

Course Descriptions
Master of Science in Nutrition and Human Performance
2019-2020 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: N/A

HLTS 06106 Health Policy **3 credit hours**

This course introduces financial and organizational influences that shape health policy. It provides students with both the historical and current political context of health care in the U.S. and provides strategies for analysis of health policy issues. The course examines select problems in the current health care environment and encourages students to think critically in ways to solve these problems through involvement with public and private policymakers and through effective communication in the policy environment.

Pre-requisites: N/A

MATH 06101 Statistics **3 credit hours**

This course will introduce the use and application of statistics. Students will learn how to calculate descriptive statistics by hand and with SPSS, and interpret these in relation to data. Students will also learn how to conduct and interpret analyses to compare means, determine relationships, and make predictions using hand calculations and SPSS. The difference between parametric and nonparametric tests will be covered, along with the use of statistics to test hypotheses and answer questions.

Pre-requisites: RMET 05101

NUTR 06201 Nutrition Science **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: 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 preservatives and additives, genetically modified foods and safety. Sustainable food systems look at local food systems, organic food, industry and sustainable farming, biodiversity, conservation of renewable resources, environmental health, and the legislation and the agencies and programs that regulate human nutrition.

Pre-requisites: N/A

NUTR 05202 Lifecycle Nutrition **3 credit hours**

Develop an in-depth knowledge base of nutrition needs through each stage of life. Nutrition requirements, physical growth, and psychosocial development from preconception through older adulthood are examined. Additionally, select eating problems, nutrition-related conditions, and the consequences of under and over nutrition are explored.

Pre-requisites: N/A

NUTR 05301 Nutrigenetics and Nutrigenomics **3 credit hours**

This course focuses on nutrigenetics, how genetic differences affect nutrient uptake and metabolism, and nutrigenomics, the effect of diet and food components on gene expression. Students will develop an appreciation of genetic mutation and explain how mutations can influence biochemical pathways and alter an individual's metabolic processes. Possible nutrigenetic and nutrigenomic effects on health and disease will be explored. Genomic testing principles, interpretation and practical application will be provided.

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: N/A

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: N/A

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

NUTR 06202 Clinical Nutrition in Human Systems II **3 credit hours**

This course is a detailed study of the nutritional assessment and nutritional needs for the prevention and intervention of major human diseases. Pathophysiological changes in obesity, metabolic syndrome, diabetes mellitus and cardiovascular disease as well as behavior modification are explored applying evidence-based nutrition interventions. Students will use the nutrition care process and apply core elements of medical nutrition therapy.

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, analytical epidemiology/ methodology, and health behavior theories/ models appropriate for prevention and health promotion programs.

Pre-requisites: N/A

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 which requires

the application of nutritional science knowledge, health theories and professional practice strategies to complete assignments. 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)]

NUTR08105 Graduate Supervised Experiential Learning I 3 credit hours

Students will provide medical nutrition therapy using the nutrition care process. Neurology patients, pediatric patients and WIC patients will be assessed. In addition, students will consider the needs of patients with behavioral health issues, dental health issues and weight management issues. In addition, preventive health management and wellness and health promotion will be practiced. Nutrition focused physical exam skills will be employed. See each module for that rotation's description.

Pre-requisites: All required didactic coursework

NUTR08106 Supervised Experiential Learning II 3 credit hours

Students will provide medical nutrition therapy using the nutrition care process. Patients with multiple chronic diseases will be assessed as well as patients with cognitive and physical disabilities. In addition, students will consider the needs of patients with mental health issues and substance abuse issues. Students will gain skills in food service management and nutrition for sports and fitness. Nutrition focused physical exam skills will be employed. See each module for that rotation's description.

Pre-requisites: All required didactic coursework, SEL I