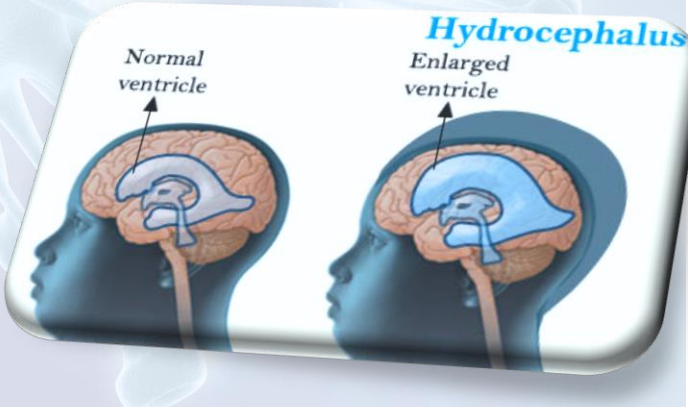
Study Guide- Fourth Year MBBS

- 14 Feb – 6 April 2022
- Duration 8 weeks

NEUROSCIENCES II MODULE



STUDY GUIDE FOR NEUROSCIENCES-II MODULE

Module name: **Neurosciences-II** *Year:* ***Four*** *Duration:* ***8 weeks (February-April 2022)***

Timetable hours: **Interactive Lectures, Case-Based Integrated Learning (CBIL), Clinical Rotations, Presentations, Tutorial**, **Demonstrations, Skills, Self-Study**

MODULE INTEGRATED COMMITTEE

MODULE COORDINATOR:	• Dr. Rajesh Kumar (**Neurology**)
CO-COORDINATOR:	• Prof. Sobia Ali (**DHPE**)

DEPARTMENTS' & RESOURCE PERSONS' FACILITATING LEARNING

BASIC HEALTH SCIENCES	CLINICAL AND ANCILLARY DEPARTMENTS
COMMUNITY MEDICINE Dr. Saima Zainab	***FAMILY MEDICINE*** Dr. Farheen Saboor
MICROBIOLOGY Professor Shaheen Sharafat	***NEUROLOGY*** • Dr. Ahmed Asif • Dr. Rajesh Kumar
PATHOLOGY Professor Naveen Faridi	***NEUROSURGERY*** Dr. Aamir Saghir
PHARMACOLOGY Professor Tabassum Zehra	***PEDIATRICS*** Dr. Raman Kumar
	PSYCHIATRY Dr. Iqtidar Taufiq
	RADIOLOGY Dr. Muhammad Misbah Tahir
	RESEARCH & SKILLS DEVELOPMENT CENTER Dr. Kahkashan Tahir
DEPARTMENT of HEALTH PROFESSIONS EDUCATION • Professor Nighat Huda • Professor Sobia Ali • Dr. Afifa Tabassum • Dr. Sana Shah	
LNH&MC MANAGEMENT • Professor Karimullah Makki, Principal, LNH&MC • Dr. Shaheena Akbani, Director A.A & R.T LNH&MC	
STUDY GUIDE COMPILED BY: Department of Health Professions Education	

INTRODUCTION

WHAT IS A STUDY GUIDE?

It is an aid to:

- Inform students how student learning program of the module has been organized
- Help students organize and manage their studies throughout the module
- Guide students on assessment methods, rules and regulations

THE STUDY GUIDE:

- Communicates information on organization and management of the module. This will help the student to contact the right person in case of any difficulty.
- Defines the objectives which are expected to be achieved at the end of the module.
- Identifies the learning strategies such as lectures, small group teachings, clinical skills, demonstration, tutorial and case based learning that will be implemented to achieve the module objectives.
- Provides a list of learning resources such as books, computer assisted learning programs, web- links, journals, for students to consult in order to maximize their learning.
- Highlights information on the contribution of continuous on the student's overall performance.
- Includes information on the assessment methods that will be held to determine every student's achievement of objectives.
- Focuses on information pertaining to examination policy, rules and regulations.

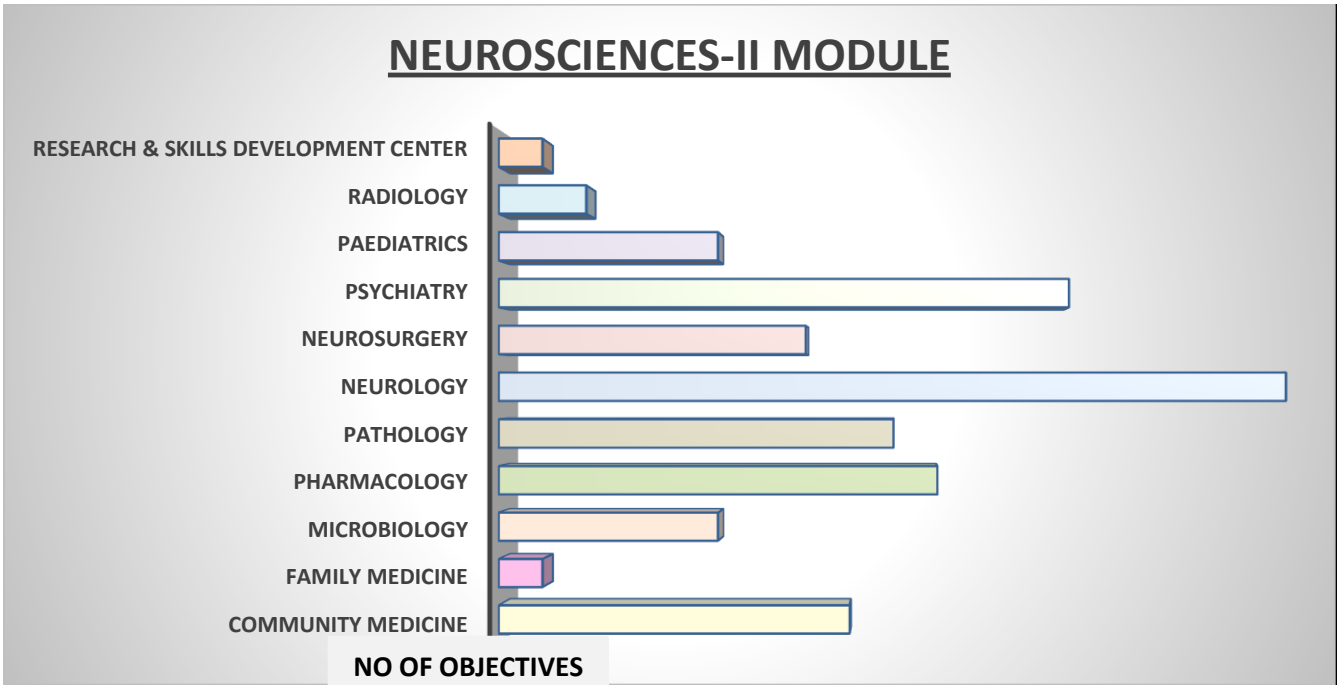
CURRICULUM FRAMEWORK

Students will experience integrated curriculum similar to previous modules**.**

INTEGRATED CURRICULUM comprises system-based modules such as Eye/ENT, dermatology, genetics, rehabilitation, reproductive system-II and neurosciences-II modules which links basic science knowledge to clinical problems. Integrated teaching means that subjects are presented as a meaningful whole. Students will be able to have better understanding of basic sciences when they repeatedly learn in relation to clinical examples.

LEARNING EXPERIENCES: Case based integrated discussions, Task oriented learning followed by task presentation, skills acquisition in skills lab, computer-based assignments, learning experiences in clinics, wards.

INTEGRATING DISCIPLINES OF NEUROSCIENCES-II MODULE



LEARNING METHODOLOGIES

The following teaching / learning methods are used to promote better understanding:

- Interactive Lectures
- Small Group Discussion
- Case- Based Discussion (CBD)
- Clinical Experiences
  - Clinical Rotations
- Skills session
- Self Study

INTERACTIVE LECTURES: In large group, the lecturer introduces a topic or common clinical conditions and explains the underlying phenomena through questions, pictures, videos of patients' interviews, exercises, etc. Students are actively involved in the learning process.

SMALL GROUP SESSION: This format helps students to clarify concepts, acquire skills or desired attitudes. Sessions are structured with the help of specific exercises such as patient case, interviews or discussion topics. Students exchange opinions and apply knowledge gained from lectures, tutorials and self study. The facilitator role is to ask probing questions, summarize, or rephrase to help clarify concepts.

CASE-BASED DISUCSSION (CBD): A small group discussion format where learning is focused around a series of questions based on a clinical scenario. Students' discuss and answer the questions applying relevant knowledge gained previously in clinical and basic health sciences during the module and construct new knowledge. The CBD will be provided by the concern department.

CLINICAL LEARNING EXPERIENCES: In small groups, students observe patients with signs and symptoms in hospital wards, clinics and outreach centers. This helps students to relate knowledge of basic and clinical sciences of the module and prepare for future practice.

- **CLINICAL ROTATIONS:** In small groups, students rotate in different wards like Medicine, Pediatrics, Surgery, Obs & Gyne, ENT, Eye, Family Medicine clinics, outreach centers & Community Medicine experiences. Here students observe patients, take histories and perform supervised clinical examinations in outpatient and inpatient settings. They also get an opportunity to observe medical personnel working as a team. These rotations help students relate basic medical and clinical knowledge in diverse clinical areas.

SKILLS SESSION: Skills relevant to respective module are observed and practiced where applicable in skills laboratory.

SELF STUDY: Students' assume responsibilities of their own learning through individual study, sharing and discussing with peers, seeking information from Learning Resource Center, teachers and resource persons within and outside the college. Students can utilize the time within the college scheduled hours of self-study.

MODULE: NEUROSCIENCES-II

INTRODUCTION

Neurological disorders are diseases of the central and peripheral nervous system. The jurisdiction starts from Cerebral cortex and moves down through brain stem, spinal cord, cranial nerves, peripheral nerves, nerve roots, autonomic nervous system, neuromuscular junction, and finally involves muscles.

This module will provide students with a multidisciplinary approach to understanding the etiology of neurological and mental disorders. Neurological problems are the leading cause for disability globally. An estimated 1-billion people around the world have a neurological disorder or disease, which is almost 15-percent of the world's population. According to WHO more than 6 million people die because of stroke each year; over 80% of these deaths take place in low- and middle-income countries. Psychiatric disorders are also major human toll of ill health. According to 2012 WHO data, Neuro-Psychiatric disorders are among 12 leading causes of disability and death in Pakistan.

In this module students will learn about the etiology of common disorders encountered by neurologists and psychiatrists and develop comprehensive understanding of the biological, pathological, psychological and social factors behind these disorders. The basis for pharmacological treatments for conditions such as epilepsy, Parkinson's disease and schizophrenia will also be discussed.

COURSE OBJECTIVES AND TEACHING STRATEGIES

At the end of the module the students will be able to:

COMMUNITY MEDICINE

OBJECTIVES	LEARNING STRATEGY
1. Poliomyelitis & Prevention	Tutorial
• Describe poliomyelitis and its epidemiology	
• Classify different types of poliomyelitis	
• Discuss its control & prevention	
• Explain Global Polio Eradication Initiative	
2. Tetanus & Prevention	Interactive lecture
• Describe Tetanus & its Epidemiology	
• Classify its types	
• Explain its control & prevention	
3. Leprosy & Prevention	
• Describe Leprosy & its Epidemiology	
• Classify the different types of Leprosy	
• Discuss its control & prevention	
• Explain the national Leprosy Control Program	
4. Stroke & Prevention	
• Describe Stroke & its epidemiology	
• Explain the risk factors of Stroke	
• Discuss its control & prevention	
5. Rabies & Prevention	
• Describe Rabies & its epidemiology	
• Discuss its control & prevention	
6. Snake bite & prevention	Tutorial
• Classify Snakes	
• Identify the characteristic features of different types of Snake Venom	
• Discuss epidemiology of snake bite	
• Explain the management of snake bite	
• Discuss the preventive measures of snake bite	
7. Introduction to mental health	
• Describe Mental Health	
• List mental health problems	
• Discuss recommendations by World Health Report 2001 for Mental Health.	
• Explain prevention and control of mental health problems	
8. Substance Abuse	
• Describe Substance abuse & its epidemiology	
• Identify the criteria of drug addiction	
• Classify psycho-active drugs	
• Describe the phases of Drug addiction	
• Explain the control & Prevention of substance abuse	

FAMILY MEDICINE

OBJECTIVES	LEARNING STRATEGY
Biopsychosocial model & Non-pharmacological intervention	Interactive lecture
• Define the role of biological, psychological and social factors in custom continuation and healing of illness	
• Discuss the management of illness	
• Describe the role of personality, attitudes, attributes, impact of family society, social factors and cultures on the etiology, presentation and the management of illness	

MICROBIOLOGY

OBJECTIVES	LEARNING STRATEGY
1. Infections	Interactive lecture
• Define meningitis and encephalitis	
• Discuss common Central Nervous System infections including acute (pyogenic) bacterial infections, acute aseptic viral infections, chronic bacterial meningo-encephalitis, and fungal meningo-encephalitis	
2. Acute aseptic Viral infections	
• Viral pathogens causing meningitis, Enteroviruses, HSV-2, Arboviruses	
3. Parasitic infections of CNS	
• Discuss pathogenesis of cerebral malaria, Naeglaria fowleri and Cysticercosis	
4. Brain Abscess	
• Define brain abscess	
• Discuss the pathogenesis, morphology and diagnosis of brain abscess	
5. Examination of CSF	Tutorial
• Infection of Brain & Meninges & CSF interpretation	
• List the most common organisms that cause CNS infection in different age groups	
• Discuss CSF findings of bacterial meningitis, tuberculous meningitis, viral and fungal meningoencephalitis	
6. Infections of Peripheral Nervous System	Interactive lecture
• Describe infections of peripheral nervous system	

PHARMACOLOGY

OBJECTIVES	LEARNING STRATEGY
1. Sedatives & hypnotics: I & II	Interactive lecture
• Classify the drugs used as Sedatives & Hypnotics	
• Discuss their basic & clinical pharmacology	
2. Drug used in Migraine	Case- Based Learning
• List the drugs used in migraine	
• Discuss their basic & clinical pharmacology	
3. Drugs used in General anesthesia: I & II	Interactive lecture
• Discuss the drugs used as pre-anesthetic medications	
• Classify the drugs used as General anesthetics	
• Discuss their basic & clinical pharmacology	
4. Drugs used in Local anesthesia	Tutorial
• List the drugs used in local anesthetia	
• Classify the drugs used as local anesthetics	
• Discuss their basic & clinical pharmacology	
5. Drugs used in Epilepsy	
• Classify the drugs used in epilepsy	
• Discuss their basic & clinical pharmacology	
6. Drugs used in Psychosis	Case- Based Learning
• Classify antipsychotic drugs according to different aspect	
• Discuss their basic & clinical pharmacology	
7. Drugs used in Depression	
• Classify the Antidepressant drugs	
• Discuss their basic & clinical pharmacology	
8. CNS Stimulants and Hallucinogens	Tutorial
• Classify CNS stimulants and hallucinogens	
• Discuss their basic & clinical pharmacology	
9. Drugs used in Parkinson's	Case- Based Learning
• Classify the anti-Parkinson's drugs	
• Discuss their basic & clinical pharmacology	
10. Drugs of Abuse & Alcohol	Interactive lecture
• List the drugs of abuse	
• Discuss their basic & clinical pharmacology	

PATHOLOGY

OBJECTIVES	LEARNING STRATEGY
1. Patterns of nerve injury, Cerebral Edema & Raised ICP	Interactive lecture/Small Group Discussion
• Discuss the pathophysiology of reactions of Neurons, Glial tissue, Astrocytes, and Microglia to injury	
• Define cerebral edema; discuss its types and etiological factors	
• Discuss the pathogenesis, morphology and clinical presentation of cerebral edema, hydrocephalus and raised intracranial pressure	
• List and discuss the pathogenesis and morphology of different types of brain herniation	
2. Traumatic injuries to CNS	Interactive lecture
• Define traumatic vascular injury	
• Discuss the patterns of vascular injury in the CNS	
• Define epidural and subdural hematoma	
• Discuss the etiology, pathogenesis, and clinical presentation of epidural and subdural hematoma	
3. Cerebrovascular Diseases: (Hypoxia, Ischemia, Infarction)	
• Define cerebrovascular diseases	
• Classify types of ischemic and vascular injury to brain	
• Discuss the risk factors, pathogenesis, localization, morphology and clinical course of global and focal cerebral ischemia	
• Discuss the pathogenesis and morphology of various infarcts in the brain and spinal cord	
4. Hypertensive Cerebrovascular disease (CVD), intracranial hemorrhage and malformations	Tutorial
• Discuss effects of hypertension on CNS, types of CVD associated with hypertension, and hypertensive intra-parenchymal hemorrhage	
• Discuss the etiology, pathogenesis, morphology and clinical course of intracranial hemorrhages	
• Discuss hypertensive cerebrovascular disease & hypertensive encephalopathy	
• Discuss intracranial hemorrhage including intraparenchymal hemorrhage, Cerebral amyloid angiopathy, Subarachnoid Hemorrhage and Ruptured Saccular Aneurysms	
• Discuss vascular malformation including arteriovenous malformations, Cavernous malformations and Capillary telangiectasia	
5. Neurodegenerative Diseases	Interactive lecture/Small Group Discussion
• Define neurodegenerative diseases	
• List the important neurodegenerative diseases	
• Discuss relationship between proteins and neurodegenerative diseases	
• Discuss the molecular genetics and pathogenesis of Alzheimer disease	
• Discuss important morphologic features, clinical presentation and diagnostic criteria of Alzheimer disease	
• Discuss the molecular genetics and pathogenesis of Parkinson disease	
• Discuss important morphologic features and clinical presentation and diagnostic criteria of Parkinson disease	

6. Brain tumors	
• Classify CNS tumors according to WHO classification	
• List genetic mutations, pathogenesis, morphology and clinical features of brain tumors including all types of Glioma, Ependymoma, Medulloblastoma and Meningioma	
• Discuss the metastatic tumors to brain	
7. Diseases of skeletal muscles -I	
• Discuss diseases of neuromuscular junction with special reference to pathophysiology and clinical features of Myasthenia gravis, Lambert-Eaton Myasthenic Syndrome & Botulism	
• Discuss important features of Type I & II muscle fiber types	
• Discuss the pathogenesis and diagnostic profile of inflammatory neuropathies including dermatomyositis and Polymyositis	
• Discuss inherited diseases of skeletal muscle including X- linked muscular dystrophy with dystrophic mutation/ Duchenne and Becker Muscular Dystrophy	
8. Diseases of skeletal muscles-II	
• Discuss pathophysiology and clinical features of Inflammatory Neuropathy i.e. Guillain-Barre Syndrome (Acute Inflammatory Demyelinating Polyneuropathy)	
• Discuss pathophysiology and clinical features of Poliomyelitis	
• Discuss pathophysiology and morphology of Prion diseases	

NEUROLOGY

OBJECTIVES	LEARNING STRATEGY
1. Investigation of neurological disorders	Interactive lecture
• List various neuro-imaging techniques	
• Enumerate uses of various neurophysiological investigations [Electromyelogram (EMG), Nerve Conduction Study (NCS), and Electroencephalogram (EEG)]	
• Discuss the indications, contraindications and process for lumbar puncture	
• Interpret CSF reports of common conditions	
2. Lesion localization	
• Localize the likely site/s of a lesion in the nervous system based on patient's symptoms and signs	
• List the differential diagnosis based on detailed history, clinical presentation and complete examination findings	
3. Lesions of cranial nerve	Tutorial
• List the causes of cranial nerve pathologies	
• Diagnose common cranial nerve lesions that would explain loss of nerve function	
• Relate cranial nerve deficits to damage of adjacent unrelated structures	
4. Approach to coma	Interactive lecture
• Discuss pathophysiology of coma & altered mental status	
• Assign Glasgow Coma Scale (GCS) score to a given case scenario	
• Discuss assessment findings associated with coma & altered mental status	
• Discuss management of coma & altered mental status	

5. Approach to headache & Primary headaches (Trigeminal autonomic cephalalgias)	
• Classify headaches	
• Define primary headache syndrome	
• Differentiate among different patterns of headache	
• Describe the process of history taking of a patient with headache	
6. Clinical presentation of different primary headaches	
• Diagnose migraine and tension headache based on written data provided	
• Discuss management plans for migraine, tension headache and cluster headache	
7. Secondary headaches	
• List differential diagnosis of secondary headache	
• Assist common causes of secondary headache	
• List the red flag signs of secondary headache	
• Diagnose Trigeminal neuralgia on the bases of clinical signs & symptoms	
• Differentiate between common clinical findings seen in Trigeminal neuralgia and other facial pain syndromes	
8. Epilepsy and status epilepticus	Interactive lecture/ Case- Based Discussion
• Define epilepsy & status epileptics	
• Discuss pathophysiology of seizures	
• Classify epilepsy	
• Classify types of seizures on the bases of clinical presentation	
• List most common causes of seizures	
• Discuss pharmacological treatment of epilepsy and the management of status epilepticus	
9. Cerebrovascular Accidents (Stroke) - I	Interactive lecture/ Case- Based Learning
• Define the terms stroke, Cerebrovascular Accidents (CVA) & Transient Ischemic Attack (TIA)	
• Discuss causes of stroke	
• Distinguish ischemic stroke (cerebral infarct) from hemorrhagic stroke (intracerebral hemorrhage) in terms of etiology and pathology	
• Discuss assessment findings associated with stroke of different arterial territories (anterior and posterior circulation)	
• Identify the signs & symptoms related to TIA	
10. Cerebrovascular Accidents (Stroke) - II	
• Discuss the management plan of Cerebrovascular Accidents (acute treatment and secondary prevention)	
• Discuss the complications of Cerebrovascular Accidents	
11. Acute CNS infections	
• Describe the clinical features & investigations of acute CNS infections	
• Summarize the characteristics of their causative organisms	
• Interpret the CSF studies in a patient with acute CNS infection	
• Describe the possible complications of acute CNS infection in untreated cases	
• Explain the treatment plan for acute CNS infections	
• Differentiate b/w acute and chronic CNS infections based on data provided	

12. Chronic CNS infections	Interactive lecture
• List the common chronic CNS infections	
• Discuss clinical presentation of CNS TB and CNS fungal infections	
• Discuss the management & complications of Chronic CNS infection	
• Interpret the CSF studies in a patient with chronic CNS infection	
13. Approaches to movement disorders	
• Describe the presentation of patients with movement disorders	
• Discuss the pathogenesis and clinical features of Parkinson's disease (PD)	
• Discuss approach to a patient with PD	
• Summarize the differential diagnosis of Parkinson's disease	
• Outline the principles of drug management of Parkinson's disease	
• Discuss the clinical presentation and treatment of Wilson's disease	
14. Multiple sclerosis (MS) and other demyelinative diseases	
• List the common CNS and PNS demyelinative diseases	
• Describe common anatomical locations of MS plaques, and parts of the CNS that are particularly prone to developing lesions	
• Discuss the epidemiology and pathogenesis of MS	
• Discuss the clinical presentation, workup, differential diagnosis and management of MS	
15. Approach to neuropathies and Guillain-Barre syndrome (GBS)	
• Name the laboratory studies that are useful in the diagnosis of peripheral neuropathy (at least two)	
• List the most common inherited neuropathies	
• Differentiate between axonal and de-myelinated neuropathy	
• State the most common cause of neuropathy	
• Diagnose hereditary peripheral neuropathies based on pathological findings	
• Formulate an approach to the evaluation and differential diagnosis of a patient with peripheral neuropathy	
• Describe the clinical presentation and pathological findings of the GBS	
• Discuss its pathogenesis	
• Describe two of its key laboratory abnormalities	
• Interpret the CSF analysis in GBS	
• Discuss the management and complications of GBS	
16. Myasthenia Gravis	
• Describe the pathophysiology of Myasthenia gravis	
• Explain its clinical presentation & investigations	
• Discuss its long-term management	Interactive lecture
• Discuss the management of Myasthenia Crisis	
17. Dementia	
• State the causes, clinical presentation and investigations of dementia	
• List the differential diagnosis of dementia	
• Describe the principles of its management	

18. Muscular dystrophies	
• Define Muscular dystrophies	
• Classify their types	
• List the causes of Muscular dystrophies	
• Discuss their genetics & clinical features	
• Name the investigations related to Muscular dystrophies	
• Discuss the management plan and complications of Muscular dystrophies	
19. Neurological manifestations of Covid-19	
• Describe the neurological manifestations of Covid-19	

NEUROSURGERY

OBJECTIVES	LEARNING STRATEGY
1. Hydrocephalus	
• Define Hydrocephalus	Interactive lecture
• List common symptoms and signs of acute hydrocephalus in children	
• List common symptoms and signs of normal pressure hydrocephalus in adults	
• Define communicating and non-communicating hydrocephalus	
• Describe the difference in the treatments of these conditions	
2. Traumatic spinal cord injury	
• Discuss the initial management of spinal injury	
3. Traumatic brain injury	
• Describe the initial assessment of a patient with head injury	
4. Raised Intracranial Pressure (ICP)	
• Identify the symptoms and signs of raised ICP	
• Describe the evaluation of a patient with raised ICP with reference to Space Occupying Lesion (SOL)	
5. Brain tumors	
• Define brain tumors	
• Classify brain tumors	
• List their causes & clinical features	
• Name the investigations related to brain tumors	
• Discuss the management plan and complications of brain tumors	
6. Spinal tumors	
• Define spinal tumors	
• Classify spinal tumors	
• List the causes & clinical features of spinal tumors	Interactive lecture
• Name the investigations related to spinal tumors	
• Discuss the management plan of spinal tumors	

7. Compressive myelopathy	
• Define compressive myelopathy	
• List the causes of compressive myelopathy	
• Discuss its clinical features	
• State the investigations for this condition	
• Discuss its management	
8. Congenital disorders of CNS: Neural tube defects	
Define Neural tube defects	
List the causes of Neural tube defects	
Classify Neural tube defects	
List the investigations related to neural tube defect	
Discuss the clinical features & complications of neural tube defect	
Discuss the management plan of neural tube defect	

PSYCHIATRY

OBJECTIVES	LEARNING STRATEGY
1. Introduction to Mental Health, and Biopsychosocial model & Non-pharmacological intervention	Interactive lecture
• Define the concept of health and mental health	
• Describe positive mental health	
• Differentiate between Psychiatry and Psychology	
• Define the role of biological, psychological and social factors in custom continuation and healing of illness	
• Discuss the management of illness	
• Describe the role of personality, attitudes, attributes, impact of family society, social factors and cultures on the etiology, presentation and the management of illness	
2. Counseling & Psychotherapy	Tutorial
• Define counseling	
• Discuss attending and listening, verbal techniques and role of empathy in healing of illness	
• Discuss the role of counseling, informational care and handling difficult patients and their families	
• Differentiate among ✓ Counseling, Psychotherapy & Active listening ✓ Types of Psychotherapies/counseling ✓ Empathy, sympathy and apathy	
• Discuss the prerequisites of counseling/ psychotherapy	
• Differentiate between boundary and barrier	
• Describe the basic rules of counseling	
• Explain rules and boundaries setting of counseling	
• Discuss some basics dos and don’ts of counseling	

3. Breaking bad news	
• List the application of biopsychosocial model in communicating with patient & his family	
• Discuss the methods to address the concerns and emotional reactions of patients	
• Discuss disclosure models of breaking bad news and management of the related issues	
4. Anxiety disorders- I; Introduction, types & etiology	Interactive lecture
• Define normal and abnormal anxiety	
• Describe the presentation of anxiety disorders	
• Discuss their etiological theories	
• Distinguish the essential features of generalized anxiety disorder (GAD), panic attacks and panic disorder, phobias (Specific, Agoraphobia and Social Phobia), Obsessive compulsive disorder (OCD), Acute stress reaction and post-traumatic stress disorder (PTSD)	
5. Anxiety disorders- II; differentiating points, diagnosis & management	
• Discuss the clinical features and etiology of PTSD and Acute stress reaction	
• Explain the causes of PTSD, Acute Stress Disorder and Obsessive Compulsive Disorder	
• Describe the management of these disorders	
6. Depressive disorders	
• Describe the diagnostic criteria for mood disorders (Depressive disorder)	
• Identify common risk factors for mood disorders	
• Discuss their management	
• Discuss Self-harm, and Suicide and its risk factors	
7. Bipolar Affective disorder	
• Describe the diagnostic criteria and types of bipolar affective disorder	
• Identify the common risk factors and co-morbids for bipolar affective disorder	
• Discuss the management of bipolar affective disorder	
8. Somatic and Medically Unexplained Symptoms	
• Discuss the assessment of medically unexplained symptoms according to their severity	
• Explain the approach for establishing an appropriate diagnosis	
• State the management of these condition including a stepped approach	
• Describe the diagnostic approach for patients with fits/attack (Epilepsy vs Convulsion disorder)	
9. Schizophrenia and related disorders	
• Explain the concept of Psychosis and its presentation, and prevalence of various psychotic disorders	
• Diagnose Acute Psychotic disorders, schizophrenia, and Delusional disorders based on given criteria	
• Discuss the principles of treatment of schizophrenia and other psychotic disorders	
• Describe their etiological factors and prevalence	
10. Disorders of Addictive Behaviour / Alcohol & Other Substance use	Tutorial
• Define Addiction	
• Discuss the behavioral issues related to addiction	
• Differentiate among tolerance, excessive use, abuse/misuse, dependence, withdrawal and intoxication	
• Classify drugs of addiction	

• Discuss briefly the effects of alcohol and other illicit drugs on the body (cannabis, opioids, cocaine, amphetamines and LSD)	
• Describe the modes of action of alcohol and other illicit drugs	
• Explain the psychological, emotional, physical and social insults of these drugs	
• Describe delirium tremens	
• Describe the impact of suddenly stopping the use of addictive drugs	
• Discuss the difference of harm minimization and drug eradication	
11. Psychosexual disorders	Interactive lecture
• Discuss different types of psychosexual disorders	
• Describe their characteristic features, etiology and prevalence	
• Explain principles of management of these conditions	
12. Introduction to childhood psychiatric disorders	
• Discuss the presentation of various childhood psychiatric disorders, i.e. Attention deficit hyperactive disorder (ADHD), Autism Spectrum Disorder, Depressive disorder and Mental Retardation	
• Categorize mental health disorders (such as emotional disorders, behavior disorders) in children and adolescents	
• Discuss the factors impacting childhood mental and emotional health	
• Describe the use of multimodal treatment	
13. Introduction to old age psychiatric disorders, Delirium and Dementia	Tutorial
• Describe the variations in presenting psychiatric symptoms in this age group	
• Explain the high likelihood of co-morbidity in this age group	
• Diagnose common psychiatric illnesses in the geriatric group	
• Describe the use of multimodal treatment in old age patients	
• Name standardized assessment tools and their use in measuring cognitive impairment	
• Formulate the differential diagnosis of a patient presenting with cognitive impairment suggestive of dementia	
• Compare features of dementia versus delirium	
• Formulate the clinical assessment and differential diagnosis of an elderly patient with delirium	
• Explain the salient features of delirium and dementia	

PAEDIATRICS

OBJECTIVES	LEARNING STRATEGY
1. Cerebral Palsy and intellectual disability	Interactive lecture
• Define cerebral palsy	
• List its causes	
• Describe the topographic classification of cerebral palsy	
• Discuss the associated conditions in cerebral palsy	
• Explain the management of cerebral palsy	
2. Common CNS infections in children	
• Enumerate common pathogens of CNS infections in various ages	
• List the common signs and symptoms of CNS infections	
• Interpret the CSF reports of cases with CNS infections	
• Describe management of CNS infections and their complications	
3. Upper and lower motor neuron lesions	Tutorial
• Differentiate between the symptoms and signs of upper and lower motor neuron lesions	
• Identify the common conditions associated with Acute flaccid paralysis (AFP) [Polio, GBS, transverse myelitis and traumatic neuritis]	
• Identify the common conditions associated with upper motor neuron lesions	
• Discuss the importance of Polio eradication program in Pakistan	
4. Seizures in Children	Interactive lecture
• Identify various types of fits based on data provided	
• List causes of seizures in children	
• Define febrile seizures & childhood epilepsy	
• Discuss management of acute seizures	
5. Neuroprotective studies	
• Differentiate between primary and secondary brain injuries	
• Identify 10 strategies that can prevent secondary brain injury in brain trauma.	

RADIOLOGY

OBJECTIVES	LEARNING STRATEGY
1. CT Scan Brain	Tutorial
• Describe the role of radiographic imaging studies in diagnosis and management of stroke patients	
• Identify the following on a CT film:	
i. Normal cranial and neurological anatomy	
ii. Skull fracture	
iii. Extra-cerebral blood	
iv. Intracranial blood	
v. Appearance of both hemorrhagic and ischemic strokes	
2. MRI Brain	
• Identify the radiological features of normal and diseased spine and vertebral column like TB, Disk compression, METS and meningitis	
3. Neuro-radiology of brain tumors, head injury and hydrocephalus	
• Describe the role of the diagnostic radiological modalities in the evaluation of patients with brain tumor, head injury and hydrocephalus	
• Discuss the advantages and limitations of the following diagnostic tools used in the evaluation of brain tumors:	
i. Plain skull radiograph	
ii. Plain spine radiograph	
iii. CT scan of head or spine	
iv. MRI of head or spine	

RESEARCH & SKILLS DEVELOPMENT CENTER

	LEARNING STRATEGY
Lumbar puncture	Small Group Discussion
Perform lumbar puncture with proper steps on mannequin.	

LEARNING RESOURCES

SUBJECT	RESOURCES
COMMUNITY MEDICINE	**TEXTBOOKS** 1. Preventive and Social Medicine by K Park 2. Community Medicine by M. llyas 3. Basic *Statistics* for the Health Sciences by Jan W Kuzma 4. Textbook of Community Medicine and Public Health, 2018. Saira Afzal, Sabeena Jalal
NEUROLOGY	**TEXTBOOKS** 1. Davidson's Principles and Practice of Medicine 2. Kumar and Clark's Clinical Medicine, Edited by Parveen Kumar, 9th Edition
NEUROSURGERY	**TEXTBOOK** 1. Bailey & Love's Short Practice of Surgery , 26th Edition
PATHOLOGY	**TEXTBOOKS** 1. Robbins & Cotran, Pathologic Basis of Disease,9th edition. 2. Rapid Review Pathology,4th edition by Edward F. Goljan MD **WEBSITES:** http://library.med.utah.edu/WebPath/webpath.html http://www.pathologyatlas.ro/
PEDIATRICS	**TEXTBOOKS** 1. Nelson Textbook of Pediatrics, 19th Edition 2. Textbook of Pediatrics by PPA, preface written by S. M. Haneef 3. Clinical Pediatrics by Lakshmanaswamy Aruchamy, 3rd Edition
PHARMACOLOGY	**TEXT BOOKS** 1. Lippincot Illustrated Pharmacology 2. Basic and Clinical Pharmacology by Katzung
PSYCHIATRY	**TEXT BOOK** 1. Oxford textbook of psychiatry by Michael G. Gelder, 2nd Edition 2. Handbook of Behavioural Sciences, by Mowadat H. Rana 3. Drugs used in Psychiatry, by Prof. Muhammad Iqbal Afridi 4. Kaplan Series, Behavioural Sciences, Psychiatry

ASSESSMENT METHODS:

- **Best Choice Questions(BCQs)** also known as MCQs (Multiple Choice Questions)
- **Objective Structured Practical/Clinical Examination (OSPE or OSCE)**

Internal Evaluation

- Students will be assessed comprehensively through multiple methods.
- 20% marks of internal evaluation will be added to JSMU final exam. That 20% may include class tests, assignment, practicals and the internal exam which will all have specific marks allocation.

Formative Assessment

Individual department may hold quiz or short answer questions to help students assess their own learning.

The marks obtained are not included in the internal evaluation

For JSMU Examination Policy, please consult JSMU website!

More than 75% attendance is needed to sit for the internal and final examinations

LNH&MC EXAMINATION RULES & REGULATIONS

- Student must report to examination hall/venue, 30 minutes before the exam.
- **Exam will begin sharp at the given time.**
- No student will be allowed to enter the examination hall after 15 minutes of scheduled examination time.
- Students must sit according to their roll numbers mentioned on the seats.
- **Cell phones are strictly not allowed in examination hall.**
- If any student is found with cell phone in any mode (silent, switched off or on) he/she will be not be allowed to continue their exam.
- No students will be allowed to sit in exam without University Admit Card, LNMC College ID Card and Lab Coat
- Student must bring the following stationary items for the exam: Pen, Pencil, Eraser, and Sharpener.
- Indiscipline in the exam hall/venue is not acceptable. Students must not possess any written material or communicate with their fellow students.

SCHEDULE:

WEEKS	4TH YEAR	MONTH
WEEKS 1 -8	NEUROSCIENCES II MODULE	February 14, 2022 April 6, 2022
4 WEEKS	HEAD & NECK & SPECIAL SENSES 2 (EYE)	
4 WEEKS	HEAD & NECK & SPECIAL SENSES 3 (EYE)	
4 WEEKS	ENDOCRINOLOGY 2	
6 WEEKS	REPRODUCTIVE 2	
4 WEEKS	URINARY 2	
2 WEEKS	DERMATOLOGY	
2 WEEKS	ORTHOPEDICS	
2 WEEKS	REHABILITATION