

COURSE DETAIL

THE LEARNING BRAIN: FROM PERCEPTION TO MEMORY FORMATION

Country

Netherlands

Host Institution

Maastricht University - Center for European Studies

Program(s)

Psychology and Neuroscience, Psychology and Neuroscience, Maastricht

UCEAP Course Level

Upper Division

UCEAP Subject Area(s)

Psychology

UCEAP Course Number

126

UCEAP Course Suffix**UCEAP Official Title**

THE LEARNING BRAIN: FROM PERCEPTION TO MEMORY FORMATION

UCEAP Transcript Title

PERCEPTION & MEMORY

UCEAP Quarter Units

6.00

UCEAP Semester Units

4.00

Course Description

This course takes a purely biological view of a set of interconnected topics in the field of learning and memory. All learning and memory formation is dependent on changes in functional connections between neurons. The course starts with seminal findings illustrating this principle in *Aplysia*. These findings are then compared with mechanisms of Long-Term Potentiation (LTP). In a number of papers, and accompanying lectures, students gain insight into molecular mechanisms to manipulate intra-cellular processes contributing to LTP and neural plasticity, at the genomic, RNA, and protein levels. In parallel, students learn about some landmark neurophysiological findings that have been crucial in our current understanding of memory formation. With this background in mind, students read studies in which molecular tools are used to modulate memory formation and their neurophysiological correlates. The course focuses mainly on two forms of learning, namely episodic memory and skill learning. Most of the papers focus on animal models of learning, using molecular and neurophysiological approaches, but there are also papers on human and non-human primate learning. The lectures provide crucial background to understand the papers, and in a broad sense could provide topics for exam questions. The course is challenging, and so a background or strong interest in neuroscience and/or (cellular) biology is very strongly recommended for this course. Further, students must have a genuine interest in biological approaches of learning and memory.

Language(s) of Instruction

English

Host Institution Course Number

PSY3345

Host Institution Course Title

THE LEARNING BRAIN: FROM PERCEPTION TO MEMORY FORMATION

Host Institution Campus

Host Institution Faculty

Faculty of Psychology and Neuroscience

Host Institution Degree

Host Institution Department

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