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

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOS:4120</td>
<td>Introduction to Biostatistics</td>
<td>3</td>
</tr>
<tr>
<td>or      STAT:4143</td>
<td>Introduction to Statistical Methods</td>
<td>3</td>
</tr>
</tbody>
</table>

Exercise Science Core

Three of these (9 s.h.):

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>HHP:3110</td>
<td>Advanced Anatomy Laboratory</td>
<td>3</td>
</tr>
<tr>
<td>HHP:4130</td>
<td>Skeletal Muscle Physiology</td>
<td>3</td>
</tr>
<tr>
<td>HHP:4150</td>
<td>Clinical Exercise Physiology</td>
<td>3</td>
</tr>
<tr>
<td>HHP:4220</td>
<td>Biomechanics of Human Motion</td>
<td>3</td>
</tr>
<tr>
<td>HHP:4300</td>
<td>Neural Control of Posture and Movement</td>
<td>3</td>
</tr>
<tr>
<td>HHP:4310</td>
<td>Sport and Exercise Nutrition</td>
<td>3</td>
</tr>
</tbody>
</table>

Clinical Research Tools

One approved clinical tool course in computer science, counseling, epidemiology, health promotion, leisure studies, nursing, or pathology

Athletic Training Core

All of these:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>HHP:5000</td>
<td>Problems</td>
<td>2</td>
</tr>
<tr>
<td>HHP:6010</td>
<td>Non-Thesis Seminar</td>
<td>2</td>
</tr>
<tr>
<td>HHP:7000</td>
<td>Practicum in College Teaching</td>
<td>2-3</td>
</tr>
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</table>

One of these:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>EPID:4400</td>
<td>Epidemiology I: Principles</td>
<td>3</td>
</tr>
<tr>
<td>PATH:8133</td>
<td>Introduction to Human Pathology for Graduate Students</td>
<td>4</td>
</tr>
</tbody>
</table>

PSQF:6205 Design of Instruction 3

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

- **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 clinical 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:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOS:5120</td>
<td>Regression Modeling and ANOVA in the Health Sciences</td>
<td>3</td>
</tr>
<tr>
<td>EPID:5241</td>
<td>Statistical Methods in Epidemiology</td>
<td>4</td>
</tr>
<tr>
<td>STAT:6513</td>
<td>Intermediate Statistical Methods</td>
<td>4</td>
</tr>
</tbody>
</table>

### Research Methods

One of these:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>TR:5205</td>
<td>Research Methods and Leisure Behavior</td>
<td>3</td>
</tr>
<tr>
<td>EALL:5150</td>
<td>Introduction to Educational Research</td>
<td>3</td>
</tr>
<tr>
<td>PSQF:6220</td>
<td>Quantitative Educational Research Methodologies</td>
<td>3</td>
</tr>
</tbody>
</table>

### Seminar Courses

Two enrollments (1 s.h. each) chosen from these:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>HHP:6300</td>
<td>Motor Control Seminar</td>
<td>1</td>
</tr>
<tr>
<td>HHP:6400</td>
<td>Integrative Physiology Seminar</td>
<td>1</td>
</tr>
<tr>
<td>HHP:6500</td>
<td>Seminar in Health Promotion</td>
<td>1</td>
</tr>
</tbody>
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### 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:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>HHP:5000</td>
<td>Problems</td>
<td>arr.</td>
</tr>
<tr>
<td>HHP:6000</td>
<td>Research</td>
<td>arr.</td>
</tr>
<tr>
<td>HHP:6050</td>
<td>Advanced Topics in Obesity</td>
<td>3</td>
</tr>
<tr>
<td>HHP:6130</td>
<td>Advanced Skeletal Muscle Physiology</td>
<td>1-3</td>
</tr>
<tr>
<td>HHP:6150</td>
<td>Advanced Clinical Exercise Physiology</td>
<td>1-3</td>
</tr>
<tr>
<td>HHP:6200</td>
<td>Advanced Metabolic Exercise Testing and Prescription</td>
<td>4</td>
</tr>
</tbody>
</table>

### Thesis

This course:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>HHP:7500</td>
<td>Thesis: M.S.</td>
<td>4</td>
</tr>
</tbody>
</table>

### 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.