

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 structure and function of the CNS, ANS and PNS with the functional aspects of human motion and normal posture. Introductions to neurological pathways and their influences on sensation, reflexes, muscle tone, coordination and balance.

Learning Outcomes:

At the end of this course the student will:

- A. communicate appropriately in the clinical environment, both verbally and in written form, using correct terminology related to neuroanatomy, neurophysiology and neurologic pathologies;
- B. demonstrate clinical proficiency in the performance of selected physical therapy assessment and intervention skills commonly utilized in the treatment of the neurologically involved patient; and
- C. appropriately apply foundational knowledge of neuroanatomy/physiology, and neurologic pathologies during interim analyses of patient positions/movements and the correct interpretation and execution of a PT plan of care.

To achieve the learning outcomes, the student will:

- 1. define common descriptive terms associated with the nervous system. (A)
- 2. discuss the fundamental organizational units of the central and peripheral nervous systems. (A)
- 3. label various anatomical structures associated with a neuron and the neuromusculoskeletal junction. (A,C)
- 4. differentiate the functional and anatomical structure of axons and dendrites. (A, C)
- 5. differentiate the primary roles of the supporting cells of the nervous system. (A,C)
- 6. identify and locate supporting membranes of the nervous system. (A,C)
- 7. discuss the primary subdivisions of the cerebral cortex. (A,C)
- 8. recognize fundamental histological features of the cerebral cortex. (A)
- 9. discuss the normal sequence of cortical processing. (A,B,C)
- 10. differentiate the roles of neuronal fibers which form cortical connection. (A,C)
- 11. label the principal functional areas of the cerebral cortex. (A,B)
- 12. differentiate the primary functions of selected Brodman's Areas of the lateral and medial cortical surfaces. (A,C)
- 13. identify the functional loss associated with lesions at various areas of the cerebral cortex. (A,B,C)

14. discuss the basic organization structure of the forebrain (A)
15. label the anatomical structures which make up the diencephalon. (A)
16. recognize clinical implications and common causes of CSF flow blockage. (A,B,C)
17. discuss the role of the blood-brain barrier. (A)
18. label the primary arterial vasculature of the CNS. (A,C)
19. differentiate the clinical significance of occlusion or hemorrhage at primary arteries of the CNS. (B,C)
20. recognize the primary function of the anatomical components of the brainstem. (A,C)
21. label basic anatomical structures of the brainstem. (A,C)
22. identify the role of each cranial nerve and the effects of pathology on these nerves. (A,B,C)
23. identify the principal brainstem centers which influence spinal motor activity. (A,C)
24. recognize the effects of brainstem impairment on posturing. (A,B,C)
25. differentiate the signs and symptoms of brainstem lesions and syndromes. (B,C)
26. recognize how pathology at selected areas of the spinal cord affect function. (B,C)
27. label gross anatomical structures of the spine and spinal cord. (A)
28. discuss primary anatomical regional differences of the spinal cord. (A)
29. discuss in general terms the complex system of neuronal control over motor activity. (A,B)
30. generally locate spinal cord lower motor neurons based on their influence on extremity movement (B,C)
31. correlate selected nerve roots with their respective dermatomes, myotomes and myotatic reflexes. (B,C)
32. recognize fundamental anatomical differences between the autonomic sympathetic and parasympathetic nervous systems. (A)
33. discuss principal features of the autonomic nervous system. (A)
34. differentiate the influence of the sympathetic and parasympathetic nervous systems on selected organs. (A,C)
35. identify and locate common body areas of referred visceral pain. (B,C)
36. identify the roles of the primary ascending and descending pathways. (A,C)
37. recognize common somatosensory senses. (B,C)
38. differentiate the primary categories and functions of somatosensory receptors. (A,B)
39. compare the anatomical structure and function of somatosensory nerve fibers. (B,C)
40. discuss the fundamental role that the major categories of pathways play in motor control. (A,C)
41. recognize the functional impact which occurs with pathology or injury of selected ascending or descending pathways. (B,C)
42. compare classical clinical signs and symptoms of upper and lower motor neuron injuries. (B,C)
43. recognize the key functional centers of the limbic system. (A,C)
44. discuss the fundamental functional roles of the limbic system. (C)
45. describe the Papez Circuit (A,C)
46. identify common clinical disease processes seen with pathology of the limbic system. (C)
47. compare clinical signs and symptoms of selected disorders of the limbic system. (B,C)
48. label the primary structures associated with the ventricular system. (B,C)
49. recognize the role of the choroid plexus with CSF production. (C)
50. describe the physiological mechanism which results in the development of hydrocephalus. (C)
51. identify common signs and symptoms associated with hydrocephalus. (C)

52. recognize the principal functions of the hypothalamus. (A)
53. discuss common signs and symptoms associated with pathology of the hypothalamus.
(A,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 all of the following course requirements.

- minimum 75% average on integrated laboratory practical examination
- minimum 75% on all coloring book assignments
- co-curricular community service or professional development (required for grade of A only)

Course Grading Scale:

- A- 90% or more of total possible points including the comprehensive final exam; and minimum of 75% average on laboratory practical tests and participation in at least one approved community service or professional development activity.
- A- 80% or more of total possible points including the comprehensive final exam; and minimum of 75% average on laboratory practical tests
- B- 70% or more of total possible points including the comprehensive final exam; and minimum of 75% average on laboratory practical tests
- C- 60% or more of total possible points including the comprehensive final exam; and minimum of 75% average on laboratory practical tests
- D- less than 60% of total possible points including the comprehensive final exam; or less than 75% average on laboratory practical tests

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

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COORDINATOR FOR SECTION 504 AND ADA

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Reviewed by L. Bryant 4/19