

# Combined Degrees: Biology B.S./Public Health M.P.H.

The College of Arts & Sciences and the College of Health & Wellness offer students an opportunity to earn both their undergraduate and graduate degrees through its Combined Degrees: Biology B.S./Public Health M.P.H. program. This program enables qualified students to earn, in a continuous plan of study, both a B.S. degree in Biology and a Master of Public Health degree in as little as five years.

Qualified students are able to complete five core Master of Public Health graduate courses that will count toward their undergraduate Biology degree. Visit the Biology B.S. degree and Master of Public Health degree program pages for program descriptions and outcomes.

## Requirements

Eligible undergraduate students who would like to pursue the Combined Degrees: Biology B.S./Public Health M.P.H. program should apply directly for the program by the end of their first year to take maximum advantage of this accelerated option. Qualified students who elect the Combined Degrees: Biology B.S./Public Health M.P.H. program as an undergraduate student must fulfill all admissions requirements for entrance into the intended graduate program and complete a graduate program application.

## Biology

A four-year program leading to the bachelor of science degree

### Major Courses

BIO1022	General Biology - Organismal	3
BIO1026	General Biology Laboratory - Organismal	1
BIO2001	Genetics	3
BIO3040	Molecular Biology	3
BIO3046	Molecular Biology Laboratory	1
BIO3100	Coastal Ecology	3
BIO3106	Coastal Ecology Laboratory	1
BIO4020	Integrative Biology	3
BIO4026	Integrative Biology Laboratory	1
BIO4100	Senior Seminar in Biology	3

### Major Electives or Specialization

Choose 16-22 credits of the following (at least two courses must be at 3000 level or higher)\* or Specialization listed below: † 16-22

BIO2003 & BIO2006	Human Anatomy and Physiology I and Human Anatomy and Physiology I Laboratory	
BIO2013 & BIO2016	Human Anatomy and Physiology II and Human Anatomy and Physiology II Laboratory	
BIO2041 & BIO2046	Human Physiology and Human Physiology Laboratory	
BIO2201 & BIO2206	General Microbiology and General Microbiology Laboratory	
BIO2510 & BIO2516	Plant Cultivation I: Soil, Soil Substitutes, and Disease Management and Plant Cultivation I: Soil, Soil Substitutes, and Disease Management Laboratory	
BIO3070	Evolution	
BIO3080	Epigenetics	
BIO3400	Fundamentals of Pharmacology	
BIO3510 & BIO3516	Plant Cultivation II: Hydroponics, Aquaponics, Tissue Culture, Genetics and Extraction and Plant Cultivation II: Hydroponics, Aquaponics, Tissue Culture, Genetics and Extraction Laboratory	
BIO3620 & BIO3626	Comparative Vertebrate Anatomy and Comparative Vertebrate Anatomy Laboratory	
BIO4030	Advanced Anatomy	
BIO4040 & BIO4046	Functional Histology and Functional Histology Laboratory	
BIO4070	Fundamentals of Immunology	
BIO4510 & BIO4516	Applications of Plants & Fungi and Applications of Plants & Fungi Laboratory	
CHM3040 & CHM3046	Biochemistry and Biochemistry Laboratory	
CHM3200	Analytical Chemistry	
SCI3020	Sustainability Policy and Planning	
SCI3070	Food Sustainability	
SCI3080	The Business of Sustainability	
SCI4090	Research Seminar in Sustainability	

### Applied/Experiential Learning

Choose 6 credits from the following: 6

ASCI4799	College of Arts & Sciences Internship <sup>1c</sup>	
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DEE3999	Directed Experiential Education <sup>D</sup>	
RSCH3810	Undergraduate Laboratory and Field Research	
RSCH3830	Undergraduate Research Experience	
RSCH4020	Honors Directed Academic Experience	
Study Abroad <sup>5a</sup>		

### Related Professional Studies

CAR0010	Career Management	1
CHM1011	General Chemistry I	3
CHM1016	General Chemistry I Laboratory	1
CHM1022	General Chemistry II	3
CHM1026	General Chemistry II Laboratory	1
CHM2011	Organic Chemistry I	3
CHM2016	Organic Chemistry I Laboratory	1
CHM2022	Organic Chemistry II	3
CHM2026	Organic Chemistry II Laboratory	1
FYS1020	First-Year Seminar	1

### A&S Core Experience

Communications Foundation Courses		
ENG1020	Rhetoric & Composition I	
ENG1021	Rhetoric & Composition II	
ENG1030	Communication Skills	
Integrative Learning		
Two ILS courses, one at the 2000 level, one at the 4000 level		

Arts and Humanities		
PHIL3240	Ethics: A Global Perspective	
One course from ART, HIST, HUM, LIT or REL		

Mathematics		
MATH1040	Calculus I (or higher, based on student's placement)**	
MATH2010	Introduction to Biostatistics	

Science		
BIO1011 & BIO1016	General Biology - Cellular and General Biology Laboratory - Cellular	

Social Sciences		
PSYC1001	Introductory Psychology	
One course from ANTH, ECON, GEND, LEAD, PSCI, RES or SOC		

### A&S Electives

A&S Electives		
PHY1011 or PHY2011	General Physics I / Physics I	
PHY1016 or PHY2016	General Physics I Laboratory / Physics I Laboratory	
PHY1022 or PHY2022	General Physics II / Physics II	
PHY1026 or PHY2026	General Physics II Laboratory / Physics II Laboratory	

### Graduate Courses\*\*\*

HSC5020	Foundations of Public Health	3
HSC5080	Health and Healthcare****	3
HSC5120	Health Trends	3
HSC5150	Chronic Disease Prevention and Control	3
HSC5220	Insights into Vulnerable Populations	3

**Total Credits** 122.0-128.0

- \* Students are responsible for meeting prerequisites.
- \*\* Students that do not place in MATH1040 Calculus I, will need to take an extra course(s), MATH1020 Fundamentals of Algebra, and/or MATH1030 Precalculus, as prerequisite(s).
- \*\*\* Students use 15 credits from free electives for graduate-level courses in the Public Health M.P.H. during their fourth year.
- \*\*\*\* Course may only be available online. Students should consult with their academic advisor regarding course availability and for planning purposes.

### †Specialization in Biomedical Science

22		
BIO2003 & BIO2006	Human Anatomy and Physiology I and Human Anatomy and Physiology I Laboratory	
BIO2013 & BIO2016	Human Anatomy and Physiology II and Human Anatomy and Physiology II Laboratory	
BIO2201 & BIO2206	General Microbiology and General Microbiology Laboratory	
BIO4040 & BIO4046	Functional Histology and Functional Histology Laboratory	

BIO4070	Fundamentals of Immunology	
CHM3040	Biochemistry	
<b>†Specialization in Environmental Studies</b>		<b>22</b>
BIO2201 & BIO2206	General Microbiology and General Microbiology Laboratory	
BIO3070	Evolution	
SCI3020	Sustainability Policy and Planning	
SCI3070	Food Sustainability	
SCI3080	The Business of Sustainability	
SCI4090	Research Seminar in Sustainability	
SOC3200	Environmental Sociology †	

‡Students must use social science elective to take SOC1001 to satisfy SOC3200 prerequisite

<b>†Specialization in Plant Science</b>		<b>16</b>
BIO2201 & BIO2206	General Microbiology and General Microbiology Laboratory	
BIO2510 & BIO2516	Plant Cultivation I: Soil, Soil Substitutes, and Disease Management and Plant Cultivation I: Soil, Soil Substitutes, and Disease Management Laboratory	
BIO3510 & BIO3516	Plant Cultivation II: Hydroponics, Aquaponics, Tissue Culture, Genetics and Extraction and Plant Cultivation II: Hydroponics, Aquaponics, Tissue Culture, Genetics and Extraction Laboratory	
BIO4510 & BIO4516	Applications of Plants & Fungi and Applications of Plants & Fungi Laboratory	

<sup>C</sup>Typically, internships require a minimum of six credits. Students interested in a 9 or 12-credit internship can apply additional experiential learning and free elective credits, if available. Students are strongly encouraged to contact a faculty advisor before scheduling internship and free elective credits.

<sup>D</sup>Directed Experiential Education (DEE) opportunities are based on project availability with community partners and student eligibility. For more information, visit Experiential Education & Career Services (EE&CS).

<sup>Sa</sup>To be eligible to count toward Applied/ Experiential Learning, a Study Abroad offering must meet certain requirements. Contact JWU Global to discuss eligible Study Abroad options for this degree program.

## Public Health

### Master of Public Health (MPH)

#### Core Courses

HSC5020	Foundations of Public Health †	3
HSC5080	Health and Healthcare †‡	3
HSC5100	Healthy Planet	3
HSC5120	Health Trends †	3
HSC5150	Chronic Disease Prevention and Control †	3
HSC5180	Discrimination and Health	3
HSC5220	Insights into Vulnerable Populations †	3
HSC5260	Advocating for Healthier Diets ‡	3
HSC5290	Combatting Infectious Disease	3
HSC5320	Cultural Competency to Improve Health	3
HSC5350	Diversity, Equity and Inclusion ‡	3
HSC5380	Policy of Addiction	3
HSC5420	Community Organizing	3
HSC6120	Improving Community Health	3
HSC6920	Public Health Capstone	3
<b>Total Credits</b>		<b>45.0</b>

† These graduate courses fulfill the bachelor of science requirements in the fourth year. Please note: The bachelor of science is not awarded until all graduate-level courses applying to the undergraduate degree have been successfully completed.

‡ Courses may only be available online. Students should consult with their academic advisor regarding course availability and for planning purposes.

Note: Students must pass MATH0010 Pre-Algebra or have equivalent placement scores to enroll in required math courses.

Note: Students must pass ENG0001 Writing Workshop or have equivalent placement scores to enroll in ILS 2000-level courses.

In collaboration with academic colleges across all JWU campuses, JWU Global Study Abroad programs offer a variety of international, domestic, and digital options for major, minor, free electives, experiential learning, and transferable

courses. There are many affordable options for students during a semester, winter session, spring and/or summer breaks. Faculty-led, exchange, affiliate, and direct-enroll programs range in duration from one week to a full semester or full year. Financial aid may be applied, and some partners offer external scholarships. Premiere programs do not qualify for JWU scholarships or grants; however federal aid is available. Visit the study abroad website for information, program descriptions and online applications. Where will you go? Wherever you decide, make the best of your educational journey!