

**Bachelor of Science (BS)**

# Biology Option

The societal need for highly trained and educated public health professionals continues to grow rapidly. According to the US Bureau of Labor Statistics (BLS), nearly one-third of the projected increase in US jobs is projected to come from the healthcare and social assistance sectors.

Public health professionals protect, improve and promote the health of individuals, communities and populations. They play a significant role in responding to infectious disease epidemics and emergency situations relating to natural disasters. The work of a public health professional can range from addressing the health needs of people in a very specific locality to focusing on the spread of disease across the globe. The work of public health professionals spans many disciplines.

The curriculum for the B.S. in Public Health consists of a core of approximately 83 credit hours, 15 credit hours in a selected option, and 22 additional credit hours of general education and elective credits. The core draws on courses taught by twelve different departments. The option area is intended to allow students to gain an in-depth understanding of a specific area of professional practice. All students complete internships and/or research participation. This interdisciplinary curriculum provides multiple opportunities for graduates in the growing public health field.

**Public Health students will...**

- Understand the concepts of population health, and the basic processes and interventions that identify and address major health related needs and issues for populations.
- Be able to identify opportunities for promoting and protecting health across the human life span by acquiring an understanding of the science of human health and disease.
- Develop an understanding of the socioeconomic, behavioral, biological, environmental and other factors that impact human health and health disparities.
- Be able to use and analyze public health data and evidenced based approaches in public health practice.
- Be well prepared to directly enter career positions in the public health field or to successfully pursue post-baccalaureate education programs

**Career Planning**

Career preparation is part of the mission of Southeast. In fact, more than 90% of Southeast students participate in internships, clinical opportunities, student teaching, research assistantships, and study abroad. Professional career counselors are available for all students. The Office of Career Services in Academic Hall 057 can provide students with professional career counseling, resume critiques, practice interviews, job search strategies, career events, networking opportunities, and more.

Demonstrated Career Proficiency is a Requirement of all Southeast Students		
CL001/CL002	First Semester	Complete the FOCUS2 assessment and develop a Career Action Plan.
CL003	Junior Year	Students gain information about career planning and job searching resources.
CL004	Senior Year	Students demonstrate advanced proficiency by identifying a position in their field, developing a cover letter, and tailoring a resume for the position. Materials are critiqued to ensure preparedness for a successful job search.

**Internships, Employment Opportunities, and Graduate Schools of Recent Graduates**

- Health Officer
- Project Manager
- Health Research Analyst
- Rural Health Analyst
- Disaster Specialist
- Health Services Consultant
- Humanitarian Organizations
- Program Administrators
- Policy Analysis and Planning
- Community Based Prevention Manager
- Management Analyst
- Quality and Performance Measurement
- Public Health Administrator
- State Departments of Public Health
- Entertainment/Hospitality Companies
- Universities and Colleges
- Community Health Manager
- Local Public Health Agencies
- Federal Emergency Management Agency
- U.S. Food and Drug Administration
- U.S. Department of Agriculture
- Health Plans
- Washington University School of Public Health
- St. Louis University School of Public Health
- University of Missouri – Columbia

**Admission Requirements**

A college preparatory sequence that includes three years of science (including biology, chemistry and physics) and mathematics through advanced algebra is encouraged.

**To learn more**  
 Office of Admissions  
 (573) 651-2590  
[admissions@semo.edu](mailto:admissions@semo.edu)  
[www.semo.edu](http://www.semo.edu)

**To explore the College**  
 of Science, Technology and  
 Agriculture online, visit  
[www.semo.edu/costa](http://www.semo.edu/costa)

**For advising**  
 Center for Academic Advising - North  
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[advisingnorth@semo.edu](mailto:advisingnorth@semo.edu)

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This is a guide based on the 2016-2017 Undergraduate Bulletin and is subject to change. The time it takes to earn a degree will vary based on several factors such as dual enrollment, remediation, and summer enrollment. Students will meet with an academic advisor each semester and use DegreeWorks to monitor their individual progress.

**CURRICULUM CHECKLIST**

"Critical Courses" are *italicized and bolded*. Data shows that students who have completed this course in the first two years and have earned the noted grade are most likely to complete this program of study.

**Public Health: Biology Option – 97-99 credit hours**

- \_\_\_ BI163 Evolution and Ecology (4)
  - \_\_\_ ***BI173 Cell and Organismal Biology (4)***
  - \_\_\_ BI310/BS240/BS242 Microbiology (3-4)
  - \_\_\_ BI443/EV443 Epidemiology (3)
  - \_\_\_ BI454/EV454 Risk Assessment Applications (3)
  - \_\_\_ BI471/EV481/HA471/PS384 Internship (1)
  - \_\_\_ BS113 Anatomy and Physiology I (4)
  - \_\_\_ BS114 Anatomy and Physiology II (4)
  - \_\_\_ ***CH185 General Chemistry (5)***
  - \_\_\_ CH234/CH341 Organic and Biological Chemistry (3-4)
  - \_\_\_ EC215 Microeconomics (3)
  - \_\_\_ EV 401 Environmental Science Seminar (1)
  - \_\_\_ HL120 Health Perspectives (3)
  - \_\_\_ HL320 Community Health (3)
  - \_\_\_ IS175 Information Systems (3)
  - \_\_\_ ***MA134 College Algebra (3)***
  - \_\_\_ MA223/MA155 Probability and Statistics (3)
  - \_\_\_ PS103 US Political Systems (3)
  - \_\_\_ PY220 Psychological Development Across the Lifespan (3)
  - \_\_\_ PY555 Health Psychology (3)
  - \_\_\_ SC105 Fundamentals of Oral Communication (3)
  - \_\_\_ SC301 Foundations of Health Communications (3)
  - \_\_\_ SO102 Society, Culture and Social Behavior (3)
  - \_\_\_ IU309 Professional Writing for Science and Technology (3)
  - \_\_\_ UI352 Medical Ethics (3)
  - \_\_\_ UI386 Environmental Health (3)
  - \_\_\_ UI412 American Healthcare Systems (3)
- Biology Option: select 15 credit hours from the following:**
- \_\_\_ BI283 Genetics (4)
  - \_\_\_ BI413 Molecular Genetics (3)
  - \_\_\_ BI441 Virology (3)
  - \_\_\_ BI442 Immunology (3)
  - \_\_\_ BI447/EV447 Fundamentals of Disaster/Emergency Management and Planning (3)
  - \_\_\_ BI448/EV448 Disaster/Emergency Planning and Response (3)
  - \_\_\_ BI449/EV449 Vulnerability, Risk Reduction & Critical Incident Management (3)
  - \_\_\_ BI453/EV453 Occupational Health (3)
  - \_\_\_ BI456/EV456 Fundamentals of Risk Communication in Emergency Management (3)
  - \_\_\_ BI458 Analytical Bioinformatics (3)
  - \_\_\_ BI460/EV460 Introduction to Toxicology (3)
  - \_\_\_ BI543 & 544 Pathogenic Microbiology (3)

**University Studies Requirements (not already listed above):**

UI100 First Year Seminar, EN100 English Composition, Artistic Expression, Written Expression, Literary Expression, Development of a Major Civilization.

**SAMPLE FOUR-YEAR PLAN**

	Fall Semester		Spring Semester	
	Course #	Hrs	Course #	Hrs
<b>FIRST YEAR</b>	UI100	3	<b><i>BI173</i></b>	4
	BI163	4	EN100	3
	<b><i>CH185</i></b>	5	HL120	3
	<b><i>MA134</i></b>	3	MA223 or MA155	3
			SO102	3
	<b>Total</b>	<b>15</b>	<b>Total</b>	<b>16</b>
Milestone: maintain 2.0 cumulative GPA				
<b>SECOND YEAR</b>	CH234/CH341	3-4	BI310/BS240/BS242	3-4
	HL320	3	EC215	3
	IS175	3	PS103	3
	PY220	3	SC105	3
	Written Expression	3	Literary Expression	3
	<b>Total</b>	<b>15-16</b>	<b>Total</b>	<b>15-16</b>
	Milestone: maintain 2.0 cumulative GPA			
<b>THIRD YEAR</b>	BS113	4	BI443/EV443	3
	IU309	3	BS114	4
	UI352	3	SC301	3
	Option Course	3	UI386	3
	Elective	1	Option Course	3
	<b>Total</b>	<b>14</b>	<b>Total</b>	<b>16</b>
Milestone: maintain 2.0 cumulative GPA				
<b>FOURTH YEAR</b>	BI454/EV454	3	BI471/EV481/HA471/PS384	1
	UI412	3	EV401	1
	Option Course	3	PY555	3
	Artistic Expression	3	Option Courses	6
	Develop of a Major Civ	3	Elective	3
	<b>Total</b>	<b>15</b>	<b>Total</b>	<b>14</b>
Milestone: maintain 2.0 cumulative GPA				

A "Milestone" signifies a significant stage for a student in the completion of a degree.

**Degree requirements for all students:** a minimum of 120 credit hours, completion of University Studies program, career proficiencies (CL001-004), Writing Proficiency Exam (WP003), and completion of the Measure of Academic Proficiency and Progress (MAPP) at the senior level.

A minimum 2.00GPA in the major and overall are required to graduate with a BS degree.

Refer to the Undergraduate Bulletin or DegreeWorks for additional graduation requirements (i.e. minimum GPA and coursework) for your program of study.

Revised  
2/23/2016