

Module title:	Ultrasound diagnostics of the reproductive tract in farm animals	ECTS	2
Polish translation:	Diagnostyka ultrasonograficzna układu rozrodczego u zwierząt gospodarskich		
Course:	Veterinary Medicine		

Module language: English		Stage: JM-FVM	
Form of studies: ☒ intramural ☐ extramural	Type of module: ☐ basic ☐ mandatory ☒ directional ☒ elective	Semester: 11	☒ winter semester ☐ summer semester
Academic year:		Intake 2021/2022	Catalogue number: FVM-V-JMSS-11W-ED10_20

Module coordinator:	dr hab. Bartosz Pawliński, prof. SGGW			
Teachers responsible for the module:	Academic teachers of the Faculty of Veterinary Medicine; Department of Large Animal Diseases with Clinic; PhD students in accordance to the internal legal acts; visiting professors; other specialists in the field of study			
Assumptions, Goals, and Course Description	Program consists of lectures and practical exercises from farm animal reproduction ultrasound diagnostics. Lectures include theoretical explanation of ultrasound imaging technics in physiology and pathology of female reproductive tract in farm animals. Classes include using ultrasound to diagnose physiological and pathological status of reproductive organs of farm animals. Isolated organs will be used. During field workshops students will be using ultrasound for clinical diagnosis of reproductive tract in living farm animals. During the course students gain knowledge and practical abilities			
Teaching forms, number of hours:	a) Lectures: 5 h b) Clinical exercises: 25 h			
Teaching methods:	Oral presentation with audio-visual techniques e.g. videos, 3D animated visualization or other multimedia presentation types with practical training on isolated organs and phantoms. Training in the diagnosis and therapy of diseases in slaughter-house and field clinics. Detailed schedule will be defined by the coordinator of the course at the beginning of semester. Detailed organization of consultations will be defined by the coordinator of the course at the beginning of semester.			
Formal prerequisites and initial requirements:	Farm animals diseases course			
Learning effects	Course outcomes:		Learning outcomes relative to the course outcomes	Impact on the course outcomes*
Knowledge:	1	The student follows the rules of clinical evaluation and animal health monitoring;	B.W.5	3
	2	The student correctly assesses conditions of animal welfare;	B.W.9	3
	3	Students knows the principles of conducting clinical trials and monitoring the health status of farm animals	B.W.4, B.W.5, B.W.6, C.W.3	3
Skills:	1	ability to choose a proper USG equipment	K_KP5, U_PUZ7, U_PUZ13	3
	2	basic and detailed clinical examination of the reproductive tract both manually and by ultrasound	U_PUZ1, U_PUZ2, U_PUZ3, K_KP2	3
	3	ability to interpret USG images presenting normal ovaries and uterus	U_PUZ7	3
	4	ability to interpret USG images presenting pathologic status of ovaries and uterus	U_PUZ7	3
Competences:	1	Student critically analyzes the results of research and is ready to use them for diagnostics, treatment and eradication of diseases of farm animals	K.S.4, K.S.5, K.S.7	3
	2	The student is ready to work in a team; Good communication with the animal owner / keeper	KS.3; KS.10	3
	3	Independently makes clinical diagnosis	KS.4; KS.5	3

Objectives of the module required to obtain learning effects:		Clinical classes include elements of ultrasound technique in relation to the physiology and pathology of the female reproductive system of farm animals. Clinical exercises include clinical assessment on isolated organs of physiological and pathological conditions of the reproductive system of farm animals using the method of ultrasound. During the course, students learn about the principles of ultrasound, construction of ultrasound equipment , selection of the appropriate probe for the test , the principle of ultrasound examination of the reproductive system in farm animals, standards ultrasound examination in relation to the reproductive system, interpretation of sonograms, interpretation of artefacts clinical exercises. Examination of the bovine reproductive system (ovaries and uterus) on isolated organs ; Examination of the pig's reproductive tract (ovaries and uterus) on isolated organs ; Ultrasound clinical examination of the reproductive system in farm animals, clinical case analysis and management - fieldwork.		
Assessment methods:		The basis for passing the elective is attendance and active participation in the implementation of the curriculum, the correct implementation of all techniques presented. Knowledge of the theoretical basis in relation to physiology and pathophysiology of the reproductive system of farm animals In case of unforeseen, unusual circumstances mandatory remote teaching and remote assessment methods might be adopted.		
Detail description of assessment methods;		Theoretical test, written one or multiple choice test. The second test date is in the same form.		
Formal documentation of learning outcome:		Scoring for the written test: 61-69% - (3.0) 70-76% - (3.5) 77-84% - (4.0) 85-92% - (4.5) 93-100% - (5.0) No extra assessment methods are anticipated. eHMS entry. Records collected in the course portfolio i.e. individual records of student results, presence lists, database of oral and written questions, written assessments of the students.		
Elements impelling final grade:		To verify the learning outcomes: 1. attendance at exercises 50% 2. exam grade 50%.		
Teaching base:				
Mandatory and supportive materials :				
Textbooks:				
1. Large Animal Theriogenology. R.F. Youngquist, W.L. Threlfall. 2nd ed. Saunders, Elsevier. 2007				
2. Wolfgang Kähn, Dietrich Volkmann, Robert Kenney Veterinary Reproductive Ultrasonography , 2004				
3. M.A.M. Taverne, A.H. Willemse Diagnostic Ultrasound and Animal Reproduction 2013				
Journals:				
Theriogenology, Animal Reproduction Science, Reproduction of Domestic Animals, Biology of Reproduction, Reproduction, Molecular Reproduction and Development, Reproductive Biology, Cloning, Archives of Andrology, International Journal of Andrology, Life Veterinary, Veterinary MedicineRelevant scientific publications including those of the module coordinator.				
ANNOTATIONS				
During clinical and laboratory classes, protective clothing is required: apron and covered footwear. The necessary condition for participation in classes is the possession of accident insurance (in Polish: Ubezpieczenie NNW).				

* 3 – complete and detailed, 2 – moderate, 1 – basic.

Quantitative summary of the module:

Estimated number of work hours per student (contact and self-study) essential to achieve presumed learning outcomes of the module - base for quantifying ECTS:	50 h
Total ECTS points, accumulated by students during contact learning:	1 ECTS