# 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 Specializa	ation	
Choose 16-22 credits of the fo higher)* or Specialization liste	pllowing (at least two courses must be at 3000 level or ed below: $^{\dagger}$	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	General Microbiology	
& BIO2206	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 Learni	ng	
Choose 6 credits from the foll	owing:	6
ASCI4799	College of Arts & Sciences Internship <sup>Ic</sup>	

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CHM1011 General Chemistry I   CHM1011 General Chemistry I Laboratory   CHM1022 General Chemistry II   CHM1024 General Chemistry II Laboratory   CHM1025 General Chemistry II Laboratory   CHM2011 Organic Chemistry II Laboratory   CHM2016 Organic Chemistry I Laboratory   CHM2026 Organic Chemistry II Laboratory   CHM2026 Organic Chemistry II Laboratory   CHM2026 First-Year Seminar <b>ASS Core Experience</b> First-Year Seminar   ENG1020 Rhetoric & Composition I	
CHM1011     General Chemistry I       CHM1016     General Chemistry I Laboratory       CHM1022     General Chemistry II       CHM1026     General Chemistry II       CHM1026     General Chemistry II       CHM2011     Organic Chemistry I Laboratory       CHM2016     Organic Chemistry I Laboratory       CHM2022     Organic Chemistry II Laboratory       CHM2026     Organic Chemistry II Laboratory       FYS1020     First-Year Seminar <b>A&amp;S Core Experience</b> Communications Foundation Courses	
CHM1011 General Chemistry I   CHM1016 General Chemistry I Laboratory   CHM1022 General Chemistry II   CHM1026 General Chemistry II Laboratory   CHM2011 Organic Chemistry I Laboratory   CHM2016 Organic Chemistry I Laboratory   CHM2022 Organic Chemistry I Laboratory   CHM2026 Organic Chemistry II   CHM2026 Organic Chemistry II Laboratory   FYS1020 First-Year Seminar <b>A&amp;S Core Experience</b> Core Seminar	
CHM1011General Chemistry ICHM1016General Chemistry I LaboratoryCHM1022General Chemistry IICHM1026General Chemistry II LaboratoryCHM2011Organic Chemistry I LaboratoryCHM2016Organic Chemistry I LaboratoryCHM2022Organic Chemistry IICHM2026Organic Chemistry IICHM2026First-Year Seminar	ç
CHM1011General Chemistry ICHM1016General Chemistry I LaboratoryCHM1022General Chemistry IICHM1026General Chemistry II LaboratoryCHM2011Organic Chemistry ICHM2016Organic Chemistry I LaboratoryCHM2022Organic Chemistry IICHM2026Organic Chemistry II	
CHM1011General Chemistry ICHM1016General Chemistry I LaboratoryCHM1022General Chemistry II LaboratoryCHM1026General Chemistry II LaboratoryCHM2011Organic Chemistry ICHM2016Organic Chemistry I LaboratoryCHM2022Organic Chemistry II	1
CHM1011General Chemistry ICHM1016General Chemistry I LaboratoryCHM1022General Chemistry IICHM1026General Chemistry II LaboratoryCHM2011Organic Chemistry ICHM2016Organic Chemistry I Laboratory	1
CHM1011 General Chemistry I   CHM1016 General Chemistry I Laboratory   CHM1022 General Chemistry II   CHM1026 General Chemistry II Laboratory   CHM2011 Organic Chemistry I	3
CHM1011 General Chemistry I   CHM1016 General Chemistry I Laboratory   CHM1022 General Chemistry II   CHM1026 General Chemistry II Laboratory	1
CHM1011 General Chemistry I   CHM1016 General Chemistry I Laboratory   CHM1022 General Chemistry II	3
CHM1011 General Chemistry I CHM1016 General Chemistry I Laboratory	1
CHM1011 General Chemistry I	3
	1
CAR0010 Career Management	3
	1
Related Professional Studies	
Study Abroad <sup>Sa</sup>	
RSCH4020 Honors Directed Academic Experience	
RSCH3830 Undergraduate Research Experience	
DEE3999 Directed Experiential Education <sup>D</sup> RSCH3810 Undergraduate Laboratory and Field Research	

\* Students are responsible for meeting prerequisites.

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- \*\* 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 Bio	medical 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

#### +Specialization in Environmental Studies

Specialization in Environm		
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 <sup>‡</sup>	
Students must use social scie rerequisite	ence elective to take SOC1001 to satisfy SOC3200	

### +Specialization in Plant Science

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22

†S	pecialization in Plant Scie	nce
	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>Ic</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)

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

- † 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