



Cell biology

ECTS: 2.50

SUBJECT MATTER CONTENT

TEACHING OBJECTIVE

The aim of the course is to provide students with knowledge about: organisation of biological membranes, transport via membranes, structure and function of organelles, cytoskeleton, cell cycle, differentiation and aging of cells, stem cells.

DESCRIPTION OF THE LEARNING OUTCOMES OF THE COURSE IN RELATION TO THE DESCRIPTION OF THE CHARACTERISTICS OF THE SECOND LEVEL LEARNING OUTCOMES FOR QUALIFICATIONS AT LEVELS 6-8 OF THE POLISH QUALIFICATION FRAMEWORK IN RELATION TO THE SCIENTIFIC DISCIPLINES AND THE EFFECTS FOR FIELDS OF STUDY:

Symbols for outcomes related to the discipline:

R/WA_P7S+++

Symbols for outcomes related to the field of study:

A.W4. +, A.U8. +, A.U21. +, K.4.+, A.W1. +, K.5+, K.8.+

LEARNING OUTCOMES:

Knowledge:

W1 – Student recognizes ultrastructural elements of animal cells in electron microscopy images. He can describe the functions of these structures and show the relationship between the ultrastructure, number of organelles and cell function.

Skills:

U1 – Student understands the principles of optical and electron microscopy. Can name different types of optical and electron microscopes. Can describe the basic research methods carried out on cells (cytochemistry, immunocytochemistry, in vitro cell culture) and techniques for preparing cells and tissues for microscopic examination (paraffin, freezing and embedding in resin techniques). Understands the need for further education in order to improve his professional competences.

Social competence:

K1 – Student has a habit of continually deepening knowledge and improving skills using objective sources of information and is able to formulate conclusions from his own observations. Demonstrates understanding of the need and necessity of lifelong learning for continuous professional development.

TEACHING FORMS AND METHODS:

Lecture(W1;U1;K1):Information lecture with multimedia presentation.

Practical classes(W1;U1;K1):Practical - work with the use of a light microscope - construction of animal cells, methods of cell visualization, images of selected processes taking place in cells. Methodical tasks. Electronograms analysis. Demonstration:

Legal acts specifying learning outcomes:
682/2020
Disciplines: Veterinary science
Status of the course:Obligatoryjny
Group of courses:A - przedmioty podstawowe
Code: ISCED 0841
Field of study:Veterinary Medicine
Scope of education:
Profile of education: General academic
Form of studies: full-time
Level of studies: uniform master's studies
Year/semester: 1/1

Types of classes: Lecture, Practical classes
Number of hours in semester:Lecture: 15.00, Practical classes: 15.00
Language of instruction:Polish
Introductory subject: Biology, Chemistry
Prerequisites: Knowledge of the cell structure and functions basics

Name of the organisational unit conducting the course:Katedra Histologii i Embriologii
Person responsible for the realization of the course:prof. dr hab. wet. Bogdan Lewczuk
e-mail: lewczukb@uwm.edu.pl

Additional remarks:

transmission and scanning electron microscope; specialized light microscopes; morphological research laboratory - technique of making microscopic slides and apparatus. Observation of preparations and electronograms.

FORM AND CONDITIONS OF VERIFYING LEARNING OUTCOMES:

Lecture (Written exam) - Student answers to questions related to the material presented during lectures and classes. In the case of on-line classes, the written exam takes the form of a test at moodle.uwm.edu.pl -

Practical classes (Written test) - Test of of knowledge presented during the classes. In the case of on-line classes, the written test takes place at moodle.uwm.edu.pl -

BASIC LITERATURE:

1. Kilarski W., *Strukturalne podstawy biologii komórki*, Tom I, Wyd. PWN W-wa, R. 2013
2. Alberts B. i współ., *Podstawy biologii komórki*, Tom II, Wyd. PWN W-wa, R. 2015

SUPPLEMENTARY LITERATURE:

1. Kłyszajko-Stefanowicz L., *Cytobiochemia*, Wyd. PWN, R. 2018
2. Kawiak J., Zabel M., *Seminaria z cytofizjologii*, Tom I, Wyd. Urban and Partner, R. 2018

