



**NEUROSCIENCES MODULE
STUDY GUIDE
MBBS YEAR II
2022-2023**



**BAQAI MEDICAL COLLEGE
BAQAI MEDICAL UNIVERSITY**

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LIST OF ABBREVIATIONS

Ana-Lect	Anatomy Lecture	CBL	Case Based Learning
DSL	Directed Self Learning	SDL	Self-directed learning
SGD	Small Group Discussion	DSL	Directed Self learner

PW	Practical Work	OSCE	Objective Structured Clinical Examination
MCQ	Multiple Choice Question	Phy-Lect	Physiology Lecture
BMU	Baqai Medical University	Bio-Lect	Biochemistry Lecture
BMC	Baqai Medical College	PEaRLS	Professionalism, Ethics, Research, Leadership, Communication Skills.
LGIF	Large group interactive format	SGIF	Short group interactive format
TS	Teaching strategy		

BAQAI MEDICAL UNIVERSITY VISION STATEMENT

To evolve as a nucleus for higher learning with a resolution to be socially accountable, focused on producing accomplished health care professionals for services in all spheres of life at the national and global level.

BAQAI MEDICAL UNIVERSITY MISSION STATEMENT

University is dedicated to the growth of competencies in its potential graduates through dissemination of knowledge for patient care, innovation in scholarship, origination of leadership skills, and use of technological advancements and providing.

BAQAI MEDICAL COLLEGE MISSION STATEMENT

The mission of the Baqai medical college is to produce medical graduates, who are accomplished and responsible individuals and have skills for problem solving, clinical judgment, research &

leadership for medical practice at the international level and are also aware of the health problems of the less privileged rural and urban population of Pakistan.

OUTCOMES OF THE MBBS PROGRAM

By the end of five years MBBS program, The Baqai Medical College graduate will be able to:

- Write and report focused history, perform physical examination, formulate a diagnosis and management plan for common health problems.
- Utilize knowledge of basic and clinical sciences for patient care.
- Apply evidence-based practices for protecting, maintaining and promoting the health of individuals, families and community.
- Identify problems, critically review literature, conduct research and disseminate knowledge.
- Lead other team members as per situational needs for quality health service.

Acquire professional behaviours that embodies lifelong learning, altruism, empathy and cultural sensitivity in provision health care service.

2nd Year MBBS Modular Committee

Dr. Rashid (Anatomy)	Chairman 2 nd Modular Committee and Head of CBL Team
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Dr. Asma Siddiqui (Physiology)	2 nd Year MBBS Study Guide Team member-2
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Dr. Saba Abrar (Physiology)	2 nd year MBBS CBL Team Coordinator
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Dr. Muhammad Salman khan (Pathology)	Member
Dr. Hina (Pharmacology)	Member
Dr. Rafay (Forensic Medicine)	Member
Dr. Sidra (Surgery & allied)	Member
Dr. Anita Haroon (Medicine & Allied)	Member
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Introduction:

The Neurosciences Module is the fifth module for 2nd Year MBBS Integrated Modular Curriculum for MBBS program. It will give an introduction and

awareness about the curriculum of neurosciences in general along with the teaching and learning environment. This module includes basic anatomical, physiological and biochemical concepts in relation to the nervous system and its link with clinical aspects related to the diseases of brain and nerves. It also includes the basis of research and orientation about the clinical neurosciences. The curriculum will be delivered in the form of interactive large and small group formats including lectures, SGDs, practical and DSL.

Duration	13 weeks
Dates	18-10-2022 to 13-01-2023
Placement in Course	5 th Module of 2 nd Year MBBS
EOA (End of module Assessment)	16 th January, 2023 (Subject to minor changes)

Distribution of Teaching Activities

Learning Objectives:

ANATOMY			
LEARNING OBJECTIVES	TEACHING STRATEGY	DURATION	VENUE
OVERVIEW OF NERVOUS SYSTEM (LEC-1)			
<ul style="list-style-type: none"> • Explain the basic organization of the main structures that form the nervous system. • Recognize a three dimensional appreciation of the parts of the brain and their relative positions to one another. 	LGIS	1 hour	Lecture Hall-2 Block-A
NEUROBIOLOGY OF NEURON & NEUROGLIAL CELL (LEC-2)			
<ul style="list-style-type: none"> • Define the neuron and name its processes. • Describe the varieties of neuron and identify them in the different parts of the nervous system. • Recognize the cell biology of the neuron and understand the function of nerve cell and its cell processes. 	LGIS	45 minutes	Lecture Hall-2 Block-A

<ul style="list-style-type: none"> • Compare the structure of the plasma membrane as it is related to its physiology. • Describe the transport of materials from the cell body to the axon terminals. • Explain the structure and function of synapses and neurotransmitters. 			
NERVE FIBERS, RECEPTORS, & DERMATOME (LEC-3)			
<ul style="list-style-type: none"> • Define the nerve fibers and name its processes. • Describe the varieties of receptors and identify them in the different parts of the nervous system. • Recognize the dermatome of the nervous system and understand their landmarks. • Describe the transport of materials from the cell body to the axon terminals. • Explain the structure and function of receptors and neurotransmitters. 	LGIS	2 hours	Lecture Hall-2 Block-A
HISTOLOGY OF NEURON & NEUROGLIA (HIS LEC-1)			

<ul style="list-style-type: none"> • Define the neuron and name its processes. • Explain the histology of neuron and neuroglia. • Microanatomy of various types neuroglia cells. 	<p>LGIS</p>	<p>1 hour</p>	<p>Lecture Hall-2 Block-A</p>
DEVELOPMENT OF SPINAL CORD (EMB LEC-1)			
<ul style="list-style-type: none"> • Describe the Neuro-epithelial, Mantle, and Marginal Layers. • Describe the Basal, Alar, Roof, and Floor Plates. • Enumerate the Histological Differentiation • Explain the role of neural crest cells. • Describe the processes of myelination. • Describe the clinical correlation of spinal cord development. 	<p>LGIS</p>	<p>1 hour</p>	<p>Lecture Hall-2 Block-A</p>
SPINAL CORD (LEC-4)			

<ul style="list-style-type: none"> • Discuss the basic structure of the spinal cord. • Explain the position of the main nervous pathways and nerve cell group in the spinal cord. • Comparison of structural details in different regions of the spinal cord. • Discuss the transverse section of spinal cord at different levels. • Enlist the main arteries and veins supplying the spinal cord. 	<p>LGIS</p>	<p>2 hours</p>	<p>Lecture Hall-2 Block-A</p>
FORMATION OF NEURAL TUBE (EMB LEC-2)			
<ul style="list-style-type: none"> • Describe the formation of neural tube. • Describe the development of Rhombencephalon: Hindbrain. • Describe the development of Mesencephalon: Midbrain. • Describe the development of Telencephalon. • Describe the development of cerebellum. • Describe the cranial defects. 	<p>LGIS</p>	<p>1 hour</p>	<p>Lecture Hall-2 Block-A</p>
HISTOLOGY OF SPINAL CORD (HIS LEC-2)			

<ul style="list-style-type: none"> • Discuss the basic micro structure of the spinal cord. • Explain the position of the main nervous pathways and nerve cell group in the spinal cord. • Comparison of structural details in different regions of the spinal cord. • Discuss the transverse section of spinal cord at different levels. 	<p>LGIS</p>	<p>1 hour</p>	<p>Lecture Hall-2 Block-A</p>
ASCENDING TRACTS OF SPINAL CORD (LEC-5)			
<ul style="list-style-type: none"> • Enlist the names of ascending tracts. • Drawing of each of the ascending tracts, showing their cells of origin, their course through the central nervous system and their destinations. • Describe the function of ascending tracts. 	<p>LGIS</p>	<p>1hour</p>	<p>Lecture Hall-2 Block-A</p>
MODEL OF SPINAL CORD (SGT-1)			

<ul style="list-style-type: none"> • Discuss the model of spinal cord. • Comparison of structural details in different regions of the spinal cord. • Discuss the spinal cord at different levels. • Enlist the main arteries and veins supplying the spinal cord. 	SGIS	2 hours	Lecture Hall-2 Block-A
SLIDES OF SPINAL CORD (PW-1)			
<ul style="list-style-type: none"> • Identify the microscopic features of Spinal cord. • Discuss the spinal cord at different levels. • Comparison of structural details in different regions of the spinal cord. 	SGIS	2 hours	Histology Lab, 1 st floor, Block-A
DEVELOPMENT OF BRAIN-I (EMB LEC-3)			
<ul style="list-style-type: none"> • Describe the development of fore brain. • Describe the defects of fore brain. • Describe the development of Mesencephalon: Midbrain. • Describe the defects of midbrain. 	LGIS	1 hour	Lecture Hall-2 Block-A

<ul style="list-style-type: none"> Describe the development of Rhombencephalon: Hindbrain. Describe the defects of hind brain. 			
DESCENDING TRACTS OF SPINAL CORD (LEC-6)			
<ul style="list-style-type: none"> Enlist the names of descending tracts. Demonstrate each of the descending tracts, showing their cells of origin, their course through the central nervous system and their destinations. Describe the function of descending tracts. 	LGIS	2 hours	Lecture Hall-2 Block-A
BLOOD SUPPLY OF SPINAL CORD (LEC-7)			
<ul style="list-style-type: none"> Discuss the basic structure of the spinal cord. Explain the position of the main nervous pathways and nerve cell group in the spinal cord. Enlist the main arteries and veins supplying the spinal cord. 	LGIS	1 hour	Lecture Hall-2 Block-A
MODEL OF BRAIN STEM (SGT-2)			

<ul style="list-style-type: none"> • Enumerate the anatomy of the brain stem. • Describe the pons, its parts, location, and relations. • Recognize the gross appearance of medulla oblongata. • Discuss the main anatomical connections of the brain stem. 	SGIS	2 hours	LRC Anatomy Ground floor Block-A
INTRODUCTION OF BRAIN STEM (LEC-8)			
<ul style="list-style-type: none"> • Enlist the parts of the brain stem. • Describe the pons, its parts, location, and relations. • Recognize the gross appearance of medulla oblongata. • Discuss the main anatomical connections of the brain stem. 	LGIS	1 hour	Lecture Hall-2 Block-A
EXTERNAL STRUCTURES OF MEDULLA OBLONGATA (LEC-9)			

<ul style="list-style-type: none"> • Recognize the gross appearance of medulla oblongata. • Describe the external appearance of medulla oblongata. • Describe the origin of different cranial nerves from the medulla oblongata. • Summarize the function of medulla oblongata. 	<p>LGIS</p>	<p>1 hour</p>	<p>Lecture Hall-2 Block-A</p>
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INTERNAL STRUCTURES OF MEDULLA OBLONGATA (LEC-10)

<ul style="list-style-type: none"> • Recognize the internal appearance of medulla oblongata. • Develop a three dimensional picture of cut section of medulla oblongata. • Describe comparison of the different level of the medulla oblongata. • Summarize the details of medulla oblongata. 	<p>LGIS</p>	<p>45 minutes</p>	<p>Lecture Hall-2 Block-A</p>
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DEVELOPMENT OF BRAIN-II (EMB LEC-4)

<ul style="list-style-type: none"> • Describe the development of fore brain, midbrain, and hindbrain. • Describe the defects of forebrain, midbrain and hindbrain. 	<p>LGIS</p>	<p>1 hour</p>	<p>Lecture Hall-2 Block-A</p>
<p>PONS-I (LEC-11)</p>			
<ul style="list-style-type: none"> • Enumerate the anatomy of the brain stem. • Describe the pons, its parts, location, and relations. • Enlist the position of several cranial nerve nuclei, and the paths taken by various ascending and descending nerve tracts. • Describe the different level of the pons. <p>Summarize the function of the pons.</p>	<p>LGIS</p>	<p>1 hour</p>	<p>Lecture Hall-2 Block-A</p>
<p>PONS-II (LEC-12)</p>			

<ul style="list-style-type: none"> • Describe the pons, its parts, location, and relations. • Enlist the position of several of the cranial nerve nuclei, and the paths taken by various ascending and descending nerve tracts. • Describe the defects of the different level of the pons. 	<p>LGIS</p>	<p>45 minutes</p>	<p>Lecture Hall-2 Block-A</p>
MID BRAIN-I (LEC-13)			
<ul style="list-style-type: none"> • Recognize the gross appearance of midbrain • Develop a three dimensional picture of cut section of the midbrain. • Describe comparison of the different levels of the midbrain. • Summarize the function of the midbrain. 	<p>LGIS</p>	<p>1 hour</p>	<p>Lecture Hall-2 Block-A</p>
MID BRAIN-II (LEC-14)			

<ul style="list-style-type: none"> • Describe the midbrain and recognize the cut sections of the midbrain. • Describe comparison of the different levels of the midbrain. • Enlist the position and the paths of several cranial nerve nuclei of the midbrain. 	<p>LGIS</p>	<p>45 minutes</p>	<p>Lecture Hall-2 Block-A</p>
CEREBELLUM (LEC-15)			
<ul style="list-style-type: none"> • Explain the structure and function of the cerebellum. • Describe the functional areas of the cerebellar cortex. • Enlist the intracerebellar nuclei. • Discuss the cerebellar cortical mechanism. 	<p>LGIS</p>	<p>1 hour</p>	<p>Lecture Hall-2 Block-A</p>
HISTOLOGY OF CEREBELLUM (HIS LEC-3)			
<ul style="list-style-type: none"> • Discuss the basic micro structure of the cerebellum. • Comparison of structural details in different regions of the cerebellum. • Discuss the transverse sections of cerebellum at different levels. 	<p>LGIS</p>	<p>1 hour</p>	<p>Lecture Hall-2 Block-A</p>

<ul style="list-style-type: none"> Develop a three dimensional picture of cut section of cerebellum. 			
CEREBELLAR PATHWAY (LEC-16)			
<ul style="list-style-type: none"> Discuss the cerebellar cortical mechanism. Describe the functional areas of the cerebellar cortex. Enlist the intracerebellar nuclei. Discuss the cerebellar pathways. 	LGIS	1 hour	Lecture Hall-2 Block-A
SLIDES OF CEREBELLUM (PW-2)			
<ul style="list-style-type: none"> Identify the microscopic features of cerebellum. Discuss the basic micro structure of the cerebellum. Discuss the cerebellum at different levels. 	SGIS	2 hours	Histology Lab, 1 st floor, Block-A
CEREBRUM (LEC-17)			
<ul style="list-style-type: none"> Describe the cerebrum and its various lobes. Enlist the various sulci and gyri of the cerebrum. 	LGIS	2 hours	Lecture Hall-2 Block-A
STRUCTURE OF CEREBRAL HEMISPHERE (LEC-18)			

<ul style="list-style-type: none"> • Understand the definition of the diencephalon. • Accurately localize the thalamus and hypothalamus by studying the sagittal, coronal and horizontal sections of the brain. • To understand the exact position of the main conduit of the ascending and descending tracts. • Enlist the main sulci of the cerebrum. • Enlist the lobes of the cerebral hemisphere. 	<p>LGIS</p>	<p>1 hour</p>	<p>Lecture Hall-2 Block-A</p>
STRUCTURE OF CEREBRAL CORTEX (LEC-19)			
<ul style="list-style-type: none"> • Understand the diencephalon, thalamus and hypothalamus. • Enlist the lobes of the cerebral hemisphere. • Enlist the main sulci of the cerebrum. • Describe the position of the ascending and descending tracts. 	<p>LGIS</p>	<p>45 minutes</p>	<p>Lecture Hall-2 Block-A</p>
HISTOLOGY OF CEREBRUM (HIS LEC-4)			
<ul style="list-style-type: none"> • Discuss the internal structure of cerebral hemisphere. 	<p>LGIS</p>	<p>I hour</p>	<p>Lecture Hall-2 Block-A</p>

<ul style="list-style-type: none"> • Identify the histology of cerebrum. • Identify the various types of cells of cerebrum. 			
MODEL OF BRAIN (SGT-3)			
<ul style="list-style-type: none"> • Discuss the structure of the cerebral cortex and other parts of brain. • Describe the mechanism of the cerebral cortex. • Explain the cortical areas. • Discuss the main anatomical connections of the cerebral cortex. 	SGIS	2 hours	Lecture Hall-2 Block-A
RETICULAR FORMATION AND LIMBIC SYSTEM (LEC-20)			
<ul style="list-style-type: none"> • Summarize the structure and function of the reticular formation. • Discuss the parts of the reticular formation and its functions. • Describe the connecting pathway of the reticular formation. • Summarize the structure and function of the limbic system. 	LGIS	1 hour	Lecture Hall-2 Block-A

<ul style="list-style-type: none"> • Discuss the parts of the limbic system and its functions. • Describe the connecting pathway of the limbic system. 			
BASAL GANGLIA (LEC-21)			
<ul style="list-style-type: none"> • Describe the basal ganglia. • Describe the basal nuclei, and their connections. • Describe the functions of basal ganglia and their nuclei. • Analyze the clinical problem relate to basal nuclei. 	LGIS	1 hour	Lecture Hall-2 Block-A
BASAL GANGLIA & THEIR CONNECTIONS (LEC-22)			
<ul style="list-style-type: none"> • Describe the basal ganglia and their connections. • Describe the function of basal ganglia. • Analyze the clinical problem relate to basal ganglia. 	LGIS	2 hours	Lecture Hall-2 Block-A
SLIDES OF CEREBRUM (PW-3)			
<ul style="list-style-type: none"> • Identify the microscopic features of cerebrum. • Discuss the basic micro structure of the cerebrum. 	SGIS	2 hours	Histology Lab, 1 st floor, Block-A

<ul style="list-style-type: none"> • Discuss the cerebrum at different levels. 			
THALAMUS (LEC-23)			
<ul style="list-style-type: none"> • Define thalamus. • Describe the subdivision of thalamus. • Enlist the nuclei of the thalamus. • Describe the various connections of thalamus. • Describe the function of thalamus. 	LGIS	1 hour	Lecture Hall-2 Block-A
THALAMIC CONNECTIONS (LEC-24)			
<ul style="list-style-type: none"> • Describe the subdivision of thalamus. • Enlist the nuclei of the thalamus. • Describe the various connections of thalamus. • Describe the function of connections of thalamus. 	LGIS	2 hours	Lecture Hall-2 Block-A
HYPOTHALAMUS (LEC-25)			
<ul style="list-style-type: none"> • Identify the location and boundaries of the hypothalamus • Describe the function of hypothalamus. 	LGIS	1 hour	Lecture Hall-2 Block-A

<ul style="list-style-type: none"> Analyze the common clinical problems involving the hypothalamus. 			
HYPOTHALAMIC CONNECTIONS (LEC-26)			
<ul style="list-style-type: none"> Describe the various connections of hypothalamus. Illustrate the main connections of the nuclei. 	LGIS	45 minutes	Lecture Hall-2 Block-A
MODEL OF HYPOTHALAMUS & THALAMUS (SGT-4)			
<ul style="list-style-type: none"> Identify the location and boundaries of the thalamus and hypothalamus. Describe the function of thalamus & hypothalamus. Identify the relations of thalamus & hypothalamus. 	SGIS	2 hours	LRC Anatomy Ground floor Block-A
OLFACTORY CRANIAL NERVE (LEC-27)			
<ul style="list-style-type: none"> Recognize the location of olfactory nerve, its cranial nuclei and their connections. Describe the function of olfactory nerve. Discuss the pathway of olfactory nerve. 	LGIS	1.45 hour	Lecture Hall-2 Block-A
OPTIC CRANIAL NERVE (LEC-28)			
<ul style="list-style-type: none"> Enlist the names of cranial nerves and their nuclei. 	LGIS	1.45 hour	Lecture Hall-2 Block-A

<ul style="list-style-type: none"> • Recognize the location of optic nerve, its cranial nuclei and their connections. • Describe the function of optic nerve. • Discuss the pathway of optic nerve. 			
OCULOMOTOR CRANIAL NERVE (LEC-29)			
<ul style="list-style-type: none"> • Recognize the location of oculomotor nerve, its cranial nuclei and their connections. • Describe the function of oculomotor nerve. • Discuss the pathway of oculomotor nerve. 	LGIS	1.45 hour	Lecture Hall-2 Block-A
CRANIAL NERVE SPOTTING (PW-4)			
<ul style="list-style-type: none"> • Enlist the names of cranial nerves and their nuclei. • Recognize the location of cranial nuclei and their connections. • Describe the function of cranial nerves. • Discuss the pathway of each cranial nerve. 	SGIS	2 hours	Anatomy LRC, Ground floor, Block-A
AUTONOMIC NERVOUS SYSTEM (LEC-30)			

<ul style="list-style-type: none"> • Discuss the organization of the autonomic nervous system. • Describe the autonomic ganglia. • Explain the function of autonomic nervous system. • Describe some important autonomic innervations. • Discuss some important physiological reflexes involving the nervous system. 	<p>LGIS</p>	<p>1hour</p>	<p>Lecture Hall-2 Block-A</p>
SYMPATHETIC SYSTEM (LEC-31)			
<ul style="list-style-type: none"> • Illustrate important anatomical, physiologic and pharmacologic differences between the sympathetic and parasympathetic parts. • Explain the function of sympathetic nervous system. 	<p>LGIS</p>	<p>1.45 hour</p>	<p>Lecture Hall-2 Block-A</p>
PARASYMPATHETIC SYSTEM (LEC-32)			

<ul style="list-style-type: none"> • Illustrate important anatomical, physiologic and pharmacologic differences between the sympathetic and parasympathetic parts. • Explain the function of parasympathetic nervous system. 	LGIS	45 minutes	Lecture Hall-2 Block-A
TRIGEMINAL CRANIAL NERVE (LEC-33)			
<ul style="list-style-type: none"> • Recognize the location of trigeminal nerve, its cranial nuclei and their connections. • Describe the function of trigeminal nerve. • Discuss the pathway of trigeminal nerve. 	LGIS	1.45 hour	Lecture Hall-2 Block-A
CRANIAL NERVE SPECIMEN (PW-5)			
<ul style="list-style-type: none"> • Enlist the names of cranial nerves and their nuclei. • Recognize the location of cranial nuclei and their connections. • Describe the function of cranial nerves. • Discuss the pathway of each cranial nerve. 	SGIS	2 hours	Anatomy LRC, Ground floor, Block-A
MENINGES OF BRAIN AND SPINAL CORD (LEC-34)			

<ul style="list-style-type: none"> • Describe the structure and function of the three meninges. • Describe the venous sinuses within the skull. • Explain how the meninges contribute to their walls. • Discuss the relationship of the meninges to the different form of cerebral hemorrhage. • Discuss the basic structure of the spinal cord. • Explain the position of the main nervous pathways and nerve cell group in the spinal cord. 	<p>LGIS</p>	<p>1.45 hour</p>	<p>Lecture Hall-2 Block-A</p>
VENTRICULAR SYSTEM (LEC-35)			
<ul style="list-style-type: none"> • Discuss the ventricular system. • Illustrate the locations, functions, the origins and the fate of cerebrospinal fluid. • Recognize the structure and extend of ventricular system. 	<p>LGIS</p>	<p>1.45 hour</p>	<p>Lecture Hall-2 Block-A</p>
QUIZ (SEQ) OF CRANIAL NERVES (SGT-5)			

<ul style="list-style-type: none"> • Enlist the names of cranial nerves and their nuclei. • Recognize the location of cranial nuclei and their connections. • Describe the function of cranial nerves. • Discuss the pathway of each cranial nerve. 	SGIS	45 minutes	Lecture Hall-2 Block-A
SPECIMEN OF MENINGES OF BRAIN (PW-6)			
<ul style="list-style-type: none"> • Recognize the structure of the three meninges. • Describe the venous sinuses within the skull. • Explain how the meninges contribute to their walls. • Discuss the relationship of the meninges to the different form of cerebral hemorrhage. 	SGIS	2 hours	Anatomy LRC, Ground floor, Block-A
THIRD VENTRICLE (LEC-36)			
<ul style="list-style-type: none"> • Discuss the ventricular system. • Illustrate the locations, functions, and the landmarks of 3rd ventricle. • Recognize the structure and extend of 3rd ventricle. 	LGIS	1 hour	Lecture Hall-2 Block-A
FOURTH VENTRICLE (LEC-37)			

<ul style="list-style-type: none"> • Discuss the ventricular system. • Illustrate the locations, functions, and the landmarks of 4th ventricle. • Recognize the structure and extend of 4th ventricle. 	<p>LGIS</p>	<p>1 hour</p>	<p>Lecture Hall-2 Block-A</p>
<p>CEREBROSPINAL FLUID (LEC-38)</p>			
<ul style="list-style-type: none"> • Illustrate the locations, functions, the origins and the fate of cerebrospinal fluid. • Explain how certain parts of the brain are protected from potentially toxic drugs or other exogenous materials. • Recognize the structure and function of the blood brain barriers. 	<p>LGIS</p>	<p>1 hour</p>	<p>Lecture Hall-2 Block-A</p>
<p>CIRCLE OF WILLIS MODEL (PW-7)</p>			
<ul style="list-style-type: none"> • Recognize the structure of the gross anatomy of brain model. • Describe the formation of Circle of Willis. • Enlist the main arteries supplying the brain. • Describe the venous sinuses within the skull. 	<p>SGIS</p>	<p>2 hours</p>	<p>Anatomy LRC, Ground floor, Block-A</p>

<ul style="list-style-type: none"> • Explain how the meninges contribute to their walls. • Discuss the relationship of the meninges to the different form of cerebral hemorrhage. 			
BLOOD SUPPLY OF THE BRAIN AND SPINAL CORD (LEC-39)			
<ul style="list-style-type: none"> • Enlist the main arteries and veins supplying the brain and spinal cord. • Explain the areas of the cerebral cortex and spinal cord supplied by a particular artery. • Describe the circle of Willis and blood supply to the internal capsule. • Discuss the dysfunction that would result if the artery were blocked. 	LGIS	1.45 hour	Lecture Hall-2 Block-A
BLOOD BRAIN BARRIER-I (LEC-40)			
<ul style="list-style-type: none"> • Illustrate the locations, functions, the origins and the fate of cerebrospinal fluid. • Recognize the structure and function of the blood brain barriers. 	LGIS	1 hour	Lecture Hall-2 Block-A
BLOOD BRAIN BARRIER-II (LEC-41)			

<ul style="list-style-type: none"> • Recognize the structure of the blood brain barriers. • Explain how certain parts of the brain are protected from potentially toxic drugs or other exogenous materials. 	LGIS	1 hour	Lecture Hall-2 Block-A
APPLIED ANATOMY OF BLOOD SUPPLY OF BRAIN (LEC-42)			
<ul style="list-style-type: none"> • Enlist the main arteries and veins supplying the brain and their applied. • Explain the areas of the cerebral cortex supplied by a particular artery and their applied. • Describe the circle of Willis and blood supply to the internal capsule and their applied. • Discuss the dysfunction that would result if the artery were blocked. 	LGIS	1.45 hour	Lecture Hall-2 Block-A
VESTIBULOCOCHLEAR NERVE (LEC-43)			
<ul style="list-style-type: none"> • Describe the vestibulocochlear nerve and its branches. • Identify its pathway and relations. • Identify the structures supplied by vestibulocochlear 	LGIS	1 hour	Lecture Hall-2 Block-A

nerve.			
APPLIED ANATOMY OF CORTICAL AREAS (LEC-44)			
<ul style="list-style-type: none"> • Understand the diencephalon, thalamus, hypothalamus and their applied. • Enlist the lobes of the cerebral hemisphere and their applied. • Enlist the main sulci of the cerebrum and the lobes of the cerebral hemisphere and their applied. • Describe the position of the ascending and descending tracts and their applied. 	LGIS	1.45 hour	Lecture Hall-2 Block-A
SLIDES OF THALAMUS & HYPOTHALAMUS (PW-8)			
<ul style="list-style-type: none"> • Define thalamus and hypothalamus. • Describe the subdivision of thalamus & hypothalamus. • Identify the microscopic features of thalamus and hypothalamus. 	SGIS	2 hours	Histology Lab, 1 st floor, Block-A
HISTOLOGY OF HYPOTHALAMUS & THALAMUS (HIS LEC-5)			
<ul style="list-style-type: none"> • Define thalamus and hypothalamus. • Describe the subdivision of thalamus & hypothalamus. 	LGIS	1 hour	Lecture Hall-2 Block-A

<ul style="list-style-type: none"> Identify the microscopic features of thalamus and hypothalamus. 			
FACIAL CRANIAL NERVE (SGT-6)			
<ul style="list-style-type: none"> Recognize the location of facial nerve, its cranial nuclei and their connections. Describe the function of facial nerve. Discuss the pathway of facial nerve. 	SGIS	2 hours	Lecture Hall-2 Block-A
ABDUCENT CRANIAL NERVE (SGT-7)			
<ul style="list-style-type: none"> Recognize the location of abducent nerve, its cranial nuclei and their connections. Describe the function of abducent nerve. Discuss the pathway of abducent nerve. 	SGIS	1 hour	Lecture Hall-2 Block-A
VAGUS CRANIAL NERVE (LEC-45)			
<ul style="list-style-type: none"> Recognize the location of vagus nerve, its cranial nuclei and their connections. Describe the function of vagus nerve. 	LGIS	1.45 hours	Lecture Hall-2 Block-A

<ul style="list-style-type: none"> • Discuss the pathway of vagus nerve. 			
ACCESSORY CRANIAL NERVE (LEC-46)			
<ul style="list-style-type: none"> • Describe the accessory nerve, its nuclei and its branches. • Identify its pathway and relations. • Identify the structures supplied by accessory nerve. 	LGIS	1 hour	Lecture Hall-2 Block-A
DEVELOPMENT OF CRANIAL AND SPINAL NERVES (EMB LEC-5)			
<ul style="list-style-type: none"> • Describe the development of cranial nerves. • Describe the development of spinal nerves. • Describe the developmental anomalies of cranial and spinal nerves. 	LGIS	1 hour	Lecture Hall-2 Block-A
APPLIED ANATOMY OF CRANIAL NERVES (LEC-47)			

<ul style="list-style-type: none"> • Enlist the names of cranial nerves and their nuclei. • Recognize the location of cranial nuclei and their connections. • Describe the function of cranial nerves and their applied. • Discuss the pathway of each cranial nerve and their applied. 	LGIS	1.45 hour	Lecture Hall-2 Block-A
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PHYSIOLOGY			
LEARNING OBJECTIVES	TEACHING STRATEGY	DURATION	VENUE
NEURONS AND ITS TYPES, CLASSIFICATION (LEC-1)			
<ul style="list-style-type: none"> • Explain the role and function of the basic structures of a neuron. • Differentiate the functional roles between the main cell classes in the neurons. • Define resting membrane potential and action potentials. • Explain the features of axonal and synaptic communication in neurons. 	LGIS	1 hour	Lecture hall # 2, ground floor, A block.
SYNAPSES & TYPES (LEC-2)			

<ul style="list-style-type: none"> Define a synapse, discuss the types. Describe the excitatory postsynaptic potentials & inhibitory postsynaptic potentials. Explain the features of axonal and synaptic communication in neurons. 	LGIS	45 minutes	Lecture hall # 2, ground floor, A block
RECEPTOR I, TYPES & PROPERTIES (LEC-3)			
<ul style="list-style-type: none"> Define receptor. Describe the structure and types of receptors. 	LGIS	1 hour	Lecture hall # 2, ground floor, A block
RECEPTOR II, TYPES & PROPERTIES (LEC-4)			
<ul style="list-style-type: none"> Discuss the basic properties of receptors. Discuss the signal transmission through various receptors. 	LGIS	1 hour	Lecture hall # 2, ground floor, A block
SPINAL CORD PHYSIOLOGY (LEC-5)			
<ul style="list-style-type: none"> Discuss the functions of spinal cord? Discuss the physiological significance of spinal columns. Discuss the spinal nerves and functions in detail. 	LGIS	1 hour	Lecture hall # 2, ground floor, A block
INHIBITORY POST-SYNAPTIC POTENTIAL (LEC-6)			
<ul style="list-style-type: none"> Define IPSP. 	LGIS	2 hour	Lecture hall # 2,

<ul style="list-style-type: none"> • Discuss the effects of inhibitory synapses on the postsynaptic membrane. • Describe the characteristics of IPSP. 			ground floor, A block
EXCITATORY POST-SYNAPTIC POTENTIAL (LEC-7)			
<ul style="list-style-type: none"> • Define EPSP. • Describe the characteristics of excitatory synapses on the post synaptic membrane. • Describe the features of EPSP. 	LGIS	1 hour	Lecture hall # 2, ground floor, A block
SUMMATION & OTHER PROPERTIES (LEC- 8)			
<ul style="list-style-type: none"> • Define summation. • Describe and differentiate spatial summation and temporal summation. 	LGIS	2 hour	Lecture hall # 2, ground floor, A block
SENSORY SYSTEM (LEC-9)			
<ul style="list-style-type: none"> • Discuss the facts about sensory system. • Describe the physiologic anatomy of sensory system. 	LGIS	1 hour	Lecture hall # 2, ground floor, A block
CLASSIFICATION OF NERVE FIBERS (LEC-10)			
<ul style="list-style-type: none"> • Describe the general classification of nerve fibers. 	LGIS	1 hour	Lecture hall # 2, ground floor, A block

<ul style="list-style-type: none"> • Discuss the Erlanger and Gasser classifications. • Discuss the properties of nerve fibers. 			
SENSORY PATHWAYS (LEC-11)			
<ul style="list-style-type: none"> • Describe the sensory pathways. • Discuss the major somatic pathways. • Discuss the types of sensory pathways. • Discuss the dorsal column medial lemniscus system function. • Discuss the anterolateral pathway. • Discuss the spinothalamic tract. • Describe two-point discrimination. 	LGIS	45 minutes	Lecture hall # 2, ground floor, A block
TRANSMISSION OF TOUCH (LEC-12)			
<ul style="list-style-type: none"> • Discuss the types of touch receptors. • Describe the types and functions of mechanoreceptors. • Discuss the spinal reflex arc. 	LGIS	1 hour	Lecture hall # 2, ground floor, A block
PAIN & TEMPERATURE TRANSMISSION (LEC-13)			

<ul style="list-style-type: none"> • Define pain and pain perception. • Describe the gate control theory of pain. • Identify the three parts of nervous system involved in the physiological anatomy of pain. • Differentiate between the different classes of pain. • Differentiate between nociceptive and non-nociceptive pain. • Discuss the physiological anatomy involved in the phenomenon of temperature regulation. 	<p>LGIS</p>	<p>1 hour</p>	<p>Lecture hall # 2, ground floor, A block</p>
SENSE OF TEMPERATURE & POSITION (LEC-14)			
<ul style="list-style-type: none"> • Describe the part of nervous system controlling senses of temperature and position. • Define the sense of temperature. • Explain the regulatory mechanism for our sense of temperature. • Define the sense of position 	<p>LGIS</p>	<p>2 hours</p>	<p>Lecture hall # 2, ground floor, A block</p>

<ul style="list-style-type: none"> • Explain the regulatory mechanism for our sense of position. • Discuss the clinical manifestations showing disturbed senses of temperature and position. 			
GATING SYSTEM OF PAIN & ANALGESIA SYSTEM (LEC-15)			
<ul style="list-style-type: none"> • Describe pain pathway. • Explain gate control theory of pain. • Enlist the neuro transmitters responsible for pain suppression. 	LGIS	1 hour	Lecture hall # 2, ground floor, A block
TRIPLE RESPONSE OF SKIN (PW-1)			
<ul style="list-style-type: none"> • Explain the mechanism of the three stages of triple response. • Define Axon reflex. • Describe the types of sensory fibers and neurotransmitters involved in triple response. • Discuss orthodromic and antidromic nerve conduction. 	SGIS	2 hours	Physiology lab, 1 st floor, A-block
REFERRED PAIN (LEC-16)			
<ul style="list-style-type: none"> • Define referred pain. 	LGIS	1 hour	Lecture hall # 2, ground

<ul style="list-style-type: none"> • Explain the criteria for diagnosing the referred pain. • Discuss the types and causes. • Explain the prevalence of referred pain in older individuals. • Discuss the age-related systemic changes potentiating referred pain. 			<p>floor, A block</p>
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PAIN ABNORMALITIES (LEC-17)

<ul style="list-style-type: none"> • Define pain and pain perception. • Differentiate between pain threshold, perceptual dominance and pain tolerance. • Identify the three parts of nervous system involved in the neurotransmission of pain. • Describe the effects that neuromodulator have on the transmission of pain impulses. 	<p>LGIS</p>	<p>1 hour</p>	<p>Lecture hall # 2, ground floor, A block</p>
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MOTOR SYSTEM INTRODUCTION (LEC-18)

<ul style="list-style-type: none"> Describe and draw the organization of motor system. Describe the function and arrangement of the alpha and gamma motor neurons in the anterior grey matter of spinal cord. Define a motor unit and its role in controlling the force developing in a skeletal muscle. 	<p>LGIS</p>	<p>1 hour</p>	<p>Lecture hall # 2, ground floor, A block</p>
MOTOR SYSTEM PATHWAYS (LEC-19)			
<ul style="list-style-type: none"> Explain functions of motor cortex, premotor cortex and supplementary motor cortex. Explain the functions of motor pathways. Identify and give the major function of the 4 motor pathways that originate from the brainstem. 	<p>LGIS</p>	<p>45 minutes</p>	<p>Lecture hall # 2, ground floor, A block</p>
REFLEXES & ITS TYPES (LEC-20)			
<ul style="list-style-type: none"> Define reflex. Describe the components of a reflex arc. 	<p>LGIS</p>	<p>45 minutes</p>	<p>Lecture hall # 2, ground floor, A block</p>

<ul style="list-style-type: none"> • Explain the type of reflexes. • Give the classification and functions of reflexes. 			
STRETCH REFLEX I & II (LEC-21)			
<ul style="list-style-type: none"> • Describe the function and mechanism of a stretch reflex. • Explain the need of stretch reflex in our body with examples of types. 	LGIS	1 hour	Lecture hall # 2, ground floor, A block
GOLGI TENDON REFLEX (LEC-22)			
<ul style="list-style-type: none"> • Define golgi tendon reflex. • Explain the Functions of Gamma Efferent System. • Describe the Inverse Stretch Reflex. • Discuss the types of Polysynaptic reflexes & their level of integration. • Describe the Physiological Significance of these reflexes. • Enlist the differences between Muscle spindle & Golgi Tendon Organ. 	LGIS	1 hour	Lecture hall # 2, ground floor, A block
HEMISECTION OF SPINAL CORD (LEC-23)			

<ul style="list-style-type: none"> • Explain the pathophysiology of hemi section of spinal cord. • Describe the changes with lesion at the lumbar or cervical plexuses. • Explain the changes with right sided hemi section. 	<p>LGIS</p>	<p>1 hour</p>	<p>Lecture hall # 2, ground floor, A block</p>
BROWN SEQUARD SYNDROME (LEC-24)			
<ul style="list-style-type: none"> • Explain the physiology of ascending and descending tracts. • Enlist the lesions of spinal cord. • Describe the Brown sward syndrome. • Enlist the characteristics of Brown-sward syndrome. • Mention which sensations are lost and preserved on the side of lesion. 	<p>LGIS</p>	<p>1 hour</p>	<p>Lecture hall # 2, ground floor, A block</p>
EXAMINATION OF MOTOR SYSTEM (PW-2)			
<ul style="list-style-type: none"> • Explain the components of motor system. • Discuss the points of motor systemic examination with demonstration. 	<p>SGIS</p>	<p>2 hours</p>	<p>Physiology lab, 1st floor, A-block</p>

<ul style="list-style-type: none"> • Explain the types of involuntary movements with demonstration. • Explain the different deep tendon reflexes and demonstrate with the help of clinical hammer. • Explain the different types of gait with the underlying lesion. 			
ROLE OF THE BRAIN STEM (LEC-25)			
<ul style="list-style-type: none"> • Enlist the structures comprising brain stem. • Explain the function of brain stem. • Discuss the potential lesions in the brainstem and their effects on the involuntary vital functions. 	LGIS	45 minutes	Lecture hall # 2, ground floor, A block
PYRAMIDAL & EXTRA-PYRAMIDAL TRACT (LEC-26)			
<ul style="list-style-type: none"> • Identifying Pyramidal tract. • Identifying Extrapyramidal tracts. • Discuss the origin, termination and function of both. • Explaining extrapyramidal disorders. 	LGIS	2 hours	Lecture hall # 2, ground floor, A block

<ul style="list-style-type: none"> Explaining Parkinson disease. 			
UMNL & LMNL (LEC-27)			
<ul style="list-style-type: none"> Define Upper motor neurons and Lower motor neurons. Describe & differentiate between Upper and Lower motor neuron lesions. Explain the upper motor neuron syndrome. Discuss the pathophysiology of lower motor lesion. 	LGIS	1 hour	Lecture hall # 2, ground floor, A block
EXAMINATION OF CEREBELLUM (PW-3)			
<ul style="list-style-type: none"> Demonstrate the physiological anatomy of cerebellum. Explain the dysfunctions reported due to cerebellar lesions. Ask the students to perform steps of cerebellar examination on volunteering student. 	SGIS	2 hours	Physiology lab, 1 st floor, A-block
FUNCTIONS & PATHWAYS OF CEREBELLUM (LEC-28)			

<ul style="list-style-type: none"> • Identify the anatomical divisions of the cerebellum. • Identify the functional divisions of the cerebellum. • Explain what observable functions each division of the cerebellum is involved with. • Describe each afferent and efferent pathway structure, function, neurotransmitters, and neuron type if applicable. • Describe or draw the layers of the cerebellar cortex. • Describe or draw the types of neurons in the cerebellar cortex. • Identify which neurons are excitatory (glutamate & aspartate) and which are inhibitory (GABA). • Explain how the neurons in the cerebellar cortex interact. 	<p>LGIS</p>	<p>1 hour</p>	<p>Lecture hall # 2, ground floor, A block</p>
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ABNORMALITIES OF CEREBELLUM (LEC-29)

<ul style="list-style-type: none"> • Define functional division of cerebellum. • Explain physiological role of cerebellum in regulation of movements. • Enlist the abnormalities of cerebellum like ataxia, drunken gait, nystagmus, past pointing, dysdiadochokinesia, and intentional tremors. 	<p>LGIS</p>	<p>45 minutes</p>	<p>Lecture hall # 2, ground floor, A block</p>
SLEEP (LEC-30)			
<ul style="list-style-type: none"> • Define sleep and measurement technique. • Explain the difference between stages 3 & 4 of sleep. • Describe areas of the brain and hormone secretions involved in sleep. • Describe theories (adaptive and cognitive) aimed at explaining the function of sleep. • Recognize characteristics of sleep deprivation. • Identify evidence-based practices to promote sleep and rest. 	<p>LGIS</p>	<p>1 hour</p>	<p>Lecture hall # 2, ground floor, A block</p>

<ul style="list-style-type: none"> • Discuss the health_benefits of sleep. 			
SPEECH (LEC-31)			
<ul style="list-style-type: none"> • Define speech. • Describe the physiological anatomy of language and speech. • Discuss the function of tongue in speech production. • Identify and define the important components of speech delivery. 	LGIS	45 minutes	Lecture hall # 2, ground floor, A block
MEMORY (LEC-32)			
<ul style="list-style-type: none"> • Describe and differentiate psychological and physiological systems of memory. • Outline the principles underlying effective encoding, storage, and construction of memories. • Describe strategies for memory improvement. • Explain the legal implementation of memory function. 	LGIS	45 minutes	Lecture hall # 2, ground floor, A block
FUNCTION OF LIMBIC SYSTEM (LEC-33)			

<ul style="list-style-type: none"> • Study the physiological anatomy of limbic system. • Describe the roles of limbic system. • Discuss especially the roles of hippocampus, amygdala, and hypothalamus. • Discuss the lesions of various parts of limbic system, with neurophysiological basis and effects. • Describe the function of limbic system in humans. • Enlist the three parts of the limbic system. • Discuss the mechanism of gyri interaction with the limbic system. 	<p>LGIS</p>	<p>1 hour</p>	<p>Lecture hall # 2, ground floor, A block</p>
EPILEPSY & EEG (LEC-34)			
<ul style="list-style-type: none"> • Define epilepsy. • Explain the pathophysiology of epilepsy. • Explain EEG. • Discuss the epileptiform activity on EEG. 	<p>LGIS</p>	<p>2 hours</p>	<p>Lecture hall # 2, ground floor, A block</p>
BASAL GANGLIA & ITS FUNCTIONS (LEC-35)			

<ul style="list-style-type: none"> • Explain physiological anatomy of components of the basal ganglia: caudate nucleus, putamen, globus pallidus, substantia nigra, and subthalamic nucleus. • Explain the terms: striatum and lentiform nuclei. • Outline the basic looped circuit that links the cortex with the basal ganglia. • Distinguish between the direct and indirect pathways that modulate voluntary motor activity. • State the major structures most affected in hemiballismus, Parkinson disease, Huntington disease. 	<p>LGIS</p>	<p>2 hours</p>	<p>Lecture hall # 2, ground floor, A block</p>
<p>PARKINSONISM (LEC-36)</p>			
<ul style="list-style-type: none"> • Describe the characteristics of neurocognitive disorder with Lewy bodies. • Describe the characteristics of 	<p>LGIS</p>	<p>1 hour</p>	<p>Lecture hall # 2, ground floor, A block</p>

<p>neurocognitive disorder due to Parkinson's disease.</p> <ul style="list-style-type: none"> • Explain the effects of parkinsonism with most common age of development 			
EXAMINATION OF SENSORY SYSTEM (PW-4)			
<ul style="list-style-type: none"> • Enlist the types of senses. • Describe & discuss the somatic senses with demonstration. • Explain the fine & crude senses with their tracts & demonstrate. • Define two point discrimination, stereognosis, morphosynthesis, and graphaesthesia barognosis with practical demonstration. 	LGIS	2 hours	Lecture hall # 2, ground floor, A block
FUNCTION OF HYPOTHALAMUS (LEC-37)			
<ul style="list-style-type: none"> • Discuss the physiological anatomy of hypothalamus. • Describe the function of hypothalamus. • Explain the causative factors for the release of hormones from 	LGIS	1 hour	Lecture hall # 2, ground floor, A block

hypothalamus and the disorders or malfunctions.			
VESTIBULAR APPARATUS (LEC-38)			
<ul style="list-style-type: none"> Define the basic structures of the vestibular receptor system. Describe the physiological anatomy of the vestibuloocular and the vestibulospinal. Enlist n explain the three main functions of vestibular apparatus. Name and discuss the role of primary sensory axons in the vestibular apparatus 	LGIS	2 hours	Lecture hall # 2, ground floor, A block
EXAMINATION OF CRANIAL NERVES I-III (PW-5)			
<ul style="list-style-type: none"> Explain the nerve type, division and functions. Describe anosmia, parosmia and its types with demonstration. Explain the nervous pathways of the respective cranial nerves. Name the extraocular muscles and their functions with practical demonstration. 	SGIS	2 hours	Physiology lab, 1 st floor, A-block

<ul style="list-style-type: none"> • Describe squint/strabismus and demonstrate. • Describe Ptosis and drooping of eyelid with practical demonstration of nerve involved. 			
PARASYMPATHETIC NERVOUS SYSTEM (LEC-39)			
<ul style="list-style-type: none"> • Make a list of the components of the system. • Discuss the cranial nerves having parasympathetic activity. • Describe the parasympathetic ganglia in the head and neck, their locations and target organs. • Describe the sacral parasympathetic outflow and its target organs with demonstration of examples. 	LGIS	1 hour	Lecture hall # 2, ground floor, A block
SYMPATHETIC NERVOUS SYSTEM (LEC-40)			
<ul style="list-style-type: none"> • Explain how the sympathetic nervous system leads to the fight-or-flight response. • Discuss the hormones being secreted from the 	LGIS	75 minutes	Lecture hall # 2, ground floor, A block

<p>adrenal glands during the fight-or-flight response.</p> <ul style="list-style-type: none"> • Discuss the common signs and symptoms of sympathetic nervous system problems. 			
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EXAMINATION OF CRANIAL NERVES IV-VI (PW-6)

<ul style="list-style-type: none"> • Explain the nervous pathways of these nerves. • Describe the types of nerves, their origin and functions with practical demonstration. • Discuss the divisions of trigeminal nerve and their functions on defined facial areas. • Describe the facial sensations perceived by trigeminal nerve. • Discuss the symptoms found with trigeminal nerve lesions. • Revise the functional loss due to trochlear and abducent nerve lesions. 	<p>SGIS</p>	<p>2 hours</p>	<p>Lecture hall # 2, ground floor, A block</p>
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CRANIAL NERVE- VII-IX EXAMINATION (PW-7)

<ul style="list-style-type: none"> • Explain the type and pathways of the respective cranial nerves. • Define facial palsy, differentiate between Facial palsy and Bell's palsy. • Explain the difference between upper and lower motor neuronal lesions specifically in facial palsy. • Discuss the facial nerve carrying taste sensation with demonstration. 	<p>LGIS</p>	<p>2 hours</p>	<p>Lecture hall # 2, ground floor, A block</p>
<p>CSF (LEC-41)</p>			
<ul style="list-style-type: none"> • Define and explain the term CSF. • List the names, locations, and functions of the meninges of the brain. • List the names of the ventricles in the brain. • Describe the production and circulation of cerebrospinal fluid. • Explain the Circle of Willis and blood flow through the brain. 	<p>LGIS</p>	<p>1 hour</p>	<p>Lecture hall # 2, ground floor, A block</p>
<p>HYDROCEPHALUS (LEC-42)</p>			

<ul style="list-style-type: none"> • Identify the etiology of hydrocephalus. • Describe the appropriate evaluation of hydrocephalus. • Outline the management options available for hydrocephalus. • Discuss interprofessional team strategies for improving care coordination and communication to advance health care and improve outcomes for patients with hydrocephalus. 	<p>LGIS</p>	<p>1 hour</p>	<p>Lecture hall # 2, ground floor, A block</p>
EXAMINATION OF CRANIAL NERVES X-XII (PW-8)			
<ul style="list-style-type: none"> • Describe the pathways and functions of vagus, accessory and hypoglossal nerves. • Discuss and demonstrate the palatal reflex & describe the respective nerve lesion. • Discuss the lesion of accessory nerve with practical demonstration. 	<p>LGIS</p>	<p>45 minutes</p>	<p>Lecture hall # 2, ground floor, A block</p>

<ul style="list-style-type: none"> • Discuss the untoward effects seen by the lesion of vagus nerve with practical demonstration. • Differentiate between a supranuclear lesion from an infra nuclear lesion. • Describe the signs and symptoms of hypoglossal nerve lesion and name the muscles involved with practical demonstration. 			
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CEREBRAL BLOOD FLOW (LEC-43)

<ul style="list-style-type: none"> • List the cerebral arteries. • Describe the cerebral arterial supply regarding the origin, distribution and branches. • Describe the arterial Circle of Willis. • Describe the cerebral venous drainage and its termination. • Describe arterial & venous vascular disorders and their clinical manifestations. 	<p>LGIS</p>	<p>45 minutes</p>	<p>Lecture hall # 2, ground floor, A block</p>
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SUPERFICIAL REFLEXES IN HUMAN SUBJECTS (PW-9)

<ul style="list-style-type: none"> • To define and explain superficial reflexes. • Differentiate between monosynaptic and polysynaptic reflexes with examples? • Discuss the examples of superficial reflexes. 	LGIS	2 hours	Physiology lab, first floor, A block.
EXAMINATION OF DEEP REFLEXES (PW-10)			
<ul style="list-style-type: none"> • Understand and define Deep Tendon Reflexes. • Distinguish between hyper and hypo-tonic Deep Tendon Reflexes. • Gain a basic knowledge of Deep Tendon Reflex grading. • Give the examples of deep reflexes with demonstration. 	SGIS	2 hours	Physiology lab, first floor, A block.

BIOCHEMISTRY			
LEARNING OBJECTIVES	TEACHING STRATEGY	DURATION	VENUE
FATTY ACID MOBILIZATION & TRANSPORT (LEC-1)			
<ul style="list-style-type: none"> • Recall the chemistry of Fatty acids. • Describe the process of lipolysis. 	LGIS	2 hours	Lecture Hall-2 Block-A

<ul style="list-style-type: none"> Identify the enzymes involved in lipolysis. Identify the fate of fatty acids and glycerol after lipolysis. 			
BIOSYNTHESIS OF FATTY ACID-I (LEC-2)			
<ul style="list-style-type: none"> Recognize the importance of acetyl CoA as the starting material for fatty acid synthesis. Identify that NADPH is required for the reduction in Fatty acid synthesis. Enumerate the phases in which denovo fatty synthesis takes place. Explain the structure of Fatty acid synthase enzyme. 	LGIS	1 hour	Lecture Hall-2 Block-A
BIOSYNTHESIS OF FATTY ACID-II (LEC-3)			
<ul style="list-style-type: none"> Describe the reactions of third phase of fatty acid synthesis with reference to fatty acid synthase enzyme. Discuss the regulation of fatty acid synthesis. 	LGIS	1 hour	Lecture Hall-2 Block-A
FATTY ACID MODIFICATION AND TRIGLYCERIDE SYNTHESIS (LEC-4)			

<ul style="list-style-type: none"> • Describe unsaturation process of fatty acids. • Differentiate between mitochondrial fatty acid elongation and microsomal fatty acid elongation. • Describe the synthesis of triglycerides. • List the fate of triglycerides. 	LGIS	2 hours	Lecture Hall-2 Block-A
KETOGENESIS (LEC-5)			
<ul style="list-style-type: none"> • Define ketone bodies. • List the ketone bodies. • Describe the pathway of ketone bodies synthesis and its regulation (ketogenesis). 	LGIS	1 hour	Lecture Hall-2 Block-A
KETOLYSIS (LEC-6)			
<ul style="list-style-type: none"> • Describe the utilization of ketone bodies by extra-hepatic tissues (ketolysis). • Describe the regulation of ketolysis. • Identify the causes of ketone bodies formation and site of production of ketone bodies. 	LGIS	45 minutes	Lecture Hall-2 Block-A
B-COMPLEX VITAMINS –I (LEC-7)			

<ul style="list-style-type: none"> • Identify the “biological active” forms of B1, B2 and B3 vitamins. • List the dietary sources of B1, B2 and B3 vitamins. • Describe the metabolic role of B1, B2 and B3 vitamins. • Discuss the diseases which occur due to deficiencies of B1, B2 and B3 vitamins. 	<p>LGIS</p>	<p>1 hour</p>	<p>Lecture Hall-2 Block-A</p>
<p>B-COMPLEX VITAMINS –II (LEC-8)</p>			
<ul style="list-style-type: none"> • Identify the “biological active” forms of B5, B6 and B7 vitamins. • Outline the dietary sources and functions of B5, B6 and B7 vitamins. • List the clinical indications for prescribing B6 supplements. • Identify that consumption of raw eggs can lead to Biotin deficiency. 	<p>LGIS</p>	<p>45 minutes</p>	<p>Lecture Hall-2 Block-A</p>
<p>VITAMIN A (LEC-9)</p>			
<ul style="list-style-type: none"> • Identify the different forms of vitamin A. • Outline the dietary sources and daily requirements of vitamin A. 	<p>LGIS</p>	<p>2 hours</p>	<p>Lecture Hall-2 Block-A</p>

<ul style="list-style-type: none"> • Enlist the functions of vitamin A. • Recall the role of vitamin A in visual cycle. 			
INTEGRATION OF METABOLISM – I (LEC-10)			
<ul style="list-style-type: none"> • Define integration of metabolism. • Identify the 3 stages of energy production from nutrients. • Recall the rate-limiting reactions of energy metabolic pathways. 	LGIS	1 hour	Lecture Hall-2 Block-A
INTEGRATION OF METABOLISM – II (LEC-11)			
<ul style="list-style-type: none"> • Describe the interconversion of carbohydrates and lipids and conversion of proteins to fats. • Recall the interconversion of carbohydrates and amino acids. 	LGIS	45 minutes	Lecture Hall-2 Block-A
METABOLISM OF WELL-FED STATE-I (LEC-12)			
<ul style="list-style-type: none"> • Define the metabolic states of the body i.e. well-fed state, fasting state and starvation state. • Identify the organs involved in maintenance of 	LGIS	45 minutes	Lecture Hall-2 Block-A

<p>well-fed and fasting metabolic states.</p> <ul style="list-style-type: none"> List the factors involved in regulation of well-fed state. 			
METABOLISM OF WELL-FED STATE-II (LEC-13)			
<ul style="list-style-type: none"> Outline the metabolic changes in liver in relation to carbohydrate metabolism. Outline the metabolic changes in liver in relation to fat and protein metabolism. Outline the metabolic changes in adipose tissue in relation to carbohydrate and fat metabolism. 	LGIS	2 hours	Lecture Hall-2 Block-A
METABOLISM OF WELL-FED STATE-III (LEC-14)			
<ul style="list-style-type: none"> Outline the metabolic changes in skeletal tissue in relation to carbohydrate, fat and protein metabolism. Outline the metabolic changes in brain in relation to carbohydrate and fat metabolism. 	LGIS	1 hour	Lecture Hall-2 Block-A
METABOLISM OF FASTING STATE-I (LEC-15)			

<ul style="list-style-type: none"> Define fasting state and starvation state. Outline the factors involved in maintenance of fasting state. List the conditions due to which fasting/starvation state can occur. 	LGIS	1 hour	Lecture Hall-2 Block-A
METABOLISM OF FASTING STATE-II (LEC-16)			
<ul style="list-style-type: none"> Outline the metabolic changes in liver and adipose tissue in relation to carbohydrate and fat metabolism. 	LGIS	1 hour	Lecture Hall-2 Block-A
METABOLISM OF FASTING STATE-III (SGT-1)			
<ul style="list-style-type: none"> Outline the metabolic changes in skeletal muscle in fasting state in relation to carbohydrate, protein and fat metabolism. 	SGIS	2 hours	Lecture Hall-2 Block-A
METABOLISM OF FASTING STATE-IV (SGT-2)			
<ul style="list-style-type: none"> Outline the metabolic changes in brain in fasting state in relation to carbohydrate and fat metabolism. Identify the role of kidneys in fasting state. 	SGIS	1.75 hours	Lecture Hall-2 Block-A

PATHOLOGY			
LEARNING OBJECTIVES	TEACHING STRATEGY	DURATION	VENUE
DISORDER OF MYELINATION (LEC-1)			
<ul style="list-style-type: none"> Classify Myelination Disorders. Briefly describe Multiple Sclerosis including its definition, Etiology and Pathogenesis. 	LGIS	1 hour	Lecture Hall-2 Block-A
NEUROLOGICAL DISORDERS RELATED TO TREMORS (LEC-2)			
<ul style="list-style-type: none"> Describe the Types of Tremors. Briefly describe Parkinson disease including its definition, Etiology and Pathogenesis. Briefly describe Alzheimer disease including its definition, Etiology and Pathogenesis. 	LGIS	1 hour	Lecture Hall-2 Block-A
MENINGITIS (LEC-3)			
<ul style="list-style-type: none"> Define Meningitis. Explain the Etiology & Pathogenesis of Meningitis. 	LGIS	1 hour	Lecture Hall-2 Block-A

<ul style="list-style-type: none"> Explain the clinical manifestations of Meningitis. 			
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RESEARCH			
LEARNING OBJECTIVES	TEACHING STRATEGY	DURATION	VENUE
RESEARCH PROJECT & ITS COMPONENTS-II (LEC-1)			
<ul style="list-style-type: none"> Define research synopsis. List the components of a research project. Describe the sections of a research project. 	LGIS	1 hour	Lecture Hall-2 Block-A
QUESTIONNAIRE DEVELOPMENT (LEC-2)			
<ul style="list-style-type: none"> Define a research questionnaire. Explain the development of a research questionnaire. 	LGIS	1 hour	Lecture Hall-2 Block-A
INFORMED CONSENT & ITS SIGNIFICANCE (LEC-3)			
<ul style="list-style-type: none"> Define informed consent. Summarize the ways of establishing informed consent. Explain the content of an informed consent form. 	LGIS	1 hour	Lecture Hall-2 Block-A
RESEARCH TOPIC SELECTION (LEC-4)			
<ul style="list-style-type: none"> Define the criteria for topic selection. Explain the rationale of selecting a new topic. 	LGIS	1 hour	Lecture Hall-2 Block-A

PEARLS			
LEARNING OBJECTIVES	TEACHING STRATEGY	DURATION	VENUE
(LEC-1)			
	LGIS	1 hour	Lecture Hall-2 Block-A
(LEC-2)			
•	LGIS	1 hour	Lecture Hall-2 Block-A

BEHAVIOURAL SCIENCES			
LEARNING OBJECTIVES	TEACHING STRATEGY	DURATION	VENUE
PERCEPTION (LEC-1)			
<ul style="list-style-type: none"> • Define stress and stressor. • Common stressors. • Models/theories of stress. • What are the cognitive, behavioral and somatic features of stress. • Relationship of stress and stressors with illness. 	LGIS	45 minutes	Lecture Hall-2 Block-A

BIOETHICS			
LEARNING OBJECTIVES	TEACHING STRATEGY	DURATION	VENUE
NEGATIVE THOUGHTS/ANGER AND ETHICAL ISSUES (LEC-1)			
• Recognize the types of negative thinking.	LGIS	1 hour	Lecture Hall-2 Block-A

<ul style="list-style-type: none"> • Explain ethical issue related to researcher and research participants. 			
NEGATIVE THOUGHTS/ANGER AND ETHICAL ISSUES (CBL-1)			
<ul style="list-style-type: none"> • Exemplify the ethical issues in health care. • Manage the patient with anger. 	LGIS	1 hour	Lecture Hall-2 Block-A
NEGATIVE THOUGHTS/ANGER AND ETHICAL ISSUES (LEC-2)			
<ul style="list-style-type: none"> • Define anger. • Discuss the management of anger. 	LGIS	45 minutes	Lecture Hall-2 Block-A
NEGATIVE THOUGHTS/ANGER AND ETHICAL ISSUES (CBL-2)			
<ul style="list-style-type: none"> • Exemplify the ethical issues in health care. • Manage the patient with anger. 	LGIS	1 hour	Lecture Hall-2 Block-A
EQUALITY, JUSTICE AND EQUITY (LEC-3)			
<ul style="list-style-type: none"> • Define the principle of justice in bioethics. • Discuss importance of justice in health care profession. • Discuss difference between equality and equity. 	LGIS	1 hour	Lecture Hall-2 Block-A

EQUALITY, JUSTICE AND EQUITY (CBL-3)			
<ul style="list-style-type: none"> • Explain justice in medical ethics. • Exemplify the justice in health care professions. 	LGIS	1 hour	Lecture Hall-2 Block-A
PHARMACOLOGY			
LEARNING OBJECTIVES	TEACHING STRATEGY	DURATION	VENUE
OVERVIEW OF PHARMACOLOGY OF PARKINSONS DISEASE (LEC-1)			
<ul style="list-style-type: none"> • Describe the physiology of Parkinson's disease. • Explain the pathophysiology of Parkinson's disease. • Discuss and understand the mechanistic pharmacology of Parkinson's disease. 	LGIS	45 minutes	Lecture Hall-2 Block-A
OVERVIEW OF PHARMACOLOGY OF ANS (LEC-2)			
<ul style="list-style-type: none"> • Describe the physiology of Autonomic nervous system. • Explain the pathophysiology of Autonomic nervous system. • Discuss and understand the mechanistic pharmacology of 	LGIS	1 hour	Lecture Hall-2 Block-A

Autonomic nervous system.			
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SURGERY			
LEARNING OBJECTIVES	TEACHING STRATEGY	DURATION	VENUE
NEURAL TUBE DEFECTS (LEC-1)			
<ul style="list-style-type: none"> • Define Neural tube defects. • List the causes of Neural tube defects. • Classify Neural tube defects. • Discuss the clinical features & complications of neural tube defect. 	LGIS	45 minutes	Lecture Hall-2 Block-A
HEMISECTION OF SPINAL CORD (LEC-2)			
<ul style="list-style-type: none"> • Define the basic anatomy of spinal cord. • Explain the sensory and motor distribution in spinal cord. • Define hemi section of spinal cord. • Enlist the signs and symptoms of hemi section of spinal cord. • Explain the sensory and motor loss in hemi section of spinal cord. 	LGIS	1 hour	Lecture Hall-2 Block-A

MEDICINE			
LEARNING OBJECTIVES	TEACHING STRATEGY	DURATION	VENUE
SIGNS & SYMPTOMS OF NEUROLOGICAL DISEASE (LEC-1)			
<ul style="list-style-type: none"> Recognize sign and symptoms that may signify neurologic diseases. 	LGIS	45 minutes	Lecture Hall-2 Block-A
INTRODUCTION OF NEUROIMAGING (LEC-2)			
<ul style="list-style-type: none"> List various neuro-imaging techniques CT scan /MRI. Enumerate uses of various neurophysiological investigations: Electro myelogram (EMG), Nerve conduction velocity (NCV), Electroencephalogram (EEG). 	LGIS	45 minutes	Lecture Hall-2 Block-A
SPINAL CORD LESIONS (LEC-3)			
<ul style="list-style-type: none"> Discuss the various clinical presentations of spinal cord disorders correlating with its organization, structure and function. 	LGIS	1 hour	Lecture Hall-2 Block-A
SIGNS & SYMPTOMS OF PYRAMIDAL & EXTRA-PYRAMIDAL DISEASE (LEC-4)			
<ul style="list-style-type: none"> Differentiate between pyramidal and extra-pyramidal syndromes. 	LGIS	1 hour	Lecture Hall-2 Block-A
UPPER AND LOWER MOTOR NEURONE LESION (LEC-5)			

<ul style="list-style-type: none"> Differentiate between upper and lower motor neuron lesions in terms of their sign and symptoms with the knowledge of structure and types of fiber bundles traversing the brain and their function. 	LGIS	1 hour	Lecture Hall-2 Block-A
SIGNS & SYMPTOMS OF CEREBELLAR DISEASE (LEC-6)			
<ul style="list-style-type: none"> Discuss the clinical conditions associated with cerebellar dysfunction. Identify sign and symptoms associated with cerebellar lesion. 	LGIS	1 hour	Lecture Hall-2 Block-A
CEREBRAL EDEMA (LEC-7)			
<ul style="list-style-type: none"> Define Cerebral edema. Discuss its types and etiological factors. 	LGIS	45 minutes	Lecture Hall-2 Block-A
PARKINSON'S DISEASE (LEC-8)			
<ul style="list-style-type: none"> Correlate the presentation of Parkinson's disease with the topographic anatomy and function of basal nuclei. 	LGIS	45 minutes	Lecture Hall-2 Block-A
CSF/LUMBAR PUNCTURE (LEC-9)			
<ul style="list-style-type: none"> Discuss signs and symptoms and interpret 	LGIS	45 minutes	Lecture Hall-2 Block-A

<p>the effects of increased intracranial pressure with the structure of craniospinal meninges, ventricular system, and changes occurring in C.S.F in various diseases.</p> <ul style="list-style-type: none"> • Discuss the indications and contraindications and process for lumbar puncture. 			
CVA-I (LEC-10)			
<ul style="list-style-type: none"> • Define the terms stroke, Cerebrovascular Accidents (CVA) & Transient Ischemic Attack (TIA). • Discuss the causes and risk factors for cerebrovascular diseases. • Identify the signs & symptoms related to stroke. 	LGIS	1 hour	Lecture Hall-2 Block-A
CVA-II (LEC-11)			
<ul style="list-style-type: none"> • Distinguish ischemic stroke (cerebral infarct) from hemorrhagic stroke (intracerebral hemorrhage) 	LGIS	1 hour	Lecture Hall-2 Block-A

<p>in terms of etiology and pathology.</p> <ul style="list-style-type: none"> • Discuss clinical findings associated with stroke of different arterial territories (anterior and posterior circulation). 			
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PAKISTAN STUDIES			
LEARNING OBJECTIVES	TEACHING STRATEGY	DURATION	VENUE
CONSTITUTION OF 1956 (LEC-1)			
<ul style="list-style-type: none"> • Describe and explain the Constitution of 1956. 	LGIS	45 minutes	Lecture Hall-2 Block-A
CONSTITUTION OF 1962 (LEC-2)			
<ul style="list-style-type: none"> • Describe and explain the Constitution of 1962. 	LGIS	45 minutes	Lecture Hall-2 Block-A
CONSTITUTION OF 1973 (LEC-3)			
<ul style="list-style-type: none"> • Describe and explain the Constitution of 1973. 	LGIS	45 minutes	Lecture Hall-2 Block-A
REVISION (LEC-4)			
	LGIS	45 minutes	Lecture Hall-2 Block-A

CBL			
LEARNING OBJECTIVES	TEACHING STRATEGY	DURATION	VENUE
CVA (CBL-1)			

<ul style="list-style-type: none"> • Discuss the anatomical parts of the internal capsule. • Discuss the blood supply of internal capsule. • Comprehend the physiological significance of internal capsule. • Specify the different speech areas and physiological role of each. 	SGIS	2 hours	Lecture Hall-2 Block-A
STROKE (CBL-2)			
<ul style="list-style-type: none"> • Define aphasias. • Describe the different types of aphasia & compare these with dysarthria. • What are the 2 main components which are needed for the survival of a brain and the brain gets deprived of it during a hemorrhagic stroke . • Describe the role of excitatory and inhibitory neurotransmitters. • Describe the pathophysiological basis of 	SGIS	2 hours	Lecture Hall-2 Block-A

<p>signs & symptoms of the patient.</p> <ul style="list-style-type: none"> • Discuss the evaluation, treatment and prognosis of aphasia. • Differentiate between Upper and lower motor neuron lesions. • What are the types of stroke, give its causes. • Rehabilitation of stroke patient. 			
VENTRICULAR SYSTEM (CBL-3)			
<ul style="list-style-type: none"> • Define ventricular system. • What are the different parts of ventricular system? • What is the shape and anatomical location of each ventricle? • What is CSF and from where it is generated and give normal ranges of amount, pressure and rate of secretions of CSF. • Give route of CSF circulation and how CSF absorbed and drained. 	SGIS	2 hours	Lecture Hall-2 Block-A

<ul style="list-style-type: none"> Differentiate between the normal and abnormal composition of CSF. 			
HYDROCEPHALUS (CBL-4)			
<ul style="list-style-type: none"> What are the causes of hydrocephalus? What is the pathogenesis of communicating and obstructive hydrocephalus? What is normal pressure of hydrocephalus and what is idiopathic intracranial hypertension? 	SGIS	2 hours	Lecture Hall-2 Block-A
PAIN (CBL-5)			
<ul style="list-style-type: none"> Describe the different types of pain. What is referred pain. Describe the Pathway of different pains. What are the centers of pain in brain? 	SGIS	2 hours	Lecture Hall-2 Block-A

BAQAI MEDICAL COLLEGE
TIME TABLE FOR 2nd YEAR MBBS
NEUROSCIENCES MODULE
Week 1

DAYS	8:30-9:30	9:30-10:15	10:15-10:30	10:30-11:30	11:30-12:30	12:30-1:15	1:15-1:30	1:30-3:30
	MODULE EXAM HEAD&NECK							
DAY-1	ANATOMY Overview of the nervous system	ANATOMY Neurobiology of Neuron & Neuroglia	Tea break	PHYSIO Neuron & its types classification	SDL	RESEARCH Research project & its Components -I	Lunch & Prayer	ANATOMY Nerve fibers, receptors, dermatome
DAY-2	ANATOMY HISTO Neuron & Neuroglia	PHYSIO Synapsis & types		PHYSIO Receptor I types & properties	PATHOLOGY Disorder of myelination	P. ST		ANATOMY Spinal Cord
DAY-3	ANATOMY EMBRYO Formation of Neural tube	SURGERY Neural Tube Defects		PHYSIO Receptor II types & properties	PEARL	SDL		BIOCHEMISTRY Fatty acid mobilization and transport
DAY-4	ANATOMY HISTOLOGY spinal cord	MEDICINE Sign and symptoms of neurological disease Dr Iftikhar		PHYSIOLOGY SPINAL CORD PHYSIOLOGY	BIOCHEMISTRY Biosynthesis of fatty acid I	12:30-1:00 SDL		PHYSIO INHIBITORY POST SYNAPTIC POTENTIAL

BAQAI MEDICAL COLLEGE
TIME TABLE FOR 2nd YEAR MBBS
NEUROSCIENCESMODULE
Week 2

DAYS	8:30-9:30	9:30-10:15	10:15-10:30	10:30-11:30	11:30-12:30	12:30-1:15	1:15-1:30	1:30-3:30
DAY-5	PHYSIOLOGY EXCITATORY POST SYNAPTIC POTENTIAL	BEHAVIORAL SCIENCES Perception	T e a b r e a k	RESEARCH	BIOCHEMISTRY Biosynthesis of fatty acid II	SDL		PHYSIOLOGY <u>Summation and other properties</u>
DAY-6	PHYSIOLOGY Sensory system	SDL		ANATOMY Spinal Cord ASCENDING TRACTS	PHYSIOLOGY Classification of nerve fibers	P.STUDIES	L u n c h & p r a y e r	BIOCHEMISTRY Fatty acid modification and triglyceride synthesis
DAY-7	BIOCHEMISTRY ketogenesis	PHYSIOLOGY Sensory pathways		PHYSIOLOGY Transmission of touch	Research Questionnaire development	SDL		Anatomy SGT Model of Spinal cord
DAY-8	PHYSIOLOGY Pain & temperature transmission	BIOCHEMISTRY keto lysis		ANATOMY SGT	BIOCHEMISTRY B complex vitamin I	SDL		PHYSIOLOGY <u>Sense of temperature and position</u>
DAY-9	PHYSIOLOGY Gating system of pain and analgesia system	MEDICINE Introduction of neuro imaging Dr iftikhar		PRACTICAL A & B Histology of t SPINAL CORD) triple response of skin(Physiology)		12:30-1:00 S DL	1:00-1:30 0 Lun ch & Pra yer	PRACTICAL A & B Histology of SPINAL CORD triple response of skin (Physiology)

BAQAI MEDICAL COLLEGE
TIME TABLE FOR 2nd YEAR MBBS

NEUROSCIENCES MODULE

Week 3

DAYS	8:30-9:30	9:30-10:15	10:15-10:30	10:30-11:30	11:30-12:30	12:30-1:15	1:15-1:30	1:30-3:30
DAY-10	ANATOMY EMBRYO Development of brain	BIOCHEMISTRY B complex vitamin II		PHYSIOLOGY Referred pain	PHYSIO PAIN ABNORM ALITIES	SDL		ANATOMY DESCENDING TRACT
DAY-11	PHYSIOLOGY MOTOR SYSTEM INTRODUC TION	PHYSIOLOGY MOTOR SYSTEM pathways		ANATOMY Blood Supply Of Spinal cord	SDL	P.STUDIE <u>S</u>	Lu nc & Pr ay er	BIO CHEMISTRY VITAMIN A
DAY-12	BIOCHEMISTRY INTEGRATI ON OF METABOLI SM I	PHYSIOLOGY reflexes & its types		RESEARCH Informed consent & its significance	PHYSIOLOGY STRETCH REFLEX I & II	SDL		CBL
DAY-13	PHYSIOLOGY Golgi tendon reflex	BIOCHEMISTRY INTEGRA TION OF METABO LISM II		PHYSIOLOGY Hemisection of spinal cord	SURGERY Hemi section of Spinal cord	SDL		ANATOMY LRC
DAY-14	PHYSIOLOGY BROWN SEQUARD SYNDROME	MEDICINE Spinal cord lesions Dr Saqib		PRACTICAL A & B MODEL OF BRAIN STEM (ANATOMY) Examination of motor system (Physiology)		12:30-1:00 PEARL		1:00- 1:30 Lunc & Praye r

**BAQAI MEDICAL COLLEGE
TIMETABLE FOR 2nd YEAR MBBS
NEUROSCIENCES MODULE**

Week 4

DAYS	8:30-9:30	9:30-10:15	10:15 - 10:30	10:30- 11:30	11:30- 12:30	12:30-1:15	1:1 5- 1:3 0	1:30-3:30
DAY-15	ANATOMY Introduction of the brain stem	BIOCHEMISTRY Metabolism of well-fed state I	Te a br e a k	ANATOMY external structure of medulla oblongata	SDL	PHYSIOLOGY Role of the brain stem	L u n c h & P r a y e r	BIOCHEMISTRY Metabolism of well- fed state II
DAY-16	ANATOMY EMBRYOLOGY DEVELOPMENT OF BRAIN II	ANATOMY internal structure of medulla oblongata II		BIOCHEMISTRY Metabolism of well- fed state III	SDL	P. STUDIES		PHYSIOLOGY PYRAMIDAL AND EXTRA PYRAMIDAL TRACT
DAY-17	ANATOMY PONS I	ANATOMY PONS II		MEDICINE Sign and symptoms of pyramidal and extrapyra midal disease	PHYSIOLOGY UMNL & LMNL	SDL		BIOCHEMISTRY Metabolism of fasting state I
DAY-18	Anatomy Midbrain I	ANATOMY Midbrain II		MEDICINE Upper & lower motor neuron lesion	BIOCHEMISTRY Metabolism of fasting state II	SDL		ANATOMY Cerebellum
DAY-19	ANATOMY HISTOLOGY Cerebellum	ANATOMY Cerebellar pathways or connection		PRACTICAL Ea & b Anatomy –(slide of cerebellum) Examination of cerebellum (Physiology)		12:30-1:00 SDL		PRACTICAL A & B Anatomy –(slide of cerebellum) Examination of cerebellum (Physiology)

BAQAI MEDICAL COLLEGE
TIME TABLE FOR 2nd YEAR MBBS
NEUROSCIENCES MODULE

Week 5

DAYS	8:30-9:30	9:30-10:15	10:15 - 10:30	10:30-11:30	11:30- 12:30	12:30- 1:15	1:15- 1:30	1:30-3:30
DAY-20	PHYSIOLOGY Y Functions & pathways of Cerebellum	PHYSIOLOGY Y Abnormalities of Cerebellum	Te a br e a k	MEDICINE Sign and symptoms of cerebellar disease	RESEARCH	SDL	Lun ch & Pra yer	Anatomy cerebrum
DAY-21	ANATOMY Structure of cerebral hemisphere	ANATOMY Structure of cerebral cortex		PHYSIOLOGY Sleep	SDL	PHYSIOLOGY Speech		ANATOMY MODEL OF BRAIN
DAY-22	ANATOMY Histology cerebrum	PHYSIOLOGY Y Memory		ANATOMY Reticular formation & limbic system	PHYSIOLOGY Function of limbic system	SDL		PHYSIOLOGY Epilepsy & EEG
DAY-23	ANATOMY Basal ganglia	MEDICINE Cerebral edema		ANATOMY basal ganglia and their connection		SDL		Physiology Basal ganglia & its function
DAY-24	Physiology Parkinsonism	MEDICINE Parkinson's disease		PRACTICAL A & B Anatomy (cerebrum histology) Physiology (examination of sensory system)		12:30-1:00 SDL		PRACTICAL A & B Anatomy (cerebrum histology) Physiology (examination of sensory system)

BAQAI MEDICAL COLLEGE

TIME TABLE FOR 2nd YEAR MBBS NEUROSCIENCES MODULE

Week 6

DAYS	8:30-9:30	9:30-10:15	10:15 - 10:30	10:30-11:30	11:30- 12:30	12:30- 1:15	1:15- 1:30	1:30-3:30
DAY-25	PATHOLOGY Neurological disorders related to tremors	PHARMACOLOGY Overview of pharmacology of Parkinson disease	Te a br e a k	Anatomy Poster/model competition				Anatomy Poster/model competition
DAY-26	PHYSIOLOGY Function of hypothalamus	BIOETHICS INTERACTIVE LECTURE Negative thoughts/anger and ethical issues		Anatomy Poster/model competition				Anatomy Poster/model competition
DAY-27	BIOCHEMISTRY PRESENTATION	RESEARCH		Anatomy Poster/model competition				Anatomy Poster/model competition
DAY-28	PHYSIOLOGY Vestibular apparatus	BIOCHEMISTRY FORMATIVE ASSESSMENT		Anatomy Poster/model competition				Anatomy Poster/model competition
DAY-29	BIOCHEMISTRY	PHYSIOLOGY		Anatomy Poster/model competition				Anatomy Poster/model competition

**BAQAI MEDICAL COLLEGE
TIME TABLE FOR 2nd YEAR MBBS
NEUROSCIENCES MODULE**

Week 7

DAYS	8:30-9:30	9:30-10:15	10:15 - 10:30	10:30-11:30	11:30- 12:30	12:30- 1:15	1:15- 1:30	1:30-3:30
DAY-30	SGT PHYSIOLOG Y	BIOCHEMIS TRY	Te a bre ak	ANATOMY THALAMU S	PEARLS	SDL	Lun ch & Pra yer	ANATOMY Thalamus and its connection
DAY-31	ANATOMY HYPOTHAL AMUS	ANATOMY HYPOTHAL AMUS & ITS CONNECTI ON		SGT PHYSIOLO GY	Bioethics	SDL		ANATOMY LRC
DAY-32	ANATOMY CRANIAL NERVES I			Research	PHYSIO LOGY	SDL		FPRMATIVE ASSESSMENT QUIZ PHYSIOLOGY
DAY-33	ANATOMY CRANIAL NERVES II			SGT PHYSIOLO GY	SDL			<u>CBL</u>
DAY-34	ANATOMY CRANIAL NERVES II			PRACTICAL A & B Anatomy –cranial nerves Physiology- examination of cranial nerves I-III		12:30- 1:00 SDL		PRACTICAL A & B Anatomy –cranial nerves Physiology- examination of cranial nerves I-III

**BAQAI MEDICAL COLLEGE
TIME TABLE FOR 2nd YEAR MBBS
NEUROSCIENCES MODULE**

Week 8

DAYS	8:30-9:30	9:30-10:15	10:15 - 10:30	10:30-11:30	11:30- 12:30	12:30- 1:15	1:15- 1:30	1:30-3:30
DAY-35	ANATOMY Autonomic nervous system	ANATOMY PARASYMP ATHETIC SYSTEM	Te a bre ak	PHYSIOLOGY Parasympathetic nervous system	RESEARCH	SDL	Lun ch & Pra yer	ANATOMY DSL
DAY-36	ANATOMY SYMPATHETIC SYSTEM			BIOETHICS Negative thoughts/anger and ethical issues	SGT PHYSIOLOGY	SDL		ANATOMY <u>FORMATIVE ASSESSMENT</u>
DAY-37	PHYSIOLOGY Sympathetic nervous system			PHARMACOLOGY Overview of pharmacology of ANS	SDL			CBL
DAY-38	ANATOMY			BIOCHEMISTRY	SDL			PHYSIOLOGY <u>FORMATIVE ASSESSMENT</u>
DAY-39	BIOCHEMISTRY			PRACTICAL A & B Anatomy- specimen Physiology- examination of cranial nerves IV-VI				12:30- 1:00 SDL

**BAQAI MEDICAL COLLEGE
TIME TABLE FOR 2nd YEAR MBBS
NEUROSCIENCES MODULE**

Week 9

DAYS	8:30-9:30	9:30-10:15	10:15 - 10:30	10:30-11:30	11:30- 12:30	12:30- 1:15	1:15- 1:30	1:30-3:30
DAY-40	ANATOMY Meninges of brain and spinal cord		Te a br e a k	PATHOL OGY meningitis	SGT Physiology	SDL	Lun ch & Pra yer	ANATOMY DSL
DAY-41	ANATOMY Ventricular system			RESEARC H	SDL			ANATOMY FORMATIVE ASSESSMENT
DAY-42	SGT Physiology			BIOETHIC S INERACTI VE LECTURE Equality, justice and equity	SDL			SGT Biochemistry
DAY-43	SGT ANATOMY			Biochemistr y	SDL			PHYSIOLOGY FORMATIVE ASSESSMENT
DAY-44	SGT Biochemistry			PRACTICAL A & B Anatomy- specimen Physiology- Cranial Nerve VII-IX		12:30- 1:00 SDL		PRACTICAL A & B) Anatomy- specimen Physiology- Cranial Nerve VII-IX

**BAQAI MEDICAL COLLEGE
TIME TABLE FOR 2nd YEAR MBBS
NEUROSCIENCES MODULE**

Week 10

DAYS	8:30-9:30	9:30-10:15	10:15 - 10:30	10:30-11:30	11:30- 12:30	12:30- 1:15	1:15- 1:30	1:30-3:30
DAY-45	ANATOMY 3 RD VENTRICLE	PHYSIOLOGY Presentation	Te a bre ak	RESEARCH	ANATOMY 4 TH VENTRICLE	SDL	Lun ch & Pra yer	PHYSIOLOGY FORMATIVE ASSESSMENT
DAY-46	ANATOMY CSF	PHYSIOLOGY CSF		Biochemistry	SDL	PHYSIOLOGY Presentati on		Anatomy LRC
DAY-47	Biochemistry	MEDICINE CSF/LUMBAR PUNCTURE		BIOETHICS CBL Equality, justice and equity	SDL			CBL
DAY-48	SGT ANATOMY			PHYSIOLOGY Hydrocephalus	SDL			ANATOMY PRESENTATION
DAY-49	Biochemistry	PHYSIOLOGY		PRACTICAL A & B Anatomy- circle of willis model Physiology- Cranial Nerve X-XII		12:30- 1:00 SDL		PRACTICAL A & B) Anatomy- circle of willis model Physiology- Cranial Nerve X-XII

**BAQAI MEDICAL COLLEGE
TIME TABLE FOR 2nd YEAR MBBS
NEUROSCIENCES MODULE**

Week 11

DAYS	8:30-9:30	9:30-10:15	10:15 - 10:30	10:30-11:30	11:30- 12:30	12:30- 1:15	1:15- 1:30	1:30-3:30
DAY-50	ANATOMY blood supply of brain and spinal cord		Te a br e a k	BIOCHEMISTRY Presentation	PHYSIOLOGY Presentation	SDL	Lun ch & Pra yer	PHYSIOLOGY FORMATIVE ASSESSMENT
DAY-51	ANATOMY Blood brain barrier	PHYSIOLOGY Cerebral blood flow		Biochemistry Presentation	SDL			Anatomy LRC
DAY-52	ANATOMY Blood brain barrier	Research		PHYSIOLOGY Presentation	SDL			SGT PHYSIOLOGY
DAY-53	BIOCHEMISTRY Presentation	ANATOMY Model		PHYSIOLOGY Presentation	SDL			ANATOMY PRESENTATION
DAY-54	ANATOMY Presentation			PRACTICAL A & B Anatomy- circle of willis model Physiology- Superficial reflexes in human subject		12:30- 1:00 SDL		PRACTICAL A & B) Anatomy- circle of willis model Physiology- Superficial reflexes in human subject

**BAQAI MEDICAL COLLEGE
TIME TABLE FOR 2nd YEAR MBBS
NEUROSCIENCES MODULE**

Week 12

DAYS	8:30-9:30	9:30-10:15	10:15 - 10:30	10:30- 11:30	11:30- 12:30	12:30- 1:15	1:15- 1:30	1:30-3:30
DAY-55	ANATOMY BLOOD SUPPLY OF BRAIN APPLIED		Te a br e a k	MEDICIN E CVA I	PHYSIOL OGY Presentation	SDL	Lun ch & Pra yer	PHYSIOLOGY FORMATIVE Assessment
DAY-56	PHYSIOLOGY Presentation			SDL	Biochemistry FORMATIVE Assessment			ANATOMY LRC
DAY-57	ANATOMY CORTICAL AREAS APPLIED			<u>M</u> <u>EDICINE</u> <u>CVA II</u>	PHYSIOL OGY Presentation	SDL		Formative assessment Quiz Biochemistry
DAY-58	PHYSIOLOGY Presentation			ANATOMY Presentation		SDL		ANATOMY FORMATIVE Assessment
DAY-59	PHYSIOLOGY Presentation			PRACTICAL A & B Anatomy- Physiology- Deep reflexes in human subject		12:30- 1:00 DSL (Anatom y)		PRACTICAL A & B) Anatomy- Physiology- Deep reflexes in human subject

**BAQAI MEDICAL COLLEGE
TIME TABLE FOR 2nd YEAR MBBS
NEUROSCIENCES MODULE**

Week 13

DAYS	8:30-9:30	9:30-10:15	10:15 - 10:30	10:30- 11:30	11:30- 12:30	12:30- 1:15	1:15- 1:30	1:30-3:30
DAY-60	BIOCHEMISTRY PRESENTATION		Te a br ea k	ANATO MY	SGT PHYSIOL OGY	SDL	Lu nch & Pra yer	PHYSIOLOGY FORMATIVE Assessment Quiz
DAY-61	ANATOMY APPLIED CRANIAL NERVES			SDL	PHYSIOLOGY Presentation			ANATOMY LRC
DAY-62	ANATOMY			BIOCHE MISTRY PRESENT ATION	SDL			CBL
DAY-63	ANATOMY			BIOCHE MISTRY PRESENT ATION	SGT PHYSIOL OGY	SDL		ANATOMY FORMATIVE Assessment
DAY-64	ANATOMY			PRACTICAL A & B Anatomy- Physiology- Journal checking ^ certifying		SDL		PRACTICAL A & B Anatomy- Physiology- Journal checking certifying
DAY-65	Neurosciences Module Examination							

FOUNDATION MODULE EXAMINATION

TENTATIV
E- MARCH
2023

INTEGRATED MODULE PAPER (for all the topics taught in the module)

REFERENCES BOOKS AND OTHER READING RESOURCES

Gross Anatomy	<p>BD Chaurasia's Handbook of GENERAL ANATOMY</p> <ol style="list-style-type: none"> 1. Chapter-1--Introduction-Page 1-28 2. Chapter-2—Skeleton- Page 29-57 3. Chapter-3---Joints –Page 58-82 4. Chapter-4—Muscles—Page 83-100 <p>Netter Atlas of Human Anatomy</p>
Embryology	<p>Langman’s Embryology</p> <ol style="list-style-type: none"> 1. Chapter-2—Gametogenesis-Page 12-29 2. Chapter-3—First week of Development-Page 30-43 3. Chapter-4—2nd week of development--Page 44-53 4. Chapter-5—3rd week of development-Page 54-65 5. Chapter-6—3rd week to birth-Page 66-87 6. Chapter-7—Placenta-Page 92-101
Histology	<p>Laiq Hussain Histology</p> <ol style="list-style-type: none"> 1. Chapter-1-introduction—Page 1-10 2. Chapter-2-Epithelium—Page 11-30 3. Chapter-3-Glands—Page 31-38 4. Chapter-4-Connective tissue—Page 39-60
Physiology	<p>Guyton and Hall. “Textbook of Medical Physiology”-13th edition</p> <p>Ganong’s “Review Of Medical Physiology”-25th Edition</p>
Biochemistry	<p>Lippincott Illustrated Reviews: Biochemistry.</p> <p>Harpers illustrated Biochemistry.</p> <p>Textbook of Medical Biochemistry by MN Chaterjee & Rana Shinde.</p> <p>DM Vasudevan – Textbook of Biochemistry.</p>

Pharmacology	<p>Basic and Clinical Pharmacology by Bertram Katzung, 14th Edition.</p> <p>Katzung and Trevor's Pharmacology Examination and Board Review, 14th Edition.</p> <p>Lippincott's illustrated review of Pharmacology. 7th Edition.</p>
Pathology	Robin's Basic Pathology-10 th Edition
Community Medicine	<p>Ilyas M, Public Health and Community Medicine, 7th Edition, Karachi, Pakistan, Time Publisher, 2007.</p> <p>Maxcy-Rosenau-Last, public Health and Preventive Medicine, 13th Edition, USA, Prentice-Hall International Inc, 1992.</p> <p>K.Park, Preventive and Social Medicine, 20th Edition, Jabalpur (India), M/s Banarsidas Bhanot, Publisher, 2009.</p>
Medicine	Davidson's Principles and Practice of Medicine-22 nd Edition
Clinical Examination	Talley and O'Connor's Clinical Examination-6 th Edition
Surgery	<p>Bailey And Love Short Practice Of Surgery, 27th Edition</p> <p>Last's anatomy 12th edition</p> <p>Snell's anatomy by regions 10th edition</p>
Research	<p>Introduction to Research in Health Sciences- Stephen Polgar, Shane A. Thomas.</p> <p>Biomedical Research Proposal Writing- Syed Sharaf Ali Shah, Zarfshan Tahir, Rozina Karmaliani.</p> <p>Epidemiology - Leon Gordis; Fifth Edition.</p>
PEARLS	https://www.mededportal.org/publication/10610/
PAEDS	<p>Nelson Textbook of Pediatric 21st edition.</p> <p>Textbook of Paediatrics (PPA) Fifth edition.</p> <p>Basis of Pediatrics (Pervez Akbar Khan) 10th edition</p>

Distribution and Duration* of Teaching Activities amongst Different Disciplines

S. No.	Disciplines	Large Group Interactive Session		Small Group Interactive Session		Total hours
		Lectures	PRE	SGT	PW	
1.	Anatomy	70.15	5.75	11.45	16	103.35
2.	Physiology	48	0	0	18.45	66.45
3.	Biochemistry	28.75	8	3.75	0	40.5
4.	Pharmacology	2	0			2
5.	Pathology	3	0			3
6.	Com. Med	0	0			0
5.	Research	4	0			4
6.	Family Medicine	0	0			0
7.	Medicine	9.75	0			9.75
8.	Nephrology	0	0			0
9.	Emergency medicine	0	0			0
10.	Radiology	0	0			0
11.	Surgery	1.75	0			1.75
12.	Paediatric surgery	0	0			0

13.	Gynae & Obs	0	0		0
14.	Behavioral sciences	0.75	0		0.75
15.	Bioethics	5.75	0		5.75
16.	PEARLS	2	0		2
17.	Patient safety	0	0		0
18.	Infection control	0	0		0
19.	Skill Lab	0	0		0
20.	CBL			10	10
21.	SDL	53.5	0		53.5
22.	Pak. Studies	3	0		3
23.	Formative assessment	11.75	0		11.75

* calculated in hours

Assessment Type:

Summative Assessment

- SEQs
- MCQs
- OSPE