UCLouvain

wsbim2156

2022

Animal and human electrophysiology project

2.00 credits	20.0 h	Q1

Teacher(s)	Gailly Philippe (coordinator) ;Missal Marcus ;Mouraux André ;
Language :	French
Place of the course	Bruxelles Woluwe
Learning outcomes	
Evaluation methods	Written exam with short open-ended questions
Teaching methods	Theoretical teaching ex cathedra and laboratory demonstrations.
Content	The course will consist of three parts, to be given by three co-teachers with particular expertise in the field concerned: (1) Cellular and molecular electrophysiology: electrical phenomena in biology, membrane transport and ion channels, voltage clamp technique, patch clamp (unit channels and whole cell configuration), reconstitution of exogenous ion channels, membrane potential - action potential - post synaptic potential, recording on brain slices, specific microelectrodes for certain ions. (2) Extra-cellular action potential recording: recording techniques and applications, multimedia demonstrations of electrophysiology, recording of local field potentials, multi-electrode recordings, brain-machine interfaces in animals: state of the art and prospects. (3) Electrophysiology as a tool for functional exploration of the nervous system in humans : electroencephalography and invasive recordings of local field potentials (nature of bioelectric signals, recording techniques, electroencephalography as a diagnostic tool, hypnogram), evoked potential recording technique (nature of recorded bioelectric signals, sensitive evoked potentials, motor and cognitive, induced rhythms, source location analysis, stationary evoked potentials), electroneurography and electromyography (nature of recorded bioelectric signals, stimulodetection techniques, surface and needle electromyography, electromyography as a diagnostic tool).
Faculty or entity in charge	FASB

Programmes containing this learning unit (UE)				
Program title	Acronym	Credits	Prerequisite	Learning outcomes
Master [120] in Biomedicine	SBIM2M	2		🔍
Master [60] in Biomedicine	SBIM2M1	2		🔍