

**PTHA 2305 Neurology**  
**May 16 – June 17 (Hybrid)**  
**May Minimester 2022**

Instructor: Dr. Carla Gleaton, PT, DPT  
Office: UHS 105 (Director's Office)  
Office Hours: Available by appointment only  
Office Phone: 434-8323 (Director's Office)

On-campus: W 8:00-12:00  
Online/Classroom  
Credit hours: 3

#### I. COURSE DESCRIPTION

Study of neuroanatomy and neurophysiology as it relates to neurological conditions.  
Prerequisites: Successful completion of prior PTHA courses.

#### II. GENERAL COURSE LEARNING OUTCOMES

Identify the functions of the neuroanatomical structures; correlate lesions with clinical signs and symptoms; describe the pathogenesis and prognosis of neurological disorders treated in physical therapy.

#### III. GENERAL OBJECTIVES:

Objectives will be evaluated using self and instructor assessment rubrics targeting professional behaviors.

The student:

1. Attends all classes and arrive on time.
2. Listens attentively to instruction in class and lab
3. Projects professional image (dress/hygiene) in class, lab, field trips and field experiences
4. Discusses the potential implications of non-attendance and tardiness in the classroom.
5. Participates voluntarily in class and lab sessions.
6. Demonstrates professional behavior in interactions with instructors/students during classroom and lab activities.
7. Demonstrates acceptance and application of faculty feedback on written, oral and practical exams.
8. Participates in the professional organization through attendance of a national, state, or district activity.
9. Recognizes the need for participation in events to promote access to or awareness of physical therapy.
10. Acknowledges and describes errors and discuss correct responses upon completion of practical exam and skill check.

#### IV. SPECIFIC OBJECTIVES

Upon completion of this course 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, cerebellar 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. Lecture with PowerPoint presentations - web-enhanced audio lectures
2. Assigned Readings
3. Group Discussion
5. Multi-Media
6. Role Playing
7. Various learning related games
8. Quizzes – graded and ungraded

## MINIMUM TECHNOLOGY REQUIREMENTS

- Daily high speed internet access
- Microsoft Word

- Power point
- Portable storage device such as a Jump drive/Thumb drive

#### REQUIRED COMPUTER LITERACY SKILLS

- Word Processing skills
- Email skills

#### COMMUNICATION

EMAIL: Please check your NTCC email EVERYDAY. Email is the official form of communication used here at NTCC. Since I am a part-time adjunct instructor, I do not check the NTCC daily so prefer communication via the Remind app.

TEXT MESSAGE NOTIFICATIONS: You are required to sign up for the text message notifications via Remind. This will enable you to receive important class announcements and reminders from me via text message so that you will not miss out on any assignment changes or important updates. I will respond to Remind texts generally within an hour but at least within 24 hours.

ANNOUNCEMENTS: These can be found in Blackboard under the course link on your Bb homepage. Please make sure you are reading any announcements thoroughly when they are posted there.

#### 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 READING

1. Essentials of Neuroanatomy for Rehabilitation by Leah Dvorak and Paul Mansfield, 1<sup>st</sup> edition, Pearson. (e-book)

#### OPTIONAL READING

1. Neurologic Interventions for Physical Therapy by Martin and Kessler, 4<sup>th</sup> edition, Elsevier, 2021.
2. Physical Rehabilitation by O'Sullivan, Schmitz, and Fulk, 7<sup>th</sup> edition, F.A. Davis, 2019.

## VIII. ATTENDANCE AND ABSENTEEISM/TARDINESS

Students are responsible for the attendance policies stated in the **Northeast Texas Community College Student Handbook and the PTA Program Student Policy and Procedure Handbook.**

### *TARDIES AND ABSENCES ARE STRONGLY DISCOURAGED*

The PTA faculty believes that the habits and work patterns established in school will be carried over to the work setting. Therefore, every effort should be made to establish patterns of good attendance and promptness. This applies not only to the technical courses but also the general education and support courses. Student attendance is addressed under student responsibilities in the school catalog. In addition, student attendance and participation is also addressed utilizing the Professionalism Development Rubric. This document provides the student a means to identify and track any area(s) of deficiency regarding professional behaviors; and, to improve in the area(s). For the PTA Program, 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 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 program student handbook.

## IX. 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, information/ notes, handouts, lab work, covered during that absence. It is the **student's responsibility** to schedule a time with the instructor to complete lab check-offs for content missed. 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 and check-off not made up **within the allocated timeframe**. If the student has not "checked-off", any missed lab material/techniques; they will **NOT** be allowed to take the corresponding lab practical and a grade of "0" will be assigned. If a test, lab practical, 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. The student must make-up the missed test or lab practical 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!*** Assignments due on the date of the excused 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" on a test, lab practical, or special assignment missed; the student will not have the opportunity to make up the work missed work.

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 test or lab practical missed.**

## X. POLICY ON DISHONESTY

It is the responsibility of students and faculty to help maintain scholastic integrity at the College by refusing to participate in or tolerate scholastic dishonesty. **Plagiarism** and other **forms of dishonesty** undermine the very purpose of the college and diminish the value of an education. Specific sanctions for academic dishonesty are outlined in the Northeast Texas Community College Student Handbook and in this manual. Personal and professional ethics are inherent in the field of physical therapy therefore; the highest standards of honesty and integrity must be adhered to. This Honor Code, in its simplest form means that you will neither give nor receive any unauthorized assistance from any person, paper, or object on any examination, lab practical, paper, 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 or practical with a student who has not yet taken the test and/or practical (this includes the State Board exam).

With regards to research papers, in-services, group projects, etc. the use of another person's words or ideas must be cited and credit given to the source(s). Examples of plagiarism include:

- The inclusion of another person's exact words in a paper or assignment without placing quotation marks around the words to indicate an exact quote, *even if the source is cited*;
- Using **several** consecutive sentences written by another person, changing the words somewhat to keep the passage from being an exact quote, *even if the source is cited*;

- Presenting someone else's ideas without citing that person as the original thinker;
- Submitting a paper written in part or in whole by another person;
- Any other act intended to circumvent the process of performing and presenting original academic research in completion of a course assignment.

Violations of any portion 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 dismissal 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 Executive Vice President for Instruction. 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.

#### XI. POLICY ON CIVILITY AND CELL PHONES IN THE CLASSROOM AND LABORATORY

Use of cell phones is **prohibited** in class/lab. Phones are **NOT** allowed and should be kept out of sight during class time unless being specifically utilized for a class activity. If the student is observed using the phone (texting, calling) during class he/she will be asked to turn the phone off and surrender it to the instructor. If the student desires to use the phone to access course materials, the student is asked to inform the instructor prior to class for approval. If a student's cell phone rings in class, the student will be required to turn off the phone immediately. If a student is expecting a very important call, he/she is to notify the instructor prior to class regarding the nature of the situation. The student will be asked to keep the phone silent, and upon receiving the call he/she must step out of the room to answer.

#### XII. SCANS

Scans addressed as follows: Resources (allocates time, allocates money, allocates material & facility resources); Information (acquires and evaluated information, organizes and maintains information, interprets and communicates information); Interpersonal (participates as a team member, teaches others, and serves clients/customers); Systems (understands systems); Technology (applies technology); Basic S kills (reading, writing, arithmetic, listening, speaking); Thinking Skills (decision making, problem solving, knowing how to learn, reasoning); Personal Qualities (responsibility, self-esteem, sociability, self-management, integrity/honesty).

#### XIII. EVALUATION

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

Class attendance/participation/assignments = 10%

#### XIV. GRADING

- A 92-100
- B 83-91
- C 75-82
- D 66-74
- F Below 65

A grade below 75 constitutes unsatisfactory understanding of the course content and/or unsatisfactory performance of skills.

#### XV. CLASS PREPAREDNESS

Students are expected to complete all reading assignments and online activities, 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. Any activity assigned to be completed prior to class time but reviewed during class time is due at the beginning of the class period. No late assignments will be accepted.

#### **Alternate Operations During Campus Closure and/or Alternate Course Delivery Requirements:**

In the event of an emergency or announced campus closure due to a natural disaster or pandemic, it may be necessary for Northeast Texas Community College to move to altered operations. During this time, Northeast Texas Community College may opt to continue delivery of instruction through methods that include, but are not limited to, online through the Blackboard Learning Management System, online conferencing, email messaging, and/or an alternate schedule. It is the responsibility of the student to monitor NTCC's website (<http://www.ntcc.edu/>) for instructions about continuing courses remotely, Blackboard for each class for course-specific communication, and NTCC email for important general information.

Additionally, there may be instances where a course may not be able to be continued in the same delivery format as it originates (face-to-face, fully online, live remote, or hybrid). Should this be the case, every effort will be made to continue instruction in an alternative delivery format. Students will be informed of any changes of this nature through email messaging and/or the Blackboard course site.

#### **NTCC Academic Honesty/Ethics Statement:**

NTCC upholds the highest standards of academic integrity. The college expects all students to engage in their academic pursuits in an honest manner that is beyond reproach using their intellect and resources designated as allowable by the course instructor. Students are responsible for addressing questions about allowable resources with the course instructor. Academic dishonesty such as cheating, plagiarism, and collusion is unacceptable and may result in disciplinary action. This course will follow the NTCC Academic Honesty and Academic Ethics policies stated in the Student Handbook. Refer to the student handbook for more information on these subjects.

## XVI. 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 the Academic Advisor/Coordinator of Special Populations located in Student Services and can be reached at 903-434-8264. For more information and to obtain a copy of the Request for Accommodations, please refer to the special populations page on the NTCC website

## XVII. FAMILY EDUCATION 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.**