Module code	M_WE_SEM3 PW 1B/2B CHGEN
Field(s) of study	Veterinary medicine
Education module name	Animal genetic diseases Choroby genetyczne
Language of instruction	English
Type of education module	Elective
Level of education module	Long-cycle master's degree studies
Form of study	Full-time
Year of study in the field of study	II
Semester of study in the field of study	3
ECTS credits, divided into contact/non-contact hours	1 (0,72/0,28)
Full name of authorised person - academic degree	Dr hab. Urszula Kosior-Korzecka, Professor of the University
Co-teachers	Lek. wet. Natalia Szysiak
Unit teaching the course	Department of Pathophysiology, Department of Preclinical Veterinary Sciences, Faculty of Veterinary Medicine
Module objective	This module aims to 1. familiarise students with aetiology and pathogenesis of the most common genetic diseases in companion animals, farm animals and horses; 2. familiarise students with the genetic basis of selected metabolic, endocrine, and cancer diseases, as well as with exemplary gene therapies in animals.
Learning outcomes	Knowledge:
	Student: K1. Knows and understands the molecular mechanisms that are responsible for genetic diseases; K2. knows selected, genetically determined, metabolic, endocrine, cardiovascular, hematologic and neurologic diseases in farm and companion animals; K3. knows the molecular methods of diagnosis of genetic diseases and the principles of causal gene therapy.
	Skills:
	Student: S1. can use the knowledge of aetiology and pathogenesis of selected genetic diseases in the selection of appropriate methods of their diagnosis and (if possible) therapy; S2. is able to analyse and interpret the results of laboratory tests for the diagnosis of animal genetic diseases; S3. can analyse and estimate disease risk based on knowledge of the aetiology and inheritance effects of selected animal genetic diseases.

	Social competences:
	Student: C1. Is willing to learn and improve their own skills throughout their life due to continuous advances in the biomedical sciences; C2. Is willing to work as part of a team, to collaborate and complete assigned tasks.
Verification methods and ways of documenting the achieved learning outcomes	K - answers to the questions during the practical classes, final written assessment S - evaluation of performed practical exercises, evaluation of protocols from practical classes, answers to questions during classes, written colloquium C - participation in discussion, written colloquium Proper completion of the practical classes provided in the schedule is a requirement for the final colloquium. Forms of documenting the achieved learning outcomes: written colloquia
Elements and values affecting final grade	The course final grade consists of: 1. grade for the completion of practical classes (30%) 2. grade for the colloquium (70%).
Prerequisites and additional requirements	----
Education module content	PRACTICAL CLASSES Pathomechanisms of epigenetic disorders in animals. Uniparental disomy and genomic imprinting. Diseases determined by structural and numerical chromosomal mutations in animals. Recessive and dominant genetic diseases in animals caused by autosomal gene mutations. Autosomal diseases associated with incomplete dominance. Monogenic sex-linked diseases in animals. Aetiology and pathomechanisms of selected genetic diseases in cattle and horses. Aetiology and pathomechanisms of selected genetic diseases in cats and dogs. Aetiology and pathomechanisms of genetic diseases in pigs, sheep and goats. Hereditary immunodeficiencies and the genetic control of disease resistance in animals. Genetic basis of tumorigenesis. Therapy of genetically determined diseases. Transgenic animals as models of genetic diseases found in humans.
Recommended reading list or required reading	Lecture and class notes; Fries R., Ruvinsky A. The genetics of cattle. Pawlowitzki I. H.,Edwards J. H., Thompson E.A. Genetic mapping of disease genes. Scientific papers

Planned forms/activities/teaching methods	Laboratory classes and recitation section, multimedia presentations, practical classes, experiments, demonstrations, discussion.		
ECTS credits	CONTACT HOURS		
		Hours	ECTS credits
	practical classes	15	0.6
	Consultations	2	0.08
	colloquium in practical classes	1	0.04
	TOTAL contact hours	18	0.72
	NON-CONTACT HOURS		
	preparation for classes	1	0.04
	literature study	3	0.12
	preparation for the exam/credit test	3	0.12
	TOTAL non-contact hours	7	0.28
Workload associated with practical activities:	attendance at practical classes	15	0.6
	preparation for classes	1	0.04
	participation in consultations	2	0.08
	written credit for practical classes	1	0.04
	preparation for and participation in the exam	3	0.12
	TOTAL of practical character	22	0.88
Degree of achievement of directional outcomes:	K1 – A.W14+++ A.W10++ K2 – A.W14++ A.W10++ K3 – A.W14+ A.W11++ S1 – A.U4+ S2 – B.U6+ S3 – A.U9+ C1 – K8+++ C2 – K9++		