

DEPARTMENT OF MEDICAL EDUCATION



NEUROSCIENCES-II MODULE (Study Guide) 4th Proff MBBS

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Gajju Khan Medical College (GKMC) Vision:

The Gajju Khan Medical College will be a national and global leader and a Centre of excellence in Medical education, Scientific research, Patient care and Community services.

Gajju Khan Medical College (GKMC) Mission:

The mission of GKMC is to provide an integrated, Community oriented, Quality Medical education that prepares the next generation of socially conscious doctors, trained to the highest level of competence to deliver high quality, compassionate, ethical and evidence based care to diverse populations

Core Values:

High Ethical Standards and Professionalism.

High Quality and Excellence in training and clinical governance.

Collaborative Leadership and Teamwork.

Scientific Creativity.

Transparency and Accountability

*Edited by Roiedar Khan
Computer Operator DME GKMC*

Sub-Curricular Committee of 4th Proff MBBS

S.NO	Faculty Member	Portfolio
1	Module Lead of 4 th Proff MBBS (HoD Pathology)	Chairman
2	Module coordinator Neurosciences-II	Member
3	Module coordinator GIT & Hepatobiliary-II	Member
4	Module coordinator Renal -II	Member
5	Module coordinator Endocrine and Reproduction-II	Member
6	Module coordinator ENT	Member
7	Module coordinator EYE	Member
8	HoD Pathology Department	Member
9	HoD Pharmacology Department	Member
10	HoD Forensic Medicine Department	Member
11	HoD Community Medicine Department	Member
12	HoD ENT Department	Member
13	HoD Eye Department	Member
14	HoD Medicine Department	Member
15	HoD Surgery Department	Member
16	HoD Psychiatry Department	Member
17	HoD Paeds Department	Member
18	Medical Educationist	Member

NEUROSCIENCES-II
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Integrated curriculum:

An integrated curriculum is all about making connections, whether to real life or across the disciplines, about skills or about knowledge. An integrated curriculum fuses subject areas, experiences, and real-life knowledge together to make a more fulfilling and tangible learning environment for students. 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. Case based discussions, computer-based assignments, early exposure to clinics, wards, and skills acquisition in skills lab are characteristics of integrated teaching program.

Outcomes of the curriculum: The outcomes of the curriculum of MBBS According to the PMC are as follows

- Knowledgeable
- Skilful
- Community Health Promoter
- Problem-solver
- Professional
- Researcher
- Leader and Role Model

KNOWLEDGE

By the end of five year MBBS program the GKMC SWABI student should be able to;

1. Acquire a high level of clinical proficiency in history taking, physical examination, differential diagnosis, and the Effective use of medicine's evolving diagnostic and procedural capabilities including therapeutic and palliative modalities.
2. Manage the common prevalent diseases in community.
3. Identify the common medical emergencies.
4. Develop plan for prevention of common community diseases.
5. Formulate a referral plan 6. Compose a prescription plan

PSYCHOMOTOR

By the end of five year MBBS program the GKMC SWABI student should be able to;

1. Demonstrate the ability to perform the disease specific relevant examination.
2. Respond to common medical emergencies.
3. Master the skill of first aid.
4. Perform BLS.
5. Apply the best evidenced practices for local health problems.

AFFECTIVE

By the end of five year MBBS program the GKMC SWABI student should be able to

1. Relate to patient and caregivers vulnerability
2. Demonstrate ethical self-management
3. Counsel and educate patients and their families to empower them to participate in their care and enable shared decision-making.
4. Display compassion with patient and colleagues
5. Demonstrate in clinical care an understanding of the impact of psychological, social, and economic factors on human health and disease

Themes

Table 1: Thematic Distribution

S. No	Themes	Duration in days
1	Disturbed sleep	5
2	Disturbed mood & behaviour	5
3	Right-sided weakness and inability to speak	3
4	Loss of consciousness and Fits	5
5	Tremors	2
6	Headache	5
7	Paraplegia	2
8	Numbness and tingling	3

Teaching Hours Allocation

Table 2: Subject Wise Hours Distribution

S#	Subject	Hours (approximate)
1	Pathology	24
2	Pharmacology	22
3	Forensic medicine	20
4	Community medicine	36
5	General medicine	12
6	Psychiatry	10
7	Paediatrics	5
8	Neurosurgery	2
9	Orthopaedics	1
10	Anaesthesia	4
11	PRIME/MEDICAL EDUCATION	2
12	PRIME/RESEARCH*	16**
13	Family medicine	1
	TOTAL	139

* two hours per week for research project in the whole academic session

**the final marks of research events are NOT included in total hours as these are not used in developing assessment blueprints.

Learning Objectives

By the end of NS II Module, 4th year MBBS students will be able to:

- 1) Describe anxiety disorders and their pharmacological management.
- 2) Explain the concepts of Mood disorders and their pharmacological management.
- 3) Explain psychotic disorders and their pharmacological management.
- 4) Describe the pathophysiology and management of Dementias.
- 5) Elaborate the pathophysiology, clinical features, management, and prevention of cerebrovascular diseases.
- 6) Classify epilepsy and describe the pharmacological management of epilepsy in children and adults.
- 7) Describe the types and protocols of anesthesia and explain the drugs used as anesthetics.
- 8) Explain the pathology and clinical features of cerebellar diseases.
- 9) Elaborate the clinical features and pharmacological management of Parkinson`s disease.
- 10) Explain the clinical features and management of Motor neuron disease and Friedrich`s ataxia.
- 11) Describe the pathology and management of head injury.
- 12) Describe the pathogenesis, clinical features, and management of common CNS infections.
- 13) Classify brain, spinal cord, and peripheral nerves tumors, and describe their clinical features and management.
- 14) Explain the pathophysiology, clinical features, investigations and management of Multiple sclerosis, transversemyelitis, and Guillain Barre syndrome.
- 15) Classify peripheral neuropathies and elaborate their etiologies and clinical presentations.
- 16) Explain the clinical features and forensic approach to a patient with neurotoxic poisons.
- 17) Explain the forensic aspects of insanity and head injury.

Specific Learning Objectives

Table 3: Theme Wise Learning objectives

Theme I: Disturbed sleep					
S#	Subjects	Topics	Los	Contents	Hours
1.	Psychiatry	Sleep disorders	Describe the types of sleep disorders	Sleep disorders and its management	1 Hour
			Explain the pharmacological and non-pharmacological management of sleep disorders		
			Describe the ways of improving healthy sleep		
		Non-organic insomnia	Define non-organic insomnia	Non-organic insomnia and its treatment	
			Explain the management of non-organic insomnia		
		Sleep wake cycle disorders	Describe the concept of sleep-wake cycle disorder	Sleep Walk and its treatment	
Describe the pharmacological and non-pharmacological					

			management of sleep-wake wake cycle disorder		
2.	Pharmacology	Introduction to the Pharmacology of CNS	Describe basic terms like neurotransmitters, neuromodulator/neurotropic factors, withdrawal symptoms (abstinence syndrome), cross- tolerance, reverse tolerance (sensitization) and cross- dependence	Common terminologies BBB Neurotransmitters Ion channels and its receptors	1 Hour
			Describe the blood-brain barrier and its clinical significance		
			Enlist the principal neurotransmitters and their receptors in the CNS		
			Describe voltage-gated, ligand-gated (ionotropic), ion channels and metabotropic receptors on the neuronal membrane		

		Classify the drugs acting on the CNS	
	Sedative-hypnotics (Minor tranquilizers)	Classify broadly the Sedative-Hypnotics	Minor tranquilizers
	Benzodiazepines	Classify Benzodiazepines	Benzodiazepines and its pharmacological characteristics
		Describe the pharmacokinetics of Benzodiazepines	
		Describe the mechanism of action of Benzodiazepines	
		Describe the pharmacological effects of Benzodiazepines	
		Describe the clinical uses of Benzodiazepines	
		Describe the adverse effects of Benzodiazepines	
		Describe the tolerance and dependence on Benzodiazepines	

			Describe the drug interactions of Benzodiazepines	
			Name the antidote (competitive antagonist) to Benzodiazepines	
		Barbiturates	Classify barbiturates	
			Describe the mechanism of action and clinical uses of barbiturates	
			Describe the difference regarding the mechanism of action of Barbiturates in comparison to Benzodiazepines	
		Buspirone	Describe the mechanism of action and clinical use of Buspirone	
			Describe the merits and demerits of Buspirone in comparison to Benzodiazepines	

		Ramelteon	Describe the mechanism of action and clinical use of Ramelteon		
		CNS stimulants	Classify CNS stimulants		
		Respiratory analeptics (Doxapram, Nikethamide)	Describe the mechanism of action, clinical uses and adverse effects of Respiratory analeptics	Respiratory Aneleptics	
		Methyl xanthine/Theophylline, Caffeine, Theobromine)	Describe the mechanism of action, clinical uses and adverse effects of Methyl xanthine	Methylxanthine	
		Sibutramine	Describe the mechanism of action and clinical use of Sibutramine	Sibutramine	
3.	Forensic Medicine	Classification of neurotoxins	Define and classify neurotoxins	Classifications	1 Hour
		Cerebral Poisons- Somniferous Poisons	Describe and enlist Somniferous poison.	Types MOA	
			<ul style="list-style-type: none"> • Morphine • Opium 	Describe the mechanism of action for the Somniferous poison.	

	Heroin	Describe different signs, symptoms and autopsy appearance in a typical of Somniferous poisons.	Autopsy appearance Fatal dose Treatment and diagnosis
		Describe fatal dose, treatment, and diagnosis for the Somniferous poisons.	Medicolegal importance
		Describe medico-legal importance for the Somniferous poisons.	
		Describe and enlist Somniferous poison.	
	Inebriant Poisons <ul style="list-style-type: none"> • Ethyl Alcohol • Methyl Alcohol 	Describe and enlist Inebriant poison.	Types MOA
		Describe mechanism of action for the Inebriant poison.	Sign and symptoms Autopsy appearance
		Describe different sign, symptoms, and autopsy appearance in a typical of Inebriant poisons.	Fatal dose Treatment and diagnosis

			Describe fatal dose, treatment, and diagnosis for the Inebriant poisons.	Medicolegal importance		
			Describe medico-legal importance for the Inebriant poisons.			
		Sedative & Hypnotics <ul style="list-style-type: none"> • Chloral hydrate • Barbiturates 	Describe and enlist sedative and hypnotics	Types MOA		
			Describe mechanism of action for the Sedative and hypnotics.	Sign and symptoms Autopsy		
			Describe different sign, symptoms, and autopsy appearance in a typical of Sedative and hypnotics.	appearance Fatal dose Treatment and diagnosis		
			Describe fatal dose, treatment, and diagnosis for the Sedative and hypnotics.	Medicolegal importance		
			Describe medico-legal importance for the Sedative and hypnotics.			

		<p>Fuels, stimulants and hallucinogens</p> <ul style="list-style-type: none"> • Agrochemical poisons • Kerosene • Hallucinogens- LSD • Stimulants- Amphetamines 	Describe and enlist fuels, stimulants and hallucinogens.	<p>Fuels: Stimulants Hallucinogens</p> <p>Sign and symptoms Autopsy appearance Fatal dose Treatment and diagnosis</p>	
			Describe mechanism of action of fuels, stimulants and hallucinogens.		
			Describe different sign, symptoms and autopsy appearance in a typical case of fuels, stimulants and hallucinogens poisoning.		
			Describe fatal dose, treatment, and diagnosis of fuels, stimulants and hallucinogens.		
			Describe medico-legal importance of fuels, stimulants and hallucinogens.		
		Drug Dependence	Describe Drug dependence and its psychological effects.	Drug dependence Its psychological effects	

			Describe drug abuse and outline the procedure to investigate a case due to narcotics.	Drug abuse	
4.	Community medicine/epidemiology	Epidemiology	Define epidemiology	Definition	1 Hour
			Explain the basic concepts of epidemiology	Concept	
		Study design	Classify and elaborate study designs	Study Design	
		Screening	Explain the screening in epidemiology	Screening	
		Measures of mortality and morbidity	Explain the measures of morbidity and mortality	Measurement of mortality and morbidity	

Theme II: Disturbed Mood & Behaviour					
S#	Subjects	Topics	Los	Contents	Hours
1.	Psychiatry (mood and anxiety disorders)	Depressive disorders	Classify depressive disorders	Classification	2 Hours
			Describe the aetiology, clinical features and management protocols of different depressive disorders	Aetiology C/F Management	
		Bipolar Affective Disorder	Describe the clinical features and management protocols of Bipolar affective disorders	Clinical presentation Management	
		Suicide	Describe the preventive measures of suicide	Preventive measures	
		Anxiety Disorders	Classify anxiety disorders	Classification	
			Differentiate between medical and psychiatric causes of anxiety	Differences Management	
			Differentiate between anxiety and phobia		

			Describe the pharmacological and non- pharmacological management of different anxiety disorders including relaxation techniques and breathing exercises	
		Dissociative disorders	Explain the different behavioral and neurological presentations of dissociative disorders	Types Management
			Describe the pharmacological and non- pharmacological management of dissociative disorders	
		Stress related disorders	Classify stress related disorders	Classification and management
			Explain the concept of stress in stress related disorders	

			Explain the pharmacological and non-pharmacological management of stress related disorders			
		Somatoform disorders	Classify somatoform disorders	Classification Counselling of patient		
			Describe the concept of medically unexplained symptoms			
			Counsel a patient with medically unexplained symptoms			
		Atypical depression and seasonal affective disorder	Describe the clinical presentation of atypical depression	C/F Management		
			Recognize the symptoms of atypical depression			
			Describe the management of atypical depression and seasonal affective disorders			
2.	Psychiatry (Psychotic illnesses)	Personality disorders	Classify personality disorders	Classification C/F	1 Hour	

			Describe the clinical features, diagnostic criteria and management of personality disorder	Diagnosis Management		
		Psychotic disorders	Differentiate between organic and non-organic psychosis	Types concept Classifications		
			Explain the concept of psychosis			
			Classify psychotic disorders			
		Schizophrenias	Describe the clinical features, diagnostic criteria and management of Schizophrenias	C/F Diagnosis Management Psychotherapy Electroconvulsive Rehabilitations strategies		
			Explain the role of psychotherapy and Electroconvulsive therapy in Schizophrenias			
			Describe the rehabilitations strategies with patients of Schizophrenias			

		Delusional disorders	Describe the types and management of delusional disorders	Management and Types	
			Describe the ways of differentiating delusional disorders from Schizophrenias		
		Substance abuse disorder	Describe the concept of drug dependence	General concept	
			Classify of drug abuse	Classification	
			Describe the principles of management of substance abuse	Management	
			Explain the concept of harm reduction	Harm reduction	
3.	General Medicine	Alzheimer`s disease and Dementias	Explain the pathophysiology, clinical features and management of Alzheimer`s disease	Pathophysiology C/F Management Dementia and its types	1 Hour
			Describe the reversible and irreversible causes of Dementia		

4.	Pharmacology	Depression	Describe the Monoamine hypothesis of depression	Monoamine hypothesis	2 Hours
		Antidepressants	Classify antidepressants	Classification	
		SSRIs (Selective Serotonin Reuptake Inhibitors)	Enlist SSRIs	Types	
			Enlist the most selective SSRIs	MOA	
			Describe the pharmacokinetics, mechanism of action, clinical uses, adverse effects and drug interactions of SSRIs	Clinical uses	
				Adverse Effects	
		TCAs (Tricyclic Antidepressants)	Classify antidepressants		
			Enlist TCAs	Types	
			Describe the mechanism of action, clinical uses, adverse effects and drug interactions of TCAs	MOA	
		Enlist TCAs		Clinical uses	
MAOIs (MonoamineOxidase Inhibitors)	Enlist MAOIs	Adverse Effects			
	Describe the pharmacokinetics,	Monoamine Oxidase Inhibitors			

			mechanism of action, clinical use, adverse effects and drug interactions of MAOIs		
			Describe Serotonin syndrome		
			Describe Hypertensive Cheese reaction		
			Describe St John's Wort		
			Describe the procedure of switching-over from one category of antidepressants to another one		
			Describe "Augmentation" of antidepressant therapy		
			Describe Electroconvulsive Therapy (ECT) for depression		
		Psychoses (Schizophrenia and others)	Describe the Dopamine hypothesis of Schizophrenia	Dopamine hypothesis	
			Classify Antipsychotics		

		Antipsychotics (Anti-schizophrenic drugs)	Describe the advantages of Atypical antipsychotics over the Typical (Classical/Traditional/Old) agents	Antipsychotic drugs	
			Describe the mechanism of action of Antipsychotics		
			Describe the pharmacological effects of Antipsychotics		
			Describe the clinical uses of Antipsychotics		
			Describe the drug interactions of Antipsychotics		
			Describe the adverse effects of Antipsychotics		
			Explain the drug treatment of extrapyramidal syndrome		

	Bipolar affective disorder (Manic Depressive illness)	Describe the concept of “mood-stabilization” in Bipolar affective disorder (Manic Depressive illness)	Mood stabilization
	Mood-stabilizing drugs	Enlist Mood-stabilizing drugs	Types
	Lithium carbonate	Describe the pharmacokinetics, mechanism of action, clinical uses, adverse effects and drug interactions of Lithium carbonate	Pharmacokinetics MOA Clinical uses Averse Effects
	Alcohols	Describe alcoholism	Alcoholism and its pharmacological characteristics
		Describe the pharmacokinetics of Ethanol	
		Describe the mechanism of action of Ethanol	
		Describe the pharmacological effects of Ethanol	

			Describe the clinical uses of Ethanol		
			Describe the adverse effects of Ethanol		
			Describe Disulfiram-like reaction with example of drugs causing it		
			Describe the management of Ethanol intoxication		
			Describe the management of Ethanol withdrawal symptoms		
			Describe the treatment of alcoholism		
			Describe briefly Methanol poisoning		
		Opioids (Morphine, Diamorphine, Codeine, Pethidine, Methadone, Pentazocine,	Differentiate between Opioids and Opiates	Types MOA Adverse Effects Pharmacological features	
			Describe the term “narcotic”		
			Describe the source of Opium		

		Buprenorphine, Dextromethorphan)	Enlist the “brain’s own Morphine” (endogenous Opioids)		
			Classify Opioids		
			Enlist Opioids with mixed agonist-antagonist properties		
			Enlist Opioids with partial agonist activity		
			Describe the pharmacokinetics, mechanism of action, pharmacological effects, clinical uses, adverse effects and drug interactions of Opioids		
			Describe the use of opioids as palliative care in terminal illness		
			Describe opioid rotation		
			Describe the treatment of Opioid over dosage		

			Describe the Opioid antagonists (antidotes)		
			Describe Opioid dependence		
			Describe the management of Opioid dependence		
			Describe the contraindications of Opioids		
			Enlist the drugs used for pain in opioid addicts		
		Tramadol	Describe the mechanism of action and clinical use of Tramadol	MOA	
		Drugs of abuse	Describe substance abuse, drug dependence, addiction and habituation	Substance abuse Drug dependence Addiction Habituation	
			Describe the Dopamine hypothesis of addiction	Dopamine hypothesis	
			Enlist the drugs causing addiction	Types of drugs that causes addiction	
			Enlist the non-addictive drugs of abuse		
			Describe "Club drugs"		

			<p>Enlist the drugs having high-risk of addiction (scored 5 on the list of relative-risk of addiction)</p>	<p>Non-addictive drugs “Club drugs” Nicotine, Alcohol, Cannabis Opioids Drugs used insports.</p>	
			<p>Enlist the drugs having moderate-risk of addiction (scored 4 on the list of relative-risk of addiction)</p>		
			<p>Describe the drug treatmentof Nicotine, Alcohol, Cannabis and Opioid abuse</p>		
			<p>Describe the drug abuse in sports with examples</p>		
5.	Forensic Medicine	Insanity and relationship to criminal charges	<p>Define insanity.</p>	<p>Insanity and relationship to criminal charges</p>	1 Hour
			<p>Classify insanity and explain its sub-types</p>		
			<p>Describe relationship of insanity with criminal charges.</p>		
			<p>Describe different pleas andits legal exception based on unsoundness of mind.</p>		

			Describe McNaghten rules, Durham`s rule and Impulse along with its application and criticism.	
			Differentiate between true and feigned insanity	
		Forensic Psychiatry	Define and describe Forensic Psychiatry.	Definition Common terminologies
			Describe different terms used in Forensic Psychiatry:	
			a) Affect	
			b) Confabulation	
			c) Delirium	
			d) Delusion	
			e) Fague	
			f) Hallucination	
			g) Illusion	
			h) Intelligent Quotient	
			i) Lucid Interval	
			j) Neurosis	
			k) Psychopath	
			l) Psychosis	

		m) Stupor Twilight states	
	Mental health act	Define mental disorders based on mental health act	Types of mental disorders
		Describe procedure of admission and discharge of mentally ill patient based on mental health act	Admission and discharge procedure Wandering lunatic
		Describe procedure of handling a wandering lunatic	
	Will	Define testamentary capacity	Testamentary capacity Valid
		Enlist conditions required for a valid Will	Will features Dr-patient Will
		Describe the role of a doctor in taking a Will from a sick person	
	Civil and criminal responsibility of mentally ill patients	Explain the concept of civil and criminal responsibility of mentally ill patients	Civil and criminal responsibility of mentally ill patients

6.	Community medicine	Mental health	Describe classification of mental health illnesses	classification	1 Hour
			Define mental health	Definition	
			Discuss global perspectives and epidemiology of mental health disorders	Global perspectives	
			Discuss risk factors leading to mental health problems	Epidemiology Risk Factors	
			Discuss prevention and control of mental health disorders	Prevention and Control	
7.	PRIME/MEDICAL EDUCATION	Conflict resolution	Explain the prerequisites for conflict resolution as a leader	Prerequisites	1 Hour
			Show the ability to solve problems regarding difficult patients/attendant.	Skills demonstration	
8.	Community medicine/biostatistics	Biostatistics: Introduction	Describe the significance of biostatistics in health and epidemiology	Significance	1 Hour
		Data and variable types	Define and classify variables	Definition and Types	

	Sampling	Define sampling	Definition
		Discuss types of sampling	Types
	Biases in epidemiological studies	Define Bias	Definition
		Discuss different types of biases	Types
		Discuss how bias can be prevented	Prevention

Theme III: Right-sided weakness and inability to speak					
S#	Subjects	Topics	Los	Contents	Hours
1.	Pathology	Hypoxia, ischemia, and infarction	Define hypoxia, ischemia, and infarction, and describe its morphology and consequences in the context of CNS involvement	Common terminologies	1 Hour
		Intracranial haemorrhage	Describe the aetiology, risk factors and morphology of intracranial haemorrhage	C/F Aetiology Risk Factors	
		Strokes syndromes	Describe the aetiology, risk factors, morphology, and clinical and radiological features of stroke		
		Subarachnoid haemorrhage (SAH)	Explain the aetiology, risk factors and clinical features of SAH		
2.	General Medicine	Stroke	Describe the risk factors of stroke	Risk Factors Types C/F, radiological findings	1 Hour
			Explain the types of strokes		

			Describe the clinical features, radiological features, and management of a patient with intracerebral bleed	Management of intracerebral bleed and infarction	
			Describe the clinical features, radiological features, and management of a patient with stroke due to an infarction		
3.	Community medicine	Non-communicable diseases: Strokes	Discuss the epidemiological determinants of stroke in community	Epidemiology Prevention Rehabilitation	1 Hour
			Discuss the prevention and rehabilitation of strokes		
4.	Neurosurgery		Describe the neurosurgical management of stroke and Subarachnoid hemorrhage	Management	1 Hour
5.	Community medicine/biostatistics	Measures of central tendency	Classify measures of central tendency	Central tendency	1 Hour
			Calculate measures of central tendency		

			Interpret and signify the results		
			Describe the advantages and disadvantages of different measures		
	Measures of dispersion		Classify measures of dispersion	Dispersion	
			Calculate measures of dispersion		
			Interpret the results of measures of dispersion		
			Explain the advantages and disadvantages of measures of dispersion		
			Explain the use of different measures in specific circumstances		
	Normal distribution		Define normal distribution	Normal distribution curve and its significance	
			Describe normal distribution		
			Calculate and graphically represent normal distribution		

			Explain its use & significance in relation to data	
			Describe percentile and interquartile range	
			Calculate and depict percentile and interquartile range	
			Explain use and significance of these in different situations	
	Confidence Interval, Confidence level, Standard error		Define confidence level and interval	Confidence interval, confidence level Standard errors
			Describe confidence level and interval	
			Calculate confidence level and interval	
			Explain their use and significance in different situations	
	P value, critical region, rejection		Define P value, critical region, rejection region, α β errors	P Value and its significance

		region, alpha beta errors	Describe P value, critical region, rejection region, α β errors		
			Calculate P value, critical region, rejection region, α β errors		
			Describe their use and significance in different situations		

Theme IV: Loss of consciousness and Fits					
S#	Subjects	Topics	LOS	Contents	Hours
1.	General Medicine	Seizures	Define seizures	Definition	1
			Differentiate between a seizure and syncope	Classification Pathophysiology	
			Classify epilepsy	C/F	
			Explain the pathophysiology, clinical features, risk factors, investigations and treatment of Tonic-Clonic epilepsy	Investigations Risk Factors Management	
			Explain the pathophysiology, clinical features, investigations and treatment of absence seizures		
			Explain the pathophysiology, clinical features, investigations and treatment of psychomotor epilepsy		
			Explain the management of a patient with status epilepticus		
2.	Anaesthesia		Define anaesthesia	Definition	1

		Introduction to the subject	Describe different types of anaesthesia	Types	
		General anaesthesia	Describe the methods of induction of anaesthesia	Methods of induction	
		Neuroaxis block	Describe the following terms: <ul style="list-style-type: none"> • Spinal block • Epidural block • Caudal block Combined spinal /Epidural	Common terminologies	
		Regional anaesthesia	Describe the following terms: <ul style="list-style-type: none"> • Nerve block • Single shot • Continuous infusion Local infiltration		
		Preoperative evaluation and risk assessment	Explain the purpose of preoperative evaluation	Preoperative evaluation and risk assessment	
			Perform risk assessment of patient undergoing general anaesthesia		

			Describe the steps of history taking in preoperative evaluation for anaesthesia		
			Describe the plans of general and regional anaesthesia techniques		
			Describe the ASA classification for pre-operative risk assessment		
		Monitoring in anaesthesia	Describe the non-invasive and invasive techniques of patients` monitoring for the following parameters during general anaesthesia <u>Non-invasive:</u> a. Oxygenation b. Hemodynamic c. Temperature d. Electrical activity e. Neuromuscular activity f. Circulation <u>Invasive:</u>	Non-invasive and Invasive techniques	

			<ul style="list-style-type: none"> a. Oxygenation b. Hemodynamic c. Temperature d. Cardiac output e. Central venous pressure Circulation		
3.	Pharmacology	Anti-seizure drugs (Anti-epileptics)	Classify anti-seizure drugs	Classifications	1
			Enlist the “Broad-spectrum” anti-epileptics (Valproate and Lamotrigine)		
		Carbamazepine	Describe the mechanism of action, clinical uses, adverse effects and drug interactions of Carbamazepine	Clinical uses MOA Adverse Effects Drugs	
		Phenytoin	Describe the pharmacokinetics of Phenytoin with reference to the phenomenon of zero-order kinetics	interactions	
			Describe the mechanism of action, clinical uses, adverse effects and drug interactions of Phenytoin		

	Valproate	Describe the mechanism of action, clinical uses, adverse effects and drug interactions of Valproate		
	Ethosuximide	Describe the mechanism of action, clinical uses and adverse effects of Ethosuximide		
	Phenobarbitone	Describe briefly the historic role of phenobarbitone in the management of epilepsy	Clinical uses	
	Benzodiazepines	Name the benzodiazepines used in the management of epilepsy		
	Lamotrigine, Topiramate and others	Name the new antiepileptic drugs	Anti-epileptic drugs and its features	
		Describe the mechanism of action, clinical uses and adverse effects of Lamotrigine and Topiramate		
		Describe the use of antiepileptics during pregnancy		

			Describe drug interaction of antiepileptics with oral contraceptive pills		
		Status epilepticus	Describe the management of status epilepticus	Management	
		General anaesthetics	Describe the stages of general anaesthesia	General anaesthetics	
			Describe balanced anaesthesia		
		Inhaled anaesthetics (N ₂ O, Halothane, Isoflurane, Sevoflurane, Desflurane)	Describe the pharmacokinetics of Inhaled anaesthetics	Inhaled anaesthetics	
			Discuss the clinical significance of Blood: Gas partition coefficient of Inhaled anaesthetics		
			Describe the mechanism of action of Inhaled anaesthetics		
			Define MAC ₅₀ (minimum Alveolar Concentration- 50%)		
			Describe the significance of MAC ₅₀		
			Describe the pharmacological effects of Inhaled anaesthetics		

			Describe the adverse effects of Inhaled anaesthetics	
			Describe second gas effect	
			Describe diffusion hypoxia	
			Describe Malignant hyperthermia and its management	
			Describe the properties of an ideal inhaled anaesthetics	
		IV anaesthetics (Thiopentone, Propofol, Etomidate, Ketamine, Midazolam, Fentanyl)	Describe the mechanism of action, clinical use and adverse effects of Intravenous anaesthetics	IV anaesthetics
			Describe re-distribution of Thiopentone	
			Define neuroleptanalgesia and neuroleptanaesthesia	
			Describe dissociative anaesthesia	
			Name the anaesthetic agent that causes dissociative anaesthesia	
			Describe TIVA (Total Intravenous Anaesthesia) technique	

		Pre-anaesthetic medications	Describe Pre-anaesthetic medications	Pre-anaesthetic medications	
			Describe the drugs used as Pre-anesthetic medications		
		Obstetric analgesia	Describe the drugs for obstetric analgesia	Obstetric analgesia	
4.	Forensic medicine	Deliriant Poisons <ul style="list-style-type: none"> • Dhatura • Hyocyamus nigra Cannabis indica	Describe and enlist Deliriant poisons.	Deliriant Poisons	1
			Describe mechanism of action of the Deliriant poisons.		
			Describe different sign, symptoms and autopsy appearance in a typical of Deliriant poisons.		
			Describe fatal dose, treatment, and diagnosis of the Deliriant poisons.		
			Describe medico-legal importance of the Deliriant poisons.		
			Describe and enlist Deliriant poisons.		

5.	Community medicine/biostatistics	Z test & it's application, Types / shapes of frequency distribution	Define & Describe 'z' test	Z test & it's application, Types / shapesof frequency distribution	1
			Describe its use in different statistical settings		
			Calculate 'z' test		
			Explain its application in hypothesis testing		
			Interpret and apply to clinical settings		
			Discuss various shapes of frequency distribution		
			Describe the applications of parametric and non-parametric tests		

Theme V: Tremors					
S#	Subjects	Topics	Los	Contents	Hours
1.	Pathology	Neurodegenerative disorders: <ul style="list-style-type: none"> • Alzheimer`s disease • Parkinson`s disease • Huntington`s Disease and Spinocerebellar ataxias Motor Neuron disease	Describe the aetiology, risk factors, morphology and clinical features of Alzheimer`s disease	Common Neurological disorders	1
			Describe the ethology, risk factors, morphology and clinical features of Parkinson`s disease		
			Describe the aetiology, risk factors, morphology and clinical features of Huntington`s disease		
			Describe the clinical features of spinocerebellarataxias		
2.	General Medicine	Parkinson`s disease	Describe the aetiology, risk factors, morphology and	Aetiology Risk factors	1

			clinical features of Motor Neuron Disease	Morphology Clinical features Types	
			Describe the types, clinical presentation and management of Motor neuron disease		
3.	Pharmacology	Drugs for Parkinsonism	Classify drugs for Parkinsonism	Classification	1
		Levodopa (with Carbidopa)	Describe the pharmacokinetics, mechanism of action, adverse effects, contraindications and drug interactions of Levodopa	MOA Clinical uses Adverse Effects	
			Discuss the rationale of combining Carbidopa (or Benserazide) with Levodopa		
			Describe the on-off phenomenon		
			Describe the end-of-dose akinesia		

			Describe “drug holidays” for Levodopa	
		Bromocriptine	Describe the mechanism of action, clinical uses and adverse effects of Bromocriptine	
		Selegiline	Describe the mechanism of action and clinical uses of Selegiline	
			Describe the differentiating point regarding the use of Selegiline as antiparkinsonian drug and its use as an antidepressant drug	
		Apomorphine	Describe the mechanism of action and clinical use of Apomorphine	
		Drug-induced Parkinsonism	Enlist the drugs causing Parkinsonism-like symptoms	Drug-induced Parkinsonism

			Enlist the drugs used in the management of drug-induced Parkinsonism		
			Describe the rationale of avoiding Levodopa in drug-induced Parkinsonism		
4.	Paediatrics	Cerebellar ataxias	Describe the clinical features and management of Friedreich's Ataxia	Friedreich's Ataxia	1
5.	Community medicine/biostatistics	"t" test & its application	Define & Describe 't' test	"t" test & its application	1
			Explain its use in different statistical settings		
			Calculate 't' test		
			Describe its application in hypothesis testing		
			Interpret and apply to clinical settings		
			Calculate degree of freedom		
		Chi square test & its application	Describe 'x ² ' test	Chi square test & its application	
	Describe its use in different statistical settings				

			Calculate 'x ² ' test		
			Explain its application in hypothesis testing		
			Interpret and apply to clinical settings		
		Correlation, regression	Describe Correlation & Regression	Correlation, regression	
			Interpret and apply to clinical settings		
		Practical Problems in biostatistics	Discuss practical problems encountered in the application of biostatistics and SPSS	Practical Problems in biostatistics	

Theme VI: Headache					
S#	Subjects	Topics	Los	Contents	Hours
1.	Pathology	Meningitis	Explain the aetiology, clinical features, investigations and complications of acute pyogenic meningitis	Aetiology C/F Investigations Managements	2
			Explain the aetiology, clinical features, investigations and complications of Tuberculous meningitis		
		Encephalitis	Explain the aetiology, clinical features, investigations and complications of viral encephalitis		
		Brain abscess	Explain the aetiology, clinical features, investigations and complications of brain abscess		
		Cerebral Toxoplasmosis	Explain the aetiology, clinical features, investigations and		

			complications of Cerebral Toxoplasmosis		
	<p>Tumours of CNS</p> <ul style="list-style-type: none"> • Gliomas • Embryonal neoplasms • Meningioma <p>Other neoplasms</p>		Describe the classification of brain tumours on the basis of primary and secondary origin and benign and malignant	Common CNS tumours	
			Describe the classification, gross and microscopic morphology and clinical features of Gliomas		
			Describe the classification, gross and microscopic morphology and clinical features of embryonal neoplasms of brain		
			Describe the gross and microscopic morphology and clinical features of Meningioma		
			Enlist brain neoplasms other than gliomas, meningioma and embryonal cell neoplasms		

			Enlist the metastatic brain neoplasms		
2.	Pharmacology	Migraine and Cluster headaches	Classify drugs used for the treatment of Migraine and Cluster headaches	Classification	1
			Enlist the drugs used for the prophylaxis of Migraine and Cluster headaches		
		Triptans (Sumatriptan and others)	Describe the mechanism of action, clinical use and adverse effects of Sumatriptan	MOA, clinical uses and adverse effects	
		Ergot alkaloids	Enlist Ergot alkaloids		
			Describe the pharmacological effects of Ergot alkaloids		
Ergotamine	Describe the mechanism of action, clinical use and adverse effects of Ergotamine				
3.	Forensic Medicine	Head Injury	Describe head injury in relation to scalp and skull injuries.	Head Injuries and its characteristics	1
			Classify different varieties of skull fractures.		

			<p>Explain commonest site of skull fracture.</p> <p>Describe mechanism of cerebral injury including coup and counter coup mechanism.</p> <p>Describe injuries to cranial content and its medicolegal importance.</p> <p>Describe intracranial haemorrhages and its types in detail as per medicolegal point of view.</p> <p>Describe the medicolegal aspects of Punch drunk syndrome</p>		
4.	General Medicine	Meningitis	<p>Explain the aetiology, pathogenesis, clinical presentation, investigations and management of Acute pyogenic meningitis</p> <p>Explain the aetiology, pathogenesis, clinical</p>	Pyogenic Tuberculous Meningitis	1

			presentation, investigations and management of Tuberculous meningitis		
5.	Community medicine	Rabies	Explain the aetiology, clinical presentation of a patient with Rabies	Aetiology C/F Prophylaxis	1
			Describe post-exposure prophylaxis of Rabies		
6.	Family medicine	Rabies prophylaxis	Describe the types of wounds inflicted by rabid dog bite	Wounds caused by rabid dogs Types of immunizations	1
			Explain the types of active and passive immunisation for Rabies post-exposure prophylaxis		
			Describe the indications of Rabies vaccine and immunoglobulins		
7.	Paediatrics	Meningitis	Explain the aetiology, pathogenesis, clinical presentation, investigations and management of Acute pyogenic meningitis in children and neonates	Aetiology, pathogenesis, clinical presentation, investigations	1

		TBM	Explain the aetiology, pathogenesis, clinical presentation, investigations and management of Acute pyogenic meningitis in children	and management	
8.	Psychiatry	Chronic daily headache	Differentiate between neurological and psychological headache (chronic tension headache)	Types C/F Management	1
			Identify the red signs in patients with headache		
			Describe the principles of management of acute and chronic headaches		
9.	PRIME/RESEARCH	Data analysis	Use MS Excel for data analysis	Data analysis	1
			Use SPSS for data analysis		
			Use Endnote for reference management		
			Compile, analyze and write a dissertation		

Theme VII: Paraplegia					
S#	Subjects	Topics	Los	Contents	Hours
1.	Pathology	Multiple sclerosis and other demyelinating disorders of CNS	Explain the pathogenesis, morphology and clinical features of multiple sclerosis	Multiple Sclerosis Common pathological demyelinating disorders	1
			Describe the morphology of the following: <ul style="list-style-type: none"> • Acute demyelinating encephalomyelitis Acute necrotizing haemorrhagic encephalitis		
2.	Forensic Medicine	Neurotoxins:	Describe and enlist spinal poison.	Sign, symptoms and autopsy appearance	1
			Describe mechanism of action for the spinal poison.		
			Describe different sign, symptoms and autopsy appearance in a typical case of spinal poisons.		
			Describe fatal dose, treatment, and diagnosis for the spinal poisons.		

			Describe medico-legal importance for the spinal poisons.		
			Describe vertebral and spinal injuries		
		Snake bite neurotoxins	Describe different sign, symptoms and autopsy appearance in a typical case of snake bite poisons		
		Botulism toxins	Describe different sign, symptoms and autopsy appearance in a typical case of botulism		
3.	General Medicine	Multiple sclerosis	Explain the pathophysiology, clinical features and management of Multiple sclerosis	Pathophysiology, clinical features and management	1
		Transverse myelitis	Describe the aetiology, pathophysiology, clinical features and management of Transverse myelitis		
		Caries spine	Explain the pathophysiology, clinical features, investigations and management of Caries spine		
4.	Orthopaedics		Describe the general management of a patient with traumatic paraplegia	Management of traumatic paraplegia	1
5.	Neurosurgery		Describe the general management of a patient with traumatic paraplegia	Traumatic paraplegia	1
			Describe the types, clinical features and surgical management of spinal tumours	Spinal Tumor	

Theme VIII: Numbness and tingling					
S#	Subjects	Topics	LOS	Contents	Hours
1.	Pathology	Patterns and types of peripheral nerves injury	Describe the patterns and types of neuronal injury	Types pathophysiology	1
		Acute and chronic demyelinating neuropathies	Describe the pathophysiology and clinical features of Guillain Barre syndrome	clinical features	
			Explain the pathophysiology of Chronic demyelinating polyneuropathies		
		Myasthenia Gravis	Describe the pathophysiology and clinical features of Myasthenia Gravis	pathophysiology clinical features	
		Tumors of Peripheral nerve	Enlist the tumours of peripheral nerves	Types Neurofibromatosis	
			Describe the clinical features, of Neurofibromatosis		

2.	Pharmacology	Local anaesthetics (Lignocaine and others)	Classify Local anaesthetics	Local anaesthetics	1
			Enlist the Local anaesthetics used for surface anaesthesia		
			Enlist the Local anaesthetics used for infiltration anaesthesia, nerve block, spinal anaesthesia and epidural anaesthesia		
			Describe EMLA (Eutectic Mixture of Local Anaesthetics) and its clinical use		
			Describe the pharmacokinetics of Local anaesthetics		
			Describe the mechanism of action of Local anaesthetics		
			Describe the pharmacological effects of Local anaesthetics on nerves		
			Describe the differential blockade of peripheral nerves by Local anaesthetics		

			Describe the pharmacological effects of Local anaesthetics on other excitable membranes		
			Describe the clinical uses of Local anaesthetics		
			Describe the major advantages of adding Adrenaline to Lignocaine for infiltration anaesthesia		
			Calculate the quantity of Adrenaline/ml in the traditionally used combinations of Adrenaline and Lignocaine (i.e. 1:200,000 & 1:80,000)		
			Describe the adverse effects of Local anaesthetics		
			Classify Local anaesthetics		
3.	Forensic Medicine	Neurotoxins: Peripheral poison	Describe and enumerate peripheral poisons.	Peripheral poison	1
			Describe mechanism of action for the peripheral poisons.		

			Describe different sign, symptoms and autopsy appearance in a typical of peripheral poisons.		
			Describe fatal dose, treatment, and diagnosis for the peripheral poisons.		
			Describe medico-legal importance for the peripheral poisons.		
4.	General Medicine	Guillain Barre syndrome	Explain the pathophysiology, clinical features and management of Guillain Barre syndrome	pathophysiology, clinical features and management	1
		Neuropathies	Describe the causes, types, distribution and clinical features of different neuropathies		
		Myasthenia Gravis	Explain the pathophysiology, clinical features and management of Myasthenia Gravis	Myasthenia Gravis Neurofibromatosis	
	Describe the clinical features, types and management of Neurofibromatosis				

5.	Paediatrics	Hereditary neuropathies	Describe the types, clinical features and management of hereditary neuropathies	types, clinical features and management	1
6.	Orthopaedics	Peripheral nerve injury	Describe the types and management of peripheral nerve injury	types, clinical features and management	1
			Explain entrapment neuropathies		
			Describe the risk factors, clinical features and management of Carpal tunnel syndrome		

Practical Work				
S#	Subjects	Topics	LOS	Hours
1.	Pathology	CSF	Describe the chemical, cytological composition of CSF Estimate the following analysis of CSF: <ul style="list-style-type: none"> • Chemistry • Cytology • Gram stain • Microbiology 	1
		Histopathological specimens of brain tumours	Identify the gross structure and microscopic features of: <ul style="list-style-type: none"> • Meningioma • Glioma/Astrocytoma 	
2.	Pharmacology	Depression	Formulate a prescription for a newly diagnosed case of depression	
		Epilepsy	Formulate prescriptions for patients with Tonic-Clonic and Petit-mal epilepsy	
		Migraine headache	Formulate prescription for a patient with migraine headache	

3.	Forensic medicine	Somniferous poisons	Recognition of Opium and Heroin
		Inebriant poisons	Recognition of Ethyl Alcohol and its examination
		Fuel	Recognition of Kerosene oil
		Deliriant	Recognition of Dhatura and Cannabis
		Spinal poison	Recognition of Nux Vomica seeds
4.	Community medicine	Data presentation <ul style="list-style-type: none"> • pie chart • histogram • bar chart and its types • venn diagram • scatter plot 	Identify and interpret the charts
		Application and Interpretation of statistical data	Apply a statistical test on a given scenario
		Data interpretation	Interpret the normal distribution curve, skewed distribution, bi and poly-modal distribution & Standard Normal Curve

Learning Resources

Table 4: Reference Textbooks

S#	Subjects	Resources
1.	Community medicine	<ol style="list-style-type: none"> 1. Preventive and Social Medicine by K Park 2. Community Medicine by M. Ilyas 3. Basic Statistics for the Health Sciences by Jan W Kuzma 4. Textbook of Community Medicine and Public Health, 2018. Saira Afzal, SabeenaJala
2.	Neurology	<ol style="list-style-type: none"> 1. Davidson's Principles and Practice of Medicine 2. Kumar and Clark's Clinical Medicine, Edited by Parveen Kumar, 9th Edition
3.	Neurosurgery	<ol style="list-style-type: none"> 1. Bailey & Love's Short Practice of Surgery , 26th Edition
4.	Pathology	<ol style="list-style-type: none"> 1. Robbins & Cotran, Pathologic Basis of Disease,9 th edition. 2. Rapid Review Pathology,4 th edition by Edward F. Goljan MD
5.	Pediatrics	<ol style="list-style-type: none"> 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
6.	Pharmacology	<ol style="list-style-type: none"> 1. Lippincot Illustrated Pharmacology 2. Basic and Clinical Pharmacology by Katzung
7.	Psychiatry	<ol style="list-style-type: none"> 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

GKMC

4th Year MBBS Paper J Assessment Plan

Theory paper	Modules	Theory marks	Internal assessment theory (10%)	OSPE/OSPE	Internal assessment OSPE/OSPE (10%)	Total Marks
Paper J	Neurosciences-2	120	13	120	13	266
Total Marks		120	13	120	13	266

Assessment Blueprints

Table 5: Paper J (MCQs)

Subject	Total MCQs
Pharmacology	20
Pathology	22
Forensic medicine	18
Community medicine	27
PRIME	02
Medicine	11
Psychiatry	09
Neurosurgery	02
Pediatrics	05
Anesthesia	03
Family medicine	01
Total	120

Table 6: OSPE/OSCE distribution of Paper J

Subject	Viva stations	OSPE/OSCE Stations	Total Stations
Pharmacology	2	3	5
Pathology	2	2	4
Forensic medicine	2	2	4
Community medicine	2	3	5
Medicine (neurological examination)	X	1	1
Psychiatry (counselling)	x	1	1
Total	8	12	20

* A minimum of 20 stations will be used in final exams. Total marks will be 120 (6 marks for each station).



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4th YEAR NEUROSCIENCES-II MODULE 1: TIMETABLE WEEK 1 (7th to 11th Feb 2022)
Theme 1: Disturbed sleep

Timings	8:00-9:00am	9:00-11:am		11:00-11:30am	11:30 am-1:30-pm	1:30 3:30pm	4:00 -6:00 pm
Monday 7-2-2022	LCF Sleep disorders (Psychiatry) (Dr. Asif Kamal/ Dr. Zainab)	Practicals Path/Forensic Medicine/ Pharma Batches: ABC		SDL	Clinical Rotation Med,Surg,OBGYN,PAEDS,EYE,ENT,Derma / Psych,Cardio/ GAST,URO / N.SURG,Anes/P.Surg, Nephro/Radio,CBM/Community oriented/based Medical Education G1 to G12	SGD (Forensic Medicine) Inebriant Poisons. Fuels, stimulants &hallucinogens	Evening Clinical Rotation Med, Surg, OBGYN, PAEDS, EYE, ENT, Derma/ Psych, Cardio/GAST, URO/N.SURG,Anes/P.Surg, .Nephro/Radio, G1 to G12
Tuesday 8-2-2022	LCF Intro to the Pharmacology of CNS (Pharmacology) (Prof. Dr. Sajid)	Practicals Path/Forensic Medicine/ Pharma Batches: B C A			Clinical Rotation Med, Surg, OBGYN, PAEDS, EYE, ENT, Derma / Psych, Cardio/ GAST, URO / N.SURG, Anes/P.Surg, Nephro/Radio, CBM/Community oriented/based Medical Education G1 to G12	SGD (Pharmacology) Respiratory anaesthetics (Doxapram, Nikethamide barbiturates, baupiron)	
Wednesday 9-2-2022	LCF Epidemiology (Community Medicine) (Dr. Khalid)	Practicals Path/Forensic Medicine/ Pharma Batches: C A B			Clinical Rotation Med, Surg, OBGYN, PAEDS, EYE, ENT, Derma / Psych, Cardio/ GAST, URO / N.SURG, Anes/P.Surg, Nephro/Radio, CBM/Community oriented/based Medical Education G1 to G12	SGD (Pharmacology) CNS stimulants	
Thursday 10-2-2022	LCF Non-organic insomnia, Sleep wake cycle Disorders (Psychiatry) (Dr. Asif Kamal/ Dr. Zainab)	9:00-10:00 am	10:00 -11:00 am		Clinical Rotation Med, Surg, OBGYN, PAEDS, EYE, ENT, Derma / Psych, Cardio/ GAST, URO / N.SURG, Anes/P.Surg, Nephro/Radio, CBM/Community oriented/based Medical Education G1 to G12	SGD (Community Medicine)	
		LCF Sedative & Hypnotics, Drug Dependence (Forensic Medicine) Dr. Masaud	LCF Study Designs (Community medicine) (Dr. Khalid)				
Friday 11-2-2022	LCF Sedative-hypnotics, Minor tranquilizers, benzodiazepine (Pharmacology) (Dr. Iftikhar Adil)	LCF Classification of Neurotoxins. Cerebral Poisons Somniferous Poisons (Forensic Medicine) (Dr. Masaud)	LCF Measures of mortality &Morbidity (Community medicine) (Dr. Junaid Ahsan)	11:30am-12:30pm	12:30=1:30 pm	1:30-3:30 pm	
				LCF Screening (Community Medicine) (Dr. Junaid Ahsan)	Jumma Prayer	SDL	



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4th PROFF NEUROSCIENCES-II MODULE 1: TIMETABLE WEEK 2 (14th to 18th Feb 2022)
Theme 2: Disturbed Mood & Behaviour

Timings	8:00-9:00am	9:00-11:am		11:00-11:30am	11:30 am-1:30-pm	1:30 2:30pm	2:30 3:30pm	4:00 -6:00 pm
Monday 14-2-2022	LCF Depressive disorders/ Bipolar Affective Disorder (Psychiatry)	Practicals Path/Forensic Medicine/ Pharma Batches: A B C		SDL	Clinical Rotation Med,Surg,OBGYN,PAEDS,EYE,ENT,Derma / Psych,Cardio/ GAST,URO / N.SURG,Anes/P.Surg, Nephro/Radio, CBM/Community oriented/based Medical Education	LCF Depression/ Antidepressants (Pharmacology) (Dr. Naveed)	SGD Insanity and relationship to criminal charges (Forensic Medicine)	Evening Clinical Rotation Med, Surg, OBGYN, PAEDS, EYE, ENT, Derma/ Psych, Cardio/GAST, URO/N.SURG,Anes/P.Surg,Nephro/Radio, G1 to G11
Tuesday 15-2-2022	LCF Forensic Psychiatry (Forensic Medicine) Dr. Saeed Hussain	Practicals Path/Forensic Medicine/ Pharma Batches: B C A			Clinical Rotation Med, Surg, OBGYN, PAEDS, EYE, ENT, Derma / Psych, Cardio/ GAST, URO / N.SURG, Anes/P.Surg, Nephro/Radio, CBM/Community oriented/based Medical Education G1 to G12	LCF Suicide /Anxiety Disorders (Psychiatry) (Dr. Asif Kamal/ Dr.Zainab)	SGD SSRIs / TCAs (Pharmacology)	
Wednesday 16-2-2022	LCF MAOIs / Psychoses (Schizophrenia & others) (Pharmacology) (Dr. Iftikhar Adil)	Practicals Path/Forensic Medicine/ Pharma Batches: C A B			Clinical Rotation Med, Surg, OBGYN, PAEDS, EYE, ENT, Derma / Psych, Cardio/ GAST, URO / N.SURG, Anes/P.Surg, Nephro/Radio, CBM/Community oriented/based Medical Education G1 to G12	LCF Dissociative disorders/ Stress related Disorders (Psychiatry) (Dr. Asif Kamal/ Dr. Zainab)	LCF Alzheimer's disease & Dementias (General Medicine) (Dr. Fawad Jan)	
Thursday 17-2-2022	LCF Antipsychotics (Antischizophrenic drugs)/ Alcohols (Pharmacology) Prof. Dr. M Sajid	9:00-10:00 am	10:00 -11:00 am		Clinical Rotation Med, Surg, OBGYN, PAEDS, EYE, ENT, Derma / Psych, Cardio/ GAST, URO / N.SURG, Anes/P.Surg, Nephro/Radio, CBM/Community oriented/based Medical Education G1 to G12	LCF Biostatistics Data and variable Types (Community Medicine) Dr. Junaid Ahsan	LCF Schizophrenias/ Personality,Psychotic, Delusional&Substance abuse disorders (Psychiatry) Dr. Asif Kamal	
		LCF Somatoform Disorders/ Atypical depression & seasonal affective disorder (Psychiatry) Dr. Asif Kamal	LCF Bipolar affective Disorder/ Mood-stabilizing Drugs/ Lithium carbonate (Pharmacology) Prof. Dr. M Sajid					
Friday 18-2-2022	LCF Prevention & control of mental health disorders (Community Medicine) Miss. Rubina	LCF Mental health act (Forensic Medicine) Dr. Masaud	LCF Will/Civil and criminal responsibility of mentally ill patient (Forensic Medicine) Dr. Masaud	11:30am-12:30pm	LCF Opioids(Morphine, Diamorphine, Codeine, Pethidine, Methadone, Pentazocine,Buprenorphine, Dextromethorphan), Tramadol, Drugs of abuse (Pharmacology) Dr. Iftikhar Adil	Jumma Prayer	1:30-3:30 pm	
							LCF Sampling/ Biases in epidemiological studies (Community Medicine) Dr. Khalid Khan	



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14th PROFF NEUROSCIENCES-II MODULE 1: TIMETABLE WEEK 3 (21st to 25th Feb 2022) Theme 3: Right-sided weakness and inability to speak

Timings	8:00am-9:00am	9:00am-11:am		11:00 am-1:00-pm		1:00 pm-1:30-pm	1:30-2:30pm	2:30- 3:30pm	4;00 -6:00 pm
Monday 21-2-2022	LCF Hypoxia, ischemia, and infarction (Pathology) Dr. Aisha	Clinical Rotation Med, Surg, OBGYN, PAEDS, EYE, ENT, Derma / Psych, Cardio/ GAST, URO / N.SURG, Anes/P.Surg, Nephro/Radio, CBM/Community oriented/based Medical Education G1 to G12		Practicals Path/Forensic Medicine/ Pharma Batches: A B C		SDL	LCF Non-communicable diseases: Strokes (Community Medicine) Dr. Khalid Khan	SGD (Forensic Medicine) Forensic Psychiatry	Evening Clinical Rotation Med, Surg, OBGYN, PAEDS, EYE, ENT, Derma/ Psych, Cardio/GAST, URO/N.SURG, Anes/P.Surg, Nephro/Radio, G1 to G11
Tuesday 22-2-2022	LCF Measures of dispersion (Biostatistics) Mr. Gul Karam	Clinical Rotation Med, Surg, OBGYN, PAEDS, EYE, ENT, Derma / Psych, Cardio/ GAST, URO / N.SURG, Anes/P.Surg, Nephro/Radio, CBM/Community oriented/based Medical Education G1 to G12		Practicals Path/Forensic Medicine/ Pharma Batches: B C A			LCF Normal distribution (Biostatistics) Mr. Gul Karam	LCF Intracranial hemorrhage (Pathology) Prof Dr. Atta Ullah	
Wednesday 23-2-2022	LCF Subarachnoid Haemorrhage(SAH) (Pathology) Dr. Nazish	Clinical Rotation Med, Surg, OBGYN, PAEDS, EYE, ENT, Derma / Psych, Cardio/ GAST, URO / N.SURG, Anes/P.Surg, Nephro/Radio, CBM/Community oriented/based Medical Education G1 to G12		Practicals Path/Forensic Medicine/ Pharma Batches: C A B			LCF Strokes syndromes (Pathology) Dr. Sonia	SGD (Pathology)	
Thursday 24-2-2022	LCF Neurosurgical management of stroke and Subarachnoid hemorrhage (Neurosurgery) Dr. Adnan Ahmad	9:00am-10:00 am LCF P value, critical region, rejection region, alpha beta errors (Biostatistics) Mr. Gul Karam	10:00 -11:00 am SGD Community Medicine NCDs	11:00am-12:00 pm LCF Stroke (G.Medicine/ Neurology) Dr. Fawad Jan	12:00 -1:00 pm LCF Measures of central tendency (Biostatistics) Mr. Gul Karam		LCF Confidence Interval, Confidence level, Standard error (Biostatistics) Mr. Gul Karam	SGD (Pharmacology) Alcohol	
Theme 4: Loss of Consciousness and Fits									
Friday 25-2-2022	LCF Seizures (G.Medicine/Neurology) Dr. Fawad Jan	LCF Introduction to subject /General Anesthesia (Anesthesia) Dr. Pervaiz	LCF Anti Seizures Drugs (Pharmacology) Dr Iftikhar Adil	11:00am-12:00pm LCF Deliriant Poisons: Dhatura (Forensic Medicine) Dr. Masaud	12:00pm-01:00pm LCF Carbamazepine (Pharmacology) Dr. Naveed	1:00-2:00 pm Jumma Prayer	2:00-3:30 pm SDL		



4th PROFF NEUROSCIENCES-II MODULE 1: TIMETABLE WEEK 4 (28th Feb to 4th Mar 2022)

Theme 4: Loss of Consciousness and Fits

Timings	8:00am-9:00am	9:00am-11:am		11:00 am-1:00-pm		1:00 pm-1:30-pm	1:30-2:30pm	2:30- 3:30pm	4:00 -6:00 pm
Monday 28-2-2022	LCF (EYE) Glaucoma/Classification/Glaucoma related Optic Neuropathy	Clinical Rotation Med, Surg, OBGYN, PAEDS, EYE, ENT, Derma / Psych, Cardio/ GAST, URO / N.SURG, Anes/P.Surg, Nephro/Radio, CBM/Community oriented/based Medical Education		Practicals Path/Forensic Medicine/ Pharma Batches: A B C		SDL	LCF Neuroaxis block/ Regional anaesthesia (Anaesthesia)	SGD (Forensic Medicine)	Evening Clinical Rotation Med, Surg, OBGYN, PAEDS, EYE, ENT, Derma/ Psych, Cardio/GAST, URO/N.SURG, Anes/P.Surg, Nephro/Radio, G1 to G11
Tuesday 01-3-2022	LCF (ENT) Salivary Glands & its disorders Dr. Raza/ Dr. Arshad Abbas	Clinical Rotation Med, Surg, OBGYN, PAEDS, EYE, ENT, Derma / Psych, Cardio/ GAST, URO / N.SURG, Anes/P.Surg, Nephro/Radio, CBM/Community oriented/based Medical Education G1 to G12		Practicals Path/Forensic Medicine/ Pharma Batches: B C A			LCF Preoperative evaluation and risk assessment (Anesthesia) Dr. Pervaiz	LCF Phenytoin/Valproate/ Phenobarbitone/ Benzodiazepines (Pharmacology) Dr. Naveed	
Wednesday 02-3-2022	LCF Lamotrigine, Topiramate etc/Status epilepticus (Pharmacology) Dr. Naveed	Clinical Rotation Med, Surg, OBGYN, PAEDS, EYE, ENT, Derma / Psych, Cardio/ GAST, URO / N.SURG, Anes/P.Surg, Nephro/Radio, CBM/Community oriented/based Medical Education G1 to G12		Practicals Path/Forensic Medicine/ Pharma Batches: C A B			LCF Conflict resolution (PRIME/DME) Ms. Rubina Psychologist	LCF General, Inhaled, IV anesthetics (Pharmacology) Dr. Andaleeb	
Thursday 03-3-2022	LCF Monitoring in anaesthesia (Anesthesia) Dr. Pervaiz	9:00am-10:00 am	10:00 -11:00 am	11:00am-12:00 pm	12:00 -1:00 pm		LCF Z-test & it's application, Types / shapes of frequency distribution (Biostatistics) Mr. Gul Karam	SGD (Pharmacology) Chronic Alcoholism	
		LCF (EYE) Functions of Optic Nerve Prof Dr. Iftikhar Ahmad	LCF Peripheral Neurotoxin (Forensic Medicine) Dr. Masaud	LCF Pre-anaesthetic medications/ Obstetric analgesia (Pharmacology) Dr. Andaleeb	SGD (Community Medicine)				

Theme 5: Tremors

Friday 04-3-2022	LCF Parkinson `s disease (G.Medicine/Neurology) Dr. Fawad Jan	LCF (ENT) Peritonsillar Abscess Dr. Raza/ Dr. Arshad Abbas	LCF Neurodegenerative disorders: /MND (Pathology) Dr. Asif	11:00am-12:00pm	12:00pm-01:00pm	1:00-2:00 pm	2:00-3:30 pm	
				LCF Correlation, regression (Biostatistics) Mr. Gul Karam	LCF Drugs for Parkinsonism/ Levodopa/ Bromocriptine/ Selegiline (Pharmacology) Dr. Andaleeb	Jumma Prayer	SDL	



4th PROFF NEUROSCIENCES-II MODULE 1: TIMETABLE WEEK 5 (7th to 11th Mar 2022)

Theme 5: Tremors

Timings	8:00am-9:00am	9:00am-11:am	11:00 am-1:00-pm	1:00 pm-1:30-pm	1:30-2:30pm	2:30- 3:30pm	4;00 -6:00 pm
Monday 07-3-2022	LCF (EYE) Optic Neuritis Prof Dr. Iftikhar Ahmad	Clinical Rotation Med, Surg, OBGYN, PAEDS, EYE, ENT, Derma / Psych, Cardio/ GAST, URO / N.SURG, Anes/P.Surg, Nephro/Radio, CBM/Community oriented/based Medical Education G1 to G12	Practicals Path/Forensic Medicine/ Pharma Batches: A B C	SDL	LCF Apomorphine/ Drug-induced Parkinsonism (Pharmacology) Dr. Andaleeb	LCF Cerebellar ataxias (Paediatrics) Dr. Haji Gul	Evening Clinical Rotation Med, Surg, OBGYN, PAEDS, EYE, ENT, Derma/ Psych, Cardio/GAST, URO/N.SURG, Anes/P.Surg, Nephro/Radio, G1 to G11

Theme 6 : Headache

Tuesday 08-3-2022	LCF (ENT) Tonsillectomy indication, procedures & it completions Dr. Raza/ Dr. Arshad Abbas	Clinical Rotation Med, Surg, OBGYN, PAEDS, EYE, ENT, Derma / Psych, Cardio/ GAST, URO / N.SURG, Anes/P.Surg, Nephro/Radio, CBM/Community oriented/based Medical Education G1 to G12	Practicals Path/Forensic Medicine/ Pharma Batches: B C A	SDL	LCF Tumours of CNS (Pathology) Prof Dr. Mir Atta Ullah	LCF Head Injury 1 (Forensic Medicine) Dr. Saeed Hussain							
Wednesday 09-3-2022	LCF Meningitis (Pathology) Dr. Nazish	Clinical Rotation Med, Surg, OBGYN, PAEDS, EYE, ENT, Derma / Psych, Cardio/ GAST, URO / N.SURG, Anes/P.Surg, Nephro/Radio, CBM/Community oriented/based Medical Education G1 to G12	Practicals Path/Forensic Medicine/ Pharma Batches: C A B		LCF "t" test/ Chi square test & its application (Biostatistics) Mr. Gul Karam	LCF Meningitis/ TBM (Paediatrics) Dr. Haji Gul							
Thursday 10-3-2022	LCF Migraine & Cluster headaches/ Triptans Ergot alkaloids/ Ergotamine (Pharmacology) Dr. Naveed	<table border="1" style="width: 100%;"> <tr> <td>9:00am-10:00 am</td> <td>10:00 -11:00 am</td> </tr> <tr> <td>LCF (EYE) Pupillary reactions & its abnormalities Prof Dr. Iftikhar Ahma</td> <td>LCF Encephalitis/ Brain abscess/ Cerebral Toxoplasmosis (Pathology) Dr. Asif /Prof Dr. Atta Ullah</td> </tr> </table>	9:00am-10:00 am		10:00 -11:00 am	LCF (EYE) Pupillary reactions & its abnormalities Prof Dr. Iftikhar Ahma		LCF Encephalitis/ Brain abscess/ Cerebral Toxoplasmosis (Pathology) Dr. Asif /Prof Dr. Atta Ullah	<table border="1" style="width: 100%;"> <tr> <td>11:00am-12:00 pm</td> <td>12:00 -1:00 pm</td> </tr> <tr> <td>LCF Head Injury 2 (Forensic Medicine) Dr. Masaud</td> <td>LCF Meningitis General Medicine/ Neurology Dr. Fawad Jan</td> </tr> </table>	11:00am-12:00 pm	12:00 -1:00 pm	LCF Head Injury 2 (Forensic Medicine) Dr. Masaud	LCF Meningitis General Medicine/ Neurology Dr. Fawad Jan
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LCF (EYE) Pupillary reactions & its abnormalities Prof Dr. Iftikhar Ahma	LCF Encephalitis/ Brain abscess/ Cerebral Toxoplasmosis (Pathology) Dr. Asif /Prof Dr. Atta Ullah												
11:00am-12:00 pm	12:00 -1:00 pm												
LCF Head Injury 2 (Forensic Medicine) Dr. Masaud	LCF Meningitis General Medicine/ Neurology Dr. Fawad Jan												

Theme 7: Paraplegia

Friday 11-3-2022	LCF Neurotoxins: spinal poison (Forensic Medicine) Dr. Fazal Ur Rahman	LCF (ENT) Oral Ulcers Dr. Raza/ Dr. Arshad Abbas	LCF Multiple sclerosis & other demyelinating disorders of CNS (Pathology) Dr. Shazia	<table border="1" style="width: 100%;"> <tr> <td>11:00am-12:00pm</td> <td>12:00pm-01:00pm</td> </tr> <tr> <td>LCF Snake bite neurotoxins / Botulism toxins (Forensic Medicine) Dr. Masaud</td> <td>LCF Multiple sclerosis/ Transverse myelitis/ Caries spine (General Medicine/ Neurology) Dr. Fawad Jan</td> </tr> </table>	11:00am-12:00pm	12:00pm-01:00pm	LCF Snake bite neurotoxins / Botulism toxins (Forensic Medicine) Dr. Masaud	LCF Multiple sclerosis/ Transverse myelitis/ Caries spine (General Medicine/ Neurology) Dr. Fawad Jan	1:00-2:00 pm	2:00-3:30 pm	
11:00am-12:00pm	12:00pm-01:00pm										
LCF Snake bite neurotoxins / Botulism toxins (Forensic Medicine) Dr. Masaud	LCF Multiple sclerosis/ Transverse myelitis/ Caries spine (General Medicine/ Neurology) Dr. Fawad Jan										
					Jumma Prayer	SDL					



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GAJJU KHAN MEDICAL COLLEGE SWABI
Department of Medical Education



4th PROFF NEUROSCIENCES-II MODULE 1: TIMETABLE WEEK 6 (14th to 18th Mar 2022)
Theme 7: Paraplegia

Timings	8:00am-9:00am	9:00am-10am	10am-11am	11am-12pm	12pm-1pm	1:00 pm-1:30-pm	1:30-2:30pm	2:30- 3:30pm	4;00 -6:00 pm
Monday 14-3-2022	LCF (EYE) Prof Dr. Iftikhar Ahmad	LCF Data analysis (PRIME/ RESEARCH) Mr. Gul Karam	LCF Traumatic paraplegia Spinal Tumor (Neurosurgery)	LCF Practical Problems in biostatistics (Biostatistics)	SGD (Comm. Medicine)	SDL	LCF Mx of traumatic paraplegia (Orthopaedic s)	SGD (Pharmacolog y) Migraine & Cluster Headache	Evening Clinical Rotation Med, Surg, OBGYN, PAEDS, EYE, ENT, Derma/ Psych, Cardio/GAST, URO/N.SURG, Anes /P.Surg, Nephro/Radio,
Theme 8:									
Tuesday 15-3-2022	LCF (ENT) Carcinoma Oral Cavity & D/Ds of Membrane over Tonsil Dr. Raza/ Dr. Arshad Abbas	LCF Guillain Barre syndrome/ Neuropathies/ Myasthenia Gravis (General Medicine/ Neurology) Dr. Fawad Jan	LCF Hereditary neuropathie s (Paediatrics) Dr. Haji Gul	LCF Local anesthetics (Pharmacology) Dr. Naveed	LCF Peripheral nerve injury (Orthopaed ics) Dr. M. Saqib	SDL	LCF P.Nerves injury+Tumours/ Demyelinating neuropathies/ Myasthenia Gravis (Pathology) Dr. Subhanud din	SGD (Pathology)	G1 to G11
Wednesday 16-3-2022	BLOCK J: MCQs PAPER								
Thursday 17-3-2022	Community Tour to Lahore								
Friday 18-3-2022	Community Tour to Lahore								