



## Histology and embryology I

ECTS: 4.00

### SUBJECT MATTER CONTENT

#### TEACHING OBJECTIVE

The aim of the course is to enable the student to understand: 1) the structure of animal body at the level of light and electron microscopy, 2) the correlations between histological structure of the organ and its function, 3) the embryological development in birds and mammals. This course is an introduction to subsequent courses on the higher levels of veterinary faculty and allow the student to obtain an integrated knowledge about structure and function of the animal organism.

#### 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.U8. +++, A.W4. +, K.8.+ , A.W1. +

#### LEARNING OUTCOMES:

##### Knowledge:

W1 – Student knows and describes structures of healthy animal organism: cells, tissues and organs at the level of light and electron microscopy. Student knows and is able to characterize processes occurring in tissues and cells e.g. osteogenesis, keratinization, contraction mechanism. Student is able to define role of specific cells in healthy tissues and organs.

##### Skills:

U1 – Student is able to identify all kinds of animal tissues and most of mammalian and avian organs under the light microscope. Student is also able to name and indicate structures forming the organs (layers, tissues, cells) on microscopic images.

U2 – Student uses diagnostic equipment – is able to operate an optical microscope and computer software for analysis of digital images of histological sections.

U3 – Student uses the medical terminology in the field of histology.

##### Social competence:

K1 – Student has the habit of constant development of knowledge and improvement of the skills.

#### TEACHING FORMS AND METHODS:

Lecture(W1;U1;U3;K1);Lecture with multimedia presentation.

**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: 30.00  
**Language of instruction:**Polish  
**Introductory subject:** Cell biology  
**Prerequisites:** Participation in "Cell biology course" (without the need to receive a credit for a class).

**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:**

Practical classes(W1;U1;U2;U3;K1):Observation of histological slides with the use of light microscope and computer software.

### **FORM AND CONDITIONS OF VERIFYING LEARNING OUTCOMES:**

Lecture (Oral test) - The knowledge of lecture material is verified in the tests performed during classes. -

Practical classes (Colloquium practical) - Identification of histological slides with the use of light microscope as well as indication and description of cells, tissues, layers, etc. on virtual slides. -

Practical classes (Oral test) - Student answers questions about the material presented on lectures and classes as well as about the issues dedicated to oneself preparation -

### **BASIC LITERATURE:**

1. Zabel M., *Histologia*, Wyd. Edra Urban Partner, Wrocław, R. 2013
2. Junqueira LC, Carneir J, *Basic Histology, text and atlas*, Wyd. wyd. McGraw-Hill, R. 2013
3. Cichocki T., Litwin J., Mirecka J., *Kompendium Histologii*, Wyd. Wydawnictwo Uniwersytetu Jagiellońskiego, Kraków, R. 2016
4. Gartner LP, Hiatt JL, Strum JM, *Cell Biology and Histology*, Wyd. wyd. Harwal Publishing, R. 2011
5. Gartner L.P., Hiatt J.L., *Color Textbook of Histology*, Wyd. wyd. W.B. Saunders Company, R. 2008
6. Ostrowski K.(red.), *Histologia*, Wyd. PZWL Warszawa, R. 1995
7. Kuryszko J., Zarzycki J., *Anatomia mikroskopowa zwierząt domowych i człowieka*, Wyd. PWN Warszawa, R. 1995

### **SUPPLEMENTARY LITERATURE:**

1. Bielańska-Osuchowska Z., *Embriologia*, Wyd. PWRiL, Warszawa, R. 2001
2. Jura C., Klag J., *Podstawy embriologii zwierząt i człowieka*, Tom 1-2, Wyd. PWN, Warszawa, R. 1994
3. Stevens A., Lowe J., (w tłumaczeniu M. Zabła), *Histologia człowieka*, Wyd. Wydawnictwo Medyczne Słotwiński Verlag, Brema, R. 1994
4. Banks W. J., *Applied veterinary histology*, Wyd. Mosby-Year Book, St. Louis, R. 1993
5. Dellmann H.D., Eurell J.A., *Textbook of Veterinary Histology*, Wyd. Wiley, John Sons, USA, R. 1998
6. Samuelson D.A., *Textbook of Veterinary Histology*, Wyd. W.B. Saunders Company, Philadelphia, R. 2007