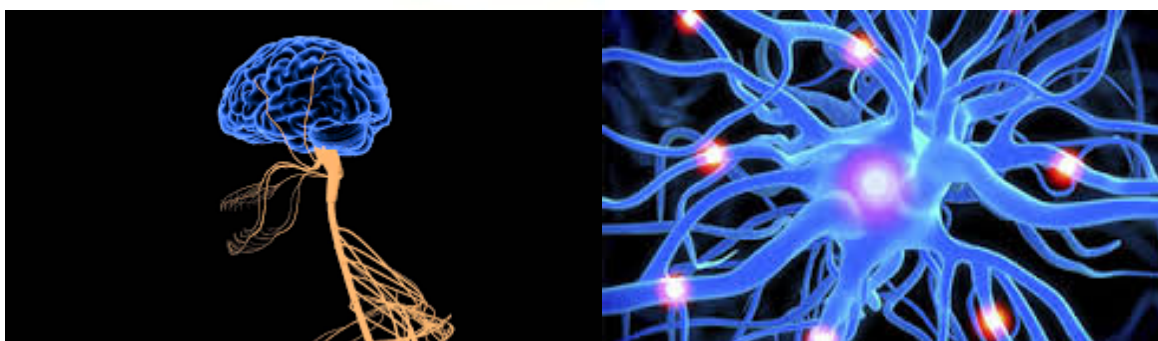
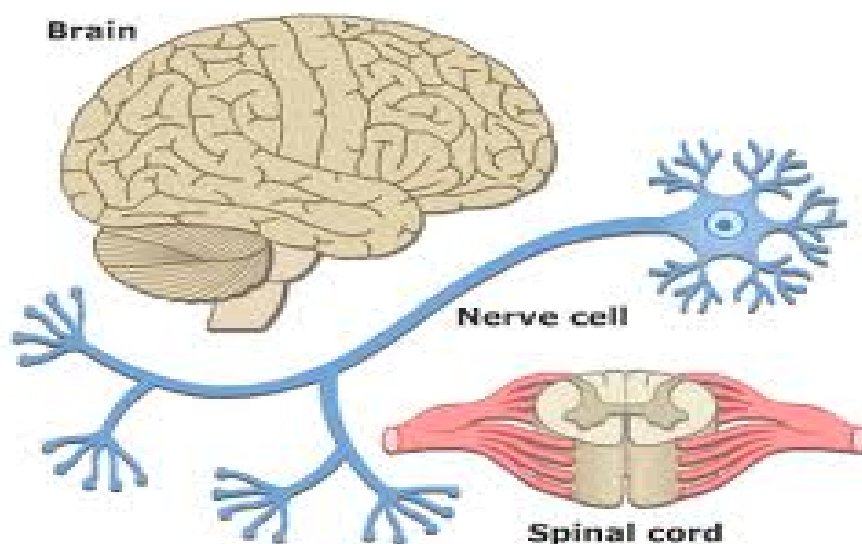


AJK Medical College Muzaffarabad



STUDY GUIDE NEU-IV Module (0321) Module (5th Year MBBS)



Module Duration: 2 weeks

Starting From:

Pre-Requisites: FM, CVS-IV, RES-IV, GIT IV, Hematology, REN-II,
Reproduction-II & Endocrine -II Modules

DEPARTMENT OF MEDICAL EDUCATION

CONTENTS

1. **Module Team**
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3. **Module themes**
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Module Team

1- Dr. Kh Imtiaz Ahmed	Module planner
2- Dr. Mzhar Hamdani	Module Coordinator
3- Dr. Khalid Awan	DME
4- Dr. Mateen Khan	Member
5- Dr. Raja Manzoor	Member
6- Dr. Shafaq Hanif	Member

BACKGROUND:

The neurological disorders are diseases of the brain, spine and the nerves that connect them. There are more than 600 diseases of the nervous system, such as brain tumors, epilepsy, Headache, Parkinson's disease and stroke as well as less familiar ones such as ALS Arteriovenous Malformation, Brain Aneurysm, Dural Arteriovenous Fistula, Memory Disorders, Multiple Sclerosis, Peripheral Neuropathies etc.

RATIONALE:

Overall burden of Neurological Diseases in the world is around 6.5%. It ranges from 4-5% in lower income countries (Pakistan) as compared to 10-11% in high income countries. Over all death and disability related to Neurological diseases is higher than HIV/AIDS, neoplasms, ischemic heart diseases and Tuberculosis. More than half of the disability due to neurological diseases is related to stroke followed by Dementias, Migraine, Epilepsy and tetanus.

The burden of neurological diseases in developing countries is rising due to increasing life expectancy, urbanization of population and better diagnostic facilities. It is the need of time to improve health care facilities for patients with neurological disorders so that we can reduce the burden of disability as well as its social consequences.

Based on their existing knowledge and skills this course will help final year students to build sound foundation of their knowledge and skills in the domain of Neuro medicine.

GOAL:

The goal of this module is to achieve the highest professional standards for patient care, prevention and management of neurological diseases.

Curricular Philosophy:

The predominant curricular philosophy will be constructivist.

COMPETENCIES:

The focus of this module will be on the following competencies of students.

Patient care

Medical knowledge

Communication skills

Professionalism

Targeted Skills

Focused History taking in patients with Neurological disorders

General and focused systemic Physical Examination of patients with Neurological disorders

Outcomes:

By the end of the course the participants will be proficient in the evaluation and management of common medical conditions in patients suffering from Neurological disorders.

Course structure:

In this course maximum emphasis will be on history taking and physical examinations. The students will start with general aspects of history taking and will be provided opportunities to proceed with focused history taking of Nervous system.

Simultaneously they will be practicing physical examination skills. A didactic session comprising of lectures will guide them and provide essential information about different important condition of Nervous system. Major emphasis will be on discussion, analysis, history taking and performance of physical examinations and deductions to reach a provisional diagnosis. All students will have opportunity to work individually as well as in small groups and will be guided by the faculty.

There will be some flexibility in schedule depending upon the availability of a patient with the disease during ambulatory and bed side teaching.

Teaching Strategies/Methods:

The content of this module will be delivered by a combination of different teaching strategies. These include LIGS, SGD, Bed side and ambulatory teaching. There will be CPCs as well in the departments in teaching hospitals and students presentations in grand rounds.

Your predominant activities during this module will be clinical clerkship. You will be actively involved in evaluation and management of patients in teaching hospitals. There will be two LGIS (45-minutes each) in the morning. This activity will be used to activate your prior knowledge of basic and clinical subjects and to pass on general concepts regarding the themes. It will also provide you guidance for clinical activities and correction of any misconceptions.

Outcomes

At the end of this module you will be able to:

- 1- Evaluate patients suffering from neurological diseases.
- 2- Carryout and interpret relevant and cost effective investigation
- 3- Take measures for prevention of disease and contribute towards promotion of health.
- 4- Refer the cases for specialist care at appropriate time.
- 5- Effectively communicates with the patient families, paramedic, nurses and other individuals.
- 6- Deliver proper information to the patient for a shared plan of care.

Assessment:

In this 2 weeks course there will be surprise clinical tests.

A full-fledged summative assessment will be taken after two weeks at the end of the course. Marks obtained in these examinations will contribute 30% (internal assessment) towards end of year Professional University Examination.

Quality assurance of assessment will be ensured by taking essential measures before, during and after assessment. The important measures will be blueprinting, standard setting, editing of MCQs, post-hoc analysis and conducting exams strictly according to the institution policy.

Table of specifications (TOS)

Theme	Percentage
Hemiplegia	20
CNS Infections	15
Headache	15
Seizures	15
Polyneuropathy	10
Movement disorders	10
Easy Fatigability and Ptosis	5
Dementia	5
Head and spinal injury	5

LOs for Module

By the end of this module students will be able to:

- 1- Hemiplegia (Deviated mouth with difficulty of walk (stroke, SOL)

i-Ischemic Stroke

Cognitive

- 1- List essential features for diagnosis of stroke.
- 2- Describe symptoms and signs of obstruction of carotid circulation.
- 3- Describe symptoms and signs of obstruction of vertebrobasilar circulation
- 4- Discuss role of diagnostic imaging in stroke.
- 5- Discuss laboratory findings in stroke.
- 6- Describe targets of lowering Blood Pressure in stroke.
- 7- Describe targets of lowering Blood Pressure in stroke.

- 8- Discuss role of anti-platelets in management of stroke
- 9- Discuss indications of anti-thrombolytic therapy in stroke
- 10- Discuss contra-indications of anti-thrombolytic therapy in stroke
- 11- Discuss prognosis of stroke.

ii- Intracerebral Hemorrhage

Cognitive

- 1- Describe symptoms and signs of Intracerebral Hemorrhage.
- 2- Discuss laboratory findings in Intracerebral Hemorrhage.
- 3- Discuss role of diagnostic imaging in Intracerebral Hemorrhage.
- 4- Discuss laboratory findings in Intracerebral Hemorrhage.
- 5- Discuss treatment of Intracerebral Hemorrhage
- 6- Discuss prognosis of Intracerebral Hemorrhage.

iii- Spontaneous Subarachnoid Hemorrhage

Cognitive

- 1- List 3 essential features for diagnosis Spontaneous Subarachnoid Hemorrhage.
- 2- Describe symptoms and signs of Spontaneous Subarachnoid Hemorrhage.
- 3- Discuss role of imaging in diagnosis of Spontaneous Subarachnoid Hemorrhage.
- 4- Discuss laboratory findings in Spontaneous Subarachnoid Hemorrhage.
- 5- Discuss treatment medical and surgical and modalities of treatment in Spontaneous Subarachnoid Hemorrhage.
- 6- Explain prognosis in Spontaneous Subarachnoid Hemorrhage.

Psychomotor

- 1- Take focused history of patient suffering from stroke
- 2- Perform physical examination of patient from stroke
- 3- Prepare plan of investigations for a patient with stroke

Affective

- 1- Demonstrate politeness while communicating with patient.
- 2- Respond to patient queries in a gentle manner.
- 3- Counsel attendants of patients suffering from stroke.

2- Infections of Central Nervous System

i-Meningitis

Cognitive

- 1- List etiological classification of meningitis.
- 2- Describe symptoms and signs of meningitis
- 3- Discuss laboratory findings in meningitis.
- 4- Discuss indications and contraindications of Lumbar puncture.
- 5- Discuss differential diagnosis of meningitis.
- 6- Discuss complications of meningitis.
- 7- Discuss treatment of meningitis.
- 8- Describe symptoms and signs of tuberculous meningitis
- 9- Discuss laboratory findings in tuberculous meningitis.
- 10- Discuss complications of tuberculous meningitis.
- 11- Discuss treatment of tuberculous meningitis.

ii - Encephalitis

Cognitive

- 1- List essential of diagnosis of Encephalitis.
- 2- Describe symptoms and signs of Encephalitis
- 3- Discuss laboratory findings in Encephalitis.
- 4- Discuss differential diagnosis of Encephalitis.
- 5- Discuss complications of Encephalitis.
- 6- Discuss treatment of Encephalitis.
- 7- Discuss prevention of Encephalitis.

Psychomotor

- 1- Take focused history of patient suffering from Encephalitis/meningitis
- 2- Perform physical examination of patient with Encephalitis/meningitis
- 3- Perform fundoscopy prior to lumbar puncture.

- 4- Observe lumbar puncture and perform under supervision

Affective

- 1- Demonstrate sympathy with patient while counseling in cases of Encephalitis.

3-Headache

i-Migraine

Cognitive

- 1- List essentials of diagnosis of migraine.
- 2- Describe symptoms and signs of migraine
- 3- Differentiate among types of headaches based on symptoms and signs
- 4- List underlying causes and precipitating factors of different types of headache disorders.
- 5- Recommend appropriate non-pharmacologic measures for headache treatment and prevention of headache.
- 6- Based on patient-specific data; determine when pharmacologic therapy is indicated for headache.
- 7- Propose individualized pharmacologic treatment regimens for the acute and chronic management of headache syndromes.
- 8- Discuss symptomatic treatment of migraine.
- 9- Discuss prophylactic treatment of migraine.

ii- Tension type headache

- 1- Describe symptoms and signs of Tension type headache
- 2- Discuss symptomatic treatment of Tension type headache

iii - Cluster headache

- 1- Describe symptoms and signs of cluster headache
- 2- Discuss symptomatic treatment of cluster headache

iv- Post Traumatic headache

- 1- Describe symptoms and signs of Post Traumatic headache
- 2- Discuss symptomatic treatment of Post Traumatic headache

v- Headache due to Giant Cell

(Temporal or Cranial) Arteritis

- 1- Describe symptoms and signs of Post headache due to temporal arteritis
- 2- Discuss treatment of headache due to temporal arteritis

vi - Headache Due to Intracranial Mass Lesions

- 1- Describe symptoms and signs of headache due to intracranial mass lesions.
- 2- Discuss treatment of headache due to due to intracranial mass lesions.

vii-Trigeminal Neuralgia

- 1- List essentials of diagnosis of Trigeminal Neuralgia
- 2- Describe symptoms and signs of Trigeminal Neuralgia
- 3- Discuss differential diagnosis of Trigeminal Neuralgia
- 4- Discuss treatment of Trigeminal Neuralgia.

Psychomotor

- 1- Take focused history of patient presenting with headache.
- 2- Perform physical examination of patient with headache.
- 3- Perform fundoscopy in patients presenting with headache

Affective

- 1- Demonstrate sympathy with patient while examining patients with headache.

4-Seizures

i-Epilepsy

Cognitive

- 1- List essential of diagnosis of Epilepsy.
- 2- List etiology of Epilepsy.
- 3- Describe classification of seizure disorders.
- 4- Describe symptoms of simple partial seizures.
- 5- Describe symptoms of complex partial seizures.
- 6- Describe symptoms of absence (petit mal) seizures.
- 7- Describe symptoms of atypical absence seizures
- 8- Describe symptoms of myoclonic seizures
- 9- Describe symptoms of tonic-clonic (Grand mal) seizures
- 10- Describe symptoms and signs of Epilepsy

- 11- Discuss laboratory findings in Epilepsy.
- 12- Discuss role of imaging in diagnosis of Epilepsy.
- 13- Discuss differential diagnosis of partial seizures.
- 14- Discuss differential diagnosis of generalised seizures.
- 15- Discuss general measures in treatment of Epilepsy.
- 16- Discuss choices of anti-epileptic medications in different types of Epilepsy
- 17- Discuss treatment of status epilepticus
- 18- Discuss discontinuance of anti-epileptic therapy.
- 19- Explain treatment options refractory to pharmacological management.
- 20- Discuss management of solitary seizure.

Psychomotor

- 1- Take focused history of patient presenting with seizures.
- 2- Perform physical examination of patient with seizures.

Affective

- 1- Demonstrate sympathy with patient while explaining prognosis of seizures.

5-Neuropathies

i-Polyneuropathy

Cognitive

- 1- List essential features for diagnosis of Polyneuropathy.
- 2- List inherited different types of inherited neuropathies.
- 3- Describe neuropathies associated with diabetes mellitus.
- 4- Describe neuropathies associated with uremia.
- 5- Describe neuropathies associated with alcohol intake and nutritional deficiencies.
- 6- Describe neuropathies associated with leprosy.
- 7- List essential features for diagnosis of Acute Idiopathic Polyneuropathy (Guillain-Barré Syndrome)
- 8- Describe symptoms and signs of Guillain-Barré Syndrome
- 9- Discuss differential diagnosis of Guillain-Barré Syndrome
- 10- Discuss treatment of Guillain-Barré Syndrome

ii-Mono-neuropathy

- 1- List essential features for diagnosis of Bell Palsy
- 2- Describe symptoms and signs of Bell Palsy
- 3- Discuss treatment of Bell Palsy.

Psychomotor

- 1- Take focused history of patient presenting with neuropath.
- 2- Perform physical examination of patient with neuropathies

Affective

- 1- Demonstrate sympathy with patient while explaining prognosis of neuropathies.

6-Movement disorders

Cognitive

Describe different types of tremors.

i-Benign Essential (Familial) Tremor

- 1- List essential features for diagnosis of Benign Essential (Familial) Tremor
- 2- Describe symptoms and signs Benign Essential (Familial) Tremor
- 3- Discuss treatment of Benign Essential (Familial) Tremor

ii-Parkinsonism

- 1- List essential features for diagnosis of Parkinsonism
- 2- Discuss etiology of Parkinsonism
- 3- Describe symptoms and signs Parkinsonism
- 4- Discuss differential diagnosis of Parkinsonism
- 5- Discuss treatment of Parkinsonism

iii-Huntington Disease

- 1- List essential features for diagnosis of Huntington Disease
- 2- Describe symptoms and signs Huntington Disease
- 3- Discuss differential diagnosis of Huntington Disease
- 4- Discuss treatment of Huntington Disease

iv-Gilles de la Tourette Syndrome

- 1- Describe symptoms and signs of Gilles de la Tourette Syndrome
- 2- Discuss treatment of Gilles de la Tourette Syndrome

Psychomotor

- 1- Take focused history of patient presenting with tremors and tics.
- 2- Perform physical examination of patient with tremors and tics

Affective

- 1- Demonstrate sympathy with patient while explaining prognosis of tremors and tics

7- Easy Fatigability and Ptosis

i-Myasthenia Gravis

- 1- List essential features for diagnosis of Myasthenia Gravis
- 2- Describe symptoms and signs of Myasthenia Gravis
- 3- Discuss differential diagnosis of Myasthenia Gravis
- 4- Discuss treatment of Myasthenia Gravis

ii-Multiple sclerosis

- 1- List essential features for diagnosis of Multiple sclerosis
- 2- Describe symptoms and signs of Multiple sclerosis
- 3- Describe laboratory findings in Multiple sclerosis
- 4- Discuss role of imaging in diagnosis of Multiple sclerosis
- 5- Discuss differential diagnosis of Multiple sclerosis
- 6- Discuss treatment of Multiple sclerosis

iii-Muscular dystrophies

List different types of muscular dystrophies with diagnostic clinical features

iv-Degenerative Motor Neuron Diseases

- 1- List essential features for diagnosis of Motor Neuron Diseases
- 2- Describe symptoms and signs of Motor Neuron Diseases
- 3- Explain different types of Motor Neuron Diseases
- 4- Describe laboratory findings in Motor Neuron Diseases
- 5- Discuss role of EMG in diagnosis of Motor Neuron Diseases
- 6- Discuss differential diagnosis of Motor Neuron Diseases
- 7- Discuss treatment of Motor Neuron Diseases

Psychomotor

- 1- Take focused history of patient presented with weakness.
- 2- Perform physical examination of patient with weakness

Affective

- 1- Demonstrate sympathy with patient while explaining prognosis of myasthenia gravis, motor neuron disease and multiple sclerosis

8-Dementia

- 1- List essential features for diagnosis of Dementia
- 2- List common causes of age related Dementia
- 3- Describe symptoms and signs of Motor Neuron Diseases
- 4- Discuss neuropsychological assessment of Dementia
- 5- Discuss role of imaging (MRI and Positron-emission tomography -PET) in diagnosis of Dementia
- 6- Describe laboratory findings in Dementia
- 7- Discuss differential diagnosis of Dementia
- 8- Discuss Non-Pharmacological treatment of Dementia

Psychomotor

- 1- Take focused history of patient suffering from dementia.
- 2- Perform neuropsychiatric assessment of patient with dementia.
- 3- Perform physical examination of patient with dementia

Affective

Demonstrate sympathy with patient while explaining prognosis of with dementia

9-Head and Spinal Injury

Cognitive

- 1- Discuss acute sequelae of head injury
- 2- Discuss Chronic sequelae of head injury
- 3- Discuss management of head injury and spinal trauma.

Psychomotor

- 1- Take focused history of patient suffering from head injury.
- 2- Perform physical examination of patient from head injury

Affective

- 1- Demonstrate sympathy with patient while explaining prognosis of head injury

Clinical Cases**Case 1:**

A 18 years old boy has history sudden onset of severe palpitations followed by weakness of left half of body and deviation of mouth. On exam he is fully conscious with HR of 150/min and irregular. Detailed neurological exam showed R 7th nerve palsy of UMN type with hemiparesis of left side of UMN type. CT scan brain showed hypodense area in parietal lobe on right side. Patient started on treatment of stroke. His past history is significant for sore throat and severe joint pain at the age of 5 years.

What is most likely diagnosis?

What investigations should be done in this case?

After three days of hospital admission he developed headache with high grade fever up to 104°F.

His CT scan brain repeated with contrast this time. Same lesion showed marked rim enhancement;

What is differential diagnosis?

What is most likely diagnosis now?

Case 2:

34 yrs old female has history of episodic headache for most days of month for last two years. She also had history of loss of consciousness that lasted for 5 min with tongue bite and incontinence 1 year back, twice in a month, and she was put on Anti Epileptic Drugs. Clinical exam is unremarkable except mild sensory-neuronal deafness on right side and subcutaneous skin nodules.

What is primary diagnosis?

What are investigations of choice at this time?

How you will counsel this patient about possible treatment options and disease transmission?

Case 3:

A 55 yrs old male known case of DM and IHD for last 13 years now presented with severe burning feet and numbness for 6 months. On examination there was normal motor system but sensory system showed decreased pin prick below knee and marked loss of sense of vibration sense below ankle. He is taking Glimipride, Aspirin, atorvastatin and Cardaron (amiodaron). His HbA1C is 7. ECG showed Q waves in lateral chest leads.

What is likely diagnosis?

What could be the likely causes of this condition in above case?

Case 4:

A 23 year old female has history of easy fatigability for last 6 months. She performs better in the morning but develops double vision and even difficulty in uttering words at evening time. She also gives history of difficulty of swallowing occasionally. On exam there is bilateral ptosis. Rest of sensory and motor system is normal. Cranial nerves are intact.

How should this patient be investigated?

List at least 3 investigations that can help in the diagnosis?

What is most dangerous complication of this disease?

Name other conditions that can mimic the above diagnosis.

Case 5:

15 yrs old male has history of RTA with head injury 1 yr back. He admitted to hospital for 24 hours and then discharged at that time. He had history of clear watery discharge from nose off and on since then. 10 days back he developed headache and vomiting for which he was treated in local hospital without improvement. Three days after onset of his symptoms he developed high grade fever up to 103°F with one episode of tonic clonic fits. On examination there is marked neck stiffness. CSF showed Protein of 700, glucose of 33 mg, glucose of 144mg/dl, and WBCs of 1498. A diagnosis of meningitis was made. During hospital stay, he had two more episodes of fits.

1- What is likely cause of meningitis in this case?

2- What should be the investigation plan in this patient?

3- Is there any neurosurgical intervention indicated in this case?

AJK Medical College, Muzaffarabad

Schedule for NEU-IV Module (0321) – 5thYear MBBS

Week □1

Time	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
8:00am-8:40am	LGIS Introduction of module Ischemic stroke Dr. Muzhar/ Dr. Imtiaz	LGIS Meningitis Dr. Kh. Imtiaz Ahmed	LGIS Headache (1) Dr. Muzhar Hamdani	LGIS Role of imaging in Neurological disorders Dr. Shaukat Dar	LGIS Epilepsy (2) Dr. Muzhar Hamdani	CLINICAL ROTATIONS (8:00 AM to 2:00 PM)
8:45am-9:25am	LGIS Stroke (Haem/SAH) Prof. Javed Rathore	LGIS Encephalitis Prof. Nagi	LGIS Headache (2) Migraine Col. Dr. Kamran Butt	LGIS Epilepsy (1) Dr. Muzhar Hamdani	LGIS Polyneuropathies Dr. Munazza	
9:30am-2:00pm	CLINICAL ROTATIONS	CLINICAL ROTATIONS	CLINICAL ROTATIONS	CLINICAL ROTATIONS	CLINICAL ROTATIONS	
Break (2:00 – 5:00 PM)						
5:00-8:00 pm	CLINICAL ROTATIONS	CLINICAL ROTATIONS	CLINICAL ROTATIONS	CLINICAL ROTATIONS	CLINICAL ROTATIONS	

AJK Medical College, Muzaffarabad

Schedule for NEU-IV Module (0321) – 5th Year MBBS

Week □ 2

Time	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
8:00am-8:40am	<u>LGIS</u> GB Syndrome Dr. Manzoor	<u>LGIS</u> Mono-Neropathy (Bell palsy) Dr. Naeem	<u>LGIS</u> Parkinsonism Dr. Abdul Khalid	<u>LGIS</u> Myasthenia Gravis Dr. Muzhar Hamdani	<u>LGIS</u> Dementia Dr. Mustafa Awan	CLINICAL ROTATIONS (8:00 AM to 2:00 PM)
8:45am-9:25am	<u>LGIS</u> Neuropathies Of systemic diseases Dr. Rubina	<u>LGIS</u> Tremor Disorders (Benign essential tremor and Huntington's disease) Dr. Muzhar Hamdani	<u>LGIS</u> Multiple Sclerosis Dr. Muzhar Hamdani	<u>LGIS</u> Muscular Dystrophies Dr. Bashir Taunbu	<u>LGIS</u> Head Injury and spinal trauma Dr. Liaqat Awan	
9:30am-2:00pm	CLINICAL ROTATIONS	CLINICAL ROTATIONS	CLINICAL ROTATIONS	CLINICAL ROTATIONS	CLINICAL ROTATIONS	
Break (2:00 – 5:00 PM)						
5:00-8:00 pm	CLINICAL ROTATIONS	CLINICAL ROTATIONS	CLINICAL ROTATIONS	CLINICAL ROTATIONS	CLINICAL ROTATIONS	

Assessment:

There will be written assessment and OSCE for this module.

The written assessment will comprise of 50 MCQs and 6 SEQs.

The distribution of these written assessment tools will be according to the TOS.

There will be 14 OSCE stations for the assessment of psychomotor skills.



For Inquiries & Trouble Shooting Please contact
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