



# Department of Physical Therapy and Rehabilitation Science

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## Coursework



## Handbook

[PhD in Rehabilitation Science Handbook](#) [1]

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## Overview

The PhD in Rehabilitation Science offers two areas of specialization that represent the expertise of our Department as well as the UCSF community as a whole: Musculoskeletal Biomechanics and Clinically Informed Neuroscience. These areas of specialization are supported by established research infrastructure, including basic science laboratories on the Parnassus and SFGH campuses, movement analysis labs on the Mission Bay campus, imaging facilities, clinical physical therapy and health and wellness facilities, and the Neurobehavioral Core for Rehabilitation Research. The latter is a Core facility, supported by the Department of Physical Therapy and Rehabilitation Science that is available to the research community to study behavior of mouse models of injuries/diseases and to address activity-based restoration of function. In addition, SFSU has a movement analysis lab and a lab dedicated to clinical research.

## Unit Requirements (by quarter unit)

- Total core units: 15 (year 1)
  - Total rotation units: 9 (year 1)
  - Total elective units: 9-12 (year 2)
  - Total research units: 108 (years 1-4) - 36 units (year 3 and 4) + 72 (years 3-4)
  - Grand total units: 138-141
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## Courses

*Core courses in the first year focus on Rehabilitation Science, Statistics, Research Ethics, and Basic Sciences.*

The primary focus of the first two years of the PhD program will be to expose students to the basic core courses in Rehabilitation Science and provide opportunities for students to experience and ultimately select a laboratory and Principal Investigator with whom to complete their dissertation. Courses taken in the first year include: RS 201 Introduction to Rehabilitation Science, GRAD 214 Ethics and the Responsible Conduct of Research, BIOSTAT 200 and 208 Biostatistical Methods in Clinical Research I and II, GRAD DIV course on Race and Racism in Science, and other basic science courses needed, based upon the student's needs and interests (Anatomy, Physiology, Neuroscience, Statics and Dynamics, etc.). The remainder of the first year of study will be filled with Research Lab rotations (10-20 hours/week), the teaching assistantship or practicum, and the Doctoral Colloquium.

*Courses in the second year begin to focus on a specific area of research in either the Musculoskeletal Biomechanics or Clinically Informed Neuroscience track.*

By the end of the second year in the PhD program, students are expected to have selected a research focus and a primary research mentor. The goal of the second year is to allow the student to finalize his/her dissertation focus and obtain the necessary knowledge and skills to successfully execute the dissertation. Coursework to be taken during this time includes electives within the selected domain, such as RS 330 Biomechanics of Human Motion or RS 340 Activity and Its Effects on CNS Disease/Injury Across the Lifespan, additional courses in biostatistics, and continuing with the Doctoral Colloquium. It is expected that the student will have at least 20 hours per week for research experiences, including pilot studies for the dissertation proposal, as appropriate.

### **Normative Time from Matriculation to Degree**

The time needed to complete the PhD in Rehabilitation Science will vary depending on the student's training and experience prior to enrolling in the PhD program and the time it takes to complete the dissertation research.

Students who have completed undergraduate level training require at least two years to complete their coursework and pass their qualifying examination, followed by an additional two to three years to complete their research and file the dissertation. Those who have completed Masters level training may progress more quickly through the coursework. Thus, the mean time to completion of a PhD in Rehabilitation Science for students entering with a Bachelor's degree is expected to be approximately five years. To facilitate timely progress in the program, all students will be required to complete annual progress reports and to discuss them with their adviser and Graduate Committee or Dissertation Committee.

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## Laboratory Rotations

Students will be required to complete three quarters of lab rotations (3 units each), similar to the lab rotation requirement in other established PhD Programs at UCSF (e.g. Biomedical Sciences, Biological and Medical Informatics and Pharmaceutical Sciences and Pharmacogenomics). The objective of these rotations is for the student to have the opportunity to:

- Apply concepts taught in formal classes
- Learn practical aspects of conducting research, including how to work within a multidisciplinary team
- Acquire exposure to areas of research other than the student's primary area
- Launch projects with potential for developing into qualifying examination or dissertation research topic
- Decide on a primary research mentor, if not already identified

Three lab rotations will be required over three quarters before advancing to Candidacy status. A plan for which research teams to rotate with should be part of the Year 1 Plan of Study approved by the Graduate Committee. The subject matter for each rotation, however, is not prescribed by the PhD Program and would be determined by the needs of the research team and the student. In the lab rotations, PhD students will participate in active research teams at UCSF or SFSU, or affiliated institutions. The PI and the student will set a plan for the lab rotation, including expectations.

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