Commission for Academic Affairs
UL Faculty of Medicine

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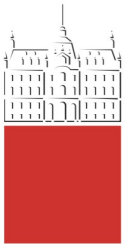

Curriculum with study regime

a. Course information

1. Module

   Molecular basis of human body functioning

2. Subject

   Immunology

3. Content cluster (if the subject has content clusters)

4. Study programme and level

   EMŠ programme Medicine

5. Year

   1st ☐ ☑ 2nd 3. ☐ 4. ☐ 5. ☐ 6. ☐

6. Semester

   Winter

7. Type of course

   Compulsory subject

8. Vertical column

   Medicine/Dental medicine as a science ☑
   Professional development ☐
   Patient- and community-oriented medicine/dental medicine ☐

9. Participating organisational units / Course providers

   Department of Microbiology and Immunology, Faculty of Medicine, University of Ljubljana Institute of Cell Biology

10. Credit rating

3

11. Forms of study obligations

Lectures	15
Seminars	15
Laboratory exercises Clinical exercises	15
Other forms of study	
Independent student work Total	45

12. Course coordinator / Content coordinator

Prof. Dr. Alojz Ihan

13. Language of instruction

Slovenian

14. Conditions for completing study obligations

Enrolment in the 2nd year of the EMŠM programme.

b. Content, basic objectives, course of study

1. Course content - Exam topics, clinical pictures and skills

Students learn about the structure and functions of the immune system at the organ, cell and molecular levels and connect their functioning into a whole set of interconnected mechanisms that act as innate, specific, non-specific, humoral and cellular immune responses. The material covers: antigens, antibodies (especially their basic structure, function, antigenic determinants on antibodies, B-cell receptors), the organisation and expression of immunoglobulin genes, and the emergence of diversity and interactions between antigens and antibodies as the basis for immunological diagnostic techniques. Furthermore, students learn about the characteristics of MHC molecules (genetic basis, molecular structure, function and regulation of expression, processing and presentation of Ag) as the most important molecules for the presentation of extracellular and intracellular

2. Objectives and competences

Understanding the components of the immune system, the characteristics of molecules produced by immune cells, their mode of action and their importance for maintaining the integrity of the animal organism. The relationship between the immune system and the environment, its importance for health and the development of disease. Learning about methods for studying the structure and functioning of the immune system.

3. Teaching and learning methods and the way the study unit is implemented

Lectures/seminars, laboratory exercises.
Lectures require preparation from literature, and there is a colloquium at the end of each lecture.

4. Primary and supplementary study materials

- A Ihan. Fundamentals of Medical Immunology. Second, updated edition. UL, Faculty of Medicine, Institute of Microbiology and Immunology, Department of Microbiology and Immunology, 2022.
- A. Ihan (ed.). Immunology Handbook. University of Ljubljana, Faculty of Medicine, Institute of Microbiology and Immunology, Department of Microbiology and Immunology. Ljubljana, 2016
- A - Lydyard P, Whelan A, Fanger M. Immunology (BIOS Instant Notes). New York, Garland Science 2011
- B - Roitt I, Martin S, Delves PJ, Burton D. Roitt's Essential Immunology. Blackwell 2011.

5. Expected learning outcomes

Knowledge and understanding: the student knows the structure of the immune system, the characteristics of immune cells, the characteristics of antigens, immunoglobulin molecules, cytokines and corresponding receptors, understands their mode of action and importance for maintaining the integrity of the macroorganism.

Application: understands the importance of immune techniques for studying the structure and function of the

immune system. Reflection: understands the relationship between the immune system and the environment in

health and disease.

Transferable skills: ability to use foreign literature and other sources; ability to collect and interpret data; oral and written reporting; critical analysis.

6. Method of assessment and verification of knowledge and skills of the course unit (ongoing and final assessment of knowledge, conditions for admission to the final assessment)

Lectures: Lectures require preparation from the literature, and there is a colloquium at the end of the lecture. The exam grade consists of a grade for the written assignment and a grade for the colloquium from the exercises.

With weekly knowledge assessments after the lecture, students can earn a maximum of 1 point, for a total of 7 points, which amounts to a maximum of 7% of the final sum of partial grades (final colloquium in the exercises and written exam). The bonus is only taken into account in the case of a positive grade on the first attempt at the exam in the current academic year.
Practical classes: compulsory attendance and participation in practical classes. A positive mark in the colloquium is a prerequisite for taking the exam.

Grading scale:
unsatisfactory (1 to 5): 0.00% to 59.99%
sufficient (6): 60.00% to 67.99%
Good (7): 68.00% to 75.99%
very good (8): 76.00% to 83.99%
very good (9): 84.00% to 91.99%
excellent (10): 92.00% to 100%

A positive written exam grade (60%) is a prerequisite for taking the oral exam.
Students who achieve a score lower than 60% on the written exam must retake the written exam.
In the case of a positive oral exam grade, the examiner may confirm, raise or lower the final exam grade (theoretical colloquium
from exercises, written exam, bonus) by one grade.

7. Other information

Article 34 of the Rules on the Assessment and Evaluation of Knowledge and Skills for the Integrated Master's study programmes in Medicine and Dental Medicine.

The commission exam has a written and oral part and is conducted in accordance with Article 30 of the Rules.

Persons with special needs may take all forms of ongoing and final knowledge assessment with up to 50% more time.

8. References of the course lecturer or content coordinator

References of the lecturer/Lecturer's references:

Ihan A, Grosek S, Stubljar D. An In Vitro Evaluation of the Red Cell Damage and Hemocompatibility of Different Central Venous Catheters. Biomed Res Int. 2020 2020:8750150. doi: 10.1155/2020/8750150.

Resman Rus K, Kopitar NA, Korva M, Ihan A, Petrovec M, Avšič-Županc T. Comparison of Lymphocyte Populations in Patients With Dobrava or Puumala orthohantavirus Infection. Front Cell Infect Microbiol. 2020; 10: 566149.

Tesovnik T, Kovač J, Pohar K, Hudoklin S, Dovč K, Bratina N, Trebušak Podkrajšek K, Debeljak

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