NUTRITION (NUTR)

NUTR 501: Regulation of Nutrient Metabolism I

4 Credits

Integration of nutritional, biomedical, biochemical, physiological, and hormonal processes involved in carbohydrate, lipid, and protein metabolism.

Prerequisite: NUTR 445

NUTR 502: Regulation of Nutrient Metabolism II

3 Credits

Complementary to NUTR 501 with an emphasis on metabolic roles of vitamin and mineral elements.

Prerequisite: NUTR 446

NUTR 503: Nutritional Epidemiology

3 Credits

This course will provide the foundation for understanding Nutritional Epidemiology with a particular focus on theroretical and practical consideration in the design of studies and analysis of dietary data. The material has a strong methodological emphasis, and students are expected to gain a critical understanding of the design, conduct, analysis and interpretation of nutritional epidemiologic studies. The relationship between diet and health outcomes will be thoroughly discussed.

Prerequisites: PHS 554
Cross-listed with: PHS 503

NUTR 504: Behavioral Nutrition

3 Credits

The world is experiencing a nutrition transition as an increasing number of countries rise from poverty. Globally, chronic disease rates continue to increase while rates of undernutrition, including micronutrient deficiencies, stunting, and wasting, remain persistently high. To attenuate all forms of malnutrition across contexts, we need to understand how and why people make choices about the foods they eat so that effective, theory-based interventions can be designed to improve diet and reduce malnutrition risk. This course in behavioral nutrition investigates the bidirectional relationship between eating behaviors and nutrition, with particular emphasis on developing theoretical foundations for how research is conducted and disseminated in this discipline. This course will build an awareness of the many social, environmental, and individual differences that influence the brain and related eating behaviors. At the end of this course, students will be able to recognize and identify the foundational principles of behavioral nutrition and apply these to the design of scientific experiments. They will also be able to apply the principles learned in this course to the design of interventions and programs to change nutrition behaviors.

Recommended Preparation: Prior undergraduate coursework in nutrition, human development, psychology, neuroscience, biobehavioral health, public health, or basic sciences. Demonstrated ability to critically synthesize information at the graduate level.

NUTR 506: Ruminology

3 Credits

Physiological, biochemical, and microbiological activities occurring within the rumen and the relation of rumen function to animal response.

Prerequisite: at least one course in each of the following areas: animal nutrition, physiology, microbiology, and biochemistry
Cross-listed with: ANSC 506

NUTR 508: Critical Readings in Molecular Nutrition

1.5 Credits/Maximum of 6

Understanding of approaches, methods and current concepts in molecular biology and nutrition through critical readings of current primary literature.

Concurrent: NUTR 445or NUTR 446
Cross-Listed

NUTR 511: Maternal and Child Nutrition

3 Credits

Role of nutrition in female fertility, during pregnancy and lactation, as well as during infancy and early childhood. NUTR 511 Maternal and Child Nutrition (3) This course is designed to provide an understanding of the nutritional recommendations during preconception, pregnancy, lactation, early infancy, and childhood. In this course, students will acquire a broad understanding of the role and regulation of nutrient metabolism and effects of genetic variation on nutritional needs during these unique physiological periods. These concepts will be discussed from molecular, clinical and applied perspectives that will guide further graduate-level inquiry. Lectures and readings will explicate 1) how nutrient metabolism affects pregnancy outcomes, lactation sufficiency and infant development; 2) how nutrition affects common early childhood conditions, such as obesity, allergy and autism; 3) how fetal/postnatal nutrition affects long-term health; and 4) the role of genetics in nutritional requirements during these times in the lifecycle. Students will gain an appreciation for the contribution of nutrition during the fetal/postnatal periods on long-term health and the incidence of disease through understanding the role of nutrients in a translational framework.

NUTR 513: Atherosclerosis and Nutrition

2 Credits

The etiology and pathophysiology of atherosclerotic cardiovascular disease, with emphasis on nutritionally-related aspects.

Prerequisite: NUTR 452

NUTR 515: Mathematical Modeling in Nutrition

2 Credits

Study of the theory and application of mathematical modeling of the tracer and tracee kinetics of nutrients and their metabolites in animals and man.

Prerequisite: MATH 140 or MATH 141

NUTR 520: Readings in Nutrition

1 Credits/Maximum of 2

Readings and reports of selected topics in nutrition.

NUTR 532: Childhood Obesity

3 Credits

This course addresses how genetic predispositions, behavioral and environmental factors affect children's obesity risk and examines strategies for obesity prevention. HDFS (NUTR) 532 Childhood Obesity (3) This course will examine the epidemic of obesity, particularly childhood obesity, and how various behavioral and environmental factors place children at risk of becoming overweight. Sources of influence that will be examined include: children's nutrition and physical activity behaviors, the family environment, the school environment and community characteristics. Media, social policy and economic factors will also be addressed. In addition, the health and psychosocial consequences of obesity, ethnic and socioeconomic disparities in the prevalence and predictors of obesity among children and adolescents will be addressed. At its conclusion, this course will examine policy initiatives and obesity prevention programs.

Cross-listed with: HDFS 532

NUTR 533: Adult Obesity

3 Credits

Important current and emerging topics in obesity research relevant to government policy and general public education; emphasis on adult obesity. HD FS (NUTR) 533 Adult Obesity (3) This course will examine the epidemic of obesity, particularly adult obesity. Obesity: Causes, Consequences and Treatment will provide a forum to introduce and discuss current and emerging topics in adult obesity research, with emphasis on policy, prevention and treatment. Focus will be given to determinants of adult obesity and translation into government policy and efforts to educate the general public on the most effective strategies for body weight regulation, obesity prevention and treatment. Sources of influence that will be examined include: environment, genetics, neural, peripheral and sensory mechanisms, food properties and food supply, and therapies and treatment of adult obesity.

Cross-listed with: HDFS 533

NUTR 534: Readings in Ingestive Behavior

1 Credits/Maximum of 6

Students lead discussions of original research in the field of ingestive behavior; focus on food intake in particular. FDSC 534 / NUTR 534 Readings in Ingestive Behavior (1 per semester/maximum of 6) The class provides a forum for students to learn to lead a discussion focused on original research in the field of ingestive behavior. In addition, it provides the opportunity for students to become familiar with the broad range of topics relevant to this field of research. While the primary focus is on the consumption of food, other relevant topics (obesity, eating disorders, fluid intake) also are included. Research topics include both basic and applied areas.

Cross-listed with: FDSC 534

NUTR 540: Research Methods

3 Credits/Maximum of 999

Review of different studies that utilize various nutrition research designs and data analyses. This course will provide information on how to evaluate the scientific literature and will promote the development of skills to enable students to identify the strengths and limitations of different types of experimental approaches (epidemiologic, etc.), individual studies, and a body of literature on a specific nutrition-related topic. The importance of generating hypotheses and testing them will be emphasized. The Bradford Hill criteria for evaluating a body of literature and making causal inferences will be utilized. In addition, development and use of the Evidence Analysis Library for making nutrition policy decisions will be discussed. The course will focus on major contemporary nutrition topics undergoing scientific inquiry. The review of a body of literature, as well as a single study in a practice setting will take place throughout the course. The knowledge gained in reviewing and critiquing the scientific literature will be applied to the preparation of a proposal for students' Capstone Project.

Prerequisite: NUTR 850, STAT 500

NUTR 551: Seminar in Nutrition

1-6 Credits/Maximum of 6

Selected topics and recent advances in nutrition.

NUTR 583: Nutritional Epidemiology

3 Credits

Epidemiological principles and methodology to study nutritional determinants of disease.

Prerequisite: NUTR 445 , NUTR 446 and 6 credits of statistics or concurrent

NUTR 590: Colloquium

1-3 Credits/Maximum of 3

Continuing seminars which consist of a series of individual lectures by faculty, students, or outside speakers.

NUTR 595: **SPECIAL TOPICS**

1-6 Credits

NUTR 595A: Application of Community Nutrition -- Internship

3 Credits

Application and integration of community nutrition theories in a practicum environment under the supervision of preceptors in community agencies.

Prerequisite: selection into the Dietetic Internship Program

NUTR 595B: Application of Food Service Management -- Internship

3 Credits

Application and integration of food service management principles and motivation theories in a practicum environment under the supervision of preceptor.

NUTR 595C: Dietetic Enrichment Experience - Dietetic Internship

1 Credits

The enrichment experience is designed for interns to plan and implement a rotation of interest in the nutrition field.

Prerequisite: NUTR 595A , NUTR 595B , NUTR 595D , or NUTR 595E

NUTR 595D: Application Clinical Nutrition -- Internship

6 Credits

Application and integration of clinical nutrition theories in a practicum environment under the supervision of preceptor who is a registered dietitian.

NUTR 595E: Introduction to Nutrition Research -- Internship

1 Credits

Introduction of nutrition research to assist in the understanding of planning and conducting research studies in a variety of nutrition research laboratories.

NUTR 595F: Professional Portfolio Internship

1 Credits

Designing and completing a professional portfolio to assist in the employment process in the field of dietetics.

NUTR 596: Individual Studies

1-9 Credits/Maximum of 9

Creative projects, including nonthesis research, which are supervised on an individual basis and which fall outside the scope of formal courses.

NUTR 597: Special Topics

1-9 Credits/Maximum of 9

Formal courses given on a topical or special interest subject which may be offered infrequently; several different topics may be taught in one year or term.

NUTR 600: Thesis Research

1-15 Credits/Maximum of 999

No description.

NUTR 601: Ph.D. Dissertation Full-Time

0 Credits/Maximum of 999

No description.

NUTR 602: Supervised Experience in College Teaching

1-3 Credits/Maximum of 6

Provides an opportunity for a supervised and graded experience for graduate students in teaching undergraduate courses in nutrition.

NUTR 610: Thesis Research Off Campus

1-15 Credits/Maximum of 999

No description.

NUTR 611: Ph.D. Dissertation Part-Time

0 Credits/Maximum of 999

No description.

NUTR 800: Food Systems and Organization Management

3 Credits

This course provides an opportunity to acquire an in-depth knowledge of food systems management and develop the skills necessary to guide practice in the management and leadership of food and nutrition service operations. Students will develop the skills to apply principles of organization management to achieve operational goals and manage financial, human, material, and physical resources in the area of food service and clinical management care. Skills that are emphasized include: collaboration, critical thinking, effective communication, professional conduct, decision-making, planning, time management, and training. Management and leadership are key components of quality food and nutrition services and effective practice in the field of nutrition and dietetics.

RECOMMENDED PREPARATIONS: Admission to the online Integrated Studies track of the Master of Professional Studies in Nutritional Sciences or departmental approval.

NUTR 801: Leadership in the Nutrition Profession

3 Credits

This course provides an opportunity for students to become proficient in the skills essential for effective leadership within the nutrition field. We will utilize evidence-based tools designed for self-assessment of leadership traits and strengths. Students will practice and develop competency in the skills of negotiation, collaboration and persuasion, intercultural communication and motivation, visioning, and ethical decision-making. The importance of work-life balance and personal boundaries will be examined in the context of today's work environment.

NUTR 805: Advanced Nutrient Metabolism

3 Credits

This course provides the student with both a review of the fundamentals of nutrient metabolism but also more advanced topics in the biochemistry, physiology, metabolism, and regulation of nutrients important in health and disease. At this advanced level, students develop an understanding of the integration and interdependency of many of these metabolic processes. There will be an initial review of cellular structure and function and the basics of organ systems, followed by the physiology and microbiology of the gastrointestinal (GI) tract related to nutrient processing, including the impact of dietary fibers on GI function. For each nutrient, the following topics will be covered: food sources and/or dietary considerations; chemical structure and characteristics; and regulation of digestion, absorption, and excretion. Water, macronutrient (carbohydrate, protein, and lipids), and micronutrient (vitamins and minerals) metabolism, function, and regulation will be presented. For some select nutrients of public health concern, the metabolic mechanisms of deficiency and/or toxicity will be discussed.

Metabolic integration relevant to nutritional needs and biomedical applications will be highlighted in this course. Students will apply their knowledge to current biomedical situations relevant to nutrition and health professionals. This course prepares students for the advanced courses in assessment and clinical nutrition.

NUTR 810: Nutritional Assessment and Diagnosis

3 Credits

Evaluation of assessment methods and interpretation of results to assess and diagnose nutritional status of individuals and groups. This course will offer a critical analysis of assessment methods used in clinical, community, and home-based settings to diagnose malnutrition and other nutrition-related problems. Students will become proficient at identifying appropriate current techniques and technologies for collecting assessment data, interpreting the results of the collected data, and diagnosing nutrition problems for specific populations. Specific skills such as nutrition-focused physical examination, identifying and applying appropriate assessment data collection methods, interpreting laboratory values and genetic tests, etc., will be integrated by the student through hands-on experience and case study development. The course focus will be on advanced skill development, critical analysis of assessment methods and interpretation of the data, and communicating the findings to health care professionals and patients/clients in a variety of workplace settings.

NUTR 820: Advanced Clinical Nutrition

3 Credits

Advanced study of acute and chronic illnesses and conditions and how these events influence the nutritional needs of patients. This class provides an opportunity for students to become proficient in the skills essential to advanced clinical nutrition practice. We will examine the metabolic demands of acute and chronic illness and conditions and how these influence the nutritional needs of patients in various disease states. Interrelationships of nutrition with biochemical, physiological, and anatomical changes associated with acute illness or injury, chronic disease, terminal illness, surgery, and trauma will be covered. Students will utilize an evidence-based approach to assessing nutrient requirements and determine best methods of nutrient delivery in various disease states. The ultimate goal of the course is to develop the skills necessary for advanced clinical nutrition practice.

NUTR 825: Nutrient and Energy Assessment for Performance

3 Credits

This course will provide an in-depth understanding of the assessment process for nutrient and energy availability and use for performance science. Students will practice using multiple tools to assess individual and group nutrient and energy needs for performance. Using the nutrition care process, students will practice reviewing biomarkers and acceptable values, and create diet interventions to improve performance. Students will share results and intervention plans with interprofessional teams.

NUTR 826: Maximizing Performance Through Nutrition and Other Supplements

3 Credits

In this course, the students will learn how to interpret biomarkers and explain the results to student athletes and others in performance-based settings, provide intervention ideas through fueling and supplementation, and review vitamin compliance evidence. The students will also be able to explain how to review ergogenic aids, and how to recommend third-party tested supplementations and education around specific ergogenic aids. Lastly, students will be able to understand and compare the NCAA and other governing bodies' rules and regulations around permissible, impermissible, and banned supplements to a variety of rules and regulations of governing bodies.

NUTR 827: Performance Nutrition for Special Populations and Dietary Patterns

3 Credits

This course will provide insight to performance nutrition fueling strategies covering special populations in athletics and performance (e.g., specific teams, those with special diets, and other groups). This course will provide the students with insights on a variety of special populations seen in the human performance space as well as practice implementing the nutrition care process to provide optimal fueling for performance that fall within special population parameters.

NUTR 830: Advanced Nutrition and Health Program Planning

3 Credits

This course provides an opportunity for students to become proficient in the skills essential for successful nutrition education programming, dissemination, and evaluation through development and implementation of a nutrition education intervention with a target audience in their respective communities. We will examine current theories, models, and state-of-the-art strategies, and discuss how to apply them to a variety of settings including clinical, community, and other workplaces, as well as the home. Various behavioral and environmental factors, which may contribute to the maintenance of poor nutritional outcomes, will be critically assessed. Focus will be on how to plan interventions that address multiple components within the target populations environment. Students will gain proficiency by working in groups and using best practices to design, implement, and evaluate an educational program within their chosen community.

NUTR 835: Nutrition Promotion & Disease Prevention Across the Lifecycle

3 Credits

This course is designed to address the population-level lifecycle health through the lens of health promotion and disease prevention. After completing this course, learners should be able to critically consider population-specific nutrition needs across the lifecycle and design health promotion strategies to promote nutrition and prevent nutrition-related disease. Evidence-based practice and cultural competencies and social determinants of health are a focus throughout the course. The course addresses the lifecycle stages: 1) preconception, pregnancy and lactation nutrition; 2) infant nutrition; 3) toddler, preschooler and school-age child nutrition; 4) adolescent nutrition; 5) young and middle adult nutrition; 6) older adult nutrition. Key topics and population trends are also discussed including food security, maternal and child health, pediatric overweight and obesity, chronic disease prevention, optimal aging, and emerging issues in lifecycle nutrition.

NUTR 840: Advanced Nutrition Counseling

3 Credits

Application of theories and counseling techniques to the nutrition care process in different practice settings with diverse patients/clients. This class provides an opportunity for students to become proficient in the skills essential to successful nutrition counseling. We will examine current theories and state-of-the-art techniques of counseling, and apply them to a variety of settings including clinical, community, workplace, and home-based. Various behavioral and environmental factors, which may contribute to the maintenance of poor nutritional outcomes, will be critically assessed focusing on advanced skill development and the ability to handle challenging communication issues that arise within the nutrition care process. Students will gain proficiency through practicing techniques including client-centered counseling methods, motivational interviewing,and behavior change strategies, as well as principles of group counseling, facilitation, and effective team dynamics. Best practices for those with chronic diseases, obesity, eating disorders, lifespan counseling, and end of life issues will be discussed.

NUTR 850: Leadership Concepts and Application for the Nutrition Professional

3 Credits/Maximum of 999

Exploration and application of concepts essential to effective leadership within the nutrition profession. This course will revisit and expand on the skills necessary for effective leadership within the field of nutrition introduced in NUTR 801. Theories and concepts of leadership as they apply to the nutrition field will be examined. Students will have opportunities to interview leaders in their area of interest, and they will identify the topic of their Capstone Project, which is designed to promote individual leadership development. Promotion of leadership development specific to the field of nutrition will be emphasized in the selection of a project as well as in course content. Student projects will need to be of sufficient breadth and scope to promote the utilization of skills and concepts presented throughout the M.P.S. program and this particular course. Course topics will focus on the process of identifying and creating change within an organization. The ultimate goal of the course is to foster the development of a leadership mindset for innovation, empowerment, and risk-taking.

Prerequisite: NUTR 801

NUTR 855: Nutrition Policy, Systems, Environments: A Leadership Perspective

3 Credits

This course will take an individual + policy, systems, and environmental (I+PSE) approach to examining nutrition-related public health issues. Students will learn to assess nutrition policies within the context of the nutrition assistance safety net with the I+PSE lens. Students will explore complex questions about how government has responded to diet-related health problems, the role of government in efforts to facilitate healthy eating, and how to develop and evaluate policy approaches to improve diet quality and reduce the burden of diet-related disease. Leadership competencies will be integrated throughout the course.

NUTR 860: Capstone Project in Nutritional Sciences

2-5 Credits/Maximum of 5

Completion of a Capstone Project involving research and application of leadership principles in nutrition practice. This course is the culminating course for the M.P.S. in Nutritional Sciences program. This course requires students to synthesize the research gathered from the leadership opportunity project, their literature review, and their Capstone Project results to prepare a paper and give a presentation of their findings to their fellow students and to a professional audience. Students will use the findings from their Capstone Project to formulate evidenced-based solutions that can be used in nutrition practice.

Prerequisite: NUTR 540 NUTR 850

NUTR 895A: Internship-Clinical

1-18 Credits/Maximum of 18

Supervised, professional oriented, off-campus, nongroup instruction, including field experiences, practicums, or internships. Written and oral critique of activity required.

NUTR 895B: Internship-Food Systems and Organization Management

1-18 Credits/Maximum of 18

Supervised, professionally oriented, off-campus, nongroup instruction, including field experiences, practicums, or internships. Written and oral critique or activity required.

NUTR 895C: Internship-Community

1-18 Credits/Maximum of 18

Supervised, professionally oriented, off-campus, nongroup instruction, including field experiences, practicums, or internships. Written and oral critique of activity required.