NUTRITIONAL SCIENCES (NUSC)

NUSC 5000. Nutritional Biochemistry. (3 Credits)
Biochemical processes for the metabolism and functions of carbohydrates, proteins, lipids, and vitamins.
Enrollment Requirements: Open only to NUSC students. Not open to students who have passed NUSC 4236.
View Classes (https://catalog.uconn.edu/course-search/?details&code=NUSC%205000)

NUSC 5100. Concepts of Nutrition. (2 Credits)
An introduction to the broad field of nutrition. Intended for entering graduate students, the course provides a conceptual framework for research and study in the nutritional sciences.
View Classes (https://catalog.uconn.edu/course-search/?details&code=NUSC%205100)

NUSC 5200. Macronutrient Metabolism. (3 Credits)
The digestion, absorption/transport and metabolism of carbohydrates, protein/amino acids and lipids; their functions, metabolic pathways and interrelationships; mechanisms regulating their metabolism; methodologies for studying metabolism and assessing nutrient requirements in man and animals.
Enrollment Requirements: MCB 2000 or equivalent; open only to Nutrition Sciences students, instructor consent required.
View Classes (https://catalog.uconn.edu/course-search/?details&code=NUSC%205200)

NUSC 5270. Immunological Mechanisms of Disease. (3 Credits)
Assessment of immune function in the pathophysiology of various diseases including allergy, autoimmune diseases, cancer, infectious diseases, and metabolic syndrome with an emphasis on the roles of diet and host microbiota in shaping immune development and function. Patient case studies will be used to facilitate learning outcomes.
Enrollment Requirements: NUSC 1165 or BIOL 1107; CHEM 2241 or 2443. Not open for credit to students who have passed NUSC 4270.
View Classes (https://catalog.uconn.edu/course-search/?details&code=NUSC%205270)

NUSC 5280. U.S. Nutrition and Food Regulations. (3 Credits)
Development of new nutrition products; regulations applicable to foods, medical foods, dietary supplements and ingredients; accurate and appropriate representation of scientific evidence for substantiating label claims and advertisements.
Enrollment Requirements: NUSC 5200.
View Classes (https://catalog.uconn.edu/course-search/?details&code=NUSC%205280)

NUSC 5300. Vitamins and Minerals. (3 Credits)
Comprehensive study of vitamins and macro-/trace minerals on the levels of biochemical and physiological functions, metabolic pathways, interactions, and deficiencies/toxicities.
Enrollment Requirements: MCB 2000 or equivalent; open only to Nutrition Sciences students, instructor consent required.
View Classes (https://catalog.uconn.edu/course-search/?details&code=NUSC%205300)

NUSC 5319. Nutrition Research Methods in Clinical and Population Studies. (3 Credits)
Basic concepts and methodologies of research in public health and observational and clinical nutritional sciences, research proposal writing and in-class presentation.
Enrollment Requirements: Instructor consent.
View Classes (https://catalog.uconn.edu/course-search/?details&code=NUSC%205319)

NUSC 5325. Principles of Nutritional Assessment. (3 Credits)
Nutritional assessment as a systematic process of obtaining and interpreting data to characterize nutritional status in association with health and nutrition-specific problems for individuals and selected populations. Interpretation of dietary, anthropometric, and laboratory data as applied to case studies.
Enrollment Requirements: NUSC 5200.
View Classes (https://catalog.uconn.edu/course-search/?details&code=NUSC%205325)

NUSC 5350. Nutrient and Food Analysis. (3 Credits)
An overview of analytical techniques and instrumentations commonly used in the food industry to determine food quality. Laboratories involve hands-on trainings on analytical equipment to collect and analyze experimental data on various food samples.
Enrollment Requirements: Instructor consent required. Recommended preparation: CHEM 2241 or equivalent, NUSC 1165 or equivalent. Not open for credit to students who have passed NUSC 3350.
View Classes (https://catalog.uconn.edu/course-search/?details&code=NUSC%205350)

NUSC 5390. Field Work on Community Nutrition. (1-6 Credits)
Supervised field studies of community nutrition problems and visits with community agencies and families. Readings, conferences and reports required.
View Classes (https://catalog.uconn.edu/course-search/?details&code=NUSC%205390)

NUSC 5394. Seminar. (1 Credit)
Students develop the skills required for the analysis and presentation of current literature and research problems.
Enrollment Requirements: NUSC 5100.
May be repeated for a total of 4 credits
View Classes (https://catalog.uconn.edu/course-search/?details&code=NUSC%205394)

NUSC 5398. Special Topics in Nutrition. (1-6 Credits)
Advanced study in a given area of nutritional science.
View Classes (https://catalog.uconn.edu/course-search/?details&code=NUSC%205398)

NUSC 5399. Independent Study in Nutritional Science. (1-6 Credits)
Research problems or critical review of literature in any area of nutrition.
May be repeated for a total of 9 credits
View Classes (https://catalog.uconn.edu/course-search/?details&code=NUSC%205399)

NUSC 5400. Molecular Techniques and Instrument Analysis in Nutrition. (2 Credits)
Provide hands-on experience performing basic molecular nutrition techniques and cover theoretical bases and application.
Enrollment Requirements: MCB 2000 or equivalent.
View Classes (https://catalog.uconn.edu/course-search/?details&code=NUSC%205400)

NUSC 5410. Clinical Nutrition. (3 Credits)
Application of principles of human nutrition, physiology, and biochemistry to progressive pathology of selected diseases and associated effects on nutritional status, nutritional needs, nutrient intake and utilization in the context of the nutrition care process.
Enrollment Requirements: NUSC 5200.
View Classes (https://catalog.uconn.edu/course-search/?details&code=NUSC%205410)

NUSC 5500. Food Colloids and Nanotechnology. (3 Credits)
Comprehensive study on properties and structures of food colloids, including lipids, proteins and carbohydrates, from nanotechnology perspective. Development of food colloids-based nanoscale systems for applications in the context of food and nutrition.
Enrollment Requirements: Recommended preparation: NUSC 5200.
View Classes (https://catalog.uconn.edu/course-search/?details&code=NUSC%205500)

NUSC 5510. Plant-based Diets and Nutrition. (3 Credits)
The nutritional and health aspects of various plant-based food groups with emphasis on the nutrient composition and their roles in health promotion and disease prevention. It also provides the principles of designing and implementing healthy plant-based diets and its implications.
Enrollment Requirements: Instructor consent.
View Classes (https://catalog.uconn.edu/course-search/?details&code=NUSC%205510)

NUSC 5520. Plant-based Food Products. (3 Credits)
Healthy and sustainable plant-based food alternatives to animal food products, including alternatives of meat, fish, egg, milk and other dairy products. Current research and innovations in plant-based foods and their nutritional implications, socioeconomic and environmental impacts.
Enrollment Requirements: Instructor consent.
View Classes (https://catalog.uconn.edu/course-search/?details&code=NUSC%205520)

NUSC 5600. Pathophysiology of Metabolic Diseases. (3 Credits)
Biochemical, physiological and molecular aspects of energy metabolism and inflammatory pathways involved in pathogenesis of metabolic diseases; diet and dietary component contribution to pathogenesis.
Enrollment Requirements: NUSC 5200.
View Classes (https://catalog.uconn.edu/course-search/?details&code=NUSC%205600)

NUSC 5700. Precision Nutrition. (3 Credits)
Studies the foundation of precision nutrition which encompasses research focusing on the interaction between nutrients and human/microbial genes and identifies genetic backgrounds contributing to individual differences in macro and micronutrient metabolism. Examines the effects of dysregulated nutrient-gene interactions in pathophysiological conditions.
Enrollment Requirements: NUSC 5200.
View Classes (https://catalog.uconn.edu/course-search/?details&code=NUSC%205700)

NUSC 6311. Regulation of Food Intake and Energy Balance. (3 Credits)
Central and peripheral regulation of energy balance and how this affects body weight and risk for chronic disease. Relative contribution of genetic and metabolic factors, diet, and exercise on the pathophysiology of obesity.
Enrollment Requirements: NUSC 5200.
View Classes (https://catalog.uconn.edu/course-search/?details&code=NUSC%206311)

NUSC 6313. Nutrition and Gene Expression. (3 Credits)
Studies the regulations of eukaryotic gene expression by various macro-/micronutrients and their metabolites in the scope of epigenetic, transcriptional, post-transcriptional, translational, and post-translational mechanisms.
Enrollment Requirements: NUSC 5200 and 5300.
View Classes (https://catalog.uconn.edu/course-search/?details&code=NUSC%206313)

NUSC 6315. Lipid Metabolism in Health and Disease. (3 Credits)
Comprehensive study of lipid and lipoprotein metabolism. Influence of diet, drugs, exercise and obesity. Overview of relationship between genetics, lifestyle factors and chronic disease.
View Classes (https://catalog.uconn.edu/course-search/?details&code=NUSC%206315)

NUSC 6317. Nutritional Epidemiology. (3 Credits)
Principles and applications of nutritional epidemiology with emphasis on research design.
View Classes (https://catalog.uconn.edu/course-search/?details&code=NUSC%206317)

NUSC 6410. Advanced Clinical Nutrition. (3 Credits)
Interrelationships of physiology and biochemistry of disease and dietary intervention involving complex conditions, alternative approaches to therapeutic nutrition and extension to special populations. Clinical nutrition research in the context of therapeutic practice and case studies.
Enrollment Requirements: NUSC 5410.
View Classes (https://catalog.uconn.edu/course-search/?details&code=NUSC%206410)