Course syllabus

Sinnesbiologi
Sensory Biology

EXTN30, 15 credits, A (Second Cycle)

Valid for: 2023/24
Faculty: Faculty of Engineering, LTH
Decided by: PLED W
Date of Decision: 2023-03-27

General Information

Elective for: BME4, N4
Language of instruction: The course will be given in English

Aim

The aim of the course is to provide knowledge for advanced studies, work and research especially within chemical-biological-biochemical areas.

Learning outcomes

Knowledge and understanding
For a passing grade the student must

- have theoretical knowledge of the molecular background of the function of sensory cells
- have theoretical knowledge of the function of sensory organs and information processing in the nervous system of the different senses in different animal groups
- have theoretical knowledge of the importance of the senses in relation to animal behavior, communication and navigation.

Competences and skills
For a passing grade the student must

have practical laboratory skills in important experimental methods for the study of animal senses and orientation of the surrounding world.

Contents

The course deals with vision and other types of photoreception, olfaction, taste, hearing, equilibrium, mechanoreception, pressure reception, electroreception, magnetoreception and senses for temperature and heat radiation. All senses are studied comparatively across the animal kingdom. A range of methods in physiology, ethology and human psychophysics are taught and used during the course. The course is divided into sections covering different levels of organisation:

- The molecular machinery of sensory receptors.
- The design and function of sensory organs.
- Neuroanatomy, neural processing and integration of sensory information.
- The role of sensory information in behaviour and in the adaptation of animals to their environment (sensory ecology).

Towards the end of the course, each student will carry out a major practical project specialised in one area of sensory biology. The project results will be discussed at a full-day symposium organised at a field station.

Examination details

Grading scale: UV - (U,G,VG) - (Fail, Pass, Pass with Distinction)
Assessment: Written examination and passed laboratory works.

The examiner, in consultation with Disability Support Services, may deviate from the regular form of examination in order to provide a permanently disabled student with a form of examination equivalent to that of a student without a disability.

Parts
Code: 0114. **Name:** Theory.
Credits: 10. **Grading scale:** UV. **Assessment:** Written exam.
Code: 0214. **Name:** Laboratory Work and Mandatory Assignments.
Credits: 5. **Grading scale:** UG. **Assessment:** Passed laboratory work.

Admission

Admission requirements:

- EXTA70 Biology of the Cell
- EXTG50 Human Physiology

The number of participants is limited to: 4
Selection: Credits awarded or credited within the study programme.Priority is given to students enrolled on programmes that include the course in their curriculum.
The course overlaps following course/s: TEK083

Reading list

- Handouts that are distributed during the course.

Contact and other information

Course coordinator: Eric Warrant, eric.warrant@biol.lu.se
Course homepage: https://www.biologi.lu.se/utbildning/grund-och-avancerad-utbildning/kurser/kurser-avancerad-niva/biologiska-kurser-pa-avancerad-niva-for-teknologer
Further information: The course is to be studied together with BIOR20, which is given by the Department of Biology. Does not follow the study period structure.