

# Biology

## Biology AS

The Biology Program provides students with the opportunity to earn an associate degree in the student's area of specialization and prepares the student for transfer to a four-year institution. Students completing the baccalaureate program or graduate school may be hired in the major or in a related field such as biochemistry, bioengineering, botany, clinical lab technology, environmental biology, forestry, oceanography, range management, wildlife/fisheries biology, or zoology.

### Program Student Learning Outcomes

Upon completion of the program, students will be able to:

- recognize and explain the individual structures and hierarchical levels of structure of living organisms
- relate the physiological functions of living organisms to homeostasis, at multiple levels of organismal complexity
- explain and apply basic chemistry principles as they relate to inorganic and organic molecules in biological systems
- manipulate advanced mathematical concepts and equations that can relate to biological systems and/or research
- explain and apply basic physics concepts that can relate to biological systems and/or research

### Associate Degree Requirements:

- Complete a minimum of 18 semester units in a major or area of emphasis
- Complete Local General Education and District requirements
- Complete elective units for total of 60 degree applicable semester units
- Complete all required courses for the major or area of emphasis, English, and math with a "C" or better
- Obtain an overall minimum grade point average of 2.0

Course #	Title	Units
<b>Required Core Courses</b>		
BIO 032	Human Anatomy	4
BIO 035	Human Physiology	4
BIO 038	Microbiology	4
<b>Plus at least 8 units from the courses listed below:</b>		
CHEM 001A	General Chemistry I	5
CHEM 001B	General Chemistry II	5
CHEM 002A	Introductory Chemistry	4
MATH 001A	Introduction to Calculus	5
MATH 001B	Calculus With Applications	5
PHYSICS 002A	Mechanics and Thermodynamics	4
PHYSICS 002B	Elect., Mag., Optics & Modern Physics	4
<b>Total</b>		<b>20</b>

*This is a **recommended sequence** of courses for timely completion of this program. Entry in to transfer level English and math required to follow this recommended sequence. Please see your counselor to formalize your personalized educational plan or for alternative planning.*

SEMESTER 1		SEMESTER 2		SEMESTER 3		SEMESTER 4	
ENG 001A	3	BIO 032	4	BIO 035	4	BIO 038	4
MATH 015	5	AREA C	3	CHEM-002A or		BIOLOGY MAJOR	4
AREA-E	3	AREA D	3	CHEM-001A	4	ELECTIVE 001-049	8
ELECTIVE 001-049	3	ELECTIVE 001-049	6	Elective 001-049	6		<b>16</b>
	<b>14</b>		<b>16</b>		<b>14</b>		