

THE UNIVERSITY OF BRITISH COLUMBIA
Graduate Program in Rehabilitation Sciences

RHSC 520 - Neurorehabilitation

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Office Hours: By appointment office: 714-4105

I. Course Description (3 credits)

Therapeutic approaches and strategies in rehabilitation for persons with common neurological conditions. (0-0,3-0)

II. Major Course Objectives

On completion of this course, the student will be able to:

Discuss theoretical concepts and evidence-base literature of neurological rehabilitation and their implications for rehabilitation

1. Examine controversies, concerns and the neurophysiological basis (presence or absence) behind current neurological therapeutic interventions
2. Discuss the pathophysiological mechanisms that contribute to common clinical neurological sign/symptoms and their implications for therapeutic intervention
3. Critically examine published research on the efficacy of interventions in neurological rehabilitation.
4. Discuss key issues with respect to the physical and psychosocial rehabilitation of individuals with neurological conditions.
5. Prepare a manuscript on the topic of neurorehabilitation (specific intervention, theory, technique) according to the guidelines of a relevant peer-reviewed journal (eg., Journal of the American Occupational Therapy Association, Physical Therapy, Archives of Physical Medicine and Rehabilitation).

III. Method of Instruction

Group discussions (critical evaluation of published research), assigned readings, presentations

IV. Methods of Evaluation

Group Participation	10 marks
Background teaching	20 marks
Leading the session	10 marks
Final class presentation (conference style, 15 min presentation, 5 min questions)	20 marks
Final written manuscript	40 marks
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	100 marks

Grades are based on UBC Faculty of Graduate Studies evaluation:

< 60% (MSc) or <68% (PhD): misses expectation

> 60%: minimally meets expectation

72-75%: meets expectation

76-79%: fully meets expectation

80-84%: very good completion of task

85-89%: exceeds expectation

90-100%: outstanding completion of task

Group participation (10 marks based on below criteria)

Demonstrates excellent preparation: has analyzed paper exceptionally well, relating it to readings and other material (e.g., readings, course material, discussions, or experiences, etc.).

Offers analysis, synthesis, and evaluation of material, e.g., puts together pieces of the discussion to develop new approaches that take the class further.

Contributes in a very significant way to ongoing discussion: keeps analysis focused, responds very thoughtfully to other students' comments, demonstrates ongoing very active involvement.

Teaching the background (20 marks)

One student will conduct a 60-90 minute interactive lesson to discuss the background topics to that day's session. The objective of the background session is to provide the class with the theoretical framework of the topic at hand, that might be physiological, psychological, neuroscience, etc. In addition, basic terms might be defined, limitations of techniques, etc. Note, I have already listed key topics for each session, but you can add any additional topics that you feel relevant to provide context to the papers. The background lecture/discussion should not critique the assigned papers (their methods, impact, etc) as that would then overlap with the role of the leader of the discussion.

The student instructor will be marked on the following criteria:

1. The student instructor was able to effectively assist the students to learn the content.
2. The student instructor used teaching methods that enhanced student participation.
3. The student instructor was respectful and considerate of students in the class.
4. The student instructor was able to conduct and direct learning activities in a dynamic manner and to stimulate interest and excitement in content and activities.

Leading the discussion (10 marks)

One student will lead a 60-90 minute discussion of the papers for each session. This person shall facilitate the group to bring forward issues considered relevant to the topics addressed in the papers (e.g., suitability of research design to answer question at hand, novelty/originality of study, methodological soundness, appropriateness of patient population, suitability of measurements to answer questions, interpretation of results, generalizability of study, implications [eg, clinical, physiological, theoretical] of findings, feasibility for real world setting) and facilitate the discussion. The group will follow-up on these points and others brought forward by the group. The group will discuss the clinical and scientific merit and impact of the papers, as well as the strengths and weaknesses of the paper.

The student leading the discussion will be marked on the following criteria:

The student's skills in facilitating student participation in class discussion and in leading those discussions in fruitful directions.

Final class presentation (20 marks)

Each student will be required to present a 15 minute "conference-style" presentation on their selected neurorehabilitation topic. The student should select an appropriate amount of material to convey during this 15 minute time frame. An additional 5 minutes (so total 20 minutes) will be reserved for questions. See attached evaluation form.

Manuscript (40 marks)

The topic of the manuscript/presentation and journal style must be approved with the instructor by March 1. The manuscript will be a comprehensive and critical review of the literature relevant to topics discussed in the course (neurorehabilitation assessment and treatment). Alternatively, students who have the resources in place may wish to undertake a small project (case study, chart audit) relevant to the topic of neurorehabilitation. The topic cannot be part of the student's thesis project. Although 14 students have now gone on to publish their 520 final paper, the publication process (submission, revisions) occurs after the course ends for only those interested students.

The manuscript grade will be based on:

Critical thinking

30 marks

(critical analysis, relevant content, integration of current/past relevant literature, relevance to rehabilitation, relevant to future developments/interventions in rehabilitation, logical conclusions based on synthesis of material)

Clarity, presentation and organization of material (including appropriate formatting) 10 marks

Below is a prior topical outline from a previous year. The exact topics will change and will be influenced by the interests of the group.

V. Topical Outline

week	Topic	Backgnd	Leader
1	Neurorehabilitation Theories	Janice	Janice
2	Issues in Motor Control		
3	Issues in Motor Learning		
4	Neural plasticity and recovery		
5	Aerobic exercise and plasticity		
6	Timing of neurorehabilitation		
	Reading Break		
7	Task-specific approach		
8	Environment and neurorehabilitation		
9	Technology in neurorehabilitation		
10	Cognition and neurorehabilitation		
	Easter Monday No class		
11	Presentations		
12	Paper due – No class		