



DEPARTMENT OF NEUROBIOLOGY, CARE SCIENCES AND SOCIETY

H1F2630, Neurodegenerative Disorders II - Cellular and Molecular Mechanisms, 1.5 credits (hec)

Neurodegenerativa sjukdomar II - cellulära och molekyllära mekanismer, 1,5
högskolepoäng

Third-cycle level / Forskarnivå

Approval

This syllabus was approved by the The Committee for Doctoral Education on 2023-10-31, and was last revised on 2024-02-29. The revised course syllabus is valid from autumn semester 2024.

Responsible department

Department of Neurobiology, Care Sciences and Society, Faculty of Medicine

Prerequisite courses, or equivalent

The course is a continuation of the course Neurodegenerative Disorders I: Genes, Mechanisms and Clinical Aspects, but it can also be taken as a separate course, provided that the participant has basic knowledge about neurodegenerative disorders.

Purpose & Intended learning outcomes

Purpose

The purpose of the course is to provide a deeper understanding of neurodegenerative disorders, focusing on molecular mechanisms and techniques used for studying these, as well as treatment strategies.

Intended learning outcomes

The student should be able to:

- critically evaluate relevant cellular and molecular pathophysiological mechanisms of neurodegenerative disorders, and the mechanisms of current and/or possible future treatments.
- discuss similarities and differences between the different neurodegenerative diseases.
- discuss advantages and drawbacks of important methods, assays, and disease models for studying mechanisms behind neurodegenerative disorders.

Course content

The course addresses topics in basic and clinical research on neurodegenerative disorders. The focus will be on a deeper understanding of cellular and molecular mechanisms, and the techniques to study them. To this end, the students will learn about some powerful techniques that can be used for studying neurodegeneration, subcellular localization, and omics approaches for elucidation of pathogenic pathways. Current and/or possible future treatment strategies will also be addressed.

Forms of teaching and learning

The course runs daytime for 1 week full-time with some key lectures by invited scientists, laboratory practicals, and discussions in small groups and the entire class.

Language of instruction

The course is given in English

Grading scale

Pass (G) /Fail (U)

Compulsory components & forms of assessment

Compulsory components

The student is obliged to attend at least 80% of the lectures, all laboratory practicals, and the exam (including the group discussion after the exam).

Forms of assessment

Oral examination followed by group discussions on the examination questions, and a general discussion between all participants.

Course literature

Recommended reading:

Scientific articles and hand-outs distributed by the course organizers and lecturers.