

# Milken Institute School of Public Health

THE GEORGE WASHINGTON UNIVERSITY

## Department of Exercise and Nutrition Sciences

### Bachelor of Science in Nutrition Science

2020 – 2021

Note: All curriculum revisions will be updated immediately on the website <http://publichealth.gwu.edu>.

#### Program Director

Allison Sylvetsky, PhD

Assistant Professor

950 New Hampshire Avenue, NW, 2<sup>nd</sup> floor Washington,

DC 20052

[asylvets@gwu.edu](mailto:asylvets@gwu.edu)

#### Program Mission Statement

The mission of the BS program in Nutrition Science is to provide undergraduates with an in-depth understanding of the scientific aspects of food and nutrition. The program also aims to lay the groundwork for integrating nutrition science across disciplines and provides students with the foundation required to apply nutrition to the health sciences.

#### Goals of the BS Program in Nutrition Science at GW

The goals of this BS program in Nutrition Science are to ensure that graduates are able to:

- Integrate knowledge of multiple physiologic responses to foods and nutrients at the molecular, cellular, and systemic levels.
- Provide students with a broad introduction to the field of public health.
- Provide students with a public health framework for the translation of nutrition science into human health, function, and disease prevention.
- Develop critical thinking skills in using and evaluating nutrition science research.
- Develop effective oral and written communication skills, ethical and complex decision-making abilities, as well as general career development skills for careers in nutrition science.
- Acquire practical skills for promoting healthy nutrition among individuals and populations, taking into account psychological, anthropologic, and contextual factors that may influence diet and food choice.

#### Program Specific Competencies

- Students will be able to demonstrate knowledge and understanding of basic concepts of nutrition, biology, chemistry, biochemistry, cell biology, human anatomy, and physiology.
- Students will be able to explain the structure, function, digestion, absorption, metabolism, and interaction of macronutrients and micronutrients.
- Students will be able to organize this knowledge in discussing and communicating lifestyle choices that promote health and wellness.
- Students will be able to evaluate the effect of various dietary modifications on both short- and long-term human health.
- Students will be able to demonstrate knowledge and understanding of various physiological and behavioral mechanisms underlying the benefits of lifestyle modification.
- Students will be able to recognize how the body uses nutrients to promote growth, maintain health, and prevent disease throughout the lifecycle.

## Careers

The BS in Nutrition Science prepares students for professional careers in the field and for entrance into professional graduate programs:

- Medicine (Physician Assistant, Nursing, Physician)
- Pharmacy
- Dietetics
- Public Health
- Federal agencies
- Worksite wellness and health promotion
- Management of nutrition interventions and research studies
- Food and nutraceutical industry positions
- Trade associations related to food and nutrition
- Non-profit organizations
- Nutrition advocacy groups
- International organizations

## Degree Requirements

All students accepted to the BS with a major in Nutrition Science **complete 124 credit hours** and **maintain a minimum 2.5 grade point average in the core Nutrition Science courses**. In addition **students must earn a minimum of a C- in each Nutrition Science core course**. This only applies to the courses within the Nutrition Science Core. There are five levels of requirements for the BS with a major in Nutrition Science: University general education requirements, Basic Science and Math core requirements, Nutrition core requirements, guided electives, and general electives. General education requirements are taken by all University undergraduate students and form the liberal arts education component of the BS degree with a major in Nutrition Science.

**PROGRAM-AT-A-GLANCE 2020-2021**  
**DEPARTMENT OF EXERCISE and NUTRITION SCIENCES**  
**BACHELOR OF SCIENCE in NUTRITION SCIENCE**

<b>BS Nutrition Science Students Must Fulfill the Following Degree Requirements</b>		
➤	All General Education Requirements (GenEd) & WID Courses	26 Credits
➤	All Core Basic Science Requirements	34 Credits
➤	All Core Nutrition Science Requirements <ul style="list-style-type: none"> <li>• C- or better in required core Nutrition Science courses and core GPA <math>\geq 2.5</math></li> </ul>	26 Credits
➤	Guided Electives Planned with Advisor <ul style="list-style-type: none"> <li>• Please see the "Guided Electives" worksheet for a list of approved courses</li> </ul>	20 Credits
➤	General Electives	18 Credits
<b>Total Nutritional Science Requirements</b>		<b>124</b>

<b>University General Education Requirements (GenEd) Courses</b> (See <i>University Bulletin for General Education Requirements</i> )		
<b>University Writing</b>	UW 1020 UNIVERSITY WRITING OR HONR 1015 TWO WID COURSES; These may also be counted in another category	10
<b>Humanities</b>	ONE COURSE IN HUMANITIES <a href="http://bulletin.gwu.edu/university-regulations/general-education/">http://bulletin.gwu.edu/university-regulations/general-education/</a>	3
<b>Mathematics or Statistics*</b>	ONE COURSE IN EITHER MATH OR STATISTICS <i>Can be satisfied with STAT 1051 or STAT 1053 or STAT 1127</i>	3
<b>Science*</b>	ONE NATURAL OR PHYSICAL SCIENCE COURSE WITH LABORATORY EXPERIENCE <i>Can be satisfied with BISC 1115 and BISC 1125</i>	4
<b>Social Science*</b>	TWO COURSES IN THE SOCIAL SCIENCES <i>Can be satisfied with ANTH and COMM</i> <a href="http://bulletin.gwu.edu/university-regulations/general-education/">http://bulletin.gwu.edu/university-regulations/general-education/</a>	6
<b>TOTAL GenEd</b>		<b>26</b>

BS in Nutrition Science Core Courses					
Basic Math and Science Core			Nutrition Science Core		
BISC 1111 <sup>G</sup> OR BISC 1115/1125	Intro Biology: Cells & Molecules		EXNS 1109	**Professional Foundations in Nutrition Science	1
BISC 1112 OR BISC 1116/1126	Intro Biology: Biology of Organisms	4	EXNS 2119	Introduction to Nutrition Science	3
EXNS 1110	Applied Anatomy & Physiology I & Lab	4	EXNS 3111W	Exercise and Nutrition Science Research Methods	3
EXNS 1111	Applied Anatomy & Physiology II & Lab	4	EXNS 4112	Nutrition Senior Capstone Seminar	1
CHEM 1111	General Chemistry I	4	PUBH 1101	Introduction to Public Health	3
CHEM 1112	General Chemistry II	4	EXNS 2120	Assessment of Nutritional Status	3
CHEM 2151	Organic Chemistry I	3	EXNS 2123	Nutrition and Chronic Disease	3
CHEM 2153	Organic Chemistry I Lab	1	EXNS 2124	Nutrition throughout the Lifecycle	3
CHEM 2152	Organic Chemistry II	3	EXNS 2122 OR EXNS 3199 <sup>1</sup> OR EXNS 4199 <sup>2</sup>	Food Systems in Public Health OR International Nutrition OR Metabolism	3
CHEM 2154	Organic Chemistry II Lab	1	PSYC 1001	General Psychology	3
BISC 3165 or CHEM 3165	Biochemistry	3	COMM* <sup>G</sup>	1040 or 1041 (satisfies Social Science & Oral Communication requirement)	
MATH ≥ 1220	Calculus with Precalculus (or higher level MATH)	3	ANTH* <sup>G</sup>	1002 or 1003 or 1004 (satisfies Social Science & Global/Cross Cultural Perspective requirement)	
			STAT <sup>G</sup>	1051 or 1053 or 1127	
<b>TOTAL Basic Science</b>		<b>34</b>	<b>TOTAL Nutrition Science</b>		<b>26</b>
					<b>TOTAL CORE</b>
					<b>61</b>
<b>General Electives</b>					<b>18</b>
<b>Guided Electives (See list attached)</b>					<b>19</b>

\*\*Students who have taken EXNS 1103, Professional Foundations in Exercise Science, should not take EXNS 1109.

<sup>1</sup>Only EXNS 3199 International Nutrition. Other EXNS 3199 Topics courses will not meet this requirement.

<sup>2</sup>Only EXNS 4199 Metabolism in Exercise and Nutrition Sciences. Other EXNS 4199 Topics courses will not meet this requirement.

## NUTRITION SCIENCE GUIDED ELECTIVES, 2020-2021

### ANTHROPOLOGY

ANTH 1005	Biological Bases of Human Behavior	4
ANTH 3413	Evolution of the Human Brain	3
ANTH 3504	Illness, Healing, and Culture	3

### BIOLOGICAL SCIENCES

BISC 2202	Cell Biology	3
BISC 2207	Genetics	3
BISC 2213	Biology of Cancer	3
BISC 2214	Developmental Biology	3
BISC 2220	Developmental Neurobiology	3
BISC 2320	Neural Circuits & Behavior	3
BISC 2322	Human Physiology	3
BISC 2336	Introduction to Microbiology	3
BISC 2337	Introduction to Microbiology Lab	1
BISC 2581	Human Gross Anatomy	3
BISC 2583	Biology of Proteins	3
BISC 3209	Molecular Biology	3
BISC 3212	Immunology	3
BISC 3261	Introductory Medical Biochemistry	4
BISC 3262	Biochemistry Lab	2
BISC 3263	Special Topics in Biochemistry	2
BISC 3320	Human Neurobiology	2

### CHEMISTRY

CHEM 3166 or CHEM 3166W	Biochemistry II	3
CHEM 3262	Biochemistry Lab	2
CHEM 3263W	Special Topics in Biochemistry	2
CHEM 3564	Lipid Biotechnology	0-2
CHEM 4122	Instrumental Analytical Chemistry	3

### EMERGENCY HEALTH SERVICES

EHS 1002	CPR & First Aid	1
EHS 1040	EMT Basic	3
EHS 1041	EMT Basic Lab	1
EHS 1058	EMT Instructor Development	2
EHS 2108	Emergency Medical Clinical Scribe	3
EHS 2110	Emergency Department Critical Care Assessment and Procedures	4

### EXERCISE & NUTRITION SCIENCES

EXNS 1114	Community Nutrition	3
EXNS 1118	Sport and Nutrition	3
EXNS 1199	Topics in EXNS	3
EXNS 2111	Exercise Physiology I and Lab	4
EXNS 2112	Exercise Physiology II and Lab	4
EXNS 2116	Exercise and Health Psychology	3
EXNS 2122	Food Systems in Public Health	3
EXNS 3101	Independent Study	3
EXNS 3110	Field Experience	2

EXNS 3199	Topics in EXNS (ONLY: International Nutrition) <sup>1</sup>	3
EXNS 3995	Undergraduate Research Course	1-6
EXNS 4199	Topics in EXNS (ONLY: Metabolism in Exercise and Nutrition Sciences) <sup>2</sup>	3

### HEALTH & WELLNESS

HLWL 1102	Stress Management	3
HLWL 1106	Drug Awareness	3
HLWL 1108	Weight & Society	3
HLWL 1114	Personal Health & Wellness	3

### HEALTH SCIENCES

HSCI 2101	Psychological Aspects of Health and Illness (Residential and Online)	3
HSCI 2102	Pathophysiology (ONLINE ONLY)	3
HSCI 2103	Health Policy and the Healthcare System (ONLINE ONLY)	3
HSCI 2110	Disease Prevention/Health Promotion (ONLINE ONLY)	3
HSCI 2112W	Writing in the Health Sciences (ONLINE ONLY)	3

### PHYSICS

PHYS 1011	General Physics I	4
PHYS 1012	General Physics II	4

### PSYCHOLOGY

PSYC 2011 OR PSYC 2011W	Abnormal Psychology	3
PSYC 2013	Developmental Psychology	3
PSYC 2014	Cognitive Psychology	3
PSYC 2015	Biological Psychology	3
PSYC 2570	Peer Education	3
PSYC 3128	Health Psychology	3

### PUBLIC HEALTH

PUBH 1102	History of Public Health	3
PUBH 2110	Public Health Biology	3
PUBH 2112	Principles of Health Education and Health Promotion	3
PUBH 2113	Impact of Culture Upon Health	3
PUBH 2116	Global Delivery of Health Systems	3
PUBH 2117	Service Learning in Public Health	3
PUBH 3130	Health Services Management and Economics	3
PUBH 3131	Epidemiology: Measuring Health and Disease	3
PUBH 3135W	Health Policy	3
PUBH 3137	Global Public Health Nutrition	3

\* *Guided Electives* - the courses listed have been identified as highly relevant to the BS in Nutrition Science curriculum. Twenty (20) elective credits are required to be selected from this list of 'guided elective' courses. General electives (18 additional elective credits) can also be selected from this list, or any other undergraduate course at the University.

Note- courses offered online may only be taken in the summer term. Note – only three credits of EXNS 3101, EXNS 3110, or EXNS 3995 count toward guided electives. Additional credits in these courses will count towards the general electives.

<sup>1</sup>Only EXNS 3199 International Nutrition. Other EXNS 3199 Topics courses will not meet this requirement.

<sup>2</sup>Only EXNS 4199 Metabolism in Exercise and Nutrition Sciences. Other EXNS 4199 Topics courses will not meet this requirement.