

NEUROLOGY
PTHA 2305 -Hybrid (Summer 2020)
May 18-June 19

Instructor: Carla Gleaton, PT, DPT
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Lab/Activities: W 8:00-12:00
On-line Lectures: Independent
Credit hours: 3

I. COURSE DESCRIPTION

Study of Neuroanatomy and neurophysiology as it relates to commonly encountered neurological conditions. Pre-requisite: Successful completion of all PTHA courses up to this point in the curriculum.

II. COURSE LEARNING OUTCOMES

The student will identify, explain, and differentiate the components of neuroanatomy as related to physical therapy when applicable; and describe the pathogenesis, prognosis, and management of neurological disorders commonly treated in physical therapy.

III. GENERAL OBJECTIVES

1. Attend all classes and arrive on time
2. Demonstrate professional behaviors in interactions with instructors/students during classroom activities
3. Demonstrate acceptance and application of faculty feedback on written, oral and practical exams
4. Demonstrate professional behaviors when representing the PT profession
5. Seek opportunities to promote access to or awareness of Physical Therapy
6. Demonstrate appropriate verbal and non-verbal communication with classmates and instructor in an effective, appropriate, capable manner.

IV. SPECIFIC OBJECTIVES

On a written examination with 75% proficiency, the student will be able to:

1. Locate and label the primary divisions of the central and peripheral nervous systems
2. Identify the component parts of each division of the nervous system
3. Explain the general functions of each component part of the nervous system
4. Identify the major lobes of the cerebral hemispheres and associated lobe functions
5. Identify the embryological development of the nervous system
6. Determine the deficits resulting from malformation during embryological development
7. Discuss the importance and function of cerebrospinal fluid in the central nervous system.
8. Discuss possible dysfunctions which can occur with blockage of the CSF pathway.
9. Identify and discuss the major component parts of the diencephalon and their respective functions
10. Identify the major component parts of the brainstem and cerebellum and their respective functions
11. In a given case scenario, isolate the component part of the brain that produces the stated impairment/deficit
12. List the names and general functions of the cranial nerves.
13. Discuss the deficits that might occur with damage to an indicated cranial nerve
14. Identify the major arteries and venous blood flow to the brain.
15. Discuss the deficits that might occur with damage to an indicated blood vessel
16. Identify components of sensory stimuli from the periphery to the CNS along spinal and cranial nerves

17. Identify the parts of the CNS involved with perception, communication, cognition, awareness and identify signs and symptoms of dysfunction
18. Identify the sensory and motor visual pathway and their functions
19. In a given case scenario, summarize the impairment/deficit that might result at a given level of the pathway
20. Compare and contrast the various neurological communication deficits including Broca's aphasia, Wernicke's aphasia, global aphasia and dysarthria
21. Compare and contrast the sympathetic and parasympathetic parts of the autonomic nervous system
22. Identify and describe the function of the component parts of the cerebellum including the vermin, cerebella hemispheres, cerebellar nuclei, and cerebellar peduncles.
23. Name the components of the basal ganglia and describe the function of the basal ganglia
24. Predict the deficits that might occur with damage to the components of the basal ganglia
25. Discuss the mechanisms of CNS injury, including trauma, ischemia, infection and hemorrhage, and their effects on neuron function.
26. Explain the role of the descending/motor tracts in producing movement, and the functional effects of injury to each tract
27. Discuss the role of the ascending/sensory tracts, and the functional implications of injury to each tract
28. Classify spinal cord injuries according to their locations and functional effects
29. Describe the sensory receptors and pathways responsible for vision, hearing, and balance
30. Explain common clinical conditions involving the visual, auditory and vestibular systems
31. Describe the major arteries supplying the brain and spinal cord, and the major venous sinuses that drain them.

V. METHODS OF PRESENTATION

1. On-line Lecture
2. Multi-Media Presentations
3. Models
4. Group and Independent Activities

VI. OUTLINE OF CONTENT

1. Embryology
2. Neuroanatomy General Review
3. Motor and Sensory Systems Neuroanatomy
4. Arterial Supply to the Brain
5. Vision, Perceptual, and Communication Neuroanatomy
6. Venous System Neuroanatomy
7. Alertness, Arousal, Memory, Judgment, and Personality Neuroanatomy
8. Cerebellum Neuroanatomy
9. Basal Ganglia Neuroanatomy
10. Vestibular System Neuroanatomy

VII. REQUIRED AND RECOMMENDED READING

1. Essentials of Neuroanatomy for Rehabilitation by Leah Dvorak and Paul Mansfield, 1st ed.; Pearson

VIII. SCANS

Scans addressed as follows: Information (acquires and evaluated information, organizes and maintains information, interprets and communicates information); Basic Skills (reading, writing, and listening); Thinking Skills (decision making, problem solving, knowing how to learn, and reasoning); Personal Qualities (responsibility, self-esteem, sociability, self-management, integrity/honesty).

IX. EVALUATION

Unit tests (I, II, III, IV, V) = 90% (Total)

Class attendance/participation/assignments = 10%

X. GRADING

A = 92-100

B = 83-91

C = 75-82

D = 66-74

F = 65 and below

A grade below 75 constitutes unsatisfactory understanding and failure of this course.

XI. ATTENDANCE AND ABSENTEEISM

TARDIES AND ABSENCES ARE STRONGLY DISCOURAGED

Students are responsible for the attendance policies stated in the NTCC Student Handbook and the PTA Program Student Policy and Procedure Handbook.

Roll will be informally taken at the beginning of each class meeting. For this class, the following guidelines concerning attendance will be enforced:

1. For every class period missed, one (1) absence is accumulated.
2. A student more than five minutes late or leaving class early (five minutes) with or without instructor permission is considered tardy.
3. Three (3) tardies constitute one (1) absence.
4. After absences (excused or unexcused) in any 4 class periods per semester, the student will be placed on probation. Stipulations of probation will be developed based on the student's history and circumstances surrounding the absences and conditions for dismissal in the event of a future absence will be included in the probationary contract.
5. Make-up work is required for all absences in order to ensure that the student acquires information and skills presented during his/her absence (see Make-up work section). It is the student's responsibility to meet with instructor(s) on the first day back to schedule make-up work and/or lab check-off.
6. Students must notify (voicemail or e-mail) the PTA office in advance whenever excessive (>5 minutes) tardiness or absence is unavoidable. Notification of the student's absence by classmates is not acceptable.

*Note: An absence will be excused by provision of a note written and signed by a medical professional and by uncontrollable or unavoidable extenuating circumstances as documented below. All other absences/tardies will be considered unexcused.

Further explanation of **excused absences** is as follows:

- “A student’s serious illness” shall mean a condition such as pneumonia, surgery, hospital confinement, or valid documented medical reason. A physician’s documentation verifying illness must be provided.
- “Death in the immediate family” shall be interpreted to mean mother, father, mother-in-law, father-in-law, spouse, child, brother, sister, grandparents, or significant other. Documentation must be provided.
- “Statutory government responsibilities” refer to such matters as jury duty or subpoena for court appearance. Documentation must be provided.
- Inclement weather – see policy below.

MAKE-UP WORK

Due to Absence:

Each student is responsible for all material and techniques presented in class and labs. If a class is missed, the student is responsible for obtaining from a classmate, notes, handouts and information covered during that absence. It is the student’s responsibility to schedule a time with the instructor to make up any missed lab check-offs. Lab check-offs must be made up within one week of the date absent. The student’s grade will be lowered 10 points on the corresponding lab practical for each lab session not made up within the timeframe scheduled. If a test or special assignment is missed (due to an excused absence), it is the student’s responsibility to consult the instructor the next time the student is on campus about making up a test or turning in an assignment. Assignments due on the date of absence must be turned in the next time the student is on campus; otherwise, the student will receive a “0” for the work missed. An unexcused absence will result in a “0” for assignments, check-offs, practicals, and exams missed; the student will not have the opportunity to make up the work missed work.

If a lecture test or lab practical is missed, the student must make-up that test within one week from the date missed providing appropriate notification of absence was made prior to the original test time. Lack of notification prior to exam time will result in a grade of “0” for the missed exam; notifying classmates to relay the student’s absence is not acceptable. One make-up test and/or lab practical due to excused absence, per class, per semester is allowable without penalty. **It is the student’s responsibility to set up a time with the instructor to make up the exam.**

Due to failure of lecture exam or practical:

If a student fails to make at least a “75” on a lecture exam or a lab practical, the student may take a make-up test within one week. The final exam in each course is excluded from this policy; i.e. the student cannot “re-do” the final exam to pass the class. Only one re-do lecture exam or lab practical is allowed per class per semester and can only result in a maximum grade of “75”; if the student fails the re-do the second grade stands. **It is the student’s responsibility to set up a time with the instructor to make up any redo practical. “Redo’s” cannot be taken on the same day as the lab practical and must be scheduled during the instructor’s office hours the next week.**

ACADEMIC HONESTY POLICY

“Students are expected to complete course work in an honest manner, using their intellects and resources designated as allowable by the course instructor. Students are responsible for addressing questions about allowable resources with the course instructor. **NTCC upholds the highest standards of academic integrity. This course will follow the NTCC Academic Honesty policy stated in the Student Handbook.**”

In addition to upholding the NTCC Academic Honesty Policy, students in the PTA program are required to follow the honor code provided in the program policy and procedure manual. The program honor code states that you will neither give nor receive any unauthorized assistance from any person, paper, or object on any test, paper, examination, or project. This includes talking about lab practical exams, regular exam questions, looking at copies of old tests from previous students, copying or allowing anyone to copy off of your test or assignment, and discussing any aspect of an exam with a student who has not yet taken the test. When using another person’s words or ideas, credit should be given to the source. Failure to abide by this policy may result in expulsion from the PTA Program.

Violations of this policy will be brought to the attention of the student by the instructor. If there is suspicion of wrongdoing without corroborating evidence, the matter will be discussed with the student and a written warning/contract will be issued if warranted. If there is clear evidence that a violation has taken place, the student will receive a grade of “0” for that test/assignment in question; and the instructor will impose a sanction ranging from a written warning to expulsion from the course with a failing grade.

If the student does not feel that the issue is satisfactorily resolved, the student should contact the PTA Program Director to discuss the matter. If the matter cannot be resolved at that level, the student may contact the Dean of Allied Health, followed by the Vice President for Instruction and Student Development. If the issue is not satisfactorily resolved at the end of this process, the student may initiate a formal grievance procedure outlined in the NTCC Student Handbook and in this manual.

XII. CLASS PREPAREDNESS

Students are expected to complete all reading assignments, as outlined in the course schedule or assigned by the instructor, prior to class time. It is the responsibility of the student to turn in assignments on time. Assignments are due at the beginning of the class period. Late assignments received by the next class period will result in a maximum grade of 75. If assignment is not turned in by the next class period the student will receive a grade of “0” for that assignment.

Students are expected to participate in and perform a variety of physical therapy procedures on each other in lab and the classroom for educational purposes; after practicing each laboratory skill, the student will be asked to present a return demonstration to the instructor at some point prior to the conclusion of the lab.

XIII. POLICY ON CIVILITY AND CELL PHONES IN THE CLASSROOM AND LABORATORY

Students are expected to assist in maintaining a classroom environment that is conducive to learning. If a student brings a cell phone to class/ lab, make sure it is turned off or on silent mode. The student will not be allowed to answer his/her cell phone during class/lab. If the student is expecting a very important call, they are to notify the instructor prior to class regarding the nature of the situation. Cell phones must be put away, out of sight, during tests. Inappropriate or distracting classroom behavior is

prohibited in order to assure that everyone has opportunity to gain from time spent in class. Should a disruptive classroom incident occur, the faculty member in charge may remove the student on either a temporary or permanent basis. Students have the right to appeal through appropriate channels.

XIV. ADA STATEMENT

It is the policy of NTCC to provide reasonable accommodations for qualified individuals who are students with disabilities. This College will adhere to all applicable federal, state, and local laws, regulations, and guidelines with respect to providing reasonable accommodations as required to afford equal educational opportunity. It is the student's responsibility to request accommodations. An appointment can be made with Shannin Garrett, Academic Advisor/Coordinator of Special Populations located in the College Connection. She can be reached at 903-434-8218. For more information and to obtain a copy of the Request for Accommodations, please refer to the [NTCC website - Special Populations](#).

XV. FAMILY EDUCATIONAL RIGHTS AND PRIVACY ACT (FERPA):

The Family Educational Rights and Privacy Act (FERPA) is a federal law that protects the privacy of student education records. The law applies to all schools that receive funds under an applicable program of the U.S. Department of Education. FERPA gives parents certain rights with respect to their children's educational records. These rights transfer to the student when he or she attends a school beyond the high school level. Students to whom the rights have transferred are considered "eligible students." In essence, a parent has no legal right to obtain information concerning the child's college records without the written consent of the student. In compliance with FERPA, information classified as "directory information" may be released to the general public without the written consent of the student unless the student makes a request in writing. Directory information is defined as: the student's name, permanent address and/or local address, telephone listing, dates of attendance, most recent previous education institution attended, other information including major, field of study, degrees, awards received, and participation in officially recognized activities/sports.

****The instructor reserves the right to make modifications in content and schedule as necessary to provide the best education possible within prevailing conditions affecting this course.**