

fundamentalsin neuroscience

SCIENTIFIC PROGRAMME

September 22nd to October 10th

Monday, September 22nd

09:30 - 10:00 Course presentation [\[G2.02\]](#)

PART I. Neuron Structure & function

10:00 – 11:00 The nervous system: cells and structure – Hugo Almeida [\[G2.02\]](#)

BREAK

11:30 – 12:30 Membrane Potential and action potential – João Oliveira [\[G2.02\]](#)

LUNCH

14:00 – 17:00 Neurotransmitters and neuromodulators – Ana João Rodrigues
[\[G2.02\]](#)

PART II. Neuronal communication

Tuesday, September 23rd

9:00 – 10:00 Methods for recording brain activity – João Oliveira, Carina Soares-Cunha [\[G2.02\]](#)

BREAK

10:30 – 12:30 Practical class on methods for recording brain activity – Leandro Aguiar, Ana Verónica Domingues, Carina Soares-Cunha, João Machado
[\[Electrophysiology Facility\]](#)

LUNCH

14:30 – 16:30 Regulatory Systems and brain metabolism - Neuroendocrinology
– Joana Palha, Fernanda Marques [\[G2.02\]](#)

PART III. Nervous system organization

Wednesday, September 24th

9:30 – 11:00 Brain Anatomy - Tiago Gil Oliveira [\[G2.02\]](#)

BREAK

11:30 – 13:00 Brain Anatomy - hands-on - #1 – Carina Soares-Cunha, Sara Silva, Ana Verónica Domingues [\[Lab I2.04\]](#)

LUNCH

14:30 – 16:00 Brain Anatomy - hands-on - #2 – Carina Soares-Cunha, Sara Silva, Daniela Fernandes [\[Lab I2.04\]](#)

PART IV. Sensory and motor systems

Thursday, September 25th

9:30 – 11:00 Organization of the sensory and motor structures and function – João Cerqueira [\[G2.02\]](#)

BREAK

11:30 – 13:00 Motor Behavior hands-on – Sara Silva, Marta Costa [\[Lab I2.04\]](#)

LUNCH

14:30 – 15:30 Pain modulation and perception – Hugo Almeida, Filipa Pinto Ribeiro [\[G2.02\]](#)

BREAK

16:00 – 17:30 Assessing pain in rodents – Hugo Almeida, Filipa Pinto Ribeiro, Diana Rodrigues, Juliana Fernandes [\[Lab I2.04\]](#)

PART V. Memory and Limbic systems

Friday, September 26th

9:30 – 10:30 Memory, and cognition – Tiago Gil Oliveira [\[G2.02\]](#)

BREAK

11:00 – 12:00 Reward, aversion and motivation – Carina Soares-Cunha [\[G2.02\]](#)

LUNCH

14:00 – 15:00 Behavioral Flexibility, associative learning and decision-making – Pedro Morgado [\[G2.02\]](#)

BREAK

15:30 – 16:30 Neural control of stress/HPA axis – Luisa Pinto

16:30 – 17:30 Emotional behavior – João Bessa

Monday, September 29th

9:00 – 10:30 Behavioral assessment of memory and limbic circuits in rodents #2 – Sara Silva, Carina Soares-Cunha, Ana Verónica Domingues, Daniela Monteiro [\[Animal house\]](#)

11:00 – 12:30 Behavioral assessment of memory and limbic circuits in rodents #1 – Sara Silva, Carina Soares-Cunha, Ana Verónica Domingues, Daniela Monteiro [\[Animal house\]](#)

LUNCH

14:00 – 17:00 Mini-workshop 1: A Primer on Brain Imaging – Tiago Gil Oliveira, Neuroimaging team [\[G2.02\]](#)

Project Assignment

Tuesday, September 30th

09:30 - 10:30 Project assignment – António Salgado, Carina Soares-Cunha, Sara Silva [\[G2.02\]](#)

10:30 - 18:00 Monitoring of progress concerning projects – António Salgado, Carina Soares-Cunha, Sara Silva [\[G2.02\]](#)

Studying the nervous system

Wednesday, October 1st

9:30 – 11:00 Brain Circuits and Neuron-Glia adaptations – C2B Team representative

BREAK

11:30 – 13:00 Inflammation at the nervous system – INSI Team representative

LUNCH

14:30 – 16:00 Mechanisms of Memory and Alzheimer's disease pathogenesis – MeMAD Team representative

Thursday, October 2nd

9:30 – 10:30 Neurobiology of Pain – NoPAIN Team representative

BREAK

11:00 – 12:30 Novel approaches in nervous system regenerative medicine – ReNEU Team representative

LUNCH

14:00 – 15:30 Stress and compulsivity from brain to mental health – STRESS.com Team representative

BREAK

16:00 – 17:30 Translational neurogenetics – TransNEU Team representative

Evaluation preparation and assessment

Friday, October 3rd

Self-study

Monday, October 6th

Self-study

Tuesday, October 7th

Self-study

Wednesday, October 8th

Self-study

Thursday, October 9th

9:30 – 11:00 Final exam

Friday, October 10th

9:00 – 13:00 Project Presentation