

**LS642 TOPICS IN NEUROSCIENCE**  
**S K Jha\* and A C Mondal**

<b>S. No</b>	<b>Topics</b>	<b>Contact hours</b>
1.	Neuroanatomy - Spinal cord, brainstem, cerebrum, cerebellum, Organization of neurons - cytoarchitecture, Functional organization, Ascending and descending tracts	3
2.	Reflex- types, muscle control and posture regulation	3
3.	Neural regulation of complex functions e.g. sensation - modalities, pain, touch	2
4.	Neural regulation of cardiovascular and respiratory systems	
5.	Special senses - vision and hearing	4
6.	Sleep-wakefulness – Mechanism, Neural and Chemical regulations	3
7.	Functions of Sleep and REM Sleep; various hypotheses, Sleep loss and sleep disorders, Insomnia, REM sleep behavior disorders, Narcolepsy, Sleep apnea etc	2
8.	Biorhythm and its regulatory genes,	2
9.	Learning and memory, commonly studied types of memories and its molecular basis	2
10.	Ageing its nature and property, cause and prevention	3
11.	Some derangement of neural function - Epilepsy, Dementia, Alzheimers	2
12.	Study of brain and its functions from gross behavior to cellular to intracellular and molecular levels	2

**Suggested Reading:**

1. Principles of Neural Science by Eric R. Kandel, James Harris Schwartz, Thomas M. Jessell
2. Fundamental Neuroscience by Larry R. Squire
3. The Central Nervous System: Structure and function by Per Brodal
4. Textbook of Medical Physiology by A C Guyton.