



## Rehabilitation Science PhD Program

UNIVERSITY OF COLORADO  
ANSCHUTZ MEDICAL CAMPUS

### **Required Core Coursework (30sch)**

#### **Foundations in Rehabilitation Science (2sch)**

- RHSC 7000 (Foundations in Rehabilitation Science, 2sch) Prereq: None

#### **Rehabilitation Science Seminar (2sch)**

Required during two semesters of enrollment:

- RHSC 7001 (Seminars in Rehabilitation Science, 1sch each) Pre/Coreq: Found Rehab Sci

#### **Rehabilitation Science Research Rotation (6sch)**

Required during two semesters of enrollment:

- RHSC 7910 (Research Practicum in Rehabilitation Science I, 3sch) Prereq: None
- RHSC 7911 (Research Rotation in Rehabilitation Science II, 3sch) Prereq: Res Rot I

#### **Statistics/Data Management (8-10sch)**

One of the following sequences:

- BIOS 6601/6602 (Biostatistics I & II, 3sch per course) Prereq: None
- BIOS 6611/6612 (Biostatistical Methods I & II, 3sch per course) Prereq: Differential Calc

Plus a minimum of one of the following advanced courses:

- BIOS 6613 (Advanced Statistical Modeling, 3sch) Prereq: BIOS 6612
- BIOS 6680 (Programming for Research Data Management, 2sch) Prereq: None
- CLSC 6040 (Database & Web Design Programming, 1sch) Prereq: PRMD 6603 or Instr consent
- BIOS 6648 (Design of Clinical Trials and Experiments, 2sch) Prereq: BIOS 6611 or BIOS 6601
- CLSC 6260 (Clinical Trials for Investigators, 2sch) Prereq: Instr consent
- CLSC 7200 (Clinical Outcomes Assessment, 2sch) Prereq: Instr consent
- BIOS 6649 (Statistical Methods for Clinical Trials, 1sch) Prereq: BIOS 6611. Coreq: BIOS 6612 and 6648.
- BIOS 7711 (Longitudinal Data Analysis, 3sch) Prereq: BIOS 6612
- BIOS 7713 (Statistical Methods for Missing Data, 2sch) Prereq: BIOS 7711, BIOS 7712
- PRMD 6620 (Questionnaire Design, 1sch) Prereq: None
- PRMD 6629 (Clinical Epidemiology, 1sch) Prereq: None
- PRMD 6630 (Epidemiology, 4sch) Prereq: Instr consent
- NURS 7300 (Qualitative Empirical Research, 3sch) Prereq: Instr consent
- NURS 7310 (Qualitative Interpretive Research, 3sch) Prereq: Instr consent

#### **Scientific Writing (1-2sch)**

One of the following courses:

- CLSC 7101 (Grant Writing, 1sch) Prereq: BIOS 6601, 6602, BIOS 6648 or EPID 6626, CLSC 7150
- NRSC 7661 (Grant Proposal Writing Workshop, 1sch) Prereq: NRSC 7610 and Instr consent
- IDPT 7200 (Scientific Writing for Doctoral Students, 2sch) Prereq: Pass preliminary examination

#### **Research Ethics (1sch)**

One of the following courses:

- CLSC 7150 (Lectures Ethics & Regulation in Human Subjects Review, 1sch) Prereq: Instr consent
- IMMU 7607 (Science as a Profession, 1 sch) Prereq: None

**Professional Skills in Academia (2sch)**

- RHSC 7002 (Professional Skills, 2Sch) Prereq: None

**Specialization Electives (5-8sch) \***

\* Recommended courses for selected areas of specialization in Rehabilitation Science. Students may petition the Admissions and Curriculum Committee to consider additional courses in primary area of specialization to fulfill this requirement.

A minimum of two of the following electives in primary area of specialization:

**Applied Molecular and Cellular Physiology**

- BIOL 5064 (Advanced Cell Biology, 3sch)
- BIOL 5550 (Cell Signaling, 3sch)
- BIOL 5124 (Molecular Biology, 3sch)
- BIOL 5125 (Molecular Biology Laboratory, 3sch)
- CLSC 7450 (Biopharmaceutics and Applied Pharmacokinetics, 2sch)
- CLSC 7500 (Molecular and Cell Biology Techniques for the Clinical Investigator, 3sch)
- IPHY 5102 (Molecular Genetic Analysis of Physiology and Behavior, 2sch)
- BIOL 5126 (Molecular Genetics, 3sch)
- BIOL 5134 (Human Genetics, 3sch)
- HMGP 7600 (Survey of Human Genetics, 2sch)
- HMGP 7620 (Genomics, 2sch)
- IMMUN 7662 (Immunology, 6sch)
- BIOL 5621 (Immunology, 3sch)
- MICB 7705 (Medical Microbiology, 4sch)
- BIOL 5144 (Medical Microbiology, 3sch)
- BIOL 5051 (Advanced Topics in Microbiology, 3sch)
- IDPT 7646 (Tissue Biology and Disease Mechanism, 3sch)
- IPHY 5500 (Histology: Cells and Tissues, 4sch)
- BIOL 5475 (Mechanisms of Human Pathology, 3sch)
- CSC 5610 (Computational Biology, 3sch)
- BIOL 5634 (Biology of Cancer, 3sch)

**Applied Exercise and Cardiopulmonary Physiology**

- BIOL 5465 (Cardiovascular Physiology, 3sch)
- IPHY 5550 (Exercise Biochemistry, 3sch)
- IPHY 5640 (Clinical and Exercise Electrocardiography, 3sch)
- IPHY 6640 (Systemic Cardiovascular Regulations, 3sch)
- IPHY 6650 (Cellular Cardiovascular Physiology, 3sch)
- CLSC 7400 (Techniques for the Study of Human Metabolism In Vivo, 2sch)
- IPHY 5440 (Endocrinology, 4sch)
- BIOL 5674 (Mammalian Endocrinology, 3sch)

**Applied Motor Control**

- NRSC 7600 (Cellular and Molecular Neurobiology, 3sch)
- BIOL 5165 (Neurobiology, 3sch)

- MCDB 5777 (Molecular Neurobiology, 3sch)
- NRSC 7610 (Fundamentals of Neurobiology, 4sch)
- NRSC 5100 (Introduction to Neuroscience I, 2-5sch)
- NRSC 5110 (Introduction to Neuroscience II, 3sch)
- PSYC 5262 (Mammalian Neuroanatomy, 3sch)
- IPHY 5730 (Motor Control, 3sch)
- IPHY 5740 (Theory of Motor Skill Learning, 3sch)
- ECEN 4811 (Neural Signals and Functional Brain Imaging, 3sch)
- ECEN 4821 (Neural Systems and Physiological Control, 3sch)
- BIOL 5560 (Seminar: Nervous System Disorders, 3sch)
- CSC 5542 (Neural Networks, 3sch)

### **Applied Biomechanics**

- CLSC 6281 (Engineering & Biotechnology: Principles & Emerging Technologies, 3sch)
- CSC 5098 (Computer Science for Bioscientists, 3sch)
- IDPT 7300 (Technology Transfer and Biotechnology, 3sch)
- CSC 5702 (Data Mining, 3sch)
- EE 5637 (Digital Signal Processing, 3sch)
- IPHY 6680 (Matlab for Physiological and Biomechanical Research, 3sch)
- ME 5163 (Dynamics, 3sch)
- IPHY 6660 (Locomotion Energetics and Biomechanics, 3sch)
- CE 5515 (Introduction to Finite Element Analysis, 3sch)
- MCEN 5173 (Finite Element Analysis, 3sch)
- MCEN 5117 (Anatomy and Physiology for Engineers, 3sch)
- CSC 5610 (Computational Biology, 3sch)
- CE 5121 (Intermediate Mechanics of Materials, 3sch)
- CE 5514 (Matrix Analysis of Structures, 3sch)

### **Applied Lifespan Studies**

- RPSC 7801 (Molecular Mechanisms of Reproductive Endocrinology & Metab, 3sch)
- RPSC 7802 (Reproductive Development, 1sch)
- BIOL 5074 (Human Reproductive Biology, 3sch)
- BIOL 5054 (Developmental Biology, 3sch)
- CLSC 6653/54 (Key concepts in Neurodevelopmental Disabilities I & II, 2sch/course)
- NRSC 7615 (Developmental Neurobiology, 3sch)
- MCDB 5680 (Mechanisms of Aging, 3sch)

### **Other**

- RHSC 8900 (Independent Study in Rehabilitation Science, 1-3sch)  
Course may be repeated up to 3sch maximum

### **Required Doctoral Thesis Credit (30 sch)**

- RHSC 8990 (Doctoral Thesis in Rehabilitation Science, variable sch)