Course Type	Course Code	Name of the Course	L	T	P	Credits
DE	NHSD542	Brain and Behaviour	3	0	0	3

Course Objective
This course will introduce the students to the scientific study of how our brains work to create our experience of ourselves and the world.
Learning Outcomes
Upon completion of this course, students should: • Gain familiarity with the basic structure and function of the brain. • Be aware of the methods used to study how the brain supports cognition and behaviour. • Understand how various functions of the brain enable us to interact and act in the world at different levels of complexity.

Unit No.	Topics to be Covered	Lecture Hours	Learning Outcome
1	History of cognitive neuroscience and the main questions it addresses. Overview of the methods used to study brain and behaviour.	6	Understand the historic development of cognitive neuroscience, research methods used, and how studying brain and behaviour may benefit human society.
2	The brain and nervous system. Neurons and encoding of information in neural activity, Synapses, Action potentials. Brain lateralization.	9	Be familiar with the basic structure and function of human central and peripheral nervous systems, and understand how neurons collect, integrate, and output signals.
3	How does the brain interact with the world? Perception and action. The binding problem.	9	Understand how brain forms an internal model of the world.
4	Higher levels of interaction: Attention and consciousness. Types and mechanisms of memory. Why do we sleep? Stages of sleep.	9	Understand the brain mechanisms underlying attention and memory. Be aware of the theories about the purpose of sleep and its role in learning and insight.
5	Motivated behaviours: How does the brain make decisions? Where do emotions come from? Why are some things rewarding? “Liking” vs. “wanting”.	9	Describe the neural basis of subjective value and of various common decision making patterns. Be aware of the major brain areas and neurotransmitters that influence emotion and emotion regulation. Understand the reward circuitry of the brain and how it is hijacked in addiction.
	Total Lecture Hours	**42**	

Text Books:

1. Eagleman, D. & Downar, J. (2015). Brain and Behavior: A Cognitive Neuroscience Perspective. Oxford University Press.

2. Gazzaniga, M. S., Ivry, R. B., Mangun, G. R. (2019). Cognitive Neuroscience: The Biology of the Mind, 5th Edition. W.W. Norton & Company.

Reference Books:

1. Ramachandran, V. S. (2012). The Tell-Tale Brain: Unlocking the Mystery of Human Nature. Random House India.
2. Eagleman, D. (2017). The Brain: The Story of You. Vintage.
3. Barrett, L. F (2020). Seven and a Half Lessons About the Brain. Picador.