

Physical Rehabilitation Science, PhD

Requirements

The Doctor of Philosophy with a major in physical rehabilitation science requires a minimum of 72 s.h. of graduate credit. Students must maintain a cumulative grade-point average of at least 3.00.

The program is designed to advance a student's ability to independently develop and carry out research that establishes the scientific basis for the prevention, evaluation, and treatment of impairments, functional limitations, and disability. The curriculum is flexible enough to accommodate research focusing on basic, applied, or clinical studies in the rehabilitation sciences. Students have access to the program's research laboratories (see Facilities in this section of the catalog).

Curriculum

Students and their faculty advisor develop an individualized study plan. A preliminary study plan is developed within the first year of study for full-time students and within the second year of study for part-time students; a final plan is submitted to the Graduate College when the PhD comprehensive examination is scheduled.

To ensure breadth of knowledge, all students complete specific core, research, and scientific specialty area content courses. Elective courses are selected to provide in-depth study of the specialty; they are complemented by an advanced seminar course specific to a student's specialty and taken in preparation for the comprehensive examination.

Students must satisfactorily complete the comprehensive examination, which is taken after all required coursework is completed. Doctoral study culminates with 12 s.h. of thesis research and an oral examination.

General Core Requirement

PhD students must complete the following core requirements. In addition to the following courses, the Collaborative Institutional Training Initiative (CITI)—online, web-based training—must be completed before a student enrolls in BMED:7270 and BMED:7271.

Course #	Title	Hours
All of these:		
PTRS:7812	Biomedical Instrumentation and Measurement	3
PTRS:7820	Seminar in Rehabilitation Science (taken twice for 1 s.h. each)	2
PTRS:7880	Teaching Practicum	arr.
BIOS:5120/ IGPI:5120/ STAT:5610	Regression Modeling and ANOVA in the Health Sciences	3
BMED:7270	Scholarly Integrity/ Responsible Conduct of Research I	0

BMED:7271	Scholarly Integrity/ Responsible Conduct of Research II	0
PSQF:7385/ CSED:7385/ EDTL:7385/ EPLS:7385/ GRAD:7385	Teaching and Learning in Higher Education	3
One of these:		
BIOS:4120	Introduction to Biostatistics	3
STAT:4143/ PSQF:4143	Introduction to Statistical Methods	3

Research Requirement

Students complete at least 27 s.h. from the following. The capstone course PTRS:7900 is recommended but not required for students who enter the program with a master's or doctoral-level degree; however, it is required for students who enter with a bachelor's degree.

Course #	Title	Hours
PTRS:7826	Scientific Writing in Rehabilitation Science	2
PTRS:7884	Practicum in Research	arr.
PTRS:7895	Advanced Seminar in Rehabilitation Science	arr.
PTRS:7900	Rehabilitation Research Capstone Project	arr.
PTRS:7927	Research in Rehabilitation Science	arr.
PTRS:7930	Critical Thinking in Neuro-Mechanical Systems	arr.
PTRS:7931	Critical Thinking in Pain	arr.
PTRS:7932	Critical Thinking in Biomechanics and Human Performance Assessment	arr.
PTRS:7933	Critical Thinking in Activity-Based Plasticity	arr.
PTRS:7934	Critical Thinking in Neural Plasticity	arr.
PTRS:7935	Critical Thinking in Movement Science	arr.
PTRS:7936	Critical Thinking in Cardiovascular Physiology	arr.
PTRS:7990	Thesis: Rehabilitation Science	arr.

Specialty Content Requirement

Students must complete at least 9 s.h. in their scientific specialty area. Students may choose courses from the following list, but other courses suited to a student's background knowledge and interest area are considered.

Course #	Title	Hours
Anatomy and Cell Biology		
ACB:8401	Advanced Human Anatomy	arr.
Epidemiology		
EPID:6900	Design of Intervention and Clinical Trials	3
Health and Human Physiology		
HHP:6130	Advanced Skeletal Muscle Physiology	1,3

HHP:6150	Advanced Clinical Exercise Physiology	1,3
HHP:6300	Motor Control Seminar	1
HHP:6410	Advanced Integrative Physiology of Exercise	1,3
HHP:6460	Advanced Cardiovascular Physiology	1,3
HHP:6470	Advanced Physiology of Aging	1,3
Neuroscience		
NSCI:7235/ NEUR:7235	Neurobiology of Disease	3
Nursing		
NURS:3460	Professional Role II: Research	3
Occupational and Environmental Health		
OEH:4310	Occupational Ergonomics: Principles	3
Pharmacology		
PCOL:5137	Neurotransmitters	1
PCOL:6207	Ion Channel Pharmacology	1
PCOL:6250	Advanced Problem Solving in Pharmacological Sciences	1
Physical Therapy		
PTRS:5210	Kinesiology and Pathomechanics	4
PTRS:5206	Cardiopulmonary Therapeutics	3
PTRS:6224	Activity-Based Neural and Musculoskeletal Plasticity in Health Care	4
PTRS:6250	Critical Inquiry I: Evidence-Based Practice	2
PTRS:6251	Critical Inquiry II: Rehabilitation Research	2
PTRS:6253	Functional Neuroanatomy	arr.
PTRS:7875	Analysis of Activity-Based Neural and Musculoskeletal Plasticity	3
PTRS:7899	Introduction to Pain: Overview of Theories, Concepts, and Mechanisms	1
PTRS:7901	Clinical Correlates of Pain: Syndromes and Management	1
PTRS:7902	Molecular, Cellular, and Neural Mechanisms of Pain	2
PTRS:7903	Rehabilitation Management of Pain	1