Neuroscience

Course Title	:	Neuroscience
Duration	:	30 weeks
Course units	:	6 credit hours
Instruction hours	:	Lectures 60hrs- Tutorials
30hrs- Lab 26 classes.		

I- General Objectives:

At end of this course the students should be able to:

- Identify the basic structural components of the nervous system.
- Understand the basic functions of different parts of the nervous system.
- Interpret the functional structural relationships within the nervous system.
- Carry out basic clinical procedures for functional assessment of the nervous system.
- Apply the basic knowledge to explain the clinical data of common neurological problems, on anatomical and physiological basis.
- Interpret neurological data including normal findings and classic disorders.

II. Course Content:

- Unit 1: Nervous tissue components [A].
- Unit 2: Development of the nervous system [A].
- Unit 3: Electrophysiology of the neuron [P].
- Unit 4: Synaptic transmission [P].

- Unit 5: Anatomy of the spinal cord [A].
- Unit 6: Anatomy of the spinal cord tracts [A].
- Unit 7: Physiology of the somatosensory system [P].
- Unit 8: Physiology of pain [P].
- Unit 9: Motor function of the spinal cord [P].
- Unit 10-11: anatomy of the brain stem [A].
- Unit 12: anatomy of the cerebellum [A].
- Unit 13: Vestibular sensations and reflexes [P].
- Unit 14: Auditory system [P].
- Unit 15: Visual system [P].
- Unit 16: Chemical senses (smell & taste) [P].
- Unit 17: Structure of the diencephalons [A].
- Unit 18: Structure of the cerebral hemispheres [A].
- Unit 19: Motor control system [P].
- Unit 20: Motor functions of the basal ganglia and cerebellum [P].
- Unit 21: Internal regulation system (hypothalamus & limbic system) [P].
- Unit 22: Consciousness system [P].
- Unit 23: Learning and memory [P].
- Unit 24: Language system [P].
- Unit 25: Ventricular system and cerebrospinal fluid [A].
- Unit 26: Functional characteristics of cerebral blood flow [A].

III. Educational Strategies (Mode of teaching):

- Formal lectures.
- Interactive lectures: including student presentations of their previously prepared assignments.
- Tutorial classes: including small group discussions, case studies and other interpretative exercises.

- Examination of anatomical specimens.
- Laboratory experiments including animal experiments (study of the frog's reflexes).
- Clinical skills: Neurological testing in human subjects including the assessment of the sensory and motor functions.
- Homework and Assignments: including comparative studies between the neurological systems (e.g. visual and auditory systems, basal ganglia and cerebellar circuits).

IV. Evaluation:

1.	Continuous assessment:	50%
2.	Final exam:	50%
3.	Total:	100%

V. Textbook S:

- Clinical neuroanatomy for medical students (Snell R).
- Textbook of Medical Physiology (Ganong WF).
- Objective medical physiology: neurophysiology (Wakim & El-Bahai)

V1. References

- Neuroanatomy for medical students (Wilkinson JL).
- Barr's human nervous system (Keirnan JA).
- Core text of neuroanatomy (Carpenter MB).
- Neuroscience (Bear MF).
- Neuroscience (Kendel).
- Concise test of neuroscience (Kengsley RE).
- The human nervous system (Noback CR).