Neurogenetics Online Course – Content Outline

Format	Title	Lecturer	**Behavioral Objectives** Participants will:
Lecture 1	Overview of Neurogenetics	Andrew Burrow, MD	Describe 3 classification systems for neurogenetic disorders including location, genetic, and phenotype based. Identify characteristics, symptoms, and inheritance patterns of common disorders impacting the cerebral cortex, basal ganglia, and cerebellum.
Lecture 2	Genetic Counseling for an Adult Onset Neurogenetic Condition: the Example of Huntington Disease	Erin Mundt, MS, LGC	Discuss clinical features and genetics of Huntington Disease Explore the genetic counseling process for Huntington Disease and HD gene testing Review Huntington Disease management and treatment.
Lecture 3	Genetic Counseling and Testing for Single Gene Epilepsies	Christine Spaeth, MS, LGC Hansel Greiner, MD	Distinguish between seizures and epilepsy Discuss various etiologies of epilepsy and targeted questions to ask about epilepsy in a family or medical history Describe genetic conditions associated with epilepsy.
Lecture 4	Amyotrophic Lateral Sclerosis (ALS)	Robert Hopkin, MD	Identify symptoms of ALS Describe the inheritance, testing, and treatment options of ALS Outline genetic counseling issues related to ALS
Lecture 5	Tuberous Sclerosis	Jennifer Glass, MS, LGC	Identify common clinical features of Tuberous Sclerosis Explain inheritance, testing options and genetic counseling issues related to Tuberous Sclerosis
Lecture 6	Leukodystrophies	Andrew Burrow, MD	Define characteristics of leukodystrophies Identify the structure and function of myelin. Describe the clinical features and inheritance patterns of different specific leukodystrophies
Lecture 7	Familial Strokes	Joseph Broderick, MD	Describe different mechanisms that result in ischemic stroke. Identify environmental risk factors for aneurysms Recognize mendelian disorders that have an increased risk for stroke
Lecture 8	Approach to Evaluation of a Child with Neurodevelopmental Disabilities	Barbara Hallinan, MD	Identify reasons why a child may be referred to neurology. Summarize important factors to consider when making a diagnosis for a child with a neurodevelopmental disability Recognize features of GLUT1 deficiency and Juvenile Batten disease

Lecture 9	Genetic Counseling for Prenatal Onset Brain Malformations	Emily King, MS, LGC	Identify important structures on prenatal ultrasound and fetal MRI. Develop a differential diagnosis for prenatal onset brain malformations. Discuss testing options and genetic counseling issues for prenatal brain malformations.
Lecture 10	The Genetics of Progressive Causes of Dementia	Jennifer Rose Molano, MD	Describe the domains of cognition and the cognitive spectrum Recognize the phenotype, pathology, and genetics of common causes of neurodegenerative cognitive changes Identify the role of genetic counseling in neurodegenerative causes of cognitive changes
Lecture 11	Posterior Fossa Malformations	Emily King, MS, LGC	Identify common imaging findings for posterior fossa malformations. Evaluate prognosis for varying posterior fossa malformations. Identify genetic conditions associated with posterior fossa malformations.
Lecture 12	Migrational Disorders	Robert Hopkin, MD	Describe the features and outcomes of common migrational disorders including lissencephaly, pachygyria, schizencephaly, polymicrogyria, and heterotopia and related genetic syndromes Distinguish common causes of migrational disorders
Lecture 13	Syndromic Malformations of Brain Vasculature	Nicole Weaver, MD	Identify types of vascular malformations Discuss different causes of vascular malformations including germline and mosaic genetic mutations Describe common syndromes that involve malformations of brain vasculature including HHT, CCM, Sturge-Weber, and others
Self-Paced Case Modules	Neurogenetics Case Modules	NA	Incorporate knowledge of neurogenetics to process a neurogenetics case. Demonstrate neurogenetics knowledge through case-based learning.