NUTRITIONAL SCIENCE (NS)

NS 1150 - Nutrition, Health, and Society (3 Credits)
Introduction to Human Nutrition, Health, and Society provides fundamental knowledge for majors and non-majors in nutrition. The role of nutrition in health promotion and disease prevention is introduced from biological, social, and structural perspectives.
Enrollment Information: Enrollment preference given to: incoming Nutritional Sciences majors and Human Biology, Health, and Society majors.
Distribution Requirements: (AFS-AG, OPHLS-AG), (PBS-HE), (SCT-IL)
Exploratory Studies: (CU-SBY)

Last Four Terms Offered: Summer 2025, Fall 2024, Summer 2024, Fall 2023
Learning Outcomes:

- Identify the role of key nutrients, foods, and dietary patterns in health, disease prevention and therapeutic approaches.
- Describe complex systems of interactions of nutrition with genetic, behavioral, social, and structural factors.
- Explain the development and progression of nutrition guidance for individuals and populations.
- Demonstrate fundamental skills in the interpretation of the nutrition literature and explain differences in quality of evidence.

Schedule of Classes (https://classes.cornell.edu/)

NS 1160 - Personalized Concepts and Controversies (1 Credit)
Last Four Terms Offered: Fall 2020, Fall 2019, Fall 2018, Fall 2017
Schedule of Classes (https://classes.cornell.edu/)

NS 1200 - Nutrition and Health: Issues, Outlooks, and Opportunities (1 Credit)
Last Four Terms Offered: Spring 2021, Spring 2020, Spring 2019, Spring 2018
Schedule of Classes (https://classes.cornell.edu/)

NS 1220 - Nutrition and the Life Cycle (3 Credits)
Biology of the life cycle including development, growth, maturation and aging and its impact on nutritional requirements of humans from the zygote to the elderly is considered. How to meet these nutritional requirements is discussed relative to the feeding issues and context of each major life stage. Course emphasizes the critical analyses of beneficial and adverse outcomes of various nutrient intakes and dietary patterns on the nutritional status and well-being through integration of nutrition and other health sciences in understanding nutritional needs during the life cycle.
Prerequisites: one semester of college biology or NS 1150.
Enrollment Information: Enrollment preference given to: Dietetics (DPD) students and HBHS majors.
Last Four Terms Offered: Spring 2025, Spring 2024, Spring 2023, Spring 2022
Learning Outcomes:

- Students will integrate knowledge from the biological and social sciences to address nutrition and health problems across the life span.
- Students will relate and identify, across the life span, influences of age, growth and normal development on nutritional requirements, methods of assessing dietary and nutritional health risks, influences of socioeconomic, cultural, and psychological factors on food and nutrition behavior, and health behaviors and educational needs of diverse populations.
- Students will be able to screen individuals for nutritional risk for health promotion and disease prevention, calculate and interpret body composition data, determine nutrient requirements, translate nutritional needs into food choices and dietary recommendations.
- Students will demonstrate a) an understanding of the complex and evolving nature of scientific knowledge of the role of nutrition in the promotion of health and the etiology and prevention of disease and b) the ability to access and evaluate critically scientific information from the primary research literature to investigate causal effects of nutrition and other environmental factors in human health and disease.
- Students will relate and identify, across the life span, health promotion and disease prevention guidelines.
- Students will be able, across the life span, to explain a public recommendation or policy position regarding diet and nutrition for an individual and interpret current research relevant to public dietary recommendations or policy.

Schedule of Classes (https://classes.cornell.edu/)

NS 1400 - Introduction to Human Biology, Health, and Society (3 Credits)
Introduction to Human Biology, Health, and Society is intended for first-year Human Biology, Health, and Society (HBHS) majors. The course provides a foundational framework for the major as well as an introduction to disciplines involved in understanding, integrating, and improving human health from biological, behavioral, environmental, and public policy perspectives. Students will have the opportunity to explore these sub-disciplines and develop interests that will guide their future course choices as well as develop critical thinking skills, the ability to work in groups, communicate, reflect on social and cultural perceptions, and critically read scientific literature.
Enrollment Information: Enrollment limited to: first Year HBHS majors or HBHS transfer students. Junior and Senior HBHS students permitted to enroll subject to the enrollment cap.
Last Four Terms Offered: Fall 2024, Fall 2023, Fall 2022, Fall 2021
Learning Outcomes:

- Contrast pathogenic mechanisms that underlie a variety of human diseases and understand their implications for clinical presentation and management.
- Examine the social, behavioral, and environmental context of lifestyle factors contributing to human disease, and implications for health equity.
- Analyze approaches to disease prevention from diverse perspectives, including public health, epidemiology, and economics.
- Integrate biological, behavioral, environmental, and economic perspectives to critically evaluate human health.
- Demonstrate critical thinking and collaborative skills to communicate the biological, behavioral, environmental, and economic impacts on human health.

Schedule of Classes (https://classes.cornell.edu/)

NS 1600 - Introduction to Public Health (3 Credits)
Introduction to Public Health is intended for Global and Public Health Sciences majors and for other students majoring in related disciplines. The course provides the basic principles, practices, and policies of public health, including an introduction to the infrastructure and organization of public health; methods of data collection and surveillance; disease promotion and prevention; health disparities; the achievements, challenges, and controversies in the field; and the range of career opportunities available in the field. This course has a particular focus on public health assessment, policy development, and assurance in the United States.
Distribution Requirements: (D-AG, SBA-AG), (D-HE, SBA-HE)
Last Four Terms Offered: Summer 2025, Fall 2024, Summer 2024, Fall 2023
Learning Outcomes:

- Articulate basic public health functions of assessment, policy development, and assurance.
- Describe major public health achievements, challenges, and controversies.
- Identify major epidemiological study designs and compare their attributes and limitations for answering different public health questions.
- Describe the differences and commonalities between public health approaches to health prevention versus an individual-level medical approach to health.
- Describe the organization of the US healthcare system.
- Summarize the major steps involved in designing, implementing, and evaluating a public health program.
- Give examples of career opportunities in public health.
- Assess the impact of a public policy position on nutrition and dietetics practice. (Satisfies DPD learning outcome KRDN 2.3)
- Discuss the impact of health care policy and different health care delivery systems on food and nutrition services. (Satisfies DPD learning outcome KRDN 2.4)

Schedule of Classes (https://classes.cornell.edu/)

NS 1800 - The DNS Experience for CALS First-Years (1 Credit)
This course introduces the Division of Nutritional Sciences and the Nutritional Sciences and Global and Public Health Sciences majors. The course focuses on transitioning to college life, developing your academic identity, and making meaning of your college experience. You will develop a learning community, identify your support network, and explore what Cornell has to offer alongside other students in DNS. Course content will promote the development of skills for academic success, campus engagement, higher-order thinking and self-reflection, self-care, communication, and intercultural knowledge.
Enrollment Information: Enrollment limited to: CALS first-year students in the Division of Nutritional Sciences (Global and Public Health Sciences majors and Nutritional Sciences majors.
Learning Outcomes:

- Describe what you can learn and experience in your major and explore possible career paths associated with your major.
- Identify your academic goals and the opportunities, resources and services that are available to help you meet these goals.
- Identify and acknowledge your social identity, cultural rules and biases and the inherent value of being open to diverse perspectives.
- Communicate effectively and professionally with members of the Cornell community.
- Develop a learning community and a support network.
- Engage in self-reflection about how you think and learn, how you interact with others, and how you respond to new information.

Schedule of Classes (https://classes.cornell.edu/)

NS 2060 - Preparation for Engaged Learning in Global and Public Health Sciences (2 Credits)
This course provides foundational knowledge about community-engaged and experiential learning as it relates to global and public health and creates a dynamic classroom environment and community of learners to develop the essential orientations and skills required for success in the experiential learning and future careers in global and public health.
Prerequisites: NS 1600, NS 2600.
Enrollment Information: Enrollment limited to: GPHS majors.
Last Four Terms Offered: Fall 2024, Fall 2023, Fall 2022, Fall 2021
Learning Outcomes:

- Describe the concepts, rationales, expectations, and ethics of community-engaged and experiential learning as they relate to global and public health.
- Demonstrate familiarity with the available experiential opportunities for GPHS majors and the associated expectations, requirements, and learning objectives.
- Appreciate the value of a professional, reflexive, culturally-sensitive, and civic-minded orientation to their proposed community engagement.
- Appreciate the value of effective and appropriate inter-personal skills for managing diverse situations that arise in community and organizational settings related to global and public health.
- Have the ability to identify and critically analyze ethical dilemmas in global and public health research and practice.
- Appreciate the value of practicing regular reflection as part of responsible professional practice.

Schedule of Classes (https://classes.cornell.edu/)

NS 2061 - Site-Specific Preparation for Engaged Learning in Global and Public Health Sciences (1-2 Credits)
This course provides pre-engagement preparation tailored to the research project or site where students will complete the experiential learning required for the GPHS major. Students will meet with the faculty member in charge, at a time and place to be arranged.
Prerequisites: NS 1600, NS 2060, NS 2600.
Enrollment Information: Enrollment limited to: GPHS majors.
Exploratory Studies: (SAAREA)

Last Four Terms Offered: Spring 2025, Fall 2024, Spring 2024, Fall 2023
Learning Outcomes:

- Can describe the overall purposes, methods, strategies, and/or activities of the project or organization with which they will work.
- Can describe the roles and responsibilities they will have in their chosen project or organization.
- Have formulated their personal learning objectives and a plan for documenting their achievement during and after the experience.
- Are aware of any relevant administrative, health, safety, IRB, logistical, social, cultural, technical or other requirements associated with their experiential project or site and have assumed full responsibility for meeting these requirements.

Schedule of Classes (https://classes.cornell.edu/)

NS 2450 - Social Science Perspectives on Food and Nutrition (3 Credits)
Uses theories, concepts, and methods from the social sciences to examine food, eating, and nutrition. The food choice process model is used as a framework to examine the scope of social science aspects of nutrition. Assignments include examinations, short homework papers, and two research projects, one qualitative and one quantitative, for which students prepare proposals, collect and interpret data, and write reports.
Prerequisites: students must have taken another NS course prior to requesting enrollment.
Enrollment Information: Enrollment preference given to: DNS, CHE, CALS students.
Distribution Requirements: (AFS-AG, SBA-AG), (SBA-HE)
Exploratory Studies: (LAAREA)

Last Four Terms Offered: Fall 2024, Fall 2023, Fall 2022, Fall 2021
Learning Outcomes:

- Explain how social science concepts and theories apply to food and nutrition issues and explain individual, social, cultural, economic, and historical patterns of food, eating, and nutrition.
- Describe basic social facts about food, eating, and nutrition.
- Demonstrate basic principles and procedures for conducting qualitative and quantitative research to understand food choice, including protecting human participants in research.
- Demonstrate sensitivity and appreciation of individual, social, cultural, economic, and historical variations in food, eating, and nutrition.

Schedule of Classes (https://classes.cornell.edu/)

NS 2470 - Food for Contemporary Living (2 Credits)
During this laboratory course, the understanding of food ingredients and techniques of food preparation is applied to positive nutritional practices and health promotion goals; basic food science and nutrition principles, food safety/sanitation, sensory evaluation, and social-cultural influences on food choices; food preparation, recipe modification, sensory evaluation (taste testing required); basic cooking skills, techniques. Introduction to basic menu planning and meeting nutritional requirements while restricted to a budget. Lab performance and a lab practical factored into final student evaluation; attendance at all labs is expected.
Prerequisites: Recommended prerequisite: NS 1150 or NS 1220.
Last Four Terms Offered: Spring 2025, Fall 2024, Spring 2024, Fall 2023
Learning Outcomes:

- Students demonstrate the ability to modify, prepare and evaluate recipes.
- Students are able to apply knowledge of food composition, dietary standards, and science principles to modify recipes and menus for individual needs and preferences.
- Students are able to demonstrate effective and professional oral and written communication and documentation and use of current information technologies when communicating with individuals, groups and the public.
- Students are able to use current technologies to locate and apply evidence-based guidelines and protocols.

Schedule of Classes (https://classes.cornell.edu/)

NS 2600 - Introduction to Global Health (3 Credits)
Explore contemporary topics, issues, and controversies in the field of global health through several different perspectives. This course will first introduce the global burden of disease, and then engage students in examining complex social, economic, political, environmental, and biological factors that structure the origins and consequences of global health problems, as well as potential solutions. The three core modules of this course focus on HIV/AIDS, maternal mortality, and water/sanitation and hygiene.
Enrollment Information: Enrollment limited to: first-years and sophomores. Juniors completing the Global Health Minor must contact DNS Student Services to discuss permissions prior to pre-enrollment.
Distribution Requirements: (CA-AG, D-AG), (CA-HE, D-HE)
Last Four Terms Offered: Spring 2025, Spring 2024, Spring 2023, Spring 2022
Learning Outcomes:

- Analyze global health topics, issues and controversies from multiple perspectives.
- Express basic knowledge about global health current events, world geography, demographics, poverty, and health disparities.
- Work in teams to evaluate a global health intervention using tools of program theory and create an effective oral presentation.

Schedule of Classes (https://classes.cornell.edu/)

NS 2750 - Human Biology and Evolution (3 Credits)
Crosslisted with ANTHR 2750
Distribution Requirements: (SCT-IL)
Last Four Terms Offered: Spring 2021, Spring 2020, Fall 2018, Fall 2017
Schedule of Classes (https://classes.cornell.edu/)

NS 3030 - Nutrition, Health and Vegetarian Diets (3 Credits)
Last Four Terms Offered: Spring 2022, Spring 2021, Spring 2020, Spring 2019
Schedule of Classes (https://classes.cornell.edu/)

NS 3060 - Nutrition and Global Health (3 Credits)
Malnutrition is a leading cause of death and disability worldwide, and a major impediment to population health and economic development. This course will introduce students to nutritional problems in the global community, through evaluation of the scientific literature and exploration of epidemiological, biological, demographic, and social factors that affect nutritional status. Students will be encouraged to think critically about the major challenges to improve nutrition with applications to infectious diseases, maternal and child health, and non-communicable diseases. Students will also have an opportunity to develop interventions to target a nutritional problem in the context of a specific country.
Prerequisites: NS 1150 or NS 1220.
Exploratory Studies: (LAAREA, SAAREA)

Last Four Terms Offered: Spring 2024, Spring 2022, Fall 2019, Fall 2017
Learning Outcomes:

- Understand the basic principles of nutrition and its role in health in both resource-limited and developed settings.
- Increase awareness of the current issues in nutrition and global health.
- Critically evaluate and interpret scientific literature on public health nutrition.
- Design an evidence-based intervention to target a major nutrition problem in the context of a specific country or region.

Schedule of Classes (https://classes.cornell.edu/)

NS 3090 - Global Health Case Studies from Weill Cornell Medicine (1 Credit)
Crosslisted with GDEV 3091
Weill Cornell Medicine faculty from several clinical departments including the department of medicine, department of surgery, department of anesthesiology, department of pediatrics, department of psychiatry, department of radiation oncology, department of public health, and department of emergency medicine, share their experiences in global health and international work. These global health experts will present their experiences abroad in a seminar style course.
Enrollment Information: Enrollment limited to: graduate, senior, junior, or sophomore students.
Exploratory Studies: (CU-ITL)

Last Four Terms Offered: Fall 2024, Fall 2023, Fall 2022, Fall 2021
Learning Outcomes:

- Students will be able to: Describe discrete, short-term interventions in global health including medical mission style surgery and anesthesia services and emergency responses to humanitarian and natural disasters, such as the COVID-19, Ebola, or Zika outbreaks, the Haitian Earthquake, and the Syrian Refugee Crisis.
- Students will be able to: Describe the sustainable nature of existing global health initiatives such as Physicians for Human Rights work, cervical cancer screening, and long-term research collaborations in low- and middle-income countries through an understanding of the biosocial factors that impact health like poverty and economics, gender violence, and access to natural resources.
- Students will be able to: Compare and contrast the differences between traditional medical mission style work abroad and a biosocial approach to global health.

Schedule of Classes (https://classes.cornell.edu/)

NS 3150 - Obesity and the Regulation of Body Weight (3 Credits)
Crosslisted with PSYCH 3150
Multidisciplinary discussion of the causes, effects, and treatments of human obesity. Topics include the biopsychology of eating behavior, the genetics of obesity, the role of activity and energy metabolism, the psychosocial determinants of obesity, anorexia nervosa, therapy and its effectiveness, and social discrimination.Multidisciplinary discussion of the causes, effects, and treatments of human obesity. Topics include the biopsychology of eating behavior, the genetics of obesity, the role of activity and energy metabolism, the psychosocial determinants of obesity, anorexia nervosa, therapy and its effectiveness, and social discrimination.
Prerequisites: NS 1150 or NS 1220, or one semester intro biology lecture (BIOMG 1350, BIOG 1440, or equivalent), plus Biochemistry (NS 3200, BIOMG 3300, or equivalent).
Enrollment Information: Enrollment limited to: juniors or seniors, others (with prerequisites) by permission of instructor.
Distribution Requirements: (BSC-AG, OPHLS-AG)
Last Four Terms Offered: Spring 2025, Spring 2024, Spring 2023, Spring 2022
Learning Outcomes:

- Familiarize students with the breadth of knowledge, theories, and therapies concerning energy balance and the control of food intake and energy expenditure.

Schedule of Classes (https://classes.cornell.edu/)

NS 3200 - Introduction to Human Biochemistry (4 Credits)
Presents the principles of biochemistry within the context of human health and disease. Teaches the metabolism of carbohydrates, lipids, and proteins from a perspective that emphasizes their role in supporting the structure and physiological functions of the major organs of the body. Incorporates the concepts of enzyme catalysis, enzyme regulation, hormone action, and bioenergetics within this framework. Covers he fundamental concepts of eukaryotic DNA structure, function, and gene expression with reference to their importance in regulating metabolism.
Prerequisites: one year college biology, one year college general chemistry, and CHEM 1570 or CHEM 3570 or permission of instructor.
Forbidden Overlaps: BIOMG 3300, BIOMG 3310, BIOMG 3330, BIOMG 3350, NS 3200
Distribution Requirements: (BSC-AG)
Last Four Terms Offered: Fall 2024, Fall 2023, Fall 2022, Fall 2021
Learning Outcomes:

- Predict the impact of gene regulation and protein regulation on metabolism and physiology at the cell, system and whole body level.
- Predict the impact of vitamins and minerals on metabolism and physiology at the cell, system and whole body level.
- Integrate knowledge of the interactions of gene regulation, protein regulation and nutrient availability on homeostasis.

Schedule of Classes (https://classes.cornell.edu/)

NS 3310 - Human Nutrition and Nutrient Metabolism (4 Credits)
Examines the biochemical, physiological, molecular and genomic aspects of human nutrition. Covers the topics of food sources, digestion, metabolism and function of nutrients (i.e., carbohydrates, proteins, lipids, vitamins, and minerals). Metabolic and chronic diseases related to nutrition are highlighted throughout the semester.
Prerequisites: BIOMG 3300 or BIOMG 3310, or NS 3200, or equivalent. Recommended prerequisite: NS 1150 or NS 1220.
Enrollment Information: Not open to: first-year and sophomore students.
Last Four Terms Offered: Spring 2025, Spring 2024, Spring 2023, Spring 2022
Learning Outcomes:

- Students should be able to describe: 1) dietary sources and functions of major nutrients, and how they are metabolized in the body; 2) nutrient requirements and consequences of deficiency; 3) effects of caloric restriction, genetic impairments, fasting/feeding, exercise, weight loss/gain and illness on metabolic pathways and fuel utilization; and 4) the relationships between nutrient intake and health outcomes.

Schedule of Classes (https://classes.cornell.edu/)

NS 3320 - Methods in Nutritional Sciences (3 Credits)
Laboratory introduction to principles and analytical techniques of nutritional research. Emphasizes analytical concepts and skills required to determine nutrient function and nutritional status of individuals and populations. Topics include methods of nutrient, metabolite, and enzyme analysis in body fluids; methods for assessing individual food intake and nutritional status; methods for assessing body composition and energy expenditure; and methods for assessing the composition of foods.
Prerequisites: undergraduate biochemistry, NS 3450, NS 3310 preferred, or (where possible) concurrent registration.
Enrollment Information: Enrollment preference given to: senior Nutritional Sciences majors and DPD (Dietetics) students.
Distribution Requirements: (BSC-AG)
Last Four Terms Offered: Fall 2024, Fall 2023, Fall 2022, Fall 2021
Learning Outcomes:

- Demonstrate knowledge of the fundamental theory and practice of common quantitative and qualitative methodologies used in nutrition and clinical research.
- Demonstrate an understanding of measurement error and its assessment.
- Demonstrate the ability to effectively interpret, report, and communicate experimental data.

Schedule of Classes (https://classes.cornell.edu/)

NS 3410 - Human Anatomy and Physiology (4 Credits)
Introduces human anatomy and physiology by detailing the structure and function of the human body and mechanisms used to maintain homeostasis. Emphasis is given to aspects relevant to the nutritional sciences and medicine. Content includes language of anatomy, cells, tissue, integumentary, respiratory, skeletal, muscular, digestive, nervous, cardiovascular, urinary, and reproductive systems. Clinical examples are provided to highlight the physiology of systems covered. Weekly clinical correlate activities are used to encourage active learning and group discussions. Evaluation is based on attendance class interaction, two take home case studies, weekly quizzes, two preliminaries and a midterm and final.
Prerequisites: one year introductory biology (BIOG 1440 or BIOG 1445 strongly recommended).
Enrollment Information: Enrollment limited to: senior, junior, or sophomore students.
Distribution Requirements: (BSC-AG)
Last Four Terms Offered: Spring 2025, Spring 2024, Spring 2023, Spring 2022
Learning Outcomes:

- Identify major human body systems in terms of their location, function, key components and anatomical nomenclature.
- Demonstrate an understanding of metabolic functions and physiological control of each major organ system.
- Recognize and synthesize principles of homeostasis with respect to how major organ systems are physiologically interrelated to maintain human health.

Schedule of Classes (https://classes.cornell.edu/)

NS 3420 - Human Anatomy and Physiology Laboratory (2 Credits)
Principles of human anatomy and physiology will be presented using anatomical models, drawings, dissections, and histology as well as non-invasive interactive assessments of physiological functions and review of clinical case studies. Weekly lecture will provide content connections with NS 3410. Emphasis will be on location, recognition, and description of anatomical structures and their relation to function. Content includes anatomical terminology, gross and microscopic anatomy, and regulation of various organ systems. Evaluation based on attendance, two lab practicums, and weekly lab assignments.
Prerequisites: Prerequisite or corequisite: introductory biology. Corequisite: NS 3410 strongly recommended.
Enrollment Information: Enrollment limited to: senior, junior, or sophomore students. Enrollment preference given to: DNS majors and DPD (Dietetics) students.
Last Four Terms Offered: Spring 2025, Spring 2024, Spring 2023, Spring 2022
Learning Outcomes:

- Demonstrate the ability to readily identify components of the major organs systems and describe their location in the human body using anatomical terminology.
- Demonstrate the ability to predict the physiological consequences of imbalances in the homeostatic regulation of the major organ systems.
- Demonstrate an understanding of how organ systems are integrated at the whole body level.

Schedule of Classes (https://classes.cornell.edu/)

NS 3450 - Introduction to Physiochemical and Biological Aspects of Foods (3 Credits)
Crosslisted with FDSC 2000
Comprehensive introduction to the physical, chemical, and nutritional properties of foods and to the principles and practice of food science and technology. Topics include chemistry and functionality of commodities and ingredients, chemical, physical and biological phenomena that affect food quality, techniques of processing and preservation, microbiology and fermentation, food safety, regulation, and contemporary issues.
Prerequisites: college-level courses in general chemistry and biology; organic chemistry or concurrent registration.
Distribution Requirements: (AFS-AG, BSC-AG, OPHLS-AG)
Last Four Terms Offered: Fall 2024, Fall 2023, Fall 2022, Fall 2021
Learning Outcomes:

- Demonstrate the ability to define parameters that collectively determine the quality of foods, and describe the chemical, biochemical, and biological phenomena that impact quality parameters.
- Demonstrate the ability to link the functionality of food ingredients with their chemical and physical, nutritional, and biological characteristics in the context of specific foods or categories of foods.
- Identify and describe the physicochemical and biological phenomena that underlie the major methods of food preservation, and recognize foods whose quality is extended by the use of such methods.
- Demonstrate the ability to independently locate authoritative information on food regulation and composition, and on contemporary issues of national and international importance using federal web-based resources.

Schedule of Classes (https://classes.cornell.edu/)

NS 3600 - Epidemiology (3 Credits)
This course introduces the principles and methods used in epidemiologic research. NS 3600 will use a combination of didactic lectures, classroom discussions, applied projects, and in-depth case studies to explore epidemiologic research, including disease occurrence, measures of association, causal inference in quantitative research, and applications of epidemiologic methods to global and public health research. Epidemiologic principles in the design, conduct, and interpretation of findings from observational and experimental studies will be explored in detail, including strengths and limitations of study designs. The final project of the course will require integration of methodological concepts with applications to develop a scientific question and design an epidemiologic research study to address a threat to public and global health.
Prerequisites: STSCI 2150 or BTRY 3010.
Last Four Terms Offered: Spring 2025, Spring 2024, Spring 2023, Spring 2022
Learning Outcomes:

- To understand the basic principles and methods used in epidemiology research.
- To evaluate the scientific literature, with emphasis on epidemiologic studies, including interpretation of findings and critical examination of strengths and limitations of different study designs.
- To apply methodological concepts to develop a scientific question and design an epidemiologic research study to address a threat to public and global health.

Schedule of Classes (https://classes.cornell.edu/)

NS 3610 - Hot and Hidden Topics in Global and Public Health (2 Credits)
Last Four Terms Offered: Fall 2021, Fall 2020, Fall 2019, Fall 2018
Schedule of Classes (https://classes.cornell.edu/)

NS 3980 - Research in Human Nutrition and Health (1 Credit)
Provides an introduction to a range of topics and skills related to engaging in research in the fields of human health and nutrition, including constructing research questions, searching and assessing available literature, considering ethical implications of research with humans and animals, working with scientific data, and communicating scientific work. Some weekly sessions feature expert guest speakers from around campus, and the course includes several workshop sessions designed to give students practical experience in important research-related skills. NS 3980 is a required component of the DNS Honors Program, but non-DNS majors may enroll, and DNS majors may enroll whether or not they are interested in applying to the DNS Honors Program.
Last Four Terms Offered: Fall 2024, Fall 2023, Fall 2022, Fall 2021
Learning Outcomes:

- Describe the processes, requirements, and general timeline for the DNS Honors Research Program.
- Describe basic key information related to professional research in human and animal research, such as the structure of scientific literature, strategies for effective literature searches, key ethical considerations in research using human participants and animal subjects, introductory methods for data analysis, and basic essential components of scientific communication.
- Describe the practical relevance of course content to a student's own research and understand the next steps to applying this content.
- Describe areas of research in human health and nutrition, including research activities in DNS.

Schedule of Classes (https://classes.cornell.edu/)

NS 4000 - Directed Readings (1-4 Credits)
Study that predominantly involves library research and independent reading.
Exploratory Studies: (SAAREA)

Last Four Terms Offered: Spring 2025, Fall 2024, Spring 2024, Fall 2023
Schedule of Classes (https://classes.cornell.edu/)

NS 4010 - Empirical Research (1-4 Credits)
Study that predominantly involves data collection and analysis or laboratory or studio projects.
Exploratory Studies: (CU-UG); (SAAREA)

Last Four Terms Offered: Spring 2025, Fall 2024, Spring 2024, Fall 2023
Schedule of Classes (https://classes.cornell.edu/)

NS 4020 - Supervised Fieldwork (1-4 Credits)
Study that involves both responsible participation in a community setting and reflection on that experience through discussion, reading, and writing. Academic credit is awarded for this integration of theory and practice.
Exploratory Studies: (SAAREA)

Last Four Terms Offered: Spring 2025, Fall 2024, Spring 2024, Fall 2023
Schedule of Classes (https://classes.cornell.edu/)

NS 4030 - Teaching Apprenticeship (1-5 Credits)
Study that includes assisting faculty with instruction.
Exploratory Studies: (SAAREA)

Last Four Terms Offered: Spring 2025, Fall 2024, Spring 2024, Fall 2023
Schedule of Classes (https://classes.cornell.edu/)

NS 4060 - Experiential Learning in Global and Public Health Sciences (1 Credit)
Formalized active learning opportunity for students in the Global and Public Health Sciences major to develop and apply academic knowledge, principles and skills to a public health problem in a supervised community or research setting, either domestic or international.
Prerequisites: NS 1600, NS 2600. Recommended: STSCI 2150, NS 3600.
Exploratory Studies: (SAAREA)

Last Four Terms Offered: Fall 2024, Fall 2023, Fall 2022, Fall 2021
Learning Outcomes:

- Describe a public health issue through engagement in practice, policy, or research.
- Examine and explain the key characteristics and interests of host organization, hospital, institution, or research project, and how they relate to specific public health issue of student interest.
- Analyze a public health issue integrating academic knowledge and experiential learning.
- Document and explain how the applied experience advanced academic, professional, and personal learning goals.

Schedule of Classes (https://classes.cornell.edu/)

NS 4140 - Maternal and Child Nutrition and Health (3 Credits)
Advanced course on the role of nutrition in maternal and child health, in preconception, pregnancy, postpartum, and beyond. The course format will be directed readings, case studies, discussions, and selected lectures given by experts in maternal and child nutrition and health.
Enrollment Information: Enrollment limited to: senior undergraduate students.
Learning Outcomes:

- To examine the major threats to maternal and child nutrition and health.
- To evaluate the role of nutrition in the development of health outcomes in maternal and child health, across the lifecycle, from preconception through pregnancy, postpartum, lactation/infant feeding, and beyond.
- To critically analyze evaluate the use of scientific evidence on a specific topic in nutrition and maternal and child health that informs nutritional interventions, policy, and practice.

Schedule of Classes (https://classes.cornell.edu/)

NS 4200 - Diet and the Microbiome (3 Credits)
In this course, students will acquire a present-day overview of the reported effects of diet on the microbiome with an emphasis on metabolic health outcomes. The microbiome field is rapidly evolving, and this course has no textbook; we will mainly be assessing primary literature and scientific reviews. Students will learn to critically analyze the conclusions drawn from microbiome studies to empower them to make informed judgments as new research findings are reported.
Prerequisites: one semester introductory biology lecture (BIOMG 1350, BIOG 1140, or equivalent), one semester introductory chemistry (CHEM 1560, CHEM 2070, CHEM 2090, or equivalent), microbiology (BIOMI 2900 or equivalent) and introductory statistics (STSCI 2150, PUBPOL 2100, AEM 2100, or equivalent).
Enrollment Information: Enrollment limited to: senior, junior, and graduate students.
Distribution Requirements: (BSC-AG, OPHLS-AG), (PBS-HE)
Last Four Terms Offered: Spring 2025, Spring 2024, Spring 2023, Spring 2022
Learning Outcomes:

- Engage in conversation including terms and techniques in the microbiome field.
- Assess the relevance of correlations between dietary intake, gut microbes, and parameters of metabolic health.
- Design a study to address a question.
- Identify strengths, limits, and confounding factors in studies addressing diet:microbiome associations.
- Present technical information clearly.
- Articulate good arguments to support your decisions regarding scientific issues.

Schedule of Classes (https://classes.cornell.edu/)

NS 4210 - Precision Nutrition and Health (3 Credits)
This course will introduce students to the principles of precision nutrition and its goal to optimize human nutrition and improve human health outcomes throughout the lifespan. Topics to be covered include identification of genetic/epigenetic signatures that alter nutrient requirements, biomarker discovery and application, and the effects of environmental exposures (microbiome, exercise, etc) and/or disease on nutrient needs. The course will cover both molecular and epidemiological aspects of precision nutrition and will highlight advantages and limitations of current precision nutrition approaches in clinical practice. Undergraduate students enroll in NS 4210, and graduate students enroll in NS 6210.
Prerequisites: NS 1150 or NS 1220. NS 3200, BIOMG 3300, BIOMG 3310, BIOMG 3330, or BIOMG 3350.
Distribution Requirements: (OPHLS-AG)
Last Four Terms Offered: Spring 2025
Learning Outcomes:

- Articulate/describe the importance/demand for more targeted precision nutrition approaches.
- Identify technologies and approaches that support/drive the implementation of precision nutrition.
- Critically evaluate scientific literature, especially as related to precision nutrition.
- Describe benefits and limitations of precision nutrition.
- Summarize and present primary literature.

Schedule of Classes (https://classes.cornell.edu/)

NS 4250 - Nutrition Communications and Counseling (3 Credits)
Students learn the theoretical basis of effective health promotion communications and develop effective nutrition communication skills through application in a variety of settings. Provides hands-on experiences in counseling, educational program development, and oral and written communications.
Prerequisites: NS 1150 or NS 1220 and NS 2450.
Enrollment Information: Enrollment limited to: senior and junior students. Enrollment preference given to: senior Dietetics (DPD) students and Nutritional Sciences majors.
Distribution Requirements: (CA-AG), (CA-HE)
Exploratory Studies: (CU-CEL)

Last Four Terms Offered: Spring 2025, Spring 2024, Spring 2023, Spring 2022
Learning Outcomes:

- Develop and articulate original nutrition education material through written, oral, and social media outlets for diverse audiences. KRDN 2.1 Demonstrate effective and professional oral and written communication and documentation
- Evaluate the scientific evidence behind food messages, popular diets, and common nutrition misconceptions. KRDN 1.1: Demonstrate how to locate, interpret, evaluate and use professional literature to make ethical, evidence-based practice decisions.
- Discover intrinsic motivations with relation to both food choices and career choice. KRDN 3.3: Demonstrate counseling and education methods to facilitate behavior change for and enhance wellness for diverse individuals and groups
- Apply principals from formal theories to successfully counsel a client to achieve a behavior change. KRDN 3.3: Demonstrate counseling and education methods to facilitate behavior change for and enhance wellness for diverse individuals and groups.
- Conduct a comprehensive nutrition assessment including diet analysis, nutrition counseling, goal setting, and evaluation with an individual. KRDN 3.1 Use the Nutrition Care Process and clinical workflow elements to assess nutritional parameters, diagnose nutrition related problems, determine appropriate nutrition interventions and develop plans to monitor the effectiveness of these interventions.
- Plan, execute, and evaluate a nutrition lesson plan for a specific audience. KRDN 3.2: Develop an educational session or program/ educational strategy for a target population.
- Differentiate between optimal and disordered eating and the commensurate counseling strategies.
- Understand current coding and billing practices within the insurance and medical systems. KRDN 4.3: Describe the regulation system related to billing and coding, what services are reimbursable by third party payers, and how reimbursement may be obtained.

Schedule of Classes (https://classes.cornell.edu/)

NS 4300 - Proteins, Transcripts, and Metabolism: Big Data in Molecular Nutrition (3 Credits)
This course will cover fundamental concepts of big data analysis at an introductory level in the context of gene expression at the mRNA and protein levels with a focus on metabolic regulatory networks. Programming in Python and R will be required, but no prior experience is necessary. Programming in this course will focus methods to parse large data sets and perform informatics analyses.
Prerequisites: one semester introductory biology lecture (BIOMG 1350, BIOG 1440, or equivalent), biochemistry (NS 3200, BIOMG 3300, or equivalent), and introductory statistics (STSCI 2150, PUBPOL 2100, AEM 2100, or equivalent).
Enrollment Information: Enrollment limited to: senior, junior, and graduate students. Sophomores by permission during the add period.
Distribution Requirements: (DLG-AG, OPHLS-AG), (PBS-HE)
Last Four Terms Offered: Spring 2025, Spring 2024, Spring 2022, Spring 2021
Learning Outcomes:

- Students will be able to: (1) run Python and R on their own systems and (2) access and use programs written in these languages.
- Students will be able to constructively critique potential hypotheses or conclusions based on mRNA or protein abundance patterns.
- Students will be able to: (1) find public data sets and (2) determine the numerical format of public data sets.
- Students will be able to hypothesize the impacts on metabolism of up- or down- regulation of proteins and transcripts corresponding to genes of metabolic pathways.
- Students will be able to propose pairs or groups of genes that regulate aspects of metabolism based on their mRNA or protein abundance patterns.

Schedule of Classes (https://classes.cornell.edu/)

NS 4330 - Nutrition and the Brain (3 Credits)
Our brain regulates what and how we eat, while our dietary choices, in turn, influence our cognitive health. This course examines the relationship between nutrition and brain function, integrating insights from neuroscience, physiology, metabolism, and behavioral research. This course will provide a comprehensive overview of how nutrients affect brain health and how the brain influences eating behaviors and metabolism. The course introduces key concepts and modern techniques in the field of nutritional neuroscience. Through the analysis of primary literature, students will explore neural mechanisms underlying feeding behavior, brain-body communication, and the impact of nutrition on cognitive health. The course combines lectures providing foundational knowledge with paper discussions delving into key discoveries and research findings.
Prerequisites: introductory biology course (BIOG 1440, BIOMG 3320 or equivalent) and introductory nutrition course (NS1150 or equivalent),
Enrollment Information: Primarily for: undergraduate students
Learning Outcomes:

- Discuss general methods used in nutritional neuroscience research.
- Describe nutritional effects on brain function and brain-related disorders.
- Discuss neural control of food intake and metabolism.
- Identify and interpret primary scientific literature in the field of nutritional neuroscience.
- Apply effective communication strategies in written, oral, and visual formats for diverse purposes and audiences.
- Implement nutritional neuroscience knowledge in science communications and research design (grad students).

Schedule of Classes (https://classes.cornell.edu/)

NS 4410 - Nutrition and Disease (4 Credits)
This course presents the role of nutrition in disease using review of the current literature and application to clinical cases. Students use their foundational knowledge in the sciences to understand the etiology and pathophysiology of disease states and learn where nutrition plays a critical role in the development, prevention, and/or management of disease. Application of knowledge to case studies is emphasized to develop skills in integrating nutrition into the assessment and management of acute illness and chronic medical conditions. The course prepares students to recognize the impact of nutrition in disease and apply this information personally and professionally in the areas of public health, community nutrition, clinical dietetics and clinical medicine.
Prerequisites: NS 3200 or equivalent (can be taken concurrently). Recommended Prerequisites: NS 1150 or NS 1220; NS 3410 or NS 3420.
Distribution Requirements: (BSC-AG)
Exploratory Studies: (CU-SBY)

Last Four Terms Offered: Fall 2024, Spring 2024, Spring 2023, Fall 2021
Learning Outcomes:

- Show a working knowledge of the etiology, pathophysiology, and progression of various disease states.
- Identify the role of specific nutrients, foods, and dietary patterns in the etiology and pathophysiology of various disease states.
- Explain the evidence-based nutrition recommendations and practice guidelines for specific diseases.
- Apply knowledge of pathophysiology and nutrition to health and disease states in the context of patient case studies.
- Communicate scientific information collaborate across differences (eg. cultural, social, personal, economic, physical, religious, learning styles and more) to evaluate patient cases.

Schedule of Classes (https://classes.cornell.edu/)

NS 4420 - Implementation of Nutrition Care (3 Credits)
Develop skills necessary to implement nutrition care. Application of the nutrition care process as it applies to clinical settings is emphasized. Students develop skills to perform nutrition assessment, nutrition diagnosis, nutrition intervention, monitoring, and evaluation. Content includes principles of MNT for acute and chronic diseases, menu planning for disease states, the role of other allied health practitioners in assuring nutritional health, and reimbursement and legislation in dietetics practice.
Prerequisites: Prerequisite or corequisite: NS 1220, NS 2470, NS 4410, or permission of instructor.
Enrollment Information: Enrollment preference given to: Senior Dietetics (DPD) students.
Last Four Terms Offered: Fall 2024, Fall 2023, Fall 2022, Fall 2021
Learning Outcomes:

- 1.1: Demonstrate how to locate, interpret, evaluate, and use professional literature to make ethical, evidence-based practice decisions.
- 1.2: Select and use appropriate current information technologies to locate and apply evidence-based guidelines and protocols.
- 1.3: Apply critical thinking skills.
- 2.1: Demonstrate effective and professional oral and written communication and documentation.
- 2.2: Describe the governance of nutrition and dietetics practice, such as the Scope of Nutrition and Dietetics Practice and the Code of Ethics for the Profession of Nutrition and Dietetics.
- 2.5: Identify and describe the work of interprofessional teams and the roles of others with whom the registered dietitian nutritionist collaborates.
- 2.6: Demonstrate cultural humility, awareness of personal biases, and an understanding of cultural differences as they contribute to diversity, equity and inclusion.
- 3.1: Use the Nutrition Care Process and clinical workflow elements to assess nutritional parameters, diagnose nutrition related problems, determine appropriate nutrition interventions and develop plans to monitor the effectiveness of these interventions
- 3.6 Develop nutritionally sound meals, menus, and meal plans that promote health and disease management and meet client's/patient's needs.

Schedule of Classes (https://classes.cornell.edu/)

NS 4430 - Applied Anatomy and Physiology (2 Credits)
Students will be introduced to the fundamentals of the patient clinical encounter to apply advanced human anatomy and physiology knowledge, practice critical thinking, and strengthen interpersonal skills. In order to understand the mechanisms behind clinical skills and assessment of a patient, students will learn advanced knowledge in the areas of cardiovascular, respiratory, and gastrointestinal anatomy and physiology. Students will apply and practice this knowledge by learning introductory clinical skills in eliciting patient history, conducting focused physical examinations, and documenting findings with hands-on practice. Informal and formal communication skills will be developed and practiced through working in groups, taking practical exams, and writing medical notes for case studies. This course will develop foundational skills and critical thinking strategies needed to engage and succeed in health-profession training.
Prerequisites: NS 3410.
Enrollment Information: Enrollment preference given to: students whose course of study requires 8 credits and/or a two-semester sequence of Anatomy & Physiology.
Learning Outcomes:

- Appropriately use basic medical terminology.
- Elicit, present, and document a focused patient history.
- Demonstrate taking vital signs and conducting basic cardiovascular, respiratory and gastrointestinal assessments to show understanding and application of fundamental anatomy and physiology knowledge.
- Demonstrate critical thinking skills through participation in case study discussions, written medical notes and practical exams.

Schedule of Classes (https://classes.cornell.edu/)

NS 4450 - Toward a Sustainable Global Food System: Food Policy for Developing Countries (3 Credits)
Crosslisted with GDEV 4450, AEM 4450
Comprehensive presentation and discussion of policy options for a sustainable global food system, with focus on developing countries. Topics include economic policy related to nutrition, health, consumption, production, natural resource management, trade, markets, gender roles, armed conflict, and ethics. A social entrepreneurship approach based on case studies and active participation by students will be used.
Distribution Requirements: (AFS-AG, SBA-AG, SCH-AG), (SBA-HE)
Exploratory Studies: (CU-SBY); (AFAREA, SAAREA)

Last Four Terms Offered: Fall 2024, Fall 2023, Fall 2022, Fall 2021
Learning Outcomes:

- Ability to analyze a specific food policy problem, identify the related policy issues, suggest one or more policy options to solve the problem, and estimate how each option would affect relevant stakeholder groups and their expected response.
- Ability to undertake the above with limited information and within a short time frame.
- Motivation to engage in the design and implementation of innovative solutions to existing and expected future problems related to the global, national and local food systems, i.e. to be a social or policy entrepreneur within or outside the public sector.

Schedule of Classes (https://classes.cornell.edu/)

NS 4480 - Economics of Food and Malnutrition (3 Credits)
Crosslisted with AEM 4485
This course focused on the economics of food and malnutrition from the perspective of individuals and households; that is, a micro-economic approach. Topics include characteristics and constraints associated with food production in both developed and developing countries; the determinants of household food security; the social and economic causes and consequences of undernutrition; the social and economic causes and consequences of obesity; intervention design to reduce food insecurity, undernutrition and obesity.
Prerequisites: ECON 1110, AEM 2100, or equivalent, and 9 additional credits in economics, applied economics, or nutrition. Recommended prerequisite: ECON 3140, NS 3600, or equivalent.
Enrollment Information: Enrollment limited to: seniors and juniors.
Distribution Requirements: (AFS-AG, D-AG, SBA-AG), (SBA-HE)
Exploratory Studies: (CU-ITL, CU-SBY)

Last Four Terms Offered: Fall 2024, Fall 2023, Fall 2022, Fall 2021
Learning Outcomes:

- Ability to analyze problems of food security and nutrition using perspectives and tools drawn from both economics and nutrition; critically assess studies of the determinants of these; understand the strengths and limitations of interventions designed to ameliorate these.
- Integrate knowledge from the biological and social sciences to address nutrition problems facing individuals, societies and governments.
- Ability to understand and analyze quantitative data on food security and nutrition.
- Ability to access and critically evaluate scientific information from the primary research literature to investigate the causal effects of nutrition.
- Motivation to engage in debates surrounding the design and implementation of innovative solutions to current existing and future problems related to food, hunger, and nutrition.

Schedule of Classes (https://classes.cornell.edu/)

NS 4500 - Public Health Nutrition (3 Credits)
Public health nutrition is the major professional career track for nutritionists outside of dietetics. It deals with efforts to improve the diets and nutritional status of whole populations by working at the community, state, and national levels. This course helps to prepare students to work in public health nutrition by describing the methods used in the assessment of nutrition problems, the development of nutrition-related policies, and the delivery of health, nutrition, and food assistance programs.
Prerequisites: NS 1150, NS 1400, or NS 1600 (or equivalent) and an introductory social science course.
Enrollment Information: Not open to: first-year students
Distribution Requirements: (AFS-AG)
Exploratory Studies: (CU-SBY)

Last Four Terms Offered: Spring 2024, Spring 2023, Spring 2022, Spring 2021
Learning Outcomes:

- To learn the core functions of government in public health (assessment, policy development and assurance) and understand how they have been and are currently applied to nutrition. Students will be able to: (1) describe the functions of government in public health and articulate how they are related to their personal profession goals, (2) describe the evolution of public health and public health nutrition policies in the US, (3) understand best practices and key considerations in working with diverse audiences and (4) apply communication strategies.
- To understand how health problems related to nutrition are assessed at the population level. Students will be able to: (1) describe how nutrition problems are assessed at the individual and population level, (2) describe how nutritional status is monitored in the American population and (3) discuss the concepts used to link food production to health, including relevant economic and social concerns.
- To identify the necessary monitoring and evaluation measures to critique and improve food and nutrition-related programs and interventions. Students will be able to: (1) discuss relevant techniques to monitor nutrition and health status outcomes, (2) evaluate and discuss nutrition and health interventions and programs, and (3) evaluate and discuss community-based programs designed to improve public health and the food system.
- To understand how policies related to nutrition are developed in the United States and to be able to identify gaps in our matrix of nutrition policies. For each policy covered in class, students will be able to: (1) describe the policy and how its design relates to its rationale and goals, (2) discuss its positive aspects, (3) critique its negative aspects and (4) name the agency responsible for it.
- To be able to analyze current nutrition problems and policy instruments and develop and critique policy alternatives. Students will be able to: (1) identify gaps of nutrition policies in the US, (2) develop alternative policy options and (3) compare policy options using relevant analytic approaches.
- To understand the context for food assistance programs in the United States, how they operate and their strengths and weaknesses. For each program covered in class, students will be able to: (1) describe the program (including who is eligible and what benefits are provided) and how its design relates to its rationale and goals, (2) discuss its positive aspects, (3) critique its negative aspects and (4) name the agency responsible for it.

Schedule of Classes (https://classes.cornell.edu/)

NS 4510 - Nutrition and Health Equity (3 Credits)
This course introduces key structural and social determinants (i.e., sociopolitical context, socioeconomic position, access to healthcare, living and working conditions, food availability, among others) shaping nutrition and health inequities among historically marginalized populations in U.S. society. It is designed to offer advanced undergraduate students and graduate students directed readings and tailored activities to meet the learning objectives. Undergraduates should enroll in NS 4510, and graduate students should enroll in NS 6510.
Last Four Terms Offered: Spring 2025
Learning Outcomes:

- Describe and understand the context and factors shaping nutrition and health inequities for U.S. minoritized groups.
- Constructively critique scientific literature on nutrition and health inequities affecting U.S. minoritized groups.
- Identify policy areas and interventions to achieve health equity for all in U.S. society.
- Apply knowledge acquired in written and oral course assessments.

Schedule of Classes (https://classes.cornell.edu/)

NS 4570 - Health, Poverty, and Inequality: A Global Perspective (3 Credits)
Crosslisted with ECON 3910
Course focuses on global health challenges, and how they are related to poverty and inequality.
Prerequisites: introductory microeconomics and statistics or permission of instructor.
Distribution Requirements: (D-AG, SBA-AG), (D-HE, SBA-HE), (SCD-AS, SSC-AS)
Exploratory Studies: (CU-SBY); (AFAREA)

Last Four Terms Offered: Fall 2024, Fall 2023, Fall 2022, Fall 2020
Learning Outcomes:

- Understand the nature and extent of global health challenges and inequalities in health at various levels, including across countries, at the national level, and even within the household, both current and historical.
- Understand possible policy responses to improving health and well-being and reducing observed disparities, differentiating the appropriate role of government and the private sector in crafting solutions to global health programs, including priority setting and resource allocation.
- Prepare convincing and policy relevant documents that outline major global health challenges, including their causes, magnitude (prevalence and incidence), and feasible opportunities to address these problems, taking into account the political and economic dimensions, as well as considerations such as the time frame, and positive and negative externalities, both anticipated and unanticipated.

Schedule of Classes (https://classes.cornell.edu/)

NS 4600 - Explorations in Global and Public Health (3 Credits)
This capstone course provides guidance, conceptual tools, feedback and a dedicated space in the schedule for students to design, complete and communicate a capstone project on a topic of their choosing that allows them to demonstrate their mastery of the learning outcomes for the Global and Public Health Sciences major or Global Health minor.
Prerequisites: completion of all requirements for Global and Public Health Sciences major, or Global Health minor, or permission of instructor.
Enrollment Information: Enrollment limited to: senior or junior Global and Public Health Sciences majors, or Global Health minor students.
Exploratory Studies: (CU-CEL, CU-ITL)

Last Four Terms Offered: Fall 2024, Fall 2023, Fall 2022, Fall 2021
Learning Outcomes:

- Conduct an analysis of a global or public health issue that integrates multidisciplinary knowledge, contextual considerations, global or public health frameworks, current literature, community perspectives, normative considerations, an evaluation of alternatives for addressing the issue and critical reflection on your observational standpoint.
- Demonstrate the ability to communicate your analysis to a defined audience and recommend and defend your preferred alternative for addressing the issue.
- Demonstrate the capacity to appreciate and collaborate across differences, including cultural, social, personal, economic, values, religious and racial/ethnic differences.

Schedule of Classes (https://classes.cornell.edu/)

NS 4620 - Preparation for Cross-Cultural Engagement and Collaborative Research (1 Credit)
Last Four Terms Offered: Spring 2022, Spring 2021, Spring 2020, Spring 2019
Schedule of Classes (https://classes.cornell.edu/)

NS 4630 - Global Health, Development, and Policy Issues in Tanzania (4 Credits)
Last Four Terms Offered: Summer 2022, Summer 2021, Summer 2019, Summer 2018
Schedule of Classes (https://classes.cornell.edu/)

NS 4631 - Global Health Practice and Policy Research in Zambia (4 Credits)
Last Four Terms Offered: Summer 2022, Summer 2021, Summer 2019, Summer 2018
Schedule of Classes (https://classes.cornell.edu/)

NS 4650 - Leadership Development in Global and Public Health (1 Credit)
Last Four Terms Offered: Fall 2021, Fall 2020, Fall 2019, Fall 2018
Schedule of Classes (https://classes.cornell.edu/)

NS 4880 - Applied Dietetics in Food Service Systems (4 Credits)
Gain experience in facility design; equipment selection, use, and care; job analysis and evaluation; human resources planning; management of financial resources; recipe development and volume food production; computer-assisted management; employee training; and applied safety and sanitation standards. Through planning and executing a themed event, students synthesize and apply knowledge and skills required to operate and manage a foodservice program. Laboratories are arranged through Cornell Dining and other off-campus sites. Completion of a professional portfolio is required. ServSafe training and examination is conducted; successful completion results in ServSafe manager certification.
Prerequisites: HADM 1361 , HADM 3365, or intro food service management course, NS 2470 and BIOMI 2900.
Enrollment Information: Enrollment limited to: senior DPD (Dietetics) students. Junior DPD (Dietetics) students by permission of instructor.
Course Fee: Course Fee, $110. For special supplies/training and activities. Fee amount approximate.
Last Four Terms Offered: Spring 2025, Spring 2024, Spring 2023, Spring 2022
Learning Outcomes:

- (2.1): Demonstrate effective and professional oral and written communication and documentation.
- (2.2): Describe the governance of nutrition and dietetics practice, such as the Scope of Nutrition and Dietetics Practice and the Code of Ethics for the Profession of Nutrition and Dietetics.
- (4.1): Apply management theories to the development of programs or services.
- (4.2): Evaluate a budget/financial management plan and interpret financial data.
- (4.4): Apply the principles of human resource management to different situations.
- (4.5): Apply safety and sanitation principles related to food, personnel, and consumers.
- (4.6): Explain the processes involved in delivering quality food and nutrition services.
- (4.7): Evaluate data to be used in decision-making for continuous quality improvement.
- (5.1): Perform self-assessment that includes awareness in terms of learning and leadership styles and cultural orientation and develop goals for self-improvement.
- (5.2): Identify and articulate one's skills, strengths, knowledge and experiences relevant to the position desired and career goals. (5.3): Practice how to self-advocate for opportunities in a variety of settings. (5.4): Practice resolving differences or dealing with conflict. (5.5): Promote team involvement and recognize the skills of each member. (5.6): Demonstrate an understanding of the importance and expectations of a professional in mentoring and precepting others.

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NS 4990 - Honors Problem (1-15 Credits)
All DNS Honors students must complete a total of six credits in NS 4990 Honors Problem. Students must complete three credits of NS 4990 in each of their last two semesters. These credits are supervised by the DNS Honors Program Director and represent both a student's research with their faculty advisor, as well as the program's required writing tasks, and presenting their project in a research symposium. Writing tasks include a progress report, abstract, literature review, full thesis draft, and final thesis.?Research activities may include reviewing the literature, writing a proposal, developing research methods, collecting data in the field or laboratory, analyzing data, and writing the honors thesis. Additional research credit is taken as NS 4000, NS 4010, NS 4020, or equivalent.
Enrollment Information: Enrollment limited to: students who have been accepted into the DNS Honors Research Program.
Exploratory Studies: (CU-UG)

Last Four Terms Offered: Spring 2025, Fall 2024, Spring 2024, Fall 2023
Schedule of Classes (https://classes.cornell.edu/)

NS 4997 - Experiential Learning in Global and Public Health in Washington, DC (4 Credits)
This course centers on the student's global and public health internship in Washington DC to engage in an applied and holistic way with the global and public health policy world. Students will contribute to some work of their host organization and identify a particular global and public health policy issue they have encountered in their internship. They will analyze this issue in NS 4997 using guidance provided in their ePortfolios and they will do further analysis on it using complementary frameworks and perspectives gained from the policy and politics course - NS 4998.
Prerequisites: NS 1600, NS 2060, NS 2600.
Enrollment Information: Enrollment limited to: GPHS majors.
Last Four Terms Offered: Spring 2025, Fall 2024, Spring 2024, Fall 2023
Learning Outcomes:

- Describe a public health issue through engagement in practice, policy, or research.
- Examine and explain the key characteristics and interests of their host organization, hospital, institution, or research project, and how they relate to public health issue they have described and analyzed.
- Analyze a public health issue integrating academic knowledge and experiential learning.
- Document and explain how the applied experience advanced academic, professional, and personal learning goals.

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NS 4998 - Engaged Learning About Policy Making in Washington D.C. (4 Credits)
Crosslisted with PUBPOL 4060, AMST 4998, ALS 4998, GOVT 4998, CAPS 4998
The core course at Cornell in Washington is an engaged learning class that focuses on understanding and analyzing the professional experience of being in DC. Its primary purpose is to give students a chance to sunthesize the lessons of their internship work by examining and reflecting on that work, investigating the context and structures of the policy and political world with which they are engaging, and learning and practicing the professional forms of writing that the community uses. This process occurs through readings, written assignments, guest speakers, and signature events. An internship is required for the class.
Enrollment Information: Enrollment limited to: students in the Cornell in Washington program.
Distribution Requirements: (OCE-IL), (SBA-AG), (SBA-HE)
Exploratory Studies: (EAAREA)

Last Four Terms Offered: Spring 2025, Fall 2024, Spring 2024, Fall 2023
Learning Outcomes:

- Students will have employed engaged learning techniques through readings, class sessions, reflective journals, guest speakers, and other activities to examine the professional norms and codes of working in the policy world.
- Students will have identified the day-to-day processes of the American policy and political community in DC, its aims and goals, and how it works at the ground level.
- Students will have composed a series of policy memos and done an oral presentation in order to be able to construct a policy analysis and recommendation.
- Graduate students will have assessed the state of knowledge in their particular policy area.

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NS 5150 - Obesity and the Regulation of Body Weight (3 Credits)
Obesity is a complex biological and socioeconomical problem that is multifaceted within each of these broad descriptions. This course provides a comprehensive overview of various influencers and effectors of obesity and body weight regulation. We will examine energy expenditure, genetics, environment, organ physiology, neurological control of hunger, food choice structure, eating behavior, and health disparities. Additionally, this course will examine biomedical and surgical intervention of obesity and associated sequelae. The course is designed to contain lectures with presentation of primary literature and class discussion. We will also have guest lectures to discuss specific topics on obesity and the regulation of body weight!
Prerequisites: Recommended prerequisite: NS 1150 or one semester Intro Biology lecture (BIOMG 1350, BIOG 1440, or equivalent), plus Biochemistry (NS 3200, BIOMG 3300, or equivalent).
Enrollment Information: Enrollment limited to: juniors, seniors, and graduate students during pre-enroll.
Last Four Terms Offered: Spring 2025, Spring 2024, Spring 2023
Learning Outcomes:

- Demonstrate an integrative understanding that adipose tissue is an endocrine organ with multiple locations that regulate many major physiologic and metabolic responses such as appetite, reproduction, glucose and fat metabolism and sensing, and thermogenesis all which control body weight regulation and obesogenic responses.
- Describe and synthesize the relationship between lipid metabolism, lipogenesis, and lipolysis and its effect on body composition and metabolic performance.
- Synthesize factual information to understand and relate the metabolic cross-talk between adipose tissue and other organ crosstalk to regulate physiology vs pathology.
- Create a conceptual framework of how genetics and the environment control weight, eating behavior, and metabolism and describe how taste, brain, and gut sensing control body weight and metabolism.
- Synthesize and create factual framework to devise pharmacological, dietary, psych/soc, health disparities, surgical, and environmental strategies to counteract obesogenic cues.

Schedule of Classes (https://classes.cornell.edu/)

NS 5510 - Nutrition Assessment (3 Credits)
This course provides students with an in-depth overview of current practices in assessment of human nutritional status across the lifespan for the clinic and research. The content is divided into four modules, biomarker, anthropometric and body composition, dietary, and clinical assessment. Students will be introduced to the different assessment methods, practice the evaluation and interpretation of assessment data, and discuss the strengths and weaknesses of the methods. The format includes pre-class preparation, in-class mini-lectures, and in-class small-group application of information in case studies, research study design, and evaluation of scientific papers. Using simulated clinical and research cases, students will demonstrate competency in the evaluation of nutrition assessment methods, interpretation of results, and conduct of specific nutrition assessment methods, including the nutrition-focused physical examination.
Prerequisites: Undergraduate students: NS 1150 or NS 1220, and at least one of the following introductory statistics courses or their equivalents: STSCI 2150, PUBPOL 2100, AEM 2100, BTRY 3010, ILRST 2100, MATH 1710, PSYCH 2500, SOC 3010, or AP Statistics exam (score of 4 or 5). Graduate students: Introductory Nutrition course from another University or NS 6310 and NS 6320 (concurrent enrollment permitted) and introductory statistics.
Enrollment Information: Enrollment limited to: undergraduate seniors and graduate students.
Last Four Terms Offered: Spring 2025
Learning Outcomes:

- Compare the advantages and disadvantages of the nutritional assessment tools used in current practice, including the reliability, validity, feasibility, psychosocial impact (where applicable), and appropriateness for clinical and research settings.
- Select appropriate tools for biomarker, anthropometric, body composition, dietary and clinical assessment of nutritional status across the lifespan in simulated clinical and research scenarios.
- Conduct a nutrition focused physical examination.
- Communicate nutrition assessment information and results in written and verbal forms.
- Critically read and interpret nutrition assessment methods and results sections of scientific literature.

Schedule of Classes (https://classes.cornell.edu/)

NS 5550 - Leadership in Dietetics Practice (2 Credits)
Principles, theories and foundational skills of leadership are explored in the context of evidence-based dietetics practice through seminars, skill-building workshops, case-studies, role-playing scenarios and reflection on the application of leadership to practice. NS 5550 is a required course to fulfill Dietetic Internship competencies, as outlined in the Learning Outcomes, as well as learning outcomes for the Cornell Graduate School and Graduate Field of Nutrition.
Enrollment Information: Enrollment limited to: Cornell Dietetic Interns.
Last Four Terms Offered: Fall 2024, Fall 2023, Fall 2022, Fall 2021
Learning Outcomes:

- (2.3): Demonstrate active participation, teamwork, and contributions in group settings.
- (2.7): Apply change management strategies to achieve desired outcomes.
- (2.8): Demonstrate negotiation skills.
- (5.1): Perform self-assessment that includes awareness in terms of learning and leadership styles and cultural orientation and develop goals for self-improvement.
- (5.2): Identify and articulate one's skills, strengths, knowledge, and experiences relevant to the position desired and career goals.
- (5.4): Advocate for opportunities in professional settings.
- (5.5): Demonstrate the ability to resolve conflict.
- (5.6): Promote team involvement and recognize the skills of each member.
- (5.7): Mentor others.
- Demonstrate ethical behaviors in accordance to the dietetics Professional Code of Ethics. Outcome 11: Identify and apply leadership theories, philosophies, strategies and skills for effective leadership in diverse practice settings. Outcome 12: Apply principles of organization management including strategic planning.

Schedule of Classes (https://classes.cornell.edu/)

NS 5600 - Epidemiology (3 Credits)
This course introduces the principles and methods used in epidemiology research. NS 3600|5600 will use a combination of didactic lectures, classroom discussions, applied projects, and in-depth case studies to explore epidemiologic research, including disease occurrence, measures of association, causal inference in quantitative research, and applications of epidemiologic methods to global and public health research. Epidemiologic principles in the design, conduct, and interpretation of findings from observational and experimental studies will be explored in detail, including strengths and limitations of study designs. The final project of the course will require integration of methodological concepts with applications to develop a scientific question and design an epidemiologic research study to address a threat to public and global health.
Last Four Terms Offered: Spring 2025, Spring 2024, Spring 2023
Learning Outcomes:

- To understand the basic principles and methods used in epidemiology research, including measures of disease frequency, measures of association, and study designs.
- To critically analyze the scientific literature and evaluate evidence from research studies, including interpretation of findings and critical examination of strengths and limitations of different study designs.
- To apply epidemiology principles and methods to develop a scientific question and design an epidemiologic research study or intervention to target a major threat to global and public health.

Schedule of Classes (https://classes.cornell.edu/)

NS 6000 - Special Problems for Graduate Students (1-9 Credits)
Emphasizes independent advanced work. Experience in research laboratories in the Division of Nutritional Sciences may be arranged.
Enrollment Information: Enrollment limited to: graduate students, recommended by their chair and approved by the instructor in charge.
Exploratory Studies: (SAAREA)

Last Four Terms Offered: Spring 2025, Fall 2024, Spring 2024, Fall 2023
Schedule of Classes (https://classes.cornell.edu/)

NS 6140 - Maternal and Child Nutrition and Health (3 Credits)
Advanced course on the role of nutrition in maternal and child health, in preconception, pregnancy, postpartum, and beyond. The course format will be directed readings, case studies, discussions, and selected lectures given by experts in maternal and child nutrition and health.
Prerequisites: NS 6310 and NS 6320.
Enrollment Information: Enrollment limited to: NICHD T32 trainees, masters students, and doctoral students.
Exploratory Studies: (LAAREA)

Last Four Terms Offered: Fall 2021, Fall 2020, Fall 2019, Fall 2018
Learning Outcomes:

- To examine the major threats to maternal and child nutrition and health.
- To evaluate the role of nutrition in the development of health outcomes in maternal and child health, across the lifecycle, from preconception through pregnancy, postpartum, lactation/infant feeding, and beyond.
- To critically analyze evaluate the use of scientific evidence on a specific topic in nutrition and maternal and child health that informs nutritional interventions, policy, and practice.

Schedule of Classes (https://classes.cornell.edu/)

NS 6160 - Maternal and Child Nutrition Seminar (1 Credit)
The Maternal and Child Nutrition training program in the Division of Nutritional Sciences, Cornell University, is the longest-standing training program devoted to maternal and child nutrition in the country. Funded by the National Institutes of Health (NICHD), it brings together faculty across the disciplinary spectrum of nutrition - including molecular nutrition, human nutrition and metabolism, community nutrition, and international nutrition - to advance the nutrition and health of mothers and children.
Enrollment Information: Enrollment limited to: NICHD T32 trainees, masters students, and doctoral students. Senior undergraduate students with advanced coursework in nutrition must receive instructor consent to enroll.
Last Four Terms Offered: Spring 2025
Learning Outcomes:

- Examine the major threats to maternal and child nutrition and health.
- Evaluate the role of nutrition in the development of health outcomes in maternal and child health, across the lifecycle, from preconception through pregnancy, postpartum, lactation/infant feeding, and beyond.
- Critically analyze evaluate the use of scientific evidence on a specific topic in nutrition and maternal and child health that informsnutritional interventions, policy, and practice.

Schedule of Classes (https://classes.cornell.edu/)

NS 6190 - Division of Nutritional Sciences Seminar (1 Credit)
Crosslisted with ANSC 6190
Lectures on current research in nutrition.
Enrollment Information: Enrollment limited to: graduate level students. Others may request a space with permission of instructor.
Last Four Terms Offered: Spring 2025, Fall 2024, Spring 2024, Fall 2023
Schedule of Classes (https://classes.cornell.edu/)

NS 6200 - Translational Research and Evidence-Based Policy and Practice in Nutrition (3 Credits)
This team taught graduate nutrition course addresses the frameworks used in evidenced-based approaches and decision making to set nutrition policy and practice guidelines where emerging and conflicting scientific data are commonplace. The course format is 50% lecture-based with content lectures given by experts in the subject area, and 50% discussion based, with interactive discussions and case-study discussions facilitated by practice and policy guest experts using videoconferencing.
Enrollment Information: Enrollment limited to: graduate students.
Last Four Terms Offered: Spring 2025, Spring 2023, Spring 2021, Spring 2019
Learning Outcomes:

- Relate and explain how available scientific information is used to develop research that translates basic to applied science, applied science to mechanistic inquiry, evidence-based clinical care, expert committee guidance, and public health policies.
- Evaluate, as a result of this course, translational research approaches and the use of scientific evidence to inform policy making at the national and international levels.

Schedule of Classes (https://classes.cornell.edu/)

NS 6210 - Precision Nutrition and Health (3 Credits)
This course will introduce students to the principles of precision nutrition and its goal to optimize human nutrition and improve human health outcomes throughout the lifespan. Topics to be covered include identification of genetic/epigenetic signatures that alter nutrient requirements, biomarker discovery and application, and the effects of environmental exposures (microbiome, exercise, etc) and/or disease on nutrient needs. The course will cover both molecular and epidemiological aspects of precision nutrition and will highlight advantages and limitations of current precision nutrition approaches in clinical practice. Undergraduate students enroll in NS 4210, and graduate students enroll in NS 6210.
Prerequisites: NS 1150, NS 1220, or equivalent. NS 3200, BIOMG 3300, BIOMG 3310, BIOMG 3330, or BIOMG 3350, or equivalent.
Last Four Terms Offered: Spring 2025
Learning Outcomes:

- Articulate/describe the importance/demand for more targeted precision nutrition approaches.
- Identify technologies and approaches that support/drive the implementation of precision nutrition.
- Critically evaluate scientific literature, especially as related to precision nutrition.
- Describe benefits and limitations of precision nutrition.
- Summarize and present primary literature.

Schedule of Classes (https://classes.cornell.edu/)

NS 6250 - Community Nutrition in Action (3 Credits)
Provides students enrolled as dietetic interns with supervised, in-depth experiences in a community nutrition program and fosters the integration of research, theory, and practice. Through placements in community programs, students gain experience in program administration and in assessing, designing, implementing, and evaluating food and nutrition programs for targeted populations through public and private organizations. In weekly seminars (and other seminars and observations as arranged) students integrate theory and practice, reflect upon their placement experience, learn about community nutrition research, and explore the many issues facing community food and nutrition practitioners.
Enrollment Information: Enrollment limited to: Dietetic Interns.
Exploratory Studies: (CU-CEL)

Last Four Terms Offered: Fall 2024, Fall 2023, Fall 2022, Fall 2021
Learning Outcomes:

- Identify indicators and measure outcomes appropriate for food and nutrition services and programs. CRDN 1.1: Select indicators of program quality and/or customer service and measure achievement of objectives. CRDN 1.3: Justify programs, products, services, and care using appropriate evidence or data.
- Apply evidence-based guidelines; conduct systematic reviews and scientific literature in the nutrition care process model and other areas of dietetics practice. CRDN 1.3: Justify programs, products, services, and care using appropriate evidence or data.
- Develop nutrition care plan for population groups across the lifespan, i.e., infants through geriatric and a diversity of people, cultures, and religions.CRDN 3.1: Perform the Nutrition Care Process and use standardized nutrition language for individuals, groups and populations of differing ages and health status, in a variety of settings.
- Develop and demonstrate effective communications skills using oral, print, visual, electronic, and mass media for community-based food and nutrition. CRDN 3.7: Demonstrate effective communication and documentation skills for clinical and client services in a variety of formats and settings, which include telehealth and other information technologies and digital media
- Relate organizational processes and tools applied in human resource functions of community nutrition agencies. CRDN 4.1: Participate in management functions of human resources (such as training and scheduling). CRDN 4.8: Develop a plan to provide or develop a product, program or service that includes a budget, staffing needs, equipment and, supplies.
- Apply systems theory and a process approach in organizational decision-making, planning, and goal setting. CRDN 1.2: Evaluate research and apply evidence-based guidelines, systematic reviews, and scientific literature in nutrition and dietetics practice
- Differentiate between public and private policies; processes involved in development and impact on public health, the food supply, food security, and community food systems. CRDN 2.1: Practice in compliance with current federal regulations and state statutes and rules, as applicable, and in accordance with accreditation standards and the Scope of Practice for the Registered Dietitian Nutritionist, Standards of Practice, Standards of Professional Performance, and Code of Ethics for the Profession of Nutrition and Dietetics.
- Design and supervise quality improvement, including systems and customer satisfaction, for community dietetics practice. CRDN 1.3: Justify programs, products, services, and care using appropriate evidence or data. CRDN 2.7: Apply change management strategies to achieve desired outcomes.
- Use current informatics technology to develop, store, retrieve and disseminate information and data. CRDN 4.4: Apply current informatics technology to develop, store, retrieve, and disseminate

NS 6300 - Proteins, Transcripts, and Metabolism: Big Data in Molecular Nutrition (3 Credits)
This course will introduce the concepts of big data analysis in the context of transcriptomics and proteomics with a focus on metabolic regulatory networks. Programming in Python will be used, but no prior experience is necessary. Programming will focus on methods to parse large data sets, perform informatics analyses, and build machine learning models. Prior courses in biology and biochemistry are prerequisites. Students must own or have personal access with administrative privileges to a computer with Windows 10 or MacOS 10.14 (or more recent).
Prerequisites: at least one of the following courses: BIOMG 1350, BIOG 1440, NS 3200, BIOMG 3300, STSCI 2150, PUBPOL 2100, or AEM 2100.
Enrollment Information: Enrollment limited to: undergraduate seniors, juniors and graduate students.
Last Four Terms Offered: Spring 2025, Spring 2024
Schedule of Classes (https://classes.cornell.edu/)

NS 6310 - Micronutrients: Function, Homeostasis, and Assessment (2-4 Credits)
This course further expands on the material covered in introductory courses in nutritional biochemistry by providing a broad perspective of the function, homeostasis, and metabolism of the principal dietary micronutrients.
Enrollment Information: Enrollment limited to: graduate students. Undergraduates need permission from the instructor to enroll.
Last Four Terms Offered: Fall 2024, Fall 2023, Fall 2022, Fall 2021
Learning Outcomes:

- Understand the function and metabolism of selected vitamins and minerals.
- Describe aspects of homeostatic regulation and specific mechanisms of physiological control.
- Describe the scientific basis of micronutrient requirements and recommendations.
- Explain, evaluate, and effectively discuss claims, theories, and assumptions of micronutrients as presented in primary literature.
- Effectively communicate scientific arguments related to micronutrients, both in oral and written forms.

Schedule of Classes (https://classes.cornell.edu/)

NS 6320 - Regulation of Macronutrient Metabolism (4 Credits)
Course provides a comprehensive overview of macronutrient metabolism with an emphasis on issues relevant to human nutrition. Topics include regulation of macronutrient utilization by various tissues in response to food intake, energy stores, and energy expenditure; cellular pathways for integration of nutrient, growth, and stress signals; biological regulation of food intake and energy expenditure; the regulation of utilization of macronutrients for growth; dietary reference intakes for macronutrients; specialized functions of essential amino acids and essential fatty acids; lipoprotein and cholesterol metabolism; and the regulation, or dysregulation, of macronutrient utilization in various disease/physiological states.
Prerequisites: NS 3310, or permission of instructor.
Last Four Terms Offered: Spring 2025, Spring 2024, Spring 2023, Spring 2022
Learning Outcomes:

- Demonstrate an integrative understanding of macronutrient metabolism and how it is regulated in humans.
- Describe roles of macronutrients in providing fuels and synthetic substrates for net tissue deposition.
- Synthesize factual knowledge into an understanding of how macronutrient metabolism changes in response to food intake versus food deprivation and the major ways in which this is regulated in key tissues.
- Synthesize factual knowledge into a conceptual framework for the functions of macronutrient metabolism and its regulation in normal physiological processes (developmental programming, growth, immune function, regulation of food intake and energy expenditure, etc.
- Synthesize factual knowledge into a conceptual framework for understanding how macronutrient metabolism and its regulation (dysregulation), including tissue-specific roles, may contribute to disease or poorer health outcomes (e.g., obesity, metabolic disease, premature aging, malnutrition, impaired immune function).
- Describe functions of essential macronutrients (e.g., n-3 and n-6 fatty acids, essential amino acids).
- Describe metabolism of lipoprotein and cholesterol metabolism including their normal roles in macronutrient metabolism and disease processes.
- Use DRIs for macronutrients and energy and food composition data to calculate desirable energy and macronutrient intakes.

Schedule of Classes (https://classes.cornell.edu/)

NS 6330 - Nutrition and the Brain (3 Credits)
Our brain regulates what and how we eat, while our dietary choices, in turn, influence our cognitive health. This course examines the relationship between nutrition and brain function, integrating insights from neuroscience, physiology, metabolism, and behavioral research. This course will provide a comprehensive overview of how nutrients affect brain health and how the brain influences eating behaviors and metabolism. The course introduces key concepts and modern techniques in the field of nutritional neuroscience. Through the analysis of primary literature, students will explore neural mechanisms underlying feeding behavior, brain-body communication, and the impact of nutrition on cognitive health. The course combines lectures providing foundational knowledge with paper discussions delving into key discoveries and research findings.
Prerequisites: Introductory Biology courses (BIOG 1440, BIOMG 3320 or equivalent) and Introductory Nutrition courses (NS1150 or equivalent).
Enrollment Information: Open to: graduate students.
Learning Outcomes:

- Discuss general methods used in nutritional neuroscience research.
- Describe nutritional effects on brain function and brain-related disorders.
- Discuss neural control of food intake and metabolism.
- Identify and interpret primary scientific literature in the field of nutritional neuroscience.
- Apply effective communication strategies in written, oral, and visual formats for diverse purposes and audiences.
- Implement nutritional neuroscience knowledge in science communications and research design (grad students).

Schedule of Classes (https://classes.cornell.edu/)

NS 6350 - Introduction to Community Nutrition Research for Dietetic Interns (3 Credits)
Introduces the paradigms, concepts, methods, and issues involved in community nutrition research. Students design and conduct individual research projects to inform community nutrition programs. Lectures, readings, and class discussion support students as they conduct their research activities.
Enrollment Information: Enrollment limited to: Dietetic Interns.
Last Four Terms Offered: Fall 2024, Fall 2023, Fall 2022, Fall 2021
Learning Outcomes:

- Students will have an understanding of the total research process as it applies to community nutrition programs.
- Students will have an understanding of conceptual and operational aspects of research related to community nutrition.
- Students will have selected research skills.

Schedule of Classes (https://classes.cornell.edu/)

NS 6410 - Nutrition and Disease (4 Credits)
Schedule of Classes (https://classes.cornell.edu/)

NS 6455 - Toward a Sustainable Global Food System: Food Policy for Developing Countries (3 Credits)
Crosslisted with GDEV 6455, AEM 6455
Comprehensive presentation and discussion of policy options for a sustainable global food system, with focus on developing countries. Topics include: economic policy related to nutrition, health, consumption, production, natural resource management, trade, markets, gender roles, armed conflict, and ethics. A social entrepreneurship approach based on case studies and active participation by students will be used.
Distribution Requirements: (D-HE, KCM-HE, SBA-HE)
Exploratory Studies: (CU-ITL, CU-SBY)

Last Four Terms Offered: Fall 2024, Fall 2023, Fall 2022, Fall 2021
Learning Outcomes:

- Ability to analyze a specific food and nutrition policy problem, identify the related policy issues, suggest one or more policy options to solve the problem, and estimate how each option would affect relevant stakeholder groups and their expected response.
- Ability to undertake the above with limited information and within a short time frame.
- Motivation to engage in the design and implementation of innovative solutions to existing and expected future problems related to the global, national and local food systems, i.e. to be a social or policy entrepreneur within or outside the public sector.
- Graduate students will be required to lead/mentor their case study group of undergraduate students and be provided with an opportunity to identify an area of future graduate research for his/her own thesis.

Schedule of Classes (https://classes.cornell.edu/)

NS 6480 - Economics of Food and Malnutrition (3 Credits)
Crosslisted with AEM 6485
This course focused on the economics of food and malnutrition from the perspective of individuals and households; that is, a micro-economic approach. Topics include characteristics and constraints associated with food production in both developed and developing countries; the determinants of household food security; the social and economic causes and consequences of undernutrition; the social and economic causes and consequences of obesity; intervention design to reduce food insecurity, undernutrition and obesity.
Prerequisites: ECON 1110, AEM 2100, or equivalent, and 9 additional credits in economics, applied economics, or nutrition. Recommended prerequisite: ECON 3140, NS 3600, or equivalents.
Enrollment Information: Enrollment limited to: graduate students.
Distribution Requirements: (SBA-HE)
Exploratory Studies: (CU-ITL, CU-SBY)

Last Four Terms Offered: Fall 2024, Fall 2023, Fall 2022, Fall 2021
Learning Outcomes:

- Ability to analyze problems of food security and nutrition using perspectives and tools drawn from both economics and nutrition; critically assess studies of the determinants of these; understand the strengths and limitations of interventions designed to ameliorate these.
- Integrate knowledge from the biological and social sciences to address nutrition problems facing individuals, societies, and governments.
- Ability to understand and analyze quantitative data on food security and nutrition.
- Ability to access and critically evaluate scientific information from the primary research literature to investigate the causal effects of nutrition.
- Motivation to engage in debates surrounding the design and implementation of innovative solutions to current existing and future problems related to food, hunger, and nutrition.

Schedule of Classes (https://classes.cornell.edu/)

NS 6500 - Public Health Nutrition (3 Credits)
Public health nutrition is the major professional career track for nutritionists outside of dietetics. It deals with efforts to improve the diets and nutritional status of whole populations by working at the community, state, and national levels. This course helps to prepare students to work in public health nutrition by describing the methods used in the assessment of nutrition problems, the development of nutrition-related policies, and the delivery of health, nutrition, and food assistance programs.
Prerequisites: introductory nutrition course and an introductory social science course.
Enrollment Information: Enrollment limited to: graduate students.
Last Four Terms Offered: Spring 2024, Spring 2023
Learning Outcomes:

- To learn the core functions of government in public health and understand how they are applied to nutrition. Students will be able to: (1) describe the functions of government in public health and articulate how they are related to their personal profession goals, (2) describe the evolution of public health and public health nutrition policies in the US, (3) understand best practices and key considerations in working with diverse audiences, and (4) apply communication strategies.
- To understand how health problems related to nutrition are assessed at the population level. Students will be able to: (1) describe how nutrition problems are assessed at the individual and population level, (2) describe how nutritional status is monitored in the American population, and (3) discuss the concepts used to link food production to health, including relevant economic and social concerns.
- To identify the necessary monitoring and evaluation measures to critique and improve food and nutrition-related programs and interventions. Students will be able to: (1) discuss relevant techniques to monitor nutrition and health status outcomes, (2) evaluate and discuss nutrition and health interventions and programs, and (3) evaluate and discuss community-based programs designed to improve public health and the food system.
- To be able to analyze current nutrition problems and policy instruments and develop and critique policy alternatives. Students will be able to: (1) identify gaps of nutrition policies in the US, (2) develop alternative policy options, and (3) compare policy options using relevant analytic approaches.
- To understand the context for food assistance programs in the United States, how they operate and their strengths and weaknesses. For each program covered in class, students will be able to: (1) describe the program (including who is eligible and what benefits are provided) and how its design relates to its rationale and goals, (2) discuss its positive aspects, (3) critique its negative aspects, and (4) name the agency responsible for it.

Schedule of Classes (https://classes.cornell.edu/)

NS 6510 - Nutrition and Health Equity (3 Credits)
This course introduces key structural and social determinants (i.e., sociopolitical context, socioeconomic position, access to healthcare, living and working conditions, food availability, among others) shaping nutrition and health inequities among historically marginalized populations in U.S. society. It is designed to offer advanced undergraduate students and graduate students directed readings and tailored activities to meet the learning objectives. Undergraduates should enroll in NS 4510, and graduate students should enroll in NS 6510.
Last Four Terms Offered: Spring 2025
Learning Outcomes:

- Describe and understand the context and factors shaping nutrition and health inequities for U.S. minoritized groups.
- Constructively critique scientific literature on nutrition and health inequities affecting U.S. minoritized groups.
- Identify policy areas and interventions to achieve health equity for all in U.S. society.
- Apply knowledge acquired in written and oral course assessments.

Schedule of Classes (https://classes.cornell.edu/)

NS 6520 - The Foundations of Epidemiology (3 Credits)
Last Four Terms Offered: Spring 2022, Spring 2021, Spring 2020, Spring 2019
Schedule of Classes (https://classes.cornell.edu/)

NS 6580 - Advanced Epidemiology: Theory and Practice (3 Credits)
This course will use a combination of lectures and discussions with 'hands-on' laboratory sessions as a method to learn about nutritional epidemiology. Students should be able to apply the methods learned in this class and gain proficiency in designing, conducting, and analyzing nutritional epidemiology studies. Broadly, the topics that will be covered would guide the design of research projects, and include data management and data analysis as it pertains to nutritional data, errors in nutrition assessment, biomarkers of nutritional status or outcome, methods of energy adjustment, anthropometry, and body composition, CDC and WHO growth charts, propensity scores, genetics and gene-environment interactions in nutritional epidemiology, measurement and analysis of physical activity, translating conceptual models into statistical models and dealing with confounders, mediators, endogenous variables, and multilevel models, working with large samples, and longitudinal analysis for analyzing the relationship between diet and disease.Course will build:Cognitive skills - skills for critical thinking and quantitative literacy; visual literacy and analysis; capacity to create knowledge; creative problem solving; reflection on professional practice.Interpersonal skills - leadership and innovation; teamwork and cooperation; oral and written communication.Interdependence and social responsibility - sense of community, interdependence, and service; ethics; appreciation of diversity and how concepts of human difference are created; ability to manage diverse and changing social, technological and material environment.
Prerequisites: BTRY 4110 or equivalent, NS 5600 or equivalent, BTRY 6010, BTRY 6020.
Enrollment Information: Enrollment limited to: graduate students who have completed all requirements for obtaining a minor in Epidemiology.
Last Four Terms Offered: Fall 2022, Fall 2020, Fall 2018, Fall 2016
Learning Outcomes:

- Critically evaluate the nutrition epidemiology literature.
- Describe and compare common methods of dietary assessment, and understand the nature of nutrient variation in the diet.
- Understand the components of study design in nutrition epidemiology studies, particularly data analysis, and interpretation.
- Analyze and interpret gene-environment interactions.
- Select appropriate physical activity indicators and describe common methods of anthropometric assessment.
- Independently construct a nutritional epidemiology question and conduct data analysis to address that question in a dataset (either open-source such as NHANES or a dataset related to their theses).

Schedule of Classes (https://classes.cornell.edu/)

NS 6600 - Epidemiology (3 Credits)
Last Four Terms Offered: Spring 2022, Fall 2019, Spring 2019, Fall 2018
Schedule of Classes (https://classes.cornell.edu/)

NS 6850 - Microeconomics of Development: Applications to Health, Nutrition and Education (3 Credits)
Crosslisted with ECON 7711
Advanced seminar explores recent empirical research and evaluation literature on issues of health, nutrition, education and intrahousehold decision-making in developing countries.
Prerequisites: Intermediate Microeconomics, Intermediate Statistics or Econometrics (through multiple regression and limited dependent variable models), or permission of instructor.
Exploratory Studies: (EAAREA)

Last Four Terms Offered: Fall 2021, Fall 2019, Fall 2017, Fall 2015
Learning Outcomes:

- Explore are health, nutrition, education, and intra-household decision-making, with an emphasis on models of behavior of individuals and households, as well as the evaluation of programs.
- Understand the underlying theory and econometric techniques of the literature on the economics of health, nutrition and education, including issues such as model identification, functional form, and estimation techniques to control for endogeneity and heterogeneity.
- Understand the merits and limitations of randomized control trials (experiments) and non-experimental and econometric methods used to evaluate social interventions as well as understand behavior.

Schedule of Classes (https://classes.cornell.edu/)

NS 6980 - International Nutrition Seminar (1 Credit)
Discussions and presentations by Cornell faculty, graduate students, and invited outside speakers representing a range of multisectoral perspectives on global nutrition. Topics and themes focus on research, policy, and programs related to nutrition in low- and middle-income countries.
Exploratory Studies: (LAAREA)

Last Four Terms Offered: Spring 2025, Fall 2024, Spring 2024, Fall 2023
Schedule of Classes (https://classes.cornell.edu/)

NS 7030 - Seminar in Nutritional Sciences (1 Credit)
This graduate nutrition course addresses the analytic and professional skills required to critique original research publications and make public presentations to a broad audience. Students critically analyze and interpret findings from research articles published in a wide variety of journals related to the field of nutritional sciences. Students present these critiques to a broad multi-disciplinary audience, and participate in the seminars presented by other students.
Enrollment Information: Enrollment limited to: graduate students.
Last Four Terms Offered: Spring 2025, Fall 2024, Spring 2024, Fall 2023
Schedule of Classes (https://classes.cornell.edu/)

NS 7040 - Grant Writing (2 Credits)
Interactive course that addresses the knowledge, approach, and professional skills (conceptual, technical, and writing) required to create a successful grant proposal and initiate a career in research. Format is focused around the development, execution, and evaluation of NIH-style grant proposals. Lectures will focus on the development of hypotheses, specific aims, and long term goals, as well as research design and methodology. Issues of human subject and animal experimentation, ethics, and research collaborators are also covered. Students are expected to develop a full-length grant proposal in consultation with their research advisor. Basic guidelines and approach to proposal evaluation and scoring are covered. Course concludes with a mock study section where all proposals are reviewed by the students.
Prerequisites: NS 7030.
Enrollment Information: Enrollment limited to: graduate students in DNS.
Last Four Terms Offered: Spring 2025, Fall 2023, Fall 2022, Fall 2021
Learning Outcomes:

- To develop skills necessary to write successful research funding proposals and to review and evaluate grant proposals.

Schedule of Classes (https://classes.cornell.edu/)

NS 7940 - Presidential Life Scholars Seminar (0.5 Credits)
Last Four Terms Offered: Fall 2023, Fall 2022, Fall 2021, Fall 2020
Schedule of Classes (https://classes.cornell.edu/)

NS 8990 - Master's Thesis and Research (1-15 Credits)
A course for Division of Nutritional Sciences (DNS) Graduate Students doing research related to completing their Master's degree.
Enrollment Information: Enrollment limited to: graduate students completing their masters research.
Last Four Terms Offered: Summer 2025, Spring 2025, Fall 2024, Spring 2024
Schedule of Classes (https://classes.cornell.edu/)

NS 9990 - Doctoral Thesis and Research (1-15 Credits)
A course for Division of Nutritional Sciences (DNS) Graduate Students doing research related to completing their Doctoral degree.
Enrollment Information: Enrollment limited to: graduate students completing their Doctoral research.
Last Four Terms Offered: Spring 2025, Fall 2024, Spring 2024, Fall 2023
Schedule of Classes (https://classes.cornell.edu/)