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100869	Prin Of Physiology
Subject:	Catalog Nbr:
CRSK	166

101370	Gene Exp In Eukaryotes
Subject:	Catalog Nbr:
CRSK	212B

101722	Graduate Pathobiology
Subject:	Catalog Nbr:
CRSK	293G

101800	Muscle Physiology
Subject:	Catalog Nbr:
CRBU	592

101892	Adv Anatomy/physiology
Subject:	Catalog Nbr:
CRBU	701A

102187	Human Physiology
Subject:	Catalog Nbr:
CRBR	42A

102313	Exercise Physiology
Subject:	Catalog Nbr:
CRBU	731

102358	Prin Of Biochemistry

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Subject:	Catalog Nbr:
CRBU	223

102763	Principles Of Biostatics
Subject:	Catalog Nbr:
CRMD	202

102794	Public Health Politics
Subject:	Catalog Nbr:
CRMD	203

102830	Interm Biostatistics
Subject:	Catalog Nbr:
CRMD	206

102865	Epidemiologic Methods
Subject:	Catalog Nbr:
CRMD	207

102915	Adv Prof Communication Emerson College
Subject:	Catalog Nbr:
CRMD	500

102952	Public Health/care Health Communications
Subject:	Catalog Nbr:
CRMD	503H

102979	Population Dynamics
Subject:	Catalog Nbr:
CRBU	881H

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103167	**Communication Theory Emerson College**
Subject:	Catalog Nbr:
CRMD	520

103291	**Emerson College Media Strategies/health**
Subject:	Catalog Nbr:
CRMD	579

103349	**Dir Std:public Relations**
Subject:	Catalog Nbr:
CRMD	585Q

103423	**Writing For Press Emerson College**
Subject:	Catalog Nbr:
CRMD	CS55

107606	**Economic Development**
Subject:	Catalog Nbr:
CRFL	E231

122478	**Physical Activity, Nutrition, and Health**
Subject:	Catalog Nbr:
NUTR	0272
2016 SPRG	Primary Kieran Reid Kieran.Reid@tufts.edu
Inadequate physical activity and a sedentary lifestyle are thought to be important causes of many of the major diseases of developed societies, including coronary artery disease, stroke, hypertension, diabetes, obesity, osteoporosis, and arthritis. There has been an explosion of information over the past two decades on the health benefits of exercise. In addition, exercise and nutrition are closely linked, with each modifying the effects of the other. Athletes, for example, may have markedly increased needs for some nutrients, but not others. Exercise has potent effects on the metabolism of protein, energy, fat, and some micronutrients. In addition, exercise is an important form of oxidative stress, and the ability of nutrients to alter the effect of	

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exercise is not well understood. Exercise and nutrition together offer an extremely powerful intervention for a variety of problems, including the frailty of aging, the wasting of AIDS, and the obesity that underlies most cases of diabetes and atherosclerosis. This course is designed to give students an understanding of the fundamental interactions between exercise and nutrition, and to offer students an opportunity to examine the application of nutrition to exercise and vice versa. Each lecture will also discuss how these factors are important in disease prevention, and where applicable, treatment. Undergraduate biology or physiology is recommended. Prerequisites: NUTR 202 is required and undergraduate-level physiology is recommended, unless exemption approved by instructor, and graduate standing or instructor consent.

122782	**Globalization, Development And Humanitarianism: Ethics And Personal Transformation**
Subject: NUTR	Catalog Nbr: 0279
(Cross-listed as DHP D238 (Fletcher School). This course challenges students to reflect on the moral and ethical ideas underpinning today's changing global interests and power. As we witness humanitarian crises and failed development efforts, we will consider ethical and moral values that support humanitarian and developmental interventions. We will consider the ethical implications that are inherent in the choice between justice and mercy, freedom and order and truth and loyalty. Students will analyze the moral and ethical underpinnings of ideas that promote new approaches to development and humanitarian action with a personal, academic and institutional perspective. Even as the world is coming closer together in the information age, divisions on the lines of regional, ethnic and religious identities continue to grow more pronounced and stark. This course will encourage students to articulate their personal beliefs and ethical values. As students move to become policy makers and stakeholders it is essential that they are grounded in an understanding of their own moral framework and also appreciate the differences that exist in their midst. Students will explore ideas of minimalist ethics, just wars, realists and liberal arguments around humanitarian and developmental intervention.	

127008	**General Nutrition**
Subject: NRAK	Catalog Nbr: 0202

127043	**Epidemiology: Nutr Profs**
Subject: NRAK	Catalog Nbr: 0204

127080	**Nutr Biochem I**
Subject: NRAK	Catalog Nbr: 0205

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127118	**Statistical Methods**
Subject:	Catalog Nbr:
NRAK	0207

127151	**Mgmt:nutr&health Ngos**
Subject:	Catalog Nbr:
NRAK	0208

127193	**Monitoring & Evaluation**
Subject:	Catalog Nbr:
NRAK	0210

127213	**Food Policy Fundamentals**
Subject:	Catalog Nbr:
NRAK	0211

127234	**Nutrition Policy**
Subject:	Catalog Nbr:
NRAK	0212

127247	**Nutr Comm In Glb Context**
Subject:	Catalog Nbr:
NRAK	0213

127265	**Food Science Fundamental**
Subject:	Catalog Nbr:
NRAK	0219

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127285	Global Nutritional Pgms
Subject:	Catalog Nbr:
NRAK	0227

127313	Dir Study:
Subject:	Catalog Nbr:
NRAK	0297

127331	Masters Thesis
Subject:	Catalog Nbr:
NRAK	0300

127368	Nutr Biochem II
Subject:	Catalog Nbr:
NRAK	0305

127387	Adv Medical Nutr Therapy
Subject:	Catalog Nbr:
NRAK	0316

128471	Foundations of Nutrition Science
Subject:	Catalog Nbr:
NUTC	0200
2016 FALL	Primary Diane McKay diane.mckay@tufts.edu

This course provides an understanding of basic nutrition science, including the principles of diet planning and government standards; the biological functions of the macro- and micronutrients; energy balance, weight control, and physical activity; and the role of nutrition in chronic diseases, nutrition throughout the life cycle, and contemporary nutrition-related issues. Prerequisite: Graduate standing or instructor consent.

128489	Program Development and Delivery
Subject:	Catalog Nbr:

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NUTC	0203			
2016 FALL		Primary	Erin Boyd	Erin.Boyd@tufts.edu

This course provides presentations, readings, and exercises relating to the broad range of nutrition interventions utilized in global programs, including: growth monitoring and promotion; nutrition counseling and IEC; supplementary feedings and food-based income transfers; household food security and agricultural-based interventions; micronutrient activities; and breast-feeding.The course covers malnutrition causality, nutrition and structural adjustment, social funds, economic and food aid, active learning capacity and the nutrition transition. Students become versed in program design and appraisal techniques including dynamic models and program constraint assessments, and are responsible for major exercises relating to programs in Asia, Africa and Latin America. Prerequisite: Graduate standing or instructor consent.

128508	**Nutrition Related Consum Marketing**			
Subject:	Catalog Nbr:			
NUTC	0205			
2016 SUMR		Primary	Rachel Cheatham	Rachel.Cheatham@tufts.edu
2016 SUMR		Primary	Ashley Reynolds	Ashley.Reynolds@tufts.edu

This course examines the issues of consumer psychology and food choice, and explores the interplay of nutrition and marketing from both the consumer and the marketer's perspectives. The course will examine historical effectiveness of efforts by food companies, health advocacy organizations, and governments aimed at improving nutritional habits. Students will gain an understanding of consumer behavior and approaches to affect positive nutrition-related health outcomes.

128532	**Program Monitoring & Evaluation**			
Subject:	Catalog Nbr:			
NUTC	0210			
2016 SUMR		Primary	Marion Min-Barron	Marion.Min-Barron@tufts.edu
2016 SUMR		Primary	Natalie Valpiani	Natalie.Valpiani@tufts.edu

This course provides an introduction to the principles and practices of program monitoring and evaluation, as applied to food security and nutrition-related programs in developing countries. The course content will be imparted through online lectures, case studies, interactive discussion, and assignments that prompt students to grapple with monitoring and evaluation challenges facing ongoing global efforts to combat malnutrition and food insecurity. By the end of the semester, course participants will: be familiar with the strategies and techniques for monitoring and evaluating projects, particularly those related to nutrition and food security; be able to assess the adequacy of monitoring and evaluation proposals and program evaluations designed by others; be exposed to multiple domestic and international examples of monitoring and evaluation systems, both large and small; and gain experience in the design of monitoring and evaluation plans for real programs.

128568	**Theories of Behavioral Change & Their Application in Nutrition and Public Health Interventions**
Subject:	Catalog Nbr:
NUTC	0211

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2016 SPRG	Primary	Daniel Hatfield	Daniel.Hatfield@tufts.edu
2016 SPRG	Secondary	Sarah Sliwa	sarah.sliwa@tufts.edu

For many Americans, actual health behaviors fall short of evidence-based recommendations and guidelines. Why do people do what they do—or don't do? How can we design programs that tap into these factors to support healthier behaviors? This course explores theories of behavior change commonly used in nutrition and public health. Specific theories addressed include the Health Belief Model, the Theory of Planned Behavior, Social Learning Theory, Diffusion of Innovations, Behavioral Economics, and the Socio-Ecological framework. The course emphasizes the application of core theory concepts to the design and evaluation of program interventions.

128591	**Social Media For Nutrition Audiences**
Subject:	Catalog Nbr:
NUTC	0220

128622	**Pd Theories Methods Proc**
Subject:	Catalog Nbr:
NUTC	0318

128667	**Theories Of Pd**
Subject:	Catalog Nbr:
NUTC	0319

128687	**Positive Deviance In Practice**
Subject:	Catalog Nbr:
NUTC	0320

128785	**Directed Study/undergrad**
Subject:	Catalog Nbr:
NUTR	0102

128948	**Directed Study**
Subject:	Catalog Nbr:
NUTR	0297

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2015 FALL	Primary	Jeanne Goldberg	jeanne.goldberg@tufts.edu
2015 FALL	Primary	Susan Roberts	susan.roberts@tufts.edu
2015 FALL	Primary	Miriam Nelson	miriam.nelson@tufts.edu
2015 FALL	Primary	Ligi Paul Pottenplackel	Ligi.Paul_Pottenplackel@tufts.edu
2015 FALL	Primary	William Masters	William.Masters@tufts.edu
2016 FALL	Primary	Sean Cash	Sean.Cash@tufts.edu
2016 SPRG	Primary	Mohsen Meydani	mohsen.meydani@tufts.edu
2016 SPRG	Primary	Nicola McKeown	nicola.mckeown@tufts.edu
2016 SPRG	Primary	Daniel Maxwell	Daniel.Maxwell@tufts.edu
2016 SPRG	Primary	Fang Fang Zhang	Fang_Fang.Zhang@tufts.edu
2016 SUMR	Primary	Sarah Booth	Sarah.Booth@tufts.edu

To enroll in a Directed Study course, please complete and submit the Directed Study Course Proposal Form (available at: http://nutrition.tufts.edu/students/registrar/forms) to the Registrar's Office so the Directed Study course may be added to your schedule in SIS. A Directed Study course is a mechanism for a student to receive academic credit for work completed under the tutelage of a faculty member. This is generally on a one-to-one basis with the student taking major responsibility for his/her progress. Research conducted in a laboratory during a Directed Study project can be either problem-oriented or technique-based. Directed Study courses must be supervised by Friedman School faculty. The grading basis for this Directed Study course is Satisfactory/Unsatisfactory (S/U).

129095	**Special Tps:study Abroad Nutrition**
Subject:	Catalog Nbr:
NUTR	0196

129117	**Special Tps:study Abroad Nutrition**
Subject:	Catalog Nbr:
NUTR	0197

129335	**Principles of Nutrition Science**		
Subject:	Catalog Nbr:		
NUTR	0202		
2016 FALL	Primary	Diane McKay	diane.mckay@tufts.edu

This course presents the fundamental scientific principles of human nutrition. Students will become familiar with food sources; recommended intake levels; biochemical role; mode of absorption, transport, excretion; deficiency/toxicity symptoms, and potential major public health problems for each macro- and micronutrient. The student goals for this course are: 1) to describe the components of a healthy diet, 2) understand the major nutrition problems that affect individuals and populations from conception and throughout the life cycle, and 3) understand the scientific basis for nutritional recommendations brought before the scientific and lay communities. Prerequisites: Students are required to have taken a one semester college-level course in

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either human biology, chemistry, or physiology (preferred).

129416	Fundamentals of Public Policy			
Subject:	Catalog Nbr:			
NUTR	0203			
2016 FALL		Primary	Patrick Webb	patrick.webb@tufts.edu
2016 FALL		Primary	Eileen Kennedy	Eileen.Kennedy@tufts.edu

NUTR 203 is a course that will allow students at the Friedman School to become familiar with policy processes (domestic and international), typologies of policy initiatives (laws, regulations, program interventions, legal restrictions and systems, institutional mandates), and to be able to critically analyze and discuss how policy and science interact with regard to food and nutrition. The class will cover: a) how science influences the policy agenda, and how policy debates influence the scientific agenda; b) the scientific underpinnings of food and nutrition policies; c) how empirical findings in scientific research and operational programming make their way into policy and law; d) debates and controversies in US and international nutrition; e) the range of options for intervention that exist (to improve nutrition), and those that are used; f) how do we know what works best and what the alternatives might be?; g) approaches to problem assessment and measurement; h) success stories in the nutrition pantheon; i) constraints to success (what makes or breaks major program successes), and j) key institutions and organizations involved in nutrition policy and programming in the US and around the world. Prerequisites: Graduate standing or instructor consent.

129475	Principles of Epidemiology			
Subject:	Catalog Nbr:			
NUTR	0204			
2015 FALL		Primary	Mark Woodin	mark.woodin@tufts.edu
2016 FALL		Primary	Silvina Choumenkovitch	silvina.choumenkovitch@tufts.edu
2016 FALL		Primary	Maria Lammi	Maria.VanRompay@tufts.edu

129491	Communicating Health Information to Diverse Audiences, Part A			
Subject:	Catalog Nbr:			
NUTR	0205			
2016 SUMR		Primary	Kathy Brenner	Kathy.Brenner@tufts.edu

Nutrition communicators are often called upon to reach a variety of audiences, from consumers and patients to low-literacy individuals, other health and nutrition professionals, funders, and more. This course will help students tailor communications for these diverse audiences across a range of media. This course was formerly listed as NUTR 0201A. Prerequisites: NUTR 0220, and graduate standing or instructor consent. NOTE: 10-week course; enrollment limited to 12 students. Enrollment priority is given to Nutrition Communication program students. Prerequisite may not be taken concurrently with NUTR 0205.

129583	Statistical Methods for Nutrition Science and Policy

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Subject:	Catalog Nbr:			
NUTR	0207			
	2016 FALL	Primary	Sean Cash	Sean.Cash@tufts.edu

Part one of a one-year, two-semester course covering descriptive statistics, graphical displays, confidence intervals, hypothesis testing, t test, chi-square test, nonparametric tests, multiple linear regression, multiple logistic regression, experimental design, multi-factor and multiple comparisons procedures. Students will learn how to use Stata statistical analysis software. This course was formerly listed as NUTR 209A-02. Prerequisite: Graduate standing or instructor consent.

129603	**Human Physiology**

Subject:	Catalog Nbr:			
NUTR	0208			
	2016 SPRG	Primary	Paul Leavis	paul.leavis@tufts.edu

This course meets the physiology requirement for students in the following programs: Human Nutrition, Nutritional Epidemiology, Cell and Molecular Nutrition. This course will cover the functions of mammalian organisms as we understand them at various levels of organization - organ system, organ, cellular and subcellular levels. Our goal is to provide a working knowledge of the fundamental properties and regulation of these systems so that the student can understand and relate this material to that learned in other basic science courses with particular emphasis on those related to nutrition. Prerequisites: Undergraduate level introductory biology and chemistry and graduate standing or instructor consent.

129664	**Statistical Methods for Nutrition Research (science)**

Subject:	Catalog Nbr:
NUTR	0209

The first of a two course sequence covering study design, descriptive statistics, graphical displays, confidence intervals, hypothesis testing, Student's t test, chi-square test, nonparametric tests, sample size calculations, multiple linear regression, multiple logistic regression, multi-factor experimental design, repeated measures, and multiple comparisons procedures. NUTR 209 generally covers topics through the start of linear regression. Students will make extensive use of SAS for Windows. NOTE: Students cannot receive credit for both NUTR 209: Statistical Methods in Nutrition Research (Science) and its second semester counterpart NUTR 207: Regression Analysis for Nutrition Research (Policy). This course was formerly listed as NUTR 209A-01.

129679	**Survey Research in Nutrition**

Subject:	Catalog Nbr:			
NUTR	0210			
	2016 SPRG	Primary	Beatrice Rogers	beatrice.rogers@tufts.edu

This is a methods course focusing on field research in nutrition. Students will learn to identify policy-relevant issues, define hypotheses, and select and combine appropriate methods drawn from nutrition, epidemiology, anthropology, economics, psychology, sociology, education and political science. Students will also learn how to develop research designs, sampling and analysis plans, as well as how to construct and pretest the types of instruments commonly used in nutrition and food policy research and evaluation. The course will cover ethical

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issues in human subjects research and compliance with IRB requirements, interviewer training, quality control, site operations, and logistics. Prerequisites: NUTR 207 or equivalent, and graduate standing or instructor consent.

129766	Theories of Behavior Change and Their Application in Nutrition and Public Health Interventions

Subject: NUTR | Catalog Nbr: 0211

2016 FALL | Primary | Sara Folta | sara.folta@tufts.edu

What motivates people to adopt healthier food and lifestyle choices? This course will explore various theoretical perspectives on nutrition and health-related behavior change. It will include an examination of several individual-based, social-based, organization-based an eco-social theories, including the Health Belief Model, the Theory of Planned Behavior, the Transtheoretical Model, Decision-Making, Social Support, Social Learning Theory, and Diffusion of Innovations. Knowledge of these theories will help inform the design of research and program interventions based on psycho-biological, social, cultural and organizational frameworks. The course emphasizes an understanding of core theory concepts and issues in measurement. In-class workshops will allow for direct application of the theories to students' current research and program intervention interests. The course will provide concepts and tools that can apply not only to the students' own research interests, but also to other courses, such as those focused on nutrition interventions, patient education, persuasive communication, social marketing and mass media. This course should be of great value to MS students in the Nutrition Communication, Nutrition Epidemiology, Nutrition Intervention Programs and to students in the MS/Dietetic Internship programs. Enrollment limited to 15 students. Priority enrollment is given to: 1) Nutrition Communication students (for whom the course is a requirement); 2) Second-year FPAN students, Nutrition Interventions specialization; 3) Second-year Friedman students in any program doing a Nutrition Communication minor; 4) First-year FPAN students, Nutrition Interventions specialization; 5) First-year Friedman students in any program doing a Nutrition Communication minor; 6) Any other Friedman students; 7) MPH students; 8) Any other Tufts students (Graduate standing or instructor consent); 9) Any other students from Boston Consortium Schools.

129922	Statistical Methods for Health Care Professionals

Subject: NUTR | Catalog Nbr: 0214

2016 SPRG | Primary | Robert Houser | robert.houser@tufts.edu

In this course students critically evaluate, compare, interpret, judge, summarize and explain statistical results published in research articles in health and nutrition journals that are influencing nutrition science, research, policy, and clinical practice. Students will also develop an intermediate level ability to analyze research data with Stata statistical software. Prerequisites: Undergraduate level statistics or college level math course and graduate standing or instructor consent..

129943	Fundamentals of U.S. Agriculture

Subject: NUTR | Catalog Nbr: 0215

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	2016 FALL	Primary	Timothy Griffin	Timothy.Griffin@tufts.edu

This course covers the major social, institutional and human aspects of the American agricultural system, both as it exists today as well as its historical development. After consideration of agricultural systems in general and of the values that underlie different concepts of agriculture, it covers some of the key historical forces that have made American agriculture what it is today, and the major role of the federal government, both past and present. The next part of the course deals with the economics of American agriculture as a whole and its large-scale structure, followed by an analysis of farming on the microlevel, emphasizing types of farms and farm-scale production economics. Prerequisite: Graduate standing or instructor consent. This course is cross-listed with AS&E's UEP Department (UEP 0223).

129998	**Management, Planning, and Control of Nutrition and Health Programs and Organizations**

Subject:	Catalog Nbr:			
NUTR	0216			
	2016 SPRG	Primary	David Hastings	david.hastings@tufts.edu

Key management concepts and principles for managing nutrition and health programs and organizations will be addressed to equip students to function as program directors and project managers). Case studies and readings will be used to convey a practical understanding of how to manage and coordinate business functions to achieve the goals and objectives of the organization. This course will deal with for-profit and nonprofit organizations. Topics will include business and project planning, management control systems, financial management, budgeting, performance measurement, pricing and marketing of services, operations, management, cost analysis, human resource management, and the development of management information systems. The course is designed to provide practical tools in areas we believe students need to acquire skills. This course was formerly listed as NUTR 225. Prerequisite: Graduate standing or instructor consent.

130033	**Monitoring and Evaluation of Nutrition and Food Security Projects**

Subject:	Catalog Nbr:			
NUTR	0217			
	2016 SPRG	Primary	Jennifer Coates	jennifer.coates@tufts.edu

This seminar will provide an introduction to the principles and practice of program monitoring and evaluation, with an emphasis on food security and nutrition-related programs in developing countries. By reviewing relevant literature and utilizing case studies in the areas of nutrition, food security, primary health, agriculture and other fields, students will become fluent in applying the language and tools of program monitoring and evaluation system design and implementation. This seminar will consist of lectures, discussions, guest speakers, and applied exercises including work on practical monitoring and evaluation challenges for ongoing development programs. Enrollment limited to 22 students with the following priority order: 1) MAHA students; 2) FPAN students pursuing the Nutrition Interventions Specialization; 3) Graduating and Second-Year students; 4) Phd students; 5) First-Year students; 6) MS/MPH and dual-degree students that don't fall into any of the preceding categories; and 7) Cross-Registrants. Prerequisite: Graduate standing or instructor consent.

130080	**Communications Strategies in Nutrition and Health Promotion Nutrition**

Subject:	Catalog Nbr:

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NUTR	0218			
2016 SPRG		Primary	Jeanne Goldberg	jeanne.goldberg@tufts.edu

A survey of communications strategies in health promotion. This course will provide students with the ability to decide when a health communication initiative is appropriate; to develop health communications programs based on appropriate theoretical foundations; and to select and plan evaluation strategies appropriate for the particular intervention. Prerequisite: Graduate standing or instructor consent.

130123	**Fundamentals of Food Science**
Subject:	Catalog Nbr:
NUTR	0219

This course will provide students a broad overview of certain aspects of both the U.S. and worldwide food supply. This course is intended to provide students with an understanding of : 1) the basic groups of foods in the food supply and their nutrient profiles; 2) the effects of harvesting, processing and storage; and 3) the important issues affecting food safety. Requirement for all students in the Food Policy and Applied Nutrition (FPAN), Agriculture, Food, and Environment (AFE), and Nutrition Communication programs who entered before the Fall of 2006. (0.5 credits)

130290	**The Global Food Business**
Subject:	Catalog Nbr:
NUTR	0221

2016 SPRG	Primary	James Tillotson	james.tillotson@tufts.edu

The purpose of this course is to introduce the student to the field of international food and agribusiness. Today, international trade in agricultural commodities and foods is a major segment of the world's business. This business continues to grow yearly, motivated by new and potential international trade agreements (GATT, NAFTA), expansion by both established and new multinational companies, and export policies by countries seeking new markets for their growing food and agricultural production. The focus of this course will be to develop in each student a conceptual knowledge of the analytical skills in administration, marketing, business strategy, research, governmental policies and technology that international food business requires today. The course also attempts to analyze the global food business from a transnational perspective, rather than any single nationalistic viewpoint of food and agribusiness. It is designed to meet the requirements of students aiming to enter the international food business world, as well as for students who in their professional careers (e.g., government, legal) will deal with this important sector of international business. This course was formerly listed as NUTR 245. This course is cross-listed with The Fletcher School (B280). Prerequisite: Graduate standing or instructor consent.

130334	**Gender, Culture and Conflict in Complex Humanitarian Emergencies**
Subject:	Catalog Nbr:
NUTR	0222

2016 FALL	Primary	Dyan Mazurana	Dyan.Mazurana@tufts.edu
2016 FALL	Secondary	Elizabeth Stites	elizabeth.stites@tufts.edu

This course examines situations of armed conflict, civilian experiences of these crises, and the international and national humanitarian and military responses to these situations from a gender perspective and highlights

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the policy and program implications that this perspective presents. Topics covered include gender analyses of current trends in armed conflict and terrorism, and of the links among war economies, globalization and armed conflict; the manipulation of gender roles to fuel war and violence; gender and livelihoods in the context of crises; masculinities in conflict; sexual and gender-based violations; women's rights in international humanitarian and human rights law during armed conflict; peacekeeping operations; peacebuilding; and reconstruction. Case studies are drawn from recent and current armed conflicts worldwide. This course is cross-listed with The Fletcher School (D232). Prerequisite: Graduate standing or instructor consent.

130388	Seminar In Humanitarian Issues

Subject:	Catalog Nbr:			
NUTR	0223			
2015 FALL		Primary	Daniel Maxwell	Daniel.Maxwell@tufts.edu
2016 FALL		Primary	Dyan Mazurana	Dyan.Mazurana@tufts.edu

Open for credit only to Master of Arts in Humanitarian Assistance (MAHA) students. This seminar will explore in depth key issues in humanitarian assistance, for example, humanitarian law, ethics, psycho-social interventions, the role of the military, program and agency management, and fund-raising. A hands-on course with an opportunity to discuss in depth much of the theory and academic literature of prerequisite courses. This course was formerly listed as NUTR 273.

130448	Community Food Planning And Programs

Subject:	Catalog Nbr:
NUTR	0224

Key features of the course include field trips to community / local food and farm programs, guest presenters, and field-based planning projects with area non-profits, public sector agencies, or businesses.
This course will cover (domestic) food and agriculture programs that focus on or operate at the community or regional levels. Such initiatives promote local/regional agriculture and food chain businesses that process, market, and use local or regional food products. In tandem, public sector and NGO initiatives now sponsor programs and policies with a community or urban food system agenda. The focus will be on more complex initiatives such as farm-to-institution projects, regional wholesaling initiatives, and food policy councils.
A major course objective is to provide practical skills and tools for design, strategic planning, and implementation of these programs, including assessments, research, policy components, and funding. We will also provide contextual analyses and critical perspectives of community-based strategies as alternative food systems models.

130500	Introduction to Modern Biology Techniques

Subject:	Catalog Nbr:			
NUTR	0225			
2016 FALL		Primary	Martin Obin	martin.obin@tufts.edu

This intensive, 5-week course is designed to (1) familiarize basic science track (BMN, NEPI) students with the conceptual approaches and techniques used to study nutrition at the molecular, cell, tissue, whole organism and population levels and (2) introduce new students to the nutrition research and science culture of the HNRCA. Techniques covered include but are not limited to chromatography, mass spectrometry, cell culture

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and transfection, electrophoresis, immunoassays, PCR/RT-PCR, next generation sequencing (NGS), fluorescence cell sorting, microscopy, imaging techniques, bioinformatics, systems biology, data science (Big Data), and bioengineering. Web-based reading and assignments will form the basis of a weekly quiz given at the beginning of each class. Discussion of the quiz will occupy the bulk of actual class time, with student participation and creativity contributing significantly to student's grade. This is a required course for all Biochemical and Molecular Nutrition (BMN) degree program students. The grading basis for this course is Satisfactory/Unsatisfactory. Prerequisites: Graduate standing or instructor consent.

130524	Health Claims and the Food Industry

Subject: NUTR | Catalog Nbr: 0226

2016 SPRG | Primary | James Tillotson | james.tillotson@tufts.edu

This course examines the U.S. food policies governing the use of diet and health information in commercial communications. In the mid-1980s, for the first time in history, the food industry began to use health claims in food advertising and labeling. This proved to be a highly effective marketing method for the food industry. However, industry use of health claims product promotion created public controversy and policies--a comprehensive new labeling law as well as many new FDA, USDA, and FTC regulations--governing food advertising and labeling that use nutritional and medical information. The object of this course is to review current food policies governing health claims and the regulatory regime controlling their use in commercial communications. Pre-requisites: Graduate standing or instructor consent.

130571	International Nutrition Programs

Subject: NUTR | Catalog Nbr: 0227

2016 FALL | Primary | Erin Boyd | Erin.Boyd@tufts.edu

This course provides presentations, readings, and exercises relating to the broad range of nutrition interventions utilized in international programs: infant and young child nutrition, cash and food-based programs, agricultural-based interventions, micronutrient prevention and control activities, prevention and treatment of acute malnutrition, and water, sanitation and hygiene activities. The course also covers malnutrition causality, nutrition architecture, and an overview of global nutrition platforms. Students become well versed in program design and appraisal techniques including dynamic models and program constraint assessments, and are responsible for major exercises relating to existing programs in Asia, Africa and Latin America. Pre-requisite: Graduate standing or instructor consent.

130618	Community and Public Health Nutrition

Subject: NUTR | Catalog Nbr: 0228

2016 FALL | Primary | Virginia Chomitz | Virginia.Chomitz@tufts.edu

This intensive course provides presentations, readings and activities related to the broad range of community-based nutrition research, programs and policies in the U.S. today. Public health efforts in communities are implemented in many different types of settings, including community non-profit agencies, worksites, health centers, clinics, hospitals, schools, churches, supermarkets, recreational and sports centers,

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councils on aging/senior centers, and emergency feeding sites. Students will become familiar with community-based research and programs focused solely on nutrition as well as those in which nutrition is one component. Students will engage in skill-building and participatory activities, as well be introduced to case examples of creative and innovative approaches to community nutrition. Through field visits and guest speakers, students will have an opportunity to dialogue with public health experts and practitioners who can influence community nutrition practice. Upon completion of this course, the students will have a toolbox of skills to utilize and apply in a wide range of practice settings. Enrollment limited to 23 students. Prerequisites: NUTR 0202: Principles of Nutrition Science or equivalent and graduate standing or instructor consent.

130716	**Humanitarian Action in Complex Emergencies**
Subject: NUTR	Catalog Nbr: 0229
2016 FALL	Primary Daniel Maxwell Daniel.Maxwell@tufts.edu

The intent of the class is to introduce students to a broad range of research and writing that constitutes our knowledge on humanitarian action in complex emergencies, and to give the student the skills to read research and keep abreast of a rapidly evolving field. There is a strong emphasis on the practical application of this knowledge. The course simultaneously treats humanitarian action as a phenomenon to be understood and as a practice that urgently needs to be improved.

This multi-disciplinary course will cover a broad range of subjects, and has a number of objectives. By the end of the course, students will be able to: Outline historical perspectives on humanitarian action; Describe and define the application of international humanitarian law, principles, and codes of conduct to humanitarian action in complex emergencies, and outline major debates surrounding these frameworks; Utilize the main analytical frameworks for addressing the protection of life, livelihoods, rights and safety of people caught in complex emergencies; Critically and quickly read, interpret and apply research on humanitarian action; Analyze the political economy of conflict and humanitarian assistance; Discuss the ethical and practical implications of incorporating human rights in humanitarian action; Utilize methodologies for improving the quality, effectiveness and accountability of humanitarian action; and Describe the evolving nature of conflict, crisis, and the architecture of the humanitarian system. This course is cross-listed with the The Fletcher School (DHP D230). Prerequisites: Graduate standing or instructor consent.

130855	**International Ngo's: Ethics And Management Practice**
Subject: NUTR	Catalog Nbr: 0230

The course first examines the role and relevance of The course first examines the role and relevance of the non-governmental sector with a view to understanding the concepts underpinning NGO management, accountability and role in society. The course will then focus on a number of key issues essential for the effective running of NGOs. The course will end with an exploration of Southern NGOs and their relationship with the North and the future of international NGOs. This course will introduce students to such essential skills such as strategic planning, advocacy, the use of the press, fundraising, budgets and reading financial statements. It will also explore key questions including the role NGOs play in society and in international development and how and whether they are different from other institutions in society. This course focuses on key conceptual questions that are essential to understanding NGOs and on practical skills and tools needed

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for managing them. The course first examines the role and relevance of the non-governmental sector with a view to understanding the concepts underpinning NGO management, accountability and role in society. The course will then focus on a number of key issues essential for the effective running of NGOs. The course will end with an exploration of Southern NGOs and their relationship with the North and the future of international NGOs. This course will introduce students to such essential skills such as strategic planning, advocacy, the use of the press, fundraising, budgets and reading financial statements. It will also explore key questions including the role NGOs play in society and in international development and how and whether they are different from other institutions in society. This course focuses on key conceptual questions that are essential to understanding NGOs and on practical skills and tools needed for managing them.

130915	**Fundamentals of GIS**

Subject: NUTR | Catalog Nbr: 0231

2016 FALL	Primary	Paul Cote	Paul.Cote@tufts.edu

Many problems in agriculture, food and nutrition are inherently geographic in nature. For example, livestock production is increasingly concentrated in large feeding operations, leading to new spatial patterns of water and air pollution or foodborne illness. Spatial clustering is equally important for food consumption, nutrition and public health, as in hunger hotspots, food deserts and disease corridors. This course will equip students with the skills needed to capture, analyze and communicate spatial data in geographic information systems (GIS), using a variety of examples from agriculture, food and nutrition. Pre-requisites: Graduate standing or instructor consent.

130952	**Nutrition Epidemiology Journal Club**

Subject: NUTR | Catalog Nbr: 0232

The principal goals of the nutrition epidemiology journal club are 1) to enhance graduate students' understanding of the field of nutrition epidemiology and 2) to provide practice reviewing and critiquing research studies. In weekly sessions, the students will prepare a peer-reviewed or original article for class discussion that reinforces the principles of study design as they apply to nutritional epidemiology. This course will also help students to develop their peer review skills and thus become critical reviewers of epidemiologic literature.

131013	**Agricultural Science and Policy I**

Subject: NUTR | Catalog Nbr: 0233

2016 SPRG	Primary	Timothy Griffin	Timothy.Griffin@tufts.edu
2016 SPRG	Secondary	Christian Peters	Christian.Peters@tufts.edu

First part of a two-semester sequence required of AFE students. This course covers the major biological, chemical and physical components of agricultural systems. Each is discussed from the viewpoints of both the underlying natural processes and principles, and their significance for major agricultural, food safety, and environmental policy issues in the U.S. today. In the first semester, the topics covered are soils, water, nutrients, and genetic resources. Prerequisite: NUTR 0215: Fundamentals of U.S. Agriculture, and graduate

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standing or instructor consent.

131043	Junior Clinical Rotations			
Subject: NUTR	Catalog Nbr: 0235			
2016 SPRG	Primary	Kelly Kane	Kelly.Kane@tufts.edu	
Required of junior standing students enrolled in the Combined Dietetic Internship/Masters Degree program. Grading is Satisfactory/Unsatisfactory.				

131317	Practicum In Bioresearch Techniques		
Subject: NUTR	Catalog Nbr: 0236		
2016 FALL	Primary	Martin Obin	martin.obin@tufts.edu
Biochemical and Molecular Nutrition students must enroll in one practicum in bioresearch techniques. Students who anticipate a career in basic nutritional sciences require extensive laboratory training. Practicums in bioresearch techniques, established as a single, 1.0 credit course, will provide students with an understanding of critical experimental evaluation as well as hands-on experience in essential techniques of modern biology. In the practicum, students will answer a specific biologic question through experimentation. Faculty in participating laboratories will be responsible for providing an overview of the biologic interest of the laboratory, overseeing the development of a specific, defined project, teaching the theory of specific techniques to be employed, and training the students in the application of these techniques. Students will be evaluated through a written report and oral presentation in a laboratory meeting-type setting. Pre-requisites: Graduate standing or instructor consent.			

131352	Economics for Food Policy Analysis		
Subject: NUTR	Catalog Nbr: 0238		
2016 SPRG	Primary	William Masters	William.Masters@tufts.edu
This course equips students with the economic principles used to explain and predict consumption and production choices, market interactions and government interventions in the food system. We use the graphical methods taught in standard, one-semester courses on the principles of economics, applied to current news stories and data sources about food and nutrition problems in the United States and around the world. In so doing students gain the skills needed to: (1) explain and predict consumption, production and trade in agriculture and food markets; (2) evaluate the social welfare consequences of market failure, collective action and government policies including regulation, taxation and enforcement of property rights in agriculture and food markets; (3) measure poverty and inequality in income, wealth, nutrition and health, as influenced by changes in markets and policies; and (4) describe macroeconomic relationships, fluctuations and trends in incomes, employment, economic growth and development. Textbook in syllabus is recommended not required. Pre-requisites: Graduate standing or instructor consent.			

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131383	Emerging Technologies And Nutrition Communication
Subject: NUTR	Catalog Nbr: 0239

The course begins with an overview of the role of technology in nutrition communication through a grounding in core concepts and a survey of technology in the field of health and nutrition communication. It then provides an orientation to three specific uses of Internet-based communication technology (dissemination, collaboration, and knowledge) through hands-on opportunities that encourage students to use and evaluate specific tools and their appropriateness to various nutrition communication contexts. Throughout the course, students work on a group that utilizes one or more technologies covered.

131447	Nutrition Science Journal Club
Subject: NUTR	Catalog Nbr: 0240

2016 FALL	Primary	Paul Jacques	paul.jacques@tufts.edu
2016 FALL	Primary	Jeffrey Blumberg	jeffrey.blumberg@tufts.edu

The principal goals of this student-run Nutrition Science Journal Club are to: (a) enhance graduate students¿ understanding of the current state of biochemical and molecular nutrition and (b) provide experience in reviewing and critiquing research articles. In alternate week sessions, students will critically evaluate peer-reviewed articles for class discussion that reinforce the principles of various research approaches (including in vitro experiments, animal models, observational studies, clinical trials) and analytical methods. This course will also help students to develop their evaluative skills and presentation performance.All BMN & NEPI MS and PhD students are encouraged to take this course within the first two years of matriculation to the Friedman School. This will be an intellectually stimulating course that will focus on recent findings in the field. In addition to the faculty advisor for this course, other faculty will be encouraged to attend to help facilitate discussions; for each session, faculty with expertise in a topic to be discussed during that class will be invited to participate. This approach also has the benefit of allowing students in their first and second year of their program to meet and interact with a variety of Friedman faculty. The primary format of this course will be student-selected and -led presentations of recent publications in the biochemical and molecular nutrition literature. The course covers two semesters, meeting every two weeks. During the year, all participating students will be required to give at least one PowerPoint presentation, and submit to the class a one-page summary that addresses the study aims, methods and results, and provides a critical assessment of the article. Presentation dates will be selected at the beginning of the semester. This course will also include two introductory faculty-led lectures on: (a) developing the skills and knowledge essential to understanding and critiquing research reports and (b) effectively communicating the relevant supporting material, results, and conclusions of primary research reports.

131468	Food for All: Ecology, Biotechnology & Sustainability
Subject: NUTR	Catalog Nbr: 0241

With the human population expected to exceed 9 billion by 2050, how will we meet the increasing demand for food in an ecologically sustainable way? Historically, rapid increases in yield have been a result of advances in three main technologies:
(1) genetic improvement

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(2) use of synthetic pesticides and fertilizers
(3) expanded irrigation.

Each of these technological advances, however, has limitations or has led to significant environmental degradation. There is an urgent need for new approaches to food production without destroying the environment.
In this interdisciplinary course, we will examine the pros and cons of two divergent approaches to meeting this food demand: organic farming and genetic engineering. Using contrasting crops grown in developing and industrialized countries as case studies, we will evaluate:
(1) how ecological knowledge makes food production more sustainable
(2) what existing and emerging approaches can, in the face of climate change, contribute to a reliable supply of nutritious food
(3) the political and economic drivers that shape who has access to these technologies.
We will also explore stakeholder-specific perspectives (growers, advocacy groups, industry, governmental agencies), as well as develop important communication skills for negotiating these different perspectives.

132234	**Summer Internship**
Subject: NUTR	Catalog Nbr: 0298
Please see Departmental Website for detailed course description.	

132248	**Nutrition in the Life Cycle**
Subject: NUTR	Catalog Nbr: 0301
2016 SPRG Primary Jennifer Truong Jennifer.Truong@tufts.edu	
This course covers nutrition issues from preconception throughout life, with a particular emphasis on nutrition correlates of normal growth and development and on the consequences of under and over nutrition. It briefly considers the role of nutrition in the context of the normal physiologic changes that occur with aging. This is a 1/2 credit course and meets the first seven weeks of the semester. Prerequisites: NUTR 0202: Principles of Nutrition Science and graduate standing or instructor consent.	

132280	**Risk And Disaster Management**
Subject: NUTR	Catalog Nbr: 0302
(Cross-listed as DHP D233 (Fletcher). This course (requiring advance reading and extensive participation in discussion) serves as a bridge between classes on nutrition in a developmental context and those focused on relief in complex emergencies. Manifestations of household and national vulnerability differ in these contexts, but only by a matter of degrees. Risks of individual nutrition failure are related to risks of household food security, which in turn relate to risks inherent in the physical, economic, cultural and political environment that is the backdrop to household behavior. The conditions that determine food and nutritional stresses persist in countries undergoing economic transformation and political unrest, but also in those ill equipped to cope with the stresses of globalization, increasing poverty, and declining public sector responsibility. Much	

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	international work involves being able to assess the potential risks and returns of alternative development strategies in such diverse contexts. This course was formerly listed as NUTR 231.

132292	Determinants of U.S. Food Policy			
Subject:	Catalog Nbr:			
NUTR	0303			
2016 FALL	Primary	Parke Wilde		Parke.Wilde@tufts.edu
Focuses on government food-related programs from an economic and political perspective. Reviews the evolution of a range of policies and programs, analyzing their effects on the U.S. economy and on household consumption and the farm economy, as well as on food consumption at the national, household, and individual level. Existing policies and programs are related to the political and economic environment and to changing food consumption patterns in American society. Food assistance programs (e.g., Food Stamps), nutrition programs, food supply and agricultural price policies, and consumer protection and information are considered. This course was formerly listed as NUTR 216.				

132320	Nutrition, Food Security, and Development			
Subject:	Catalog Nbr:			
NUTR	0304			
2016 FALL	Primary	Jennifer Coates		jennifer.coates@tufts.edu
This course encourages critical, evidence-driven analysis of effective government policy responses to food security and nutrition challenges in low-income countries. Through lecture, discussion, case studies, and secondary data analysis, students will be able to: discuss the range of policy levers that are used to enact national food security policy in developing countries; describe evidence of the effectiveness of these policies and programs in improving food security, poverty, and nutrition in different contexts; analyze key sources of food and socio-economic data to understand and inform policy-relevant decisions; and produce reasoned and critical writing to influence critical policy debates. Prerequisites: NUTR 203: Fundamentals of Public Policy and NUTR 238: Economics of Food Policy Analysis, or instructor consent. NOTE: Prerequisites may not be taken concurrently with NUTR 304.				

132334	Nutritional Epidemiology			
Subject:	Catalog Nbr:			
NUTR	0305			
2016 FALL	Primary	Fang Fang Zhang		Fang_Fang.Zhang@tufts.edu
This course is designed for graduate students at either the Master's or Ph.D. level, who are interested in conducting or better interpreting epidemiologic studies relating diet and nutrition to health and disease. There is an increasing awareness that various aspects of diet and nutrition may be important contributing factors in chronic disease. There are many important problems, however, in the implementation and interpretation of nutritional epidemiologic studies. The purpose of this course is to examine epidemiologic methodology in relation to nutritional measures, and to review the current state of knowledge regarding diet and other nutritional indicators as etiologic factors in disease. This course is designed to enable students to better conduct nutritional epidemiologic research and/or to better interpret the scientific literature in which diet or other nutritional indicators are factors under study. Prerequisites: NUTR 0202: Principles of Nutrition				

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Science and NUTR 0204/PH 0201: Principles of Epidemiology and NUTR 0206: Biostatistics I/PH 0205: Principles of Biostatistics. Prerequisites may not be taken concurrently with NUTR 0305.

132349	Communicating Health Information To Diverse Audiences, Part B

Subject: NUTR | Catalog Nbr: 0306

2016 FALL | Primary | Laurie Larusso | Laurie.Larusso@tufts.edu

A review and analysis of how nutrition and health issues are presented by the media. This course will reinforce concrete journalism skills and an understanding of the values and practices required of a competent and thoughtful writer and is structured around class discussions, selected readings, and writing and editing assignments. Classroom discussions and assignments will also focus on how to report controversial issues in nutrition and health. Prerequisite: NUTR 220 or instructor consent. Enrollment limited to 15 students; priority given to Nutrition Communication degree program students. NOTE: Prerequisite may not be taken concurrently with NUTR 306.

132363	Regression Analysis for Nutrition Policy

Subject: NUTR | Catalog Nbr: 0307

2016 SPRG | Primary | Parke Wilde | Parke.Wilde@tufts.edu

Part two of a one-year, two-semester course sequence in statistics. This course is intended for students whose main focus is non-experimental or survey-based research. The course covers non-experimental research design, simple linear regression, multiple regression, analysis of variance, non-linear functional forms, heteroskedasticity, complex survey designs, and real-world statistical applications in nutrition science and policy. Students will make extensive use of Stata for Windows. NOTE: Students cannot receive credit for both NUTR 307 and its second semester counterpart NUTR 309. Pre-requisites: NUTR 207 or NUTR 206/209 and graduate standing or instructor consent.

132377	Nutrition in Emergencies Policies, Practice and Decision-Making

Subject: NUTR | Catalog Nbr: 0308

2016 SPRG | Primary | Erin Boyd | Erin.Boyd@tufts.edu

Required for students enrolled in the Master of Arts in Humanitarian Assistance (MAHA) Program. This course will examine the central role and importance of nutrition security and food security in complex emergencies. The implications of addressing nutritional needs of affected populations for assessment, program design and implementation, and policy development will be examined. The course aims to provide an understanding of: nutrition outcomes in emergencies (malnutrition, morbidity and mortality); causes of malnutrition and mortality in emergencies; approaches to mitigate and address undernutrition in complex emergencies. The course will also develop a broader range of knowledge related to humanitarian response. This course is cross-listed (D237) with The Fletcher School. Pre-requisite: Graduate standing or instructor consent.

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132392	Statistical Methods for Nutrition Research II
Subject: NUTR	Catalog Nbr: 0309
2016 SPRG	Primary Farzad Noubary Farzad.Noubary@tufts.edu
Part two of a one-year, two-semester course covering descriptive statistics, graphical displays, confidence intervals, hypothesis testing, t test, chi-square test, nonparametric tests, multiple linear regression, multiple logistic regression, experimental design, multi-factor and multiple comparisons procedures. Students will make extensive use of SPSS for Windows.NOTE: Students cannot receive credit for both NUTR 309 and NUTR 307. Pre-requisites: NUTR 206/209 and graduate standing or instructor consent.	

132420	Qualitative Research Methods for Nutrition
Subject: NUTR	Catalog Nbr: 0310
2016 SPRG	Primary Justeen Hyde No Email on file.
This course teaches principles and practical skills of qualitative methods in an interactive seminar format. Participants will learn how to design and carry out qualitative research by drawing on weekly background readings and writings, critical case-study discussions, and practical class exercises. They will also take part in the design, implementation, and reflective evaluation of a local research project that involves practical, hands-on experience. The first part of the course will focus on the foundations of qualitative research, including epistemological and ontological assumptions, an overview of methods and their strengths and challenges, standards for quality, and tools for critical assessment of insights derived from these methods. The second part of the course will be dedicated to learning how to design qualitative studies, develop data collection instruments, create data management strategies, and approach data analysis. Students will utilize an identified, community-based interest to inform their qualitative studies. In the final part of the course, students will implement the studies they have designed and gain experience interviewing, analyzing, and disseminating qualitative research. Students should have exposure to research methods in social or health sciences prior to enrollment in this course. Prerequisites: NUTR 207 or NUTR 206/NUTR 209 and either NUTR 204 or NUTR 210, and graduate standing or instructor consent.	

132434	Nutrition Data Analysis
Subject: NUTR	Catalog Nbr: 0311
2016 FALL	Primary Robert Houser robert.houser@tufts.edu
This course will cover knowledge of advanced Stata statistical computing, data base construction, error detection and correction, creation of composite variables, descriptive statistics, univariate analyses, regression analysis of continuous, binary and categorical outcomes, ANOVA & ANCOVA, analysis of clustered data including cluster randomized trials, panel data analysis & introduction to multilevel modeling, factor analysis; and the construction of scales and factor scores. Students pose a research question, identify appropriate statistical techniques for answering the research question, perform the analyses and report on the results in an article suitable for publication in an academic journal. Advanced Stata programming will be taught in weekly hands on lab sessions.	

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132447	Nutrition and Chronic Disease
Subject: NUTR	Catalog Nbr: 0312
2016 SPRG	Primary Sarah Booth Sarah.Booth@tufts.edu
This course covers issues in modern nutrition, public health and chronic disease. We will focus on the major non-infectious diseases present in Western countries that are caused by modifiable lifestyle choices and the role that diet plays in maintenance of health and the risk of chronic diseases. Credit: 0.5	

132462	Nutritional Assessment
Subject: NUTR	Catalog Nbr: 0313
2016 SPRG	Primary Sai Das sai.das@tufts.edu
This course will provide an overview of the common nutritional and food security assessment tools. Laboratory and field methods for population wide nutritional deficiency assessment, nutritional screening and surveillance, dietary assessment, hunger and food security as well as diet diversity and food group indices will be examined. Clinical methods including body composition, biochemical and clinical factors related to macro and micronutrient deficiency will be discussed. Using practical training and demonstrations students will learn how to select and apply these methods in program-based or research-based settings. Issues of validity and reliability of these methods will be addressed mainly in the context of strengths and limitations of each method. At the end of the course, students should have some familiarity with the common nutritional assessment techniques as well as their practical applications at the individual and population wide levels. Credit: 0.5	

132476	Design of Epidemiologic Studies for Nutrition Research
Subject: NUTR	Catalog Nbr: 0314
2016 SPRG	Primary Julie Dunn Julie.Dunn@tufts.edu
This course examines epidemiological principles of study design for nutrition research. Focuses primarily on valid, efficient, and ethical methods for studying relationships between nutritional exposures and chronic disease. Includes written assignments and oral presentations requiring the application of design principles to specific research questions. Enrollment limited to 12 students with priority given to Nutrition Communication degree program students. Prerequisites: NUTR 207 or NUTR 206/209 or equivalent, NUTR 204 or equivalent, and familiarity with basic methods of dietary assessment, and graduate standing or instructor consent.	

132516	Applied Nutritional Biochemistry
Subject: NUTR	Catalog Nbr: 0315
2016 FALL	Primary Alice Lichtenstein alice.lichtenstein@tufts.edu
This course will focus on human nutrition and metabolism. Emphasis will be placed on the biological ramifications of altering substrate load and essential nutrients caused by intended and unintended changes in dietary intake. The functional and regulatory roles of macronutrients and micronutrients will be stressed.	

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Additional components of the course will include integrating nutrition policy with nutrition science.Students will be guided in connecting the lay and scientific literature in the areas of biochemistry and nutrition, and exploring how each informs the other. Opportunities will be available for preparing short written reports and oral presentations on contemporary research issues related to the essential nutrients and current topics. Current challenges in the field of nutrition will be related to the lecture material.

132530	Advanced Medical Nutrition Therapy

Subject:	Catalog Nbr:			
NUTR	0316			
2016 SPRG		Primary	Kelly Kane	Kelly.Kane@tufts.edu
2016 SPRG		Secondary	Kathrina Prelack	kprelack@tufts.edu

Nutritional biochemistry and physiology as related to selected pathophysiological conditions, with attention paid specifically to dietary assessment and various indices of nutritional status. Conditions with particular relevance to clinical nutrition are emphasized. Pre-requisites: Graduate standing or instructor consent.

132544	Positive Deviance for Behavior Change: A Course for Practitioners

Subject:	Catalog Nbr:			
NUTR	0317			
2015 FALL		Primary	Randa Wilkinson-Bouvier	Randa.Wilkinson_Bouvier@tufts.edu

Positive Deviance provides a unique approach for solving problems that require social or behavioral change. At its heart is the belief that in every community there are a few individuals "positive deviants" whose uncommon practices or behaviors enable them to outperform or find better solutions to pervasive problems than their neighbors with whom they share the same resource base. Identifying the positive deviants' special practices/behaviors reveals hidden resources already present in the environment, from which it is possible to devise solutions to pervasive community problems, solutions that are sustainable as well as cost-effective. Students will read and discuss positive deviance and behavior change literature, review and critique studies and programs, and design and carry out positive deviance inquiries in the Boston area. Grading is Satisfactory/Unsatisfactory (S/U). Course enrollment is limited to 15. This course was formerly listed as NUTR 291PD.

132557	Statistical Methods For Epidemiology

Subject:	Catalog Nbr:
NUTR	0318

This course focuses on the identification of confounding, effect modification and bias in epidemiological data. Methods of control of confounding for continuous, categorical and time to event data will be explored. Topics include analysis of data from normal, binomial and Poisson distributions, logistic and Poisson regression, and survival analysis using actuarial, Kaplan-Meier and Coxâ¿¿ proportional hazards, correlated data analysis, generalized estimating equations, and the mixed model. The art and science of statistical modeling and data reduction will be introduced. The course emphasizes practical application and makes extensive use of the SAS programming language.

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132570	Intermediate Epidemiology
Subject: NUTR	Catalog Nbr: 0319
2016 SPRG	Primary Fang Fang Zhang Fang_Fang.Zhang@tufts.edu
Intermediate Epidemiology exposes students to a variety of key concepts and methods when carrying out epidemiologic studies and teaches students applied skills in analyzing epidemiologic data and interpreting study findings appropriately. This course includes a 2-hour lecture session followed by a 1-hour lab session. The lecture session will present epidemiologic methods and concepts beyond the Principles of Epidemiology, and review relevant statistical methods and their applications in epidemiologic studies. The lab session will prepare students with practical skills in conducting and analyzing epidemiologic studies using SAS. The lab session will be taught in a computer lab equipped with SAS. Pre-Requisites: NUTR 204, NUTR 206/NUTR 209 and NUTR 309 or equivalents, or concurrently taking NUTR 309 or equivalents, or instructor consent.	

132584	Nutritional Impact On The Immune System And Related Diseases
Subject: NUTR	Catalog Nbr: 0320
2015 FALL	Primary Simin Meydani simin.meydani@tufts.edu
This special topics course will review the impact of various nutrients (in both deficient and supplemental states) on maintaining the homeostasis of the immune system during physiological and pathological states as well as during different developmental stages of life. The implications for disease development and/or prevention will be discussed. Special emphasis will be given to understanding the mechanism of nutrients' effect on the immune system at biochemical, molecular and cellular levels. The role of nutrient status in maintaining "optimal" immune function and "disease prevention" and its implications for determining the recommended dietary allowance will be discussed. This course was formerly listed as NUTR 291IM.	

132599	Dietary Antioxidants and Degenerative Diseases
Subject: NUTR	Catalog Nbr: 0321
2016 FALL	Primary Mohsen Meydani mohsen.meydani@tufts.edu
This course will discuss the role of dietary antioxidants and pro-oxidants on the pathogenesis of degenerative diseases at molecular, cellular and whole body level. The balance of pro-oxidants-antioxidants on free radical generation, lipid peroxidation, protein oxidation, DNA damage and cell injury will be reviewed in the context of chronic and acute diseases such as cardiovascular disease, cancer, diabetes, arthritis, Alzheimer's disease. This course emphasizes the role of dietary antioxidant vitamins E and C, carotenoids, polyphenols, selenium, iron, zinc and copper on oxidative stress and antioxidant defense mechanisms. This course was formerly listed as NUTR 291DA.	

132614	International Humanitarian Response
Subject: NUTR	Catalog Nbr: 0324

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2016 SPRG	Primary	Daniel Maxwell	Daniel.Maxwell@tufts.edu

This course will offer a practical and in-depth analysis of the complex issues and skills needed to engage in humanitarian work in field settings. Through presentations offered by the faculty of the Humanitarian Studies Initiative and guest speakers who are experts in their topic areas, students will gain familiarity with the primary frameworks in the humanitarian field (human rights, livelihoods, Sphere standards, international humanitarian law) and will focus on practical issues that arise in the field, such as rapid assessments, application of minimum standards for humanitarian response, and operational approaches to relations with the military in humanitarian settings. Each student will be part of a team representing an international humanitarian non-governmental organization. Topics covered: Humanitarian response community and history; International Humanitarian Law and Human Rights Law; Sphere standards and sectoral applications (shelter, water and sanitation, food security, health); Civil-military relations, media skills, logistics, and budgeting; Monitoring and evaluation, accountability, and livelihoods; Personal security, mental health, stress, and teamwork; and Humanitarian technology.

IMPORTANT TO NOTE: These topics will provide the foundational knowledge and skills needed to perform successfully during a three-day intensive field simulation of a humanitarian crisis that will take place April 29-May 1, 2016). There is a $300 fee to cover camping gear hire, food, and other equipment costs. The course starts January 27, 2016 and ends May 4, 2016. This course is cross-listed with The Fletcher School (D213) and enrollment is limited to 15 Friedman students and 15 Fletcher students. Priority enrollment for Friedman is given to: 1) FPAN students pursuing the Humanitarian Assistance Specialization, 2) MAHA students, 3) Graduating and Second-Year students, 4) First-Year students. Prerequisite: Graduate standing or instructor consent.

132626	**Science Based Interventions for Child Malnutrition**

Subject:	Catalog Nbr:			
NUTR	0325			
	2016 FALL	Primary	Irwin Rosenberg	irwin.rosenberg@tufts.edu
	2016 FALL	Primary	Shibani Ghosh	Shibani.Ghosh@tufts.edu

This course will build on current knowledge and translation of nutrition science basis for interactions for prevention and treatment of child malnutrition (wasting and stunting) in developing countries. The emphasis will be on protein quality, micronutrient content especially iron, Vitamin A, zinc, folate and essential fatty acids. Current interventions will be analyzed and discussed in this manner with emphasis on criteria for effectiveness studies.

132640	**International Food And Agricultural Trade**

Subject:	Catalog Nbr:
NUTR	0326

NUTR 326 will allow fourth-semester Friedman students to examine the impact of international food and agriculture trade on food security outcomes, rural livelihoods, food safety, value-chain organization, consumption and food-related health outcomes, the environment, etc. in a seminar style format. The semester will begin with an introduction to international trade theories and market models; international trade institutions and the multilateral and bilateral agreements that regulate food trade; and international agricultural commodity markets. The effects of border interventions, domestic support policies, and exchange

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rates on food and agricultural markets will be explored. The role of domestic and multilateral governance of trade-related food regulations (labeling, risk assessment measures, etc.) will also be discussed. Problem sets will familiarize students with tariff and non-tariff border interventions and their impacts, and the effects of exchange rates on agricultural prices, comparative advantage, and production. The semester will include a trade negotiation simulation exercise.

132654	Food Systems and Sustainable Diets
Subject: NUTR	Catalog Nbr: 0327

'Systems thinking' and sustainability are rapidly evolving approaches to assessing food systems from integrated and applied perspectives. A major sub-focus this year is 'sustainable diets', defined by FAO as "those diets with low environmental impacts which contribute to food and nutrition security and to healthy life for present and future generations." The course explores contemporary food systems and sustainability from conceptual and applied perspectives. Students will: (a) build 'systems thinking' skills, and use these tools to examine the complexities and multiple dimensions of food systems and connections to sustainable diets; (b) interpret confusing food systems epistemologies, framings, and terminologies; and, (c) incorporate 'sustainability' and 'resilience' to the analyses of current and as models for food systems change. Strategies and complexities related to developing sustainable dietary guidance are also addressed. This class is most suitable for second year students, or for first year students with sufficient grounding in food systems literature and / or relevant experience (to be pre-approved by the instructor). The class is small in size and partly seminar style, and emphasizing active participation by incorporating student-led presentations and group exercises/debates on topical issues. Pre-requisite: Graduate standing or instructor consent.

132667	Understanding Nutrition Science Using Systematic Review And Meta Analysis
Subject: NUTR	Catalog Nbr: 0328

Nutrition is an increasingly important topic for clinical medicine and public health policy. An unbiased assessment of the scientific literature is critical when formulating public health policy, allocating health care resources, reviewing and approving health claims, counseling patients who have varying biological needs and comorbidities, and targeting scarce research dollars. The large body of scientific literature, often with seemingly conflicting results, presents a formidable challenge to those making these decisions. This course will focus on the methods and uses of systematic reviews and meta-analyses for nutrition studies and their applications to the field of nutrition.

132680	Agricultural Science And Policy II
Subject: NUTR	Catalog Nbr: 0333

2016 FALL	Primary	Timothy Griffin	Timothy.Griffin@tufts.edu
2016 FALL	Secondary	Christian Peters	Christian.Peters@tufts.edu

Second part of a two-semester sequence required of AFE students. This course covers the major biological, chemical and physical components of agricultural systems. Each is discussed from the viewpoints of both the underlying natural processes and principles, and their significance for major agricultural, food safety, and

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environmental policy issues in the US today. In this second semester, the topics are best management practices, livestock systems, food systems, climate change and bio-energy. Major policy issues associated with these areas include protecting groundwater from nitrogen contamination; regulating and monitoring pesticide use; regulating agricultural biotechnology; and regulating "factory" animal production.

132694	Senior Clinical Rotations

Subject: NUTR | Catalog Nbr: 0335

2016 FALL | Primary | Kelly Kane | Kelly.Kane@tufts.edu

Required of senior standing students enrolled in the Combined Masters Degree/Dietetic Internship program. The grading basis for this course is Satisfactory/Unsatisfactory. Prerequisite: Graduate standing or instructor consent.

132709	Nutritional Genomics And Epigenomics

Subject: NUTR | Catalog Nbr: 0336

The course, which consists of two modules, Nutritional Genomics and Nutritional Epigenomics, will offer a state of science approach to unravel the effects of diet on health. In the Nutritional Genomics module, students will learn how nutrients affect gene expression, how nutrients and genes interact, and how nutrients affect the process of diseases such as cardiovascular diseases and metabolic syndrome through genetic mechanism. The Nutritional Epigenomics module will provide the most recent knowledge regarding epigenetic phenomenon, a mechanism that alters gene expression without genetic changes, how nutrients affect epigenetic phenomena, and how nutrients affect physiologic and pathologic processes such as embryonic development, aging, and cancer by modifying epigenetic phenomena.

132722	Economics of Agriculture and the Environment

Subject: NUTR | Catalog Nbr: 0341

2016 SPRG | Primary | Sean Cash | Sean.Cash@tufts.edu

This course is recommended for AFE students and highly recommended for any Friedman student with an interest in economic aspects of the food/environment interface. In this class we will be studying a broad range of environmental and natural resource problems through the tools and concepts of microeconomics - the social science that deals with balancing our (seemingly unlimited) wants and needs within the limitations of our personal, social, and natural environments. It therefore provides useful frameworks for considering issues such as how we protect and use our land, forests, and oceans; the impact of climate change on food production; societal investment in land, water, and soil quality; and how private and social incentives can help overcome market failures. Economic aspects of environmental and agricultural policies will be a major focus. Pre-requisites: NUTR 238 or a similar course in microeconomic principles or consent of instructor.

132736	Nutritional Biochemistry And Physiology: Macronutrients

Course Bulletin

Subject:	Catalog Nbr:			
NUTR	0370			
2016 FALL		Primary	Stefania Lamon-Fava	stefania.lamon-fava@tufts.edu

Required of all students in the Biochemical and Molecular Nutrition and Nutritional Epidemiology programs. The course will expand understanding of the biological roles of nutrients and their metabolism using basic knowledge in physiology, biochemistry, cell biology and molecular biology. It will integrate information on the roles of macronutrients in nutrition and health especially on their relationship to cardiovascular disease, diabetes and cancer, as well as provide a forum for discussing the experimental approaches to studying macronutrient metabolism and function. NUTR 370 is an advanced course in the nutrition sciences and will cover topics related to carbohydrates and energy metabolism, fiber, protein and amino acids, and lipids. Students are expected to be familiar with the material covered in NUTR 202, as well as the biochemistry and physiology courses offered at Tufts.

132750	**Nutritional Biochemistry and Physiology: Micronutrients**			
Subject:	Catalog Nbr:			
NUTR	0371			
2016 SPRG		Primary	Edward Saltzman	edward.saltzman@tufts.edu

Required of all students in the Biochemical and Molecular Nutrition and Nutritional Epidemiology programs, NUTR 371 is an advanced course in nutritional sciences. NUTR 371 will cover topics related to minerals, watersoluble micronutrients and fat-soluble micronutrients. Students are expected to be familiar with the material covered in an introductory nutrition course, as well as the biochemistry and physiology courses. Prerequisites: BCHM 0223 (Graduate Biochemistry), NUTR 202, NUTR 208, or equivalent.

132762	**Ms Cont Part Time**
Subject:	Catalog Nbr:
NUTR	0395

132774	**Ms Cont Full Time**
Subject:	Catalog Nbr:
NUTR	0396

135600	**Directed Study**			
Subject:	Catalog Nbr:			
NUTR	0397			
2015 FALL		Primary	Robert Houser	robert.houser@tufts.edu
2015 FALL		Primary	Stefania Lamon-Fava	stefania.lamon-fava@tufts.edu
2015 FALL		Primary	Joseph Kehayias	joseph.kehayias@tufts.edu

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2015 FALL	Primary	Allen Taylor	allen.taylor@tufts.edu
2015 FALL	Primary	Martin Obin	martin.obin@tufts.edu
2015 FALL	Primary	Lynne Ausman	lynne.ausman@tufts.edu
2015 FALL	Primary	Jeffrey Blumberg	jeffrey.blumberg@tufts.edu
2015 FALL	Primary	Ellen Messer	ellen.messer@tufts.edu
2015 FALL	Primary	Chung-Yen Chen	Oliver.Chen@tufts.edu
2015 FALL	Primary	Jimmy Crott	Jimmy.Crott@tufts.edu
2015 FALL	Primary	Jennifer Obadia	No Email on file.
2015 FALL	Primary	William Masters	William.Masters@tufts.edu
2015 FALL	Primary	Jose Penalvo	Jose.Penalvo@tufts.edu
2016 FALL	Primary	Sara Folta	sara.folta@tufts.edu
2016 FALL	Primary	Sarah Booth	Sarah.Booth@tufts.edu
2016 FALL	Primary	Alice Lichtenstein	alice.lichtenstein@tufts.edu
2016 FALL	Primary	Sean Cash	Sean.Cash@tufts.edu
2016 SPRG	Primary	Xian-Dong Wang	xiang-dong.wang@tufts.edu
2016 SPRG	Primary	David Hastings	david.hastings@tufts.edu
2016 SPRG	Primary	Beatrice Rogers	beatrice.rogers@tufts.edu
2016 SPRG	Primary	Sai Das	sai.das@tufts.edu
2016 SPRG	Primary	Jennifer Sacheck	jennifer.sacheck@tufts.edu
2016 SPRG	Primary	Elizabeth Johnson	elizabeth.johnson@tufts.edu
2016 SPRG	Primary	Helen Rasmussen	Helen.Rasmussen@tufts.edu
2016 SPRG	Primary	Patrick Webb	patrick.webb@tufts.edu
2016 SPRG	Primary	Andrew Greenberg	andrew.greenberg@tufts.edu
2016 SPRG	Primary	Jennifer Coates	jennifer.coates@tufts.edu
2016 SPRG	Primary	Eileen Kennedy	Eileen.Kennedy@tufts.edu
2016 SPRG	Primary	Caren Smith	Caren.Smith@tufts.edu
2016 SPRG	Primary	Ligi Paul Pottenplackel	Ligi.Paul_Pottenplackel@tufts.edu
2016 SPRG	Primary	Timothy Griffin	Timothy.Griffin@tufts.edu
2016 SPRG	Primary	Christian Peters	Christian.Peters@tufts.edu
2016 SPRG	Primary	Fang Fang Zhang	Fang_Fang.Zhang@tufts.edu
2016 SPRG	Primary	Virginia Chomitz	Virginia.Chomitz@tufts.edu
2016 SUMR	Primary	Edward Saltzman	edward.saltzman@tufts.edu
2016 SUMR	Primary	Nicola McKeown	nicola.mckeown@tufts.edu

To enroll in a Directed Study course, please complete and submit the Directed Study Course Proposal Form (available at: http://nutrition.tufts.edu/students/registrar/forms) to the Registrar's Office so the Directed Study course may be added to your schedule in SIS. A Directed Study course is a mechanism for a student to receive academic credit for work completed under the tutelage of a faculty member. This is generally on a one-to-one basis with the student taking major responsibility for his/her progress. Research conducted in a laboratory during a Directed Study project can be either problem-oriented or technique-based. Directed Study courses must be supervised by Friedman School faculty. The grading basis for this Directed Study course is Satisfactory/Unsatisfactory (S/U).

135642	**Doctoral Candidacy Preparation**
Subject:	Catalog Nbr:

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NUTR	0399
PhD students preparing for their PhD Qualifying Examination need to enroll in this course, NUTR 0399 (full-time equivalent course), in order to remain in active status.	

135681	**Advanced Analytic Methods For Nutrition Policy Research**
Subject:	Catalog Nbr:
NUTR	0401
This course teaches advanced methods for food and nutrition policy research. A central theme is the difficulty of inferring causation using non-experimental data, because of "omitted" or "confounding" factors. We focus on four strategies for addressing omitted variables: a) proxy variables, b) the "difference-in-differences" approach, c) simple models for panel data (fixed effects and random effects), and d) instrumental variables (two-stage least squares). We also address methods for solving the most frequently encountered data problems, such as multicollinearity, complex survey design, and outliers. Most methods are drawn from the field of econometrics, but they are chosen for their likely usefulness for social science research more generally. Using examples of real nutrition policy research questions in the United States and around the world, the course demonstrates the use of advanced analytic methods for defensible and convincing policy analysis.This course was formerly listed as NUTR 281.	

135708	**Phd Thesis Only Part Time**
Subject:	Catalog Nbr:
NUTR	0402

135787	**Phd.Thesis Only**
Subject:	Catalog Nbr:
NUTR	0403
PhD students after completing their PhD Qualifying Exam and while preparing for their Dissertation Defense must enroll in this course, NUTR 0403 (full-time equivalent course), every semester to remain in active status.	

135801	**Food and Nutrition Policy Doctoral Research Seminar**
Subject:	Catalog Nbr:
NUTR	0404
2016 FALL Primary Irwin Rosenberg irwin.rosenberg@tufts.edu	
This seminar is designed to offer doctoral students a forum for discussing issues, methodologies, and research findings at a higher plane of analysis. Will represent a venue for in-depth, cross-disciplinary exploration of challenging topics. Under the direction of one or more faculty members, students will be expected to facilitate topic discussions and guide each other's research, evaluate methods, and critique research findings, often in fields outside of nutrition. Students will be actively challenged to explore cutting-edge topics in innovative ways. The seminar offers students an opportunity to apply new methodologies or insights directly to their own work and return to the seminar at different stages of preparation for further review. In addition, students	

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will further develop their presentation skills, and learn the art of giving and receiving constructive criticism. The grading basis for this course is Satisfactory/Unsatisfactory.

NOTE FPAN PHD REQUIREMENT: Food Policy and Applied Nutrition doctoral candidates are required to fulfill at least two semesters during the period of their doctoral program; participation by FPAN doctoral students beyond the requirement two is strongly encouraged. Strongly recommended for doctoral students in the (former) World Hunger, U.S. Food and Nutrition Issues programs and AFE program. Other doctoral students are welcome. Prerequisites: The seminar is open to doctoral program students or Masters-level students already admitted to the doctoral program. Other Masters students may be considered only with instructor's consent.

136001	**Directed Study**

Subject:	Catalog Nbr:
NUTR	0497

2015 FALL	Primary	Xian-Dong Wang	xiang-dong.wang@tufts.edu
2015 FALL	Primary	Christina Economos	christina.economos@tufts.edu
2015 FALL	Primary	Stefania Lamon-Fava	stefania.lamon-fava@tufts.edu
2016 FALL	Primary	Robert Houser	robert.houser@tufts.edu
2016 FALL	Primary	Patrick Webb	patrick.webb@tufts.edu
2016 FALL	Primary	Nicola McKeown	nicola.mckeown@tufts.edu
2016 SPRG	Primary	Paul Jacques	paul.jacques@tufts.edu
2016 SUMR	Primary	Sarah Booth	Sarah.Booth@tufts.edu

To enroll in a Directed Study course, please complete and submit the Directed Study Course Proposal Form (available at: http://nutrition.tufts.edu/students/registrar/forms) to the Registrar's Office so the Directed Study course may be added to your schedule in SIS. A Directed Study course is a mechanism for a student to receive academic credit for work completed under the tutelage of a faculty member. This is generally on a one-to-one basis with the student taking major responsibility for his/her progress. Research conducted in a laboratory during a Directed Study project can be either problem-oriented or technique-based. Directed Study courses must be supervised by Friedman School faculty. The grading basis for this Directed Study course is Satisfactory/Unsatisfactory (S/U).

136015	**Research Practicum**

Subject:	Catalog Nbr:
NUTR	0501

Required of Post-Doctoral and Training Grant Fellows. Grading is Satisfactory/Unsatisfactory.

138644	**Transfer Credit**

Subject:	Catalog Nbr:
TRAN	9999

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138792	Genetics & Epidmiology
Subject:	Catalog Nbr:
CRBU	0701

138793	Microeconomic Thoery
Subject:	Catalog Nbr:
CRBU	0501
Microeconomic Thoery	

138794	Advanced Microeconomics
Subject:	Catalog Nbr:
CRBR	0301

138795	Graduate Bioinformatics
Subject:	Catalog Nbr:
CRBC	0616

138799	Anthropology of Food and Nutrition
Subject:	Catalog Nbr:
NUTR	0330
This course provides an advanced introduction to anthropological theory and methods designed for food and nutrition science and policy graduate students. Section 1 covers anthropology's four-field modes of inquiry, cross-cutting theoretical approaches and thematic interest groups, their respective institutions and intellectual concerns. Section 2 demonstrates applications of these concepts and methods to cutting-edge food and nutrition issues. Assignments and activities incorporate background readings, related discussions, and short writing assignments, plus an anthropological literature review on a focused food and nutrition project, relevant to their particular interests. The course overall encourages critical thinking and scientific assessment of anthropology's evidence base, analytical tools, logic, and meaning-making, in the context of contributions to multi-disciplinary research and policy teams. Pre-requisites: Some social science background and graduate standing or instructor consent.	

138928	MARKETING OPER MANAGEMNT
Subject:	Catalog Nbr:
CRBC	0705

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138929	MUSCLE BIO HLTH & DISEAS
Subject:	Catalog Nbr:
CRBU	0560

138930	TPC ADVANCE ECONOMETRICS
Subject:	Catalog Nbr:
CRBU	0711

138931	BIOLOGICAL DATABASE ANLY
Subject:	Catalog Nbr:
CRBU	0768

138932	MASS SPEC&FUNCTNL GENOMC
Subject:	Catalog Nbr:
CRBU	0793

138933	SUPPLY CHAIN MANAGEMENT
Subject:	Catalog Nbr:
CRBU	0854

138956	Cross Reg: Research, Clinical and Public Policy Applications in Medical Nutr sci
Subject:	Catalog Nbr:
CRBU	0620

138957	Comp. Bio of Human Disease
Subject:	Catalog Nbr:
CRBU	0500

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138959	Proteins, Mass Spectometry & Functional Genomics
Subject:	Catalog Nbr:
CRBU	0792

139037	STATISTICAL METHODS EPI
Subject:	Catalog Nbr:
CRBU	0852

139207	Nutritional Biochemistry with Community/Clinical Applications: Macronutrients
Subject:	Catalog Nbr:
NUTB	0205
2016 FALL	Primary Lynne Ausman lynne.ausman@tufts.edu

Students will explore the fundamental roles of nutrients in biological systems and the implications of macronutrient biological functions on food and nutrition policy. Emphasis will be placed on the function of nutrients as defined by their chemistry, interrelations among nutrient functions, mechanistic approaches in the analysis of nutrient-disease relationships, and recent advances in the basic sciences related to nutrition and nutrient function. The course will integrate examples of community, clinical and public health policy applications throughout the term. Published journal articles from the peer reviewed literature, case histories, and public policy documents will form the basis for critical review and discussion. This is the first of a two-course sequence (NUTB 205 and NUTB 305 – may be taken in either order).

139208	Economics for Food and Nutrition Policy
Subject:	Catalog Nbr:
NUTB	0238
2016 FALL	Primary William Masters William.Masters@tufts.edu

This course equips students with the principles used for economic analysis of food and nutrition policies around the world. We use the graphical methods taught in standard, one-semester courses on the principles of economics, but our motivation, examples and applications are focused on food and nutrition problems in the United States and elsewhere. On completion, students will be able to obtain the data and apply the analytical methods needed to: (1) explain and predict consumption, production and trade in agriculture and food markets; (2) evaluate the social welfare consequences of market failure, collective action and government policies including regulation, taxation and enforcement of property rights in agriculture and food markets; (3) measure poverty and inequality in income, wealth, nutrition and health, as influenced by changes in markets and policies; and (4) describe macroeconomic relationships, fluctuations and trends in incomes, employment, economic growth and development.

139209	Statistical Methods for Health Professionals I

Course Bulletin

Subject:	Catalog Nbr:			
NUTB	0250			
2016 FALL		Primary	Robert Houser	robert.houser@tufts.edu

Students will critically evaluate, compare, interpret, judge, summarize and explain statistical results published in research articles in health and nutrition journals from the United States and around the world that are influencing the practice of nutrition science, policy and research. Students learn and use Stata® statistical software for their homework.

139222	Field Research Methods in Humanitarian Settings
Subject:	Catalog Nbr:
NUTC	0235

139239	Intermediate Biostatistics: Regression Methods			
Subject:	Catalog Nbr:			
NUTR	0323			
2016 FALL		Primary	Kenneth Chui	Kenneth.Chui@tufts.edu

This course provides a survey of regression techniques for outcomes common in biomedical and public health data including continuous, count, binary, and time series data. Emphasis is on developing a conceptual understanding of the application of these techniques to solving problems, rather than to the numerical details. The objectives of this course are to (1) recognize when data can be described and analyzed by a regression model;(2) develop and interpret regression models; (3) plan and conduct an appropriate analysis; (4) summarize the results of the analysis in terms of the research question in both verbal and written formats suitable for targeted audiences. Prerequisites: PH 205 with a grade B or better, or NUTR 207 or NUTR 206 or NUTR 209 with a grade B- or better. Students who wish to use other statistics course as prerequisites please gather a syllabus of the said course and contact the course director for consent before the end of the add/drop period. This course is cross-listed with Public Health (PH 206).

139241	Food Security and Nutrition in Emergencies
Subject:	Catalog Nbr:
NUTC	0232

The course will take a practical programming approach by first, reviewing issues of food security and nutritional assessment, interpretation and response analysis, followed by a focus on the core food security and nutrition actions including food assistance, direct nutrition interventions and interventions to protect and promote food security and livelihoods more broadly. Programming examples explored cover a range of applications from acute emergencies to protracted crises, recovery, and in some cases, food security and nutrition elements of social protection. The evidence base for these actions will be reviewed, along with related international policies, standards and guidelines. A broader range of related and topical issues will also be considered, including humanitarian protection, disaster risk reduction and emergency preparedness, coordination, capacity development, recovery and transition.

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139243	Statistical Methods for Health Professionals II			
Subject:	Catalog Nbr:			
NUTB	0350			
2016 SPRG		Primary	Robert Houser	robert.houser@tufts.edu

The purpose of this course is to help students gain proficiency applying statistical concepts and procedures for the analysis of health and nutrition data. Statistical analysis techniques used for the analysis of data from experimental and non-experimental research studies covered in this course will include multiple regression assumptions, diagnostics, transformations and robust standard errors, multiple logistic regression, analysis of variance and covariance and analysis of data from cluster randomized trials. In this course students critically evaluate, compare, interpret, judge, summarize and explain statistical results published in research articles in health and nutrition journals that are influencing nutrition science, research, policy, and clinical practice. Students will learn how to formulate research questions, how to identify appropriate statistical techniques, how to perform the analysis with Stata(R) statistical software and report results in tables, text and figures. Prerequisites: Graduate standing or instructor consent.

139371	Directed Study			
Subject:	Catalog Nbr:			
NUTR	0397			
2015 FALL		Primary	Paul Leavis	paul.leavis@tufts.edu
2015 FALL		Primary	Sara Folta	sara.folta@tufts.edu
2015 FALL		Primary	Diane McKay	diane.mckay@tufts.edu
2015 FALL		Primary	Martin Obin	martin.obin@tufts.edu
2015 FALL		Primary	Sai Das	sai.das@tufts.edu
2015 FALL		Primary	Elizabeth Johnson	elizabeth.johnson@tufts.edu
2015 FALL		Primary	Donato Rivas	Donato.Rivas@tufts.edu
2016 FALL		Primary	Kelly Kane	Kelly.Kane@tufts.edu
2016 FALL		Primary	Timothy Griffin	Timothy.Griffin@tufts.edu
2016 SPRG		Primary	Robert Houser	robert.houser@tufts.edu
2016 SPRG		Primary	Karen Jacobsen	karen.jacobsen@tufts.edu
2016 SPRG		Primary	Carole Palmer	carole.palmer@tufts.edu
2016 SPRG		Primary	Johanna Dwyer	johanna.dwyer@tufts.edu
2016 SPRG		Primary	Jennifer Coates	jennifer.coates@tufts.edu
2016 SPRG		Primary	Dyan Mazurana	Dyan.Mazurana@tufts.edu
2016 SPRG		Primary	Daniel Maxwell	Daniel.Maxwell@tufts.edu
2016 SPRG		Primary	Christian Peters	Christian.Peters@tufts.edu
2016 SPRG		Primary	Sean Cash	Sean.Cash@tufts.edu
2016 SUMR		Primary	William Masters	William.Masters@tufts.edu

This Directed study has a letter grading basis. To enroll in a Directed Study course, please complete and submit the Directed Study Course Proposal Form (available at: http://nutrition.tufts.edu/students/registrar/forms) to the Registrar's Office so the Directed Study course may be added to your schedule in SIS. A Directed Study course is a mechanism for a student to receive academic credit for work completed under the tutelage of a faculty member. This is generally on a one-to-one basis with the student taking major responsibility for his/her progress. Research conducted in a laboratory during a

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Directed Study project can be either problem-oriented or technique-based. Directed Study courses must be supervised by Friedman School faculty.

139426	Nutrition Child Development
Subject: NUTR	Catalog Nbr: 0212
This course provides an overview of development during gestation, infancy, childhood, and adolescence, and enables students to think critically about the role of nutrition in child development. We will focus primarily on current issues and controversies in the United States, notably for health promotion and obesity prevention, with international perspectives incorporated during select units. This course complements NUTR 301 (Nutrition & the Life Cycle), as well as NUTR 272 (Physical Activity, Nutrition and Health); the only prerequisite is NUTR 201 (Fundamentals of Nutrition Science) or equivalent.	

139427	Food Politics and Policy in the US
Subject: NUTR	Catalog Nbr: 0340
This course uses contemporary food issues to examine core elements of the U.S. system of government and to illuminate dynamics in American politics and policymaking. Its primary purpose is to develop a clearer understanding of how government institutions function, and how politics broadly understood shape what we end up calling (perhaps with some overstatement) “food policy.” As such, the course focuses it attention on such elements as the constitutional foundations of the U.S. system of government, how the structure of the election system affects policy debate and outcomes, why some organized societal interests have greater access to and leverage with policymakers than others, and, overall, why obtaining fundamental policy change is difficult – yet not impossible	

139428	Food Systems Modeling and Analysis
Subject: NUTR	Catalog Nbr: 0342
2016 SPRG Primary Christian Peters Christian.Peters@tufts.edu	
Agriculture and food industries are a subject of growing interest in terms of their resource requirements, ecological impacts, and sustainability. This course will provide a foundation in some of the methods of modeling and analysis used to study food systems. We will address several types of approaches, generally building in complexity, starting with net balances of production and consumption and continuing through modeling food production capacity, foodshed analyses, life cycle assessment, and system dynamics and integrated modeling. Students will learn what types of questions are best addressed through modeling approaches, the methods used to conduct food systems models, and the data required to complete the analyses. In addition, they will have opportunities to conduct simple analyses through in-class exercises. Finally, students will learn how models might be relevant to the development of policy related to local and regional food systems or dietary changes to reduce environmental impact. Pre-requisite: Graduate standing or instructor consent.	

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139439	Community Organizing
Subject:	Catalog Nbr:
CRBU	0781

139456	Nutritional Biochemistry with Community/Clinical Applications: Micronutrients
Subject:	Catalog Nbr:
NUTB	0305
2016 SPRG	Primary Lynne Ausman lynne.ausman@tufts.edu

Students will continue the exploration of the fundamental roles of nutrients in biological systems and the implications of micronutrient biological functions on food and nutrition policy. As with NUTB 205, emphasis will be on the function of nutrients as defined by their chemistry, interrelations among nutrient functions, mechanistic approaches in the analysis of nutrient-disease relationships, and recent advances in the basic sciences related to nutrition and nutrient function. This is the second of a two-course sequence (NUTB 205 and NUTB 305 – may be taken in either order). Prerequisites: Graduate standing or instructor consent.

139457	Global Nutrition Programs
Subject:	Catalog Nbr:
NUTB	0227
2015 FALL	Primary Sujata Dixit-Joshi Sujata.Dixit_Joshi@tufts.edu
2016 FALL	Primary Kristy Hendricks kristy.hendricks@tufts.edu

The goal of this course is to expose students to major global nutrition programs and strategies designed to lessen the global burden of nutrition related morbidity and mortality. Both prevention and treatment options for major nutrition related disorders that dominate contemporary populations will be discussed. This course will cover: a) current debates in the cause, prevention and treatment of global nutrition challenges, b) the range of options for interventions that exist, and actually implemented, c) the strength of the evidence base underpinning actions, d) approaches to problem assessment, (including the process of considering alternatives according to context), e) examples of successful nutrition interventions, f) constraints to success (what makes or breaks major program successes), and g) key global organizations involved in nutrition policy and programming.

Each session will seek to cover: a) main problems still needing to be resolved; b) priority/target populations; c) interventions used/not used. Students will examine solutions at the local, national, and international level, including policy impact on programs, public health interventions, and public health practices.

139458	Theories of Behavior Change
Subject:	Catalog Nbr:
NUTB	0211
2016 SPRG	Primary Sara Folta sara.folta@tufts.edu

This course explores the theories of behavior change most commonly used in nutrition and public health.

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Includes an examination of several individual-based, social-based, organization-based and eco-social theories, including the Health Belief Model, the Theory of Planned Behavior, the Trans-theoretical Model, Decision-Making, Social Support, Social Learning Theory, and Diffusion of Innovations. Understanding and being able to apply these theories will help researchers and practitioners design program interventions based on psychological, biological, social, cultural and organizational frameworks. Prerequisites: Graduate standing or instructor consent.

139459	Interpreting Nutrition Evidence

Subject: NUTC Catalog Nbr: 0230

2016 SPRG Primary Adela Hruby Adela.Hruby@tufts.edu

This course will familiarize students with the terms and tools required to navigate the scientific literature and dissect the components of nutrition research articles. The course covers literature searches, study designs, anatomy of a research paper, and common statistical terms. Through "hands-on" exercises, including a literature review and case studies of how nutrition-related scientific evidence is translated in press releases and social media, students will gain the skills required to translate and communicate this body of knowledge responsibly. Prerequisites: NUTC 0200, NUTC 0202, or a prior course in general nutrition.

139468	Obesity and Energy Regulation

Subject: NUTB Catalog Nbr: 0242

2016 SPRG Primary Sai Das sai.das@tufts.edu

This course is a perspective from the intersection of food and biology and will build upon principles of energy balance that were developed in Nutritional Biochemistry. In the first section, physiologic regulation of body weight and its dysregulation leading to obesity will be explored. The interaction between hormonal/neuroendocrine systems and dietary factors will be featured. In the second half of the course, lifestyle, pharmacologic and surgical approaches to obesity treatment as well as maintenance of lost weight will be presented. Prerequisites: Graduate standing or instructor consent.

139509	Systematic Reviews: Theory and Practice

Subject: NUTR Catalog Nbr: 0369

This course is designed to train students how to conduct a systematic literature review and how to report it in a research article suitable for an academic journal. This course combines classroom sessions with substantial individual or group work to create a systematic literature review plan. Students will be taught how to perform each step in a review and will then be expected to apply it to a topic of their choosing. They will get feedback at each stage in the process. The final deliverable for the course will be a protocol for a systematic literature review.

Both masters and doctoral students can use the course as an opportunity to become an expert on a particular

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topic of interest. Masters students can use the written review protocol as a writing sample when applying for employment after graduation and some students might eventually complete the systematic review and publish it in an academic journal. Doctoral students can use the literature review as the basis for dissertation letter of intent since conducting a systematic review is a good first step in developing a research proposal.

Several course sessions and labs will be devoted to mathematical meta-analysis concepts and procedures. The primary course objectives are to understand how to conduct a systematic literature search, how to critically evaluate the quality of each study selected for inclusion in the review and how to write up the review in a form suitable for submission to an academic journal.

139570	**Directed Study**
Subject: NUTR	Catalog Nbr: 0297
2016 SPRG Primary Daniel Maxwell	Daniel.Maxwell@tufts.edu

Directed study course with a letter grading basis. To enroll in a Directed Study course, please complete and submit the Directed Study Course Proposal Form (available at: http://nutrition.tufts.edu/students/registrar/forms) to the Registrar's Office so the Directed Study course may be added to your schedule in SIS. A Directed Study course is a mechanism for a student to receive academic credit for work completed under the tutelage of a faculty member. This is generally on a one-to-one basis with the student taking major responsibility for his/her progress. Research conducted in a laboratory during a Directed Study project can be either problem-oriented or technique-based. Directed Study courses must be supervised by Friedman School faculty.

139588	**Biology II: Cells, Genetics, Development and Physiology**
Subject: CRBU	Catalog Nbr: BI108

139604	**Directed Study**
Subject: NUTR	Catalog Nbr: 0497
2015 FALL Primary Stefania Lamon-Fava	stefania.lamon-fava@tufts.edu
2016 FALL Primary Nicola McKeown	nicola.mckeown@tufts.edu

This Directed study has a letter grading basis. To enroll in a Directed Study course, please complete and submit the Directed Study Course Proposal Form (available at: http://nutrition.tufts.edu/students/registrar/forms) to the Registrar's Office so the Directed Study course may be added to your schedule in SIS. A Directed Study course is a mechanism for a student to receive academic credit for work completed under the tutelage of a faculty member. This is generally on a one-to-one basis with the student taking major responsibility for his/her progress. Research conducted in a laboratory during a Directed Study project can be either problem-oriented or technique-based. Directed Study courses must be supervised by Friedman School faculty.

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139617	Policy, Systems, and Environmental Change for Physical Activity			
Subject:	Catalog Nbr:			
NUTC	0212			
2016 SUMR	Primary	Rebecca Boulos	Rebecca.Boulos@tufts.edu	
2016 SUMR	Primary	Richard Fenton	Mark.Fenton@tufts.edu	

Behavior change efforts alone are not sufficient to elicit population level improvements in physical activity and nutrition. This course will address policy and environmental approaches that are being utilized nationwide to create physical and cultural settings that routinely support healthier choices at all levels. The basics of physical activity measurement, epidemiology, and guidelines will be outlined, along with fundamental lessons of individually targeted approaches to physical activity and nutrition. The socio-ecological model will frame the evidence for systems-based approaches to population physical activity and nutrition, such as: key elements of the built environment that support routine activity and healthier food systems; policies such as land use plans and zoning, transportation networks and funding, and site design guidelines; school policies affecting physical activity (e.g., physical education and recess, shared-use agreements, Safe Routes to School) and nutrition (e.g., vending policies, concessions, fund-raising). The result will be a broad understanding of the evidence and best practice-based approach to healthy community development.

139618	Assessing and Measuring the Impact of Humanitarian Aid			
Subject:	Catalog Nbr:			
NUTC	0302			
2015 SUMR	Primary	Erin Boyd	Erin.Boyd@tufts.edu	

Progress has been made on monitoring and evaluation of humanitarian programs, yet little has been achieved in the field of measuring and understanding the impact of aid, both short and long term; leading to limited evidence of the effectiveness of humanitarian aid. This problem relates to both the methodological challenges of measuring impact in complex, remote or insecure humanitarian contexts, and a set of institutional constraints that hinder organizational and personal learning. This course will explore problems of impact assessment for emergency operations and will provide training in some of the most promising methodologies of impact assessment, paying attention to participatory assessment methodologies. The course explains the trade-offs between 'hard' quantitative approaches and methods in humanitarian situations, and ‘soft' qualitative approaches and methods, leading to understanding of the benefits of mixed methods for impact assessment. Through analysis of institutional constraints to impact assessment, the course provides guidance on ways to use evidence to influence policy and programming in humanitarian contexts.

139619	Master's Thesis			
Subject:	Catalog Nbr:			
NUTB	0300			
2016 SUMR	Primary	Robert Houser	robert.houser@tufts.edu	
2016 SUMR	Primary	Lynne Ausman	lynne.ausman@tufts.edu	

Faculty will oversee the selection, scope and mentoring for a thesis project.

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139620	Global Food and Nutrition Policy

Subject: NUTB Catalog Nbr: 0206

2016 SUMR Primary Eileen Kennedy Eileen.Kennedy@tufts.edu

Varying global and national forces drive food production and consumption within and among nations. The possibilities and limitations facing nutrition professionals in any given situation require an understanding of policy and the basic principles of policy formation. In order to be effective, professionals need an understanding of the indicators that are available to diagnose the situation, the skills to seek out information, and the ability to correctly interpret the results. Students will examine and apply these skills to specific case examples and evaluate the range of programs used to address over and under-nutrition, and which interventions are appropriate in varying circumstances.
The class will cover: a) how science influences the policy agenda, and how policy debates influence the scientific and programmatic agenda; b) the scientific underpinnings of food and nutrition policies and development of normative guidance; c) how empirical findings in scientific research and operational programming make their way into policy and law; d) global debates and controversies in nutrition; e) how to evaluate what works best and what the alternatives should be considered; f) a review of key organizations involved in global food and nutrition policy and programming.

139621	Management of Health and Nutrition NGO's

Subject: NUTB Catalog Nbr: 0208

2016 SUMR Primary David Hastings david.hastings@tufts.edu

Key concepts and principles for managing nutrition and health programs and organizations will be addressed to equip students to function as program directors and project managers. Case studies and readings will be used to convey a practical understanding of how to manage and coordinate business functions to achieve the goals and objectives of the organization. This course will deal with for-profit and nonprofit organizations. Topics will include business and project planning, management control systems, financial management, budgeting, performance measurement, pricing and marketing of services, operations management, cost analysis, human resource management, and the development of management information systems. The course is designed to provide students with practical tools.. The course is designed to develop an awareness of how each management function interacts and impacts the organization. Residencies will be comprised of lectures covering specialized topics, case discussions with student presentations, and journal discussions.

139622	Advanced Medical Nutrition Therapy

Subject: NUTB Catalog Nbr: 0316

2016 SUMR Primary Kelly Kane Kelly.Kane@tufts.edu
2016 SUMR Primary Kathrina Prelack kprelack@tufts.edu

This course aims to expand student's knowledge on a variety of common pathophysiological conditions and integrate this knowledge with the intervention of clinical nutrition therapies. Students will learn about the basic elements of medical nutritional therapy. These include nutritional assessment, which incorporates the use of anthropometric, biochemical and clinical data to determine nutritional status. Particular emphasis is placed on understanding energy expenditure and body composition and their components, and how these

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may change during physiological stress or illness. Students then learn about enteral and parenteral nutrition and fundamental aspects of nutrition support. These core elements are then applied in the study of various disease states and clinical nutrition therapy. Students also have the opportunity to explore diet and disease in an approved area of their interest through written and oral presentation.

139777	Principles of Nutrition Science

Subject:	Catalog Nbr:			
NUTC	0202			
2016 FALL		Primary	Diane McKay	diane.mckay@tufts.edu

This course presents the fundamental scientific principles of human nutrition. Students will become familiar with food sources; recommended intake levels; biochemical role; mode of absorption, transport, excretion; deficiency/toxicity symptoms, and potential major public health problems for each macro- and micronutrient. The student goals for this course are: 1.) to describe the components of a healthy diet, 2.) understand the major nutrition problems that affect individuals and populations from conception and throughout the life cycle, and 3.) understand the scientific basis for nutritional recommendations brought before the scientific and lay communities. Prerequisites: Students are required to have taken a one semester college-level course in either human biology, chemistry, or physiology (preferred, Tufts offers an online Physiology course every summer).

139834	Behavior Change Theory and Positive Deviance

Subject:	Catalog Nbr:			
NUTC	0213			
2016 SPRG		Primary	Kristie Hubbard	Kristie.Hubbard@tufts.edu

How do you achieve behavior change in challenging circumstances? This course explores that question by examining theories of behavior change commonly used in nutrition and public health and introducing the Positive Deviance (PD) Approach. In the first half, several individual-, social-, and organization based theories will be explored, with an emphasis on understanding core concepts and measurement issues. The second half will build on this base and cover the theory, history and application of PD. Students will develop their own problem statement and map out the steps required to apply the PD approach to their identified problem. Interactive activities and assignments will teach students when to apply each of the behavior change methods.

139852	Epidemiology for Nutrition Professionals

Subject:	Catalog Nbr:			
NUTB	0204			
2016 SPRG		Primary	Silvina Choumenkovitch	silvina.choumenkovitch@tufts.edu
2016 SPRG		Secondary	Maria Lammi	Maria.VanRompay@tufts.edu

This course covers basic epidemiologic concepts and methods and introduces students to techniques, including dietary assessment methods, which are used in human nutrition research. Students will learn to calculate and interpret basic measures of disease frequency and measures of effect, will be introduced to methods for recognizing and addressing sources of error in human studies, and will learn the basics of study

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design and implementation for nutrition research. Prerequisites: Graduate standing or instructor consent.

139853	Monitoring and Evaluation of Nutrition and Food Security Programs
Subject: NUTB	Catalog Nbr: 0210

Inadequate project monitoring and evaluation (M&E) represent a major constraint in domestic and international programmatic efforts to address problems of malnutrition. The absence of sound M&E processes in large numbers of nutrition projects, despite continued evidence of their value in assessing and improving project performance, suggests that many project planners and managers may not yet have the necessary skills or understanding to develop and operate such systems. In this course students will become familiar with the strategies and techniques for monitoring and evaluating projects, particularly those related to nutrition and food security. They will be exposed to multiple domestic and international examples of monitoring and evaluation systems. Students will gain experience in the design of regional monitoring and evaluation plans and be able to assess the adequacy of proposals and program evaluations designed by others.

139854	Nutrition, Brain and Behavior
Subject: NUTB	Catalog Nbr: 0243

2016 FALL Primary Marcy Goldsmith marcy.goldsmith@tufts.edu

During the past two decades there has been an increasing awareness of the interaction between nutrition and behavior. To examine this interaction, two general themes will be pursued. First, we will investigate the effects of nutritional variables on brain functioning and behavior. Second, we will study the influence of psychological variables in determining food intake and nutritional status. Examples of topics to be covered includes: the effects of protein- caloric malnutrition on brain development and intellectual functioning; obesity and other eating disorders; food additives and behavior; the role of brain mechanisms in determining nutritional intake; food choice; food as an addiction; and the importance of vitamins and minerals for behavioral functioning.

139855	Nutrition and Aging
Subject: NUTB	Catalog Nbr: 0241

This course will address the impact of nutrition on aging and the impact of aging on nutrient needs. The worldwide population is experiencing a dramatic increase in the number of elderly, due to socioeconomic improvements, and advances in science, technology, medicine and nutrition. It is of primary importance to determine both the nutritional needs of the elderly and to adequately determine long-term nutrient needs that will prevent or ameliorate nutrition- related chronic diseases. Topics will include changes in body composition and their adverse effects such as frailty and sarcopenia, controversies about healthy weights for older adults, roles of micronutrients in ameliorating age-related deterioration in bone health and immune function, and therapies that may prevent cognitive decline. Approaches to maximizing healthy aging from physiological and sociologic aspects of these problems will be presented.

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139856	Food Science Fundamentals
Subject: NUTB	Catalog Nbr: 0219
2016 FALL	Primary Lynne Ausman lynne.ausman@tufts.edu

The foundation of knowledge for any nutrition professional is a thorough understanding the nutritional components of food and foodborne pathogens that are linked with disease and issues affecting food safety. Students will become adept with the basic groups of foods in the food supply and their nutrient profiles, their harvesting, processing and storage procedures and policies. The course will provide students a broad overview of certain aspects of the food supply both locally and worldwide and will examine issues affecting food safety including some of the mechanisms by which foodborne pathogens that cause disease in humans, as well as the human consequences of infection by major foodborne pathogens such as E. coli O157:H7, Campylobacter and Listeria.

139922	Cardiovascular Epi II
Subject: CRHA	Catalog Nbr: EPI245

140094	Sustainability on the Farm
Subject: NUTC	Catalog Nbr: 0261
2015 FALL	Secondary Zachary Conrad No Email on file.
2016 FALL	Primary Timothy Griffin Timothy.Griffin@tufts.edu

Agriculture is the single largest user of land and water and, thus, has broad environmental impacts. Gains in yield productivity over the last five decades have met increasing demands without increasing agricultural area in the U.S., but environmental, economic and social costs have been considerable. In this first course of the series, the farm level primary costs and benefits will be analyzed, along with a profile of current conventional and alternative approaches to food production in the U.S. Students will examine the policy response to environmental and conservation concerns, focusing on the balance between meeting increased demand while mitigating environmental and social costs. Prerequisite: Graduate standing or instructor consent.

140108	Biology of Muscle Wellness & Disease
Subject: CRBU	Catalog Nbr: HS560

140148	Introduction to Epidemiology
Subject: CRBU	Catalog Nbr: 713

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140163	Principles of General Chemistry
Subject:	Catalog Nbr:
CRBU	CAS171

140277	Genetic Epidemiology
Subject:	Catalog Nbr:
CRHA	507

140278	Bayesian Methodology in Biostatistics
Subject:	Catalog Nbr:
CRHA	249
Bayesian Methodology in Biostatistics	

140279	Econometrics for Health Policy
Subject:	Catalog Nbr:
CRHA	525
Econometrics for Health Policy	

140280	Population, Health, and Development
Subject:	Catalog Nbr:
CRHA	225
Population, Health, and Development	

140281	Mobilizing the Science of Early Childhood Development to Drive Innovation in Policy and Practice
Subject:	Catalog Nbr:
CRHA	299
Mobilizing the Science of Early Childhood Development to Drive Innovation in Policy and Practice	

140373	Sustainable Food Systems and Markets			
Subject:	Catalog Nbr:			
NUTC	0262			
2016 SPRG	Primary	Jennifer Obadia	No Email on file.	

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The food sector, one of the largest components of the U.S. economy, includes transforming raw agricultural products and moving them to retail points of contact. Although highly integrated and increasingly global, the food system does not provide equal access to all consumers and significant food losses occur at all stages of the supply chain. In this course, students will analyze causes of the market failure to provide equal access; explore solutions to minimize losses within the food system; and evaluate alternative supply chains, including values-based, direct to consumer, and food hubs.

140392	**Mass Spectrometry, Proteomics, & Functional Genomics**
Subject:	Catalog Nbr:
CRBU	BI793

140478	**Environmentally Sustainable Development**
Subject:	Catalog Nbr:
CRBU	CAS304
Environmentally Sustainable Development	

140483	**Social Networks in Strategic Communication Planning**
Subject:	Catalog Nbr:
CRBU	0737
Social Networks in Strategic Communication Planning	

140491	**Data Mining and Predictive Modeling**
Subject:	Catalog Nbr:
CRHA	288
Data Mining and Predictive Modeling	

140492	**Intro to Programming in SAS**
Subject:	Catalog Nbr:
CRHA	111
Intro to Programming in SAS	

140493	**Biological Database Systems**
Subject:	Catalog Nbr:
CRBU	_BF768
Biological Database Systems	

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140539	Fundamentals of Writing About Nutrition and Health
Subject: NUTR	Catalog Nbr: 0220
2016 FALL Primary Christine Smith Christine.Smith@tufts.edu	
This introductory course is designed to teach the basic skills necessary to write nutrition- and health-related papers that are clear, accurate, and audience-appropriate. It is a practical review of grammar, writing, and revision, and will enable students to develop a clear, fluent, and readable style. The course will include both individual and collaborative exercises and will require several writing and editing assignments. NUTR 220 is a prerequisite for NUTR 205 and NUTR 306. Enrollment limited to 20 students. NOTE: NUTR 220 may not be taken concurrently with NUTR 205 or NUTR 306.	

140575	Systems Science in Public Health
Subject: CRHA	Catalog Nbr: 0212
Systems Science in Public Health	

140576	Research Synthesis of Meta-Analysis
Subject: CRHA	Catalog Nbr: 0233
Research Synthesis of Meta-Analysis	

140583	Built Environment and Human Health Energy Expenditure
Subject: CRHA	Catalog Nbr: 0539
Built Environment and Human Health Energy Expenditure	

140639	Sustainability and the Food Consumer
Subject: NUTC	Catalog Nbr: 0263
2016 SUMR Primary Sean Cash Sean.Cash@tufts.edu	
Every day, we make numerous choices about what to eat - and what not to eat. How do consumers and households make these choices, and how can the environments in which we make these choices be shaped to enhance sustainability without sacrificing our health or enjoyment of food? In this course we draw upon insights from economics, psychology, marketing, and nutrition to explore topics such as current food consumption patterns, determinants of food choice, the role of food labeling and market-based initiatives in enhancing sustainability, and the impact of regulation and "nudges" on consumer behavior around food.	

140640	Human Physiology
Subject:	Catalog Nbr:

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NUTC	0268			
2016 SUMR	Primary	Paul Leavis		paul.leavis@tufts.edu

This course will introduce the functions of mammalian organisms as we understand them at various levels of organization - organ system, organ, cellular and subcellular levels. Our goal is to provide a broad overview of the fundamental properties and regulation of these systems so that the student can understand and relate this material to that learned in other nutrition science courses. This course will cover topics that are based upon biological and chemical concepts; however, no prior background in science is required. This course does not fulfill the degree requirement for NUTR 208.

140715	**Muscle Biology in Health & Disease**
Subject:	Catalog Nbr:
CRBU	SAR560

Muscle Biology in Health & Disease

140781	**Econometric Methods in Impact Evaluation**
Subject:	Catalog Nbr:
CRHA	GHP228

Econometric Methods in Impact Evaluation

140813	**Consumer Behavior**
Subject:	Catalog Nbr:
CRBU	MK856

Consumer Behavior

140824	**Food Justice: Critical Approaches in Policy and Planning**
Subject:	Catalog Nbr:
NUTR	0285

2016 FALL	Primary	Julian Agyeman	julian.agyeman@tufts.edu

This class offers students different lenses, such as critical race theory to see how the intersectionality of race, class, gender, sexuality, ability and citizenship play out in the development of systemic structural and socio-spatial inequities and injustices in food systems. It develops an understanding and contextualization of the role of food justice activism within the broader narrative of the alternative food movement and offers emerging ideas about how policymakers and planners can take a role in increasing food justice beyond the more mainstream and ultimately contested notions of what is ‘local’ and ‘sustainable.’ The course will help participants chart their role(s) in advocating for ‘just sustainability’ as a defining factor in becoming food systems planners and policymakers.Prerequisite: Graduate standing or instructor consent. This course is cross-listed with UEP 0285.

140905	**Biostatistics I**

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Subject:	Catalog Nbr:			
NUTR	0206			
	2016 FALL	Primary	Angie Rodday	Angie.Rodday@tufts.edu
	2016 FALL	Primary	Farzad Noubary	Farzad.Noubary@tufts.edu

This course introduces basic principles and applications of statistics to problems in clinical research. Topics covered include descriptive statistics, probability and random variation, sampling, hypothesis testing, proportions, measures of frequency, t-tests, chi-square tests, one-way analysis of variance, correlation, linear regression and nonparametric statistics. This course has a required Laboratory (NUTR 0206.1L) linked to the NUTR 0206.01 course. NOTE: Students cannot receive credit for both NUTR 206: Biostatistics I and its counterpart NUTR 207: Regression Analysis for Nutrition Research (Policy). Prerequisites: Graduate standing or instructor consent.

140942	**Financial Management in Human Service Organizations**
Subject:	Catalog Nbr:
CRBU	776

Financial Management in Human Service Organizations

140945	**Marketing Management**
Subject:	Catalog Nbr:
CRBU	724

Marketing Management

140971	**Society and Health**
Subject:	Catalog Nbr:
CRHA	SBS201

Society and Health is a HSPH course that converts to 0.5 credit at Friedman.

140972	**Computational Biology**
Subject:	Catalog Nbr:
CRBU	562

Computational Biology

141020	**Directed Study - Intro to SAS Programming**			
Subject:	Catalog Nbr:			
NUTR	0297			
	2015 FALL	Primary	Gail Rogers	gail.rogers@tufts.edu

Directed Study course to be used with a letter grading basis.

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141027	Innovation and Global Health Systems
Subject: CRHA	Catalog Nbr: ID552
Innovation and Global Health Systems	

141051	Gender and Human Security in Transitional States and Societies			
Subject: NUTR	Catalog Nbr: 0242			
2016 SPRG	Primary	Dyan Mazurana	Dyan.Mazurana@tufts.edu	
2016 SPRG	Secondary	Elizabeth Stites	elizabeth.stites@tufts.edu	
This course uses gender as a key analytical tool to examine states and societies transitioning from armed conflict or other large-scale social and political upheaval. It explores key gender dimensions of such transitions and their implications for states, societies, and citizens, including those that have moved toward more democratic forms of governance and those that transitioned (or appear to be transitioning) into more authoritarian or fundamentalist regimes. The course will balance a population-focused approach (examining the evolving roles, expectations, norms and positions for both men and women, and to a lesser extent boys and girls) with an analysis of the health, humanitarian, development security, and justice/legal sectors. Prerequisite: Graduate standing and instructor consent.				

141052	Forced Migration			
Subject: NUTR	Catalog Nbr: 0243			
2016 SPRG	Primary	Karen Jacobsen	karen.jacobsen@tufts.edu	
This seminar is an introduction and overview of issues in forced migration, and how humanitarian and human security issues are related to displacement. The course provides an overview of the scale, scope and causes of global displacement, theories of forced migration, the impact of forced displacement on food security, livelihoods and protection, and the ways in which displaced people, governments and the international humanitarian system have responded, at the international, national and community levels. Prerequisite: Graduate standing and instructor consent.				

141063	Introduction to SAS Programming			
Subject: NUTR	Catalog Nbr: 0237			
2016 FALL	Primary	Gail Rogers	gail.rogers@tufts.edu	
This second half-semester course will provide students with sufficient knowledge of how to obtain, manage, clean and prepare data in SAS for Windows. Emphasis will be placed on the basics of SAS programming and data manipulation. Upon completion, students should be able to use data in SAS and be familiar with the procedure steps required to import and export data, create SAS data sets, produce descriptive statistics, and clean and transform data in preparation for statistical analyses. In-class exercises and weekly homework assignments will allow students to acquire hands-on experience solving common SAS programming tasks. Important to Note: This course is designed for students with no SAS programming experience. Students with a				

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basic knowledge of SAS should not take this course. If you are a NEPI student, it is strongly encouraged that you register for this course and acquire SAS Programming skills as you work toward completing your degree. Prerequisite: Graduate standing or instructor consent.

141080	**Issues in Health and Human Rights**
Subject: CRHA	Catalog Nbr: GHP288
This a Harvard School of Public Health course with Professor Stephen Marks for cross-registration and the course credit is equivalent to 0.5 credit at Friedman.	

141108	**Nutrition, Health, and Disease I: Pregnancy to Adolescence**			
Subject: NUTC	Catalog Nbr: 0269			
	2016 SPRG	Primary	Kathrina Prelack	kprelack@tufts.edu
	2016 SPRG	Secondary	Kelly Kane	Kelly.Kane@tufts.edu
This course examines the relationship between nutrition, health, and chronic disease spanning from pregnancy through the different stages of childhood. Energy and nutrient requirements to support pregnancy and lactation, as well as common nutrition related concerns during this life stage are addressed. Topics in pediatric nutrition encompass nutrient needs during infancy with an in depth focus on growth assessment and use of standard growth and special needs of preterm and full term infants. The course identifies specific nutrient requirements at the various phases of growth and development, as well as feeding practices and eating behaviors that accompany each stage. Medical nutrition therapy associated with common nutritional disorders of children with developmental disability, chronic disease, and obesity is introduced. Given the increased health risks associated with obesity, a comprehensive review of nutrition screening, diet therapy, and clinician based education of parents and children at various age groups is provided.				

141110	**Genetic Epidemiology**
Subject: CRHA	Catalog Nbr: EPI507
Genetic Epidemiology	

141124	**Computational Biology: Genomes, Networks, Evolution**
Subject: CRBU	Catalog Nbr: BE562
Computational Biology: Genomes, Networks, Evolution	

141193	**Trending Insights: Social Media Analysis and Visualization**
Subject: CRBU	Catalog Nbr: 0747

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Trending Insights: Social Media Analysis and Visualization

141194	**Environmental Health Science, Policy and Law**
Subject:	Catalog Nbr:
CRBU	EH805
Environmental Health Science, Policy and Law	

141195	**Nutrition and Disease Prevention: A Life Course Approach**
Subject:	Catalog Nbr:
CRBU	HS742
Nutrition and Disease Prevention: A Life Course Approach	

141196	**Food and Security**
Subject:	Catalog Nbr:
CRBU	ML712
Food and Security	

141197	**Biological Database Anaylsis**
Subject:	Catalog Nbr:
CRBU	BF768
Biological Database Anaylsis	

141208	**Social Media Marketing**
Subject:	Catalog Nbr:
CRBU	_MK845
Social Media Marketing	

141286	**Systems Science in Public Health**
Subject:	Catalog Nbr:
CRHA	_NU212
Systems Science in Public Health	

141287	**Applied Longitudinal Data Analysis**
Subject:	Catalog Nbr:
CRHA	_BI226
Applied Longitudinal Data Analysis	

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141288	Consumers, Corporations, and Public Health
Subject:	Catalog Nbr:
CRHA	_HP226
Consumers, Corporations, and Public Health	

141289	Genomic Data Manipulation
Subject:	Catalog Nbr:
CRHA	_BI508
Genomic Data Manipulation	

141290	Survey Research Methods in Community Health
Subject:	Catalog Nbr:
CRHA	_BI212
Survey Research Methods in Community Health	

141379	Nutrition, Health, and Disease II: Adulthood			
Subject:	Catalog Nbr:			
NUTC	0270			
	2016 SUMR	Primary	Kelly Kane	Kelly.Kane@tufts.edu
	2016 SUMR	Primary	Kathrina Prelack	kprelack@tufts.edu
This course covers basic epidemiologic methods and concepts, including study design, calculation and interpretation of basic measures of disease frequency and measures of effect, sources of inaccuracy in experimental and observational studies, causal inference, and an introduction to the statistical evaluation and interpretation of epidemiological data. Students will discuss past and recent publications in order to apply their understanding of abstract concepts and specific quantitative methods to the interpretation and critique of published work.				

141429	Field Methods in Humanitarian Crisis I
Subject:	Catalog Nbr:
CRHA	_GH537
Field Methods in Humanitarian Crisis I	

141430	Field Methods in Humanitarian Crisis II
Subject:	Catalog Nbr:
CRHA	_GH538
Field Methods in Humanitarian Crisis II	

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141462	Grant Writing

Subject:	Catalog Nbr:			
NUTR	0400			
	2016 SUMR	Primary	Sarah Booth	Sarah.Booth@tufts.edu

Students will receive formal and practical training on the principles of the grant writing process. Through interactive sessions, the student will devise, write and defend a research grant proposal on a topic of their choosing. Each student will also be expected to engage in peer-review activities. Throughout the course, case studies on responsible conduct in research will be discussed. Pre-Requisites: Enrolled in a doctoral program or by permission from course instructor.

141586	MAHA Capstone Project

Subject:	Catalog Nbr:
NUTR	0299

All MAHA students must present an Oral and Written MAHA Capstone Project to fulfill the MAHA Capstone Project degree requirement. The MAHA Capstone Project (only available for MAHA students; enroll in NUTR 0299 via SIS for spring semester) is a unique opportunity for students to work long and hard—longer than one usually can in professional life, and with more intellectual freedom and rigor—on an issue that they are passionate about. Students draw on their learning at Tufts and previous humanitarian experiences to develop this comprehensive written study. The specific format of the final product is flexible to allow students to achieve their pedagogical aims for the study. Each student is matched with a MAHA Capstone Project faculty advisor who will help guide them through the process.

141610	Scientific Basis of Nutrition: Micronutrients

Subject:	Catalog Nbr:			
NUTR	0245			
	2016 FALL	Primary	Paul Leavis	paul.leavis@tufts.edu
	2016 FALL	Primary	Edward Saltzman	edward.saltzman@tufts.edu

NUTR 245 is one course of a pair of courses designed to provide students with an in-depth understanding of nutrition and its scientific underpinnings. NUTR 245 focuses on micronutrients, including fat- and water-soluble vitamins and minerals. The second course of the sequence, NUTR 246, focuses on macronutrients and energy. The course will cover micronutrient sources; digestion and absorption; bioavailability; homeostasis; functions throughout the lifecycle including roles in promotion of health and prevention of disease; and deficiency and toxicity states. Additional concepts will include micronutrient fortification, dietary supplements as sources of micronutrients, gene-diet interactions, and the social determinants of micronutrient nutriture and their implications. The course has been designed to review and build upon students' existing knowledge of chemistry and biology, and will provide instruction in biochemical and physiologic principles necessary to understand the aspects of micronutrients described above. Prerequisites: Undergraduate chemistry and biology, or by instructor permission.

141611	Nutrition Science (Macro)

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Subject:	Catalog Nbr:
NUTR	0246

141612	Advanced Data Analysis

Subject:	Catalog Nbr:
NUTR	0394

2016 FALL Primary Elena Naumova elena.naumova@tufts.edu

This project-based course capitalizes on student interests to formulate research questions with understanding of data limitations, conduct multi staged data analysis, and select proper data visualization and graphical representation tools. Students will learn advanced modern analytical tools and techniques essential for analysis in a variety of disciplines such as Climate, Environment, Nutrition and Health applications (knowledge of only one of these disciplines. This course also covers research design, the scientific method, data quality and validity, data management, and research ethics in data analysis. Students should attempt to identify data sets relevant to their specific interests prior to the course. Instructor will approve data set suitability. If students cannot identify appropriate datasets, the instructor will provide a dataset. Prerequisites: Students should have basic working knowledge of statistical methods in environmental and/or nutrition research and epidemiology. Recommended courses that cover those topics include: Statistical Methods for Nutrition Research I and II (NUTR 0209/0309) or Statistical Methods in Nutrition Research and Regression Analysis for Nutrition Policy (NUTR 0207/NUTR 0307) or equivalent. Ability to analyze data by use of R is preferable, but students may utilize other statistical programs as long as those programs are sufficient for the analysis that is proposed.

141637	Statistical Genetics I

Subject:	Catalog Nbr:
CRBU	_BS858

Statistical Genetics I