Module title:	Rotation large animal diseases- reproduction	**ECTS**	**3**
Polish translation:	Staż choroby zwierząt gospodarskich - rozród		
Course:	**Veterinary Medicine**		

Module language: English			Stage: JM-FVM	
Form of studies: ☒ intramural ☐ extramural	Type of module: ☐ basic ☒ directional	☒ mandatory ☐ elective	Semester: 10	☐ winter semester ☒ summer semester
Academic year:	**2020/2021**		Catalogue number:	**FVM-V-JMSS-10S-D26/3_20**

Module coordinator:	dr Michał Trela
Teachers responsible for the module:	Academic teachers of the Institute of Veterinary Medicine; Department of Large Animal Disease and Clinic; PhD students in accordance to the internal legal acts; visiting professors; other specialists in the field of study
Unit responsible for the module:	Institute of Veterinary Medicine, Department of Small Animal Diseases and Clinic
Faculty in charge:	Faculty of Veterinary Medicine
Objectives of the module:	The course will provide the knowledge of the specificity of equine reproduction in comparison to other animal species. Content of the curriculum will be implemented in two groups of issues: 1) physiology of reproduction, 2) pathology of reproduction and obstetrics. The program is conducted in the form of practical training. Topics of practical training include diagnostics of estrous cycle phases, pregnancy detection, physical examination, complementary diagnostic methods used in gynaecology and obstetrics, contraception (including gonadectomy), identification of the causes of infertility, basic therapeutic methods and procedures, surgical treatment in gynaecology, obstetrics and diseases of mammary gland.
Teaching forms, number of hours:	a) Clinical classes 50 hours
Teaching methods:	• Methods aimed on teaching practical skills: • - review medical history, • - perform a thorough physical examination, • - select diagnostic and therapeutic procedure, • - collect and interpret laboratory data, • - perform basic surgery procedures and anaesthesia protocols • - choose the right treatment and follow-up protocol • Consultations (1h/week) The internship takes place in horse clinic and in the farms and horse studs The internship takes place in horse clinic and farms. During internship students actively participate (under the supervision of academic teacher) in current veterinary procedures, execute clinical examination with the focus on reproductive tract, use appropriate instruments and utensils, apply proper methods to diagnose pregnancy both clinically (manually, ultrasonography) and with laboratory methods, recognise physiological and pathological conditions of reproductive tract organs in the aspect of postpartum period and oestrus cycle phase and propose treatment strategies of those conditions, analyse causes of infertility and reproductive disorders in stud, asses reproduction efficiency indicators (insemination index, interpregnancy period, fertility, fecundity) and propose solutions to increase reproduction efficiency, gain practical skills in oestrus detection, oestrus cycle control, define ideal time for insemination, withdraw appropriate biological material for clinical and laboratory diagnostics. During the practice students: perform general and detailed diagnostics of horse diseases using fast, field diagnostic tests, identify pathological disorders with special inclusion of diagnostic period, analyse the causes of internal diseases and herds health disorders and apply adequate treatment; gain practical skills in disease identification field and herds health management, performing basic treatments and taking samples for laboratory examination. Students take care and feed the sick animals. Clinically examine horses with diseases requiring surgery treatment. With existing indications for additional examinations participate in it (X-rays, ultrasound and endoscopy). Analyse the results and put the initial diagnosis. Learn the operating room equipment. Participate in the preparations for the operation (patient preparation, surgical tools, surgical team and the surgical field). They learn how it is built equipment for inhalation isoflurane anaesthesia and assist in the conduct of general anaesthesia, assist during the operation and carry out activities relating to the treatment after surgery. Each student is required to write the history of the disease of one patient. Course is giving students the opportunity to have a direct contact with a patient and its owner. Learning how to conduct epizootic investigation – interview, preparing the protocol, implementing an official anti-epizootic procedures. Learning the rules for anti-epizootic protection of animal herds. Learning the skill of herd inspection. Procedures performed on animals by students individually – vaccinations, injections, collection,

	storage and transport of the material for laboratory tests. Proper interpretation of tests. Knowledge of prophylactic programs for domestic animals and livestock. Principles of using biopreparations (sera, vaccines) and chemotherapeutics in animals. Herd management. Bio-security. Operational plans. Detailed schedule of the classes and detailed organization of consultations will be defined by the coordinator of the course at the beginning of semester.		
Formal prerequisites and initial requirements:	Passing the courses: Animal anatomy, Animal physiology, Veterinary pharmacology, Pathomorphology, Diagnostic imaging, Veterinary microbiology, Animal pathophysiology, Clinical and laboratory diagnostics, General surgery and anaesthesiology Knowledge of basics of handling of animals, safety rules, general examination of the animal		
Learning outcomes:	Knowledge: Students knows; - differentiates the normal and abnormal reproductive mechanisms - the clinical manifestations of reproductive mediated diseases and knows other diseases with similar clinical appearance - the diagnostic schemes and protocols (including differential diagnosis) for reproductive diseases -the therapeutic schemes and protocols recommended for reproductive diseases, pharmacodynamics properties of recommended products and the interactions among medicinal products	Skills: Student is able to; - describe the mechanisms of reproductive diseases - to use the current nomenclature - plan the diagnostic procedures (including differential diagnosis) in the reproductive diseases - plan and monitor the treatment strategies	Competences: Student formulate; - responsible clinical decisions based primarily on the animal welfare - his opinion about understand the onset of the disease, clinical appearance and therapeutic process in the context of normal and abnormal reproductive functions - the necessity of constant education using scientific sources
Assessment methods:	The full assessment will be accomplished on the basis of combined presents and activity on elective In case of unforeseen, unusual circumstances mandatory remote teaching and remote assessment methods might be adopted.		
Formal documentation of learning outcomes:	eHMS entry. Records collected in the course portfolio (general rules of the course)		
Elements impelling final grade:	oral examination and practical abilities assessment 50%, observations of student's activity and knowledge 25%, project, medical history cards 25 %		
Teaching base:	Department of Large Animal Disease with Clinic, RZD SGGW cattle farm in Obory – Goździe, Farms		

Mandatory and supportive materials :
Textbooks:

1. Handbook of Veterinary Obstetrics / Peter G. G. Jackson ; il. John Fuller ; Saunders Ltd.; 2 edition (July 27, 2004)

2. Veterinary Reproduction and Obstetrics. D.E. Noakes, T.J. Parkinson, G.C.W. England 9th ed. Sauders, Elsevier, 2009

3. Large Animal Theriogenology. R.F. Youngquist, W.L. Threlfall. 2nd ed. Saunders, Elsevier. 2007

4. Pig diseases. D.J. Taylor, St Edmunsbury Press Ltd, Bury St Edmunds, Suffolk 2006

5. Manual of Diagnostic Tests and Vaccines for Terrestial Animals. OIE, 2008

6. Diseases of swine, 10th edition, John Wiley and Sons Inc. 2012, Ed. J.J. Zimmermann, L.A. Karriker, A. Ramirez, K.J. Schawrtz, G.W. Stevenson

7. Large animal internal medicine. Bradfort P. Smith , MOSBY St.Louis London Philadelphia Sydney Toronto, 2005.

8. Sheep and goat medicine. Pugh D.G, W.B. Saunders Company.Philadelphia, Pennsylvania, 2002.

9. Diseases of dairy cattle. Thomas J. Divers, Simon F. Peek, Saunders Elsevier. 2008.

10. Free radicals basics of cattle diseases. Kleczkowski M., Kluciński W., Bartosz G, WPALD and BWLSS. Lomza. 2006.

11. Infectious Diseases of Livestock, 2nd edition, Oxford University Press, Ed. J. A. W. Coetzer, R. C. Tustin

Journals:

Theriogenology, Animal Reproduction Science, Reproduction of Domestic Animals, Biology of Reproduction, Reproduction, Fertility and Sterility, Reproductive BioMedicine Online, Archives of Andrology, Internatiomal Journal of Andrology, Andrology

ANNOTATIONS For reasons of occupational health and safety at the Clinic, the participants should wear medical long pants and sweatshirts or aprons with short sleeves (up to the elbow) and have with them: a surgical mask and cap, changed footwear - flat footwear soles covering the foot, you can also have shoe covers.

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:	**75 h**
Total ECTS points, accumulated by students during contact learning:	**2 ECTS**

Learning outcomes of the module relative to the learning outcomes of the subject:

Outcome category	Learning outcomes:	Learning outcomes relative to the course outcomes	Impact on the each for course outcomes
Knowledge – K.1	- Student knows and differentiates the normal and abnormal reproductive mechanisms	B.W.1;B.W.2 B.W.3	3 2
Knowledge – K.2	- Student knows the clinical manifestations of reproductive and knows other diseases with similar clinical appearance	B.W.4; B.W.5 B.W.6; B.W.9	3 2
Knowledge – K.3	- Student knows the diagnostic schemes and protocols (including differential diagnosis) for reproductio diseases	B.W.4 B.W.5; B.W.6; B.W.9	3 2
Knowledge – K.4	-Student knows the therapeutic schemes and protocols recommended for reproductive diseases, pharmacodynamic properties of recommended products and the interactions among medicinal products	B.W.6	2
Skills –S.1	Student is able to describe the mechanisms of reproductive diseases	B.U.4 B.U.7; B.U. 9	3 2
Skills – S.2	-Student is able to use the current nomenclature	B.U.2, B.U.9 B.U.5; B.U.7	3 2
Skills – S.3	- Student is able to plan the diagnostic procedures (including differential diagnosis) in the reproductive diseases	B.U.2 B.U.1; B.U.7	2 1
Skills – S.4	- plan and monitor the treatment strategies	B.U.10; B.U.13 B.U.15; B.U.20	3 2
Competences – C.1	Student formulate responsible clinical decisions based primarily on the animal welfare	KS.1; KS.2; KS.3; KS.6; KS.7; KS.9	2
Competences –C.2	-Student formulate his opinion about understand the onset of the disease, clinical appearance and therapeutic process in the context of normal and abnormal immune functions	KS.4; KS.5; KS.6; KS.8	2
Competences-C.3	Student formulate the necessity of constant education using scientific sources	KS.4; KS.5; KS.6;KS.7; KS.8	2