UNIVERSITY OF WARMIA AND MAZURY IN OLSZTYN

of Medicine

Course/module syllabus - part A

48SJ-IMM
ECTS: 4
YEAR: 2021L

IMMUNOLOGY
IMMUNOLOGY

COURSE CONTENT
CLASSES

LABORATORY CLASSES: Significance of immunity system and basic definition. Antigen - antibody reaction, agglutination and precipitation. Formation of antibodies, monoclonal antibodies and their application. Immunoassay methods - procedure, type of test, application. Flow cytometry. DOTBLOT methods - procedure, application.Western-Blot - procedure, application. Primary and secondary immunodeficiences. Detection of Δ32 bp deletion determined resistance to HIV virus. Resistance to HIV virus - genetics predisposition. SEMINARS: Lyphocytes B and immunoglobulins: structure and functions. Monoclonal antibodies. Development and activation of lyphocytes B. Lymphocytes T: the major histocompatibility system, processing and antigens presentation. Differentation and activation of lymphocytes T, costimulation. Cells and tissues of the immune system, macrophages, dendritic cells, natural killer cells. Immune response: immunogenicity, tolerance, cytokines, helper T lymphocyte, regulatory T lymphocyte, apoptosis, complement system, fagocytosis, cytotoxic T lymphocyte, inflammation. Basic clinical immunology: auto-aggression diseases, hypersensitivity and allergy, transplantation immunology, tumor immunology, immunology of infections, vaccines, immunotherapy.

LECTURES

Introduction to the immune system. Cells and tissues of the immune system. Adaptive immunity. Presentation of antigens to lymphocytes. Antigens recognition. Maturation of lymphocytes, rearrangements genes. Activation of lymphocytes T. Activation of lympocytes B. Innative and adaptive immune response. Humoral immunity. Tolerance. Hypersensitivity. Immunology of infections.Tumor immunology.

EDUCATIONAL OBJECTIVE:

DESCRIPTION OF LEARNING OUTCOMES FOR THE COURSE IN RELATION TO FIELD AND MAJOR LEARNING OUTCOMES

Codes of learning outcomes in a major field of study: M/NM+++,

Codes of learning outcomes in a major area of study: C.U8.+, C.W21.+, C.W22.+, C.W23.+, C.W24.+, C.W25.+, K.4.+,

LEARNING OUTCOMES:

Knowledge

W1 - Student knows basics development mechanisms of immune system, specific and non-specific mechanisms of humoral and cellular immunity.
W2 - Student characterizes the major histocompatibility system and genetic basis of the donor - recipient selection. Student knows the genetic conditions of human blood groups and the serological conflict in the Rh and AB0 systems.
W3 - Student knows the types of hypersensitivity reactions, types of immune deficiencies and basics of immunomodulation.
W4 - Student knows the problems of tumor immunology.

Skills

U1 - Student uses antibody - antigen reaction in actual modifications and techniques for infectious diseasses, allergies, autoimmune diseasses, blood and tumor diseasses diagnosis.

Social competence

K1 - Student understands the need of systematic studying the knowledge progress and scientific findings in immunology, which as a basic science provides a background necessary for understanding other subjects of studies.

BASIC LITERATURE

1) Abbas A. K. et al., 1) Abbas A. K., Lichtman A. H., Pillai S., "Basic immunology: functions and disorders of the immune system", fourth edition, Elsevier Saunders. , wyd. Elsevier Saunders, 2018

SUPPLEMENTARY LITERATURE

1) Abbas A. K. et al., Basic immunology: functions and disorders of the immune system, wyd. Elsevier Saunders, 2014

Course/module:
Immunology

Fields of education:

Course status: mandatory

Course group: A - przedmioty podstawowe

ECTS code:

Field of study: Medicine

Specialty area: Medicine

Educational profile: General academic

Form of study: full-time

Level of study: uniform master's studies

Year/semester: 2 / 4

Type of course:
Classes, Seminar, Lecture

Number of hours per semester/week: Classes: 30, Seminar: 10, Lecture: 20

Teaching forms and methods
Classes(K1, W2, W3, W4) : Laboratory classes, Seminar(U1, W1, W2) : Lectures with the presentations, Lecture(W1) : presentation, preparation of the discussed issues, discussion

Form and terms of the verification results:
CLASSES: Written test - Written test to see how well students are prepared for laboratory classes..(null) ; CLASSES: Written test - A score point of the work sheets, checking the acquired skills and knowledge in the field of scientific publication, provided by the teacher before the laboratory classes.(null) ; SEMINAR: Written exam - Students who miss more than 40% of lectures are required to write a test based on the content of the lectures missed. Written exam (multiple matching test, multiple-choice test) containing 25 questions. 60% to pass.(K1, U1, W1, W2, W3, W4) ; LECTURE: Colloquium test - Point score of the student's presentation.(null) ; LECTURE: Prezentation - Written colloquium to see how well students are prepared for each seminar classes.(null)

Number of ECTS points: 4

Language of instruction: English

Introductory courses:

Preliminary requirements:

Name of the organizational unit offering the course:
Katedra Fizjologii i Patofizjologii Człowieka,

Person in charge of the course:
mgr Tomasz Antonowski,

Course coordinators:

Notes:

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The awarded number of ECTS points is composed of:

1. Contact hours with the academic teacher:

- participation in: classes	30 h.
- participation in: seminar	10 h.
- participation in: lecture	20 h.
- consultation	5 h.
	65 h.

2. Student's independent work:

- preparation for final exam	10 h.
- preparation for laboratory classes	15 h.
- preparation for seminar classes	5 h.
- preparation for short tests	5 h.
	35 h.

1 ECTS point = 25-30 h of the average student's work, number of ECTS points = 100 h : 25 h/ECTS = 4,00 ECTS
on average: **4 ECTS**

- including the number of ECTS points for contact hours with direct participation of the academic teacher: 2,60 ECTS points,
- including the number of ECTS points for hours completed in the form of the student's independent work: 1,40 ECTS points,