Biological Sciences
Associate of Science

General Program Information: 410 287-1000 or information@cecil.edu

The Associate of Science Biological Sciences provides a course of study for students with concentrations in either Biology, Environmental Science, or Biomedical Science. The curriculum is designed to meet the needs of students who plan to transfer to a college or a university that grants a Baccalaureate Degree in various areas of Biological Science, Environmental Science, or Health Sciences.

	General Education and Program Requirements	***General Education Code***	***Credits***
ART/HUM	Arts and Humanities Elective[1]	H	6
BIO 130	Principles of Biology I	S	3
BIO 131	Principles of Biology I Lab		1
CHM 103	General Chemistry I	S	3
CHM 113	General Chemistry I Lab		1
EGL 101	College Composition	E	3
EGL 102	Composition and Literature	H	3
MAT	Math Elective (Select from MAT 127 or higher-number Math)	M	4
SOC SCI	Social Science Electives[2]	SS	6
SPH 121 ***or*** SPH 141	Interpersonal Communications ***or*** Public Speaking	H	3
	Program Requirements		
BIO 132	Principles of Biology II	S	3
BIO 133	Principles of Biology II Lab		1
CHM 104	General Chemistry	S	3
CHM 114	General Chemistry II Lab		1
CONC	Concentrations		
	Biology Concentration [19**]**		
	CHM 203 Organic Chemistry I with Lab		4
	CHM 204 Organic Chemistry II with Lab		4
	MATH Electives (Select from MAT 127, MAT 128, MAT 191, MAT 201, MAT 202, or MAT 203[3])	M	4
	BIO Electives including BIP 101, excluding BIO 101/111 and BIO 135[5] (4 credits must be from a 200-level BIO course)	S	7
	Environmental Science Concentration [19**]**		
	ECO 222 Economics – Macro	SS	3
	ENV 106 Introduction to Environmental Science	S	3
	ENV 116 Introduction to Environmental Science lab		1
	GEO 101 Physical Geography	SS	3
	BIO/CHM/PSC electives, excluding CHM 107 BIO 135, and BIO 101/111[5] (4 credits must be from BIO 200/210 or BIO 222/232)	S/SL	9
	Biomedical Science Concentration [19]		
	BIO 200 Microbiology or BIO 222 Genetics[4]	S	3
	BIO 208 Anatomy & Physiology I	S	3

	BIO 218 Anatomy & Physiology I Lab		1
	BIO 209 Anatomy & Physiology II	S	3
	BIO 219 Anatomy & Physiology II Lab		1
	CHM 203 Organic Chemistry I with Lab		4
	CHM 204 Organic Chemistry II with Lab		4

Total Credits Required in Program: 60

[1]Selection must be from two different disciplines.
[2] PSY 101 and SOC 101 recommended.
[3] Students should work with an advisor and consider their transfer choices when selecting the appropriate math courses.
[4] It is recommended that students who plan to transfer to 4-year institutions take BIO 210 (Microbiology Lab) in addition to BIO 200 or take BIO 232 (Genetics Lab) in addition to BIO 222. Students should work with an advisor and consider their transfer choices when selecting either Microbiology or Genetics.
[5]Students may not take BIO 101, BIO 111, or BIO 135 as BIO electives nor CHM 107 as a CHM elective. Students should work with an advisor and consider their transfer choices when selecting science electives.

Program Outcomes

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

- Accurately select, identify, and describe appropriate/relevant principles of biology
- Display accurate, relevant data measurements and analysis
- Effectively use both oral and written media
- Use critical thinking and the scientific method in design and execution of scientific experimentation
- Use appropriate laboratory instrumentation and technology in a professional, skilled manner

Additional Outcomes – Area of Concentration in Biology

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

- Describe the importance of biological sciences in regards to the environment and society.
- Identify and explain the fundamental concepts in biology: molecular, cellular, organismal, ecological, and evolutionary biology.

Additional Outcomes – Area of Concentration in Environmental Science

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

- Explain the breadth and interdisciplinary nature of environmental issues.
- Characterize and analyze human impacts on the environment.
- Integrate facts, concepts, and methods from multiple disciplines and apply to environmental problems.

Additional Outcomes – Area of Concentration in Biomedical Science

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

- Effectively use aseptic techniques in a laboratory environment.
- Identify anatomical structures and describe the role they play in human physiology.
- Explain the interdisciplinary application of science to human health issues.

Career Opportunities

Biologist, dentistry, communication outreach with government agencies, educator, field consultant, laboratory researcher, medical laboratory scientist, respiratory therapy, medicine, pharmacy, research and development, teaching, testing, and universities and non-profit organizations.