Doctoral Program in Rehabilitation Science (PhD)  
Department of Rehabilitation Medicine  
University of Washington  
Seattle, Washington

Curriculum

The curriculum is founded on a bio-psycho-social-environmental framework and a commitment to interdisciplinary practice. Though we expect each student's pathway to be highly individualized, all students will complete a 7-quarter core course series, extensive coursework in research methods, and three cognates (interrelated areas of study). Each cognate will include a series of courses and/or independent studies. In addition to these requirements, curriculum for each student will include preparation for teaching, general exams, the presentation of pilot research to faculty and students, and a dissertation.

Each student will be required to take the core course series (21 credits), coursework or independent study in research methods (minimum of 18 credits), and coursework and practicum experiences in teaching (minimum of 5 credits). In addition, each student will complete three cognates (minimum of 6 credits each) specific to his or her goals. The student's committee and the Core Faculty in the Rehabilitation Science Doctoral Program must approve the entire course of study. See the outline below for an overview of the curriculum for students in the Doctoral Program in Rehabilitation Science.

General requirements

In addition to meeting all requirements of the University of Washington Graduate School, all students will be expected to meet the following general requirements.

A. Minimum cumulative and quarterly GPA of 3.0.
B. Total of 100 credits minimum, of which 27 are dissertation credits.
C. Completion of a minimum of one teaching practicum (3 credit minimum).
D. Satisfactory completion of a Research and Scientific Inquiry Day manuscript and presentation.

We expect that the requirements will generally be the same for students entering the Ph.D. program with a practice degree (e.g., MD; Bachelors or Masters of Occupational Therapy, Physical Therapy, Prosthetics and Orthotics, Rehabilitation Counseling, or Speech and Hearing Sciences; Clinical Doctorates in Occupational Therapy [OTD] or Physical Therapy [DPT]). Students entering the doctoral program with a recently completed post-professional degree can petition to have a maximum of 30-credits of coursework from that degree applied toward the doctoral degree. The Rehabilitation Science Admission, Advisement, and Evaluation Committee will determine if a portion of the credits can be applied. It will be the responsibility of the student's supervisory committee to determine the extent to which these credits can be applied to meet coursework, cognate, and teaching requirements.
Rehabilitation Science Core Course Series

The core course series for all students begins with an overview of rehabilitation science and the social constructs of disability. Specifically, models that synthesize the biological, psychological, social, and environmental perspectives to the enabling-disabling processes and the related habilitation and rehabilitation approaches across the lifespan will be introduced and critiqued. The concepts from this course will be woven through all subsequent courses, four of which focus on research methods and rehabilitation science. Though students will take many of their focused research courses from other schools and departments within the University, the four research-based courses in the rehabilitation science curriculum are designed to provide students with a broad overview of research methods specific to rehabilitation science. These courses will address research theories and methods as related to studying the constructs within a bio-psycho-social-environmental model (e.g., methods to study body functions & structures, activity & participation, environmental & personal factors and the interrelationships among factors) and will highlight the work of rehabilitation research teams. We believe this background will facilitate understanding and appreciation of multiple research methods and issues and thereby facilitate interdisciplinary collaboration in multi-method research approaches.

Year 1

Rehab 556: Foundations of Rehabilitation Science (3 credits)

**Purpose:** The purpose of this course is to provide an overview of the field of rehabilitation science and an introduction to social constructs of disability with an emphasis on bio-psycho-social-environmental models of the enabling-disabling process across the life span. Topics covered will include definitions and domains of rehabilitation science, psychosocial variables related to social constructs of disability, and civil rights laws and policies related to disability. All students will be involved in critiques, from the perspectives of their areas of interest, of social constructs of disability and of disability policies and laws.

Rehab 558: Research in Rehabilitation (3 credits)

**Purpose:** The purpose of this course is to provide a critical review of the current practices in research methodologies in rehabilitation and investigate the consequences of selecting various research methodologies and analytic strategies. Topics will include a review of qualitative and quantitative methodologies ranging from phenomenological interviews to single-subject and quasi-experimental designs to descriptive studies to single and multi-site randomized clinical trials. The advantages and disadvantages of the various approaches will be examined in relationship to the various aspects of the bio-psycho-social-environmental model of human functioning, disability, and health across the life span.
Rehab 557: Evidence-based Rehabilitation (3 credits)

**Purpose:** The purpose of this course is to further develop the student’s competence in evidence-based rehabilitation science, which involves the integration of research evidence, clinical expertise, and patient/client values. Topics covered will include frameworks for evaluating the evidence in rehabilitation science; asking answerable questions; using advanced search strategies; critically appraising the literature; understanding the systematic review process; conducting and interpreting meta-analyses; developing evidence-based practice guidelines; communicating the evidence to stakeholders; and translating evidence into rehabilitation practice. Each student will use the research evidence from the literature to answer a question relevant to one or more aspects of the bio-psycho-social-environmental model.

Rehab 566: Special Topics: Introduction to Global Rehabilitation (3 credits)

**Purpose:** The overarching purpose of this course is to provide the students with an introductory structure to explore rehabilitation from a global perspective. This seminar will draw on the expertise of interdisciplinary faculty and other participants in global rehabilitation. Course content will address: developing a framework for understanding relevant issues in global rehabilitation in context; the importance of developing an infrastructure at home and in country that supports capacity building; issues related to disability policy from a global perspective, and several examples of global rehabilitation in action.

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**Year 2**

Rehab 560: Defining and Measuring Outcomes in Rehabilitation Research (3 credits)

**Purpose:** The purpose of this course is to introduce the student to the importance, methods, and challenges of outcomes research in rehabilitation. Topics covered will include definitions and importance of outcomes research; measurement of behaviors, functional abilities, quality of life, and consumer satisfaction; outcomes measurement specific to diverse populations across the life span; design of outcomes research; and challenges specific to outcomes research. All students will be involved in the critique of outcomes research specific to rehabilitation and all will be involved in designing research projects using outcomes at the levels of body function/body structure; activity/participation; and environment.

Rehab 561: Epidemiological and Health Services Approaches to Rehabilitation Research (3 credits)

**Purpose:** The purpose of this course is to introduce the student to the application of principles and methods from the fields of epidemiology and health services to rehabilitation research. Topics covered will include an overview of epidemiological research methods applicable to rehabilitation research, health services approaches including cost benefit analysis, surveillance
and prevention, ethics, and use of research results to inform disability policy. Students will be expected to critique published research illustrating the application of these methods to rehabilitation science.

**Rehab 562: Neuroscience in Rehabilitation**

**Purpose:** The intent of this course is to foster the development of knowledge and skills related to: 1) the neural control of human movement; 2) movement dysfunction resulting from neurologic pathology; and 3) methodological approaches to investigating the neural control of movement. This course will discuss current concepts in motor control, motor learning, and neural plasticity as they relate to movement dysfunction in people with neurologic pathology and to rehabilitation science and research.

**Rehab 520: Doctoral Seminar**

In addition to the above sequence of core courses, students in the program will enroll in Rehab 520: Doctoral Seminar for 1 credit each of the first eight quarters in the program. The purpose of the Doctoral Seminar is to provide a forum for developing a culture of doctoral education that promotes independence and individual responsibility the cohort progresses through the PhD Program in Rehabilitation Science. The course will offer the opportunity to share resources, develop preliminary courses of study, participate in group mentoring and advising, and to experience the camaraderie of the cohort.

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**Research Methods Courses/Independent Studies**

Each student will be required to take a minimum of 18 credits of research courses and/or independent studies appropriate to the student's chosen line of inquiry. It is essential that students enroll in a series of foundational courses in statistics and research methods to provide a strong basis on which to build research skills. We expect that students will take their coursework in statistics and research methods from colleges, schools, and departments such as Public Health and Community Medicine, Educational Psychology, Special Education, Nursing, and Speech and Hearing Sciences. The student, working in close collaboration with his or her advisor and interdisciplinary supervisory committee, will determine which of the series is most appropriate. In addition, we expect that all students will work on an interdisciplinary team that focuses on complex rehabilitation research questions. If the student and his or her committee members feel that the research experience on a specific team is too limited, the student can do one or more independent study options outside his or her primary area.
Grant Writing

Multiple opportunities to learn about and participate in grant writing will be embedded throughout each student's program. First, students will be made aware of grant-writing courses offered in other departments and schools within the University. Depending on their needs and in consultation with their mentors, students may elect to take one or more of these courses. Second, students will be required to participate in University sponsored grant-writing workshops (e.g., Grants for Lunch Series). Third, early in the program, each student, working with an interdisciplinary team, will participate in the preparation of at least one grant application. This will involve a sequence of mentored activities. Later in the student's program, he or she will take the lead role in the preparation of a grant application to support his or her own research/scholarship.

Teaching Courses and Practica

All students will be required to complete a minimum of 5 credits total of teaching courses and practica. Students need to complete one course on teaching methods (e.g., BIME 520: Teaching Methods in Medical Education or equivalent) and a teaching practicum (REHAB 546). The latter will focus on the development of skills (the design, implementation, and evaluation of instruction) for entry-level practitioner preparation, continuing education, and/or in-service training and clinical supervision. Though students may complete multiple levels of teaching practica. The first level involves shared teaching of a class or workshop with all work completed under the direct supervision of a faculty mentor. The second level involves assuming major responsibility for a course (lecture/discussion or laboratory) or workshop, with intermittent supervision to provide mentorship and monitor progress. The third and most advanced level students will choose to do one or more of the following: (a) planning and teaching a course independently; (b) developing a new course; (c) serving on a committee focused on accreditation or curriculum revisions; or (d) completing a major project related to curriculum development (e.g., a web-based module). It is expected that a student whose goal is to become an academician will complete all three levels of teaching practica and may use "teaching" as a cognate.

Cognates (Focused Areas of Study)

Each student will be required to complete three cognates (focused areas of study). Cognates may span any aspect of the bio-psycho-social-environmental perspectives of rehabilitation science and as well as may be focused on advanced research, measurement, or teaching, depending on the needs and interests of the student. Each cognate will be a minimum of 6 credits (most will be in excess of 6 credits) and will include a series of courses and/or independent studies (conducted under faculty supervision). These will be highly individualized and related to the student's area(s) of study within rehabilitation science. The student's supervisory committee must approve these cognates.

Below is an example, of three possible interrelated cognates "pain and physical disabilities," "neuromuscular disorders in childhood," and "measurement" for a student interested in studying measurement of pain in youths with cerebral palsy.
Example: Cognates

Cognate 1: Pain and Physical Disabilities
NURS 537  Pain Management 3
REHAB 600  Pain Evaluations & Interventions for Youths 3
REHAB 600  Physical Disabilities in the Pediatric Population 3
EDSPE 502  Collaboration: Working with Parents and Professionals 3
12

Cognate 2: Neuromuscular Disorders in Childhood
PSYCH 421  Neural Basis of Behavior 5
NURS 431  Infancy in Context 4
REHAB 522  Neurophysiological Topics in Rehabilitation Medicine 2
11

Cognate 3: Measurement
REHAB 581  Application of Measurement Systems 3
EDPSY 592  Advanced Educational Measurements 3
REHAB 600  Measurement of Pain 3
12

There are innumerable opportunities for students to develop cognates that support a wide range of interests in multiple aspects of rehabilitation science. Following is a sampling of possible cognates that is in no way inclusive of the broad array of possibilities.

Sample Cognate: Biomechanics and Movement Science
REHAB 600:  Computer Programming for Human Motion Analysis:
  Introduction to custom programming for human motion analysis 3
REHAB 600:  Techniques of Applied Mathematics in Biology 3
REHAB 513  Special topics: Motion Analysis Systems & Instrumentation 3
9

Sample Cognate: Children with Disabilities and their Families
EDSPE 563  Issues in Working with Families of Students with Disabilities 3
NURS 570  Family Concepts: Health and Illness (3) 3
NURS 571:  Advanced Interpersonal Therapeutics with Families (3) 3
REHAB 513  Leadership in Neurodevelopmental Disabilities: Center on Human Development and Disabilities 3
SOCW 521  Child and Family Inequalities: Policy/Services Platform 3
HSERV 541  Topics in Maternal and Child Health 3
Sample Cognate: Culture and Rehabilitation

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<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>NURS 582</td>
<td>NURS 582 Culture, Society, and Genomics</td>
<td>3</td>
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<tr>
<td>HSERV 571</td>
<td>HSERV 571 Cultural Competency for Public Health Practice</td>
<td>1-4</td>
</tr>
<tr>
<td>HSERV 576</td>
<td>Health, Culture, and Community</td>
<td>3</td>
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<td><strong>7-11</strong></td>
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Sample Cognate: Geriatrics

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<th>Course Title</th>
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<tbody>
<tr>
<td>NURS 534</td>
<td>Seminar in Nursing in Gerontology</td>
<td>3</td>
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<tr>
<td>SOCW 533</td>
<td>Multigenerational Advanced Practice with Older Adults</td>
<td>3</td>
</tr>
<tr>
<td>HSERV 580</td>
<td>Society, Chronic Illness, and Disability</td>
<td>3</td>
</tr>
<tr>
<td>REHAB 600</td>
<td>Community-based Rehabilitation and the Elderly</td>
<td>2</td>
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Depending on the student's goals, either teaching or research can be developed as one of the cognates if the student chooses to do more extensive study in either of these areas. For example, a student, with limited teaching experience, whose long-term goal is to assume a faculty position, might choose a cognate related to teaching in higher education. In such a case, in addition to taking the required course in teaching and the teaching practicum, the student might take additional course work in Medical Education and Biomedical Informatics (MEBI: School of Medicine) and in Curriculum and Instruction (College of Education). Further, the student might complete advanced teaching practica involving curriculum development and/or the preparation of accreditation materials.

Departmental Research Seminars and Interdisciplinary Case-Based Seminars

In the first year, students will be required to attend the departmental research seminars and interdisciplinary case-based seminars. The research seminars will introduce the students to rehabilitation faculty and their research, while the case-based seminars will provide them with interdisciplinary problem solving focused on complex clinical cases.

Research Experiences

We expect that each student will be involved continuously in research. This will start with working collaboratively with his or her mentor and an interdisciplinary team and co-designing and co-publishing research. It will culminate with the student designing and implementing his or her own research relevant to rehabilitation science. As part of this process, early in the program, we expect that each student will participate in the preparation of at least one grant application and later will take the lead role in the preparation of a grant application to support his or her own research/scholarship.
Pilot Research (Research and Scientific Inquiry Paper and Presentation): Each student, working with his or her mentor and an interdisciplinary team, will be required to design, conduct, and author a research project appropriate for providing pilot data for a grant application or for publication in a peer-reviewed journal appropriate to the student's field. The student will be required to present a research manuscript for review by selected faculty in rehabilitation and formally present his or her research to rehabilitation faculty, doctoral students, and invited guests. In many cases, this pilot research will provide a foundation for the student's dissertation research.

Dissertation Research: Each student will be required to complete an original research study appropriate to his or her area of study and of sufficient quality to be publishable in a peer-reviewed journal appropriate to rehabilitation science.

General Examination

Once a student and his or her Supervisory Committee have agreed that all of the required coursework for the Ph.D. degree (excluding dissertation credits) and research and scientific inquiry paper and presentation have been completed, the student will be eligible for General Examination. The General Examination will be given in two parts. The first part will be written and will examine content in (1) the broad area of rehabilitation science, (2) the research preparation, and (3) the cognates. The second part will be an oral examination.

Mentoring

As in all degree programs in the Department of Rehabilitation Medicine, faculty members are committed to developing strong mentoring relationships with all students for the purpose of enhancing educational experiences and supporting student development and retention.

Each student will be assigned a first year advisor at the time he or she is accepted into the program. During the student's first quarter in the program, we expect the mentor to be in contact with the student, with a focus on building a relationship, registering for courses, and supporting the student's success in the program. The actual frequency of meetings between the first year advisor and student will be mutually determined considering the needs and style of the student and the advisor’s schedule. These contacts and meetings can be initiated by either the student or advisor and will be in addition to the formal quarterly advising sessions.