

Course Title: Introduction to Neuropsychology

Course Category: PS641

Schedule of Offering: 3rd Semester

Course Credit Structure: 4 Credits

- **Lecture: 3 Hours per week**
- **Lab: 1 Hours per week**

Contact Hours per week: 4 Hours per week

Course Instructor: Sarin Dominic

1. Introduction:

This course will provide an overview of biological basis of behaviour fundamentals of neuropsychology. Further, to develop an understanding of the brain-behaviour relationship and psychological and neurological functioning. The course will also introduce the neurological disorders and neuropsychological testing. The aim of the course to enable students to gain knowledge in neuropsychology and neuropsychological testing. The course will prepare students to take up advanced courses in clinical psychology.

2. Course Objectives

1. To explore and enable the students to understand biological basis of experience and behaviour and fundamentals of neuropsychology
2. To develop an understanding of relationship of Brain-behaviour and psychological disorders and neuropsychology
3. To develop an understanding of the neurological dysfunction and disorders.
4. To enable students to gain skills in neuropsychological testing

3. Pre-requisites

Registration as student in M.Sc. Applied Psychology program.

4. References:

Bryan, Kolb & Ian Q. Whishaw. (2008). Fundamentals of Human Neuropsychology. (6th Edition).

Zillmer, E. A., & Spiers, M. V. (2001). Principles of Neuropsychology. USA: Wadsworth.

Darby, D., & Walsh, K. (2005). Walsh's Neuropsychology. A Clinical Approach, Fifth edition. UK: Elsevier

Pinel, J. P. J. (2011). Biopsychology, 8th Edition. Pearson Education, New Delhi.

Carlson, N. R. (2009) Foundations of Physiological Psychology, 6th Edition. Pearson Education, New Delhi.

Breedlove, S. M., Rosenzweig, M. R., & Watson, N. V. (2007) Biological Psychology: An introduction to behavioral, cognitive, and clinical neuroscience, 5th Edition. Sinauer Associates, Inc., Sunderland, Massachusetts.

5. Module-wise topics

Module 1: Introduction to Neuropsychology (6 sessions)

Topics:

- Nature and scope of Neuropsychology
- Introduction to Brain and Its Function Localization of Function, Localization and Lateralization of Language, Sequential Programming and Disconnection, Loss And Recovery Of Function, Hierarchical Organization And Distributed Systems In The Brain

Readings:

- Bryan, Kolb & Ian Q. Whishaw. (2008). Fundamentals of Human Neuropsychology. (6th Edition).

Module 2 : The Nervous System and Functioning of Brain (12 sessions)

Topics:

- Neuroanatomy, Nervous System, The Spinal Cord- structure and functions,
- Central Nervous System, Peripheral Nervous System, The Brainstem- Hindbrain, Midbrain, Diencephalon, Forebrain, Basal Ganglia, Limbic System, Neocortex, Fissures, Sulci, and Gyri.
- Anatomical Symmetry In The Human Brain
- Organization and Principles of the Sensory Systems and Functions
- Methods of studying brain behavior relationship, Brain Imaging, New advances in imaging techniques CAT, MRI, PET

Readings:

- Bryan, Kolb & Ian Q. Whishaw. (2008). Fundamentals of Human Neuropsychology. (6th Edition).

Module 3: Functional Aspects of Lobes (12 sessions)

Topics:

- Occipital Lobes- Anatomy and Functions, Disorders of Cortical Function
- Parietal Lobes- Anatomy and Functions, Somatosensory Symptoms of Parietal Lobe Lesions and disorders
- Temporal Lobes- Anatomy and Functions, Symptoms of Temporal Lobe Lesions and disorders
- Frontal Lobes- Anatomy and Functions, Symptoms of Frontal Lobe Lesions and disorders

Readings:

Bryan, Kolb & Ian Q. Whishaw. (2008). Fundamentals of Human Neuropsychology. (6th Edition).

Module 4: Introduction to Neurological Disorders (10 sessions)

Topics:

- Introduction to Neurological Disorders
- Vascular Disorders, Traumatic Brain Injuries
- Epilepsy, Tumors, Headaches,
- Disorders of Sleep
- Dementia, types of dementia

Readings:

Bryan, Kolb & Ian Q. Whishaw. (2008). Fundamentals of Human Neuropsychology. (6th Edition).

Module 5 : Neuropsychological Testing (5 sessions)

- Introduction and Rational of Neuropsychological Assessment
- Neuropsychological Tests and Brain Activity,
- Neurorehabilitation: brain plasticity, neuropsychological retraining.

Readings:

Lezak, M. et al., (2012). Neuropsychological Assessment [5th Edition]

Practicals:

- Basic Neuropsychology Assessment and Batteries: Cognitive Functions: Attention, Memory, Perception, Thinking, etc.
- Activity based assignment Application of assessment and neuro rehabilitation program for at least one case.

Readings:

Pinel, J. P. J. (2011) Biopsychology, 8th Edition. Pearson Education, New Delhi.

6. Pedagogy

The teaching-learning of the course would be organized through lectures, 6 to 8 practical sessions, hands on assessment techniques and presentations. Students would be encouraged to develop an understanding of neuropsychology and assessment and participate in the course and practices in the clinical context. Practicum is incorporated as an important component in most of the course. ICT and mass media and web based sources (like documentaries, videos, films etc.) will used to make the teaching-learning process interactive, interesting and fruitful.

7. Evaluation Pattern

The mode of evaluation would be through a combination of examination (Mid and End semester Exam) 70 marks and internal assessment is 30 marks. The internal assessment

includes individual and group presentations and practicum submissions as a part of the overall assessment of the students.

Class Participation and Attendance	5%
Term Paper	10%
Individual Assignment (including Presentations)	10%
Group Assignments (including Presentation)	5%
Mid semester Examination	20%
Final Examination	50%
Total	100%