

Course Descriptions
Master of Science in Nutrition and Human Performance
2017-2018 Academic Catalog

HLTS 06101 Health Education Concepts and Theories **3 credit hours**

This course explores complex health problems and issues in contemporary society; various concepts, models, theories, and determinants of health. This course presents a multi-disciplinary approach for application to individual and professional situations.

Pre-requisites: N/A

HLTS 06102 Media, Technology and Public Health **3 credit hours**

This course provides students with an understanding of the role of media advocacy in advancing public health policies to promote health. The course illustrates basic concepts and skills related to media advocacy. Topics covered include: gaining access to the news, framing issues from a public health perspective, and the use of paid advertising to advance healthy public policy.

Pre-requisites: N/A

HLTS 06103 Program Planning and Assessment **3 credit hours**

This course reviews clinical nutrition assessment tools, current methodologies, and client-centered techniques used to optimize assessment of diet and lifestyle, condition assessment, and dietary planning for therapeutic interventions and disease prevention. How nutrients affect gene expression (nutrigenetics) as well as genetically-determined utilization of nutrients (nutrigenomics) and disease susceptibility are explored.

Pre-requisites: RMET 05101 Research Methods

MATH 06101 Statistics **3 credit hours**

This course presents the fundamentals of statistics as applied to medical and biological sciences. Measures of central tendency and variability; theory of sampling; theory of estimation; sample frequency functions; confidence limits; null hypothesis; linear regression and correlation; chi-square test; F-test and analysis of variance; elements of sequential analysis; statistical techniques adapted to laboratory quality control; design of experiments.

Pre-requisites: RMET 05101

NUTR 06201 Nutrition Science **3 credit hours**

This course is an advanced view of nutrition in human systems that include nutrients and nourishment, the influence of diet on health as well as disease outcomes, and the roles of food in lifestyle. Basic knowledge of clinical human nutrition fundamentals are covered such as: metabolic pathways, detoxification and excretion systems, immune system functions, digestive and absorptive functions, functions of endocrine & exocrine organs, hormonal influences on metabolism of foodstuffs, physiological models of obesity, energy metabolism, alcohol metabolism, hormonal control of nutrient metabolism, protein synthesis and breakdown, risk factors for development of illness, allergic responses in the body, the synthesis, breakdown conversions, and actions of lipids, including prostaglandins, steroids, bile, lipoproteins, phospholipids.

Pre-requisites: N/A

NUTR 05103 Nutrition and Physical Performance **3 credit hours**

This course focuses on exercise metabolism and optimal nutrient absorption for peak athletic performance. It covers chemical structure and biochemical metabolic functions of essential and nonessential nutrients, integration, coordination, and regulation of macro and micronutrient metabolism, regulation of nutrient metabolism and needs by hormones and growth factors, the physiological and biochemical basis for nutrient requirements, and dietary reference intakes and supplements for competitive athletes.

Pre-requisites: N/A

NUTR 05104 Gut Microbiome, Nutrition, & Behavior **3 credit hours**

This course provides a study of basic and emerging literature in respect to the effect of gut microbiome changes on behavior, as well as the effects of nutrition upon the microbiome and gut-brain axis.

Pre-requisites: N/A

NUTR 05201 Survey of Sustainable Food Systems

This course presents a detailed study of food systems as they relate to human nutrition incorporating food processing, preservatives and additives, safety, and toxicity of foods. Sustainable food systems look at community nutrition programs, nutrition education, as well as the legislation and the agencies and programs that regulate human nutrition.

Pre-requisites: N/A

NUTR 05202 Lifecycle Nutrition **3 credit hours**

This course covers clinical human nutrition needs through the lifecycle phases from infancy to geriatrics. A lifecycle approach to nutrition science incorporates nutrient availability, function and sources; energy balance; health risk factors; and special nutrient needs for various stages of the lifecycle. Basic clinical nutrition knowledge of physiological differences in pediatrics, inborn errors of metabolism relating to nutrient imbalances (PKU, histadenic vs. histaminic, acidosis vs. alkolosis, etc.), nutrition during pregnancy and lactation are detailed. Clinical nutrition management of emergency care, terminal illness, surgical and traumatic care will be covered.

Pre-requisites: N/A

NUTR 06101 Nutritional Assessment of Athletes **3 credit hours**

This course involves the detailed study of improving and supporting athletic performance through nutrition. Students will gain practical experience in supporting body composition/physique changes for specific sports/positions as well performance optimization in endurance, power and speed applications. Nutrition principles and aspects such as meal timing, ergogenic supplements and the relationship of nutrition to circadian rhythms and sleep to support recovery will be discussed in detail. Lecture, review of current literature and class presentations as well as personalized written plans and projects will be utilized.

Pre-requisites: HLTS 06103 Program Planning and Assessment

NUTR 06102 Natural Therapies: Herbology & Detoxification **3 credit hours**

This course is a detailed investigation of detoxification, herbology, and homeopathic therapies as they relate to human systems. Examination of the issues and trends will be explored through the use of current literature and evidence-based research. Students will obtain evidence-based knowledge of: herbal medicine, clinical guides of herbal medicine, functions of herbs, and safety issues. Specific applications and controversies relating to use of herbs and functional foods and

high-dose nutrient supplementation in the management of chronic disorders will be explored. Students will develop skills of identifying strengths and limitations of preventive as well as therapeutic utilization of herbs and supplements.

Pre-requisites: NUTR 05102 Nutrition Science I; RMET 05101 Research Methodology

NUTR 06104 Clinical Nutrition in Human Systems I 3 credit hours

This course presents a detailed study of the principles of nutrition concentrating on their biochemical, physiological, and pathological relationship to the management of acute and chronic conditions affecting humans. Topics taken into consideration include diet, exercise, lifestyle changes, and supplementation. The signs, symptoms, and diagnostic testing will be discussed for each condition, with special emphasis on homeostasis of the human body and other conditions encountered in clinical practice.

Pre-requisites: NUTR 06201 Nutrition Science II, HLTS 06103 Program Planning and Assessment

NUTR 06201 Nutrition Science II 3 credit hours

This course presents a detailed study of human biochemistry of micronutrients, their relationship with macronutrients, and how nutrition influences metabolism, cells, and body function. Vitamins and minerals will be discussed in relation to metabolism and digestion. The clinical signs and symptoms of nutrition related disorders and biochemical and laboratory assessment will be introduced.

Pre-requisites: NUTR 05102 Nutrition Science I

NUTR 06202 Clinical Nutrition in Human Systems II 3 credit hours

This course is a detailed study of the nutritional assessment, dietary habits, and nutritional needs fundamental for optimal human performance. The student will study nutritional support of performance as it relates to the physical, mental, and emotional well-being of each person.

Prerequisites: NUTR 06104 Clinical Nutrition in Human Systems I

NUTR 06203 Nutrition in Pain and Inflammation 3 credit hours

This course provides a study of basic and emerging scientific literature in respect to the inflammatory response and dysfunction found in common disorders such as low back pain, shoulder pain, carpal tunnel syndrome, headaches/migraine, rheumatoid arthritis, fibromyalgia, and gastrointestinal disorders with a brief review of the basic science and focused on the potential clinical nutrition application

Prerequisites: N/A

NUTR 06204 Nutrition Epidemiology & Health Promotion 3 credit hours

This course introduces students to epidemiological principles and methodologies relevant to clinical nutrition, research, and educational strategies for wellness and health promotion initiatives. Upon course completion students will be able to identify study designs, population selection, and analytical epidemiology/methodology appropriate for prevention and health promotion programs. Includes a critical review of current research articles in nutrition, disease prevention, and health promotion related fields.

Pre-requisites: NUTR 06104 Clinical Nutrition in Human Systems I, RMET 05101 Research Methodology

NUTR 06301 Geriatric Nutrition

3 credit hours

Advanced study of nutrition in the aging individual in health and disease. Special emphasis on interactions of physiological stages, age, lifestyle, health, disease, and nutrition. Examination of research findings focusing on the relationship of nutrition to the structural and functional changes associated with the aging process.

Pre-requisites: NUTR 05202 Lifecycle Nutrition and NUTR06201 Nutritional Science

PSYH 06202 Psychology of the Athlete

3 credit hours

This course is a detailed study of the psychological and emotional aspects of competition and its social stress, with focus on approaches to knowledge, goal setting, stress management, psychological skills training, and review of current research.

Pre-requisites: N/A

RMET 05101 Research Methods in Healthcare

3 credit hours

In this course, students will learn to evaluate the scientific/clinical literature for reliability and validity as well as the potential clinical significance of research results. Students will learn how to: identify limitations of research findings and recognize the multiple sources of research design error and researcher bias, how to evaluate reliable research study designs and experiments, how to create the various types of study designs and understand when each design is appropriate, how to write and test hypotheses, and how to find, correctly cite, and analyze peer-reviewed literature.

Pre-requisites:

Students in the MSHI program must complete 6 courses prior to taking this course.

Students in the MSNHP program must complete 4 courses prior to taking this course.

NUTR 08101 Nutrition Internship

6 credit hours

The Nutrition and Human Performance Internship is designed to increase student learning opportunities and functional understandings of nutrition, human performance, sports nutrition, health promotion and wellness, exercise metabolism, disease prevention, or approved field research. The internship is a 6 credit hour course requiring 180 clock hours under the supervision of an approved professional who holds an advanced graduate degree, certifications, and can provide a meaningful learning experience to enhance the student's employment opportunities. Students interested in the internship option are encouraged to request a copy of the Internship Manual from the Nutrition and Human Performance Director early in their program of study to begin working on possible internship sites.

Pre-requisites: All required didactic coursework

NUTR 08102 Thesis

3 credit hours

The thesis involves completion of a research project conducted under the supervision of your thesis research committee consisting of Logan professors and approved expert researchers in your chosen area of research related to nutrition and human performance. Students interested in the Thesis option are encouraged to review the Thesis Manual and to begin working on research topic proposals early in their program of study. It is also helpful for students to submit a project completion timeline and to set clear expectations for progress.

Pre-requisites: All required didactic coursework

CAPS 08105 Professional Track

3 credit hours

This Capstone course provides students with an integrative learning experience and a synthesis

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of knowledge combining theory and applications of nutrition and human performance. This course builds upon previous coursework and includes applications of theories to practical issues in the field of nutrition.

Pre-requisites: All required didactic coursework [may be taken with last course(s)]