

# 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 subprogram: the child life subprogram requires a minimum of 36 s.h. and is offered without a thesis; the clinical exercise physiology subprogram requires a minimum of 33 s.h. and is offered without a thesis; the M.S. program in health and human physiology requires a minimum of 30 s.h. and is offered with a thesis.

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

## Child Life Subprogram

The child life subprogram 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 Association of Child Life Professionals.

In order to be admitted to the subprogram, students must:

- hold a B.S. or B.A. degree with a grade-point average (GPA) of at least 3.00;
- have completed one course each in human anatomy, medical terminology, and two courses in child 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 (e.g., from a certified child life specialist, professor, advisor, and/or someone who has observed the student working with children and families in health care or non-health care settings)

Students who have not completed an introductory course in child life must enroll in TR:2077 Introduction to Child Life during their first semester.

Applicants whose first language is not English must submit official test scores to verify English proficiency. Applicants can verify English proficiency by submitting official test scores from the Test of English as a Foreign Language (TOEFL), the International English Language Testing System (IELTS), or the Duolingo English Test (DET).

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

The M.S. in health and human physiology with the child life subprogram requires the following coursework (minimum of 36 s.h.).

## Core Courses

| Code                    | Title  | Hours |
|-------------------------|--|-------|
| All of these:           |  |       |
| PSQF:4143/<br>STAT:4143 | Introduction to Statistical Methods                        | 3     |
| TR:5165                 | Child Life: Child Development and Healthcare Interventions | 3     |
| TR:5166                 | Child Life: Seminar  | 3     |
| TR:5167                 | Child Life Practicum                                       | 3     |
| TR:5211                 | Professional Ethics and Practice in Pediatrics             | 3     |
| TR:5260                 | Play and Childhood   | 3     |
| TR:5261                 | Family Systems   | 3     |
| One of these:           |  |       |
| CSED:4131               | Loss, Death, and Bereavement                               | 3     |
| SSW:3786/<br>ASP:3786   | Death/Dying: Issues Across the Life Span                   | 3-4   |
| One of these:           |  |       |
| HHP:6020                | Advanced Research Methods and Ethics                       | 1-3   |
| TR:5205                 | Research Methods and Play Behavior                         | 3     |

## Internship

The supervised internship requires 600 contact hours with a certified child life specialist.

| Code         | Title                 | Hours |
|--------------|-----------------------|-------|
| This course: |                       |       |
| TR:5270      | Child Life Internship | 9     |

## Clinical Exercise Physiology Subprogram

The clinical exercise physiology subprogram provides 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, orthopedic, neuromuscular, immunologic, and hematologic diseases.

In order to be admitted to the subprogram, students must:

- hold a B.S. or B.A. degree with a GPA 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 subprogram requires the following coursework (minimum of 33 s.h.).

## Core

| Code          | Title   | Hours |
|---------------|---|-------|
| All of these: |   |       |
| HHP:6030      | Physical Activity and Dietary Behavior Change                                       | 3     |
| HHP:6150      | Advanced Clinical Exercise Physiology (consult advisor for semester hours required) | 1,3   |

|           |   |     |
|-----------|---|-----|
| HHP:6200  | Advanced Metabolic Exercise Testing and Prescription                                      | 4   |
| HHP:6260  | Advanced Respiratory Pathophysiology (consult advisor for semester hours required)        | 1,3 |
| HHP:6410  | Advanced Integrative Physiology of Exercise (consult advisor for semester hours required) | 1,3 |
| HHP:6460  | Advanced Cardiovascular Physiology (consult advisor for semester hours required)          | 1,3 |
| PCOL:3101 | Pharmacology I: A Drug's Fantastic Journey  | 3   |

## Statistics

| Code   | Title                               | Hours |
|--|-------------------------------------|-------|
| One of these introductory courses (or equivalent): |                                     |       |
| BIOS:4120  | Introduction to Biostatistics       | 3     |
| PSQF:6242  | Selected Applications of Statistics | 3     |
| STAT:3510/<br>IGPI:3510                            | Biostatistics                       | 3     |
| STAT:4143/<br>PSQF:4143                            | Introduction to Statistical Methods | 3     |

## Research Methods

| Code         | Title                                | Hours |
|--------------|--------------------------------------|-------|
| This course: |                                      |       |
| HHP:6020     | Advanced Research Methods and Ethics | 2     |

## Internships

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

| Code         | Title                                   | Hours |
|--------------|---|-------|
| This course: |   |       |
| HHP:5935     | Clinical Exercise Physiology Internship | 3-6   |

## General Electives

With advisor approval, students choose elective coursework that enhances their concentration in human and exercise physiology, clinical exercise physiology, prescriptive exercise and training for health and fitness, health maintenance, and understanding human disease.

| Code     | Title  | Hours |
|----------|--|-------|
| HHP:4020 | Health Coaching                              | 3     |
| HHP:4350 | Health and Human Physiology Practicum        | 1-3   |
| HHP:4420 | Planning and Evaluating Health Interventions | 3     |
| HHP:5200 | Physical Activity Epidemiology               | 3     |
| HHP:6130 | Advanced Skeletal Muscle Physiology          | 1,3   |
| HHP:6300 | Motor Control Seminar                        | 1     |

|           |   |     |
|-----------|---|-----|
| HHP:6400  | Integrative Physiology Seminar                                      | 1   |
| HHP:6470  | Advanced Physiology of Aging  | 1,3 |
| HHP:6500  | Seminar in Health Promotion   | 1   |
| HHP:6510  | Advanced Energetics in Health and Disease                           | 1,3 |
| HHP:7300  | Advanced Sensorimotor Neurophysiology                               | 1,3 |
| ACB:5203  | Gross Human Anatomy for Graduate Students                           | 5-6 |
| EPID:6350 | Nutritional Epidemiology  | 2   |
| EPID:6360 | Nutrition Intervention in Clinical Trials Research                  | 2   |
| EPID:6600 | Epidemiology of Chronic Diseases                                    | 3   |
| PSY:3010  | Health Psychology   | 3   |
| PSY:3340  | Behavior Modification   | 3   |
| PTRS:6224 | Activity-Based Neural and Musculoskeletal Plasticity in Health Care | 4   |
| PTRS:7812 | Biomedical Instrumentation and Measurement                          | 3   |
| PTRS:7875 | Analysis of Activity-Based Neural and Musculoskeletal Plasticity    | 3   |

## M.S. in Health and Human Physiology with Thesis

The health and human physiology program requires a thesis. Students who intend to earn a Ph.D. after completing the master's degree should choose this program. In order to be admitted, students must hold a B.S. or B.A. degree with a GPA of at least 3.00.

The Master of Science program in health and human physiology requires the following coursework (minimum of 30 s.h.).

## Introductory Statistics Courses

| Code                    | Title                                       | Hours |
|-------------------------|---|-------|
| One of these:           |   |       |
| BIOS:4120               | Introduction to Biostatistics               | 3     |
| PCOL:5204               | Basic Biostatistics and Experimental Design | 1     |
| PSQF:6242               | Selected Applications of Statistics         | 3     |
| STAT:3510/<br>IGPI:3510 | Biostatistics                               | 3     |
| STAT:4143/<br>PSQF:4143 | Introduction to Statistical Methods         | 3     |

## Advanced Statistics Courses

| Code                                  | Title  | Hours |
|---------------------------------------|--|-------|
| One of these:                         |  |       |
| BIOS:5120/<br>IGPI:5120/<br>STAT:5610 | Regression Modeling and ANOVA in the Health Sciences | 3     |
| STAT:6513/<br>PSQF:6243               | Intermediate Statistical Methods                     | 3     |

## Research Methods Course

| Code         | Title                                | Hours |
|--------------|--------------------------------------|-------|
| This course: |                                      |       |
| HHP:6020     | Advanced Research Methods and Ethics | 3     |

## Seminar Courses

| Code   | Title                          | Hours |
|--|--------------------------------|-------|
| 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     |

## General Elective Courses

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.

| Code     | Title  | Hours |
|----------|--|-------|
| HHP:3050 | Obesity  | 3     |
| HHP:3450 | Immunology in Health and Disease                     | 3     |
| HHP:4020 | Health Coaching                                      | 3     |
| HHP:4320 | Nutrition Interventions                              | 3     |
| HHP:4350 | Health and Human Physiology Practicum                | 1-3   |
| HHP:4365 | Internship in Health Coaching                        | 3     |
| HHP:4390 | Understanding Human Disease                          | 3     |
| HHP:4420 | Planning and Evaluating Health Interventions         | 3     |
| HHP:4450 | Human Genetics and Disease                           | 3-4   |
| HHP:5200 | Physical Activity Epidemiology                       | 3     |
| HHP:6000 | Research   | arr.  |
| HHP:6030 | Physical Activity and Dietary Behavior Change        | 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 | 1,4   |
| HHP:6260 | Advanced Respiratory Pathophysiology                 | 1,3   |
| HHP:6410 | Advanced Integrative Physiology of Exercise          | 1,3   |
| HHP:6460 | Advanced Cardiovascular Physiology                   | 1,3   |
| HHP:6470 | Advanced Physiology of Aging                         | 1,3   |
| HHP:6510 | Advanced Energetics in Health and Disease            | 1,3   |
| HHP:7300 | Advanced Sensorimotor Neurophysiology                | 1,3   |

|           |  |     |
|-----------|--|-----|
| ACB:5203  | Gross Human Anatomy for Graduate Students                        | 5-6 |
| BMB: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

| Code         | Title        | Hours |
|--------------|--------------|-------|
| This course: |              |       |
| HHP:7500     | Thesis: M.S. | 4     |