Exercise Physiology

Department Chair:
Christopher Hardin
204 B Gwynn Hall
(573) 882-4288
hardinc@missouri.edu
http://ns.missouri.edu

Dietetics and Exercise Physiology Office
204 Gwynn Hall
(573) 882-4288
Fax: (573) 884-4885

Director of Graduate Studies
Jill Kanaley
204 D Gwynn Hall
(573) 882-2519
kanaleyj@missouri.edu
http://ns.missouri.edu

Admission Contact Information
Ben Saur
204 Gwynn Hall
573-882-4288
saurob@missouri.edu
http://ns.missouri.edu/

Faculty
Associate Professor S. Ball**, S. Gable**, P. S. Hinton**, C. A. Peterson**, R. S. Rector**
Assistant Professor J. Limberg*, J. Pailla*, V. Vieira-Potter*
Assistant Research Professor K. Keller
Teaching Assistant Professor L. Hudson*, M. Raedeke*, J. Schnell*, D. Smith
Joint Faculty M. J. Petris**, L. Pulakat**
Adjunct Instructor J. B. Mann, T. Roberts, R. Sharp, D. Showers, M. Stevens, J. Thyfault**
Extension Faculty J. Britt-Rankin*, C. Gabel, S. Mills-Gray

* Graduate Faculty Member - membership is required to teach graduate-level courses, chair master’s thesis committees, and serve on doctoral examination and dissertation committees.
** Doctoral Faculty Member - membership is required to chair doctoral examination or dissertation committees. Graduate faculty membership is a prerequisite for Doctoral faculty membership.

Undergraduate

While MU does not offer undergraduate degrees specifically in exercise physiology, the University does offer baccalaureate opportunities in a number of related areas, both within the College of Human Environmental Sciences, and in the other Schools and Colleges that make up the University. The catalog provides a complete list of these degree options (http://catalog.missouri.edu/degreesanddegreeprograms).

Graduate

- PhD in Exercise Physiology (http://catalog.missouri.edu/undergraduategraduate/collegeofhumanenvironmentalsciences/exercisephysiology/phd-exercise-physiology)

About the Program

The Exercise Physiology PhD program is designed to provide advanced training in both the basic and applied aspects of exercise, physical activity and physical inactivity. Currently, the research focus is to examine the mechanisms by which physical activity levels and/or exercise modulate risk and development of obesity, type 2 diabetes, and overall metabolic and cardiovascular diseases using both animal models and human subjects, and to be able to translate the findings into the clinical or applied setting. Graduate students will receive training in laboratory research, seminar preparation, scientific writing, problem solving and grant writing. Graduate studies at the University of Missouri offer the advantage of interdisciplinary exercise research that is facilitated by numerous collaborations at the many research centers at MU. In addition, the Exercise Physiology research program collaborates closely with other units on campus including the Department of Biomedical Sciences in the Vet School, and the Departments of Internal Medicine and Medical Pharmacology and Physiology in the School of Medicine among others.

The Exercise Physiology Graduate Program offers a PhD degree. This exercise physiology degree is designed to prepare students for careers in exercise physiology or exercise physiology/nutrition. The curriculum has a scientific basis with core courses in exercise physiology, nutrition, biochemistry, and physiology. Teaching and research assistantships are available on a competitive basis.

NEP 1001: Topics in Nutritional Sciences
Supervised study in specialized topic of nutritional sciences.
Credit Hour: 1-99

NEP 1034: Introduction to Human Nutrition
Basic nutrition principles, including: nutrient functions, food sources, and needs; healthy eating tools; energy balance and weight management; nutrition and fitness; nutrition through the life cycle; food safety; and consumer topics. No credit if taken after NEP 2340.
Credit Hours: 3

NEP 1034H: Introduction to Human Nutrition - Honors
Basic nutrition principles, including: nutrient functions, food sources, and needs; healthy eating tools; energy balance and weight management; nutrition and fitness; nutrition through the life cycle; food safety; and consumer topics. No credit if taken after NEP 2340.
Credit Hours: 3

Prerequisites: Honors eligibility required

NEP 1310: Food and Cultures of the World
Trans-disciplinary approach to nutrition, considering anthropological, physiological, geographical, socioeconomic and psychological elements in world nutrition. These ideas will be explored in the context of cuisines and cultures that are found in the US, but originate elsewhere.
Credit Hours: 3
NEP 1310W: Food and Cultures of the World - Writing Intensive
Trans-disciplinary approach to nutrition, considering anthropological, physiological, geographical, socioeconomic and psychological elements in world nutrition. These ideas will be explored in the context of cuisines and cultures that are found in the US, but originate elsewhere.

Credit Hours: 3

NEP 1340: Introduction to Exercise and Fitness
Provides students with practical information about exercise and physical fitness. After taking this class, students will be prepared to be physically active, understand the "Do's and Don'ts" of exercise, and know how to live a healthy way of life. As part of the course, students will assess their current level of activity/fitness, develop a plan for improvement, and put that plan into action.

Credit Hours: 3

NEP 1485: Career Exploration in Exercise Science
Undergraduate course designed to provide an overview of the components important to developing an understanding and appreciation of all aspects of Exercise Science. Graded on A-F basis only.

Credit Hour: 1
Prerequisites: NEP 1340

NEP 1995: Nutritional Food Science
The study of components of food systems and how they are affected by processing, preservation, preparation and by techniques that improve taste, texture, flavor, appearance and nutrient retention. This course is 100% online and includes a virtual lab. Graded on A-F basis only.

Credit Hours: 3

NEP 2001: Topics in Nutritional Sciences
Supervised study in a specialized topic of Nutritional Sciences.

Credit Hour: 1

NEP 2085: Problems in Nutritional Sciences
Supervised study in a specialized phase of nutritional sciences.

Credit Hour: 1-99
Prerequisites: consent required

NEP 2222: Landscape of Obesity
The societal, economic, medical, behavioral, and psychological causes and results of the obesity epidemic and potential modes of treatment and prevention. Lecture course. Graded on A-F basis only.

Credit Hours: 3
Prerequisites: sophomore standing required

NEP 2340: Human Nutrition I
Basic concepts of normal nutrition related to physiological/chemical processes; changing nutrient needs during human life cycle, emphasis on adult; some social/psychological influences on dietary habits.

Credit Hours: 3
Prerequisites: CHEM 2030 or CHEM 2100 or CHEM 2160H

NEP 2340H: Human Nutrition I - Honors
Basic concepts of normal nutrition related to physiological/chemical processes; changing nutrient needs during human life cycle, emphasis on adult; some social/psychological influences on dietary habits. Includes weekly discussion on controversial issues. Graded on A-F basis only.

Credit Hours: 3
Prerequisites: Organic Chemistry, Physiology, or instructor's consent. Honors eligibility required

NEP 2380: Diet Therapy for Health Professionals
Principles underlying normal nutrition and diet for health and disease. Graded on A-F basis only.

Credit Hours: 3
Prerequisites: sophomore standing

NEP 2420: Biology of Healthy Living
(same as PH_THR 2420 and BIOMED 2420). Biology of inactivity as a causal factor in chronic disease.

Credit Hours: 2

NEP 2450: Nutrition Throughout the Life Span
Nutritional requirements, challenges, community nutrition programs, and eating patterns throughout the life span with emphasis on health promotion and disease prevention; Role of beliefs, culture, socio-psychological influences, and economic resources in food selection and nutrition/health status. Lecture/discussion course.

Credit Hours: 3
Prerequisites: NEP 1034 or NEP 2340 or NEP 2380 or equivalent

NEP 2460: Eating Disorders
Definition, etiology, treatment, and research related to eating disorders: anorexia nervosa, bulimia nervosa and binge eating disorder/obesity. Graded on A-F basis only.

Recommended: NEP 1034 or NEP 2340 or NEP 2380 or NEP 4360

NEP 3001: Topics in Nutritional Science
Instruction in specific subject matter areas in the field of food science and nutrition.

Credit Hour: 1-99

NEP 3085: Problems in Nutritional Sciences
Advanced problems in a selected field of food science and nutrition.

Credit Hour: 1-99
Prerequisites: consent required

NEP 3085W: Problems in Nutritional Sciences - Writing Intensive
Advanced problems in a selected field of food science and nutrition.

Credit Hour: 1-99
Prerequisites: consent required
NEP 3131: International Nutrition and Exercise Physiology
Immersion into and examination of selected cultures - beliefs, practices, policies and social structures around food, physical activity and health. Graded on A-F basis only.

Credit Hour: 0-6
Prerequisites: instructor’s consent

NEP 3290: Food Service I: Supervised Practice Experience
A practicum designed to expose the student to concepts of quantity food production, evaluation of products and resources, personnel administration and application of food microbiological principles. 4 hours of supervised practice per week.

Credit Hour: 1
Prerequisites: concurrent enrollment in NEP 3280; open to students enrolled in the Coordinated Program in Dietetics only

NEP 3360: Nutritional Assessment Supervised Practice Experience
Supervised practice to develop skills in screening individuals for nutrition risk; use of dietary, anthropometric, laboratory, clinical and sociocultural criteria to assess nutritional status of individuals, 8 hours of supervised practice per week. Enrollment limited to students who have taken or are concurrently enrolled in NEP 4360; Open to Nutrition and Food majors in the Coordinated Program in Dietetics only.

Credit Hours: 2
Prerequisites: Departmental consent required

NEP 3370: Nutrition Therapy I: Supervised Practice Experience
Practice and application of principles of nutrition care for selected disease states. 12 hours of supervised practice per week.

Credit Hours: 3
Prerequisites: Concurrently enrolled in NEP 4370; Open to students enrolled in the Coordinated Program in Dietetics only

NEP 3390: Teaching and Counseling Techniques in Nutrition
Principles and theories of learning; Resources, methods and techniques for teaching food/nutrition principles and dietary guidelines; Group dynamics and facilitation; Introduction to counseling theories and methods used in nutrition care of individuals. Lecture course.

Credit Hours: 2
Prerequisites: PSYCH 1000 and NEP 2340

NEP 3400: Teaching & Counseling Techniques in Nutr. Supervised Practice Exp
Skill development and practice in counseling individuals for health promotion and disease prevention and the teaching of food and nutrition topics to groups. 4 hours of supervised practice per week.

Credit Hour: 1
Prerequisites: concurrent enrollment in NEP 3390; Open to students enrolled in the Coordinated program in Dietetics only

NEP 3450: Activity Throughout the Lifespan
Course is designed to develop knowledge and understanding of the value of physical activity across the lifespan. The physiology, psychology, and guidelines of exercise, along with the integration of nutrition with physical activity, will be explored from pregnancy through early development and into old age. Graded on A-F basis only.

Credit Hours: 3
Prerequisites: NEP 1340; May be restricted to Nutrition and Fitness majors only during early registration

NEP 3550: Corporate, Community, and Personal Fitness
Course is designed to develop the knowledge and understanding of exercise application for corporate wellness, community programs, and personal fitness. Topics covered will include exercise prescription, behavioral and motivational theories, legality, ethics and professionalism, and how these topics relate to corporate, community, and personal fitness clients. Students should be able to understand the various needs of these populations and how to apply the science of physical activity, nutrition, and human performance to each.

Credit Hours: 3
Prerequisites: NEP 2340 or NEP 2380 and NEP 3450

NEP 3590: Community Nutrition Supervised Practice Experience
A practicum which explores and applies the concepts and techniques of nutrition programming in a community setting. 4 hours of supervised practice per week. Enrollment limited to students who have taken NEP 4590. Open to students enrolled in the Coordinated Program in Dietetics only.

Credit Hour: 1
Prerequisites: Departmental consent required

NEP 3600: Prevention and Care of Athletic Injury
Theory, practice in prevention, emergency care, rehabilitation of injuries encountered in vigorous games.

Credit Hours: 3
Prerequisites: PTH_AS 2201. Restricted from Pre-Nutrition and Fitness majors

NEP 3800: Advanced Athletic Training
Advanced study in areas of prevention, evaluation, care, and treatment and rehabilitation of athletic injuries at high school and college level. Graded on A-F basis only.

Credit Hours: 3
Prerequisites: NEP 3800 and instructor’s consent

NEP 3850: Physiology of Exercise
This is the basic course in exercise physiology, which applies specific principles and concepts of human physiology to the physical work situation. This course will look at ventilation, oxygen transport, cardiovascular physiology, muscle physiology and the metabolic systems; and emphasis will be given to the adaptations to exercise and training. This course will first explore basic exercise physiology and then will explore many of the applied issues pertaining to performance and health. Graded on A-F basis only.

Credit Hours: 3
Prerequisites: PTH_AS 2201; MPP 3202 or BIO_SC 3700. Restricted from Pre-Nutritional and Fitness students

NEP 3900: Field Training in Nutritional Sciences
**NEP 4001: Topics in Nutrition and Exercise Physiology**  
Instruction in specific subject matter areas in the field of nutrition science and exercise physiology.  
**Credit Hour:** 1-3

**Prerequisites:** junior or senior standing and instructor's consent

**NEP 4020: Monogastric Nutrition**  
(same as AN_SCI 4312; cross-leveled with AN_SCI 7312, NEP 7020 and NUTRIT 7020). Principles of nutrition, feed formulation and recent research in poultry feeding. Graded on A-F basis only.  
**Credit Hours:** 3  
**Prerequisites:** AN_SCI 3212 and BIOCHM 3630

**NEP 4200: Sports Performance and Conditioning**  
(cross-leveled with NEP 7200). Course utilizes scientific theory and applied instruction to teach procedures, techniques, and modalities used to improve physical sports performance. Graded on A-F basis only.  
**Credit Hours:** 3  
**Prerequisites:** Physiology and Anatomy, Kinesiology; junior or senior standing required

**NEP 4280: Food Service Management**  
(cross-leveled with NEP 7280). Issues related to marketing and financial control in the foodservice sector. Lecture course. Graded on A-F basis only.  
**Credit Hours:** 3  
**Prerequisites:** MANGMT 3000 or equivalent

**NEP 4290: Food Serv. II: Adv. Food Service Manage. Supervised Practice Experience**  
A practicum tailored to apply marketing and budgetary principles in the foodservice industry. 8 hours of supervised practice per week. Enrollment limited to students with concurrent enrollment in NEP 4280. Open to students admitted to the Dietetics program.  
**Credit Hours:** 2  
**Prerequisites:** Departmental consent required

**NEP 4330: Human Nutrition II Laboratory**  
(cross-leveled with NEP 7330). A techniques course in nutrition, usually taken concurrently with NEP 4340.  
**Credit Hours:** 2  
**Prerequisites:** NEP 2340, Biochemistry and instructor's consent

**NEP 4340: Human Nutrition II Lecture**  
(cross-leveled with NEP 7340). Physiological and biochemical aspects of nutrition; functions of methods of measuring nutritional status; various aspects of applied nutrition. Continuation of NEP 2340.  
**Credit Hours:** 3  
**Prerequisites:** NEP 2340 and either BIOCHM 3630, BIOCHM 4270 or BIOCHM 4272. Restricted from pre-Nutrition and Fitness majors

**NEP 4360: Nutritional Assessment**  
(cross-leveled with NEP 7360). Introduction to the nutrition assessment process. The identification of dietary, anthropometric, laboratory, clinical and sociocultural parameters used to assess nutritional status of individuals. Lecture course.  
**Credit Hours:** 3  
**Prerequisites:** PSYCH 1000, NEP 2340. Restricted from Pre-Nutrition and Fitness Majors

**NEP 4370: Nutrition Therapy I**  
(cross-leveled with NEP 7370). In-depth study of physiological/biochemical changes in selected disease states (cardiovascular disease, rehabilitation, diabetes and cancer); development of principles underlying nutrition therapy. Lecture course.  
**Credit Hours:** 3  
**Prerequisites:** NEP 4360

**NEP 4380: Nutrition Therapy II**  
(cross-leveled with NEP 7380). Evaluation, design and monitoring of the nutrition care of complex health disorders such as renal disease, trauma, and multi-system organ failure; emphasis on nutrition support (enteral and parenteral nutrition). Lecture course.  
**Credit Hours:** 2  
**Prerequisites:** NEP 4370

**NEP 4381: Nutrition Therapy II: Supervised Practice Experience**  
Practice in the nutrition care of complex health disorders with emphasis on nutrition support. 16 hours of supervised practice per week. Enrollment limited to students with concurrent enrollment in NEP 4380. Open to students admitted to Dietetics program only.  
**Credit Hours:** 4  
**Prerequisites:** Departmental consent required

**NEP 4385: Professional Development I**  
(cross-leveled with NEP 7385). Course designed to provide career exploration and assessment and prepare students for the final rotations in the coordinated program in dietetics. Graded on A-F basis only. Enrollment limited to students enrolled in the coordinated program in Dietetics.  
**Credit Hours:** 1  
**Prerequisites:** Departmental consent required

**NEP 4390: Issues in Dietetic Practice**  
Lectures and discussions focus on issues and trends in dietetics. Discussions are used to encourage the development of skills and attitudes which foster life-long professional learning. Lecture/discussion course.  
**Credit Hours:** 1  
**Prerequisites:** NEP 4950 and NEP 4380; or instructor's consent

**NEP 4480: Pediatric Exercise Physiology**  
Course is designed to develop knowledge and understanding of the value of physical activity in the pediatric population. The physiology, psychology, and guidelines of exercise will be explored in the developmental process of youth. Graded on A-F basis only.
NEP 4590: Community Nutrition
(cross-leveled with NEP 7590). Public health nutrition and chronic disease prevention, food security, nutrition programs and food access, public policy, sustainable agriculture and food production systems, cultural food practices, needs assessment. Graded on A-F basis only.

Credit Hours: 3
Prerequisites: NEP 2340 or NEP 2380. Restricted from Pre-Nutrition and Fitness majors

NEP 4750: Cardiopulmonary Rehabilitation - A Multifactorial Process
A guide to the practice of Cardiopulmonary Rehab in the 21st Century. We will explore the interdisciplinary aspects of a successful approach to the delivery of cardiac and pulmonary rehabilitation throughout a broad spectrum of patients. Graded on A-F basis only.

Credit Hours: 3
Prerequisites: NEP 1340, NEP 3450 and NEP 3850 or NEP 4850

NEP 4860: Exercise Prescription
Course investigates theory and methods of testing and prescribing exercise for circulatory fitness, body composition, muscle strength, joint and muscle ranges in motion, and posture. Graded on A-F basis only.

Credit Hours: 3
Prerequisites: NEP 1340, NEP 3450 and NEP 3850 or NEP 4850

NEP 4951: Nutrition Research Communication
Analyze and interpret data; present results of a research study in manuscript and seminar presentation formats. Emphasis on effective communication of nutrition research to scientific and lay audiences. Graded on A-F basis only.

Credit Hour: 1
Prerequisites: NEP 4950 or instructor's consent

NEP 4951W: Nutrition Research Communication - Writing Intensive
Analyze and interpret data; present results of a research study in manuscript and seminar presentation formats. Emphasis on effective communication of nutrition research to scientific and lay audiences. Graded on A-F basis only.

Credit Hour: 1
Prerequisites: NEP 4950 or instructor's consent

NEP 4960: Readings in Nutritional Sciences

Credit Hour: 1-99
Prerequisites: 8 hours of course work in field of subject and instructor's consent

NEP 4970: Nutrition Capstone: Sports Nutrition
Integration of research literature with knowledge from previous coursework, emphasis on sports nutrition research, nutrient requirements of athletes, critical evaluation of ergogenic aids. Graded on A-F basis only.

Credit Hours: 2
Prerequisites: NEP 2340, and either MPP 3202 or BIO_SC 3700, and either STAT 1200, STAT 1300, STAT 1400 or ESC_PS 4170; Senior Standing, open to Nutrition and Fitness majors only

NEP 4975: Practice of Dietetics Supervised Practice Experience
Supervised practice in providing quality nutrition services in clinical, community, management and specialty settings. 40 hours of supervised practice per week.

Credit Hours: 10
Prerequisites: NEP 3590, NEP 4280, NEP 4290, NEP 4380,NEP 4381, and NEP 4590; Open to students admitted to the Dietetics Program only

NEP 7001: Topics in Nutritional Science and Exercise Physiology
Instruction in specific subject matter areas in the field of food science and nutrition.

Credit Hour: 1-99

NEP 7020: Monogastric Nutrition
(same as AN_SCI 7312 and NUTRIT 7020; cross-leveled with NEP 4020 and AN_SCI 4312). Principles of nutrition, feed formulation and recent research in poultry feeding. Graded on A-F basis only.

Credit Hours: 3
Prerequisites: AN_SCI 3212 and BIOCHM 3630

NEP 7085: Problems in Nutritional Sciences and Exercise Physiology
Advanced problems in a selected field of food science and nutrition.
NEP 7150: Readings in Nutritional Sciences and Exercise Physiology
In this course students will have the opportunity to read the literature in the area of nutrition and exercise physiology, allowing them to get more in-depth knowledge in a specific area or areas.

Credit Hour: 1-99
Prerequisites: 15 hours course work in field of subject and instructor’s consent

NEP 7200: Sports Performance and Conditioning
(cross-leveled with NEP 4200). Course utilizes scientific theory and applied instruction to teach procedures, techniques, and modalities used to improve physical sports performance. Graded on A-F basis only.

Credit Hours: 3
Prerequisites: Physiology and Anatomy, Kinesiology; junior/senior standing

NEP 7330: Human Nutrition II Laboratory
(cross-leveled with NEP 4330). A techniques course in nutrition, usually taken concurrently with NEP 4340.

Credit Hours: 2
Prerequisites: NEP 2340, Biochemistry and instructor’s consent

NEP 7340: Human Nutrition II Lecture
(cross-leveled with NEP 4340). Physiological and biochemical aspects of nutrition; functions of methods of measuring nutritional status; various aspects of applied nutrition. Continuation of NEP 2340.

Credit Hours: 3
Prerequisites: NEP 2340, Biochemistry or instructor’s consent

NEP 7360: Nutritional Assessment
(cross-leveled with NEP 4360). Introduction to the nutrition assessment process. The identification of dietary, anthropometric, laboratory, clinical and sociocultural parameters used to assess nutritional status of individuals. Lecture course.

Credit Hours: 3
Prerequisites: PSYCH 1000, NEP 2340

NEP 7370: Nutritional Therapy I
(cross-leveled with NEP 4370). In-depth study of physiological/biochemical changes in selected disease states (cardiovascular disease, rehabilitation, diabetes and cancer); development of principles underlying nutrition therapy. Lecture course.

Credit Hours: 3
Prerequisites: NEP 4360

NEP 7380: Nutrition Therapy II
(cross-leveled with NEP 4380). Evaluation, design and monitoring of the nutrition care of complex health disorders such as renal disease, trauma, and multi-system organ failure; emphasis on nutrition support (enteral and parenteral nutrition). Lecture course.

Credit Hours: 2
Prerequisites: NEP 4370

NEP 7385: Professional Development I
(cross-leveled with NEP 4385). Course designed to provide career exploration and assessment and prepare students for the final rotations in the coordinated program in dietetics.

Credit Hour: 1
Corequisites: Concurrent enrollment in NEP 7380, NEP 7381

NEP 7440: The Science and Art of Nutrition
The science of nutrition including nutrients and other active food compounds; their action, interaction, and balance in relation to human health and disease; and the processes by which they are digested, absorbed, and utilized. Emphasis on nutrient/dietary recommendations, including changing nutrient needs throughout human life span. Covers food/nutrition-related regulations and policies. Graded on A-F basis only.

Credit Hours: 3
Prerequisites: CHEM 2030 or equivalent and MPP 3202

NEP 7480: Evaluation of Food and Nutrition Research Evidence for the Consumer
Scientific evidence interpretation/critique techniques and approaches, including research literature searches, research designs and methodology, assessment of statistical validity. Evaluation of food/nutrition and health information sources and publication hierarchy. Graded on A-F basis only.

Credit Hours: 3
Prerequisites: NEP 7440

NEP 7500: Research in Nutritional Sciences and Exercise Physiology
Original investigations, usually in connection with one of the research projects of Agricultural Experiment Station. Written report required.

Credit Hour: 1-99

NEP 7590: Community Nutrition
(cross-leveled with NEP 4590). Public health nutrition and chronic disease prevention, food security, nutrition programs and food access, public policy, sustainable agriculture and food production systems, cultural food practices, needs assessment. Graded on A-F basis only.

Credit Hours: 3
Prerequisites: NEP 4360

NEP 7840: Cardiovascular Health and Fitness
Physiology underlying best methods for obtaining and maintaining cardiovascular health and fitness. Includes exercise and weight control, plasma lipids, energy metabolism, cardiovascular dynamics, and recent research findings.

Credit Hours: 3
Prerequisites: Nutrition course or instructor’s consent

NEP 7950: Research in Dietetics
(cross-leveled with NEP 4950). Introduction to research, including the relationship of basic, clinical, and outcomes-based research to dietetics practice. Defining research problems in a dietetics practice setting, developing hypotheses, reviewing scientific literature, writing research protocols, analyzing data. Lecture course.
**NEP 7970: Sports Nutrition**  
(cross-leveled with NEP 4970). Integration of research literature with knowledge from previous coursework, emphasis on sports nutrition research, nutrient requirements of athletes, critical evaluation of ergogenic aids. Graded on A-F basis only.  
**Credit Hours:** 2  
**Prerequisites:** Statistics course  
NEP 7970: Sports Nutrition (cross-leveled with NEP 4970). Integration of research literature with knowledge from previous coursework, emphasis on sports nutrition research, nutrient requirements of athletes, critical evaluation of ergogenic aids. Graded on A-F basis only.  
**Credit Hours:** 2  
**Prerequisites:** Statistics course

**NEP 8001: Topics in Nutritional Sciences and Exercise Physiology**  
Instruction in specific subject matter areas in the field of nutrition science and exercise physiology. May be repeated for credit. Graded on A-F basis only.  
**Credit Hours:** 1-3

**NEP 8030: Etiology of Obesity**  
This course is designed to provide an understanding of the cause and implications of human obesity. General topic areas covered will include: methodologies of obesity research, physiology of obesity, behavioral and environmental factors influencing obesity, obesity and disease, therapeutic approaches to obesity, and emerging topics in obesity. The structure of this course will be mixture of lectures and interactive discussions/reviews of primary research articles in these areas. Students will be expected to present and critically evaluate research papers relevant to the field of obesity.  
**Credit Hours:** 3  
**Prerequisites:** NEP 7340

**NEP 8085: Problems in Nutritional Sciences and Exercise Physiology**  
Individual studies include a minor research problems.  
**Credit Hour:** 1-99

**NEP 8087: Masters Seminar in Nutritional Sciences and Exercise Physiology**  
Seminar features expert presentations of current research and issue-based applications that represent the breadth of nutritional sciences and/or exercise physiology. Graded on S/U basis only.  
**Credit Hour:** 1

**NEP 8090: Masters Research in Nutritional Sciences and Exercise Physiology**  
Original investigation of advanced nature, leading to thesis. Graded on a S/U basis only.  
**Credit Hour:** 1-99

**NEP 8095: Internship in Exercise Physiology**  
The internship experience will take place in professionally supervised settings, and allow students to complement their academic work with employment-related experiences. Organizations, companies and business that offer internships can be selected to match with student interests. This experience will offer the student meaningful learning opportunities that will complement their career goals.  
**Credit Hours:** 4  
**Prerequisites:** must be accepted into the Exercise Physiology graduate program, 3.0 GPA or higher, completed 50% of the coursework at the masters level

**NEP 8310: Nutritional Biochemistry of Lipids**  
(same as AN_SCI 8431 and NUTRIT 8310). Current concepts in the nutritional regulation of lipid metabolism. Emphasis on integrating information and interpreting current research data.  
**Credit Hours:** 3  
**Prerequisites:** BIOCHM 4270 and BIOCHM 4272

**NEP 8340: Nutrition in Human Health**  
(same as NUTRIT 8340). Nutritional aspects of maintaining human health with emphasis on micronutrients, basis for dietary recommendations, and nutrition public health initiatives. Graded on A-F basis only.  
**Credit Hours:** 3  
**Prerequisites:** BIOCHM 4270 and BIOCHM 4272; 4000-level nutrition course; graduate standing or current enrollment in the Masters in Dietetics Program

**NEP 8360: Nutritional Biochemistry I**  
(same as NUTRIT 8360 and BIOCHM 8360). Provides a critical understanding of current developments in lipid metabolism in animals and humans, particularly as it relates to nutrition and health.  
**Credit Hours:** 3  
**Prerequisites:** BIOCHM 4270 and BIOCHM 4272; at least one 4000 level nutrition course

**NEP 8390: Molecular Biology of Mineral Nutrition**  
(same as NUTRIT 8390 and BIOCHM 8390). Current concepts of metal ion transport, intracellular metal trafficking and metal-dependent regulation of gene expression. Based entirely on research literature and taught in a tutorial format.  
**Credit Hours:** 3  
**Prerequisites:** BIOCHM 4270 and BIOCHM 4272; 4000-level nutrition course

**NEP 8438: Nutrient Regulation of Gene Expression**  
(same as AN_SCI 8438, BIOCHM 8438 and NUTRIT 8438). Current concepts with in-depth coverage of several minerals that illustrate themes in molecular mineral nutrition. Based entirely on research literature and taught in a tutorial format.  
**Credit Hours:** 3  
**Prerequisites:** BIOCHM 4270 and BIOCHM 4272; 4000-level nutrition course

**NEP 8850: Advanced Exercise Physiology**  
Lectures, laboratory experiences, and readings in current literature to provide reasonable depth in selected areas of physiology as applied to activity and health.  
**Credit Hours:** 3  
**Prerequisites:** NEP 4850 and Chemistry
**NEP 8860: Exercise Endocrinology**
The nervous system and the endocrine system integrate to regulate the functions of the body. These systems are tightly linked and frequently one system cannot be considered without consideration of the other system. This course integrates endocrine physiology and the impact that exercise has on the endocrine response. This class will focus on the glands producing hormones, the target organs, mechanisms and how both acute and chronic exercise impacts hormone action. This is an advanced exercise physiology course designed for graduate students in Exercise Physiology or the life sciences and will consist of lectures, readings and discussion. Graded on A-F basis only.

**Credit Hours:** 3  
**Prerequisites:** NEP 8850, V_BSCI 8420 or graduate standing in the Life Sciences

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**NEP 8870: Exercise Metabolism**
Review of major metabolic pathways and the effect of exercise upon them. Special topics include indirect calorimetry, EPOC, anaerobic threshold; weight control, ergogenic aids, and exercise nutrition.

**Credit Hours:** 3  
**Prerequisites:** NEP 4850 and Chemistry

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**NEP 9087: Doctorate Seminar in Nutritional Sciences and Exercise Physiology**
Seminar features expert presentations of current research and issue-based topics that represent the breadth of nutritional sciences and exercise physiology. Graded on S/U basis only.

**Credit Hour:** 1

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**NEP 9090: Doctorate Research in Nutritional Sciences and Exercise Physiology**
Original investigation of advanced nature, leading to a dissertation. Graded on a S/U basis only.

**Credit Hour:** 1-99