

# Neurological Disorders

PTA2450 301

## Course Description

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Students learn neurological pathologies including common treatment strategies and the involvement of physical therapy.

Prereq: Successful completion of prior semester courses per established curriculum plan w/C grade or better

Coreq: PTA 2460

Semester: Summer

## Course Student Learning Outcomes

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- Use the ICF to describe patient's/client's impairments, activity, and participation limitations.
- Identify when directed interventions are either beyond the scope of work or personal scope of work of the PTA.
- Communicate to the physical therapist when there are significant changes in the patient's medical status, physician referral, or when criticality and complexity of patient is beyond the knowledge, skills, and/or abilities of the PTA. Given case studies of neurological disorders, demonstrate an understanding of aerobic capacity/endurance conditioning or reconditioning principles including increase workload over time, movement efficiency and energy conservation training, and walking/wheelchair propulsion programs.
- Describe balance, coordination, and agility training procedural interventions in physical therapy including neuromuscular education or reeducation, postural awareness training, and standardized, programmatic, complementary exercises approaches, and Task-Specific Performance Training such as transfer training, mobility exercises, and functional reaching in relation to neurological disorders.

- Describe neuromotor development training including developmental activities, movement pattern training, and neuromuscular education or re-education.
- Describe breathing strategies/oxygenation including airway clearance techniques (breathing exercises, coughing techniques, secretion mobilization) for a patient with a neurological disorder, as they relate to neurological disorders.
- Collect and document aerobic capacity and endurance/vital signs including: recognizing, monitoring and determining cardiovascular function (peripheral pulses, blood pressure, heart rate), physiological responses to position change and activities/responses to exercise (orthostatic hypotension, skin color, blood pressure, heart rate), and respiratory status (pulse oximetry, rate, rhythm) related to neurological disorders.
- Collect and document gait, locomotion and balance data including determining patient's safety and progress as well as describing gait deviations and their effect on gait and locomotion related to neurological disorders.
- Determine integumentary integrity including: identifying activities, positioning, and postures that may produce, aggravate or relieve pain or altered sensations, or that can produce associated trauma to the skin; identifying devices and equipment that produce or relieve trauma to the skin; observing and describing skin characteristics, normal and abnormal changes (blistering, continuity of skin color, dermatitis, hair growth, mobility, nail growth, sensation, temperature, texture turgor); observing and describing changes in skin integrity, such as presence of wound, blister, incision, hematoma; testing for skin sensation and describing absent or altered sensation; and recognizing viable versus nonviable tissue related to neurological disorders.
- Collect and document neuromotor function/development including the identifying the presence or absence of developmental reflexes, associated reactions, or abnormal tone, righting and equilibrium reactions and identifying performance of gross and fine motor milestones and skills.
- Collect and document posture including determining postural alignment and position i.e. normal/abnormal alignment of trunk and extremities at rest and during activities (static, dynamic, symmetry, midline deviation) as related to neurological disorders.
- Collection and document ventilation, respiration and circulation data including detecting signs/symptoms of respiratory distress, and activities which aggravate or relieve edema, pain, dyspnea, or other symptoms; and describing thoraco-

abdominal movements and breathing patterns with activity as related to neurological disorders.

- Discuss the characteristics and common disorders of the nervous system and possible physical therapy interventions.
- Describe assessment, exercise, and intervention modifications typical for the neurological patient.
- Make appropriate recommendations to the physical therapist for indicated assistive and adaptive devices and equipment, orthotics, and home modifications.
- Given a case study with a plan of care, develop appropriate tests and measures and interventions.
- Given a case scenario, complete accurate documentation that follows guidelines and specific documentation formats required by state practice acts, the practice setting, and other regulatory agencies.
- Describe the scope of practice and role of the physical therapist assistant as an integral member of the rehabilitation team in the provision of patient-centered inter-professional collaborative care.

## College Wide Student Learning Outcomes

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- 1) Acquire substantive knowledge
- 2) Communicate effectively
- 3) Develop quantitative literacies
- 4) Think critically
- 5) Express creatively
- 6) Knowledge and skills to be civically engaged
- 7) Work with others in a professional and constructive manner

- 8) . Develop information literacy
- 9) . Develop computer literacy

## Course Prerequisites

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Successful completion of prior semester courses, per established curriculum plan, with a grade of “C” or better.

## Keys for Success (how to succeed in the course)

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### How to navigate this hybrid course

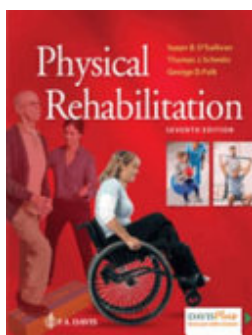
From informal surveys over the past couple of years, I have implemented changes to hopefully create a more engaging, learner-centered environment:

- 1) All lectures, readings, videos, assignments, discussions....everything...for each week will be under one module labelled with the content and the date of instruction.
- 2) I will use announcements to remind about assignments in the module and to change/modify any plans class time/location changes, so keep close eye on announcements.
- 3) Each week will have one in-person lecture and the remaining will be lab instruction and demonstration. It will be on Wednesday mornings in a large tiered classroom (JHS 211) on the second floor (which is the top floor). So look forward to a change of scenery!
- 4) All labs will be in-person on Mondays and Wednesdays from 10:00 to 3:30 pm with a 30 minute lunch usually around 1pm. During Labs Alex will often teach one lab while I teach the other lab and then we will switch. Sometimes labs will be combined especially with guest speakers or content that is easier to learn/practice.
- 5) Alex and I will do our best to provide timely feedback to quizzes, tests and assignments

\*\*To get the most out of this course please try to do the pre-instructional work which will include videos, reading assignments, quizzes, worksheets and online discussions. You will have some time on Monday mornings and Tuesday afternoons to do the pre-instructional content; but, you will need also to work on homework and prep outside of class.

## Required Text or Materials

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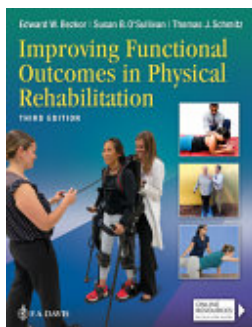
**Title: Physical Rehabilitation**

**ISBN: 9780803661622**

**Authors: Susan B. O'Sullivan, Thomas J. Schmitz, George Fulk**

**Publisher: F. A. Davis Company**

**Publication Date: 2019-01-01**

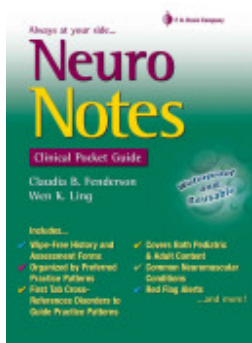


**Title: Improving Functional Outcomes in Physical Rehabilitation**

**ISBN: 9781719640909**

**Authors: Ed Bezkor, Susan B. O'Sullivan, Thomas J. Schmitz**

**Publication Date: 2021-12-15**



**Title: Neuro Notes (OPTIONAL)**

**ISBN: 9780803617476**

**Authors: Claudia Fenderson, Wen K. Ling**

**Publisher: F A Davis Company**

**Publication Date: 2009-01-01**

For more information on textbook accessibility, contact Accessibility & Disability Services at [REDACTED]

## Class Schedule

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Due Date	Assignment Name	Assignment Type	Points
	<a href="#">Extra Credit - Transfers with Matt</a>	Assignment	0
	<a href="#">Extra Credit: Concepts for persons with ALS, presented by Kay Wing &amp; Valerie Carter, on Mebridge</a>	Assignment	0
	<a href="#">Gleason Movie Extra Credit</a>	Assignment	0
	<a href="#">Neuro Practical Final</a>	Assignment	100
5/19	<a href="#">PhysioU Mini-Simulation Assignment - Malika Interview</a>	Assignment	15
5/19	<a href="#">Quiz for Rancho Los Amigos Scale of Cognitive Function</a>	Quiz	6
5/19	<a href="#">Week 1: PNF Review and Lab Participation</a>	Quiz	10
5/19	<a href="#">Week one Neurological disorders pre-participation quiz</a>	Quiz	10
5/26	<a href="#">Parkinson's Lab Activity</a>	Quiz	10

<b>Due Date</b>	<b>Assignment Name</b>	<b>Assignment Type</b>	<b>Points</b>
5/26	<a href="#">Interview with a GBS patient</a>	Assignment	25
5/26	<a href="#">MS symptoms, tests and treatments Worksheet (In class)</a>	Assignment	20
5/28	<a href="#">Medbridge: Management of Vestibular related dizziness in Geriatrics</a>	Quiz	33
5/28	<a href="#">Interview with a MS patient</a>	Assignment	30
5/28	<a href="#">Labeling Peripheral Nerve Injuries</a>	Assignment	20
6/2	<a href="#">Motor Learning Worksheet Quiz</a>	Quiz	10
6/2	<a href="#">LMN Lab Activity Worksheet</a>	Assignment	50
6/4	<a href="#">Neurological Disorders Quiz #1</a>	Quiz	40
6/9	<a href="#">Lab Group 301 Case Study Discussion Board</a>	Discussion	20
6/9	<a href="#">Lab Group 302 Case Study Discussion Board</a>	Discussion	20
6/9	<a href="#">SCI Worksheet</a>	Quiz	45
6/9	<a href="#">TBI Lab Activity including Wheelchair Positioning/Fitting Lab</a>	Quiz	15

<b>Due Date</b>	<b>Assignment Name</b>	<b>Assignment Type</b>	<b>Points</b>
6/9	<a href="#">ALS Case Study</a>	Assignment	30
6/13	<a href="#">PTA 2450 Neuro Disorders Quiz #2</a>	Quiz	55
6/16	<a href="#">Great Stroke Adventure</a>	Discussion	30
6/16	<a href="#">Medbridge: Moderate Brain Injury Post-Acute Phase: Assessment and Intervention</a>	Quiz	15
6/16	<a href="#">TBI Worksheet</a>	Quiz	30
6/16	<a href="#">Conversation with Joy Worksheet</a>	Quiz	15
6/20	<a href="#">PTA 2450 Neuro Final Exam</a>	Quiz	150
6/21	<a href="#">Extra Credit - TBI, SCI or other neurological disease movie</a>	Assignment	0
6/21	<a href="#">Final Case Study Assignment</a>	Assignment	100
6/21	<a href="#">Special Olympics Extra Credit</a>	Quiz	0
6/24	<a href="#">Professionalism: Lab Clean - up</a>	Quiz	25

## Brief Description of Assignments/Exams

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Neurological Disorders encompasses learning the characteristics of common neurological pathologies, assessments performed by the healthcare team on clients with



these disorders with a particular focus on data collection for the PTA and finally also includes physical therapy treatment strategies. This is A LOT of information to learn in 6 weeks!

To meet the learning objectives in the class you will be expected to complete all of the assignments and exams which include:

- Two preparatory quizzes prior to a final exam in the testing center
- Two final practical exams including a PNF practical and a case scenario practical where you will be assigned to perform both data collection and treatment strategies on a client who has a common neurological disorder such as CVA, TBI, SCI, Parkinson's Disease or MS.
- In lab skill checks on PNF, gait and transfer techniques, review of e-stim/biofeedback, and other treatment techniques
- Short quiz assessments/worksheets on assigned medbridge videos, visible body modules and readings
- Online discussion posts
- Assigned case studies in lab

## Grading Scale

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All individual quizzes and exams will be carried two decimal points before calculating the final exam score and will be calculated without rounding. Final course grade computation will then include additional learning requirements for the course. Students must receive 77.00% on exams and quizzes before other class projects, assignments and professionalism are computed into the course grade. Failure to achieve 77.00% on all exams and/or earning less than one point in Professionalism, despite a higher composite score for the course, will result in course failure and dismissal from the Program. Please see Program Handbook for additional information. In addition, to receive credit/recognition for this course as part of the SLCC Physical Therapist Assistant Program, the students must earn an accumulative 77.00% for all assessments as noted under Grading. The following grade scale will be used for this course:

A = 95-100% B = 86-88% C = 77-79% D = 68-70%

A- = 92-94% B- = 83-85% C- = 74-76% D- = 65-67%

B+ = 89-91% C+ = 80-82% D+ = 71-73% E = 64% and below

## How to Navigate to Canvas

## Institutional Policies

As members of our academic community, we would like to invite you to review the Institutional Syllabus which covers important policies and procedures. This document contains important links for students on the code of student rights and responsibilities, academic integrity, and grading policies, Title IX and other important acknowledgements. By familiarizing yourself with this information, you can help us create a safe and respectful environment for everyone.

You can access the document by clicking on the following link:

<https://slcc.instructure.com/courses/530981/pages/institutional-syllabus>

## Learning Support and Tutoring Services

We are pleased to offer a range of tutoring and learning support services to help you achieve your academic goals. Whether you need assistance with a specific subject or want to improve your study skills, you have many options for tutoring or other support.

To learn more about the services we offer and how to access them, please visit the Institutional Syllabus under the Tutoring and Learning Support tab:

<https://slcc.instructure.com/courses/530981/pages/institutional-syllabus>. We encourage you to take advantage of these resources to help you succeed in your studies. If you have any questions or would like to schedule a tutoring session, please don't hesitate to reach out to us. We are here to support you in any way we can.

## Advising and Counseling Support Services

At our institution, we are committed to supporting your academic and personal growth. That's why we offer a range of advising and counseling services to help you navigate the challenges of college life. To learn more about the resources available to you and how to access them, please visit the Institutional Syllabus under the Advising and Counseling Support Services tab: <https://slcc.instructure.com/courses/530981/pages/institutional-syllabus>. Our advising team and the support centers across campus are here to support you in achieving your goals and overcoming any obstacles you may face.

## Student Academic Calendar

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As students you should be aware of all important dates in the semester, such as the day that courses begin and end, as well as the drop date and the last day to withdraw. To learn more about those dates, navigate to the Student Academic Calendar below:

[SLCC Student Academic Calendar](#)