

## Faculty of Medicine



### FYSL1303 Physiology and physiopathology (3rd part) : Nervous system.

[75h+12h exercises] 8 credits

This course is taught in the 1st and 2nd semester

**Teacher(s):** Marc Crommelinck, Etienne Olivier, Léon Plaghki, André Roucoux (coord.)  
**Language:** French  
**Level:** First cycle

#### Aims

Knowledge of the anatomical structures and physiological mechanisms of the nervous system responsible for human behaviour  
 Knowledge of the pathophysiological bases of main dysfunctions of this system.  
 Knowledge of the principles of the nervous control of other physiological systems.

#### Main themes

Ex cathedra teaching : general organisation of the central nervous system (neuroanatomy), general neurophysiological mechanisms, neurophysiology of sense organs, neurophysiology of motor systems, physiological mechanisms of the development of the nervous system, plasticity of the adult brain, and psychophysiology (memory, emotions, cognitive functions, sexual differentiation of the brain, sleep)

Principles of neuro-vegetative control.

Practicals: some of the topics explained ex cathedra are further explored and illustrated such as: vision, eye movements, evoked potentials, reflexes and motor control. The aim is to bring the student to an active and reflexive posture in front of real and concrete phenomenon's observed on themselves or classroom's mates

#### Content and teaching methods

The ex cathedra course is divided into three main parts.

The general organisation of the nervous system, general neurophysiological mechanisms, phylogenetic and ontogenetic considerations, neurons, glial cells, blood-brain barrier, meninges and ventricular system, vascular system of the brain, the spinal chord, the encephalon and the vegetative nervous system.

Sensorimotor neurophysiology: sensory information in general, the somesthetic system including pain, vision including eye movements, audition, vestibular system, taste and olfaction, the control of movement and the vegetative nervous system.

Psychophysiology: development and plasticity, learning and memory, emotions, diffuse neuromodulator systems, cognitive functions and language, cerebral rhythms and sleep.

The practicals are concerned by: vision and ophthalmoscopy, eye movements and equilibrium, somatic evoked potentials and reflexes and transcranial stimulation.

#### Other information (prerequisite, evaluation (assessment methods), course materials recommended readings, ...)

Prerequisite and related courses are: cellular biology, general physiology, embryology, biochemistry, histology anatomy and psychology.

Evaluation is done by a written examination.

#### Other credits in programs

<b>MD3DA/BI</b>	Diplôme d'études approfondies en sciences de la santé (sciences biomédicales)		Mandatory
<b>MED13</b>	Troisième candidature en médecine	(9 credits)	Mandatory