NERVOUS SYSTEM DISORDERS (HCB-916) Credit Hrs 3 (3-0)

Educational Objectives:

1. The course is designed to provide how human brain works in health and disease. It highlights the translational research taking place in Nervous System Disorders. A selection of diseases and techniques that are of key importance to current clinical neuroscientists will be covered.

Course Outcomes:

2. The course offers an exciting opportunity to study modern neuroscience with a focus on clinical implications. It gives an insight into recent advances in neurosciences relevant to neurological and neuropsychiatric diseases. The development of research skills is central to the course and will be suitable to identify a carrier in neuroscience.

3. **Course Contents:**

a. Regional anatomy of the brain,
b. Introduction to the cellular function of neurons, synapses and neurotransmitters,
c. Brain function alteration by commonly used drugs,
d. Experimental animal studies to illustrate how the brain works
e. Brain dysfunction according to type:

(1) Aphasia (language)
(2) Dysarthria (speech)
(3) Apraxia (patterns or sequences of movements)
(4) Agnosia (identifying things/people)
(5) Amnesia (memory)
(6) Peripheral nervous system disorders
(7) Spinal cord disorders
(8) Movement disorders such as Parkinson's disease)
(9) Delirium and Dementia such as Alzheimer's disease
(10) Sleep disorders
(11) Headaches (migraine)
(12) Head injury
(13) Motor Neuron Disease Amyotrophic Lateral Sclerosis (ALS)
(14) Multiple sclerosis (MS) and other demyelinating diseases
(15) Infections of the brain or spinal cord (including meningitis)
(16) Prion diseases (a type of infectious agent)
(17) Seizure disorders such as epilepsy

(18) Autonomic nervous system disorders
(19) Bipolar Disorder
(20) Schizophrenia
(21) Depression
(22) Anxiety
(23) Stress
(24) Clinical Trials and Diagnostic tools for Brain Disorders
(25) Clinical case studies as illustration of brain function and scientific articles discussion is also included in the course.

Recommended Books:

1. **Basic Nervous System Disorders,** 2nd Edition by Paul A. Young, Paul H. Young, Daniel L. Tolbert
2. **Neuroscience**, 3rd Edition by Dale Purves, George J. Augustine, David Fitzpatrick
3. **The human brain and its disorders** by Doug Richards, Carl Clarke, Tom Clark