017 or FNMT 019 completed or placement in FNMT 118 or higher	4 credits	

Semester 2

Course Number and Name	Prerequisites and Corequisites	Credits	Gen Ed Requirements
<a href="#">BIOL 107 - General Biology II</a>	<a href="#">BIOL 106</a> with a "C" or better.	4 credits	
<a href="#">CHEM 110 - Introductory Chemistry</a>	<a href="#">FNMT 118</a> or MATH 118 placement and <a href="#">ENGL 101</a> ready.	4 credits	
<a href="#">CIS 103 - Computer Applications &amp; Concepts</a>		3 credits	Technological Competency
<a href="#">ENGL 102 - The Research Paper</a>		3 credits	Writing, Research, Info Lit 2

Course Number and Name	Prerequisites and Corequisites	Credits	Gen Ed Requirements
<b>Directed Elective (choose one)</b> <a href="#">FREN 101 - Elementary French</a> or <a href="#">HUM 101 - Cultural Traditions: Ancient to the 13<sup>th</sup> Century</a> or <a href="#">SPAN 101 - Elementary Spanish</a>		3 credits	

Semester 3

Course Number and Name	Prerequisites and Corequisites	Credits	Gen Ed Requirements
<a href="#">BIOL 108 - Essentials of Human Anatomy and Physiology</a>		4 credits	
<a href="#">MATH 161 - Precalculus I</a>	<a href="#">FNMT 118</a> with a grade of "C" or better	3 credits	
<b>Directed Elective (Choose two):</b> <a href="#">ART 103 - History of Art: Ancient to Renaissance</a> or <a href="#">ECON 182 - Principles of Economics (Microeconomics)</a> or <a href="#">HIST 101 - United States History: Colonial America through the Revolutionary Era</a> or <a href="#">HIST 102 - United States History: The Civil War and the 19th Century</a> or	For ENGL 190: <a href="#">ENGL 101</a> , which may be taken concurrently For PSYC 201: <a href="#">PSYC 101</a> For SOC 231: <a href="#">SOC 101</a> or <a href="#">ANTH 112</a>	6 credits	

Course Number and Name	Prerequisites and Corequisites	Credits	Gen Ed Requirements
<a href="#">HIST 103 - United States History: The 20th Century and Beyond</a> or <a href="#">HIST 121 - World History: The Distant Past</a> or <a href="#">HIST 122 - World History: The Recent Past</a> or ENGL 190 - Introduction to Literature or MUS 103 - Introduction to Music or <a href="#">PHIL 101 - Introduction to Philosophy*</a> or PHIL 211 - Ethical Problems or <a href="#">PSYC 101 - Introduction to Psychology*</a> or PSYC 201 - Child Psychology or <a href="#">SOC 231 - Social Problems</a> or			

Semester 4

Course Number and Name	Prerequisites and Corequisites	Credits	Gen Ed Requirements
<a href="#">BIOL 104 - Forensic Biology</a> or <a href="#">BIOL 123 - Principles of Biology I</a> or <a href="#">BIOL 211 - Genetics</a> or <a href="#">BIOL 225 - Ecology</a>	For BIOL 104 and STS 101: <a href="#">FNMT 118</a> or higher placement For BIOL 123: <a href="#">CHEM 121</a> or <a href="#">CHEM 110</a> with a grade	4 credits	

Course Number and Name	Prerequisites and Corequisites	Credits	Gen Ed Requirements
<p><a href="#">and Field Biology</a> or <a href="#">BIOL 241 - Principles of Microbiology</a> or <a href="#">STS 101 - Introduction to Science, Technology and Society</a></p>	<p>of "C" or better and high school biology or permission of the department head  For BIOL 211: <a href="#">BIOL 106</a> or <a href="#">BIOL 108</a> or <a href="#">BIOL 109</a> or <a href="#">BIOL 123</a> with a grade of "C" or better or permission of the department head  For BIOL 225: <a href="#">BIOL 107</a> or <a href="#">BIOL 124</a> with a grade of "C" or better in either  For BIOL 241: <a href="#">BIOL 106</a> or <a href="#">BIOL 107</a> or <a href="#">BIOL 109</a> or <a href="#">BIOL 123</a> with a "C" or better or permission of the department head</p>		
<p><a href="#">CHEM 118 - Introduction to Biochemistry</a></p>	<p><a href="#">CHEM 101</a>, <a href="#">CHEM 110</a> or <a href="#">CHEM 121</a> with a grade of "C" or better.</p>	4 credits	
<p><a href="#">MATH 162 - Precalculus II</a></p>	<p><a href="#">MATH 161</a> with a grade of "C" or better, or placement in MATH 162 or higher.</p>	3 credits	

Course Number and Name	Prerequisites and Corequisites	Credits	Gen Ed Requirements
ENGL 115 - Public Speaking	ENGL 101, which may be taken concurrently	3 credits	Oral Communication/Creative Expression

**Minimum Credits Needed to Graduate: 61**

\* Students who wish to transfer to the Associate of Science in Biology degree program should take SOC 101, PSYC 101 and PHIL 101. Students should consult an advisor and the requirements of their chosen transfer institution before choosing their directed electives.

### Courses and Completion Sequence

The following courses and sequence of courses is designed for the optimal success and completion of the [AA](#) in Biological Sciences degree/certificate. Any alterations should be discussed with your academic advisor.

#### Semester 1

Course Number and Name	Credits	Advisory Notes	Course Type
BIOL 106 - General Biology I	4 credits		Fulfills Scientific Reasoning General Education Requirement
ENGL 101 - English Composition I	3 credits		Fulfills Writing/Research/Info Lit 1 General Education Requirement
FNMT 118 - Intermediate Algebra	3 credits		Fulfills Quantitative Reasoning General Education Requirement
SOC 101 - Introduction to Sociology or ANTH 101 - Introduction to Anthropology or ECON 181 - Principles of Economics (Macroeconomics) or POLS 111 - American Government	3 credits	Students who wish to transfer to the Associate of Science in Biology degree program should take SOC 101.  Students should consult an advisor and the requirements of their chosen transfer	Fulfills Cultural Analysis & Interpretation General Education Requirement

Course Number and Name	Credits	Advisory Notes	Course Type
		institution before choosing their directed electives.	
BIOL 100: Introduction to Life Sciences	4 credits		

### Semester 2

Course Number and Name	Credits	Advisory Notes	Course Type
BIOL 107 - General Biology II	4 credits		Major Course
CHEM 110 - Introductory Chemistry	4 credits		
CIS 103 - Applied Computer Technology	3 credits		Fulfills Technological Competency General Education Requirement
ENGL 102 - The Research Paper	3 credits		Fulfills Writing/Research/Info Lit 2 General Education Requirement
<b>Choose one:</b> FREN 101 - Elementary French HUM 101 - Cultural Traditions: Ancient to the 13 <sup>th</sup> Century SPAN 101 - Elementary Spanish	3 credits		

### Semester 3

Course Number and Name	Credits	Advisory Notes	Course Type
BIOL 108 - Essentials of Human Anatomy and Physiology	4 credits		Major Course
MATH 161 - Precalculus I	3 credits		
<b>Choose two:</b> ART 103 - History of Art: Ancient to Renaissance	6 credits	Students who wish to transfer to the Associate of Science in Biology degree	Directed Elective

Course Number and Name	Credits	Advisory Notes	Course Type
ECON 182 - Principles of Economics (Microeconomics) ENGL 190 - Introduction to Literature HIST 101 - United States History: Colonial America through the Revolutionary Era HIST 102 - United States History: The Civil War and the 19th Century HIST 103 - United States History: The 20th Century and Beyond HIST 121 - World History: The Distant Past or HIST 122 - World History: The Recent Past or MUS 103 - Introduction to Music PHIL 101 - Introduction to Philosophy PHIL 101 - Introduction to Philosophy PHIL 211 - Ethical Problems PSYC 101 - Introduction to Psychology PSYC 201 - Child Psychology SOC 231 - Social Problems		program should take PSYC 101 and PHIL 101.  Students should consult an advisor and the requirements of their chosen transfer institution before choosing their directed electives.	

Semester 4

Course Number and Name	Credits	Advisory Notes	Course Type
<b>Biology Elective (choose one):</b> BIOL 104 - Forensic Biology BIOL 123 - Principles of Biology BIOL 211 - Genetics	4 credits	If students desire to transfer to Associate of Science in Biology degree program, BIOL	Concentration Elective



<b>Course Number and Name</b>	<b>Credits</b>	<b>Advisory Notes</b>	<b>Course Type</b>
BIOL 225 - Ecology and Field Biology BIOL 241 - Principles of Microbiology STS 101 - Science, Technology and Society		123 is recommended at this time.	
CHEM 118 - Introductory Chemistry	4 credits	If students desire to transfer to Associate of Science in Biology degree program, CHEM 121 is recommended at this time.	
MATH 162 - Precalculus II	4 credits		
ENGL 115 - Public Speaking	3 credits		Fulfills Oral Communication/Creative Expression General Education Requirement

