

Human Movement and Rehabilitation Sciences, MS

A strong global need exists for interdisciplinary, innovative, and translational research and practice directed toward improving quality of life and participation of all people in our communities. To meet this need, we offer a novel Master of Science in Human Movement and Rehabilitation Sciences. Human movement and rehabilitation sciences encompasses a broad range of topics including sports performance, functional assessments, occupational biomechanics and ergonomics, motor control and learning, neuroscience, musculoskeletal disorders, orthopedics, aging, assistive technology, injury prevention and rehabilitation, communication sciences, speech, and early development.

The objective of this program is to prepare graduates to assist in advancing basic, translational, and applied research, as well as practice in human movement and rehabilitation sciences. The program is based on the integration of core skills and concepts across the multiple disciplines that are associated with human movement and rehabilitation sciences, coupled with the acquisition of skills and tools, and specialization within specific areas and tracks.

The Master of Science in Human Movement and Rehabilitation Sciences program is housed in the Department of Physical Therapy, Movement, and Rehabilitation Sciences, offering excellent collaborative teaching and research programs across the departments and school of the Bouvé College of Health Sciences, the Khoury College of Computer Sciences, the College of Engineering, and the College of Science. The 12-month program requires 32 credit hours of required and elective courses, including 4 credit hours devoted to the capstone project.

Traditional Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Core Requirements

Code	Title	Hours
Seminar		
Students must enroll for two semesters for a total of 2 semester hours.		2
PT 7030	Interdisciplinary Seminar in Rehabilitation Science	
Foundations		
PHTH 5210	Biostatistics in Public Health	3
Rehabilitation Science and Human Movement		
PT 7001	Core Concepts in Rehabilitation Science and Research	3
PT 7010	Measurement and Analysis of Human Movement and Bioinstrumentation	4
PT 7020	Technologies in Movement and Rehabilitation Science	4
PT 5321	Applications of Biomechanics in Human Function and Movement	4
PT 6230	Capstone Project: Human Movement and Rehabilitation Sciences	4

Electives

Code	Title	Hours
Complete 8 semester hours from the list below. Students must petition to take electives outside the approved list.		8

BIOE 5810	Design of Biomedical Instrumentation
BIOE 5235	Biomedical Imaging
PT 5410	Functional Human Neuroanatomy
BIOL 5601	Multidisciplinary Approaches in Motor Control
EECE 5644	Introduction to Machine Learning and Pattern Recognition
EECE 7200	Linear Systems Analysis
EXSC 5210	Physical Activity and Exercise: Prescription, Measurement, and Testing
HLTH 5450	Healthcare Research
ME 5250	Robot Mechanics and Control
ME 5659	Control Systems Engineering
ME 5665	Musculoskeletal Biomechanics
ME 7247	Advanced Control Engineering
PHTH 6210	Applied Regression Analysis
PHTH 6440	Advanced Methods in Biostatistics
PT 5133	Kinesiology
PT 5138	Neuroscience
PT 5150	Motor Control, Development, and Learning
PT 5209	Neurological Rehabilitation 1
PT 5600	Ergonomics and the Work Environment
PT 6221	Neurological Rehabilitation 2

Program Credit/GPA Requirements

32 total semester hours required
Minimum 3.000 GPA required

Experiential Program Requirements

Master of Science in Human Movement and Rehabilitation Sciences –Experiential offers students the opportunity to replace electives with educational residency experiences focused on the workplace. This program is designed to prepare graduates to assist in advancing basic, translational, and applied research, as well as practice, in human movement and rehabilitation sciences. The program is based on the integration of core skills and concepts across the multiple disciplines that are associated with human movement and rehabilitation sciences, coupled with experiential opportunities to apply the acquisition of skills and tools in the workplace.

Complete all courses and requirements listed below unless otherwise indicated.

Core Requirements

Code	Title	Hours
Seminar		
Students must enroll for two semesters for a total of 2 semester hours.		2
PT 7030	Interdisciplinary Seminar in Rehabilitation Science	

Rehabilitation Science and Human Movement

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PT 7001	Core Concepts in Rehabilitation Science and Research	3
HLTH 5410	Introduction to Statistics in Health and Behavioral Science	3
PT 7010	Measurement and Analysis of Human Movement and Bioinstrumentation	4
PT 7020	Technologies in Movement and Rehabilitation Science	4
PT 5321	Applications of Biomechanics in Human Function and Movement	4
PT 6230	Capstone Project: Human Movement and Rehabilitation Sciences	4

Experiential

Code	Title	Hours
PT 6123	Human Movement and Rehabilitation Experiential Residency 1 (Human Movement and Rehabilitation Experiential Residency 1)	4
PT 6124	Human Movement and Rehabilitation Experiential Residency 2 (Human Movement and Rehabilitation Experiential Residency 2)	4

Program Credit/GPA Requirements

32 total semester hours required

Minimum 3.000 GPA required