

Module title:	Infectious diseases of livestock	ECTS	4
Polish translation:	Choroby zakaźne zwierząt gospodarskich		
Course:	Veterinary Medicine		

Module language:	English	Stage: JM-FVM	
Form of studies:	<input checked="" type="checkbox"/> intramural <input type="checkbox"/> extramural	Type of module: <input type="checkbox"/> basic <input checked="" type="checkbox"/> directional <input type="checkbox"/> accessory <input type="checkbox"/> rotation <input type="checkbox"/> summer practice	<input checked="" type="checkbox"/> mandatory <input type="checkbox"/> elective
		Semester: VII	<input checked="" type="checkbox"/> winter semester <input type="checkbox"/> summer semester
		Academic year: <b>2023/2024</b>	Catalogue number: FVM-V-JMSS-07W-D25/4_23

Module coordinator:	Prof. dr hab. Iwona Markowska-Daniel
Teachers responsible for the module:	Academic teachers of the Institute of Veterinary Medicine; Division of Veterinary Epidemiology and Economics; PhD students in accordance to the internal legal acts; visiting professors; other specialists if needed and possible
Unit responsible for the module:	Institute of Veterinary Medicine, Division of Veterinary Epidemiology and Economics
Faculty in charge:	Faculty of Veterinary Medicine

Objectives of the module:	<p>During the course students acquire theoretical knowledge necessary to understand the biology, etiology, pathogenesis, epidemiology, clinical symptoms, pathological lesions, diagnosis including differential diagnosis, eradication and importance of infectious diseases listed below. Moreover, they acquire practical skills in diagnosing, treating and controlling these infections.</p> <p>Lecture topics:</p> <ol style="list-style-type: none"> <li>1. Introduction to the subject: the most important epidemiological terminology, the significance of infectious diseases for effective animal production and public health protection. The ways of infectious diseases spreading. The rules of disease eradication. The role of OIE in controlling of infectious diseases [2 hrs.]</li> <li>2. OIE-listed (actual list) and other notifiable diseases of swine: African swine fever - occurrence, etiology, pathogenesis, clinical picture, pathological lesions, diagnosis, differential diagnosis, eradication, legal regulations [2 hrs.]</li> <li>3. OIE-listed (actual list) and other notifiable diseases of swine: classical swine fever and other pestiviruses - occurrence, etiology, pathogenesis, clinical picture, pathological lesions, diagnosis, differential diagnosis, eradication, legal regulations [2 hrs.]</li> <li>4. OIE-listed (actual list) and other notifiable diseases of swine: porcine reproductive and respiratory syndrome - occurrence, etiology, pathogenesis, clinical picture, pathological lesions, diagnosis, differential diagnosis, eradication, legal regulations [2 hrs.]</li> <li>5. OIE-listed (actual list) and other notifiable diseases of swine: Aujeszky' disease, transmissible gastroenteritis, Nipah virus encephalitis - occurrence, etiology, pathogenesis, clinical picture, pathological lesions, diagnosis, differential diagnosis, eradication, legal regulations [2 hrs.]</li> <li>6. OIE-listed (actual list) and other notifiable diseases of cattle: bovine tuberculosis, enzootic bovine leukosis - occurrence, etiology, pathogenesis, clinical picture, pathological lesions, diagnosis, differential diagnosis, eradication, legal regulations [2 hrs.]</li> <li>7. OIE-listed (actual list) and other notifiable diseases of cattle: infectious bovine rhinotracheitis, contagious bovine pleuropneumonia - occurrence, etiology, pathogenesis, clinical picture, pathological lesions, diagnosis, differential diagnosis, eradication, legal regulations [2 hrs.]</li> <li>8. OIE-listed (actual list) and other notifiable diseases of cattle: bovine spongiform encephalopathy, scrapie - occurrence, etiology, pathogenesis, clinical picture, pathological lesions, diagnosis, differential diagnosis, eradication, legal regulations [2 hrs.]</li> <li>9. OIE-listed (actual list) and other notifiable diseases of cattle: lumpy skin disease, bovine viral diarrhoea - occurrence, etiology, pathogenesis, clinical picture, pathological lesions, diagnosis, differential diagnosis, eradication, legal regulations [2 hrs.]</li> <li>10. OIE-listed (actual list) and other notifiable diseases of small ruminants: contagious agalactia, infection with <i>Chlamydia abortus</i> (enzootic abortion of ewes, ovine chlamydiosis), ovine epididymitis, salmonellosis (<i>S. abortusovis</i>), border disease - occurrence, etiology, pathogenesis, clinical picture, pathological lesions, diagnosis, differential diagnosis, eradication, legal regulations [2 hrs.]</li> <li>11. OIE-listed (actual list) and other notifiable diseases of small ruminants: caprine arthritis-encephalitis, Maedi-visna, contagious caprine pleuropneumonia, Nairobi sheep disease - occurrence, etiology, pathogenesis, clinical picture, pathological lesions, diagnosis, differential diagnosis, eradication, legal regulations [2 hrs.]</li> <li>12. OIE-listed (actual list) and other notifiable multispecies diseases: paratuberculosis, anthrax, rinderpest, peste des petits ruminants - occurrence, etiology, pathogenesis, clinical picture, pathological lesions, diagnosis, differential diagnosis, eradication, legal regulations [2 hrs.]</li> <li>13. OIE-listed (actual list) and other notifiable multispecies diseases: bluetongue, Rift valley fever, Crimean Congo haemorrhagic fever, West Nile fever, epizootic haemorrhagic disease, Japanese encephalitis - occurrence, etiology, pathogenesis, clinical picture, pathological lesions, diagnosis, differential diagnosis, eradication, legal regulations [2 hrs.]</li> <li>14. OIE-listed (actual list) and other notifiable multispecies diseases: foot and mouth disease - occurrence, etiology, pathogenesis, clinical picture, pathological lesions, diagnosis, differential diagnosis, eradication, legal regulations [2 hrs.]</li> <li>15. OIE-listed (actual list) and other notifiable multispecies diseases: Q fever, brucellosis - occurrence, etiology, pathogenesis, clinical picture, pathological lesions, diagnosis, differential diagnosis, eradication, legal regulations [2 hrs.]</li> </ol> <p>Class topics:</p>
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	<p>1. Introduction to the subject: Epidemiological investigation. Sampling and shipment of materials for laboratory examinations. Laboratory diagnosis [3 hrs.]</p> <p>2. Skin and mucosal diseases of swine: pox, vesicular exanthema of swine, exudative epidermitis, malignant oedema, foot and mouth disease, vesicular disease, vesicular stomatitis, porcine dermatitis and nephropathy syndrome, erysipelas - differential diagnosis, occurrence, etiology, pathogenesis, clinical picture, pathological lesions, diagnosis, eradication [3 hrs.]</p> <p>3. Respiratory diseases of swine: porcine respiratory disease complex, swine influenza, PRRS, circovirus infection, pleuropneumonia, mycoplasmosis, atrophic rhinitis, streptococcosis - differential diagnosis, occurrence, etiology, pathogenesis, clinical picture, pathological lesions, diagnosis, eradication [3 hrs.]</p> <p>4. Enteric diseases of swine: colibacteriosis, clostridiosis, adenomatosis, swine dysentery, salmonellosis, porcine epidemic diarrhoea, rotavirus infection - differential diagnosis, occurrence, etiology, pathogenesis, clinical picture, pathological lesions, diagnosis, eradication [3 hrs.]</p> <p>5. Reproductive disorders of swine: parvovirus, porcine reproductive respiratory syndrome, circovirus, swine influenza, SMEDI, brucellosis, leptospirosis, chlamydiosis - differential diagnosis, occurrence, etiology, pathogenesis, clinical picture, pathological lesions, diagnosis, eradication [3 hrs.]</p> <p>6. Nervous system disorders of swine: Teschovirus encephalomyelitis, vomiting and waisting disease, rabies, congenital tremors, listeriosis, tetanus, botulism, streptococcosis, Glässer disease, oedema disease - differential diagnosis, occurrence, etiology, pathogenesis, clinical picture, pathological lesions, diagnosis, eradication [3 hrs.]</p> <p>7. Periodic test (infectious diseases of swine) [3 hrs.]</p> <p>8. Respiratory diseases of cattle: enzootic bronchopneumonia, pasteurellosis - differential diagnosis, occurrence, etiology, pathogenesis, clinical picture, pathological lesions, diagnosis, eradication [3 hrs.]</p> <p>9. Enteric diseases of cattle: viral and bacterial diarrheas - differential diagnosis, occurrence, etiology, pathogenesis, clinical picture, pathological lesions, diagnosis, eradication [3 hrs.]</p> <p>10. Nervous system diseases of cattle: rabies, BSE, malignant catarrhal fever - differential diagnosis, occurrence, etiology, pathogenesis, clinical picture, pathological lesions, diagnosis, eradication [3 hrs.]</p> <p>11. Reproductive system diseases of cattle: bovine genital campylobacteriosis, trichomonosis, Schmallenberg virus infection - differential diagnosis, occurrence, etiology, pathogenesis, clinical picture, pathological lesions, diagnosis, eradication [3 hrs.]</p> <p>12. Nervous system diseases of small ruminants: listeriosis, border disease - differential diagnosis, occurrence, etiology, pathogenesis, clinical picture, pathological lesions, diagnosis, eradication.</p> <p>Respiratory diseases of small ruminants: enzootic pneumonia, ovine pulmonary adenomatosis, enzootic nasal tumor - differential diagnosis, occurrence, etiology, pathogenesis, clinical picture, pathological lesions, diagnosis, eradication [3 hrs.]</p> <p>13. Skin diseases and lameness of small ruminants: sheep pox and goat pox, contagious ecthyma, foot root - differential diagnosis, occurrence, etiology, pathogenesis, clinical picture, pathological lesions, diagnosis, eradication [3 hrs.]</p> <p>14. Clostridial diseases of small ruminants: enterotoxemia, lamb dysentery, infectious necrotic hepatitis, bradsot, tetanus - differential diagnosis, occurrence, etiology, pathogenesis, clinical picture, pathological lesions, diagnosis, eradication</p> <p>Wasting diseases of small ruminants: caseous lymphadenitis, Morel's disease - differential diagnosis, occurrence, etiology, pathogenesis, clinical picture, pathological lesions, diagnosis, eradication [3 hrs.]</p> <p>15. Periodic test (infectious diseases of ruminants) [3 hrs.]</p> <p>The content of lectures is complementary to the content of classes.</p> <p>The topics of exercises, as well as their form and number of hours may change depending on the current external conditions determined by the published legal acts.</p>		
Teaching forms, number of hours:	<p>a) Lectures; hours 30</p> <p>b) Classes - seminars; hours 45</p>		
Teaching methods:	<p>- copyright multimedia presentations,</p> <p>- clinical cases presentations,</p> <p>- video tutorials,</p> <p>- students' self-training</p> <p>Detailed schedule of classes and detailed organization of consultations will be defined by the coordinator of the course at the beginning of semester.</p>		
Formal prerequisites and initial requirements:	<p>Following courses completed: Veterinary epidemiology, Microbiology, Virology, Immunology, Physiology &amp; pathology, Immunopathology, Pathological anatomy</p>		
Learning outcomes:	<p><b>Knowledge:</b></p> <p>The student has basic knowledge of infectious diseases of farm animals, including:</p> <ol style="list-style-type: none"> <li>1. knowledge and understanding of epidemiological nomenclature</li> <li>2. The student knows the rules of conducting epidemiological investigation</li> <li>3. The student knows the pathogenesis of infectious disease</li> <li>4. The student understands the routes of transmission of infectious diseases</li> <li>5. The student knows and understands the principles of treatment of infected animals</li> <li>6. The student knows the principles of prevention of infectious diseases (general and specific)</li> </ol>	<p><b>Skills:</b></p> <ol style="list-style-type: none"> <li>1. The student knows how to diagnose particular infectious disease of livestock</li> <li>2. The student is able to plan and implement appropriate treatment of infectious diseases</li> <li>3. The student is able to plan and implement proper general and specific prevention of infectious diseases</li> <li>4. The student is able to eradicate infectious diseases of farm animals</li> <li>5. The student is able to use scientific resources in solving clinical problems</li> </ol>	<p><b>Competences:</b></p> <ol style="list-style-type: none"> <li>1. The student is ready to perform differential diagnosis of infectious diseases of farm animals</li> <li>2. The student is ready to eradicate infectious diseases in accordance with legal regulations</li> <li>3. The student is aware of his/her knowledge, understands the necessity of consultancy and is prepared to share the competencies with the veterinary team and the animals' owner</li> <li>4. The student is aware of the necessity of constant education</li> </ol>

	7. The student knows the global and national databases containing information on the occurrence of notifiable infectious diseases		
Assessment methods:	<p>Theoretical written periodic exams and written final exam which comprises the whole material – descriptive and single- or multiple-choice questions  No extra assessment methods are anticipated.  In the event of a suspension of classes at the University and the need for distance / hybrid teaching, other forms of verification of learning outcomes are allowed in a manner appropriate to the situation. Regardless of the above, the assumed practical learning outcomes assigned to classes will be verified only during contact classes</p>		
Formal documentation of learning outcomes:	<p>eHMS entry.  Records collected in the course portfolio i.e. individual records of student results, presence lists, database of oral and written questions, written students' assessments .</p>		
Elements impelling final grade:	<p><b>The necessary condition for participation in classes is the possession of accident insurance (in Polish: ubezpieczenie NNW).</b></p> <p>Lectures are voluntary. Student is allowed to miss 9 hours of classes (3 classes).</p> <p>Conditions of receiving positive final score:  2 periodic exams will be conducted:  1. infectious diseases of swine – written exam (10 descriptive and single- or multiple choice questions);  2. infectious diseases of ruminants – written exam (10 descriptive and single- or multiple choice questions);  Both exams will be based on the information provided during the classes.  Each question will be evaluated using a scale: 0, 1 and 2. The max points in each exam = 20.  For students with justified absence on the one or both exams an extra exam will be organized. After the second chance <b>no additional exams</b> will be organized.  Student will receive a positive grade from periodic exams if they receive a minimum of 60% of maximal score (max. = 20 points.; min. = 12 points). Students who do not get 12 points will not be allowed to take the final exam.  At the end of the semester final written exam covering the information provided during lectures and classes will be organized (30 descriptive and single- or multiple choice questions evaluated as mentioned above). Student will receive a positive grade from the exam if they receive a minimum of 60% of maximal score (max. = 60 points; min. = 36 points).  The final grade from the course is based on the total score from both periodic as well as final exams.</p> <p>The final evaluation depends on the number of points received:</p> <p>0-60 points – 2.0  61-68 points – 3.0  69-76 points – 3.5  77-84 points – 4.0  85-92 points – 4.5  93-100 points – 5.0</p> <p>Only one retake is allowed.</p>		
Teaching base:	Lecture facilities and laboratories of the Institute of Veterinary Medicine		
Mandatory and supportive materials :	<p>Mandatory literature:</p> <ol style="list-style-type: none"> <li>1. Diseases of swine, 11<sup>th</sup> edition, Wiley-Blackwell 2019, Ed. J.J. Zimmermann, L.A. Karriker, A. Ramirez, K.J. Schwartz, G.W. Stevenson, J. Zhang</li> <li>2. Handbook of Pig Medicine, Elsevier 2007, Jackson P., Cockcroft P.,</li> <li>3. Infectious Diseases of Livestock, 2<sup>nd</sup> edition, Oxford University Press, Ed. J. A. W. Coetzer, R. C. Tustin</li> </ol> <p>Supplementary literature:</p> <ol style="list-style-type: none"> <li>1. <a href="http://www.oie.int">www.oie.int</a></li> <li>2. <a href="http://www.isid.org">www.isid.org</a></li> <li>3. <a href="http://www.pubmed.com">www.pubmed.com</a></li> </ol> <p>Relevant scientific publications, including those of the module coordinator.</p>		
ANNOTATIONS			

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:					<b>100 h</b>
Hours theoretical:	75	Hours practical:	0	Hours of field exercises:	0
					<b>Total contact hours: 90</b>
Total ECTS points, accumulated by students during contact learning:					<b>4 ECTS</b>

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 1	knowledge and understanding of epidemiological nomenclature	A.W.20	2
Knowledge 2	The student knows the rules of conducting epidemiological investigation	A.W.15, B.W.4, B.W.5, B.W.6	3
Knowledge 3	The student knows the mechanisms of infectious disease	A.W.2, A.W.5, A.W.10, A.W.12, A.W.11, B.W.1	3
Knowledge 4	The student understands the routes of transmission of infectious diseases	A.W.13	3
Knowledge 5	The student knows and understands the rules of treatment of infected animals	A.W. 16 A.W. 17, B.W. 3	1 3
Knowledge 6	The student knows the rules of prevention of infectious diseases (general and specific)	A.W. 13, B.W. 3	3
Knowledge 7	The student knows the global and national databases containing information on the occurrence of infectious diseases subject to notification	C.W.2	3
Skills 1	The student knows how to diagnose particular infectious disease of livestock	A.U.4, A.U.10, A.U.14, B.U.2, B.U.6, B.U.16	3
Skills 2	The student can plan and implement appropriate treatment of infectious diseases	A.U.11, B.U.9, B.U.13	3
Skills 3	The student is able to plan and implement proper general and specific prevention of infectious diseases	B.U.21	3
Skills 4	The student has the ability to eradicate infectious diseases of farm animals	B.U.8, B.U.19	3
Skills 5	The student is able to use scientific resources in solving clinical problems	A.U.21; A.U.23 B.U.20	3
Competences 1	The student is ready to perform differential diagnosis of infectious diseases of farm animals	K.S.1, K.S.2, K.S.4, K.S.5	3
Competences 2	The student is ready to eradicate infectious diseases in accordance with legal regulations	K.S.1, K.S.2, K.S.4, K.S.5, K.S.11	3
Competences 3	The student is aware of his/her knowledge, understands the necessity of consultancy and is prepared to share the competencies with the veterinary team and the animals' owner	KS.1; KS.2; KS.3; KS.4; KS.7; KS.8; KS.9	3
		KS.5; KS.6	3
Competences 4	The student is aware of the necessity of constant education	KS.1; KS.2; KS.4; KS.6; KS.7; KS.8 KS.5; KS.9	3