Course Description
PTH 246 Neuromuscular Rehabilitation
5.0 (4.0 lecture, 1.0 lab)
This course introduces neurological principles, pathology and specialized rehabilitation techniques for pediatric and adult care. Prerequisite: PTH 101, PTH 202, PTH 205, PTH 240, PTH 242, PTH 252
Corequisites: PTH 235, PTH 115, PTH 228, PTH 253

Course Focus
This course introduces neurological principles, pathology and specialized rehabilitation techniques for pediatric and adult care.

Text and References


Course Outcomes. Upon successful completion of the course a student will be able to:

1. Examine basic principles related to motor development, motor control, motor learning and recovery of function.
2. Examine the varying clinical manifestations of patients with neurological disorders as related to the type and location of the neurological insult.
3. Examine the use of various physical therapy intervention techniques utilized in the treatment of patients with neurological conditions.
4. Demonstrate the use of the following intervention strategies as outlined in the Plan of Care developed by a licensed physical therapist:
   a. Brunnstrom Techniques
   b. Neuro-developmental Treatment (NDT) Techniques
   c. Proprioceptive Neuromuscular Facilitation (PNF)
   d. Rood
   e. Balance and Coordination Activities
5. Demonstrate the use of the following intervention strategies for patients with neurological conditions as outlined in the Plan of Care developed by a licensed physical therapist:
   a. Transfer Training
   b. Wheelchair Training
   c. Gait Training
   d. Activities of Daily Living
   e. Breathing and Coughing Techniques
6. Implement components of a Plan of Care developed by a licensed physical therapist for patients with various neurological and rehabilitation disorders and track patient progress.
7. Weigh various psychosocial issues impacting rehabilitation.

Clinical Outcomes. Upon successful completion of the course a student will be able to:

LABORATORY SKILLS ACHIEVEMENT LIST


Course Goals

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<thead>
<tr>
<th>Reflex and Sensory Testing</th>
<th>P</th>
<th>ND</th>
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<tr>
<td>Peripheral Nerve Testing</td>
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<td>Cranial Nerve Testing</td>
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<td>PNF Patterns</td>
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<td>NDT Patterns</td>
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<td>Brunnstrom Techniques</td>
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<td>Rood Approach</td>
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<td>Paraplegic Rehab</td>
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<td>Quadriplegic Rehab</td>
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<td>Selected Coughing and Breathing Techniques for patients with a Neurological Condition</td>
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<td>ND</td>
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<td>Balance and Coordination Interventions</td>
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<td>ND</td>
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<td>Pediatric Play Techniques</td>
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<td>ND</td>
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<td>Rehab for each stage of motor learning</td>
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<td>ND</td>
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<td>Wheelchair skills and fitting</td>
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Developed/Revised: August 13, 2010/approved MSapp 8-15-11- revision approved 8-20-12 MSapp 2
The following list of course goals will be addressed in the course. (*designates a CRUCIAL goal)

1. Administer seizure first aid*
2. Apply Erickson’s developmental stages
3. Apply Maslow’s hierarchy
4. Capitalize tenodesis grip*
5. Choose appropriate DME
6. Compare decorticate and decerbrate postures
7. Create context practice schedule
8. Create practice schedule
9. Define incidence and etiology for cerebral palsy
10. Define incidence and etiology for down’s syndrome
11. Demonstrate bed mobility
12. Demonstrate gait training techniques
13. Demonstrate transfer techniques
14. Describe autonomic nervous system
15. Describe motivation versus cognition effects on motor development
16. Describe somatic nervous system
17. Differentiate between CNS and PNS
18. Differentiate between open and closed head injuries
19. Differentiate between part versus whole learning
20. Differentiate motor learning stages
21. Discuss cerebral circulation
22. Discuss dermatome significance*
23. Discuss myotome significance
24. Distinguish between ischemic and hemorrhagic CVA’s
25. Explain equilibrium reactions*
26. Explain possible postural learning strategies
27. Explain righting reactions*
28. Explain SCI mechanisms for injury
29. Give motor control examples
30. Give motor development examples
31. Give motor learning examples
32. Identify differing CVA muscle tone
33. Identify need for internal versus external feedback
34. Identify primitive reflexes
35. Identify stages of consciousness
36. Identify symptoms of CNS injury
37. Identify symptoms of PNS injury
38. Identify various muscle tone types*
39. Know differing levels of consciousness
40. Know key muscles for each spinal nerve root*
41. Label cranial nerves*
42. List Brunstrom’s stages for recovery
43. List cranial nerve functions
44. List fine and gross motor skill age acquisition*
45. List key postures within developmental sequence
46. List right versus left hemisphere attributes
47. Manage aggressive patient behaviors*
48. Manage muscle tone changes in SCI
49. Minimize neglect patterns
50. Perform Brunnstrom treatment techniques
51. Perform home assessment
52. Perform NDT techniques
53. Perform PNF techniques
54. Perform Rood treatment techniques
55. Perform sensory screen
56. Perform wheelchair management
57. Recognize age related changes to movement
58. Recognize atypical movement patterns
59. Recognize autonomic dysreflexia*
60. Recognize common genetic pediatric conditions
61. Recognize symptoms of increasing intracranial pressure*
62. Recognize symptoms of TBI*
63. Relate SCI level to functional outcome
64. Set up closed loop versus open loop activity
65. Summarize common pediatric assistive devices
66. Teach assisted coughing techniques*
67. Teach self stretching
68. Teach wheelchair skills
69. Test cranial nerve integrity
70. Test DTR integrity
71. Understand high tone treatment techniques
72. Understand low tone treatment techniques
73. Understand sensory integration treatment techniques
74. Utilize Glasgow comma scale
75. Utilize Rancho Los Amigos scale
76. Write SOAP notes

Student Contributions
Classes are designed to employ a variety of teaching techniques. In order to maximize learning, required readings and Web enhanced sections should be done prior to class. If a student is falling behind in clinical performance and/or academic achievement, it is imperative to seek immediate assistance from the instructor.

Course Evaluation
Graded activities.
5 quizzes @100pts. each 500
Final 200
Home Remodeling project 100
Lab practical 100
Book review 100

1000
Course Schedule
Lecture: Tuesday/Thursday 8:30-10:00; Friday 8:30-9:00
Clinical: N/A
Labs: Tuesday/Thursday 1:00-3:30; Friday 9:00-11:30
Course website: http://elearning.tcl.edu www.tcl.edu

ADA STATEMENT
The Technical College of the Lowcountry provides access, equal opportunity and reasonable accommodation in its services, programs, activities, education and employment for individuals with disabilities. To request disability accommodation, contact the counselor for students with disabilities at (843) 525-8228 during the first ten business days of the academic term.

ATTENDANCE
The College’s statement of policy indicates that students must attend ninety percent of total class hours or they will be in violation of the attendance policy.

1. Students not physically attending class during the first ten calendar days from the start of the semester must be dropped from the class for NOT ATTENDING.

2. Students taking an online/internet class must sign in and communicate with the instructor within the first ten calendar days from the start of the semester to indicate attendance in the class. Students not attending class during the first ten calendar days from the start of the semester must be dropped from the class for NOT ATTENDING.

3. Reinstatement requires the signature of the division dean.
   a. In the event it becomes necessary for a student to withdraw from the course OR if a student stops attending class, it is the student’s responsibility to initiate and complete the necessary paperwork. Withdrawing from class may have consequences associated with financial aid and time to completion.
   b. When a student exceeds the allowed absences, the student is in violation of the attendance policy. The instructor MUST withdrawal the student with a grade of “W”, “WP”, or “WF” depending on the date the student exceeded the allowed absences and the student’s progress up to the last date of attendance

or

   c. under extenuating circumstances and at the discretion of the faculty member teaching the class, allow the student to continue in the class and make-up the work. This exception must be documented at the time the allowed absences are exceeded.

   d. Absences are counted from the first day of class. There are no "excused" absences. All absences are counted, regardless of the reason for the absence.

4. A student must take the final exam or be excused from the final exam in order to earn a non-withdrawal grade.

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5. Students are expected to be in class on time. Arrival to class after the scheduled start time or leaving class prior to dismissal counts as a tardy. Three tardies and/or early departures are considered as one absence unless stated otherwise.

6. It is the student’s responsibility to sign the roll/verify attendance with instructor upon entering the classroom. Failure to sign the roll/verify attendance results in a recorded absence. In the event of tardiness, it is the student’s responsibility to insure that attendance is marked. **The student is responsible** for all material/announcements presented, whether present or absent.

7. Continuity of classroom and laboratory (which includes clinical experiences) is essential to the student’s progress in providing safe and competent patient care. Students are expected to use appropriate judgment for participating in clinical activities. To evaluate the student’s knowledge and skills, it is necessary for the student to be present for all clinical experiences. If absence does occur, the designated clinical site, in addition to the Division of Health Sciences Administrative Assistant, must be notified by telephone no later than 30 minutes prior to the start of the clinical experience. The Division of Health Sciences telephone number is 843-525-8267.

8. Absences from the clinical area are strongly discouraged. The attendance policy applies to clinical activities. **“No call, no show”** for clinical is unprofessional conduct and the student will be withdrawn from the program with a WF.

A copy of TCL’s **STATEMENT OF POLICY NUMBER: 3-1-307 CLASS ATTENDANCE (WITHDRAWAL)** is on file in the Division Office and in the Learning Resources Center.

**HAZARDOUS WEATHER**

In case weather conditions are so severe that operation of the College may clearly pose a hardship on students and staff traveling to the College, notification of closing will be made through the following radio and television stations: WYKZ 98.7, WGCO 98.3, WGZO 103.1, WFXH 106.1, WWVV 106.9, WLOW 107.9, WGZR 104.9, WFXH 1130 AM, WLTV 101.1, WSOK 1230 AM, WAEV 97.3, WTOC TV, WTGS TV, WJWJ TV, and WSAV TV. Students, faculty and staff are highly encouraged to opt in to the Emergency Text Message Alert System. [www.tcl.edu/textalert.asp](http://www.tcl.edu/textalert.asp)

**ACADEMIC MISCONDUCT**

There is no tolerance at TCL for academic dishonesty and misconduct. The College expects all students to conduct themselves with dignity and to maintain high standards of responsible citizenship.

It is the student’s responsibility to address any questions regarding what might constitute academic misconduct to the course instructor for further clarification.

The College adheres to the Student Code for the South Carolina Technical College System. Copies of the Student Code and Grievance Procedure are provided in the **TCL Student Handbook**, the Division Office, and the Learning Resources Center.

Health care professionals hold the public trust. Academic misconduct by health science students calls that trust into question and academic integrity is expected.

It is a fundamental requirement that any work presented by students will be their own. Examples of academic misconduct include (but are not limited to):

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1. copying the work of another student or allowing another student to copy working papers, printed output, electronic files, quizzes, tests, or assignments.
2. completing the work of another student or allowing another student to complete or contribute to working papers, printed output, electronic files, quizzes, tests, or assignments.
3. viewing another student’s computer screen during a quiz or examinations.
4. talking or communicating with another student during a test.
5. violating procedures prescribed by the instructor to protect the integrity of a quiz, test, or assignment.
6. plagiarism in any form, including, but not limited to: copying/pasting from a website, textbook, previously submitted student work, or any instructor-prepared class material; obvious violation of any copyright-protected materials.
7. knowingly aiding a person involved in academic misconduct.
8. providing false information to staff and/or faculty.
9. entering an office unaccompanied by faculty or staff.
10. misuse of electronic devices.

**GRADING POLICY**

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<tr>
<th>Grading scale</th>
<th>Grade</th>
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<tbody>
<tr>
<td>90% - 100%</td>
<td>A</td>
</tr>
<tr>
<td>82% - 89%</td>
<td>B</td>
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<tr>
<td>75% - 81%</td>
<td>C</td>
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<tr>
<td>70% - 74%</td>
<td>D</td>
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<tr>
<td>Below 70%</td>
<td>F</td>
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**Grading Methodology.** The final grade must be 75.000 or more in order to pass the course and progress in the program. Students absent from an examination or presentation will receive a “0” grade for the examination unless other arrangements are made with the individual instructor prior to the examination or presentation day or on the examination or presentation day before the test/presentation is scheduled to be given. It is the responsibility of the student to contact the appropriate instructor to arrange to make up the examination. Arrangements may be completed by telephone. If the instructor is not available, a message should be left on the instructor’s voice mail AND with another member of the faculty or administrative assistant. The instructor will decide the time and method of make-up examinations on an individual basis. Messages sent by other students are unacceptable. The student is responsible for notifying the instructor of the reason for the absence. Grades are posted on Blackboard within one week of administration of tests and examinations.

**COURSE COORDINATOR/INSTRUCTOR:** Jennifer Culbreth
**OFFICE LOCATION:** Room 125 Building 4
**TELEPHONE NUMBER:** 843-470-5956
**E-MAIL:** jculbreth@tcl.edu