

FMUP | MASTER PROGRAM IN NEUROBIOLOGY

2022/2023 - Schedule of Classes

MeN - Students Welcome

Students Welcome

Carlos Reguenga

Data: 12/09/2022 Hora: 10:00 - 12:00 Local: UBEx Library

MOLECULAR ARCHITECTURE OF NEURONAL AND GLIAL CELLS

Module 1: Fundaments of Molecular Biology

Molecular organization of the cell / DNA replication, reparation, transcription and translation

Delminda Magalhães - Theoretical Class

Data: 12/09/2022 Hora: 17:00 - 19:00 Local: UBEx Library

Cell signalling / Protein trafficking

Alexandra Gouveia - Theoretical Class

Data: 13/09/2022 Hora: 17:00 - 19:00 Local: UBEx Library

Lab Practice Class 1: Protein extraction and quantification

Carlos Reguenga - Laboratory Class

Data: 14/09/2022 Hora: 10:00 - 13:00 Local: Class Lab (floor1)

Lab Practice Class 1: Gel casting

Carlos Reguenga - Laboratory Class

Data: 14/09/2022 Hora: 14:00 - 17:00 Local: Class Lab (floor1)

Methods in Molecular Biology

Alexandra Gouveia - Theoretical Class

Data: 14/09/2022 Hora: 17:00 - 19:00 Local: UBEx Library

Lab Practice 1: Western-blotting

Carlos Reguenga - Laboratory Class

Data: 15/09/2022 Hora: 10:00 - 17:00 Local: Class Lab (floor1)

DNA recombinant techniques and omics

Carlos Reguenga - Theoretical Class

Data: 15/09/2022 Hora: 17:00 - 19:00 Local: UBEx Library

Lab Practice 1: Immunodetection

Carlos Reguenga - Laboratory Class

Data: 16/09/2022 Hora: 10:00 - 13:00 Local: Class Lab (floor1)

Transcriptional control of gene expression

Filipe Monteiro - Theoretical Class

Data: 16/09/2022 Hora: 17:00 - 19:00 Local: UBEx Library

Gene silencing and genome editing

Jorge Ferreira - Theoretical Class

Data: 19/09/2022 Hora: 17:00 - 19:00 Local: UBEx Library

Gene engineering

Filipe Monteiro - Theoretical Class

Data: 20/09/2022 Hora: 17:00 - 19:00 Local: UBEx Library

Cell cytometry & microscopy

Jorge Ferreira - Theoretical Class

Data: 21/09/2022 Hora: 17:00 - 19:00 Local: UBEx Library

Molecular Biology exercises

Carlos Reguenga - Practical Class

Data: 22/09/2022 Hora: 17:00 - 19:00 Local: UBEx Library

Lab Practice Class2: Protein extraction and quantification; Gel casting

Alexandra Gouveia - Laboratory Class

Data: 28/09/2022 Hora: 10:00 - 13:00 Local: Class Lab (floor1)

Lab Practice Class 2: SDS-PAGE

Alexandra Gouveia - Laboratory Class

Data: 28/09/2022 Hora: 14:00 - 17:00 Local: Class Lab (floor1)

Lab Practice Class2: Western-blotting

Alexandra Gouveia - Laboratory Class

Data: 30/09/2022 Hora: 10:00 - 17:00 Local: Class Lab (floor1)

Lab Practice Class2: Immunodetection

Alexandra Gouveia - Laboratory Class

Data: 03/10/2022 Hora: 10:00 - 13:00 Local: Class Lab (floor1)

Journal Club

Carlos Reguenga

Data: 06/10/2022 Hora: 10:00 - 13:00 Local: UBEx Library

Written Exam - Fundamentals of Molecular Biology & Neurobiology

Carlos Reguenga

Data: 10/10/2022 Hora: 10:00 - 12:00 Local: UBEx Library

Module 2: Biology of Neurons and Glia

Introduction to Neurobiology

Vasco Galhardo - Theoretical Class

Data: 20/09/2022 Hora: 10:00 - 12:00 Local: UBEx Library

Perspective on current neuroscience research

Vasco Galhardo - Theoretical Class

Data: 20/09/2022 Hora: 14:00 - 15:30 Local: UBEx Library

The neuronal membrane: structure, transport, ion channels, synaptic transmission and excitability.

Boris Safronov - Theoretical Class

Data: 21/09/2022 Hora: 10:00 - 12:00 Local: UBEx Library

Input transmission, action potential and axonal conductance

Boris Safronov - Theoretical Class

Data: 21/09/2022 Hora: 14:00 - 16:00 Local: UBEx Library

General considerations on the glial system: types, morphology, ultra-structure and basic mechanisms

Fani Neto - Theoretical Class

Data: 22/09/2022 Hora: 11:00 - 12:00 Local: UBEx Library

Neuron-glia interaction

Fani Neto - Theoretical Class

Data: 22/09/2022 Hora: 14:00 - 16:00 Local: UBEx Library

Glial cells and myelination

João Relvas - Theoretical Class

Data: 23/09/2022 Hora: 10:00 - 12:00 Local: UBEx Library

Microglia and neuroinflammation

João Relvas - Theoretical Class

Data: 23/09/2022 Hora: 14:00 - 16:00 Local: UBEx Library

Seminars

Fani Neto / Carlos Reguenga - Theoretical Class

Data: 20/10/2022 Hora: 10:00 - 13:00 Local: UBEx Library

ORGANIZATION & DEVELOPMENT OF THE NERVOUS SYSTEM

Module 1: General Neuroanatomy

Overview of the CNS. Neuron

Dulce Madeira - Theoretical Class

Data: 26/09/2022 Hora: 14:00 - 15:00 Local: UBEx Library

Neural circuits

Susana Maria Silva - Theoretical Class

Data: 26/09/2022 Hora: 15:00 - 16:00 Local: UBEx Library

Spinal Cord: segmental organization;

Susana Maria Silva - Theoretical Class

Data: 26/09/2022 Hora: 16:00 - 17:00 Local: UBEx Library

introduction to long pathways; Somatic reflex

Susana Maria Silva - Theoretical Class

Data: 27/09/2022 Hora: 14:00 - 15:00 Local: UBEx Library

Brainstem. Cranial nerve nuclei (Medulla oblongata and Pons)

Susana Maria Silva - Theoretical Class

Data: 27/09/2022 Hora: 15:00 - 16:00 Local: UBEx Library

Brainstem. Cranial nerve nuclei (Mesencephalon. Reticular Formation)

Susana Maria Silva - Theoretical Class

Data: 29/09/2022 Hora: 14:00 - 15:00 Local: UBEx Library

Cerebellum

Susana Maria Silva - Theoretical Class

Data: 29/09/2022 Hora: 15:00 - 16:00 Local: UBEx Library

Diencephalon. Epithalamus. Hypothalamus. Metathalamus

Susana Maria Silva - Theoretical Class

Data: 29/09/2022 Hora: 16:00 - 17:00 Local: UBEx Library

Thalamus and internal capsule

Susana Maria Silva - Theoretical Class

Data: 03/10/2022 Hora: 14:00 - 15:00 Local: UBEx Library

Telecephalon

Susana Maria Silva - Theoretical Class

Data: 03/10/2022 Hora: 15:00 - 16:00 Local: UBEx Library

Cerebral cortex

Susana Maria Silva - Theoretical Class

Data: 03/10/2022 Hora: 16:00 - 17:00 Local: UBEx Library

Cortical functional localization

Susana Maria Silva - Theoretical Class

Data: 06/10/2022 Hora: 14:00 - 15:00 Local: UBEx Library

Basal Ganglia

Susana Maria Silva - Theoretical Class

Data: 06/10/2022 Hora: 15:00 - 16:00 Local: UBEx Library

Lymbic system

Susana Maria Silva - Theoretical Class

Data: 06/10/2022 Hora: 16:00 - 17:00 Local: UBEx Library

Autonomic nervous system

Susana Maria Silva - Theoretical Class

Data: 10/10/2022 Hora: 14:00 - 15:00 Local: UBEx Library

Vascular supply of the brain and spinal cord

Susana Maria Silva - Theoretical Class

Data: 10/10/2022 Hora: 15:00 - 16:00 Local: UBEx Library

Ventricular system. Circumventricular organs

Susana Maria Silva - Theoretical Class

Data: 10/10/2022 Hora: 16:00 - 17:00 Local: UBEx Library

Overview of the cranial nerves

Susana Maria Silva - Theoretical Class

Data: 11/10/2022 Hora: 14:00 - 15:00 Local: UBEx Library

Eye. Visual system. Visual cortex

Susana Maria Silva - Theoretical Class

Data: 11/10/2022 Hora: 15:00 - 17:00 Local: UBEx Library

General organization of the CNS. Spinal cord and spinal nerves. Brainstem and cerebellum

Susana Maria Silva - Laboratory Class

Data: 13/10/2022 Hora: 14:00 - 15:00 Local: U. Anatomy - Anatomical Theatre

Diencephalon

Susana Maria Silva - Laboratory Class

Data: 13/10/2022 Hora: 15:00 - 16:00 Local: U. Anatomy - Anatomical Theatre

Meninges

Susana Maria Silva - Laboratory Class

Data: 13/10/2022 Hora: 16:00 - 17:00 Local: U. Anatomy - Anatomical Theatre

Ear. Auditory system. Auditory cortex

Susana Maria Silva - Theoretical Class

Data: 17/10/2022 Hora: 14:00 - 16:00 Local: UBEx Library

Gustatory and olfactory systems

Susana Maria Silva - Theoretical Class

Data: 17/10/2022 Hora: 16:00 - 17:00 Local: UBEx Library

Telencephalon. Internal structure of the cerebral hemispheres. Brain sections

Susana Maria Silva - Laboratory Class

Data: 18/10/2022 Hora: 14:00 - 15:00 Local: U. Anatomy - Anatomical Theatre

Limbic system and autonomic nervous system

Susana Maria Silva - Laboratory Class

Data: 18/10/2022 Hora: 15:00 - 16:00 Local: U. Anatomy - Anatomical Theatre

Visual and auditory structures

Susana Maria Silva - Laboratory Class

Data: 18/10/2022 Hora: 16:00 - 17:00 Local: U. Anatomy - Anatomical Theatre

Ascending sensory pathways

Susana Maria Silva - Theoretical Class

Data: 20/10/2022 Hora: 14:00 - 15:00 Local: UBEx Library

Descending motor pathways

Susana Maria Silva - Theoretical Class

Data: 20/10/2022 Hora: 15:00 - 16:00 Local: UBEx Library

Written Exam - Neuroanatomy

Dulce Madeira / Susana Silva

Data: 24/10/2022 Hora: 14:00 - 16:00 Local: UBEx Library

Module 2: Neurodevelopment

General embryology

Sandra Rebelo - Theoretical Class

Data: 07/10/2022 Hora: 09:00 - 12:00 Local: UBEx Library

Neurogenesis in the developing vertebrate embryo

Diogo Castro - Theoretical Class

Data: 12/10/2022 Hora: 10:00 - 12:00 Local: UBEx Library

In ovo & in utero electroporation

Filipa Dias - Theoretical Class

Data: 12/10/2022 Hora: 14:00 - 15:30 Local: UBEx Library

Eye development and its impact on neurodegenerative disease

Carla Lopes - Theoretical Class

Data: 13/10/2022 Hora: 10:00 - 12:00 Local: UBEx Library

Practical session

Filipa Dias - Laboratory Class

Data: 17/10/2022 Hora: 10:00 - 13:00 Local: Class Lab (Floor 1)

Cortical development

Tiago Dantas - Theoretical Class

Data: 18/10/2022 Hora: 10:00 - 12:00 Local: UBEx Library

Practical session

Filipa Dias - Laboratory Class

Data: 19/10/2022 Hora: 10:00 - 13:00 Local: Class Lab (Floor 1)

Retina and glial cells: roles in homeostasis and reprogramming

Mariana Silveira - Laboratory Class

Data: 19/10/2022 Hora: 14:00 - 16:00 Local: UBEx Library

Evaluation - Neurodevelopment

Sandra Rebelo / Carlos Reguenga

Data: 26/10/2022 Hora: 14:00 - 16:00 Local: UBEx Library

NEURONAL EXCITABILITY AND NEUROTRANSMISSION

Module 1: General Pharmacology

General Pharmacology I

Dora Pinho - Theoretical Class

Data: 25/10/2022 Hora: 09:00 - 10:30 Local: UBEx Library

General Pharmacology I

Dora Pinho - Practical Class

Data: 25/10/2022 Hora: 11:00 - 12:30 Local: UBEx Library

General Pharmacology II

Teresa Sousa - Theoretical Class

Data: 26/10/2022 Hora: 09:00 - 10:30 Local: UBEx Library

General Pharmacology II

Teresa Sousa - Practical Class

Data: 26/10/2022 Hora: 11:00 - 12:30 Local: UBEx Library

Evaluation of neurotransmission and neuromodulation - Twitch-response assays

Teresa Sousa - Practical Class

Data: 27/10/2022 Hora: 09:00 - 12:00 Local: Unit Pharmacology - CIM 3rd Floor

Evaluation of neurotransmission and neuromodulation - Twitch-response assays

Teresa Sousa - Laboratory Class

Data: 27/10/2022 Hora: 14:00 - 18:30 Local: Unit Pharmacology - CIM 3rd Floor

Evaluation of neurotransmission and neuromodulation - superfusion assays

Dora Pinho - Practical Class

Data: 28/10/2022 Hora: 09:00 - 12:00 Local: Unit Pharmacology - CIM 3rd Floor

Evaluation of neurotransmission and neuromodulation - superfusion assays

Dora Pinho - Laboratory Class

Data: 28/10/2022 Hora: 14:00 - 18:30 Local: Unit Pharmacology - CIM 3rd Floor

Evaluation of neurotransmission and neuromodulation - Functional assays

Manuela Morato - Practical Class

Data: 31/10/2022 Hora: 09:00 - 12:00 Local: Unit Pharmacology - CIM 3rd Floor

Presentation and discussion of results. Evaluation

Dora Pinho/Manuela Morato/Teresa Sousa - Practical Class

Data: 02/11/2022 Hora: 09:00 - 12:00 Local: UBEx Library

Presentation and discussion of results. Evaluation

Dora Pinho/Manuela Morato/Teresa Sousa - Practical Class

Data: 03/11/2022 Hora: 09:00 - 13:00 Local: UBEx Library

Module 2: Pharmacology of synaptic transmission

Course presentation

Albino Teixeira - Theoretical Class

Data: 04/11/2022 Hora: 14:00 - 14:30 Local: UBEx Library

Pharmacological modulation of neurotransmitter release. Experimental design to study molecular interventions on release and actions of neurotransmitters

Teresa Sousa - Theoretical Class

Data: 04/11/2022 Hora: 14:30 - 16:30 Local: UBEx Library

Gasotransmitters

Dora Pinho - Theoretical Class

Data: 04/11/2022 Hora: 17:00 - 19:00 Local: UBEx Library

Presynaptic adenosine receptors

Jorge Gonçalves - Theoretical Class

Data: 11/11/2022 Hora: 14:30 - 16:30 Local: UBEx Library

Dopamine and serotonin receptors

Patrício Soares da Silva - Theoretical Class

Data: 11/11/2022 Hora: 17:00 - 19:00 Local: UBEx Library

Presynaptic ATP receptors

Paulo Correia de Sá - Theoretical Class

Data: 18/11/2022 Hora: 14:30 - 16:30 Local: UBEx Library

Presynaptic acetylcholine receptor

Paulo Correia de Sá - Theoretical Class

Data: 18/11/2022 Hora: 17:00 - 19:00 Local: UBEx Library

Presynaptic modulation of endocannabinoids

Augusta Vieira Coelho - Theoretical Class

Data: 25/11/2022 Hora: 14:30 - 16:30 Local: UBEx Library

Journal Club

Albino Teixeira - Practical Class

Data: 02/12/2022 Hora: 14:30 - 16:30 Local: UBEx Library

Evaluation

Albino Teixeira

Data: 02/12/2022 Hora: 17:00 - 19:00 Local: UBEx Library

NEURONAL PLASTICITY AND COGNITION

Module 1: Neural Plasticity

Molecular mechanisms of synaptic plasticity - part 1

Vasco Galhardo - Theoretical Class

Data: 31/10/2022 Hora: 14:00 - 17:00 Local: UBEx Library

Molecular mechanisms of synaptic plasticity - part 2

Vasco Galhardo - Theoretical Class

Data: 02/11/2022 Hora: 14:00 - 17:00 Local: UBEx Library

Mechanisms of Memory

Vasco Galhardo - Theoretical Class

Data: 03/11/2022 Hora: 14:00 - 17:00 Local: UBEx Library

Mechanisms of Attention

Vasco Galhardo - Theoretical Class

Data: 07/11/2022 Hora: 14:00 - 17:00 Local: UBEx Library

Sensation and perception

Vasco Galhardo - Theoretical Class

Data: 08/11/2022 Hora: 14:00 - 17:00 Local: UBEx Library

Module 2: Cognitive and Affective Neurosciences

Research Methods in Cognitive & Affective Neuropsychophysiology

Fernando Barbosa - Theoretical Class

Data: 07/11/2022 Hora: 10:00 - 13:00 Local: UBEx Library

Cognitive and Affective Neuroscience of Aging

Carina Fernandes - Theoretical Class

Data: 08/11/2022 Hora: 10:00 - 13:00 Local: UBEx Library

Cognitive, Affective, and Social Neuroscience

Fernando Ferreira-Santos - Theoretical Class

Data: 09/11/2022 Hora: 10:00 - 13:00 Local: UBEx Library

Lab Practices

Fernando Ferreira-Santos - Practical Class

Data: 10/11/2022 Hora: 09:00 - 13:00 Local: UBEx Library

Lab Practices

Fernando Ferreira-Santos - Practical Class

Data: 10/11/2022 Hora: 14:00 - 17:00 Local: UBEx Library

Module 3: Decision and Choice

Presentation of the module, Moodle, coursework, seminar, assessment, and... a bit on Ethics

José Paulo Marques dos Santos - Theoretical Class

Data: 09/11/2022 Hora: 14:00 - 16:00 Local: UBEx Library

1.1 System 1 & System 2 (intuition vs. deliberation); 1.2 Bounded rationality & Non-rational theories (heuristics); 1.3 Risk aversion; 1.4 Intertemporal choice (delayed vs. instant gratification)

José Paulo Marques dos Santos - Theoretical Class

Data: 14/11/2022 Hora: 09:00 - 13:00 Local: UBEx Library

1.5 Emotions and feelings; 2.1 Social conformity (Asch effect) and the illusion of free will; 2.2 The alternative: System 3 – imitation

José Paulo Marques dos Santos - Theoretical Class

Data: 15/11/2022 Hora: 09:00 - 13:00 Local: UBEx Library

2.3 Theory of Mind and Empathy; 2.4 Informational cascades

José Paulo Marques dos Santos - Theoretical Class

Data: 15/11/2022 Hora: 14:00 - 16:00 Local: UBEx Library

3.1 Game Theory

José Paulo Marques dos Santos - Theoretical Class

Data: 21/11/2022 Hora: 10:00 - 12:00 Local: UBEx Library

Written Exam - Plasticity and Cognition

José Paulo Marques dos Santos

Data: 30/11/2022 Hora: 14:00 - 16:00 Local: UBEx Library

NEUROBIOLOGY OF AGING AND DISEASE

Module 1: Neurodegeneration and Aging

Molecular Basis of neurodegenerative disorders related to protein misfolding -examples

Isabel Cardoso - Theoretical Class

Data: 21/11/2022 Hora: 14:00 - 16:00 Local: UBEx Library

Molecular basis of neurodegeneration of Alzheimer's Disease (AD)

Isabel Cardoso - Theoretical Class

Data: 21/11/2022 Hora: 16:00 - 18:00 Local: UBEx Library

Neurodegeneration in the central nervous system: examples from of non-AD diseases

João Gomes - Theoretical Class

Data: 22/11/2022 Hora: 14:00 - 16:00 Local: UBEx Library

Neurodegeneration in the peripheral nervous system

Maria João Saraiva - Theoretical Class

Data: 22/11/2022 Hora: 16:00 - 18:00 Local: UBEx Library

EVALUATION: Journal Club

Isabel Cardoso

Data: 05/12/2022 Hora: 09:00 - 12:00 Local: UBEx Library

Module 2: Neurotoxicology

Mechanisms of neurotoxicology

Teresa Summavielle - Theoretical Class

Data: 22/11/2022 Hora: 09:00 - 12:00 Local: I3S

Developmental neurotoxicology

Teresa Summavielle - Theoretical Class

Data: 25/11/2022 Hora: 09:00 - 11:00 Local: I3S

Protective strategies in neurotoxicology

Teresa Summavielle - Theoretical Class

Data: 28/11/2022 Hora: 09:00 - 11:00 Local: I3S

Behavioral studies in neurotoxicology

Ana Magalhães - Theoretical Class

Data: 28/11/2022 Hora: 14:00 - 16:00 Local: I3S

Environmental neurotoxicants

Teresa Summavielle - Theoretical Class

Data: 29/11/2022 Hora: 09:00 - 11:00 Local: I3S

EVALUATION: Student presentations

Teresa Summavielle

Data: 02/12/2022 Hora: 09:00 - 12:00 Local: I3S

Module 3: Mechanisms of Regeneration

Axon (re)growth during development and regeneration

Monica Sousa - Theoretical Class

Data: 23/11/2022 Hora: 09:30 - 11:00 Local: UBEx Library

The intriguing nature of DRG neurons

Ana Nascimento - Theoretical Class

Data: 23/11/2022 Hora: 11:00 - 12:30 Local: UBEx Library

Microtubule remodeling during axon growth and regeneration

Márcia Liz - Theoretical Class

Data: 23/11/2022 Hora: 14:00 - 15:30 Local: UBEx Library

The relevance of axonal transport and microtubule severing proteins in the course of axon regeneration

Ana Catarina Costa - Theoretical Class

Data: 23/11/2022 Hora: 15:30 - 17:30 Local: UBEx Library

The importance of actin organization and dynamics in axon (re)growth

Mónica Sousa - Theoretical Class

Data: 24/11/2022 Hora: 09:30 - 11:00 Local: UBEx Library

The role of (phospho)lipids in myelination and axon regeneration

Pedro Brites - Theoretical Class

Data: 24/11/2022 Hora: 11:00 - 12:30 Local: UBEx Library

Axon stretch growth

Sara Sousa - Theoretical Class

Data: 24/11/2022 Hora: 14:00 - 15:30 Local: UBEx Library

Acomys- the regenerating mammal

Joana Rodrigues - Theoretical Class

Data: 24/11/2022 Hora: 15:30 - 17:00 Local: UBEx Library

EVALUATION: Journal Club

Monica Sousa

Data: 29/11/2022 Hora: 15:00 - 16:30 Local: UBEx Library

Module 4: Physiopathology of Pain

Physiopathology of the nociceptive system

Isaura Tavares - Theoretical Class

Data: 05/12/2022 Hora: 14:00 - 17:00 Local: UBEx Library

Experimental research in pain

Isaura Tavares - Theoretical Class

Data: 06/12/2022 Hora: 14:00 - 15:30 Local: UBEx Library

Central plasticity during chronic pain

Hugo Almeida - Theoretical Class

Data: 06/12/2022 Hora: 16:00 - 17:30 Local: UBEx Library

Clinical pain research

Rute Sampaio - Theoretical Class

Data: 07/12/2022 Hora: 14:00 - 17:00 Local: UBEx Library

Endogenous pain control system

Isaura Tavares - Theoretical Class

Data: 09/12/2022 Hora: 14:00 - 15:00 Local: UBEx Library

Cognitive and emotional aspects of pain

Vasco Galhardo - Theoretical Class

Data: 09/12/2022 Hora: 15:00 - 16:30 Local: UBEx Library

EVALUATION

Isaura Tavares

Data: 16/12/2022 Hora: 14:00 - 15:00 Local: UBEx Library

Module 5: Clinical Neurology

Inflammatory/Infectious Diseases

Joana Guimarães - Theoretical Class

Data: 12/12/2022 Hora: 09:00 - 10:00 Local: UBEx Library

Neuromuscular Disorders

Pedro Abreu - Theoretical Class

Data: 12/12/2022 Hora: 10:30 - 11:30 Local: UBEx Library

Epilepsy

Marta Carvalho - Theoretical Class

Data: 13/12/2022 Hora: 09:00 - 10:00 Local: UBEx Library

Headache

Andreia Costa - Theoretical Class

Data: 13/12/2022 Hora: 10:30 - 11:30 Local: UBEx Library

Cerebrovascular disorders

Elsa Azevedo - Theoretical Class

Data: 14/12/2022 Hora: 09:30 - 11:00 Local: UBEx Library

Dementia

Rui Araújo - Theoretical Class

Data: 15/12/2022 Hora: 09:30 - 11:00 Local: UBEx Library

Movement Disorders

João Massano - Theoretical Class

Data: 15/12/2022 Hora: 11:30 - 13:00 Local: UBEx Library

EVALUATION - multiple choice test

Elsa Azevedo - Theoretical Class

Data: 16/12/2022 Hora: 16:00 - 17:00 Local: UBEx Library

IMAGING THE NERVOUS SYSTEM

Module 1: Fundamentals of Microscopy

Course presentation: Microscopy. Types of microscopes.

António Avelino - Practical Class

Data: 13/02/2023 Hora: 10:00 - 12:00 Local: UBEx Library

Fixatives and methods of fixation

António Avelino - Laboratory Class

Data: 13/02/2023 Hora: 14:00 - 16:00 Local: UBEx Library

Specimen preparation and sectioning

António Avelino - Practical Class

Data: 14/02/2023 Hora: 10:00 - 12:00 Local: UBEx Library

Sectioning methods

António Avelino - Laboratory Class

Data: 14/02/2023 Hora: 14:00 - 16:00 Local: UBEx Library

Optical microscopy

António Avelino - Laboratory Class

Data: 14/02/2023 Hora: 16:00 - 17:00 Local: UBEx Library

Immunohistochemistry

António Avelino - Laboratory Class

Data: 14/02/2023 Hora: 17:00 - 18:00 Local: UBEx Library

Optic sectioning; Confocal microscopy

António Avelino - Practical Class

Data: 15/02/2023 Hora: 10:00 - 12:00 Local: UBEx Library

Electron Microscopy

António Avelino - Practical Class

Data: 15/02/2023 Hora: 14:00 - 16:00 Local: UBEx Library

EVALUATION

António Avelino

Data: 17/02/2023 Hora: 14:00 - 18:00 Local: UBEx Library

Module 2: Stereological Methods

Brief introduction to stereology. The Cavalieri principle.

Dulce Madeira - Practical Class

Data: 06/03/2023 Hora: 10:00 - 10:30 Local: UAnatomy

Embedding and slicing of organs. Sampling. Volume estimation.

Armando Cardoso - Laboratory Class

Data: 06/03/2023 Hora: 10:30 - 12:00 Local: UAnatomy

The disector. The fractionator principle (systematic sampling)

Armando Cardoso - Practical Class

Data: 07/03/2023 Hora: 10:00 - 10:30 Local: UAnatomy

Number estimation

Pedro Pereira, Armando Cardoso - Laboratory Class

Data: 07/03/2023 Hora: 10:30 - 12:00 Local: UAnatomy

Sampling and sizing of particles.

Pedro Pereira - Practical Class

Data: 08/03/2023 Hora: 10:00 - 10:30 Local: UAnatomy

The nucleator. The rotator. Point sampled intercepts.

Pedro Pereira, Armando Cardoso - Laboratory Class

Data: 08/03/2023 Hora: 10:30 - 12:00 Local: UAnatomy

Surface estimation. Ratios. Reference trap. Multilevel sampling design

Armando Cardoso - Practical Class

Data: 09/03/2023 Hora: 10:00 - 10:30 Local: UAnatomy

Surface area. Areal and numerical densities.

Pedro Pereira - Laboratory Class

Data: 09/03/2023 Hora: 10:30 - 12:00 Local: UAnatomy

EVALUATION

Dulce Madeira

Data: 17/03/2023 Hora: 11:00 - 12:00 Local: UAnatomy

Module 3: Live Cell Imaging

High-resolution fluorescence-based imaging (epifluorescence vs confocal microscopy).

Instrumentation and detection for live cell imaging.

Fátima Ferreirinha - Practical Class

Data: 19/04/2023 Hora: 10:00 - 12:00 Local: Laboratory of Pharmacology and Neurobiology, ICBAS

“Hands-on” confocal: Fluorescence protein tracking and detection; monitoring protein dynamics (FRET); analysis of live cell data.

Fátima Ferreirinha - Laboratory Class

Data: 19/04/2023 Hora: 14:00 - 18:00 Local: Laboratory of Pharmacology and Neurobiology, ICBAS

Image capture with increased speed during time-lapse observations while maintaining living cells in the imaging setup

José Bernardo Noronha-Matos - Practical Class

Data: 20/04/2023 Hora: 10:00 - 12:00 Local: Laboratory of Pharmacology and Neurobiology, ICBAS

Live cell imaging: high-speed compound application vs photoactivation of caged biomolecules; photobleaching techniques; tracking dynamic cell movements and vesicle exocytosis

José Bernardo Noronha-Matos - Laboratory Class

Data: 20/04/2023 Hora: 14:00 - 18:00 Local: Laboratory of Pharmacology and Neurobiology, ICBAS

Laser-capture microdissection of neuronal cells from brain slices and culture dishes.

Paulo Correia de Sá - Practical Class

Data: 21/04/2023 Hora: 10:00 - 12:00 Local: Laboratory of Pharmacology and Neurobiology, ICBAS

Live cell imaging: Single-cell calcium imaging, imaging of voltage-sensitive dyes, real-time synaptic vesicle dynamics using styryl dyes

Paulo Correia de Sá - Laboratory Class

Data: 21/04/2023 Hora: 14:00 - 18:00 Local: Laboratory of Pharmacology and Neurobiology, ICBAS

Module 4: Bioimaging Analysis

Methods in automated analysis of microscopy

Mafalda Sousa - Theoretical Class

Data: 24/04/2023 Hora: 14:00 - 17:00 Local: Informatics room, 1st Floor CIM

Introduction to Fiji

Mafalda Sousa - Laboratory Class

Data: 26/04/2023 Hora: 14:00 - 17:00 Local: Informatics room, 1st Floor CIM

Fiji image analysis; Practical exercises

Mafalda Sousa - Laboratory Class

Data: 27/04/2023 Hora: 14:00 - 17:00 Local: Informatics room, 1st Floor CIM

DEPICTING NEURONAL CIRCUITS

Module 1: Stereotaxic Surgery and Microsurgery

Introduction to the UC “Depicting Neuronal Circuits”; Metodologia de avaliação; Elaboração de projeto científico

Isaura tavares - Theoretical Class

Data: 20/02/2023 Hora: 10:00 - 11:00 Local: UBEx Library

Introduction to stereotaxic surgery and microsurgery –principles and applications

Fani Neto - Theoretical Class

Data: 20/02/2023 Hora: 11:30 - 13:00 Local: UBEx Library

A. Cannulation of the subarachnoid space; B. Targeted lesion of brain/microinjection of neurotracer ; C. Chronic cannulation of the brain

Célia Cruz; fani neto; Daniel Pozza - Practical Class

Data: 22/02/2023 Hora: 09:30 - 12:30 Local: UBEx Library

D. Microsurgery of nerves:

Fani Neto, daniel pozza - Practical Class

Data: 22/02/2023 Hora: 14:30 - 16:30 Local: UBEx Library

Visit to animal house; handling

Patrícia Ribeiro - Practical Class

Data: 24/02/2023 Hora: 09:00 - 12:00 Local: Animal Facility, floor 01

Rodent anatomy and necropsy

Fani Neto, Célia Cruz - Practical Class

Data: 24/02/2023 Hora: 14:00 - 17:00 Local: UBEx Animal Lab, 5th floor

Module 2: Microdialysis

Genetic tools for cell and circuit manipulation- Part I

Isabel Martins - Theoretical Class

Data: 21/02/2023 Hora: 10:00 - 12:00 Local: UBEx Library

Genetic tools for cell and circuit manipulation- Part II

Isabel Martins - Practical Class

Data: 21/02/2023 Hora: 13:30 - 15:30 Local: UBEx Library

Chemiogenetics

Isabel Martins - Laboratory Class

Data: 23/02/2023 Hora: 10:00 - 12:00 Local: UBEx Library

Optogenetics

Ana João Rodrigues - Laboratory Class

Data: 02/03/2023 Hora: 15:00 - 17:00 Local: Online

Module 3: Tracing Pathways

Introdução à utilização de traçadores neuroanatómicos. Exemplos práticos da utilização de neurotraçadores em investigação em neurociências

Isaura Tavares - Theoretical Class

Data: 27/02/2023 Hora: 14:00 - 16:00 Local: UBEx Library

Identificação e visualização de circuitos neuronais

Isabel Martins - Practical Class

Data: 28/02/2023 Hora: 10:00 - 12:00 Local: UBEx Library

Deteção de traçadores por imunohistoquímica

Isabel Martins - Laboratory Class

Data: 01/03/2023 Hora: 09:30 - 16:30 Local: UBEx Lab, 5th floor

Exame teórico a UC

Isaura tavares

Data: 17/03/2023 Hora: 10:00 - 11:00 Local: UBEx Library

Apresentação dos projetos

Isaura Tavares, Isabel Martins, Fani Neto

Data: 11/04/2023 Hora: 14:00 - 16:00 Local: UBEx Library

Module 4: Neurophysiology

Methods of in vivo extracellular recording and analysis

Vasco Galhardo - Practical Class

Data: 06/03/2023 Hora: 14:00 - 17:00 Local: UBEx Library

Design of online and offline neurophysiology experiments: part 1

Vasco Galhardo - Practical Class

Data: 07/03/2023 Hora: 14:00 - 17:00 Local: UBEx Library

Design of online and offline neurophysiology experiments: part 2

Vasco Galhardo - Practical Class

Data: 08/03/2023 Hora: 14:00 - 17:00 Local: UBEx Library

Data analysis in multielectrode neurophysiology: part 1

Vasco Galhardo - Practical Class

Data: 09/03/2023 Hora: 14:00 - 17:00 Local: UBEx Library

Data analysis in multielectrode neurophysiology: part 2

Helder Cardoso-Cruz - Practical Class

Data: 10/03/2023 Hora: 14:00 - 17:00 Local: UBEx Library

EXPERIMENTAL MODELS IN NEUROSCIENCE

Module 1: Production and Validation of Animal Models

Introduction to the production and validation of animal models.

Fani Neto - Theoretical Class

Data: 13/03/2023 Hora: 09:00 - 10:30 Local: UBEx Library

Models of somatic chronic pain

Fani Neto - Theoretical Class

Data: 13/03/2023 Hora: 10:40 - 11:50 Local: UBEx Library

Models of visceral inflammation and pain

António Avelino - Theoretical Class

Data: 13/03/2023 Hora: 12:00 - 12:30 Local: UBEx Library

Models of inflammatory and neurodegenerative joint pain: i) Monoarthritis; ii)

Osteoarthritis

Fani Neto / Joana Gomes - Practical Class

Data: 13/03/2023 Hora: 14:30 - 15:30 Local: UBEx Library

Models of visceral pain: i) Cystitis

Célia Cruz - Practical Class

Data: 13/03/2023 Hora: 16:00 - 16:30 Local: UBEx Library

Models of nervous system injury: i) Spinal cord injury

Célia Cruz - Practical Class

Data: 13/03/2023 Hora: 17:00 - 18:00 Local: UBEx Library

Animal models of addiction

Teresa Summavielle - Theoretical Class

Data: 14/03/2023 Hora: 09:00 - 10:00 Local: UBEx Library

Models of degenerative diseases

Isabel Cardoso - Theoretical Class

Data: 14/03/2023 Hora: 10:30 - 12:00 Local: UBEx Library

Zebra fish models in neuroscience research

Ana Catarina Certal/Joana Monteiro - Theoretical Class

Data: 14/03/2023 Hora: 12:00 - 13:00 Local: UBEx Library

The use of Drosophila in neuroscience research

César Mendes - Theoretical Class

Data: 14/03/2023 Hora: 14:00 - 15:30 Local: UBEx Library

Models of metabolic diseases. The example of diabetic neuropathy

Isaura Tavares - Theoretical Class

Data: 15/03/2023 Hora: 09:00 - 10:00 Local: UBEx Library

Validation of animal models

Joana Gomes - Laboratory Class

Data: 15/03/2023 Hora: 11:00 - 12:00 Local: UBEx Library

Module 2: Genetically Manipulated Animal Models

Principles of genetic manipulation in mice; Summary of mouse development; Transgenesis and mutagenesis

Miguel Soares - Practical Class

Data: 20/03/2023 Hora: 10:00 - 11:00 Local: UBEx Library

Recovery and culture of preimplantation-stage mouse embryos - Group 1

Miguel Soares / Daniel Silva - Laboratory Class

Data: 20/03/2023 Hora: 11:00 - 12:00 Local: UBEX laboratory

Recovery and culture of preimplantation-stage mouse embryos - Group 2

Miguel Soares / Daniel Silva - Laboratory Class

Data: 20/03/2023 Hora: 12:00 - 13:00 Local: UBEX laboratory

Micromanipulation of mouse zygotes: pronuclear injection for transgenesis - Group 1

Miguel Soares / Daniel Silva - Laboratory Class

Data: 20/03/2023 Hora: 14:00 - 16:00 Local: UBEX laboratory

Micromanipulation of mouse zygotes: pronuclear injection for transgenesis - Group 2

Miguel Soares / Daniel Silva - Laboratory Class

Data: 20/03/2023 Hora: 16:00 - 18:00 Local: UBEX laboratory

Strategies for embryonic ES cell-based transgenesis and genome alterations; Introduction of foreign DNA into ES cells

Miguel Soares - Practical Class

Data: 21/03/2023 Hora: 10:00 - 11:00 Local: UBEx Library

Recovery and culture of preimplantation-stage mouse embryos - Group 1

Miguel Soares / Daniel Silva - Laboratory Class

Data: 21/03/2023 Hora: 11:00 - 12:00 Local: UBEX laboratory

Recovery and culture of preimplantation-stage mouse embryos - Group 2

Miguel Soares / Daniel Silva - Laboratory Class

Data: 21/03/2023 Hora: 12:00 - 13:00 Local: UBEX laboratory

Micromanipulation of morulae: injection of ES cells - Group 1

Miguel Soares / Daniel Silva - Laboratory Class

Data: 21/03/2023 Hora: 14:00 - 16:00 Local: UBEX laboratory

Micromanipulation of morulae: injection of ES cells - Group 2

Miguel Soares / Daniel Silva - Laboratory Class

Data: 21/03/2023 Hora: 16:00 - 18:00 Local: UBEX laboratory

Novel approaches for genome editing; Detection and analysis of mouse genome alterations; Animal models in Neuroscience

Miguel Soares - Practical Class

Data: 22/03/2023 Hora: 10:00 - 12:00 Local: UBEX Library

Implantation: oviduct and uterine transfer - Group 1

Miguel Soares / Daniel Silva - Laboratory Class

Data: 22/03/2023 Hora: 14:00 - 16:00 Local: UBEX laboratory

Implantation: oviduct and uterine transfer - Group 2

Miguel Soares / Daniel Silva - Laboratory Class

Data: 22/03/2023 Hora: 16:00 - 18:00 Local: UBEX laboratory

EVALUATION: Journal Club

Miguel Soares

Data: 23/03/2023 Hora: 14:00 - 16:00 Local: UBEX Library

Module 3: Behavioral Analysis

Ethological analysis of behavior

Ana Valentim - Practical Class

Data: 27/03/2023 Hora: 14:00 - 15:30 Local: UBEX Library

Rodent Behaviour: psychophysical assessment

Joana Gomes - Practical Class

Data: 28/03/2023 Hora: 10:00 - 12:00 Local: UBEX Library

Behavioral assessment of cognitive functions

Vasco Galhardo - Practical Class

Data: 28/03/2023 Hora: 14:00 - 15:30 Local: UBEX Library

Planning of neuroscience behavioral experiments

Clara Monteiro - Practical Class

Data: 28/03/2023 Hora: 16:00 - 17:30 Local: UBEX Library

Automated analysis of behaviour

Ana Valentim - Practical Class

Data: 29/03/2023 Hora: 10:00 - 11:30 Local: UBEX Library

EVALUATION: paper presentations

Clara Monteiro, Joana Gomes

Data: 30/03/2023 Hora: 10:00 - 12:00 Local: UBEx Library

EVALUATION: paper presentations

Clara Monteiro, Joana Gomes

Data: 30/03/2023 Hora: 14:00 - 16:00 Local: UBEx Library

Module 4: Neuronal Culture

Introduction to neuronal cell cultures

Adriana Rodrigues - Theoretical Class

Data: 11/04/2023 Hora: 10:00 - 10:50 Local: UBEx Library

Primary neuronal cell culture

Ana Charrua - Theoretical Class

Data: 11/04/2023 Hora: 10:00 - 10:50 Local: UBEx Library

Introductory training for Cell Culture Basics

Adriana Rodrigues - Laboratory Class

Data: 11/04/2023 Hora: 11:00 - 14:00 Local: UBEX laboratory

Training with primary neuronal cell culture

Ana Charrua - Laboratory Class

Data: 11/04/2023 Hora: 11:00 - 14:00 Local: UBEX laboratory

Neuronal cell lines

Carlos Reguenga - Theoretical Class

Data: 12/04/2023 Hora: 10:00 - 10:50 Local: UBEX laboratory

Training with Neuronal cell lines

Carlos Reguenga - Laboratory Class

Data: 12/04/2023 Hora: 11:00 - 14:00 Local: UBEX laboratory

Organotypic cultures

Sofia Santos - Theoretical Class

Data: 13/04/2023 Hora: 10:00 - 10:50 Local: UBEx Library

Training with Organotypic cultures

Sofia Santos - Laboratory Class

Data: 13/04/2023 Hora: 11:00 - 14:00 Local: UBEX laboratory

IN-SILICO NEUROSCIENCE

Module 1: Biostatistics

Dados biológicos e sua representação gráfica. Estatística descritiva. Conceitos básicos de inferência estatística: Teorema do Limite Central; Intervalos de confiança e testes de hipóteses. Exercícios de aplicação

Rui Magalhães - Practical Class

Data: 27/04/2023 Hora: 09:00 - 12:30 Local: FMUP computer room

Inferência sobre médias: Amostras emparelhadas e independentes. Análise de variância a um ou dois factores (ANOVA). Exercícios de aplicação.

Rui Magalhães - Practical Class

Data: 28/04/2023 Hora: 09:00 - 12:30 Local: FMUP computer room

Inferências sobre proporções. Uma proporção; comparação de duas proporções em amostras emparelhadas ou amostras independentes; Comparação de mais de duas proporções - teste do qui-quadrado. Exercícios de aplicação.

Rui Magalhães - Practical Class

Data: 04/05/2023 Hora: 09:00 - 12:30 Local: FMUP computer room

Correlação e regressão linear: Modelo de regressão - método dos mínimos quadrados; Coeficiente de correlação; Análise de resíduos. Exercícios de aplicação.

Rui Magalhães - Practical Class

Data: 05/05/2023 Hora: 09:00 - 12:30 Local: FMUP computer room

Module 2: Brain Imaging

Introduction to (functional) magnetic resonance imaging (fMRI). Neuroimaging markers of brain connectivity

Paulo Branco - Practical Class

Data: 02/05/2023 Hora: 14:00 - 17:30 Local: UBEx Library

Signal processing basics: Fourier transform, filtering, artefact detection, denoising.

Paulo Branco - Practical Class

Data: 03/05/2023 Hora: 14:00 - 17:00 Local: UBEx Library

Univariate and multivariate statistical methods for neuroimaging; Inverse causality, predictive models and functional connectomics.

Paulo Branco - Practical Class

Data: 04/05/2023 Hora: 14:00 - 17:00 Local: UBEx Library

Exercises

Paulo Branco - Practical Class

Data: 05/05/2023 Hora: 14:00 - 17:00 Local: UBEx Library

Module 3: Bioinformatics

Sequence databases: introduction, examples, data retrieval. Practical exercises I.

Filipe Monteiro - Practical Class

Data: 08/05/2023 Hora: 14:00 - 18:00 Local: UBEx Library

Sequence comparison: alignment methods, similarity searches, homology, protein motifs and domains. Practical exercises II.

Filipe Monteiro - Practical Class

Data: 09/05/2023 Hora: 14:00 - 18:00 Local: UBEx Library

Sequence analysis: prediction of biological properties from DNA, RNA and protein sequences. Primer design for cloning and gene expression analyses and siRNA design. Restriction maps. Practical exercises III.

Filipe Monteiro - Practical Class

Data: 10/05/2023 Hora: 14:00 - 18:00 Local: UBEx Library

Gene ontology: retrieving biological insight from high throughput experiments. Gene expression databases. Sequence variation and mutations linked to genetic neurological diseases. Practical exercises IV.

Filipe Monteiro - Practical Class

Data: 11/05/2023 Hora: 14:00 - 17:00 Local: UBEx Library

Integration of biological data: comparison of gene data sets and multiple databases query. Practical exercises V.

Filipe Monteiro - Practical Class

Data: 12/05/2023 Hora: 14:00 - 17:00 Local: UBEx Library