



Mukhtar A. Sheikh Hospital  
مختار اے شیخ ہسپتال



Pakistan Society  
of Basic & Applied  
Neuroscience



# ENC 2026

## Essentials of Neuroscience Course



Master The Fundamentals  
of **Neuroscience**  
Unlock a Deeper  
Understanding of the  
**Human Brain**


Course Director:

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Sitara-i-Imtiaz

MD, PHD, FRCSI, FRCSC, FRCSG, FACS

 **March 27<sup>th</sup> & 28<sup>th</sup> 2026**

 **8:00 AM To 5:30 PM**

 Auditorium,  
Mukhtar A. Sheikh Hospital

# Course Schedule

# ENC 2026 Course Schedule

Day 1: Friday, 27th March 2026

## Module 1: Nervous System

Time	Session Title	Description / Key Topics
8:00 - 8:20	Registration	Desk Sign-in
8:20 - 8:30	Introduction	Opening remarks
8:30 - 9:30	Lecture I-A: Overall Design of the Nervous System	General layout, surface anatomy, brain function, fiber tracts, spinal cord, spinal reflex, & brainstem
9:30 - 9:35	Breather	Short break
9:35 - 10:35	Lecture I-B: Nervous System at the Cellular Level	Neuron, glia, myelin, cell membrane, neural and glial cytoskeleton, axoplasmic transport, and histology of cerebral cortex
10:35 - 10:45	Quiz 1	Assessment for Module 1
10:45 - 11:00	Q/A and Discussion	Open floor for Module 1 topics
11:10 - 11:30	Introduction to the Book "Essential of Neuroscience"	
11:30 - 11:40	Tea Break	Morning refreshments

## Module 2: The Chatting Neurons

11:40 - 12:40	Lecture II-A: Electrical Properties of Neurons	"Resting membrane potential, ion channels, Nernst and Goldman-Hodgkin-Katz equations, action potential, and myelin "
12:40 - 1:45	Lunch and Namaz Break	Afternoon break
1:45 - 2:45	Lecture II-B: Synaptic Transmission	Cellular communication, synapses (electrical/chemical), neurotransmitters, neuropeptides, vesicles, and receptors
2:45 - 2:55	Quiz 2	Assessment for Module 2
2:55 - 3:10	Q/A and Discussion	Open floor for Module 2 topics
3:10 - 3:15	Breather	Short break

## Module 3: Deep In The Brain

3:15 - 4:15	Lecture III-A: Basal Ganglia and Thalamus	Components, motor control, anatomy/function of thalamus, and relevant diseases
4:15 - 4:20	Breather	Short break
4:20 - 5:20	Lecture III-B: Cerebellum and Reticular Activating System	Cerebellar circuits, deep nuclei, circadian rhythm, and vestibulocochlear system
5:20 - 5:30	Quiz 3	Assessment for Module 3
5:30 - 5:45	Q/A and Discussion	End of Day 1 Discussion

# ENC 2026 Course Schedule

Day 2: Saturday, 28th March 2026

## Module 4: Memory, Behaviour, and Emotions

Time	Session Title	Description / Key Topics
8:00 - 8:30	Recap of Day 1	Review and Q/A session
8:30 - 9:30	Lecture IV-A: Neurobiology of Memory	Types of memory, dementia, habituation, sensitization, LTP/LTD, and synaptic plasticity
9:30 - 9:35	Breather	Short break
9:35 - 10:35	Lecture IV-B: Neurobiology of Behavior and Emotions	Amygdala, Limbic system, neurophysiology of pain, hypothalamus, and olfactory/gustatory systems
10:35 - 10:45	Quiz 4	Assessment for Module 4
10:45 - 11:00	Q/A and Discussion	Open floor for Module 4 topics
11:00 - 11:20	Tea Break	Morning refreshments

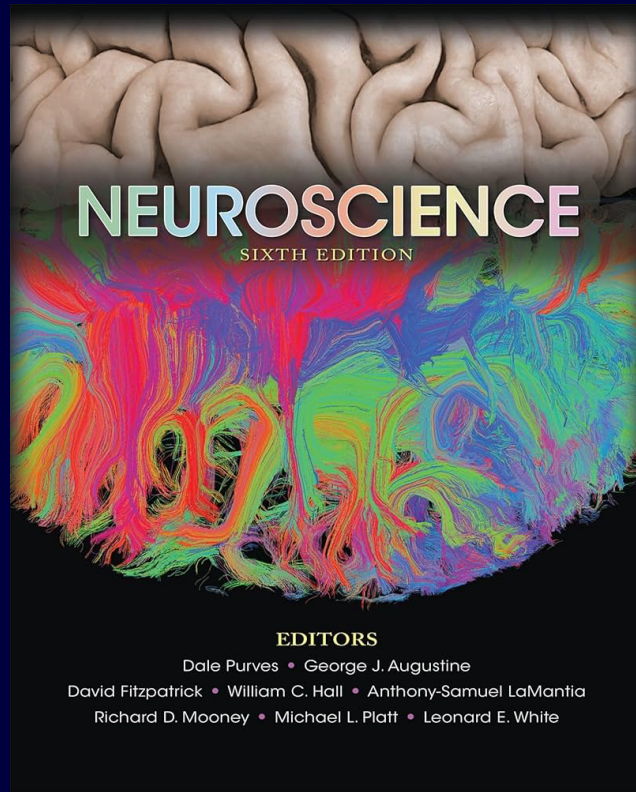
## Module 5: Brain Development

11:20 - 12:20	Lecture V-A: CNS Development I	Neural tube formation, congenital abnormalities, homeobox genes, neuronal migration, and neurotrophic factors
12:20 - 12:25	Breather	Short break
12:25 - 1:25	Lecture V-B: Evolution of Human Brain	Single cell to multicellular organisms, growth comparison of mammals, primates, and genus Homo
1:25 - 1:35	Quiz 5	Assessment for Module 5
1:35 - 1:50	Q/A and Discussion	Open floor for Module 5 topics
1:50 - 2:00	Break	Afternoon break

## Module 6: What is Special about the Human Brain?

2:00 - 3:00	Lecture VI-A: Cognition and Communication	Neural basis of language, aphasias, visual system, and association cortex
3:00 - 3:05	Breather	Short break
3:05 - 4:05	Lecture VI-B: Awareness and Consciousness	Neuroanatomy of attention, planning, intelligence, and thoughts on awareness
4:05 - 4:15	Quiz 6	Assessment for Module 6
4:15 - 4:30	Q/A and Discussion	Final discussion
4:30 - 5:00	Closing Ceremony	Shield distribution and wrap-up

# Course Reference



Neuroscience, 6th Edition, serves as the official reference for this program.

In Collaboration With



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