Health and Human Physiology, M.S.

Requirements

The Master of Science program in health and human physiology requires 30-36 s.h. of graduate credit. Required credit varies by track: the athletic training track requires a minimum of 30 s.h. and is offered without thesis; the child life track requires a minimum of 36 s.h. and is offered without thesis; the clinical exercise physiology track requires a minimum of 32 s.h. and is offered without thesis; the health and human physiology track requires a minimum of 30 s.h. and is offered with thesis.

Students interested in pursuing a Ph.D. after earning a master's degree should choose the M.S. health and human physiology track (with thesis).

Athletic Training Track

The athletic training track provides an advanced clinical education and research area of study for certified athletic trainers. It focuses on a health care team approach to sports medicine, medical care management, wellness, pediatric/adolescent health, and special health populations. The program emphasizes application of established research findings to the wide variety of problems encountered in everyday practice.

In order to be admitted to the program, athletic trainers must have completed the following prerequisite course work and must hold the following certifications:

- anatomy (3-4 s.h.);
- human physiology (3 s.h.);
- athletic training core—prevention (3 s.h.), evaluation and recognition (3 s.h.), modalities (3 s.h.), rehabilitation (3 s.h.), administrative (2 s.h.);
- exercise science core—exercise physiology (3 s.h.), biomechanics (3 s.h.);
- current emergency certification; and
- Board of Certification (BOC) certification and state license.

The Master of Science with the athletic training track requires the following course work (minimum of 30 s.h.).

**Statistics Core**
- BIOS:4120 Introduction to Biostatistics 3
- or STAT:4143 Introduction to Statistical Methods

**Exercise Science Core**
Three of these (9 s.h.):
- HHP:3110 Advanced Anatomy Laboratory 3
- HHP:4130 Skeletal Muscle Physiology 3
- HHP:4150 Clinical Exercise Physiology 3
- HHP:4220 Biomechanics of Human Motion 3
- HHP:4300 Neural Control of Posture and Movement 3
- HHP:4310 Sport and Exercise Nutrition 3
- HHP:4410 Exercise Physiology 3
- HHP:4440 Physiology of Nutrition 3
- HHP:4450 Genetic Basis of Disease 3
- HHP:4460 Cardiovascular Physiology 3
- HHP:4470 Physiology of Aging 3
- HHP:4480 Introduction to Human Pharmacology 3
- HHP:6130 Advanced Skeletal Muscle Physiology 3
- HHP:6150 Advanced Clinical Exercise Physiology 3
- HHP:6410 Advanced Exercise Physiology 3
- HHP:6460 Advanced Cardiovascular Physiology 3
- HHP:6480 Advanced Human Pharmacology 3
- HHP:7300 Advanced Neural Control of Posture and Movement 3

**Clinical Research Tools**
One approved clinical tool course in computer science, counseling, epidemiology, health promotion, leisure studies, nursing, or pathology 2-4

**Athletic Training Core**
All of these:
- HHP:5000 Problems 2
- HHP:6010 Non-Thesis Seminar 2
- HHP:7000 Practicum in College Teaching 2-3

One of these:
- EPID:4400 Epidemiology I: Principles 3
- PATH:8133 Introduction to Human Pathology for Graduate Students 4

**Electives**
Students choose elective courses that enhance their concentration in medical care management, wellness, pediatric/adolescent health, or special health populations; course selection must be approved by the advisor

Child Life Track

The child life track provides expertise in child development through services to support families and to promote children's mastery of life experiences, particularly children's health care events. Professionals in this area enhance effective coping skills through play, education, communication, and family-centered care. The program prepares students to meet credentialing requirements. For more information about the profession, visit the Child Life Council.

In order to be admitted to the program, students must:
- hold a B.S. or B.A. with a g.p.a. of at least 3.00;
- have completed one course each in human anatomy, medical terminology, and two courses in human growth and development that focus on children and adolescents;
- have verification of 100 hours of paid or volunteer experience in child life or in a pediatric setting; and
three letters of recommendation, with at least one from a credentialed child life specialist.

Students who have not completed an introductory course in child life must enroll in TR:1077 Introduction to Child Life during their first semester. For student applicants whose first language is not English, applications must be accompanied by Test of English as a Foreign Language (TOEFL) scores.

Students who pursue the child life track must successfully pass comprehensive exams in the last semester prior to their child life internship. The comprehensive exam committee works with each student to establish faculty and exam questions.

The Master of Science with the child life track requires the following course work (minimum of 36 s.h.).

Core Courses
All of these:
- PSQF:4143 Introduction to Statistical Methods 3
- SSW:3786 Death/Dying: Issues Across the Life Span 3
- TR:5165 Child Life: Methods and Materials 3
- TR:5166 Child Life: Seminar 3
- TR:5167 Child Life Practicum 3
- TR:5205 Research Methods and Leisure Behavior 3
- TR:5211 Professional Ethics and Practice in Pediatrics 3
- TR:5260 Play and Childhood 3
- TR:5261 Family Systems 3

Internship
The supervised internship requires 480-600 contact hours with a credentialed child life specialist:
- TR:4192 Child Life Internship 9

Clinical Exercise Physiology Track
The clinical exercise physiology track provides an advanced scientific and clinical education. It prepares students to be allied health professionals who work in the application of physical activity and behavioral interventions for chronic diseases and health conditions including cardiovascular, pulmonary, metabolic, orthopaedic, neuromuscular, immunologic, and hematologic diseases.

In order to be admitted to the program, students must:
- hold a B.S. or B.A. with a g.p.a. of at least 3.00; and
- have completed anatomy and physiology with laboratories (8 s.h.).

The Master of Science with the clinical exercise physiology track requires the following course work (minimum of 32 s.h.).

Statistics Core
One of these (or equivalent):
- STAT:3510 Biostatistics 3
- BIOS:4120 Introduction to Biostatistics 3
- STAT:4143 Introduction to Statistical Methods 3

Advanced Statistics
One of these (or equivalent):
- BIOS:5120 Regression Modeling and ANOVA in the Health Sciences 3
- STAT:6513 Intermediate Statistical Methods 4

Clinical Exercise Physiology Core
All of these:
- HHP:6150 Advanced Clinical Exercise Physiology 1,3
- HHP:6200 Advanced Metabolic Exercise Testing and Prescription 4
- HHP:6410 Advanced Exercise Physiology 3
- HHP:6460 Advanced Cardiovascular Physiology 1,3
- HHP:6480 Advanced Human Pharmacology 3

Two enrollments (1 s.h. each) chosen from these:
- HHP:6300 Motor Control Seminar 1
- HHP:6400 Integrative Physiology Seminar 1
- HHP:6500 Seminar in Health Promotion 1

Internship
Students complete an individually arranged internship, usually during their second year, earning 3 s.h. of credit

Electives
Students choose elective courses that enhance their concentration in human and exercise physiology, clinical exercise physiology, prescriptive exercise and training for health and fitness, health maintenance, and understanding human disease; select at least two courses from the following, with advisor’s approval:
- HHP:4400 Health Promotion Clinical Practicum 1
- HHP:4405 Health Promotion Community and Worksite Practicum 1
- HHP:4420 Planning and Evaluating Health Interventions 3
- HHP:6050 Advanced Topics in Obesity 3
- HHP:6130 Advanced Skeletal Muscle Physiology 1-3
- HHP:6470 Advanced Physiology of Aging 3
- HHP:6510 Advanced Energy Metabolism in Health & Disease 1,3
- HHP:7300 Advanced Neural Control of Posture and Movement 1-3
- ACB:5203 Gross Human Anatomy for Graduate Students 5
- BIOL:3743 Basic Biology of Human Disease 2
- EPID:6350 Nutritional Epidemiology 2
- EPID:6360 Nutrition Intervention in Clinical Trials Research 2
- EPID:6650 Cardiovascular Disease Epidemiology 3
- PSY:3010 Health Psychology 3
- PSY:3340 Behavior Modification 3
Health and Human Physiology Track

The health and human physiology track requires a thesis. Students who intend to earn a Ph.D. after the master's degree should choose this track. In order to be admitted to the program, students must:

- hold a B.S. or B.A. with a g.p.a. of at least 3.00; and
- have completed courses in anatomy and physiology with laboratory (8 s.h.) and basic physics (3 s.h.).

The Master of Science with the health and human physiology track requires the following course work (minimum of 30 s.h.).

**Advanced Statistics**
One of these:
- BIOS:5120 Regression Modeling and ANOVA in the Health Sciences 3
- EPID:5241 Statistical Methods in Epidemiology 4
- STAT:6513 Intermediate Statistical Methods 4

**Research Methods**
One of these:
- TR:5205 Research Methods and Leisure Behavior 3
- EALL:5150 Introduction to Educational Research 3
- PSQF:6220 Quantitative Educational Research Methodologies 3

**Seminar Courses**
Two enrollments (1 s.h. each) chosen from these:
- HHP:6300 Motor Control Seminar 1
- HHP:6400 Integrative Physiology Seminar 1
- HHP:6500 Seminar in Health Promotion 1

**Electives**
Students choose elective courses that broaden their knowledge in health and human physiology and related disciplines, and enhance their knowledge in their specific areas of interest, with guidance from their advisor/mentor; electives may include the following:
- HHP:5000 Problems arr.
- HHP:6000 Research arr.
- HHP:6050 Advanced Topics in Obesity 3
- HHP:6130 Advanced Skeletal Muscle Physiology 1-3
- HHP:6150 Advanced Clinical Exercise Physiology 1-3
- HHP:6200 Advanced Metabolic Exercise Testing and Prescription 4
- HHP:6410 Advanced Exercise Physiology 3
- HHP:6460 Advanced Cardiovascular Physiology 1-3
- HHP:6470 Advanced Physiology of Aging 3
- HHP:6480 Advanced Human Pharmacology 3
- HHP:6510 Advanced Energy Metabolism in Health & Disease 1,3
- HHP:7300 Advanced Neural Control of Posture and Movement 1-3
- ACB:5203 Gross Human Anatomy for Graduate Students 5
- BIOC:3110 Biochemistry 3
- EPID:4400 Epidemiology I: Principles 3
- EPID:6350 Nutritional Epidemiology 2
- EPID:6400 Epidemiology II: Advanced Methods 4
- EPID:6600 Epidemiology of Chronic Diseases 3
- MPB:5153 Graduate Physiology 4
- PTRS:7812 Biomedical Instrumentation and Measurement 3
- PTRS:7875 Analysis of Activity-Based Neural and Musculoskeletal Plasticity 3

**Thesis**
This course:
- HHP:7500 Thesis: M.S. 4

**Admission**

Admission to the department's graduate programs is based on grade-point average and score on the Graduate Record Examination (GRE) General Test. Applicants to the M.S. program must have an undergraduate g.p.a. of at least 3.00.

Applicants must meet the admission requirements of the Graduate College; see the Manual of Rules and Regulations of the Graduate College.

Application deadline is February 1 for admission the following fall.

**Career Advancement**

The Pomerantz Career Center offers multiple resources to help students find internships and jobs.