Course syllabus for

Medical Biochemistry, 10 credits

Medicinsk biokemi, 10 hp
This course syllabus is valid from spring 2014.
Please note that the course syllabus is available in the following versions:
Spring2008 , Spring2009 , Spring2012 , Spring2014

Course code	1BI002
Course name	Medical Biochemistry
Credits	10 credits
Form of Education	Higher Education, study regulation 2007
Main field of study	Biomedicine
Level	G2 - First cycle 2
Grading scale	Excellent, Very good, Good, Satisfactory, Sufficient, Fail, Fail
Department	Department of Medical Biochemistry and Biophysics
Decided by	Programnämnden för biomedicinprogrammet
Decision date	2007-06-19
Revised by	Programme Committee 7
Last revision	2013-11-20
Course syllabus valid from	Spring 2014

Specific entry requirements

At least the grade E in the course Introduction to biomedicine within the Biomedicine programme 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:

Basal metabolism, 3 hp 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. **Biochemical laboratory methods, 2 hp** Studies of cellular metabolism and in connection with this, application of chromatographic methods. **Integrated metabolism, 5 hp** Amino acid metabolism including urea, the 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. The project work implies advanced studies in a group with an emphasis on own work, group cooperation and literature studies.

Examination

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 through written laboratory reports. Graded Fail/Pass.

Integrated metabolism (5 credits). The examination consists of a written examination. Graded A-F. 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 Integrated metabolism. To pass the whole course (grade E or above), the grade pass must have been obtained for the other parts of the course.

Compulsory participation
Laboratory sessions and project work are compulsory, as well as presentations and lectures linked to these part. 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

After each course occasion there will be at least six occasions for the examination within a two-year period from the end of the course.

Other directives

The course language is Swedish and 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 Mark; Tymoczko, John L.; Stryer, Lubert

Biochemistry

6. ed. : New York, N.Y. : Freeman, cop. 2007 - xxxv, 1026, [86] s.

ISBN:0-7167-8724-5 (inb.) LIBRIS-ID:10124283

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