SZKOŁA GŁÓWNA GOSPODARSTWA WIEJSKIEGO

Fundamentals of immunopathology

Educational subject description sheet

Basic information

Field of study Biotechnology **Speciality** - **Organizational unit** Faculty of Biology and Biotechnology **Study level** first cycle (engineering degree) **Study form** full-time studies **Education profile** General academic	**Didactic cycle** 2024/25 **Subject code** BBTBTjS_D.320.01624.24 **Lecture languages** english **Mandatory** Elective subjects **Block** Major subjects **Disciplines** Biological sciences

Coordinator	Magdalena Żmigrodzka, Anna Winnicka
Teacher	Magdalena Żmigrodzka, Anna Winnicka

Period	**Examination**	**Number of ECTS points**
Semester 6	Exam **Activities and hours** Lecture: 15 Laboratory exercises: 30	4

Goals

Code	Goal
C1	Introduction to immunopathology, including the development of mechanisms of hypersensitivity and auto-aggressive diseases. Presentation methods of their recognition and the basics of pharmacotherapy. Demonstration processes the most common disorders in humans and animals.

Entry requirements

Fundamentals of immunology

Subject's learning outcomes

Code	Outcomes in terms of	Effects	Examination methods
Knowledge – Student knows and understands:			
W1	the hypersensitivity and auto-aggressive mechanisms	BTj_K3_W10	Written exam, Presentation
W2	the principles of the selection of immunopathology techniques	BTj_K3_W07_inz	Written exam, Presentation
Skills – Student can:			
U1	search the information from various sources and can use originally scientific facts to achieve the assumed goal	BTj_K3_U04_inz, BTj_K3_U19, BTj_K3_U22	Presentation
U2	improve diagnostic and therapeutic methods in clinical immunology	BTj_K3_U01_inz, BTj_K3_U04_inz	Presentation
Social competences – Student is ready to:			
K1	constantly update own knowledge and develop the skills needed in practice	BTj_K3_K02	Presentation

Study content

No.	Course content	Subject's learning outcomes	Activities
1.	Hypersensitivity classification. Mechanisms of development of diseases with hypersensitivity and autoimmunity. Selected diseases from type I, II-IV hypersensitivity in animals. Chosen autoimmune diseases in animals. Hypersensitivity and auto-aggressive diseases pharmacotherapy. Fundamental immune mechanisms of cancer. The role of extracellular vesicles in the immune response.	W1, W2	Lecture
2.	Changes in complete blood count (CBC) and blood smears c in patients with immunological diseases. Hemolytic anemia. Inflammatory bowel diseases. Skin autoimmune diseases. Atopic dermatitis. Food allergies and contact hypersensitivity. Laboratory animal models in research on selected immunological diseases.	U1, U2, K1	Laboratory exercises

Course advanced

Activities	Methods of conducting classes
Lecture	Lecture, Presentation
Laboratory exercises	Presentation, Problem solving

Activities	Examination method	Percentage
Lecture	Written exam	75%
Laboratory exercises	Presentation	25%

Activities	Credit conditions
Lecture	maximum 25 points; 13 points required to pass
Laboratory exercises	maximum 8 points; 5 points required to pass

Literature

Obligatory

1. Veterinary Immunology, 10th edition; Author: Ian R Tizard
2. Clinical Immunology of the Dog and Cat; Author: Michael J Day
3. Robbins Basic Pathology, 10th Edition

Optional

1. Veterinary Hematology, 1st Edition Author: John W. Harvey
2. Laboratory Animal Medicine (American College of Laboratory Animal Medicine) 3rd; Authors: James G. Fox, Lynn C. Anderson, Glen Otto et al.
3. Cowell and Tyler's Diagnostic Cytology and Hematology of the Dog and Cat; Author: Valenciano Amy C.
4. Allergic and Immunologic Diseases; Author: Hertl Michael
5. online articles with free access from peer-reviewed journals

Calculation of ECTS points

Activity form	Activity hours*
Lecture	15
Laboratory exercises	30
Preparation for the exam	35
Preparation for exercises	5
Preparation of a multimedia presentation	15
Student workload	**Hours** 100
Number of ECTS points	**ECTS** 4

* hour means 45 minutes

Effects

Code	Content
BTj_K3_K02	The graduate is ready to development and application of one’s skills in practice (including communication, teamwork), which enable effective lifelong learning with respect to biological sciences;
BTj_K3_U01_inz	The graduate can utilise proper techniques and knowledge related to biotechnology in practice, under the care of a supervisor;
BTj_K3_U04_inz	The graduate can present and discuss key principles of scientific interdisciplinary bases, as well as a multidisciplinary approach to the processes and mechanisms of life;
BTj_K3_U19	The graduate can use a foreign language in speech and in writing within the scope of fields of science and scientific disciplines proper for the field of biotechnology, according to the requirements defined for level B2 of the Common European Framework of Reference for Languages;
BTj_K3_U22	The graduate can find and assess information from various sources, including from original research, and present in a well organised manner (e.g. essays, reports and laboratory reports);
BTj_K3_W07_inz	The graduate knows and understands experimental methods serving the examination of important areas in the field of biotechnology, chemistry, biochemistry, biophysics, molecular biology and the related sciences;
BTj_K3_W10	The graduate knows and understands terms, principles and theories related to processes and mechanisms which have shaped the world of nature, knowing how they can be used efficiently;