**Nervous System Physiology**

The course will teach students the phenomena occurring at molecular, cellular, tissue and organ level which support vital functions. At the end of the course, students will know how the organs and systems of the human body work, how their cooperate, and how their function is controlled to keep homeostasis. What is taught at all level of organisation of the living matter will be pout in the frame of the way the organism works. Students will learn the major correlations between the phenomena occurring in physiologic and pathologic conditions.

**Course contents:**

**Sensory Receptors**

**The Receptor Potential**

**Primary Sensory Coding**

**Stimulus Type**

**Stimulus Intensity**

**Stimulus Location**

**Central Control of Afferent Information**

**Ascending Neural Pathways in Sensory Systems**

**Association Cortex and Perceptual**

**Somatic Sensation**

**Touch and Pressure**

**Sense of Posture and Movement**

**Temperature**

**Pain**
Neural Pathways of the Somatosensory System

Vision

Light

Overview of Eye Anatomy

The Optics of Vision

Photoreceptor Cells and Phototransduction

Neural Pathways of Vision

Color Vision

Color Blindness

Eye Movement

Hearing

Sound

Sound Transmission in the Ear

Hair Cells of the Organ of Corti

Neural Pathways in Hearing

Vestibular System

The Semicircular Canals

The Utricle and Saccule

Vestibular Information and Pathways

Chemical Senses

Taste

Smell

Consciousness, brain and behavior

States of Consciousness
Electroencephalogram

The Waking State

Sleep

Neural Substrates of States of Consciousness

Learning and Memory

Memory

The Neural Basis of Learning and Memory

Cerebral Dominance and Language

Control of Body Movement

Motor Control Hierarchy

Voluntary and Involuntary Actions

Local Control of Motor Neurons

Interneurons

Local Afferent Input

The Brain Motor Centers and the Descending Pathways They Control

Cerebral Cortex

Subcortical and Brainstem Nuclei

Cerebellum

Basal ganglia

Descending Pathways

Muscle Tone

Maintenance of Upright Posture and Balance

Control of visceral functions

Sympathetic and parasympathetic systems
Functions of the Hypothalamus

Teaching modalities:
Lectures, rehearsal and questions and answers to the class.

Recommended or required readings:
One of the following books:


Assessment:
Written text (multiple choices) & oral exam