SES's L.S. RAHEJA COLLEGE OF ARTS and COMMERCE (AUTONOMOUS)

BOARD OF STUDIES: Psychology
PROGRAMME: MA Psychology (with Counselling Specialization)
SEMESTER: II
NOMENCLATURE OF THE COURSE: BIOLOGY AND BEHAVIOUR
NEP Vertical: MAJOR
Credit: 4

(As Per Choice Based Credit System (under NEP 2020) with effect from the academic year 2025-26)

Programme:	**MA Psychology (with Counselling Specialization)**
Nomenclature of the Course	**Biology and Behaviour**
Course Code	**PGMACOIIMJ126**
Total Marks	**100**
Semester:	**II**
Academic year	**2026-27**

LEARNING OBJECTIVES: This paper aims to provide an in-depth understanding of the biological bases of behaviour, including neural mechanisms, brain structures, and physiological processes underlying psychological functions. It also aims to develop students' ability to critically analyse the biological underpinnings of behaviour and psychopathology in research and applied contexts.

COURSE OUTCOMES:

1. Analyse the foundational concepts of biological psychology, including neural communication and organization of the nervous system, to understand brain–behaviour relationships. Evaluate research methods used in biological psychology to interpret neural processes and functions.
2. Analyse brain structures and their functional roles, including cortical and subcortical systems, in relation to behaviour and psychopathology. Critically evaluate the impact of brain development, neuroplasticity, and localization of function on psychological processes.
3. Analyse the biological basis of motivation, emotion, and physiological functions, including the role of neural and endocrine systems. Evaluate the interaction between biological processes and behaviour in regulating drives, stress, and rhythms.
4. Analyse biological factors underlying psychopathology, including genetic influences and neural dysfunctions in mental disorders. Critically evaluate ethical issues and integrate biological perspectives to understand and explain abnormal behaviour.

Unit	Course Content	Andragogy	No of Lectures
Module I	**1. Foundations of Biological Psychology** 1.1 Overview and Major Issues 1.2 Nerve Cells and Nerve Impulses 1.3 Synapses: Synaptic transmission and neurotransmitters 1.4 Organization of the nervous system: Anatomy and Research Methods	Interactive lectures, PowerPoint presentations, Observation and analysis, Case studies Application-based learning activities	**15**
Module II	**2. Brain structures and their role in psychopathology** 2.1 Development of the brain and neuroplasticity 2.2 Cerebral cortex and cortical lobes	Interactive lectures, PowerPoint presentations, Observation and analysis, Case studies	**15**

	2.3 Subcortical structures: thalamus, hypothalamus, limbic system, basal ganglia, brainstem 2.4 Brain lateralization and hemispheric specialization 2.5 Localization of function	Application-based learning activities	
Module III	**3. Biological Basis of Motivation, Emotion & Other Functions** 3.1 Neural control of motivation and drives 3.2 Hunger, thirst, and sexual behaviour 3.3 Stress physiology and the HPA axis 3.4 Sleep, arousal, and biological rhythms 3.5 Hormones and endocrine influences on behaviour	Interactive lectures, PowerPoint presentations, Observation and analysis, Case studies Application-based learning activities	**15**
Module IV	**4. Biology of Psychopathology** 4.1 Genetic influences on behaviour and mental disorders 4.2 Depression 4.3 Schizophrenia 4.4 Anxiety disorders 4.5 Brain injury and behavioural changes 4.6 Ethical issues in biological research	Interactive lectures, PowerPoint presentations, Observation and analysis, Case studies Application-based learning activities	**15**

SUGGESTED READINGS

1. Anderson, S. W., Damasio, H., & Tranel, D. (2016). Clinical neuropsychology: A practical guide to assessment and management for clinicians. Oxford University Press.
2. Bigler, E. D. (2017). The traumatized brain: A family guide to understanding mood, memory, and behavior after brain injury. Oxford University Press.
3. Breedlove, S. M., Watson, N. V., & Rosenzweig, M. R. (2010). Behavioral neuroscience (6th ed.). Sinauer Associates.
4. Davis, A. S. (2011). Understanding the biological basis of behavior. Pearson.
5. Garrett, B. (2015). Brain & behavior: An introduction to biological psychology (4th ed.). Sage Publications.
6. Golden, C. J., & Espe-Pfeifer, P. (2014). Neuropsychological interpretation of objective psychological tests. Springer Publishing Company.
7. Greene, J. D., Morrison, I., & Seligman, M. E. P. (2016). Positive neuroscience. Oxford University Press.
8. Heilman, K. M., & Valenstein, E. (2011). Clinical neuropsychology (5th ed.). Oxford University Press.
9. Kalat, J. W. (2019). Biological psychology (13th ed.). Cengage Learning.
10. Kolb, B., & Whishaw, I. Q. (2021). Fundamentals of human neuropsychology (8th ed.). Worth Publishers.
11. Lezak, M. D., Howieson, D. B., Bigler, E. D., & Tranel, D. (2012). Neuropsychological assessment (5th ed.). Oxford University Press.
12. Martin, G. N. (2018). Essential biological psychology (4th ed.). Oxford University Press.

13. Mesulam, M. M. (2000). Principles of behavioral and cognitive neurology (2nd ed.). Oxford University Press.
14. Morgan, J. E., Ricker, J. H., & Axelrod, B. N. (2012). Introduction to neuropsychology (2nd ed.). Academic Press.
15. Pinel, J. P. J., & Barnes, S. J. (2018). Biopsychology (10th ed.). Pearson.
16. Shukla, G., & Gupta, A. (2014). Clinical neuropsychology: A pocket handbook for assessment (1st ed.). Jaypee Brothers Medical Publishers.
17. Sinha, V. K., & Satishchandra, P. (2015). Textbook of clinical neurology (3rd ed.). Elsevier.
18. Spreen, O., & Strauss, E. (2006). A compendium of neuropsychological tests: Administration, norms, and commentary (3rd ed.). Oxford University Press.
19. Srivastava, A., & Chaturvedi, S. K. (2017). Handbook of clinical neuropsychology in India. Springer.
20. Stuss, D. T., & Knight, R. T. (2013). Principles of frontal lobe function (2nd ed.). Oxford University Press.
21. Tripathi, M., & Padma, M. V. (2013). Neuropsychiatry and behavioral neurology: An Indian perspective. Jaypee Brothers Medical Publishers.

QUESTION PAPER PATTERN

(A) FOR CONTINUOUS EVALUATION

20 Marks Class Test	(MCQ/QUIZ) ---------- 20 MARKS

(A-1)

(A-1) RUBRICS FOR CONTINUOUS EVALUATION

20 Marks	ASSIGNMENT ---------- 10 MARKS
	VIVA-VOCE ---------- 10 MARKS

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(B) QUESTION PAPER PATTERN FOR SEMESTER END EXAMINATION

60 Marks	Q1. Answer in brief (1/2)-------- 15 marks
	Q2. Answer in brief (1/2)-------- 15 marks
	Q3. Answer in brief (1/2)-------- 15 marks
	Q4. Answer in brief (1/2)-------- 15 marks