Faculty of Medicine

BIMM27, Biomedicine: Metabolic Diseases, 7.5 credits

Biomedicin: Metabola sjukdomar, 7,5 högskolepoäng

Second Cycle / Avancerad nivå

Details of approval

The syllabus was approved by The Master's Programmes Board on 2023-05-23. The syllabus comes into effect 2023-05-30 and is valid from the spring semester 2024.

General information

This is an elective course in the Master's programme in Biomedicine.

Language of instruction: English

Main field of study	*Specialisation*
Biomedicine	A1N, Second cycle, has only first-cycle course/s as entry requirements

Learning outcomes

Knowledge and understanding

On completion of the course, students shall in a scientific and professional manner be able to:

- explain the structure and function of the endocrine system and discuss how its regulation affects the internal environment, growth and metabolic control of the body,
- describe metabolic syndrome and discuss causes contributing to its emergence, and
- explain in detail the underlying mechanisms associated with metabolic diseases and put forward arguments for different types of drug treatments and preventive treatments.

Competence and skills

On completion of the course, students shall in a scientific and professional manner be able to

- extract, analyse and present information from research publications on endocrine and metabolic issues,
- critically review, present and discuss current research on endocrine and metabolic diseases,
- clearly formulate a defined research project to address a given issue, and
- work in groups and make constructive contributions to the group's ability to solve research problems concerning endocrine and metabolic diseases.

Judgement and approach

On completion of the course, students shall in a scientific and professional manner be able to

- reflect on and assess research related to the field of metabolic diseases, and formulate hypotheses for the pathogenesis behind these diseases,
- reflect on ethical approaches within metabolic research, and
- identify their need of further knowledge and take responsibility for their ongoing learning.

Course content

The course provides students with further specialisation and development of courses in cell biology and human physiology, focusing on (some of the) endocrine and metabolic diseases included in the strong research areas at Lund University. The course starts with the normal physiology of the endocrine organs and how they govern the metabolism of the body.

The following weeks cover endocrine pathophysiology from different perspectives, i.e. focusing on the different endocrine organs. The course also addresses the cardiovascular complications that arise in connection with metabolic syndrome and also highlight genetic aspects of metabolic diseases. The course is intended to prepare students for research and aims to introduce ongoing research within the field.

Course design

The course is structured around weekly themes that are introduced by a lecture followed by a compulsory TBL*) group exercise and method discussions that are concluded at the end of the week. Each theme will include a lecture/seminars with experienced cancer researchers, for which students are to prepare and analyse material for discussion. The students will undertake exercises in reading research articles, extracting relevant content and making oral article presentations. The article presentations will include references to previous course content. All students in the group are expected to be prepared and participate constructively in the discussion. Attendance is compulsory for all TBL group sessions and the seminars marked in the timetable.

**) TBL (team-based learning): the students are divided into small groups in which they are to prepare through readiness assurance tests (RAT), individually and in groups. The students will then work on applying their knowledge.

Assessment

The assessment is based on two examination components: individual readiness assurance test (2 credits) (iRAT) and course portfolio (5.5 credits).

iRAT is used to assess the learning outcomes relating to knowledge and understanding.

The course portfolio is used to assess the learning outcomes relating to knowledge and understanding, competence and skills, and judgement and approach. The portfolio is to include a written and oral presentation of a research project plan, a review of the work of a fellow student, and active participation in seminars, discussions, presentations and TBL. Furthermore, the portfolio is to include an individual written assignment, in which students reflect on their performance to attain the learning outcomes, complete their project plan and review the project plans of fellow students.

Other forms of examination may be used if there are special reasons.

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.

Grades

Grading scale includes the grades: Fail, Pass

Entry requirements

To be admitted to course, students must have at least 120 first or second-cycle credits in science subjects, including at least 15 credits in cell biology, 15 credits in biochemistry, 15 credits in pathobiology/pharmacology/toxicology/molecular medicine, and 7.5 credits in physiology.

Further information

Overlapping course: BIMM23 Biomedicine: Metabolic Diseases, 7.5 credits