



Nutrition for Health and Human Performance

Mission:

The Master's of Science degree track in Exercise Physiology entitled "Nutrition for Health and Human Performance" was designed to develop an interface between Exercise Physiology and Nutrition Science. It is a two-year, 36-39 credit program.

Program Description:

The degree is rooted in a scientific background in the applied sciences with an emphasis in either human performance or health promotion/disease prevention depending upon which track students choose to pursue. The idea is to integrate both nutrition and exercise physiology concepts so that students can take leadership roles in providing nutritional services to high school, collegiate, recreation, elite and professional level athletes, and active men and women of all sports. The program will also enable students to plan, develop, and implement sound nutritional practices for active and athletic communities on a national and international level.

Graduates of the program may practice independently, conduct nutritional, health and fitness education seminars, and/or tailor nutrition programs for:

- Medical Practices/Rehabilitation Centers
- Professional and amateur sport teams and organizations; coaches and athletes
- Diabetes treatment and cardiac rehabilitation centers
- Hospitality industry-hotels, spas, cruise ships, resorts
- Health Clubs/Spas/Gyms
- Summer camps, youth organizations
- Community Wellness Centers
- Corporate Wellness Programs
- Health Maintenance Organizations
- Weight Management Programs
- Media and Internet
- Culinary cooking schools
- The military and police forces
- Functional medicine research and practice
- Non-profit Health Centers
- Community and faith-based organizations

Upon graduation, students will be able to take the exam to become a Sports Nutritionist under the auspices of the International Society of Sports Nutrition (ISSN). Students who complete all the required professional supervised hours in clinical, community and food service will also be able to apply to sit for the exam to become a Licensed Dietitian/Nutritionist (LD/N) as approved by the Dietetics and Nutrition Practice Council in the State of Florida. Knowledge gained from completion of the track and acquired credentials will enable graduates to assess the dietary needs of individuals or groups of individuals and make appropriate nutritional recommendations.

Graduation Requirements

Students must complete the 36-39 credit M.S. Ed. track in Exercise Physiology entitled "Nutrition for Health and Human Performance". Before graduation, students must pass a comprehensive examination that demonstrates mastery of the theory and application of nutrition and exercise physiology or complete a research project.



Admission Procedures

Applicants must apply to and be accepted into the University of Miami Graduate School before they can be accepted into the Nutrition for Health and Human Performance track.

All new applicants should possess:

- A Bachelor of Science in the Applied Sciences (Kinesiology, Nutrition, Athletic Training or its equivalent); Health Sciences, (Nursing, Pre-physical Therapy or its equivalent); and/or Basic Sciences (Chemistry, Biochemistry, Biology or its equivalent).
- A GPA of 3.0 or higher on a 4.0 scale in the last 60 hours of undergraduate coursework in their major.
- Evidence of completing the GRE's with a preferred combined score of at least 297.
- Three letters of recommendation from the school, work, or community/religious/volunteer internships and a 1-2 page statement of intent providing evidence of work and/or volunteer experience related to intended field of study and goals.
- A statement of professional goals
- Official transcripts that provide evidence of prerequisites or the equivalent of undergraduate courses in:
 - a. Quantity Food Service/Preparation
 - b. Basic Nutrition (KIN 150 or KIN 202 or the equivalent)
 - c. Exercise Physiology (KIN 321 or KIN 421 or the equivalent)
 - d. Human anatomy and physiology (KIN 233/234 and KIN 232 or the equivalent)
 - e. One-two years of a combination of chemistry, organic chemistry, biology, biochemistry, microbiology and laboratories.

Applicants may take all pre-requisite courses at the University of Miami. The only exceptions are Food Science and Quantity Food Service/Preparation which may be taken elsewhere i.e., Miami Dade College or Florida International University.



Curriculum

The graduate degree track in Nutrition for Health and Human Performance has two options: one in **Human Performance**, the other in Health **Promotion/Disease Prevention**.

Requirements for the Nutrition for Health and Human Performance track in the graduate Exercise Physiology Master's of Science degree program

NUTRITION FOR HEALTH AND HUMAN PERFORMANCE

Core Courses

Course Title	Credit	Professor
KIN 550 Nutritional Biochemistry and Integrative Metabolism	3	J. Kressler
KIN 549 Nutrition Assessment and Laboratory	3	L. Dorfman
KIN 543 Professional Training and Counseling for Integrative Health	3	Yahia/Konefal
KIN 538 Nutrition and Health Issues Across the Lifecycle	3	S. Rarback
KIN 579 Cardiovascular Programming & Testing or KIN 569 Principles of Exercise Prescription	3	Wes Smith
KIN 545 Clinical Aspects of Exercise Programming	3	W. Smith
KIN 646 Research Methods (optional)	3	K. Jacobs
KIN 598 Graduate Seminar in Nutrition*	3	L.Dorfman
Subtotal	24 credits	

Option 1– Human Performance- choose 2 out of 4

Course Title	Credit	Professor
KIN 539 Dietary Supplements and Human Performance	3	W. Smith/ J. Kressler
KIN 548 Sport-Specific Nutrition*	3	L. Dorfman
KIN 577 Advanced Nutrition Planning for Sports and Fitness	3	W.Smith/L. Dorfman
KIN 683 Sports Medicine for the Female Athlete	3	A. Perry
Subtotal	6 credits	



Option 2-Health Promotion/Disease Prevention-Choose 2 out of 4

Course Title	Credit	Professor
KIN 555 Medical Nutrition Therapy *	3	S. Rarback
KIN 527 Global Health and Nutrition	3	L. Parker
KIN 681 Issues Specific to Women's Health and Aging	3	A. Perry
KIN 534 Integrative and Functional Nutrition	3	F. Yahia
Subtotal	6 credits	

Electives – Students will select an elective from the following.

Course Title	Course#	Credit	Professor
Graduate Field Experience in Nutrition*	KIN 696	3	L. Dorfman
Supervised Practicum**	KIN 600	3-6	L. Dorfman
Public Health Nutrition	EPH 561	3	TBA
Chronic Disease Epidemiology	EPH 621	3	TBA
Introduction to Preventive Health	EPH 614	3	Dr. Prado
Principles of Biochemistry and Molecular Biology	BMB 506	3	TBA
Research Problems in Biochemistry and Molecular Biology	BMB 545	3	Dr. Myers
Proteins and Enzymes	BMB 507	3	TBA

*This includes a three-credit field experience in the area of nutrition at a minimum of 180 hours total time (12 hours per week for one semester) conducted either within the University of Miami or community setting.

**This includes a more comprehensive supervised practical experience in nutrition for 900 hours over the course of two semesters (450 hours per semester) for a total of 6 credits. This practicum is required to become a Licensed Dietitian/Nutritionist in the State of Florida.

All students not doing a special project must sign up for their comprehensive exam in order to graduate.

Total Credits for the Graduate Program (Two Years): 36-39 credits



Course Descriptions:

KIN 543 Professional Training and Counseling for Integrative Health

Students will learn the integrative health care model, theories, behavior change models, approaches & techniques used in nutritional counseling to help athletes, individuals and groups implement and sustain behaviors, lifestyles, and attitudes to achieve optimal health. Lecture & personal application will allow for the development of skills in each of these areas. **Number of credits: 3**

KIN 527 Global Health & Nutrition

This course is designed to provide an overview of nutritional issues & related aspects of infectious and chronic disease impacting the health and performance of athletes, individuals & groups domestically & globally. Economic and environmental issues which impact nutritional status and deficiency in the Western societies & third world countries will be addressed. An international and cultural perspective on food, eating behaviors and customs will be explored.

Number of credits: 3

KIN 534 Integrative & Functional Nutrition

This course will discuss integrative and functional medicine and how it emerged. This course will analyze the healthcare models that include personalized care and the whole-person perspective. In this course we will discuss various factors that influence disease including diet and nutrition, stress, activity level, pharmaceuticals and environmental pollutants. Alternative approaches to treatment will also be discussed. **Number of credits: 3**

KIN 538 Nutrition during the Lifecycle

This course is designed to examine the changes in nutrition requirements during the life cycle, particularly as related to growth, development and aging. Psychosocial, cultural, and economic issues related to food intake at various life stages will be reviewed. **Number of credits: 3**

KIN 545 Clinical Aspects of Exercise Programming

A comprehensive exploration of the evidence-based guidelines for exercise in the prevention, treatment and amelioration of prevalent chronic disease conditions. **Number of credits: 3**

KIN 549–Nutrition Assessment & Lab

Application of the principles of normal and therapeutic nutrition, nutrition assessment, evaluation and intervention as related to sports performance and the management and



treatment of disease states. Laboratories will allow for the development of skills in each of these areas. **Number of credits: 3**

KIN 550- Nutritional Biochemistry and Integrative Metabolism

Overview of biochemical structures and pathways involved in nutrient digestion, absorption, transport, metabolism and storage. Exploration of interrelations and connection between macronutrient pathways. Overview of micronutrient functions and mechanisms of action. Relating information to health and lifestyle diseases. **Number of Credits: 3**

KIN 569 Principles of Exercise Prescription (under KIN 365)

This class is the study of the theory and principles behind the development of exercise programs. Students will learn how to accurately evaluate and develop individual exercise prescriptions based upon sound scientific research. Exercise prescriptions will be developed in accordance with the guidelines set forth by the National Strength and Conditioning Association and the American College of Sports Medicine. **Number of Credits: 3**

KIN 579 Cardiovascular Programming & Testing

Presents a comprehensive overview of the physical, physiological and metabolic responses of the human body to exercise testing and training both in health and disease. The successful student will gain an understanding of the process involved in prescribing safe and effective therapeutic exercise in healthy individuals as well as patients with heart and lung disease, diabetes and obesity. An overview of environmental and legal considerations in the prescriptive process will also be discussed. Prerequisite: ESS 521. **Number of Credits: 3**

KIN 646 Research Methods

Research design, planning, conducting, and reporting of study results. Problem-solving and Practical experience in applied statistical analysis, interpretation, and presentation of data from the field of exercise and sport science will be addressed. **Number of Credits: 3**

KIN 598 Graduate Seminar in Nutrition Current research in nutrition and nutritional care, nutrition profession, ethics and roles in food service, clinical and community. Seminars designed to cover state-of-the-art overview of current and emerging topics will be presented by invited outside guest speakers.

KIN 539 Dietary Supplements and Human Performance Critical evaluation of issues, concepts, and controversies about dietary supplements and nutraceutical ingredients. Emphasis on the importance of scientific investigations to evaluate their efficacy, safety, and value for health promotion, disease prevention, and treatment. **Number of Credits: 3**

**KIN 548 Sport Specific Nutrition**

Sport-specific strategies to enhance performance for endurance trained, intermittent, strength/power & weight restricted/weight conscious sports. **Number of Credits: 3**

KIN 577 Advanced Nutrition Planning for Sports and Fitness

A comprehensive review of current research on nutritional strategies to combat obesity and chronic disease and the latest guidelines for proper fueling and hydration for athletes in competition and trends regarding nutritional supplementation. **Number of credits: 3**

KIN 683 Sports Medicine for the Female Athlete

This course focuses upon the physiological effects of exercise on the female athlete as it relates to her performance and health. Physiological differences between males and females will be examined as it impacts the woman's performance capabilities and potential. Gender specific problems regarding the exercising female will be explored. **Number of credits: 3**

KIN 555 Medical Nutrition Therapy

The role of nutrition in the prevention and treatment of various disease states including diabetes, cardiovascular disorders, endocrine and gastrointestinal disorders, enteral feeding, renal disease, cancer and AIDS/HIV, and weight management. This course instructs on the use of the Nutrition Care Process for assessment and documentation. **Number of credits: 3**

KIN 681 Issues Specific to Women's Health and Aging

This course focuses upon clinical health issues relevant to women. Students will acquire a body of knowledge concerning the specific biological and physiological changes women experience from birth to maturity, and from the pre-to postmenopausal state. Women will learn significant issues related to women's health and be able to make more educated decisions regarding their health and treatment options. **Number of Credits: 3**

KIN 696 Graduate Field Experience in Nutrition

Guided field experience in administrative supervisory, consultant, or similar level positions. Field experiences may not be part of the student's regular job responsibilities. **Number of credits: 3**

KIN 600 Supervised Practicum

Planned supervised practice experience component in dietetic and nutrition practice of up to 900 hours shall provide the applicant with a broad spectrum of experiences in dietetics and Nutrition in clinical, community & food service to meet licensure requirements.

Number of credits 3-6



EPH 561 Public Health Nutrition

Strives to improve or maintain optimal nutritional health of the whole population and high-risk or vulnerable groups within the population. Nutritional factors that influence health promotion and disease prevention throughout the life span will be examined, in conjunction with environmental and cultural aspects of well-being. **Number of credits: 3**

EPH 621 Chronic Disease Epidemiology

The purpose of this course is to understand the epidemiological patterns, etiology and risk factors of selected major chronic diseases from a population based perspective.

Number of Credits: 3

EPH 614 Introduction to Preventive Health

This course will introduce students to the science of prevention and health promotion. More specifically, through didactic presentations, group discussions, article readings and critiques, and a term project, this course will focus on providing students with an overview of: the top preventable causes of disease in the U.S., the etiology of disease (with a focus on the top preventable causes of disease in the U.S.) across the lifespan, the role of prevention theories in the development of preventive interventions, and the role of methodology in prevention science. The course will also provide an overview of efficacious/effective preventive interventions, including (but not limited to): family, community, and school level interventions.

Number of Credits: 3

BMB 506 Principles of Biochemistry and Molecular Biology

Protein structure and function, enzyme mechanism and kinetics, and metabolism, focusing on energy metabolism and central concepts of metabolic regulation and of molecular biology including nucleic acid structure, protein synthesis, and DNA replication.

The class has two parts. A lecture series with exams and a weekly tutorial that teaches students to collect and integrate scientific information from databases such as UniProt, EMBL, PubMed, etc. for weekly group homework and three papers of PowerPoint presentations.

Number of Credits: 3

BMB 545 Research Problems in Biochemistry and Molecular Biology

Laboratory research problems in various fields of biochemistry, including literature search, experiment design, data gathering, and evaluation of results under supervision by a faculty mentor. Students keep an online research journal; write a report about their research for their mentor and present their work in a research symposium in each term in which they are enrolled. **Number of Credits: 2-3**

BMB 507 (under BMB 407) Proteins and Enzymes

Course analyzes folding and binding of proteins, kinetics, and mechanisms of enzyme action.



Number of credits: 3

Program Prerequisites to Include:

BMB 260: Biochemistry

The composition of food and the composition and functioning of a typical cell are described in chemical terms, leading to an understanding of how life processes such as digestion, and metabolism occur and are regulated at the level of individual molecule and reactions. Applications of biochemistry and nutrition are discussed. **Number of credits: 3**

Quantity Food Production & Service. Principles & Application of food preparation, food safety, and quality improvement applied to quantity food production and service; institutional menu planning, production planning, and cost determination; food purchasing; marketing theory and materials management for foodservice systems. **Number of Credits: 3**

To be taken at FIU, MDC, or another university.



Sequence: CORE, Both Options

Fall 1	course title	Credits
KIN 538	Nutrition and Health Issues Across The Lifecycle	3
KIN 550	Nutritional Biochemistry and Integrative Metabolism	3
KIN 569 or 579	Cardiovascular Programming & Testing or Principles of Exercise Prescription	3
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Spring 1-Option 1

KIN 543	Professional Training and Counseling for Integrative Health	3
KIN 545	Clinical Aspects of Exercise Programming	3
KIN 549	Nutrition Assessment and Laboratory	3
KIN 646 or elective	Research Methods	3

Fall 2-Option 1

KIN 549 or KIN 683	sport specific nutrition or Sports medicine for female Athlete	3
KIN 600	Supervised Practicum or elective	3
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Spring 2-Option 1

KIN 577 or 539	Advanced Nutrition Planning for Sports and Fitness	3
	Or Dietary Supplements and Human Performance	
KIN 598	Graduate Seminar in Nutrition	3
KIN 600 or elective	Supervised Practicum	3

Sequence: Option 2

Fall 2

KIN 534 or KIN 555	Integrative and Functional Nutrition	
	Or Medical Nutrition Therapy	3
KIN 600 or elective	Supervised Practicum	3

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Spring 2

KIN 527 or 681	Global Health & Nutrition or	
	Issues Specific to women’s health and Aging	3
KIN 598	Graduate Seminar in Nutrition	3
KIN 600 or elective	Supervised Practicum	3

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