Course syllabus for

Immunology - methodology and diagnostics (incl. Transfusion Medicine), 7.5 credits

Immunologi - metodik och diagnostik (inkl. transfusionsmedicin), 7.5 hp
This course has been cancelled, for further information see Transitional provisions in the last version of the syllabus.
Please note that the course syllabus is available in the following versions:
Spring2009 , Autumn2009 , Autumn2012 , Autumn2013

Course code	1BA019
Course name	Immunology - methodology and diagnostics (incl. Transfusion Medicine)
Credits	7.5 credits
Form of Education	Higher Education, study regulation 2007
Main field of study	Biomedical Laboratory Science
Level	G2 - First cycle 2
Grading scale	Fail (U), pass (G) or pass with distinction (VG)
Department	Department of Laboratory Medicine
Decided by	Programnämnden för Biomedicinska analytikerprogrammet
Decision date	2008-10-22
Course syllabus valid from	Spring 2009

Specific entry requirements

General entry requirements for higher education. In addition, specific entry requirements as stated in the programme syllabus of the Biomedical laboratory science education and completed courses in Laboratory diagnostics 9 HE credits, Basic laboratory methodology, 6 HE credits, Analytical and biochemical methodology 7.5 HE credits, Instrumental technique including radio physics 7.5 HE credits, Cell culture 3 HE credits, Biochemistry 1, 6 HE credits, Biochemistry 2, 6 HE credits and Cell and Molecular Biology, 6 HE credits or the equivalent knowledge.

Objectives

The course should provide basic knowledge in immunology, transfusion medicine, immunological and blood group serological methodology On completion of the course, the student should be able to: · describe the build-up of the organ structures and cells of the immune system · account for the function of the immune system and the role of participating cells in the innate and acquired immune response. · describe the lymphocyte development, activation and cell cooperation in humoral and cellular immunity. · describe regulation of immune response. · explain the interaction between various microorganisms and

the human immune system (infection immunology). · be familiar with hypersensitivity reactions, transplantation, immunology and autoimmunity. · account for methods used in the study of humoral and cell mediated immunity, and various methods for demonstrating and measuring antigen-antibody reactions. · independently plan and carry out immunological analyses, explain the analysis principle for each method, and document, interpret and assess analysis results. · account for the basic blood group systems regarding genetics, antigen and antibodies. · at a general level, describe blood donation, blood donor requirements and component production. · indicate clinical uses of the different components as well as transfusion complications. · account for the regulations of the Swedish National Board of Health and Welfare how blood testing for blood typing and compatibility testing should be conducted. · account for various blood typing techniques and their fields of use. · independently plan and carry out blood group serological analyses, explain the analysis principle of each method. and document, interpret and assess analysis results.

Content

The course gives basic knowledge of the structure and functions of the immune system and basic knowledge in immunological methodology. Lectures are given on organs, cells and molecules in the immune system, and on composition, principles, components and function of innate and acquired immunity. Furthermore, lymphocyte development, activation and cell cooperation in humoral and cellular immunity, and regulation of immune responses, the interaction between different microorganisms and the human immune system (infection immunology), are treated. The course also comprises applied immunology such as hypersensitivity reactions, transplantation immunology and autoimmunity. The methodology section includes methods used to study humoral and cell mediated immunity, and various methods to detect and measure antigen-antibody reactions. Examples of immunological analyses that are included are cell separation method, cell activation and immunoassay. The course gives basic understanding of transfusion medicine, component production and blood donation. During the course, lectures on basic blood group systems with regard to genetics, antigen and antibodies are provided. Within blood donation, an orientation is given on the requirements on the blood donor, blood donation and component production. Clinical uses of the different components as well as transfusion complications are treated. During sampling for a laboratory session with an own sample, the regulations of the Swedish National Board of Health and Welfare are applied, how blood testing for blood grouping and compatibility testing should be conducted. Examples of blood group serological methods included are blood typings and compatibility testing. The parts of the course are: Immunology 2.2 HE credits Immunology Transfusion medicine and Blood group serology, 1.5 HE credits Transfusion medicine and Blood group serology Immunological methodology, 1.5 HE credits Immunological methodology Laboratory experiments in immunology, 1.5 HE credits Laboratory experiments in immunology Laboratory experiments in Blood group serology, 0.8 HE credits Laboratory experiments in Blood group serology

Immunolgy, 2.2 hp

Grading scale: VU

Transfusion medicine and Blood group serology, 1.5 hp

Grading scale: VU

Immunological methodology, 1.5 hp

Grading scale: VU

Laboratory experiments in immunology, 1.5 hp

Grading scale: VU

Laboratory experiments in Blood group serology, 0.8 hp

Grading scale: VU

Teaching methods

Teaching is given as lectures, study visits and laboratory sessions with written laboratory reports. The student should document laboratory work in a personal workbook.

Examination

As examination forms, written examination in immunology, theory and methodology, transfusion medicine and blood group serological methodology, and written laboratory reports are included. All laboratory sessions are compulsory. In case of absence, an agreement concerning compensation is made between the student and the responsible teacher . 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 in the course is given. 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 regarded as an examination. If a student fails a laboratory session, the student has the opportunity to redo the laboratory session once.

Other directives

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

Literature and other teaching aids

Bromilow, Imelda; Daniels, Geoff
Blodgruppsserologi
1st ed. : Studentlitteratur, 2008
ISBN:978-91-44-04806-6
Library search

Hannerz, K
Kompendium i Blodgruppsserologisk metodik
Trumstedt, K
Kompendium i Immunologisk metodik
Abbas, Abul K.; Lichtman, Andrew H.
Basic immunology :b functions and disorders of the immune system
3rd ed. : Philadelphia, Pa. : Saunders/Elsevier, cop. 2009 - viii, 312 p.
ISBN:978-1--41604688-2 LIBRIS-ID:10718969
Library search