Course syllabus for

Medical Biochemistry, 12 credits

Medicinsk biokemi, 12 hp

This course has been cancelled, for further information see Transitional provisions in the last version of the syllabus.

Course code	1BI021
Course name	Medical Biochemistry
Credits	12 credits
Form of Education	Higher Education, study regulation 2007
Main field of study	Biomedicine
Level	G2 - First cycle 2
Grading scale	Pass with distinction, Pass, Fail
Department	Department of Medical Biochemistry and Biophysics
Decided by	Programnämnd 7
Decision date	2014-03-28
Revised by	Programme committee for study programmes in biomedicine
Last revision	2020-06-10
Course syllabus valid from	Autumn 2014

Specific entry requirements

At least the grade Pass at the course Introduction to Biomedical Science or the equivalent knowledge.

Objectives

Upon completion of the course the student should be able to:

- account for the biochemical function of individual cells and the entire human body, including regulation of metabolic processes,
- predict the metabolic effects following influence on individual reaction steps by pharmaceuticals or genetic variation,
- describe and explain connections between molecular changes and changes in the metabolism for common diseases,
- search for and evaluate literature in medical biochemistry and from this retrieve information for problem-solving, experimental design and compilations,
- orally and in written form present own results and compilations of published results within medical biochemistry,
- evaluate different choices of methods for biochemical laboratory work, and to plan, carry through and evaluate experiments,

- understand ethical and security issues in biomedical work.

Content

The course is divided into the following parts:

Medical Biochemistry, 2.0 hp

Grading scale: GU

Overview of the course and it's content.

Basal Metabolism, 3.0 hp

Grading scale: GU

Catabolism and anabolism, and general principles for turnover of intermediates and energy. Special focus on regulation of enzyme activity, the signal transduction system of the cell, digestion and absorption of nutrients, carbohydrate metabolism – including energy conversions in the cell, lipid metabolism, ketone bodies and oxidative stress. The functions of enzymes in an organic chemical perspective.

Biochemical laboratory methods, 2.0 hp

Grading scale: GU

Studies of cellular metabolism and in connection with this, application of chromatographic methods.

Integrated Metabolism, 5.0 hp

Grading scale: VU

Amino acid metabolism including urea, one carbon pool and creatine phosphate, nucleotide metabolism and alcohol metabolism. Integration of metabolism and hormonal regulation.

Teaching methods

The teaching includes lectures, laboratory sessions, group tuition (seminars) and project works. It is to a large extent directed towards the understanding of biochemical contexts and aims to give the student an analytical and reflective approach to the subject.
Project work implies advanced studies in a group with an emphasis on own work, group cooperation and literature studies.

Examination

Introduction to Medical Biochemistry (2 credits). The examination consists of a written assignment graded Fail/Pass.

Basal metabolism (3 credits). The examination consists of a test and an oral presentation of a project work. Graded Fail/Pass. For the test, two make-up sessions are provided before the written final examination.

Biochemical laboratory methods (2 credits). The examination consists of observations of the student's laboratory skills and written laboratory reports. Graded Fail/Pass.

Integrated metabolism (5 credits). The examination consists of a written and oral presentation of an integrated project work, graded Fail/Pass, and a written final examination. The written examination is graded Fail/Pass/Pass with distinction. To be permitted to participate in the final examination, the test

during Basal metabolism must be approved.

The course grade is based on the grade of the final written examination. To pass the whole course, the grade Pass must have been obtained for all parts of the course.

Compulsory participation
Laboratory sessions and project works are compulsory, as well as presentations and lectures linked to these parts. The course director assesses if and, in that case, how absence can be compensated. Before the student has participated in all compulsory parts or compensated absence in accordance with the course director's instructions, the student's results for respective part will not be registered in LADOK.

Limited number of examinations or practical training sessions
Students who have not passed the regular examination are entitled to participate in five more examinations. If the student has failed six examinations/tests, no additional examination or new admission is provided.

The number of times that the student has participated in one and the same examination is regarded as an examination session. Submission of a blank examination is regarded as an examination. An examination, for which the student registered but not participated in, will not be counted as an examination.

Transitional provisions

The course is cancelled and was offered for the last time VT17. Examination according to this syllabus will be offered for the last time VT21 for students who have not completed the course with a passing grade.

Other directives

The course language is English.

Course evaluation will be carried out in accordance with the guidelines established by the Board of Higher Education.

Oral evaluation in the form of course council meetings will be carried out during the course.

Literature and other teaching aids

Ferrier, Denise R.
Biochemistry

6. ed. : Lippincott Williams and Wilkins, 2013
ISBN:978-1-4511-7562-2 LIBRIS-ID:13993817
Library search

Berg, Jeremy M.; Tymoczko, John L.; Stryer, Lubert
Biochemistry

7. ed., International ed. : Basingstoke : Palgrave Macmillan, cop. 2012 - xxxii, 1098, [78] s.
ISBN:978-1-4292-7635-1 LIBRIS-ID:12135215
Library search