Bossier Parish Community College
Master Syllabus

Course Prefix and Number: PTAP 212 **Credit Hours**: 2

Course Title: Clinical Neuroanatomy

Textbooks: Kapit; Anatomy Coloring Book.

Course Prerequisites: Selective admission to the Physical Therapist Assistant program.

Course Description:

Correlates the anatomy and processes of the CNS, ANS and PNS with both normal and abnormal human motion and function. Introductions to neurological pathways and their influences on sensation, movement, reflexes, muscle tone, coordination and balance.

Learning Outcomes:

At the end of this course the student will:

A. communicate with patients and with therapists/interdisciplinary team members , both verbally and in written form, using correct terminology related to neuroanatomy, neurophysiology and neurologic pathologies;
B. describe the anticipated signs/symptoms associated with damage to or disorders of selected structures of the central, peripheral and autonomic nervous systems including how those are assessed as part of a medical and PT evaluation; and
C. appropriately apply foundational knowledge of neuroanatomy/physiology, and neurologic pathologies in the interpretation and execution of a PT plan of care.

To achieve the learning outcomes, the student will:

1. discuss the fundamental organizational units of the central and peripheral nervous systems. (A)
2. label and discuss the function of components of a neuron and the neuromusculoskeletal junction. (A,C)
3. differentiate the primary roles of the supporting cells of the nervous system. (A,C)
4. identify and differentiate between the menengial layers surrounding the brain and spinal cord. (A,C)
5. describe embryologic development of the nervous system . (A,C)
6. differentiate the primary functions of selected Broadman's Areas of the lateral and medial cortical surfaces. (A,C)
7. label and discuss the function of the gyri and sulci of the cerebral cortex. (A,B,C)
8. locate, describe, label, and differentiate between gray matter and white matter structures found within the nervous system. (A,C)
9. differentiate the primary functions of the left and right hemispheres of the cerebral cortex. (A,C)
10. identify the functional loss associated with lesions at various areas of the cerebral cortex. (A,B,C)
11. label and describe the function of selected structures within the diencephalon. (A, B, C)

12. discuss the role of the blood-brain barrier. (A)
13. label the primary arterial vasculature of the CNS including the Circle of Willis. (A,C)
14. differentiate the clinical significance of occlusion or hemorrhage at primary arteries of the CNS. (B,C)
15. label and discuss the function of the structures housed within the brainstem. (A,C)
16. identify the role of each cranial nerve and the effects of pathology on these nerves. (A,B,C)
17. recognize the effects of cortex and brainstem injury on posturing. (A,B,C)
18. label selected white matter and grey matter structures of the spinal cord. (A)
19. identify, label, and trace a signal along the major ascending and descending pathways of the spinal cord. (A,C)
20. recognize the functional impact which occurs with pathology or injury of selected ascending or descending pathways. (B,C)
21. differentiate the primary types and functions of somatosensory receptors and nerve fibers. (A,B)
22. compare and contrast upper and lower motor neurons in terms of location, function, and impact of injury/disease (A,B)
23. accurately describe dermatomes, myotomes and myotatic reflexes associated with selected spinal levels. (B,C)
24. recognize anatomical and functional differences between the autonomic sympathetic and parasympathetic nervous systems. (A)
25. differentiate the influence of the sympathetic and parasympathetic nervous systems on selected organs. (A,C)
26. identify and locate common body areas of referred visceral pain. (B,C)
27. compare and categorize drugs used to stimulate or inhibit the sympathetic or parasympathetic systems. (B, C)
28. identify and discuss the activity/purpose of the key functional centers of the limbic system. (A,C)
29. describe the Papez Circuit (A,C)
30. identify common clinical presentation of disorders affecting the limbic system. (C)
31. label the primary structures associated with the ventricular system. (B,C)
32. recognize the role of the choroid plexus with CSF production. (C)
33. discuss the pathophysiology of and describe the common signs and symptoms associated with both obstructive and communicating hydrocephalus. (C)

Course Requirements: To earn a grade of "C" or higher the student must earn 70% of the total points for the course and meet <u>all</u> of the following course requirements.

- The student must achieve a 75% average on integrated laboratory practicals
- The student must achieve mastery on a minimum of 5 aligned assignments or quizzes that involve identification or assessment of signs/symptoms associated with pathology in given structures of the CNS, PNS and ANS.

Course Grading Scale:

A- 90% or more of total possible points including the comprehensive final exam; and meets all course requirements.

A- 80% or more of total possible points including the comprehensive final exam; and completes all course requirements.

B- 70% or more of total possible points including the comprehensive final exam; and completes all course requirements

C- 60% or more of total possible points including the comprehensive final exam; and completes all course requirements

D- less than 60% of total possible points including the comprehensive final exam; or fails to complete all course requirements

Attendance Policy: The college attendance policy, which is available at http://www.bpcc.edu/catalog/current/academicpolicies.html, allows that "more restrictive attendance requirements may apply to some specialized classes such as laboratory, activity, and clinical courses because of the nature of those courses." The attendance policy of the Physical Therapy Assistant program in described is the Physical Therapy Assistant Clinical Handbook.

Course Fees: This course is accompanied with an additional non-refundable fee for supplemental materials, laboratory supplies, certification exams and/or clinical fees.

Nondiscrimination Statement

Bossier Parish Community College does not discriminate on the basis of race, color, national origin, gender, age, religion, qualified disability, marital status, veteran's status, or sexual orientation in admission to its programs, services, or activities, in access to them, in treatment of individuals, or in any aspect of its operations. Bossier Parish Community College does not discriminate in its hiring or employment practices.

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Reviewed by K. Cox 4/23