Appendix No. 1.5 to the Resolution No. 7/2023
of the Rector of the University of Rzeszów

# SYLLABUS

**REGARDING THE QUALIFICATION CYCLE FROM 2024TO 2030.**

**1. BASIC COURSE/MODULE INFORMATION**

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|---|---|
| Course/Module title | Clinical immunology |
| Course/Module code * | Im / C |
| Faculty (name of the unit offering the field of study) | Faculty of Medicine, University of Rzeszow |
| Name of the unit running the course | Department of Human Immunology, Faculty of Medicine, University of Rzeszow |
| Field of study | medicine |
| Qualification level | uniform master's studies |
| Profile | General academic |
| Study mode | stationary / extramural |
| Year and semester of studies | year II, semester IV |
| Course type | obligatory |
| Language of instruction | English |
| Coordinator | Prof. Jacek Tabarkiewicz MD, PhD |
| Course instructor | Prof. Jacek Tabarkiewicz M.D. Ph.D., Oliwia Dąbrowska MD |

* - as agreed at the faculty

**1.1.Learning format – number of hours and ECTS credits**

| Semester (no.) | Lectures | Classes | Laboratories | Seminars | Practical classes | Internships | others | **ECTS credits** |
|---|---|---|---|---|---|---|---|---|
| IV | 15 | - | | 15 | 15 | - | - | 4 |

**1.2. Course delivery methods**
X conducted in a traditional way
x involving distance education methods and techniques

**1.3. Course/Module assessment** (exam, pass with a grade, pass without a grade)
Exam

**2. PREREQUISITES**

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| Knowledge of biology at an advanced level |

## 3. OBJECTIVES, LEARNING OUTCOMES, COURSE CONTENT, AND INSTRUCTIONAL METHODS

### 3.1. Course/Module objectives

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| O1 | Understanding of immune disorders in the pathomechanism of human diseases |
| O2 | Ability to use methods of testing immunological parametres and the principles of selection of tests in differential of human diseases. |
| O3 | Ability to use immunostimulation, immunoregulation, immunomodulation, immunosuppression in the therapy of human diseases. |

### 3.2. COURSE/MODULE LEARNING OUTCOMES (TO BE COMPLETED BY THE COORDINATOR)

| Learning Outcome | The description of the learning outcome defined for the course/module | Relation to the degree programme outcomes |
|---|---|---|
| LO.01 | knows and understands principles of diagnosing infectious, allergic, autoimmune and neoplastic diseases and blood diseases based on the antigen-antibody reaction; | C.W16 |
| LO.02 | knows and understands issues in the field of immunology of tumors and immunological diseases and principles of immunotherapy; | C.W21 |
| LO.03 | knows and understands the genetic basis of donor and recipient selection and the basics of transplantation immunology; | C.W22. |
| LO.04 | knows and understands the possibilities and types of biological, cellular, gene and targeted therapy in specific diseases; | C.W33 |
| LO.05 | knows and understands the molecular basis of neoplastic diseases and issues in the field of tumor immunology; | C.W42. |
| LO.06 | knows and understands practical elements of molecular biology and immunology used in the diagnosis and therapy of oncological diseases. | C.W43. |
| LO.07 | is able to link images of tissue and organ damage with clinical symptoms of the disease, history and laboratory test results in | C.U7. |

| | | |
|---|---|---|
| | order to establish a diagnosis in the most common diseases of adults and children; | |
| LO.08 | is ready to establish and maintain deep and respectful contact with the patient, as well as to show understanding for differences in worldviews and cultures; | K.01 |
| LO.09 | is ready to act in the best interests of the patient | K.02. |
| LO.10 | is ready to respect medical confidentiality and patient rights; | K.03 |
| LO..11 | is ready to take action towards the patient based on ethical principles, with awareness of the social conditions and limitations resulting from the disease; | K.04 |
| LO..12 | is ready to perceive and recognize his/her own limitations, make self-assessment of deficits and educational needs; | K.05 |
| LO..13 | is ready to promote pro-health behaviors; | K.06 |
| LO..14 | is ready to use objective sources of information; | K.07 |

### 3.3. Course content (to be completed by the coordinator)

A. Lectures

| Content outline |
|---|
| 1. Primary immunodeficiencies |
| 2. Management of primary immunodeficiencies |
| 3. Autoimmunity |
| 4. Organ-specific autoimmune diseases and principles of autoantibody detection. |
| 5. Immunosuppression as a method of treatment. |
| 6. Digestive tract diseases with immunological mechanisms. |
| 7. Secondary immunodeficiencies. |
| 8. Advanced medical therapies using elements of the immune system. Hospital applications of advanced therapy medicinal products (HE- |

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| ATMP). Principles of work in a GMP environment. Principles of conducting and possibilities of using Tissue and Cell Banks. Gene, targeted and cell therapy. |

B. Classes, laboratories, seminars, practical classes

| Content outline |
|---|
| **Seminars** |
| Content of clinical exercises |
| 1. Primary immunodeficiencies. |
| 2. Secondary immunodeficiencies. |
| 3. Treatment of secondary and primary immunodeficiencies. |
| 4. Autoimmune diseases. The role of the immune system in the pathogenesis of rheumatological diseases, diseases of the nervous system, diseases of the endocrine system. The use of immunological parameters in diagnostics. Immunological basis of therapy for autoimmune diseases. |
| Content of the seminar |
| 1. Transplantation immunology. Principles of donor and recipient selection. Modern methods of assessing donor-recipient compatibility. Mechanisms of action of immunosuppressive drugs used in transplantology. Immunological basis of graft rejection and other transplant complications, e.g. GVHD. Reproductive immunology. |
| 2. Antibody as a drug. Use of monoclonal antibodies. Use of IVIG. |
| 3. Immunohematology. Immunopathogenesis of hematopoietic system proliferative diseases. Acquired bleeding disorders as an autoimmune disease. |
| 4. Allergic diseases. Basic definitions. Allergens. Etiopathogenesis. Diagnostics with special emphasis on antigen-antibody reactions. Treatment with special emphasis on specific immunotherapy. |
| 5. Vaccinations. |
| 6. Diagnostics and treatment of primary and secondary immune deficiencies. |
| 7. Immunomodulating and immunosuppressive treatment in autoimmune and neoplastic diseases. |

### 3.4. Methods of Instruction

lecture: lecture with multimedia presentation

exercises: group work, work with a patient, discussing clinical cases, analyzing laboratory test results, solving tasks, discussion

seminars: multimedia presentations, discussing clinical cases, analyzing laboratory test results, solving tasks, discussion

## 4. Assessment techniques and criteria

### 4.1 Methods of evaluating learning outcomes

| Learning outcome | Methods of assessment of learning outcomes (e.g. test, oral exam, written exam, project, report, observation during classes) | Learning format (lectures, classes,...) |
|---|---|---|
| LO-01-L0-07 | Tests during classes, Exam | LECT., SEM., EXC. |
| LO-07-L0-14 | Tests during classes, observation | EXC. |

### 4.2 Course assessment criteria

Detailed information on the principles of conducting classes is included in the Faculty Clinical Class Regulations, which each student is required to familiarize themselves with before they begin.

Attendance at classes (in all their forms) is mandatory.

WRITTEN TEST EXAMINATION - 100 QUESTIONS

Test credit

A: Questions from the scope of knowledge to be memorized;

B: Questions from the scope of knowledge to be understood;

C: Solving a typical written task;

D: Solving an atypical written task;

- for insufficient solution of tasks only from area A and B = grade 2.0

- for solving tasks only from area A and B, the maximum grade is 3.0

- for solving tasks from area A + B + C, the maximum grade is 4.0

- for solving tasks from area A + B + C + D, the maximum grade is 5.0

Classes, seminars - credit taking into account the student's knowledge and skills and full participation in classes.

Knowledge assessment:

Assessment criteria:

5.0 – demonstrates knowledge of the educational content at a level of 93%-100%

4.5 – demonstrates knowledge of the educational content at a level of 85%-92%

4.0 – demonstrates knowledge of the educational content at a level of 77%-84%

3.5 – demonstrates knowledge of the educational content at a level of 69%-76%

3.0 – demonstrates knowledge of the educational content at a level of 60%-68%

2.0 – demonstrates knowledge of the educational content below 60%

Skill assessment:

5.0 - the student actively participates in classes, is well prepared, correctly interprets relationships and is able to draw the right conclusions, correctly makes a preliminary diagnosis, proposes diagnostic tests and treatment

4.5 - the student actively participates in classes, with little help from the instructor, correctly interprets occurring phenomena, correctly makes a preliminary diagnosis, proposes diagnostic tests and treatment

4.0 – the student actively participates in classes, with greater help from the instructor, is corrected, is not always able to independently and correctly make a preliminary diagnosis, proposes diagnostic tests and treatment

3.5 – student participates in classes, his/her level of preparation does not allow for a comprehensive presentation of the problem under discussion, without help he/she is unable to independently and correctly make an initial diagnosis, proposes diagnostic tests and treatment

3.0 – student participates in classes, formulates conclusions that require correction by the instructor, but makes minor mistakes, does not fully understand the dependencies and cause-effect connections, makes many mistakes independently making an initial diagnosis, proposes diagnostic tests and treatment, but is able to correct them with the instructor's help

2.0 – student passively participates in classes, his/her statements are substantively incorrect, does not understand the problems, makes an incorrect initial diagnosis, proposes diagnostic tests and treatment, is unable to correct them with the instructor's help

Assessment of social competences:

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| - continuous assessment by the teacher (observation)<br><br>- discussion during classes<br>- opinions of patients, colleagues |

**5. Total student workload needed to achieve the intended learning outcomes – number of hours and ECTS credits**

| Activity | Number of hours |
|---|---|
| Course hours | 45 |
| Other contact hours involving the teacher (consultation hours, examinations) | 3 |
| Non-contact hours - student's own work (preparation for classes or examinations, projects, etc.) | 35 |
| Total number of hours | 83 |
| Total number of ECTS credits | 3 |

* One ECTS point corresponds to 25-30 hours of total student workload

**6. Internships related to the course/module**

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|---|---|
| Number of hours | *NA* |
| Internship regulations and procedures | *NA* |

**7. Instructional materials**

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| Compulsory literature:<br><br>1. Clinical Immunology Robert R. Rich, Thomas A. Fleisher, Harry W. Schroeder Jr., Cornelia M. Weyand, David B. Corry, Jennifer M. PuckElsevier Health Sciences, 2022<br><br>2. All materials provided by teachers. |
| Complementary literature:<br><br>1. Clinical Immunology Andrew Elliott & Lucca CrosbyEdtech Press 2020 |

Approved by the Head of the Department or an authorised person