Neurodiagnostic Technology (NDT)

Courses

NDT 125 Introduction to Neurodiagnostic Technology* (4 Hours)
Prerequisites : Admission to the Neurodiagnostic Program.
Corequisites: NDT 130 and NDT 135.
This course provides an introduction to Neurodiagnostic Technology (NDT) including history, concepts, techniques, and instruments used in recording brain activity. Students will engage in a variety of learning activities to explore the Neurodiagnostic career field and establish foundational concepts used in later courses. In the lab, students will receive hands- on experience using the internationally recognized method to describe the location of scalp electrodes (International 10-20 System). Emphasis will be placed on ensuring electrical safety, electrode application, patient interaction, developing an accurate patient history, careful handling of the patient, reviewing normal electroencephalographic (EEG) activity, identifying normal variants and artifacts. The course will use a blended approach that ties the classroom concepts to performing an EEG in the lab.

NDT 130 Foundations of Neurodiagnostic Technology* (3 Hours)
Prerequisites : Admission to the Neurodiagnostic Program.
Corequisites: NDT 125 and NDT 135.
Students will engage in a variety of learning activities to build on neurodiagnostic technology knowledge to perform diagnostic procedures and react to patient responses in the clinical setting. This course is designed to build on learned concepts of anatomy and physiology. Emphasis will be on neurobiological processes and patient responses to medication and diseases. Students will explore medications that affect the cellular function of the nervous system and how chemical interactions alter the electroencephalogram (EEG). Students will also study how medications treat or alleviate symptoms of neurological disorders.

NDT 135 Pediatric Neurodiagnostic Technology I* (5 Hours)
Prerequisites : Admission to the Neurodiagnostic Program.
Corequisites: NDT 125 and NDT 130.
This course will discuss pediatric terminology as it relates to the Neurodiagnostic Technology (NDT) field. Students will study the development of the brain from premature infants to older children and its correlations on the electroencephalogram (EEG). Students will learn to assess pediatric electrographic activity in a variety of ranges including pediatric EEG variants, normal and abnormal categories, as well as seizure patterns. In the lab students will develop the skills necessary for accurate electrode placement and application on pediatric patients. A variety of learning activities will allow students to perform an EEG in the lab prior to performing an EEG in the clinical setting. Course instruction will occur using a blended approach that focuses on active engagement of the student in the classroom and simulated lab setting.

NDT 140 Adult Neurodiagnostic Technology I* (4 Hours)
Prerequisites : Admission to the Neurodiagnostic Program and NDT 125 with a grade of "C" or higher and NDT 130 with a grade of "C" or higher and NDT 135 with a grade of "C" or higher.
Corequisites: NDT 145 and NDT 150 and NDT 156.
This course will expand on adult terminology as it relates to the Neurodiagnostic Technology (NDT) field. Students will learn the maturation of the brain from adolescent through the geriatric patient, normal and abnormal activity, and electroencephalographic (EEG) variants and seizure disorders will be discussed. In the lab, students will apply concepts of electrode placement to the adult patient. A variety of learning activities will allow students to perform an EEG in the lab prior to performing an EEG in the clinical setting. Course instruction will occur using a blended approach that focuses on active engagement of the student in the classroom and simulated lab setting.

NDT 145 Pediatric Neurodiagnostic Technology II* (4 Hours)
Prerequisites : Admission to the Neurodiagnostic Program and NDT 125 with a "C" or higher and NDT 130 with a "C" or higher and NDT 135 with a grade of "C" or higher.
Corequisites: NDT 140 and NDT 150 and NDT 156.
This course will expand on the concepts presented in Pediatric Neurodiagnostic Technology I and begins to correlate electroencephalographic (EEG) patterns with varying disease processes including infectious, toxic, and metabolic disorders. Students will also examine the effect of trauma, cerebral vascular accidents, genetic disorders, and differential diagnosis with the use of EEG. In the lab, the students will continue to perfect their skills in applying the electrodes in an efficient manner while addressing specific patient needs and mental capacity. Course instruction will use a blended approach that focuses on active engagement of the student in the classroom, lab, and in the simulation center.

NDT 150 Neurodiagnostic Clinical Correlates* (2 Hours)
Prerequisites : Admission to the Neurodiagnostic Program and NDT 125 with a grade of "C" or higher and NDT 130 with a grade of "C" or higher and NDT 135 with a grade of "C" or higher.
Corequisites: NDT 140 and NDT 145 and NDT 156.
This course explores the process of comparing and contrasting patient's diagnostic tests, age, past medical history, physical health, and symptoms to assist the physician in the development of a differential diagnosis. Students will have the opportunity to compare case studies to normal and abnormal electroencephalogram (EEG) patterns to construct clinical correlations. Students will engage in a variety of activities to explore EEG specific activation procedures, artifacts on the EEG, and identify activity that requires physician intervention.

NDT 156 Neurodiagnostic Clinical I* (2 Hours)
Prerequisites : Admission to the Neurodiagnostic Program and NDT 125 with a grade of "C" or higher and NDT 130 with a grade of "C" or higher and NDT 135 with a grade of "C" or higher.
Corequisites: NDT 140 and NDT 145 and NDT 150.
This course provides opportunities for entry-level Neurodiagnostic Technology (NDT) students to apply concepts, skills, and techniques of performing electroencephalograms (EEG's) in the clinical setting. Students will work with patients under supervision to further develop their skill and understanding of basic NDT procedures.

NDT 225 Polysomnography* (5 Hours)
Prerequisites : Admission to the Neurodiagnostic Program and NDT 140 with a grade of "C" or higher and NDT 145 with a grade of "C" or higher and NDT 150 with a grade of "C" or higher and NDT 156 with a grade of "C" or higher.
Corequisites: NDT 230 and NDT 240.
This course will provide a comprehensive study of Polysomnography (PSG) including: the history of sleep medicine, neurophysiologic mechanisms of normal sleep, cardiopulmonary anatomy and physiology as it relates to sleep medicine, electrocardiogram (ECG) interpretation, sleep study equipment, disease processes and conditions which adversely affect sleep, patient and equipment preparation, PSG monitoring and documentation, sleep study scoring, and therapeutic interventions associated with PSG procedures.

NDT 230 Adult Neurodiagnostic Technology II* (3 Hours)
Prerequisites : Admission to the Neurodiagnostic Program and NDT 140 with a "C" or higher and NDT 145 with a "C" or higher and NDT 150 with a "C" or higher and NDT 156 with a grade of "C" or higher.
Corequisites: NDT 225 and NDT 240.
This course will expand on concepts acquired in Adult Neurodiagnostic Technology I and include discussion of the effects of trauma and cerebral vascular accidents as well as the use of EEG in differential diagnosis. Students will correlate electroencephalographic (EEG) patterns with clinical conditions. This course reinforces the role of the neurodiagnostic technologist in aiding the physician with differential diagnosis of patients. Students will have the opportunity to refine knowledge and skills related to equipment and modifications of the neurodiagnostic procedures based on current patient information in the co-requisite clinical course.

NDT 240 Neurodiagnostic Clinical II* (4 Hours)
Prerequisites : Admission to the Neurodiagnostic Program and NDT 140 with a grade of "C" or highrer and NDT 145 with a grade of "C" or higher and NDT 150 with a grade of "C" or higher and NDT 156 with a grade of "C" or higher.
Corequisites: NDT 225 and NDT 230.
This course is the second in a series of three clinical courses in the Neurodiagnostic Technologist (NDT) program. Students will build on fundamental neurodiagnostic knowledge and skills acquired in the first NDT course to provide a safe recording environment while performing neurodiagnostic recordings. Students will have the opportunity to work with patients under supervision to develop their skills and understanding of NDT procedures. 240 hrs. clinical/total.

NDT 245 Neurodiagnostic Related Modalities* (3 Hours)
Prerequisites : Admission to the Neurodiagnostic Program and NDT 225 with a grade of "C" or higher and NDT 230 with a grade of "C" or higher and NDT 240 with a grade of "C" or higher.
Corequisites: NDT 250 and NDT 256.
This course explores neurodiagnostic modalities and their use of basic electroencephalographic (EEG) principles. Students will build on fundamental neurodiagnostic concepts to compare and contrast instrumentation, recording parameters, and applications for evoked potential, nerve conduction, and electrocorticography studies. The content will differentiate among continuous, long-term and intraoperative monitoring, and discuss the role of the neurodiagnostic technologist while performing neurodiagnostic related modalities. Learning will occur in the classroom setting.

NDT 250 Neurodiagnostic Program Capstone* (3 Hours)
Prerequisites : Admission to the Neurodiagnostic Program and NDT 225 with a grade of "C" or higher and NDT 230 with a grade of "C" or higher and NDT 240 with a grade of "C" or higher.
Corequisites: NDT 245 and NDT 256.
This course is designed as a capstone experience for the neurodiagnostic program. Students will prepare for the American Board of Registration of Electroencephalographic and Evoked Potential (ABRET) part II exam and the Board of Registered Polysomnographic Technologists (BRPT) examinations. Exploration of career options and challenges will also occur. Upon successful completion students will demonstrate knowledge, skills and abilities expected of an entry level Neurodiagnostic Technologist(NDT.) A completed group project will document experiences and the knowledge base needed to assume the role of an NDT.

NDT 256 Polysomnography Clinical* (4 Hours)
Prerequisites : Admission to the Neurodiagnostic Program and NDT 225 with a "C" or higher and NDT 230 with a "C" or higher and NDT 240 with a grade of "C" or higher.
Corequisites: NDT 245 and NDT 250.
This course is the clinical application of sleep related diagnosis and treatment. Students will have the opportunity to work with patients under close supervision to develop their skill and understanding of polysomnographic (PSG) procedures.