

Optional Course

LS 569— NEURAL AND BEHAVIOURAL BIOLOGY [2 credits]

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S No	Topic	Contact Hours
1.	Vision: Optics, anatomy, transduction of light to electrical energy, Neurophysiology of vision, accommodation, errors, of vision color vision, visual acuity, visual perception	3
2.	Hearing: Anatomy, transduction of mechanical energy into electrical energy, and neurophysiology of hearing, Otoacoustic Emissions, The auditory nerve and its tonotopic organization, detection of binaural cues for sound location	3
3.	Neural regulation of body temperature, cardiovascular function, respiration, Neuroendocrine regulation, basis of neuroimmune control, interleukin, etc	5
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 sleep-wakefulness with other functions, biorhythm, clock/per gene regulation	6
5.	Cognition: Learning and Memory, Emotion and attention	4
6.	Biorhythm: Circadian clock and its molecular regulation	1
7.	Ageing and Neural diseases: Factors affecting ageing, Depression, Schizophrenia, epilepsy, Parkinson's and Alzheimer	4

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