



LUND
UNIVERSITY

Faculty of Medicine

BIMB31, Biomedicine: From Neuron to Nervous System, 7.5 credits

Biomedicin: Från nervcell till nervsystem, 7,5 högskolepoäng
First Cycle / Grundnivå

Details of approval

The syllabus was approved by The Master's Programmes Board on 2021-03-16 to be valid from 2021-03-24, autumn semester 2021.

General Information

The course is compulsory in the Biomedicine programme and included in semester 3.

Language of instruction: English

Main field of studies

Biomedicine

Depth of study relative to the degree requirements

G1F, First cycle, has less than 60 credits in first-cycle course/s as entry requirements

Learning outcomes

Knowledge and understanding

On completion of the course, the students shall be able to

- give an account of the embryonic development of the nervous system
- describe the fundamental structure and function of the neuron, and the electrophysiological and molecular mechanisms behind neuron signalling
- describe the anatomical and functional structure of the brain including different cell types and their characteristics, and communication with sensory and motor systems
- describe general principles of how pharmacologically active substances can reach the CNS and influence the function of the brain
- give an account of the parts of the brain that are particularly important for cognition and emotion
- describe how scientific and analytical methods can be used to gain knowledge about the nervous system

Competence and skills

On completion of the course, the students shall be able to

- search, critically review and compile information about the nervous system from literature databases
- write and provide feedback on research proposals in neurobiology and handle feedback from reviewers in a professional way
- appear with a professional approach, respect others' opinions in discussions about neuroscience and meet given deadlines

Judgement and approach

On completion of the course, the students shall be able to

- reflect on scientific and ethical issues that concern neuroscience.

Course content

The course covers how the nervous system develops, its structure and how it functions. The course consists of four modules with overlapping themes.

- Module 1 is about development of the nervous system, the different cell types and parts that form the nervous system and the functions these have.
- Module 2 is about how neurons communicate with each other and how the brain can be changed as a consequence of experiences.
- Module 3 is about how the brain takes in information from the environment via different sensory systems, how this information is integrated into the brain and how the brain creates behaviour through influence on muscles.
- Module 4 is about how pharmacologically active substances can influence the brain and how the connection functions between the brain and cognition and emotions.

All modules will place an emphasis on which methods are used to produce knowledge about the nervous system. The modules will also contain practical components to concretise lectures and required reading.

Course design

The course mainly uses student-active learning methods, which places requirements on the students to prepare before the teaching components. The students are expected to act professionally and, just as in a future work situation, participate constructively in the working group to enable the group to make progress.

The course uses group assignments with support lectures for each module. To achieve the stated skills and practice their approach and judgement, the students will plan and summarise in writing a scientific research project that resembles an actual grant application. In connection with this research plan, they will also read, interpret and use research articles. Furthermore, the students will give feedback on each others' reports.

Assessment

An individual research proposal, feedback on a fellow student's research proposal and reflections on the individual contribution to the group constitute the basis for assessment of the course's learning outcomes regarding skills, judgement and approach, and is included in a course portfolio.

The learning outcomes of the course are continuously assessed by multiple-choice questions that relate to the contents of the four modules.

1. Course portfolio 5 credits (Fail/Pass/Pass with Distinction)
2. Multiple-choice questions 2.5 credits (Fail/Pass)

If there are special reasons, other forms of examination may apply.

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.

Subcourses that are part of this course can be found in an appendix at the end of this document.

Grades

Marking scale: Fail, Pass, Pass with distinction.

To achieve the grade of Pass as final grade, all components must be passed. To achieve the grade of Pass with Distinction as final grade, the grade of Pass with Distinction is required for the course portfolio.

Entry requirements

Passed examinations and course components in semester 1 and 2 of the programme for at least 45 credits and completion of the course BIMB22 The Cell and its Environment.

Subcourses in BIMB31, Biomedicine: From Neuron to Nervous System

Applies from H21

- 2101 Course portfolio, 5,0 hp
Grading scale: Fail, Pass, Pass with distinction
- 2102 Multiple-choice questions, 2,5 hp
Grading scale: Fail, Pass