



Fundamentals in Neuroscience

September 21st to October 9th

SCIENTIFIC PROGRAMME

Monday, September 21st

09:30 - 10:00 Course presentation - Carina Soares-Cunha, Sara Silva

PART I. Neuron Structure & function

Monday, September 21st

10:00 – 11:00 The nervous system: cells and structure – Hugo Almeida

BREAK

11:15 – 13:00 Membrane Potential and action potential – João Oliveira

LUNCH

14:30 – 15:30 The synapse and neurotransmitters – Ana João Rodrigues, João Sousa

BREAK

16:00 – 17:30 Neuromodulators – Ana João Rodrigues, João Sousa

PART II. Brain anatomy and nervous system organization

Tuesday, September 22nd

9:00 – 10:45 Brain Anatomy – Rafaela Ribeiro

BREAK

11:00 – 12:00 Neuroendocrinology – Joana Palha

12:00 – 13:00 Barriers of the brain and brain metabolism – Fernanda Marques

LUNCH

14:30 – 16:30 Neural control of stress/HPA axis – Luisa Pinto

Wednesday, September 23th

9:30 – 12:30 Rodent Brain Anatomy - hands-on - #1 – Carina Soares-Cunha, Sara Silva, Ana Verónica Domingues, Daniela Fernandes

9:30 - 12:30 Human Brain Anatomy - hands-on - #2 – André Miranda, Rafaela Ribeiro

LUNCH

14:00 – 17:00 Rodent Brain Anatomy - hands-on - #2 – Carina Soares-Cunha, Sara Silva, Ana Verónica Domingues, Daniela Fernandes

14:00 – 17:00 Human Brain Anatomy - hands-on - #1 – André Miranda, Rafaela Ribeiro

PART III. Neuronal communication

Thursday, September 24th

9:00 – 10:30 Methods for recording brain activity – Sara Calafate, Bárbara Coimbra, Carina Soares-Cunha.

BREAK

11:00 – 13:00 Practical class on methods for recording brain activity - #2 – Bárbara Coimbra, Carina Soares-Cunha, Ana Verónica Domingues, Sara Calafate.

LUNCH

14:30 – 16:30 Practical class on methods for recording brain activity - #1 – Bárbara Coimbra, Carina Soares-Cunha, Ana Verónica Domingues, Sara Calafate.

PART IV. Sensory and motor systems

Friday, September 25th

9:30 – 11:00 Organization of the sensory and motor structures and function – João Cerqueira

BREAK

11:30 – 13:00 Motor Behavior hands-on – Sara Silva, Marta Costa.

LUNCH

14:30 – 15:30 Pain modulation and perception – Filipa Pinto Ribeiro.

BREAK

16:00 – 17:30 Assessing pain in rodents – Juliana Fernandes.

PART V. Memory and Limbic systems

Monday, September 28th

9:30 – 10:30 Memory and cognition – Rafaela Ribeiro

BREAK

11:00 – 12:00 Reward, aversion and motivation – Ana João Rodrigues

LUNCH

14:00 – 15:00 Behavioral Flexibility and decision-making – Pedro Morgado

BREAK

15:30 – 17:00 Emotional behavior – Luísa Pinto

Tuesday, September 29th

9:00 – 12:00 Behavioral assessment of memory and limbic circuits in rodents #2 –
Joana Silva, Sara Silva, Carina Soares-Cunha, Ana Verónica Domingues,
Daniela Monteiro

LUNCH

13:30 – 16:30 Behavioral assessment of memory and limbic circuits in rodents #1 –
Joana Silva, Sara Silva, Carina Soares-Cunha, Ana Verónica Domingues,
Daniela Monteiro

BREAK

16:45 - 17:45 Project assignment – Carina Soares-Cunha, Sara Silva

Thursday, October 1st

Neuroscience fair

9:15 – 10:15 **Pitch Team coordinators**

Brain Circuits and Neuron-Glia adaptations – Luísa Pinto

Inflammation at the nervous system – João Cerqueira

Mechanisms of Memory and Alzheimer's disease pathogenesis – Tiago Gil
Oliveira

Neurobiology of Pain – Hugo Almeida

Novel approaches in nervous system regenerative medicine – Nuno Silva

Stress and compulsivity from brain to mental health – Pedro Morgado
Translational neurogenetics – Patrícia Maciel

10:30 – 13:00 Poster viewing session – presentation by team members

Final Evaluation

Wednesday, October 7th

14:00 – 18:00 Student Project Presentation

Friday, October 9th

14:30 – 16:30 Final exam written exam