Visiting Professor Program
Academic Year 2023/2024

TEACHING COMMITMENT: 36 hours

COURSE TITLE
Conscious Awareness and Visual Perception: Neuropsychology and Psychophysics

TEACHING PERIOD
2nd term

SCIENTIFIC AREA
Cognitive Neuroscience and Neuropsychology

LANGUAGE USED TO TEACH
English

COURSE SUMMARY
The course addresses the fundamental experimental and theoretical notions of visual perception and the neural correlates of conscious awareness. The course covers current approaches in the study of consciousness in neurologically intact observers and neuropsychological patients to illustrate how retinal information is transformed in 3D visual representations and its breakdown following brain damage. Specifically, the course is organized in the following milestones.

- Psychophysics 1: Thresholds and the psychometric function
- Psychophysics 2: Noise and response bias
- Spatial vision 1: Fourier analysis
- Spatial vision 2: Channels, phase and cortical magnification
- Motion 1: Visual detection of motion
- Motion 2: Visual perception of motion
- Colour Vision 1: Trichromacy
• Colour Vision 2: Opponency and Constancy
• Seeing in 3D (part 1)
• Seeing in 3D (part 2)
• Perceptual illusions
• Conscious awareness: Mapping the theoretical landscape
• Dissociations between performance and awareness: Blindsight
• Dissociations between performance and awareness: Visual neglect
• Dissociations between performance and awareness: Normal observers
• Explaining blindsight and neglect: Setting the criterion
• Explaining blindsight and neglect: Maintaining the criterion
• Imaging awareness
• Neural models of perceptual decisions

**LEARNING OBJECTIVES**
The course aims to provide students with solid methodological and theoretical knowledge of the major topics in vision neuroscience and conscious awareness. At the end of the course, students are expected to master widely used psychophysical and neuropsychological methods to study and characterize the properties of visual perception and the neural correlates of conscious awareness. Students will be able to independently navigate the existing literature and understand the main theoretical accounts and controversies concerning the neural correlates of awareness.

**TUTORSHIP ACTIVITIES**
N/A

**LAB ACTIVITIES**
Blindsight in normal observers. Laboratory with MatLab and PsychToolBox

**OTHER ACTIVITIES BEIDES THE COURSE**
The visiting professor will hold two lectures for the PhD students in Psychological Sciences and in Neuroscience

**VISITING PROFESSOR PROFILE**
The ideal profile should document an active scientific track record on the topics dealt with in the course (i.e., the neural basis of perception and conscious awareness, including their disorders in brain-damaged patients with blindsight and visual neglect). Moreover, the ideal candidate should have consolidated experience in teaching these topics in courses, lectures and seminars to graduate and undergraduate students.
CONTACT REFERENT
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