



**Karolinska
Institutet**

Course syllabus for

Molecular medicine, 15 credits

Molekylär medicin, 15 hp

This course syllabus is valid from autumn 2009.

Please note that the course syllabus is available in the following versions:

Autumn2009 , [Autumn2013](#)

Course code	1BI012
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	Excellent, Very good, Good, Satisfactory, Sufficient, Fail, Fail
Department	Department of Medicine, Solna
Decided by	Programnämnden för biomedicinprogrammen
Decision date	2009-06-05
Revised by	Programnämnd 7
Last revision	2010-05-21
Course syllabus valid from	Autumn 2009

Specific entry requirements

At least grade E (pass) for the courses Introduction to Biomedical Science, General and Organic Chemistry, Medical Biochemistry, Cell Biology and Genetics, Integrative Physiology, Tissue Biology and Biostatistics. Passed part one within the course Infection and Immunity and passed parts 1-3 within the course Pharmacology with toxicology.

Objectives

At the end of the course the student shall be able to: Describe basic functions and molecular mechanisms at the level of the cell and organ in relation to the whole human body; Relate the above to the development of disease and treatment; Describe the application of molecular medicine in practice; Reflect on the course contents and analyse specialised information relating to one of the topics.

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. Part 1: Disease mechanisms, pathology, diagnosis and treatment (3 hp) Self-directed learning exercises covering different topics within the course. These exercises may be performed in groups. Part 2: Research plan proposal (3 hp) To write a research proposal related to one of the topics covered in the course. This project work is performed in groups. Part 3. Laboratory practicals and clinical demonstrations (4 hp) Part 4. Integration of theory and practice (5 hp) Integrating theory and practical training from the course.

Disease mechanisms, pathology, diagnosis and treatment, 3.0 hp

Grading scale: GU

Self-directed learning exercises covering different topics within the course.

Research plan proposal, 3.0 hp

Grading scale: GU

To write a research proposal related to one of the topics covered in the course.

Laboratory practicals and clinical demonstrations, 4.0 hp

Grading scale: GU

Integration of theory and practice, 5.0 hp

Grading scale: AF

Teaching methods

This is an advanced course requiring students to be familiar with the most common methods of work used at a university. 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

Part 1. Examination through completion of assignments that are handed out during the course. The assignments comprise essay-type questions and problems covering different course topics. Assessment of the assignments will be in either oral or written form. Written work is to be handed in before the end of the course according to the times specified in the schedule. The grading scale for each assignment is U/G (Fail/Pass). Part 2. Examination of the project work is in both written and oral forms. The grading scale is U/G (Fail/Pass). Part 3. Examination through observation of the students laboratory skill, participation in demonstrations, and through completion of a laboratory report (performed as group work). The grading scale is U/G (Fail/Pass). Part 4. Examination through a final written examination at the end of the course containing both essay and short-answer questions. The grading scale is F/Fx/E/D/C/B/A. The final grade for the whole course is based on the grade for part 4. To pass the whole course (grade E or above), the grade pass (G) must have been obtained for parts 1-3. Assessment criteria will be announced at the start of the course. The grade is set by the examiner. Compulsory attendance There is compulsory attendance at the introduction to the course (first day), laboratory practicals, clinical/laboratory demonstrations, and group work. The course leader decides if and how absence from compulsory activities can be compensated. Before the student has participated in compulsory parts or compensated absence in accordance with the course director's instructions the

student's results for respective part are not 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 is not approved after four examinations, he/she is recommended to retake the course at the next regular course date, and may, after that, participate in two 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 2-year period from the end of the course.

Other directives

The course will be evaluated in accordance with the guidelines established by the Board of Education. A mid-course evaluation will be held with student representatives and the course leaders. The course language is English.

Literature and other teaching aids