

UNIVERSITY OF CENTRAL ARKANSAS
DEPARTMENT OF PHYSICAL THERAPY

- Course Number & Title:** PTHY 7516 Adult Neurological Rehabilitation
- Course Description:** Study of specific progressive and non-progressive neuromuscular disorders and appropriate examination and treatment strategies based on the patient/client management model. A systems approach to examination and intervention in the adult will be explained. Neuromuscular aging will be discussed as related to normal aging and to locomotion and recovery following a neuromuscular insult or injury.
- Course Pre-requisites:** Admission to the professional DPT program or permission of the course coordinator
- Credit & Clock Hours:** 5 (3 hours of lecture and 3 hours of lab, per week). See your copy of the DPT class schedule for weekly class dates and times.
- Semester:** Spring 2015
- Course Instructors:** Chad Lairamore PT, PhD, NCS, GCS e-mail: chadl@uca.edu
Office: PTC 313; ph:501-450-5597 Office hours by appointment
- Laboratory assistants: Anita Killins, PT & Melissa Harrison-Allen, DPT
- Texts required:** O Sullivan & Schmitz. Physical Rehabilitation. 6th edition. Philadelphia: F A Davis. 2014
- Shumway-Cook & Woollacott. Motor Control: Translating Research into Clinical Practice. 4th edition. Philadelphia, PA: Lippincott Williams & Wilkins. 2012.
- Texts recommended:** Guccione AA. Geriatric Physical T/herapy 3rd ed. Elsevier Mosby, 2012.
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- Umphred DA. Neurological Rehabilitation 5th ed. Mosby Elsevier. 2007.
- Course Objectives:** At completion of the course the student will be able to:
1. Evaluate neuromuscular dysfunction, abnormal muscle tone, range of motion, reflexes, cranial and peripheral nerve integrity, and vital signs through a process of screening, physical examination, and therapeutic handling of role playing classmates and volunteer patients.
 2. Examine, evaluate, and assess the neurological and functional motor status of neurologically involved patients through the interpretation of standardized instruments such as the FIM, Rancho Los Amigos cognitive scale, Glasgow Coma Scale, Berg Functional Balance, and the NIH Stroke Scales, Katz ADL, Barthel Index, and IADL.
 3. Demonstrate facilitation/inhibition techniques to improve sensorimotor function using NDT, Brunnstrom, Rood (sensory integration), and PNF.

4. Utilize examination techniques to define the effects of tone and the presence of pathological reflexes using standardized instruments such as the Modified Ashworth Scale and Babinski Reflex.
5. Examine and evaluate atypical gait, equilibrium and righting reactions, and functional movement analysis.
6. Describe and discuss the application of clinical reasoning processes to clinical practice using the systems approach and the patient/client model of treatment planning and outcomes.
7. Utilize the information contained in the patient's medical record as an assist in problem identification, precaution determination, diagnosis, and prognosis
8. Use classmates in role-playing for the purpose of mock interviews of patients and/or members of their families to obtain accurate and relevant information for program planning and outcome assessment
9. Establish realistic short-term and long-term goals and outcomes that are achievable within a specific time duration utilizing available community and support resources.
10. Plan and modify the treatment program in keeping with the individual patient's response and include all of the necessary legal requirements for documentation per regulatory standards.
11. While taking into account the learner's needs, teach patients, families, and other caregivers to perform or assist with motor components of activities of daily living and instrumental activities of daily living.
12. Complete thorough, accurate, concise, timely, and legible documentation that follows professional guidelines and format required by the practice setting for clients/patients treated in a pro-bono clinic.
13. Recognize neuromuscular changes related to normal aging, aging with a pathology, and sex.
14. Demonstrate an understanding of the life-long development of motor function and individual functional strategies in the motor components of activities of daily living
15. Perform as a necessary component of the rehabilitation team with an understanding of the roles and responsibilities of other health professional and recognize the need for interprofessional teamwork, collaboration, and communication to provide optimal patient care.
16. Develop an awareness of the referral sources required for comprehensive discharge planning.
17. Apply professional literature to decisions made in managing patients with neuromuscular dysfunction and their caregivers using case studies and paper patients.
18. Describe and discuss physical environmental constraints to safe functional movement in the home and potential work setting.
19. Select and assess appropriateness of adaptive, assistive, orthotic, protective and supportive devices and equipment to address impairments and disabilities.
20. When providing physical therapy services (including pro-bone services provided during this course) students will demonstrate professional behavior during all interactions with clients / patients, adhere to all legal and ethical standards, and provide evidenced based care.
21. Promote optimal health by providing information on wellness, disease, impairment, functional limitations, disability, and health risks related to age, gender, culture, and lifestyle.
22. Discuss and employ preventative measures to avert secondary complications associated with neuromuscular dysfunction.

Teaching Methods and Learning Experiences:

Class content will be taught in a variety of ways including: lecture, guest speakers and lecturers, demonstration, group discussion, oral presentations, written work, reading, videos, team based

learning, service learning, and practicing skills on fellow classmates as well as clients / patients.

The student learning experiences will include functioning as a member a patient care team, decision making for patient care and outcome assessment, direct patient interaction and therapeutic communication.

Course Requirements/Evaluation of Student Performance: (see course outline for due dates)

The student is expected to complete the following requirements as defined by the instructor and outlined in the syllabus.

1. Lecture exam and a comprehensive Midterm exam:
 - Lecture Exam (50 pts)
 - Midterm Exam (100 points)
2. Two laboratory assessments will be completed:
 - Laboratory Practical (50 pts)
 - Final Laboratory Assessment (50 pts)
3. Comprehensive FINAL EXAM (150 pts)
4. Examination, progress, and discharge notes: (Requirements given in lab) (100 pts total)
5. Each student will be required to participate in 3 Team Based Learning Experiences (TBL). During TBL experiences each student will take a quiz at the beginning of the class, discuss potential answers to the quiz as a group, and finally participate in group discussions (45 pts total / 15 pts each)
6. Two written assignments will be completed after participating in service learning. (15 points each 30 points total)
7. A case report will be developed applying professional literature to decisions made in managing patients with neuromuscular dysfunction. (30 points)
8. Pop quizzes given at the discretion of the instructor and the point value will be added to the total point value for the class. Quizzes cannot be made-up by anyone with an unexcused absence (see attendance policy). (The total point range for these quizzes will be 10-20 points).
9. Complete a course evaluation (10 pts)

Lecture exams and quiz format may include multiple choice, matching, true/false, short answer and will be over assigned reading, handouts, lectures, and laboratory materials.

Grading criteria for the lab assessments will be provided prior to each practical. Students are expected to perform all lab practicals in a safe manner and will not pass practicals if safety of the patient is not assured. A "B" (at least an 85.00%) or better is required on each lab practical. You will be given up to 2 more attempts to achieve a "B" or better. The final grade for the practical will be the grade on the 1st attempt. A "B" or better is required on each practical before the next practical is given. *Failure to complete the lab practical with a "B" or better, after three attempts, will result in the student failing the course.* The Final lab assessment will be comprehensive for all lab material covered.

Course Points Summary:

AVAILABLE POINTS

Service Learning Assignments.....	30 pts
Case report.....	30 pts
Lecture Exam.....	50 pts
Midterm Exam.....	100 pts
Team Based Learning experiences.....	45 pts
Laboratory Practical 1.....	50 pts
Laboratory examination notes.....	40 pts
Laboratory progress and D/C notes	60 pts

Course Evaluation.....	10 pts
Final Comprehensive Laboratory Assessment.....	50 pts
Final Comprehensive Exam.....	150 pts
Total Points----615 - 665 pts (depends upon pop quizzes)	

Grading Scale:

A = 90 - 100

B = 85 - 89.4

C = 76.5 - 84.4

See DPT Student Handbook for the policy on grades below a C.

Attendance Policy:

Attendance is mandatory at all classes; attendance will be monitored. Excessive tardiness (regardless of reason) and multiple absences without an acceptable reason are considered unprofessional behavior. Refer to the DPT Program Attendance and Tardiness Policy (see Section D.II.A of the DPT Student Handbook) for details on procedures, expectations, and consequences regarding class attendance.

Lab Attire:

Solid color scrubs or pants (not denim) with collared shirts, tennis shoes and name badges are required for labs where patients are in attendance on campus. Otherwise the student should wear comfortable clothing and tennis shoes to all labs unless otherwise notified. Professional dress is expected during all interprofessional events.

Expectations:

Students are expected to act in a professional manner towards instructors, patients, guest speakers and fellow classmates. This includes: dressing appropriately, politely listening to the speaker and taking notes when appropriate, turning cell phones on silent, and abiding by HIPPA privacy standards in regards to your clients in the lab.

Policy for Assignments:

Specific dates are assigned for each assignment and the student is expected to submit on time. There will be a 5 point deduction for each day that an assignment is late.

Missed Exam / Quiz / Assignment Policy:

Circumstances may arise that make it difficult or impossible for a student to sit for an examination, quiz, or miss an in class assignment. Major illness or death of a close family member are two such circumstances. If the reason for absence is legitimate, arrangements will be made for a make-up exam, quiz, or assignment. No provision for a make-up exam, quiz, or assignment will be made for instances in which convenience, minor illness, incomplete preparation or social obligations resulted in the absence.

The student must assume responsibilities as follows:

1. Before the exam, quiz, or assignment; he/she must notify the course director (by telephone: 450-5597, by email: chadl@uca.edu) or, if circumstances dictate, through another individual that he/she will not be able to sit for the scheduled examination. The reason for absence must be clearly stated.

2. Immediately upon return to classes, the student will arrange with the course instructor to sit for the same exam, quiz, another appropriate exam (written or oral), or a make-up assignment. At the discretion of the course instructor, the value of the missed exam, quiz, or assignment may be added to the final exam rather than having a make-up exam.

Note that in the case of a missed examination by a member of the class, there will be a delay in availability of the key to the exam until the absentee has taken the same or equivalent exam or until a determination is made by the course instructor.

Request for Review of Exam Questions or Assignment:

Students will have the opportunity to request a review of exam questions or other classroom assignments by completely filling out the Request for Review of Examination Questions form available on Blackboard. Requests will be taken in written form only and must be submitted within 5 business days of the date the examination / assignment results were available to the student.

Academic Integrity & Misconduct:

The University of Central Arkansas affirms its commitment to academic integrity and expects all members of the university community to accept shared responsibility for maintaining academic integrity. Students in this course are subject to the provisions of the university's Academic Integrity Policy, approved by the Board of Trustees as Board Policy No. 709 on February 10, 2010, and published in the UCA Student Handbook. Students who engage in academic misconduct will be dealt with according to the policies outlined in the UCA Student Handbook regarding **academic misconduct** and according to the policies outlined in the DPT Student Handbook. Penalties for academic misconduct in this course may include a failing grade on an assignment, a failing grade in the course, or any other course-related sanction the instructor determines to be appropriate. Additional DPT program policies regarding academic misconduct are outlined in the DPT Student Handbook, in particular Section D.II.J & K ("Department Academic Integrity Policy"). See <http://uca.edu/integrity/examples> AND Section D.II.J & K of the DPT Student Handbook for detailed descriptions of forms & types of academic misconduct. Continued enrollment in this course affirms a student's acceptance of these university and DPT program policies.

Course Evaluation by Students:

Student evaluations of a course and its professor are a crucial element in helping faculty achieve excellence in the classroom and the institution in demonstrating that students are gaining knowledge. Students may evaluate courses they are taking starting late in the semester all the way through the end of final exams by logging in to myUCA and clicking on the Evals button on the top right.

Services for Students with Disabilities (Americans with Disabilities Act):

The University of Central Arkansas adheres to the requirements of the Americans with Disabilities Act. If you need accommodations under this Act due to a disability, contact the Office of Disability Services at 450-3613 or go their office in the UCA Student Health Center, Suite 212.

Building Emergency Plan:

An Emergency Procedures Summary (EPS) for the building in which this class is held will be discussed during the first week of this course. EPS documents for most buildings on campus are available at <http://uca.edu/mysafety/bep> Every student should be familiar with emergency procedures for any campus building in which he/she spends time for classes or other purposes.

Title IX Disclosure:

If a student discloses an act of sexual harassment, discrimination, assault, or other sexual misconduct to a faculty member (as it relates to "student-on-student" or "employee-on-student"), the faculty member cannot maintain complete confidentiality and is required to report the act and may be required to reveal the names of the parties involved. Any allegations made by a student may or may not trigger an investigation. Each situation differs and the obligation to

conduct an investigation will depend on those specific set of circumstances. The determination to conduct an investigation will be made by the Title IX Coordinator. For further information, please visit <http://uca.edu/titleix>. *Disclosure of sexual misconduct by a third party who is not a student and/or employee is also required if the misconduct o(CCurs when the third party is a participant in a university-sponsored program, event, or activity.

UCA Student Handbook policies: Students should familiarize themselves with all policies included in the UCA Student Handbook (<http://uca.edu/student/student-handbook>), particularly the Sexual Misconduct Policy and Academic policies.

Examination Schedule

TBL quiz 1	1/27
Exam 1	2/12
Practical 1	Week of 3/2
TBL quiz 2.....	3/12
Midterm exam.....	3/16
TBL quiz 3.....	4/20
Final Comprehensive Laboratory Assessment.....	4/28
Final Comprehensive Exam.....	4/28

Due Dates for assignments

Case report.....	4/3 before midnight
Laboratory examination notes	Due at the start of the next lab
Laboratory progress and D/C notes.....	Due at the end of lab
Service Learning Assignment 1.....	4/17 before midnight
Service Learning Assignment 2.....	4/24 before midnight
Course Evaluation.....	5/1/15 before noon

Course Content Outline & Required Readings:

week	Lecture 1	Lecture 2	Lab	Reading
1/5	---	Intro / syllabus Intro Neuro	---	---
1/12	Vestibular	BPPV	Vestibular	O'Sullivan: pg 965-999
1/19	CVA – Intro and syndromes	Neuro – Exam	Safety and Handling	O'Sullivan: pg 645-678
1/26	CVA – gait	Quiz – TBL	Neuro examination and screening	O'Sullivan: pg 251-307 Shumway-Cook: pg 381-473
2/2	--- APTA CSM	---	---	---
2/9	CVA –(intervention overview)	Exam 1	Neuro treatment	O'Sullivan: pg 678-720
2/16	Snow day	CVA / Neuro interventions	Orthotics	O'Sullivan: pg 1325-1363
2/23	CVA	AFO and FES	Serial casting	O'Sullivan: pg 859-888
3/2	TBI	TBI – Behavior mgmt	Practical 1	Umphred: 812-833
3/9	Medical Record Review (Demo exam?)	Quiz – TBL Evidence based case report	Patient exam	---
3/16	Exam 2	Brain cancer / tumor resection	Patient tx	Guccione: pg 121-152
3/23	--- Spring Break	---	---	---
3/30	Dementia and normal aging Prep for research symposium	UE neurological rehab	Patient tx	Shummway-Cook: pg 529-594
4/6	Parkinson's	Parkinson's	Patient tx	O'Sullivan: pg 807-858
4/13	ADLs, IADLs, and Community re-entry	Family training, DME, and D/C planning	Patient tx	O'Sullivan: pg 308-392
4/20	Psychosocial & Service learning reflection	Quiz – TBL Review	Patient D/C	O'Sullivan: pg 1175-1221
4/27		Final Exam	Final Practical	---