Course syllabus for

Molecular Medicine, 15 credits

Molekylär medicin, 15 hp
This course syllabus is valid from autumn 2016.
Please note that the course syllabus is available in the following versions:
Autumn2016 , Autumn2017

Course code	1BI029
Course name	Molecular Medicine
Credits	15 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 Medicine, Solna
Decided by	Programme Committee 7
Decision date	2016-03-23
Course syllabus valid from	Autumn 2016

Specific entry requirements

At least a grade of pass for the courses Introduction to Biomedicial Science, General and Organic Chemistry, Medical Biochemistry, Cell Biology and Genetics, Integrative Physiology, Tissue Biology, and Biostatistics, as well as having passed the parts Laboratory work and seminars (4 credits), and Project work (3 credits) within the course Infection and Immunity, and having passed the parts Pharmacokinetics and pharmacodynamics (2 credits), Laboratory work in pharmacology (1.5 credits) and Group assignments in pharmacology and toxicology (2.5 credits) within the course Pharmacology and Toxicology, within the Bachelor's Programme in Biomedicine.

Objectives

Upon completion of the course, the student shall be able to:

- describe fundamental functions and molecular mechanisms at the level of the cell and organ in relation to the whole human body and be able to apply the same to the development of disease and treatment,
- describe the application of molecular medicine in practice,
- integrate understanding of molecular medicine (theory) with molecular biology (practice),
- search for, collect, evaluate, interpret and discuss (in both written and oral forms) specialised information in relation to at least one of the topics covered within the course,

- demonstrate understanding of ethical aspects of research involving human and/or animal material,
- demonstrate safe laboratory work.

Content

This course focuses on the molecular, cellular and physiological mechanisms, pathology, diagnosis and treatment of common diseases: Atherosclerosis, ischaemic heart disease and cerebrovascular disease. The coagulation system and hypertension. The metabolic syndrome and Diabetes Mellitus. Asthma, allergy and inflammatory diseases of the lung. Function of the adrenal cortex and thyroid gland. The gastrointestinal system, including inflammatory bowel diseases. Insight into the laboratory medicine disciplines clinical immunology and clinical chemistry, the hypotheses considered and the laboratory techniques used.

The course is divided into the following parts:

Disease mechanisms, pathology, diagnosis and treatment, 3 hp Self-directed learning exercises covering different topics within the course. **Research plan proposal, 3 hp** To write a research proposal related to one of the topics covered in the course. **Laboratory practicals and clinical demonstrations, 4 hp Integration of theory and practice, 5 hp**

Teaching methods

This is an advanced course requiring students to take responsibility for their own learning. Learning is encouraged through the active acquisition of relevant information from appropriate sources by the student. Teaching will be in the form of expert lectures, seminars, group-based work and laboratory practicals.

Examination

Disease mechanisms, pathology, diagnosis and treatment (3 credits). The examination consists of oral or written presentation of assignments handed out during the course. The assignments comprise essay-type questions and problems covering different course topics. Written work is to be handed in before the end of the course according to the times specified in the schedule. Graded (Fail/Pass).

Research plan proposal (3 credits). The examination consists of oral and written presentation. Graded Fail/Pass.

Laboratory practicals and clinical demonstrations (4 credits). The examination consists of evaluation of the student’s laboratory skill, participation in demonstrations, and laboratory reports. Graded Fail/Pass.

Integration of theory and practice (5 credits). The examination consists of a written examination. Graded Fail/Pass/Pass with Distinction.

The final grade for the whole course is based on the grade for the part Integration of theory and practice. To pass the whole course (grade pass or above), the grade pass must have been obtained for the other parts.

Compulsory participation
There is compulsory attendance of the introduction to the course (first day), laboratory practicals, clinical/laboratory demonstrations, and group work. 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 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

Textbooks specified for earlier courses within the Biomedicine Programme contain some relevant sections. Specific study material handed out during the course form the principal reference material and provides the basis for the examination questions.