Code of subject	M_WE_SEM2 HE 2 ANG
Field of study	Veterinary
Name of the training module including the Polish name	Histology and embryology 2
	Histologia i embriologia 2
Language of instruction	English
Type of the training module	Mandatory
Level of the training module	Long-cycle master's degree studies
Form of studies	Full-time
Location in the programme (year)	I
Location in the programme (semester)	2
Number of ECTS credits with a division into contact/noncontact	4 (2,5/ 1,5)
Name and surname of the person in charge	dr Karol Rycerz
Unit offering the subject	Department of Animal Histology and Embryology
Aim of the module	The aim of the subject is to: 1) familiarize students with the microscopic structure of animals' organs involved in the formation of systems and the differences depending on the function and animal species; 2) mastering the skills of microscopic analysis of animals' organs; 3) acquainting students with embryonic development of birds and mammals, structure and classification of mammalian placenta. The content of the module provides an introduction to other subjects necessary for theoretical knowledge and clinical practice.
Learning outcomes – the total number of learning outcomes may not exceed (4-8) for the module. The description of the intended learning outcomes that a student should achieve after the completion of the module should be provided. The outcomes for all forms of classes used should be presented.	Knowledge:
	K1. knows the microscopic structure of organs of individual systems (cardiovascular, lymphatic, digestive, respiratory, urinary, male and female reproductive systems, endocrine system and common integument) in the organisms of animals of various species and characterizes the relationship between organ structures and their functions.
	K2. knows and describes the stages of embryonic development of birds and mammals as well as knows and describes the classification and structure of mammalian placenta.
	K3. knows terminology in the field of histology and embryology.
	Skills:
	S1 is able to use of microscopic equipment in order to recognize the microscopic structure of animal tissues
	S2. uses medical nomenclature in the field of histology and embryology
	S3. understands the necessity of lifelong learning in the field of histology and embryology
	Social competence:
	C1 has a habit of constantly expanding knowledge in the field of histology and embryology and improving skills

Preliminary and additional requirements	Histology and embryology 1
Contents of the training module – a compact description	The subject is conducted in the form of lectures and classes. The topics of the lectures include familiarisation with: foetal membranes in birds and mammals, implantation, pre-implantation and post-implantation development of mammals, the mechanisms of embryonic development, classification and structure of the placenta, functions of the placenta, pig's, horse's, ruminant's and carnivorous' placenta, Practical applications of embryology. It also includes repetition of histological slides. The topics of the classes include familiarisation with: microscopic structure of the cardio-vascular system (arteries, veins, capillaries), lymphatic system (lymph node, spleen, thymus, bursa Fabrici), alimentary system (oral cavity, large salivary glands, oesophagus ruminants' forestomaches, bird's stomachs and the proper stomach of a mammal, small and large intestines, liver and pancreas), respiratory system (nasal cavity, trachea, bronchi, lung), urinary system (kidney, ureter), male reproductive system (testicle with epididymis, vas deferens, penis), female reproductive system (ovary , fallopian tube, uterus), endocrine glands (pituitary gland, adrenal glands, thyroid gland), common integument (skin, hair, hoof, mammary gland).
Recommended and obligatory reading list	1. Samuelson, Don A. Textbook of veterinary histology. St. Louis : Saunders Elsevier, cop. 2007. 2. Dellmann H., Brown E.M. Textobook of veterinary histology. Philadelphia : Lea & Febiger, 1981. 3. McGeady T.A., Quinn P.J., et. al. Veterinary embryology. Wiley Blackwell, 2017. 4. Hyttel P., Sinowatz F., Vejlsted M. Essentials of domestic animal embryology. Edinburgh [etc.] : Saunders Elsevier, 2016
The intended forms/activities/ teaching methods	Lectures: multimedia presentations prepared by employees of the Department of Histology and Embryology, Classes: multimedia presentations prepared by employees of the Department of Histology and Embryology, microscopic analysis of histological preparations, discussion, showcases with slides, website of the Department, oral and test repetitions, student's own work documented with figures in exercise books, Oral individual or group consultations conducted outside the planned classes.
Methods of verification and documentation forms of the achieved learning outcomes	Knowledge: - An oral test of the theoretical preparation for the subject of the classes is conducted during the classes. - In the semester there are 4 partial tests (15 questions) in the form of a single-choice test. Criteria for evaluating a test: 15 correct answers - 5.0 14 correct answers - 4.0 12-13 correct answers - 3.0

<table>
<tr><td></td><td>11 and below - 2.0
The student has to 2 retake dates. Unexcused absence is tantamount to the loss of this term.
Final examination in Histology and Embryology is in the form of a single-choice test (50 questions).
Criteria for evaluating an exam test:
48-50 correct answers - 5.0
44-47 correct answers - 4.5
39-43 correct answers - 4.0
36-38 correct answers - 3.5
30-35 correct answers - 3.0
29 and below correct answers - 2.0
The student has 2 retake dates. Unexcused absence is tantamount to the loss of this term.
Skills:
Assessment of students' independent work and drawings of histological preparations drawn in exercise books and a discussion.
Practical test: recognizing tissues and organs in 3 histological slides under a light microscope and describing the structure of at least 2 preparations selected by an academic teacher.
Assessment criteria:
- recognition of 3 slides and description of 2 - 5.0
- recognition of 2 slides and description of 2 - 4.0
- recognition of 2 or 3 slides and description of 1 - 3.0
- lack of recognition of 2 or 3 slides and / or no description of at least 1 of them - 2.0
The student has 2 retake dates. Unexcused absence is tantamount to the loss of this term.
Social competences: There is a discussion during the exercises.</td></tr>
<tr><td>Balance of ECTS credits</td><td>
<table>
<tr><td>Form</td><td>Contact hours</td><td>ECTS</td></tr>
<tr><td>Lectures
Classes
Consultations
Exam</td><td>30
30
3
3</td><td>1,2
1,2
0,1
0,1</td></tr>
<tr><td></td><td>Non-contact hours</td><td></td></tr>
<tr><td>Preparation to auditory and laboratory classes
Preparation to tests
Preparation to exam</td><td>10
15

15</td><td>0,3
0,6

0,6</td></tr>
<tr><td>Sum</td><td>106</td><td>4</td></tr>
</table>
</td></tr>
<tr><td>Number of contact hours</td><td>- participation in lectures - 30 hours
- participation in auditorium and laboratory classes - 30 hours
- participation in consultations related to the preparation for passing and exam - 3 hours
- presence at the exam - 3 hours</td></tr>
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Relationship between subject learning outcomes and veterinary studies learning outcomes	K1 – A.W1. +++, A.W2. +++ K2 – A.W3. +++ K3 – A.W20. ++ S1 – A.U8. +++ S2 – A.U21. ++ C1 – K5) ++ C2 – K8) ++
Impact of selected compounds to final grade	Elements and weights influencing the grade of the subject in 2 semester (100%) - average of tests grades (ATG) - 75% - practical test grade (PTG) - 20% - oral test grade (OTG) - 5% Calculation of the final grade (SG2) for the subject in 2 semester: SG2 = (0.75x ATG) + (0.2x PTG) + (0.05x OTG) Elements and weights influencing the final grade in Histology and Embryology (100%) - grade from 1 semester (SG1) - 15% - grade from 2 semester (SG2) - 20% - exam grade (EG) - 65% Calculation of the final grade (FG) for the subject: FG = (0.15x SG1) + (0.2x SG2) + (0.65x EG)