Optional Course

LS 569— NEURAL AND BEHAVIOURAL BIOLOGY [2 credits]

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S No	Topic	Contact Hours
1.	Special senses; Vision optics, anatomy, transduction of light to electrical energy, Neurophysiology of vision, accommodation, errors, of vision, color vision, visual acquity, visual perception	
2.	Hearinganatomy, neurophysiology of hearing	
3.	Neural regulation of body temperature, cardiovascular function, respiration, Neuroendocrine regulation, basis of neuroimmune control, interleukin, etc	
4.	States of consciousness – sleepwakefulness behavior, identification, classification, of sleepwakefulness, EEG, EOG, EMG, Neural and neuro chemical regulation of sleepwakefulness, effects of sleep loss, functions of sleep, relation of sleepwakefulness with other functions, biorhythm, clock/per gene regulation	
5.	Feeding, social, colony formation, hibernating, migratory behaviors	
6.	Aggression, fight and flight behaviors, stress and adaptation – neural Control	
7.	Neurogenetics , Narcolepsy, Down's syndrome (lectures preferably by Geneticist)	
8.	Ageing, factors affecting, Depression, Schizophrenia, epilepsy, Parkinson's Alzheimer; Neural Modeling/artificial intelligence/neural network	

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