Public Health: Biology Option

Bachelor of Science (BS)

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 understanding 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 Academic Hall 057 can provide students with professional career counseling and coaching, resume critiques, practice interviews, job search strategies, career events, networking opportunities, and more.

The Office of Career Services in Academic Hall 057 can provide students with 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.

<table>
<thead>
<tr>
<th>Demonstrated Career Proficiency is a Requirement of all Southeast Students</th>
<th></th>
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</thead>
<tbody>
<tr>
<td>CL001 First Semester</td>
<td>Students connect academic career planning by completing an online career assessment.</td>
</tr>
<tr>
<td>CL002 Second Semester</td>
<td>Students learn more about resources available to enhance academic and career planning.</td>
</tr>
<tr>
<td>CL003 Junior Year</td>
<td>Students learn about continued career planning, job search strategies, and networking.</td>
</tr>
<tr>
<td>CL004 Senior Year</td>
<td>Students learn about resume development, professional communication, interviewing, and transitioning to the first job from college.</td>
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</tbody>
</table>
This is a guide based on the 2017-2018 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)**
- **BI434/VE443 Epidemiology (3)**
- **BI454/VE454 Risk Assessment Applications (3)**
- **BI471/VE481/HA471/PS384 Internship (1)**
- **BS113 Anatomy and Physiology I (4)**
- **BS114 Anatomy and Physiology II (4)**
- **CH105 General Chemistry (3)**
- **CH234/CH341 Organic and Biological Chemistry (3-4)**
- **EC215 Microeconomics (3)**
- **EV 481 Environmental Science Seminar (1)**
- **HL120 Health Perspectives (3)**
- **HL230 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)**
- **PY255 Health Psychology (3)**
- **SC105 Fundamentals of Oral Communication (3)**
- **SC010 Foundations of Health Communication (3)**
- **SO102 Society, Culture and Social Behavior (3)**
- **UI309 Professional Writing for Science and Technology (3)**
- **UI352 Medical Ethics (3)**
- **UI396 Environmental Health (3)**
- **UI412 American Healthcare Systems (3)**
- **UI471/EV481/HA471/PS384 Internship (1)**
- **UI520 Professional Writing for Science and Technology (3)**
- **UI523/MA523 Risk Assessment Applications (3)**
- **UI543 & 544 Pathogenic Microbiology (3)**
- **UI545/EV545 Fundamentals of Disaster/Emergency Management and Planning (3)**
- **UI546/EV546 Fundamentals of Risk Communication in Emergency Management (3)**
- **UI547 Analytical Bioinformatics (3)**
- **UI680/VE680 Introduction to Toxicology (3)**
- **BI634 & 544 Pathogenic Microbiology (3)**

**Biological Option: select 15 credit hours from the following:**

- **BI283 Genetics (4)**
- **BI413 Molecular Genetics (3)**
- **BI441 Virology (3)**
- **BI442 Immunology (3)**
- **BI448/VE448 Disaster/Emergency Planning and Response (3)**
- **BI449/VE449 Vulnerability, Risk Reduction & Critical Incident Management (3)**
- **BI453/EV453 Occupational Health (3)**
- **BI454/VE454 Fundamentals of Risk Communication in Emergency Management (3)**
- **BI458 Analytical Bioinformatics (3)**
- **BI460/VE460 Introduction to Toxicology (3)**
- **BI484 & 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.

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

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### SAMPLE FOUR-YEAR PLAN

<table>
<thead>
<tr>
<th>Year</th>
<th>Fall Semester</th>
<th>Spring Semester</th>
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<td><strong>FIRST YEAR</strong></td>
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**Milestone:** maintain 2.0 cumulative GPA

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<td></td>
<td><strong>CH234/CH341</strong></td>
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<td></td>
<td><strong>HL320</strong></td>
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<td><strong>IS175</strong></td>
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<td></td>
<td><strong>PY220</strong></td>
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<td></td>
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<tbody>
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<td><strong>Hrs</strong></td>
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<tr>
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<td><strong>Artistic Expression</strong></td>
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<td></td>
<td><strong>Develop of a Major Civ</strong></td>
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<td><strong>Total</strong></td>
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</table>

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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.