



LEAD CITY UNIVERSITY
Faculty of Social and Management Sciences
Department of Sociology and Psychology

COURSE PARTICULARS

Course Code: Psy 111

Course Title: Bio-Psychology

No. of Units: 3

Status: Compulsory

LECTURER DETAILS

Name: Dr Lydia Titilayo Dada

Qualifications: PhD

Phone: 08056139806, 07060991578

Email: titilayo.dada@yahoo.com

Area of Specialization: Clinical Psychology

COURSE DESCRIPTION

Psy 111 (Bio-Psychology) is a foundation course for Psy 214 (Physiological Psychology II), which provides a biological framework for understanding complex human and animal behaviours and mental processes. A biological perspective that deals with how the individual's experience and socio-cultural environment interact with the machinery (anatomy, physiology, and chemistry) of the nervous and endocrine systems to produce such activities as consciousness, perception, motor control, learning, memory, emotion, motivation, etc.

The course has extensive applications for both theory and practical development in bio-medicine, neuroscience, cognitive science, clinical science, psychiatry, neurology, surgery, clinical psychology, counselling psychology, rehabilitation psychology, occupational therapy, social work.

COURSE DISCRIPTION:

- Mind-Brain Relationship
- Heritability
- Genetics of Behaviour
- The nervous system

COURSE OBJECTIVES:

- To build on knowledge and skills in the concepts and topics listed in the schedule.
- To elucidate the role of nature and nurture in the determination of behaviour and conscious experience.
- To introduce students to the roles of the nervous and endocrine systems in the determination of behaviour.
- To provide insight to the age-old philosophical debate about the relationship between the mind and the brain.

ASSESSMENT

Class Attendance	5 marks
Test(s) and Assignments	25 marks
Final Examination	70 marks

LECTURE PLAN

Week	Topic
Week 1	Introduction: Major issues in Biological Psychology, Scope of the field.
Week 2	The mind-brain relationship: Biological explanations of behaviour. Evolutionary explanation of behaviour
Week 3	The Philosophical Development: Dualism and Descartes' Dualism, Monism, Materialism, empiricism and Consciousness
Week 4	Genetics of behaviour Mendelian genetics, Chromosomes and Genes
Week 5	Genetics of behaviour (CONTD) Heredity, environment and behaviour
Week 6	Cells and Nerve Impulses: Basic anatomy of animal cells The cells of the nervous system; Anatomy of neurones and glia
Week 7	MID SEMESTER TEST
Week 8	Nerve cells and nerve impulses (CONTD) The resting potential: The action potential
Week 9	Synapses: Concept and properties of synapses
Week 10	Anatomy of the vertebrate nervous system: The Central nervous system
Week 11	Anatomy of the vertebrate nervous system (CONTD) The peripheral nervous system
Week 12	Wrap-up and Revision.

READING LIST

1. Kalat, J.W. 2007 "Biological Psychology (Ninth Edition)": Wardsworth.
2. Lahey, B.B. 2007 "Psychology: An Introduction (Ninth Edition): McGraw-Hill.
3. Widmaier, E.P., Raff, H., and Strang, K.T. 2004 "Human Physiology: The Mechanisms of Body Function: McGraw-Hill.
4. Bernstein, D.A., Penner L. A., Clarke-Stewart A. and Roy E. J. (2006) Psychology 7th Edition. New York.

TUTORIAL QUESTIONS(12questions)

Question 1.

- i. What is biopsychology?
- ii. List and explain each of the different major issues in bio-psychology

Question 2.

Discuss the Mind-Brain relationship with emphasis on dualism and materialism.

Question 3.

- i Name the philosopher most associated with the concept of dualism.
- ii State and explain the scientific objection to the doctrine of dualism.
- iii Describe the state of consciousness

Question 4.

- i. What is chromosome?
- ii. What is gene?
- iii. In what part of the chromosome are genes located?
- iv. Define and differentiate between Deoxyribonucleic acid and Ribonucleic acid.

Question 5.

- i. Differentiate between dominant and recessive genes.
- ii Using a sketch diagram, illustrate the conditions under which recessive and dominant genes might show phenotypic effects in the offspring.
- iii. Define Genotype and Phenotype

Question 6.

- i. Define heritability.
- ii. Briefly explain how genes might indirectly affect behaviour.
- iii. State and illustrate Jean Lamarck's theory of evolution.
- iv. Give four reasons why evolution must occur.

Question 7

- i. Describe a typical human neuron.
- ii. Briefly describe the different types of glia.
- iii. Enumerate different types of neurons in the nervous system.

Question 8.

- i. With the aid of a well labeled diagram describe the basic anatomy of an animal cell.
- ii. Diagrammatically identify additional structures that distinguish neurons from other animal cells.
- iii. An axon that brings information to a structure is described as _____ to that structure, and a neuron that takes information from a neuron is described as _____ to that structure.

Question 9.

- i. Define electrical gradient, polarization, and resting potential.
- ii. Define hyperpolarization, depolarization, and action potential.
- iii. Explain the concept of refractory period.
- iv. Diagrammatically explain how the action potential is propagated

Question 10

- i. Define the synapse.
- ii. List and discuss the properties of synapses
- iii. Differentiate between excitatory post-synaptic and inhibitory post-synaptic potentials.
- iv. Provide a sketch of a reflex arc.

Question 11.

- i. What does dorsal mean?
- ii. Draw a cross-section describing the spinal cord.
- iii. In what part of the nervous system are the hippocampus and substantial nigra located?
- iv. The bulges in the cerebral cortex are called _____, and the grooves in the cerebral cortex are called _____.
- v. List the 12 pairs of cranial nerves in the spinal cord.

Question 12.

- i. Write a short description of the autonomic nervous system.
- ii. Differentiate between sympathetic and the parasympathetic nerves.
- iii. The set of nerves lying outside the nervous system is referred to as _____
- iv. The vital reflexes controlled by the medulla include coughing, heart rate, sneezing, etc. They are controlled through the _____ nerves