Module title:	Andrology and artificial insemination	**ECTS**	**3**
Polish translation:	Andrologia i sztuczne unasiennianie		
Course:	**Veterinary Medicine**		

Module language: English		Stage: JM	
Form of studies: ■ intramural ☐ extramural	Type of module: ☐basic ■ mandatory ■ directional ☐ elective ☐ accessory ☐ rotation ☐ summer practice	Semester: …8…….. Year 4	☐winter semester ■ summer semester
Academic year:	**2023/2024**	Catalogue number:	FVM-V-JMSS-08S-D06_23

Module coordinator:	dr hab. Sławomir Giziński		
Teachers responsible for the module:	Staff and PhD students of the Department of Large Animal Diseases with Clinic		
Unit responsible for the module:	Department of Large Animal Diseases with Clinic		
Faculty in charge:	Faculty of Veterinary Medicine		
Objectives of the module:	The aim of the course is to acquaint students with the basics of andrology and artificial insemination of animals. The program includes subjects on veterinary clinical andrology for the treatment of infertility and male diseases. Furthermore includes basics knowledge on different techniques of reproductive biotechnology, as artificial insemination, embryo transfer, assisted reproduction techniques. Students will receive the recent knowledge concerning the functional anatomy of the male reproductive system, endocrine control of testicular function, spermatogenesis, and its control, male sexual behaviour, semen analysis, semen preservation, male sexual function pathology, pharmacological control of sexual function of male and female. They also learn about the physiology of female sexual cycle, oestrus synchronization, superovulation, embryo transfer and assisted reproductive techniques.		
Teaching forms, number of hours:	a) Lectures: 14 h b) Practicals: 20 h c) Field exercises: 6 h		
Teaching methods:	Presentations with demonstrations and discussion on the presented material, experiments.		
Formal prerequisites and initial requirements:	Animal anatomy modules 1-2, Histology and embryology modules 1-2, Biochemistry modules 1-2, Animal physiology modules 1-2, Immunology, Pathophysiology, Clinical and Laboratory Diagnostics, Veterinary Pharmacology, Microbiology Student should have a good knowledge of the subjects mentioned above.		
Learning outcomes:	Knowledge: describes, explains and interprets disorders on the cellular, tissue, organ, system and organism levels occurring in the course of the disease describes and interprets causes and symptoms of the disease, describes and interprets patomorphological changes, uses procedures for therapy and prevention in the particular diseases collects, analyses and correctly interprets clinical data, results of the laboratory tests and other diagnostics techniques describes rules for animal selection for breeding, methods of breeding and selection	Skills: …….. ……..	Competences: …….. ……..
Assessment methods:	Final exam that testing overall theoretical and practical knowledge.		

Formal documentation of learning outcomes:	Colloquia and exam papers, student assessment record, grade in eHMS
Elements impelling final grade:	To pass the course you must have no more than 20% of absences or in accordance with current study regulations. Written exam covering all content of subject education, 40 test questions, for 1 point each. The score on the exam is: 40-36 points. - grade 5.0; 35-32 points - grade 4.5; 31-28 points - grade 4.0; 27-26 points - grade 3.5; 25-24 points - grade 3.0; 23 points and less - grade 2.0.
Teaching base:	Equine Clinic (Wolica), Small Animal Clinic (Ursynów), Centre of Animal Reproduction and Breeding in Łowicz, slaughterhouse
Mandatory and supportive materials : Books: 1. Laboratory Production of Cattle Embryos. 2nd ed. I. Gordon, CAB Publishing, 2003 2. Reproductive Technologies in Farm Animals. I. Gordon, CAB Publishing, 2005 3. Large Animal Theriogenology. R.F. Youngquist, W.L. Threlfall. 2nd ed. Saunders, Elsevier. 2007 4. Veterinary Andrology & Artificial Insemination. M.S. Saxena. CBS Publishers & Distributors, 2011 5. Applied Veterinary Andrology and Frozen Semen Technology. M.K. Shukla, NIPA 2011 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[24]: Students receive all the lectures and materials for practicals in the form of a pdf printed multimedia presentation and copies of the materials selected from chapters of textbooks and journal articles in English	

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:	**…80……. 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 course outcomes*)
Knowledge -	describes, explains and interprets disorders on the cellular, tissue, organ, system and organism levels occurring in the course of the disease	W_NK1	2
Knowledge -	describes and interprets causes and symptoms of the disease, describes and interprets patomorphological changes, uses procedures for therapy and prevention in the particular diseases	W_NK3	2
Knowledge	collects, analyses and correctly interprets clinical data, results of the laboratory tests and other diagnostics techniques	W_NK7	3
Knowledge	describes rules for animal selection for breeding, methods of breeding and selection	W_PZ2	3

*)

3 – Significant and detailed,

2 – Partial,

1 – Basic,