

Course Code: APSY-365
Course Title: Biological Basis of Behaviour (Practical)

Credit Hour: 1
(Foundation Course)

Introduction

This course focuses on the link between neuroscience and psychological functioning. This course is practical demonstration of the theory of Brain and behavior. The students will perform practicals to understand brain structure, functioning in normal individuals and how it is affected in case of disorders.

Course Objectives

1. This course will cover the underlying biological basis of human behavior.
2. It is designed to be a practical course focusing on the relationship between the nervous system, structure and function of brain, glandular system and human behavior as well as implications of glands and nervous system in psychiatric disorders.

Learning Outcomes

It is expected that after completion of this course:

1. The student will possess a good understanding of structure and function of brain, different parts of nervous system, neurochemistry, hormones.
2. The students will be able to understand the link between biological factors underlying human behavior and disorders. It is designed to be an introductory course focusing on the relationship between the nervous system and behavior.

Contents

Unit-I

- 1.1.1 Basic neuro-anatomical directional terms and planes of reference
- 1.1.2 Dissection of Ruminant Brain
- 1.1.3 Physiological changes during stress
- 1.1.4 Administration of neuropsychological tests such as BGT, BVRT, NFI, Stroop test etc. and report writing of at least three patients suffering from Psycho-Physiological and Neurological disorders
- 1.1.5 Test report for each test should include one on a normal person and another on a patient suffering from any neurological disorder: Brain Tumor, Epilepsy, Cerebral Palsy, Mental Retardation etc.

Assessment and Evaluation:

Total Marks: 100

Each student will prepare a report and assessment and evaluation will be carried out by an external examiner on the basis of report and viva voce.

Suggested Readings:

• Books

- Beatty, J. (2000). *The human brain-essentials of behavioral neuroscience*. University of California: Sage Publications, Inc.
- Beaumont, G. (1990). *Understanding Neuropsychology*, OUP.
- Carlson, N. R. (2005). *Foundation of physiological psychology* (6th ed.). UK: Allyn and Bacon.
- Greenwood. (1997). *Neuro-psychological rehabilitation*, USA: Psychology Press.
- Kalat, J. W. (2001). *Biological psychology* (7th ed.).USA: Woodsworth.
- Pinel, J. (1997). *Bio-Psychology*, 3rd Edition, Allyn& Bacon.

Pinel, J. P. (2006). *Biopsychology* (6th ed.). UK: Allyn and Bacon.
Smock, T. (1999). *Physiological psychology*. USA: Prentice-Hall.
Squire, L. (1990). *Neuropsychology of Memory*, Guilford Press, USA.
Watson, N.V. et al (2007). *Biological psychology*. (5th ed.). UK: Sinaver Associates.
Wilson, B. (1999). *Neuropsychological rehabilitation*. UK: Oxford University Press.

- **Journal Articles / Reports**

Daniel, F., & Kapoula, Z. (2019). Induced vergence-accommodation conflict reduces cognitive performance in the Stroop test. *Scientific reports*, 9(1), 1-13.

Erdodi, L. A., Sagar, S., Seke, K., Zuccato, B. G., Schwartz, E. S., & Roth, R. M. (2018). The Stroop test as a measure of performance validity in adults clinically referred for neuropsychological assessment. *Psychological Assessment*, 30(6), 755.

Glees, P. (2019). Embryological and neuro-anatomical aspects of the cranio-cervical region. In *Diseases in the cranio-cervical junction* (pp. 13-26). De Gruyter.

Segabinazi, J. D., Pawlowski, J., Zanini, A. M., Wagner, G. P., Sbicigo, J. B., Trentini, C. M., ... & Bandeira, D. R. (2020). Age, education and intellectual quotient influences: Structural equation modeling on the study of benton visual retention test (BVRT). *The Spanish Journal of Psychology*, 23.

Shakeri, S., Bidaki, R., Mirhosseini, H., & Kiani, M. (2021). The Comparing Bender-Gestalt Test and Quantitative Electroencephalography for Brain Trauma Diagnosis in Depressive and Attention Deficit Hyperactivity Disorders. *International Clinical Neuroscience Journal*, 8(3), 144-148.

Van den Boogert, T., van Hoof, M., Handschuh, S., Glueckert, R., Guinand, N., Guyot, J. P., ... & Van De Berg, R. (2018). Optimization of 3D-visualization of micro-anatomical structures of the human inner ear in osmium tetroxide contrast enhanced micro-CT scans. *Frontiers in neuroanatomy*, 12, 41.