Psychobiological Study of Behaviour is a 3-unit, 400 Level Compulsory course for Psychology Majors. The course is to enable students acquire mastery and skill in the following areas.

1. Advanced analysis of neural behaviour for final year students expected to design and participate in experiments centered on neural behaviour, brain, and neural interactions

   - **Research methods for examining the following**
     (a) the relationship between brain anatomy and behaviour;
     (b) the relationship between brain activity and behaviour;
     (c) effects of brain damage on behaviour
     (d) effects of brain stimulation on behaviour

   Emphasis on use and limitations of the following
   (a) computerised axial tomography,
   (b) magnetic, and functional magnetic resonance imaging,
   (c) electroencephalography,
   (d) magnetoencephalography,
   (e) positron emission tomography,
   (f) transcranial magnetic stimulation,
   (g) gene-knockout,
   (h) lesion and ablation
   (i) stereotaxic instrument

   - **Brain and intelligence**
     (a) comparison across species
     (b) comparison across humans

2. Nerve cells

   - **The cells of the nervous system**
     (a) Anatomy of neurons and glia
     (b) The blood-brain barrier
     (c) The nourishment of vertebrate neurons

   - **Cells and the nerve impulse**
     (a) The resting potential of the neuron
     (b) The action potential and its molecular basis
     (c) Propagation of the action potential
     (d) The myelin sheath and saltatory conduction
     (e) Local neurons, and graded potentials
3. **Synaptic mechanisms**
   - **The concept of synapses**
     (a) The properties of synapses
     (b) The relationship among excitatory post-synaptic potential, inhibitory post-synaptic potential, and action potential.
   - **Chemical events at the synapse**
     (a) The discovery of chemical transmission at synapses and the contributions of Charles Scott Sherrington and Ramon y Cajal.
     (b) The sequence of chemical events at a synapse
   - **Drugs and synapses**
     (a) Drug mechanisms
     (b) Common drugs and their synaptic effects

4. **E.E.G Brain response and sleep patterns**
   - **Rhythms of waking and sleeping**
     (a) Endogenous cycles
     (b) Mechanisms of the biological clock
     (c) Setting and resetting the biological clock
   - **Stages of sleep and Brain mechanisms**
     (a) The stages of sleep
     (b) Paradoxical or REM sleep
     (c) Brain mechanisms of wakefulness and arousal
     (d) Brain function in REM sleep
     (e) Sleep disorders

Emphasis on EEG and the measurement of sleep and wakefulness
   - **Sleep, REM, and Dreams**
     (a) Functions of sleep
     (b) Functions of REM sleep
     (c) Biological perspectives on dreaming

**References**
Faculty of the Social Sciences (2001 – 2002), *Prospectus*, University of Ibadan


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