

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.

Becoming Career Ready...

/ Faculty-mentored research and guidance will help you develop the professional skills needed for success in a competitive job market and/or advanced study in graduate and professional programs.

/ The Public Health: Biology option program prepares graduates for multiple opportunities in the growing public health management field. Example job titles include epidemiologist, public health microbiologist, drug sales and health researcher

/ 100% of Southeast programs offer real-world experience. Public Health: Biology option students learn this by completing a required internship and/or research participation at a governmental research or public health center, philanthropic organization or public health consultant.

/ The path to a successful career starts with you! You can maximize your career development by working closely with Career Services and Southeast faculty – they are here to help you connect your passions, interests and skills to jobs and opportunities in the field. Career Services provides professional career counseling and coaching, resume critiques, practice interviews, job search strategies, career events, networking opportunities and more.

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.

Transfer and Dual Credit Students

If you have dual credit or transfer credit, please visit our transfer course equivalencies guide at semo.edu/transfercredit.

To learn more
 Office of Admissions
 (573) 651-2590
admissions@semo.edu
semo.edu

To explore
 the College of Science,
 Technology, Engineering and
 Mathematics online, visit
semo.edu/stem

For advising
 Center for Academic Advising
semo.edu/advising

Public Health: Biology Option

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This is a guide based on the 2021-2022 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 Degree Works 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 – 94-96 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)
- ___ **CH184 General Chemistry I Lab (1)**
- ___ **CH185 General Chemistry I (3)**
- ___ CH234/CH341 Organic and Biological Chemistry (3-4)
- ___ EC215 Microeconomics (3)
- ___ EV 401 Environmental Science Seminar (1)
- ___ HL320 Community Health (3)
- ___ IS175 Information Systems (3)
- ___ **MA116 Precalculus A (3)**
- ___ MA223/MA155 Probability and Statistics (3)
- ___ PS103 US Political Systems (3)
- ___ PY220 Psychological Development Across the Lifespan (1)
- ___ PY555 Health Psychology (3)
- ___ SC105 Fundamentals of Oral Communication (3)
- ___ SC301 Foundations of Health Communications (3)
- ___ SO101 Introduction to Sociology (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 (4)
- ___ 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)
- ___ BI543/043 Pathogenic Microbiology (4)

General Education Requirements – some requirements may be fulfilled by coursework in major program

- Social and Behavioral Sciences – 6 hours
- Constitution Requirement – 3 hours
- Written Communication – 6 hours
- Oral Communication – 3 hours
- Natural Sciences – 7 hours (from two disciplines, one to include a lab)
- Mathematics – 3 hours
- Humanities & Fine Arts – 9 hours (from at least two disciplines)
- Additional requirements – 5 hours (to include UI100 for native students)
- Civics examination

SAMPLE FOUR-YEAR PLAN

	Fall Semester		Spring Semester	
	Course #	Hrs	Course #	Hrs
FIRST YEAR	UI100	1	BI173	4
	BI163	4	EN100	3
	CH184/CH185	4	MA223 or MA155	3
	MA116	3	SO101	3
	General Education	3	General Education	3
	Total	15	Total	16
Milestone: maintain 2.0 cumulative GPA				
SECOND YEAR	CH234/CH341	3-4	BI310/BS240/BS242	3-4
	HL320	3	EC215	3
	IS175	3	PS103	3
	PY220	3	SC105	3
	General Education	3	General Education	3
	Total	15-16	Total	15-16
Milestone: maintain 2.0 cumulative GPA				
THIRD YEAR	BS113	4	BI443/EV443	3
	IU309	3	BS114	4
	UI352	3	SC301	3
	Option Course	3	UI386	3
	Elective	2	Option Course	3
	Total	15	Total	16
Milestone: maintain 2.0 cumulative GPA				
FOURTH YEAR	BI454/EV454	3	BI471/EV481/HA471/PS384	1
	UI412	3	EV401	1
	Option Course	3	PY555	3
	Elective	3	Option Courses	6
	Elective	2	Elective	3
	Total	14	Total	14
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 the General Education program, and completion of 39 senior division hours (300-599). Refer to the Undergraduate Bulletin or Degree Works for additional graduation requirements for your program.

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

Revised
6/16/2021