האוניברסיטה העברית בירושלים
THE HEBREW UNIVERSITY OF JERUSALEM

The Hebrew University of Jerusalem

Syllabus

Animal Cognition - 6169

Last update 05-08-2021

HU Credits: *2*

Degree/Cycle: *1st degree (Bachelor)*

Responsible Department: *Cognitive and Brain Sciences*

Academic year: *0*

Semester: *2nd Semester*

Teaching Languages: *Hebrew*

Campus: *Mt. Scopus*

Course/Module Coordinator: *Dr. Oren Forkosh*

Coordinator Email: *oren.forkosh@mail.huji.ac.il*

Coordinator Office Hours: *Upon request*

Teaching Staff:

Dr. Oren Forkosh

Course/Module description:

The course presents principles related to animal cognition. This is a computational course, that is, for every principal we study we will present a mathematical model to help us explain (and understand) the animal's behavior. In each session we will examine how these principles differ between animals and how it helps it to cope with its unique challenges.

The course involves weekly two academic hours meetings. The course's grade will be determined by three home exercises and a final group project (in pairs).

Course/Module aims:

Knowledge and understanding of animal cognition

Learning outcomes - On successful completion of this module, students should be able to:

First, knowing about animal cognition, and second, the ability to use mathematical models to understand cognition and behavior.

Attendance requirements(%):

None, but highly recommanded

Teaching arrangement and method of instruction:

Course/Module Content:

1. Intro to animal cognition: how can we understand animals?
2. How the brain learns to solve problems; learning and memory
3. Being different: animal personalities (dimensionality reduction)
4. Living in a group: how do big groups work (complex systems)
5. Living in a group: Social structures
6. Living in a group: solving problems together (dynamical systems and chaos)
7. Finding and choosing food
8. Communication (Bayesian modeling)
9. Types of communication: audio, visual, chemical, etc.
10. Secretes, lies and competition (Cryptography)
11. Tools for analyzing animal behavior (AI)

Required Reading:

None

Additional Reading Material:

"Animal Cognition : Evolution, Behavior and Cognition"
By Clive D.L. Wynne and Monique A. R. Udell

Course/Module evaluation:

End of year written/oral examination 0 %
Presentation 0 %
Participation in Tutorials 0 %
Project work 0 %
Assignments 30 %
Reports 0 %
Research project 70 %
Quizzes 0 %
Other 0 %

Additional information: