

## NOVA COLLEGE-WIDE COURSE CONTENT SUMMARY OCT 225 – NEUROLOGICAL CONCEPT FOR OTA STUDENTS (4 CR.)

### Course Description

Focuses on the workings of the human nervous system from the cellular level to the systems level with an emphasis on normal neurological function, the impact of neurological dysfunction, and how to use neurological rehabilitation techniques to facilitate the rehabilitation process across the lifespan. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

### General Course Purpose

The purpose of this course is to provide students with the foundational knowledge of the neurological system from a cellular to a systems level in relationship to occupational performance. Students in this course will gain an understanding of normal neurological function and dysfunction and its impact on occupational performance. Students will be provided with instruction on the completion of various neurological screening methods applicable to individuals across the lifespan.

### Course Prerequisites/Corequisites

BIO 141 and BIO 142. Admission into the OCT program.

### Course Objectives

Upon completing the course, the student will be able to:

1. Explain the influence of occupation on neurological development.
2. Demonstrate knowledge of the structures and functions of the neurological system as related to occupational performance. **(aligns with 2018 ACOTE standard B.1.1)**
3. Explain the relationship between the neurological system and motor functioning, including assessing basic range of motion and manual muscle testing of the upper extremities. **(aligns with 2018 ACOTE standard B.1.1)**
4. Articulate the development of the nervous system from conception to birth. **(aligns with 2018 ACOTE standard B.1.1)**
5. Identify the basic functions of the Peripheral Nervous System with a specific focus on the peripheral nerves of the upper extremity as related to neurological function and dysfunction. **(aligns with 2018 ACOTE standard B.1.1)**
6. Articulate the relationship between the central nervous system and its vascular supply as related to normal functioning and dysfunction. **(aligns with 2018 ACOTE standard B.1.1)**
7. Explain the spinal cord anatomy and spinal tracts as related to normal functioning and dysfunction, including the examination of occupational performance implications of individuals with a spinal cord injury. **(aligns with 2018 ACOTE standard B.1.1)**
8. Be proficient with basic sensory testing. Perform general reflex testing.
9. Compare and contrast the 12 cranial nerves. **(aligns with 2018 ACOTE standard B.1.1)**
10. Be proficient in performing cranial nerve testing.
11. Compare and contrast the subsystems of the Autonomic Nervous System. **(aligns with 2018 ACOTE standard B.1.1)**
12. Articulate the relationship between the neurological system and swallowing. **(aligns with 2018 ACOTE standard B.1.1)**
13. Explain the neurological system in relationship to language. **(aligns with 2018 ACOTE standard B.1.1)**
14. Explain the neurological system in relationship to vision and visual-perceptual function and dysfunction. **(aligns with 2018 ACOTE standard B.1.1)**

15. Be proficient with the performance of a basic visual assessment.
16. Articulate the relationship between the neurological system and cognition and cognitive dysfunction. **(aligns with 2018 ACOTE standard B.1.1)**
17. Explain the neurological system in relationship to sensory functioning and dysfunction, including: tactile, auditory, gustatory, olfactory, pain, pressure, vestibular, and proprioception.
18. Explain the neurological system in relationship to perceptual functioning and dysfunction. **(aligns with 2018 ACOTE standard B.1.1)**
19. Articulate concepts of human behavior including the behavioral sciences, social sciences, and occupational science. **(aligns with 2018 ACOTE standard B.1.1)**
20. Demonstrate knowledge of the effects of disease processes including: heritable diseases, genetic conditions, mental illness, disability, trauma, and injury as related to dysfunction of the neurological system and occupational performance implications. **(aligns with 2018 ACOTE standard B.3.5)**

#### **Major Topics to be Included**

- Development of the human neurological system in relationship to occupational performance.
- Neurological system at a cellular and systems level.
- Differences between the central, peripheral, and autonomic nervous systems as related to occupational performance.
- Neurological system in relationship to: language, swallowing, cognition, perception, motor functioning, sensory functioning, vision, mental health and occupational performance.
- Normal neurological system functioning and conditions related to dysfunction of the neurological system.
- Basic neurological screening methods.