



BS (4 Years) for Affiliated Colleges

Code	Subject Title	Cr. Hrs	Semester
APSY-364	Biological Basis of Behavior	3	VI
Year	Discipline		
3	Applied Psychology		

Course Objectives

This course will cover the underlying biological basis of human behavior including Brain and Glands. It is designed to be an introductory 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.

Course Outcome

It is expected that after completion of this course: the student will possess a good understanding of structure and function of brain, different parts of nervous system, neurochemistry, hormones. 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.

Course Contents

Introduction

Brief historical background,
Current trends in the field of Behavioral neuroscience
Contribution of various areas and related disciplines

Structure and Function of Nervous System

Neurons and Glial cells
The neuron: neuronal characteristics, types, transmission and communication systems.
Neuro anatomical directional terms and planes of reference
Structures of Nervous System, their functions and connections

The central nervous system

Fore brain, mid brain, hind brain
Spinal cord, peripheral nervous system
Autonomic nervous system

Methods of studying the nervous system

Behavioral research methods of biopsychology

Glands

Endocrine glands: type of gland,
Function of glands
Effect of hormones on human behaviour

Neurochemistry

Characteristics of neurotransmitters, neuromodulators and neuroHormones
Major neurotransmitters

Dopamine
Nor epinephrine
Serotonin
Acetylcholine
GABA
Glycine, Peptides (opiates)

Brain and Behaviour

Motivation

Homeostasis
Involvement of brain and neurotransmitters in motivational behavior
Aggression
Sleep and circadian rhythms (types and basic function)
Eating behaviour
Weight, Glucose, & Metabolic Regulation

Emotions

Hormonal changes in emotion
Involvement of brain in emotions

Memory and Amnesia

Involvement of brain in memory
Memory disorders (Korsakov, Alzheimer's, Parkinson diseases etc)

Communication

Factors in the development of speech
Speech abnormalities, speech disorders
Brain areas in speech

Neurological Disorders

Epilepsy, Cerebral Palsy, Multiple Sclerosis.
Psychiatric disorders with organic/ biochemical etiology: Mood Disorder, Anxiety Disorders, and Schizophrenia, Mental Retardation.

Brain Damage

Causes of brain damage: CVA, Head injury, Infections
Psychological implications of brain damage

Clinical Neuropsychology

Introduction to Neuropsychology
Role of a Neuropsychologist
Neuropsychological assessment techniques

Recommended 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. 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.
- Pinel, J. (1997). *Bio-Psychology*, 3rd Edition, Allyn & Bacon.
- Pincus, J. (1985). *Behavioural Neurology*, OUP.
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