VYTAUTAS MAGNUS UNIVERSITY
M C M X X I I

TITLE OF THE COURSE:	Molecular Immunogenetics
Course code:	BIO 5011
Course group:	C
Faculty:	Natural Science
Study program:	Molecular Biology and Biotechnology
Level:	*Master*
Semester:	*Spring*
ECTS credits:	6
Language of instruction	English
Course lecturer/s:	dr. Indrė Lipatova
***Short course description*:**	Students are acquainted with the main trends in investigating immunogenetics, objects of investigation and methods applied. The current situation of this branch of science and the development of its evolution are considered. The key issues of this branch of science are set forth revealing processes of immunogenesis of immunocompetent cells, mechanisms of genetic control.
Course content:	1. Introduction to immunogenetics. 2. Immunoglobulins. Structure. Functions. 3. Genes of immunoglobulins. Izotypes, alotypes, idiotypes. Monoclonal antibodies. Immunoglobulins of B cell surface. 4. Molecules of cell surface and genes encoding them. 5. Antigens of organism cells. Blood group antigens. 6. Immune tolerance. 7. The system of the complement. Receptors for complement proteins. Genes regulating complement system. 8. Main histocompatibility system. 9. MHC I class components, structure, functions, and distribution in tissue. 10. Genetic control of MHC I class. 11. MHC II class components, structure, functions, and distribution in tissue. 12. Genetic control of MHC II class. 13. HLA molecules and their role.

	14. Immune response. 15. Preparation and presentation of antigen.
Grading and evaluating student work in class and/or at the final exam:	laboratory works (30%), mid-term examination (20%) and final examination (50%).
Required reading and additional study material	1. 2012 Lomas-Francis. The Blood Group Antigen FactsBook.2. USA. 2. 2012 Abbas A.K., Lichtman A.H., Pillai Sh. Cellular and Molecular Immunology. 8th Edt. Elsevier, W B Saunders Co. 3. 2009 Stephen D. Litwin „ Human Immunogenetics“ Basic Principles and Clinical Relevance. USA. 4. 2008 J. Gosling, A. Moran. Immunotechnology. Principles, Concepts and Applications John Wiley & Sons. 5. 2002 Nairn R., Helbert M. Imunology for medical students. Mosby.
Additional information (if applicable)	