

NUTRITIONAL SCIENCES, B.S.

Begin Campus: Any Penn State Campus

End Campus: University Park

Program Description

Nutrition is a dynamic science that incorporates knowledge of human biology and biochemistry to understand how the body utilizes nutrients and related substances for optimal health throughout the lifecycle. Students gain an understanding of how the interplay of nutrition and lifestyle relate to current public health issues as well as the development and nutrition management of chronic and acute diseases. Students learn the scientific rationale and practice methodology to assess the nutritional status of individuals in the clinical setting and for population analysis. They will use these skills to implement medical nutrition therapy or understand nutrition guidelines, standards, and policies to improve the health and well-being of the population.

Students may select one or more Options: Behavioral Nutrition and Public Health, Nutritional Physiology and Biochemistry, and Nutrition and Dietetics. The Nutrition and Dietetics Option is accredited by the Accreditation Council for Education in Nutrition and Dietetics (ACEND).

Behavioral Nutrition and Public Health Option

This option integrates knowledge of social and behavioral sciences with human physiology and nutrition. Students learn to apply knowledge of nutrition to improve the health and well-being of individuals and populations by applying nutrition principles in different practice settings. Graduates of this option can seek employment in public health and policy, business including the food industry, community, and international agencies, schools, or continue to graduate study in nutrition or related fields.

Nutrition and Dietetics Option

This option offers multi-disciplinary training in the biological sciences, social and behavioral sciences, and business principles to prepare students to work in a variety of settings and to be eligible to continue their education to acquire the Registered Dietitian Nutritionist (RDN) credential. It links nutrition and human behavior by applying nutrition principles, counseling skills, and educational skills to improving the nutritional status and health of individuals and communities. Students gain training that will prepare them to work in a variety of clinical, community, and business settings. It also prepares students for management positions in the nutrition field and food systems settings. Graduates satisfy the current requirements for application to accredited post-baccalaureate dietetic supervised practice programs and Master's degree programs. Upon satisfactory completion of these programs, graduates are eligible to take the registration examination to become a Registered Dietitian Nutritionist (RDN).

Nutritional Physiology and Biochemistry Option

This option incorporates knowledge from biology, chemistry, physiology, and physics with nutrition. This option is recommended for students preparing for careers in medicine and other health-related fields such as dentistry, optometry, physician assistant, physical therapy, and chiropractic, as well as graduate school. Also, this option prepares students for careers in laboratory research in the pharmaceutical or food industries, government, or academia.

What is Nutritional Sciences?

Nutritional Sciences uses nutrition as the backbone to integrate physiological science, behavioral sciences, foods, food systems management, and nutrition as medicine to prepare students to help individuals and communities locally and globally. Students are uniquely prepared to integrate their strong science foundation and nutrition knowledge to help others lead healthier lives. Areas of study include the application of nutrition principles to health promotion and wellness, sports performance, research and intervention science, medical nutrition therapy, and behavioral interventions.

MORE INFORMATION ABOUT NUTRITIONAL SCIENCES (<https://hhd.psu.edu/nutrition/undergraduate/major/>)

You Might Like This Program If...

- You want to learn about nutrition and foods' connection to health.
- You plan to go to medical school, physician assistant school, and other health-related pre-professional programs.
- You want to become a Registered Dietitian Nutritionist.
- You want to work in scientific research related to human health or the food industry.
- You want to advocate for healthier communities using sustainable food practices and access to nutritious food.
- You want to learn about interventions to nutrition-related health problems that affect the world's populations.

MORE INFORMATION ABOUT WHY STUDENTS CHOOSE TO STUDY NUTRITIONAL SCIENCES (<https://hhd.psu.edu/nutrition/undergraduate/career-opportunities/>)

Entrance to Major

Behavioral Nutrition and Public Health Option

In order to be eligible for entrance to this option in the major, a student must:

1. attain at least a C (2.00) cumulative grade-point average for all courses taken at the University; and
2. have third-semester classification (<http://www.registrar.psu.edu/enrollment/semester-classification.cfm>).

Nutrition and Dietetics Option

In order to be eligible for entrance to this option in the major, a student must:

1. attain a C or better in NUTR 251, BIOL 161, BIOL 162, BIOL 163, BIOL 164, and CHEM 110 or CHEM 130.

Retention within the Nutrition and Dietetics Option

Retention will be determined through verification of sustained academic growth as demonstrated by earning of grades of C or higher in all of the Nutritional Sciences prescribed and related courses. Failure to do so will result in referral of the student to the student's academic adviser so that they may work together to develop a clear written strategy and a time frame for the student to return to good standing. Should the student not address the issue, the faculty may advise the student into a different Nutritional Sciences option. To graduate, a student enrolled in the nutrition and dietetics option must earn a grade of C or better in all prescribed and major requirement courses, as specified by Senate Policy 82-44.

Nutritional Physiology and Biochemistry Option

In order to be eligible for entrance to this option in the major, a student must:

1. attain at least a C (2.00) cumulative grade-point average for all courses taken at the University; and
2. have third-semester classification (<http://www.registrar.psu.edu/enrollment/semester-classification.cfm>).

Degree Requirements

For the Bachelor of Science degree in Nutritional Sciences, a minimum of 120 credits is required:

Requirement	Credits
General Education	45
Electives	2-5
Requirements for the Major	88-91

17-18 of the 45 credits for General Education are included in the Requirements for the Major. This includes: Nutritional Physiology and Biochemistry Option: 6 credits of GQ courses; 3 credits of GHW courses; 9 credits of GN courses. Behavioral Nutrition and Public Health Option: 3 credits of GQ courses; 3 credits of GHW courses; 8 credits of GN courses; 3 credits of GS courses. Nutrition and Dietetics Option; 3 credits of GQ courses; 3 credits of GHW courses; 9 credits of GN courses; 3 credits of GS courses.

Per Senate Policy 83.80.5, the college dean or campus chancellor and program faculty may require up to 24 credits of course work in the major to be taken at the location or in the college or program where the degree is earned. NUTR requires students to complete 24 credits for the major through courses taken at University Park. Courses taken at other Penn State campuses may not be counted toward this 24 credit minimum. For more information, check the Recommended Academic Plan for this major.

General Education

Connecting career and curiosity, the General Education curriculum provides the opportunity for students to acquire transferable skills necessary to be successful in the future and to thrive while living in interconnected contexts. General Education aids students in developing intellectual curiosity, a strengthened ability to think, and a deeper sense of aesthetic appreciation. These are requirements for all baccalaureate students and are often partially incorporated into the requirements of a program. For additional information, see the General Education Requirements (<https://bulletins.psu.edu/undergraduate/general-education/baccalaureate-degree-general-education-program/>) section of the Bulletin and consult your academic adviser.

The keystone symbol appears next to the title of any course that is designated as a General Education course. Program requirements may also satisfy General Education requirements and vary for each program.

Foundations (grade of C or better is required.)

- Quantification (GQ): 6 credits
- Writing and Speaking (GWS): 9 credits

Knowledge Domains

- Arts (GA): 6 credits
- Health and Wellness (GHW): 3 credits
- Humanities (GH): 6 credits

- Social and Behavioral Sciences (GS): 6 credits
- Natural Sciences (GN): 9 credits

Integrative Studies (may also complete a Knowledge Domain requirement)

- Inter-Domain or Approved Linked Courses: 6 credits

University Degree Requirements

First Year Engagement

All students enrolled in a college or the Division of Undergraduate Studies at University Park, and the World Campus are required to take 1 to 3 credits of the First-Year Seminar, as specified by their college First-Year Engagement Plan.

Other Penn State colleges and campuses may require the First-Year Seminar; colleges and campuses that do not require a First-Year Seminar provide students with a first-year engagement experience.

First-year baccalaureate students entering Penn State should consult their academic adviser for these requirements.

Cultures Requirement

6 credits are required and may satisfy other requirements

- United States Cultures: 3 credits
- International Cultures: 3 credits

Writing Across the Curriculum

3 credits required from the college of graduation and likely prescribed as part of major requirements.

Total Minimum Credits

A minimum of 120 degree credits must be earned for a baccalaureate degree. The requirements for some programs may exceed 120 credits. Students should consult with their college or department adviser for information on specific credit requirements.

Quality of Work

Candidates must complete the degree requirements for their major and earn at least a 2.00 grade-point average for all courses completed within their degree program.

Limitations on Source and Time for Credit Acquisition

The college dean or campus chancellor and program faculty may require up to 24 credits of course work in the major to be taken at the location or in the college or program where the degree is earned. Credit used toward degree programs may need to be earned from a particular source or within time constraints (see Senate Policy 83-80 (<http://senate.psu.edu/policies-and-rules-for-undergraduate-students/82-00-and-83-00-degree-requirements/#83-80>)). For more information, check the Suggested Academic Plan for your intended program.

Requirements for the Major

To graduate, a student enrolled in the major must earn a grade of C or better in each course designated by the major as a C-required course, as specified by Senate Policy 82-44 (<http://senate.psu.edu/policies-and-rules-for-undergraduate-students/82-00-and-83-00-degree-requirements/#82-44>).

Common Requirements for the Major (All Options)

Code	Title	Credits
Prescribed Courses		

Prescribed Courses: Require a grade of C or better

BIOL 161	Human Anatomy and Physiology I - Lecture	3
BIOL 163	Human Anatomy and Physiology II - Lecture	3
BMB 211	Elementary Biochemistry	3
NUTR 251	Introductory Principles of Nutrition	3
NUTR 445	Energy and Macronutrient Metabolism	3
NUTR 446	Micronutrient Metabolism	3
NUTR 451	Nutrition throughout the Life Cycle	3

Additional Courses

Additional Courses: Require a grade of C or better

STAT 200	Elementary Statistics	3
or STAT 250	Introduction to Biostatistics	

Requirements for the Option

Select an option 64-67

Requirements for the Option**Behavioral Nutrition and Public Health Option (64 credits)**

Code	Title	Credits
Prescribed Courses		
BBH 101	Introduction to Biobehavioral Health	3
BBH 440	Principles of Epidemiology	3
BIOL 162	Human Anatomy and Physiology I - Laboratory	1
BIOL 164	Human Anatomy and Physiology II - Laboratory	1
NUTR 211R	Applying Biochemistry to Nutrition	1
NUTR 320	Science and Methods of Food Preparation	4
NUTR 358	Assessment of Nutritional Status	3
NUTR 360	Nutrition Education and Behavior Change Theory	3
NUTR 361	Community and Public Health Nutrition	3
NUTR 452	Nutritional Aspects of Disease	3
NUTR 490W	Nutrition Seminar	3

Additional Courses

CHEM 110	Chemical Principles I	3
or CHEM 130	Introduction to General, Organic, and Biochemistry	
CHEM 202	Fundamentals of Organic Chemistry I	3
or CHEM 210	Organic Chemistry I	
HDFS 129	Introduction to Human Development and Family Studies	3
or PSYCH 100	Introductory Psychology	
NUTR 421	Biocultural Perspectives on Public Health Nutrition	3
or NUTR 425	Global Nutrition Problems: Health, Science, and Ethics	
NUTR 175	Healthy Food for All: Factors that Influence What we Eat in the US	3
or NUTR 175Z	Healthy Food for All: Factors that Influence What we Eat in the US - LINKED	

Select one of the following: 3

AGBM 101	Economic Principles of Agribusiness Decision Making	
ECON 102	Introductory Microeconomic Analysis and Policy	
ECON 104	Introductory Macroeconomic Analysis and Policy	

Food, Nutrition, and Sustainability

Students must choose six (6) credits from the courses listed: 6

AEE 440	Communication Methods and Media	
AEE 450		
AGBM 102	Economics of the Food System	

AGBM 170	Investigating the U.S. Food System: How food moves from field to table	
AGBM 170Z	Investigating the U.S. Food System: How food moves from field to table -LINKED	
CED 152	Community Development Concepts and Practice	
COMM 320	Introduction to Advertising	
COMM 370	Public Relations	
FOR 201	Global Change and Ecosystems	
GEOG 3N	Food and the Future Environment	
GEOG 30N	Environment and Society in a Changing World	
GEOG 230	Geographic Perspectives on Environment, Society and Sustainability	
HDFS 210Z	Ethnicity, Health and Aging	
HM 407	The Sustainable Fork: Food Systems Decisions for Away-From-Home Eating	
INTAG 100	Everyone Eats: Hunger, Food Security & Global Agriculture	
NUTR 386	Managing Quality in Food and Nutrition Services	
RPTM 220	Sustainability, Society, and Well-being	
SOC 23	Population and Policy Issues	
SOC 30	Sociology of the Family	

Global Health and Nutrition Policy

Students must choose six (6) credits from the courses listed: 6

AEE 465	Leadership Practices: Power, Influences, and Impact	
BBH 302	Diversity and Health	
BBH 305	Introduction to Global Health Issues	
BBH 316	Foundations and Principles of Health Promotion	
BBH 407	Global Health Equity	
BBH 452	Women's Health Issues	
COMM 320	Introduction to Advertising	
COMM 370	Public Relations	
GEOG 30N	Environment and Society in a Changing World	
HDFS 210Z	Ethnicity, Health and Aging	
HPA 101	Introduction to Health Services Organization	
SOC 210Z	Social Determinants of Health	

Supporting Courses and Related Areas

Choose six (6) additional supporting credits at the 400 level, in consultation with an adviser, from University-wide offerings that provide relevance to this option. No more than three (3) credits may be NUTR 496. See program list of recommended courses. 6

Nutrition and Dietetics Option (64 credits)

Code	Title	Credits
Prescribed Courses		
<i>Prescribed Courses: Require a grade of C or better</i>		
BIOL 162	Human Anatomy and Physiology I - Laboratory	1
BIOL 164	Human Anatomy and Physiology II - Laboratory	1
HM 329	Principles of Food Production Management	3
HM 330	Food Production and Service Management	3
MICRB 106	Elementary Microbiology	3
MICRB 107	Elementary Microbiology Laboratory	1
NUTR 211R	Applying Biochemistry to Nutrition	1
NUTR 320	Science and Methods of Food Preparation	4

NUTR 358	Assessment of Nutritional Status	3
NUTR 360	Nutrition Education and Behavior Change Theory	3
NUTR 361	Community and Public Health Nutrition	3
NUTR 386	Managing Quality in Food and Nutrition Services	3
NUTR 391	Professional Preparation in Nutrition and Dietetics	2
NUTR 393	Dietetic Internship Application Development	1
NUTR 400	Introduction to Nutrition Counseling	2
NUTR 452	Nutritional Aspects of Disease	3
NUTR 453	Medical Nutrition Therapy	3
NUTR 490W	Nutrition Seminar	3
NUTR 495	Advanced Field Experience in Nutrition	3

Additional Courses

CHEM 202	Fundamentals of Organic Chemistry I	3
or CHEM 210	Organic Chemistry I	
HDFS 129	Introduction to Human Development and Family Studies	3
or PSYCH 100	Introductory Psychology	

Additional Courses: Require a grade of C or better

CHEM 110	Chemical Principles I	3
or CHEM 130	Introduction to General, Organic, and Biochemistry	

Supporting Courses and Related Areas

Select 9 credits, in consultation with an adviser, from University-wide offerings that provide relevance to this option. See program list of recommended courses. (At least 6 credits must be at the 400 level and, of those, no more than 3 credits may be NUTR 496.) Three (3) credits may be substituted with credits earned through ROTC.

Nutritional Physiology and Biochemistry Option (66-67 credits)

Code	Title	Credits
Prescribed Courses		
BIOL 110	Biology: Basic Concepts and Biodiversity	4
BIOL 162	Human Anatomy and Physiology I - Laboratory	1
BIOL 164	Human Anatomy and Physiology II - Laboratory	1
BIOL 230W	Biology: Molecules and Cells	4
BMB 212	Elementary Biochemistry Laboratory	1
CHEM 110	Chemical Principles I	3
CHEM 111	Experimental Chemistry I	1
CHEM 112	Chemical Principles II	3
CHEM 113	Experimental Chemistry II	1
MATH 140	Calculus With Analytic Geometry I	4
NUTR 175Z	Healthy Food for All: Factors that Influence What we Eat in the US - LINKED	3
NUTR 211R	Applying Biochemistry to Nutrition	1
NUTR 358	Assessment of Nutritional Status	3
NUTR 452	Nutritional Aspects of Disease	3
NUTR 490W	Nutrition Seminar	3
PHYS 250	Introductory Physics I	4
PHYS 251	Introductory Physics II	4

Additional Courses

CHEM 202 & CHEM 203	Fundamentals of Organic Chemistry I and Fundamentals of Organic Chemistry II	6
or CHEM 210 & CHEM 212	Organic Chemistry I and Organic Chemistry II	

MICRB 106 & MICRB 107	Elementary Microbiology and Elementary Microbiology Laboratory	4-5
or MICRB 201 & MICRB 202	Introductory Microbiology and Introductory Microbiology Laboratory	
NUTR 421	Biocultural Perspectives on Public Health Nutrition	3
or NUTR 425	Global Nutrition Problems: Health, Science, and Ethics	

Supporting Courses and Related Areas

Select 9 credits, in consultation with an adviser, from University-wide offerings that provide relevance to this option. Students need to complete at least three (3) credits that cover the topic of ethics. At least six (6) credits must be at the 400 level with no more than three (3) credits of NUTR 496. See program list of recommended courses. Three (3) credits may be substituted with credits earned through ROTC.

Program Learning Objectives

- Explain the role of chemical, biochemical, microbiological, and physiological processes and demonstrate how they interrelate with the body's utilization of nutrients and food components during digestion, absorption, metabolism, and excretion.
- Describe and apply the functions and interrelationships of nutrients and food in human health, disease prevention, and disease states.
- Describe food and nutrition programs that contribute to the continuum of nutrition services to improve the health of our population: preconception to old age.
- Apply leadership and management theory within the healthcare and food service management systems.
- Integrate the biological, behavioral, socioeconomic and environmental factors related to food and nutrient intakes and needs across the lifespan.
- Interpret and evaluate nutrition standards and analyze nutritional assessment data to make evidence-based decisions.
- Locate, interpret, and evaluate research findings and professional literature to explain implications, limitations, and applications to practice.
- Demonstrate effective and professional technical and scientific written communication skills using various media formats.
- Demonstrate effective and professional technical and scientific oral communication skills using various media formats.

Academic Advising

The objectives of the university's academic advising program are to help advisees identify and achieve their academic goals, to promote their intellectual discovery, and to encourage students to take advantage of both in-and out-of class educational opportunities in order that they become self-directed learners and decision makers.

Both advisers and advisees share responsibility for making the advising relationship succeed. By encouraging their advisees to become engaged in their education, to meet their educational goals, and to develop the habit of learning, advisers assume a significant educational role. The advisee's unit of enrollment will provide each advisee with a primary academic adviser, the information needed to plan the chosen program of study, and referrals to other specialized resources.

READ SENATE POLICY 32-00: ADVISING POLICY (<https://senate.psu.edu/policies-and-rules-for-undergraduate-students/32-00-advising-policy/>)

University Park

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Suggested Academic Plan

The suggested academic plan(s) listed on this page are the plan(s) that are in effect during the 2021-22 academic year. To access previous years' suggested academic plans, please visit the archive (<https://bulletins.psu.edu/undergraduate/archive/>) to view the appropriate Undergraduate Bulletin edition (*Note: the archive only contain suggested academic plans beginning with the 2018-19 edition of the Undergraduate Bulletin*).

Behavioral Nutrition and Public Health Option: Nutritional Sciences, B.S. at University Park Campus

The course series listed below provides **only one** of the many possible ways to move through this curriculum. The University may make changes in policies, procedures, educational offerings, and requirements at any time. This plan should be used in conjunction with your degree audit (accessible in LionPATH as either an **Academic Requirements** or **What If** report). Please consult with a Penn State academic adviser on a regular basis to develop and refine an academic plan that is appropriate for you.

First Year

Fall	Credits	Spring	Credits
BIOL 161 (GN) ^{††}	3	NUTR 251 (GHW) ^{††}	3
BIOL 162 (GN) [†]	1	BIOL 163 (GN) ^{††}	3
PSYCH 100 or HDFS 129 (GS) [†]	3	BIOL 164 (GN) [†]	1
GQ ALEKS Score	3	ECON 102, 104, or AGBM 101	3
General Education Course (GWS) (ENGL 15, ENGL 30H, ESL 15, ENGL/CAS 137H recommended) ^{†1}	3	Select 3-4 credits of Electives (Suggest NUTR 170)	3-4
First-Year Seminar (elective)	1	General Education Course (GWS) (CAS 100, CAS 100A, CAS 100B, CAS 100C, ENGL/CAS 138T recommended) ^{†1}	3
	14		16-17

Second Year

Fall	Credits	Spring	Credits
CHEM 110 or 130 (GN) ^{†2}	3	CHEM 202 or 210 ³	3
NUTR 175Z	3	STAT 200 or 250 (GQ) ^{††}	3-4
NUTR 360	3	NUTR 361 (US) [†]	3
General Education Course (GH)	3	BBH 101	3
General Education Course (GS)	3	General Education Course (GA)	3
	15		15-16

Third Year

Fall	Credits	Spring	Credits
BMB 211 [*]	3	NUTR 358	3
NUTR 211R	1	NUTR 425 (IL) or Select 3 credits from one of the two themes in consultation with academic adviser. ⁵	3
NUTR 320	4	NUTR 445 [*]	3
NUTR 421 (IL/US) or Select 3 credits from one of the two themes in consultation with academic adviser. ⁵	3	Select 3 credits from one of the two themes in consultation with academic adviser	3
General Education Course (GH) ⁴	3	General Education Course (GWS) (ENGL 202C recommended) [†]	3
	14		15

Fourth Year

Fall	Credits	Spring	Credits
NUTR 446 [*]	3	NUTR 452	3
NUTR 451 [*]	3	NUTR 490W [†]	3
BBH 440 or HPA 440	3	Select 3 credits from one of the two themes in consultation with academic adviser ⁵	3
Select 3 credits from one of the two themes in consultation with academic adviser ⁵	3	Select 3 credits of 400-level selection in consultation with academic adviser ⁵	3
Select 3 credits of 400-level selection in consultation with academic adviser ⁵	3	General Education Course (GA)	3
	15		15

Total Credits 119-121

* Course requires a grade of C or better for the major

‡ Course requires a grade of C or better for General Education

Course is an Entrance to Major requirement

† Course satisfies General Education and degree requirement

¹ Schreyer Honors College freshmen at University Park will take ENGL/CAS 137H in the fall semester and ENGL/CAS 138T in the spring semester. These courses carry GWS designation and replace both ENGL 30 and CAS 100. Each course is 3 credits. At the discretion of the college, ENGL/CAS 138T satisfies the first-year seminar requirement.

² Enforced math prerequisites for Chemistry: CHEM 110 - ALEKS score ≥ 61 or completion of MATH 22; CHEM 130 ALEKS score ≥ 46 or completion of MATH 21. If ALEKS score is not in the needed range, elective credits should be used for MATH preparation.

³ Students must complete CHEM 110 and CHEM 112 before enrolling in CHEM 210.

⁴ Within the 30 credits of required General Education Domain courses, students must take 6 credits of Integrative Studies courses (Inter-domain or Linked courses). Students should consult with their academic adviser to select appropriate courses.

- ⁵ Take either NUTR 421, NUTR 425 or a course from the List of Themed Courses and Supporting Courses at: <https://hhd.psu.edu/nutrition/supporting-courses> (<https://hhd.psu.edu/nutrition/supporting-courses/>).

University Requirements and General Education Notes:

US and IL are abbreviations used to designate courses that satisfy University Requirements (United States and International Cultures).

W, M, X, and Y are the suffixes at the end of a course number used to designate courses that satisfy University Writing Across the Curriculum requirement.

GWS, GQ, GHW, GN, GA, GH, and GS are abbreviations used to identify General Education program courses. General Education includes Foundations (GWS and GQ) and Knowledge Domains (GHW, GN, GA, GH, GS, and Integrative Studies). Foundations courses (GWS and GQ) require a grade of 'C' or better.

Integrative Studies courses are required for the General Education program. N is the suffix at the end of a course number used to designate an Inter-Domain course and Z is the suffix at the end of a course number used to designate a Linked course.

All incoming Schreyer Honors College first-year students at University Park will take ENGL 137H/CAS 137H in the fall semester and ENGL 138T/CAS 138T in the spring semester. These courses carry the GWS designation and replace both ENGL 30H and CAS 100. Each course is 3 credits.

Advising Notes:

Scheduling patterns for courses not taught each semester:

- Courses taught spring semester only – NUTR 170 (suggested, not required), NUTR 425.
- Courses taught fall semester only – NUTR 358, NUTR 421.

Behavioral Nutrition and Public Health Option: Nutritional Sciences, B.S. at Commonwealth Campuses

The course series listed below provides **only one** of the many possible ways to move through this curriculum. The University may make changes in policies, procedures, educational offerings, and requirements at any time. This plan should be used in conjunction with your degree audit (accessible in LionPATH as either an **Academic Requirements** or **What If** report). Please consult with a Penn State academic adviser on a regular basis to develop and refine an academic plan that is appropriate for you.

First Year

Fall	Credits Spring	Credits
BIOL 161 (GN) ^{*†}	3 NUTR 251 (GHW) ^{*†}	3
BIOL 162 (GN) [†]	1 BIOL 163 (GN) ^{*†}	3
PSYCH 100 or HDFS 129 (GS) [†]	3 BIOL 164 (GN) [†]	1
GQ ALEKS Score [†]	3 ECON 102, 104, or AGBM 101	3
General Education Course (GWS) (ENGL 15, ENGL 30H, ESL 15, ENGL/CAS 137H recommended) ^{†1}	3 General Education Course (GWS) (CAS 100, CAS 100A, CAS 100B, CAS 100C, ENGL/CAS 138T recommended) ^{†1}	3
First-Year Seminar (elective)	1 General Education Course (GS)	3
	14	16

Second Year

Fall	Credits Spring	Credits
CHEM 110 or 130 (GN) ^{†2}	3 CHEM 202 or 210 ³	3
BBH 101	3 STAT 200 or 250 (GQ) ^{*†}	3-4
Select 3 credits from one of the two themes in consultation with academic adviser	3 Select 3 credits from one of the two themes in consultation with academic adviser	3
General Education Course (GH)	3 General Education Course (GWS) (ENGL 202C recommended) [†]	3
General Education Course (GA)	3 General Education Course (GH) ⁴	3
	15	15-16

Third Year

Fall	Credits Spring	Credits
BMB 211 [*]	3 NUTR 320	4
NUTR 175Z	3 NUTR 358	3
NUTR 211R	1 NUTR 361 [†]	3
NUTR 360	3 NUTR 425 (IL) or Select 3 credits from one of the two themes in consultation with academic adviser ⁵	3
NUTR 421 (IL/US) or Select 3 credits from one of the two themes in consultation with academic adviser ⁵	3 NUTR 445 [*]	3
	13	16

Fourth Year

Fall	Credits Spring	Credits
NUTR 446 [*]	3 NUTR 452	3
NUTR 451 [*]	3 NUTR 490W [†]	3
BBH 440 or HPA 440	3 Select 3 credits of 400-level supporting credits in consultation with academic adviser ⁵	3
Select 3 credits from one of the two themes in consultation with academic adviser ⁵	3 Select 3-4 credits of Electives	3-4
Select 3 credits of 400-level supporting credits in consultation with academic adviser ⁵	3 General Education Course (GA)	3
	15	15-16

Total Credits 119-121

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- Courses taught fall semester only – NUTR 358, NUTR 421.

Nutritional Physiology and Biochemistry Option: Nutritional Sciences, B.S. at All Campuses

The course series listed below provides **only one** of the many possible ways to move through this curriculum. The University may make changes in policies, procedures, educational offerings, and requirements at any time. This plan should be used in conjunction with your degree audit (accessible in LionPATH as either an **Academic Requirements** or **What If** report). Please consult with a Penn State academic adviser on a regular basis to develop and refine an academic plan that is appropriate for you.

First Year

Fall	Credits	Spring	Credits
CHEM 110 & CHEM 111 (GN) [†]	4	CHEM 112 & CHEM 113 (GN) [†]	4
BIOL 110 (GN) [†]	3	BIOL 161 (GN) ^{**†}	3
Select 3 credits from supporting courses in consultation with academic adviser	3	BIOL 162 (GN) [†]	1
General Education Course (GWS) (ENGL 15, ENGL 30H, ESL 15, ENGL/CAS 137H recommended) ^{†1}	3	NUTR 251 (GHW) ^{**†}	3
First-Year Seminar (elective)	1	PHIL 132 (suggested) or General Education Course (GH) [†]	3
		General Education Course (GWS) (CAS 100, CAS 100A, CAS 100B, CAS 100C, ENGL/CAS 138T recommended) ^{†1}	3
	15		17

Second Year

Fall	Credits	Spring	Credits
CHEM 202 or 210	3	CHEM 203 or 212	3
MICRB 106 and MICRB 107 or MICRB 201 and MICRB 202 (GN) [†]	4	BIOL 230W (GN) [†]	4
MATH 140 (GQ) ^{††}	3-4	STAT 200 or 250 (GQ) ^{**†}	3-4
BIOL 163 ^{**†}	3	General Education Course (GA)	3
BIOL 164 [†]	1		
	15-16		13-14

Third Year

Fall	Credits	Spring	Credits
BMB 211 [*]	3	NUTR 445 [*]	3
BMB 212	4	PHYS 251 [†]	4
NUTR 211R	3	NUTR 358	3
PHYS 250 [†]	3	NUTR 425 (IL/US) or General Education Course (GS) ⁴	3
NUTR 175Z	3	General Education Course (GWS) (ENGL 202C recommended) [†]	3
NUTR 421 (IL/US) or General Education Course (GS) ⁴	3		
	15		16

Fourth Year

Fall	Credits	Spring	Credits
NUTR 446 [*]	3	NUTR 452 [*]	3
NUTR 451 [*]	3	NUTR 490W [†]	3
Select 3 credits from 400-level supporting courses in consultation with academic adviser	3	Select 3 credits from 400-level supporting courses in consultation with academic adviser	3
General Education Course (GA)	3	Select 3 credits from supporting courses in consultation with academic adviser	3
General Education Course (GH)	3	General Education Course (GS)	3
	15		15

Total Credits 121-123

* Course requires a grade of C or better for the major

‡ Course requires a grade of C or better for General Education

Course is an Entrance to Major requirement

† Course satisfies General Education and degree requirement

¹ Schreyer Honors College freshmen at University Park will take ENGL/CAS 137H in the fall semester and ENGL/CAS 138T in the spring semester. These courses carry GWS designation and replace both ENGL 030 and CAS 100. Each course is 3 credits. At the discretion of the college, ENGL/CAS 138T satisfies the first-year seminar requirement.

² Enforced math prerequisites for Chemistry: CHEM 110 - ALEKS score ≥ 61 or completion of MATH 22. If ALEKS score is not in the needed range, elective credits should be used for MATH preparation.

³ Within the 30 credits of required General Education Domain courses, students must take 6 credits of Integrative Studies courses (Inter-domain or Linked courses). Students should consult with their academic adviser to select appropriate courses.

⁴ Students will take either NUTR 425 or NUTR 421.

University Requirements and General Education Notes:

US and IL are abbreviations used to designate courses that satisfy University Requirements (United States and International Cultures).

W, M, X, and Y are the suffixes at the end of a course number used to designate courses that satisfy University Writing Across the Curriculum requirement.

GWS, GQ, GHW, GN, GA, GH, and GS are abbreviations used to identify General Education program courses. General Education includes Foundations (GWS and GQ) and Knowledge Domains (GHW, GN, GA, GH, GS, and Integrative Studies). Foundations courses (GWS and GQ) require a grade of 'C' or better.

Integrative Studies courses are required for the General Education program. N is the suffix at the end of a course number used to designate an Inter-Domain course and Z is the suffix at the end of a course number used to designate a Linked course.

All incoming Schreyer Honors College first-year students at University Park will take ENGL 137H/CAS 137H in the fall semester and ENGL 138T/CAS 138T in the spring semester. These courses carry the

GWS designation and replace both ENGL 30H and CAS 100. Each course is 3 credits.

Advising Notes:

Scheduling patterns for courses not taught each semester:

- Courses taught spring semester only – NUTR 170 (suggested, not required), NUTR 425.
- Courses taught fall semester only – NUTR 358, NUTR 421.

Nutrition and Dietetics Option: Nutritional Sciences, B.S. at University Park Campus

The course series listed below provides **only one** of the many possible ways to move through this curriculum. The University may make changes in policies, procedures, educational offerings, and requirements at any time. This plan should be used in conjunction with your degree audit (accessible in LionPATH as either an **Academic Requirements** or **What If** report). Please consult with a Penn State academic adviser on a regular basis to develop and refine an academic plan that is appropriate for you.

First Year

Fall	Credits Spring	Credits
GQ per ALEKS score ^{†2}	3 NUTR 251 (GHW) ^{**†}	3
BIOL 161 & BIOL 162 (GN) ^{*#†}	4 BIOL 163 & BIOL 164 (GN) ^{*#†}	4
PSYCH 100 or HDFS 129 (GS) ^{*†}	3 NUTR 170 (suggested supporting class)	1
General Education Course (GWS) (ENGL 15, ENGL 30H, ESL 15, ENGL/CAS 137H recommended) ^{†1}	3 General Education Course (GWS) (CAS 100, CAS 100A, CAS 100B, CAS 100C, ENGL/CAS 138T recommended) ^{†1}	3
First-Year Seminar (elective)	1 General Education Course (GA)	3
14		14

Second Year

Fall	Credits Spring	Credits
CHEM 110 or 130 ^{*#†}	3 CHEM 202 or 210 [*]	3
NUTR 360 [*]	3 STAT 200 or 250 (GQ) ^{*†}	3-4
MICRB 106 & MICRB 107 (GN) ^{*†}	4 NUTR 361 ^{**†}	3
General Education Course (GS)	3 General Education Course (GA)	3
Select 3 credits from electives in consultation with an academic adviser	3 General Education Course (GH)	3
16		15-16

Third Year

Fall	Credits Spring	Credits Summer	Credits
BMB 211 [*]	3 NUTR 445 [*]	3 NUTR 495 [*]	3
NUTR 211R [*]	1 NUTR 358 [*]	3	
NUTR 320 [*]	4 NUTR 391 [*]	2	

NUTR 386 [*]	3 Select 3 credits from supporting courses in consultation with an academic adviser ³	3
HM 329 [*]	3 General Education Course (GWS) (ENGL 202A or ENGL 202C recommended) [†]	3
14		14

Fourth Year

Fall	Credits Spring	Credits
NUTR 446 [*]	3 NUTR 451 [*]	3
NUTR 393 [*]	1 NUTR 453 [*]	3
NUTR 400 [*]	2 NUTR 490W ^{**†}	3
HM 330 [*]	3 Select 3 credits from 400-level supporting courses in consultation with an academic adviser ³	3
NUTR 452 [*]	3 General Education Course (GH)	3
Select 3 credits from 400-level supporting courses in consultation with an academic adviser ³	3	
15		15

Total Credits 120-121

- * Course requires a grade of C or better for the major
- ‡ Course requires a grade of C or better for General Education
- # Course is an Entrance to Major requirement
- † Course satisfies General Education and degree requirement

- 1 All incoming Schreyer Honors College freshmen at University Park will take ENGL/CAS 137H in the fall semester and ENGL/CAS138T in the spring semester. These courses carry GWS designation and replace ENGL 15/30 and CAS 100. Each course is 3 credits. At the discretion of the college, ENGL/CAS 138T satisfies the first-year seminar requirement.
- 2 Enforced math prerequisites for Chemistry: CHEM 110 - ALEKS score ≥ 61 or completion of MATH 22; CHEM 130 ALEKS score ≥ 46 or completion of MATH 21. If ALEKS score is not in the needed range, elective credits should be used for MATH preparation.
- 3 Supporting Course List: <https://hhd.psu.edu/nutrition/supporting-courses/>

University Requirements and General Education Notes:

US and IL are abbreviations used to designate courses that satisfy University Requirements (United States and International Cultures).

W, M, X, and Y are the suffixes at the end of a course number used to designate courses that satisfy University Writing Across the Curriculum requirement.

GWS, GQ, GHW, GN, GA, GH, and GS are abbreviations used to identify General Education program courses. General Education includes Foundations (GWS and GQ) and Knowledge Domains (GHW, GN, GA, GH, GS, and Integrative Studies). Foundations courses (GWS and GQ) require a grade of 'C' or better.

Integrative Studies courses are required for the General Education program. N is the suffix at the end of a course number used to designate an Inter-Domain course and Z is the suffix at the end of a course number used to designate a Linked course.

All incoming Schreyer Honors College first-year students at University Park will take ENGL 137H/CAS 137H in the fall semester and ENGL 138T/CAS 138T in the spring semester. These courses carry the GWS designation and replace both ENGL 30H and CAS 100. Each course is 3 credits.

Advising Notes:

Scheduling patterns for courses not taught each semester:

- Courses taught fall semester only – NUTR 386, NUTR 393, NUTR 421.
- Courses taught spring semester only – NUTR 170 (suggested, not required), NUTR 391, NUTR 425.

Within the 30 credits of required General Education Domain courses, students must take 6 credits of Integrative Studies courses (Inter-domain or Linked courses). Students should consult with their academic adviser to select appropriate courses.

Nutrition and Dietetics Option: Nutritional Sciences, B.S. at Commonwealth Campuses

The course series listed below provides **only one** of the many possible ways to move through this curriculum. The University may make changes in policies, procedures, educational offerings, and requirements at any time. This plan should be used in conjunction with your degree audit (accessible in LionPATH as either an **Academic Requirements** or **What If** report). Please consult with a Penn State academic adviser on a regular basis to develop and refine an academic plan that is appropriate for you.

First Year

Fall	Credits Spring	Credits
GQ per ALEKS score ^{†2}	3 NUTR 251 (GHW) ^{**†}	3
BIOL 161 & BIOL 162 (GN) ^{*#†}	4 BIOL 163 & BIOL 164 (GN) ^{*#†}	4
PSYCH 100 or HDFS 129 (GS) [†]	3 General Education Course (GWS) (CAS 100, CAS 100A, CAS 100B, CAS 100C, ENGL/ CAS 138T recommended) ^{†1}	3
General Education Course (GWS) (ENGL 15, ENGL 30H, ESL 15, ENGL/ CAS 137H recommended) ^{†1}	3 General Education Course (GA)	3
First-Year Seminar (elective)	1	

14 13

Second Year

Fall	Credits Spring	Credits
CHEM 110 or 130 ^{*#†}	3 CHEM 202 or 210 [*]	3
MICRB 106 & MICRB 107 (GN) ^{*†}	4 STAT 200 or 250 (GQ) ^{*†}	3-4
General Education Course (GH) [*]	3 General Education Course (GWS) (ENGL 202A or ENGL 202C recommended) [†]	3
General Education Course (GS)	3 General Education Course (GA)	3

Select 3 credits from electives in consultation with an academic adviser

3 General Education Course (GH)

16 15-16

Third Year

Fall	Credits Spring	Credits Summer	Credits
BMB 211 [*]	3 NUTR 445 [*]	3 NUTR 495 [*]	3
NUTR 211R [*]	1 NUTR 391 [*]	2	
NUTR 320 [*]	4 NUTR 358 [*]	3	
NUTR 360 [*]	3 NUTR 361 ^{*†}	3	
HM 329 [*]	3 Select 3-4 credits from supporting courses in consultation with an academic adviser (suggest 1 credit NUTR 170) ³	3-4	

14 14-15 3

Fourth Year

Fall	Credits Spring	Credits
NUTR 446 [*]	3 NUTR 451 [*]	3
NUTR 393 [*]	1 NUTR 453 [*]	3
NUTR 400 [*]	2 NUTR 490W ^{*†}	3
HM 330 [*]	3 NUTR 452 [*]	3
NUTR 386 [*]	3 Select 3 credits from 400-level supporting courses in consultation with an academic adviser ³	3

Select 3 credits from 400-level supporting courses in consultation with an academic adviser³

15 15

Total Credits 119-121

- * Course requires a grade of C or better for the major
- ‡ Course requires a grade of C or better for General Education
- # Course is an Entrance to Major requirement
- † Course satisfies General Education and degree requirement

- ¹ All incoming Schreyer Honors College freshmen at University Park will take ENGL/CAS 137H in the fall semester and ENGL/CAS138T in the spring semester. These courses carry GWS designation and replace ENGL 15/30 and CAS 100. Each course is 3 credits. At the discretion of the college, ENGL/CAS 138T satisfies the first-year seminar requirement.
- ² Enforced math prerequisites for Chemistry: CHEM 110 - ALEKS score ≥ 61 or completion of MATH 22; CHEM 130 ALEKS score ≥ 46 or completion of MATH 21. If ALEKS score is not in the needed range, elective credits should be used for MATH preparation.
- ³ Supporting Course List: <https://hhd.psu.edu/nutrition/supporting-courses> (<https://hhd.psu.edu/nutrition/supporting-courses/>).

University Requirements and General Education Notes:

US and IL are abbreviations used to designate courses that satisfy University Requirements (United States and International Cultures).

W, M, X, and Y are the suffixes at the end of a course number used to designate courses that satisfy University Writing Across the Curriculum requirement.

GWS, GQ, GHW, GN, GA, GH, and GS are abbreviations used to identify General Education program courses. General Education includes Foundations (GWS and GQ) and Knowledge Domains (GHW, GN, GA, GH, GS, and Integrative Studies). Foundations courses (GWS and GQ) require a grade of 'C' or better.

Integrative Studies courses are required for the General Education program. N is the suffix at the end of a course number used to designate an Inter-Domain course and Z is the suffix at the end of a course number used to designate a Linked course.

Advising Notes:

Scheduling patterns for courses not taught each semester:

- Courses taught fall semester only – NUTR 386, NUTR 393, NUTR 421.
- Courses taught spring semester only – NUTR 170 (suggested, not required), NUTR 391, NUTR 425.

Within the 30 credits of required General Education Domain courses, students must take 6 credits of Integrative Studies courses (Inter-domain or Linked courses). Students should consult with their academic adviser to select appropriate courses.

Career Paths

The multidisciplinary nature of the Nutritional Sciences degree prepares students in our program for a variety of career options and for graduate study in research and advanced professional training.

Students who choose the Nutrition and Dietetics option are well prepared for a post-graduate Dietetics supervised practice program that leads to the Registered Dietitian Nutritionist (RDN) credential. With the RDN, students can pursue careers in clinical dietetics, nutrition counseling, sports nutrition, public-health nutrition and policy, culinary nutrition, the food retail industry, sustainability, and applied research.

Courses taken in the Nutritional Physiology and Biochemistry option provide a strong science foundation for a variety of biomedical and health-related careers. This option is perfect for students interested in furthering their education by applying to medical, dental, physician assistant, chiropractic schools, or to continue their studies in graduate

school for Nutritional Sciences. Students may also seek biomedical careers in research, pharmaceutical or other health related industries.

Students in the Behavioral Nutrition and Public Health (BNPH) option are prepared to work in global programs, public health, health promotion and education. Students in this option can also plan their coursework to meet the requirements needed to apply to health-related pre-professional programs (e.g., occupational therapy, nursing, or physician's assistant) Students may choose to attend graduate school in Nutritional Sciences, Public Health or a wide variety of other graduate programs.

Careers

Armed with an advanced degree in Nutritional Science (NUTR), you will leverage your Penn State education and a vast network of like-minded professionals to find a fulfilling career that incorporates the physiological and biochemical aspects of nutritional practices in the context of health and wellness.

There is a seemingly endless array of positions in healthcare settings, academia, research, management and/or policymaking in which your skills and knowledge will be put to great use.

MORE INFORMATION ABOUT POTENTIAL CAREER OPTIONS FOR GRADUATES OF THE NUTRITIONAL SCIENCES PROGRAM (<https://hhd.psu.edu/nutrition/graduate-program/careers/>)

MORE INFORMATION ABOUT OPPORTUNITIES FOR GRADUATE STUDIES (<https://hhd.psu.edu/nutrition/graduate-program/>)

Professional Resources

- Academy of Nutrition and Dietetics (<https://www.eatright.org>)
- American Society for Nutrition (<https://nutrition.org>)
- Society for Nutrition Behavior and Education (<https://sneb.org>)
- Sports, Cardiovascular, and Wellness Nutrition (<https://www.scandpg.org>)
- Pennsylvania Academy of Nutrition and Dietetics (<https://eatrightpa.org>)
- American Association of Medical Colleges (allopathic) (<https://www.aamc.org>)
- American Association of Colleges of Osteopathic Medicine (<https://www.aacom.org>)
- Physician Assistant Education Association (<https://www.paeonline.org>)
- American Dental Education Association (<https://www.adea.org>)
- American Association of Colleges of Nursing (<https://www.aacnursing.org>)
- American Association of Schools & Programs of Public Health (<https://www.aspph.org>)

Accreditation

The Accreditation Council for Education in Nutrition and Dietetics (ACEND) is the accrediting body for the Didactic Program in Dietetics, which is the Nutrition and Dietetics option of the Nutritional Sciences major.

The Pennsylvania State University Didactic Program in Dietetics is accredited by the Accreditation Council for Education in Nutrition and Dietetics (ACEND) of the Academy of Nutrition and Dietetics, 120 Riverside Plaza, Suite 2190, Chicago, IL 60606-6995, 312-899-0040, ext 5400.

MORE INFORMATION ABOUT THE ACCREDITATION COUNCIL FOR EDUCATION IN NUTRITION AND DIETETICS (<https://eatrightpro.org/acend/>)

Professional Licensure/Certification

Many U.S. states and territories require professional licensure/certification to be employed. If you plan to pursue employment in a licensed profession after completing this program, please visit the Professional Licensure/Certification Disclosures by State (<https://psu.edu/state-licensure-disclosures/>) interactive map.

Contact

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