MINISTRY OF EDUCATION AND SCIENCE OF UKRAINE
SUMY NATIONAL AGRARIAN UNIVERSITY

Epizootiology and Parasitology Department
Faculty of Veterinary Medicine

MODULE SYLLABUS

Veterinary Technologies for the Prevention of Contagious Animal Diseases

Ветеринарні технології профілактики заразних хвороб тварин

(compulsory**)**

Implemented in the "Veterinary Medicine" Academic Program

Area of specialization 211 " Veterinary Medicine"

second (master's) level of higher education

Sumy-2023

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Module syllabus agreed at the Episootology and Parasitology Department meeting	**Minutes No 20 dated June19 2023** **Head of Episootology and Parasitology Department** (**O.I. Kasianenko**)

Approved by:

Guarantor of the Academic program (Petrov R.V.)

Dean of the Faculty (Nechyporenko O.L.)

Syllabus review (attached) is provided by :

Representative of the Department of Education Quality assurance, licensing and accreditation (N. Bapaik)

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Syllabus review data:

The academic year in which changes are made	The Academic program attachment number with changes description	Changes revised and approved		
		Minutes No and date of the department meeting	Head of Department	Guarantor of the Academic program

1. MODULE OVERVIEW

<table>
<tr><td>1.</td><td>Title</td><td colspan="4">Veterinary Technologies for the Prevention of Contagious Animal Diseases</td></tr>
<tr><td>2.</td><td>Faculty/Department</td><td colspan="4">Epizootiology and Parasitology</td></tr>
<tr><td>3.</td><td>Type (compulsory or optional)</td><td colspan="4">compulsory</td></tr>
<tr><td>4.</td><td>Program(s) to which module is attached</td><td colspan="4">211 "Veterinary Medicine"</td></tr>
<tr><td>6.</td><td>Level of the National Qualifications Framework</td><td colspan="4">7-th</td></tr>
<tr><td>7.</td><td>Semester and duration of module</td><td colspan="4">2 and 3</td></tr>
<tr><td>8.</td><td>ECTS credits number</td><td colspan="4">5 ECTS (150 hours)</td></tr>
<tr><td rowspan="2">9.</td><td rowspan="2">Total workload and time allotment</td><td colspan="3">Directed study</td><td rowspan="2">Self-directed study</td></tr>
<tr><td>Lectures</td><td>Practicals</td><td>Labs</td></tr>
<tr><td></td><td></td><td>14 / (12)</td><td>-</td><td>16 / 26</td><td>30 / 52</td></tr>
<tr><td>10.</td><td>Language of instruction</td><td colspan="4">English</td></tr>
<tr><td>11.</td><td>Module leader</td><td colspan="4">Halyna Rebenko, Phd, Associate professor</td></tr>
<tr><td>12.</td><td>Module leader contact information</td><td colspan="4">Тел.: 0961206935; viber 0665907880</td></tr>
<tr><td>13.</td><td>Module description</td><td colspan="4">Module leads to understanding of the epizootical processes of infectious animal diseases and developing of skills in making decisions on rational measures for the prevention, management and elimination of contagious animal diseases.</td></tr>
<tr><td>14.</td><td>Module aim</td><td colspan="4">The aim of curriculum “Veterinary Technologies for the Prevention of Contagious Animal Diseases” is to form a system of special theoretical knowledge about the objective laws of the processes of the emergence, development, spread and extinction of infectious animal diseases and to give the concept of the reliable diagnostic techniques and effective control procedures for it.</td></tr>
<tr><td>15.</td><td>Module Dependencies</td><td colspan="4">The educational component is based on the following: Veterinary microbiology and immunology, Veterinary</td></tr>
</table>

	(prerequisites, co-requisites, incompatible modules)	virology, Veterinary hygiene and sanitation, Pathological physiology, Pathological anatomy, Clinical diagnosis of animal diseases, Veterinary pharmacology, Biotechnology of veterinary immunobiological drugs, Organization and economics of veterinary affairs, Epizootology and infectious animal diseases, Parasitology and invasive animal diseases.
16.	The policy of academic integrity	All tasks related to calculations, planning and accounting documentation will have individual initial data. For violation of academic integrity, students may be held subject to the following academic liability: *Academic plagiarism* - grade 0, re-completion of the task. *Academic fraud* (copying, deception, publishing someone's work for their own) - cancellation of points; re-assessment evaluation re-execution of non-independently performed work with new source data; *The use of electronic devices* during the final control of knowledge - removal from work, grade 0, re-passing the final control.
17	Link in Moodle	https://cdn.snau.edu.ua/moodle/course/view.php?id=4009

2. CORRELATION BETWEEN MODULE LEARNING OUTCOMES (MLOs) AND PROGRAM LEARNING OUTCOMES (PLOs)

MLOs: On successful completion of the module the learner will be able to:	**PLOs**							**How assessed**
	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PLO 10	PLO 11	
MLO 1. To recognize the risks of infection or invasion for protection of the population from contagious animal diseases (including zoonoses)		+		+	+			Case studies and situation analysis
MLO 2. To use of tools, special devices, laboratory equipment, software and other technical means for monitoring, diagnostic tests, preventive vaccinations, other necessary manipulations during professional activities		+		+			+	Group tasks with self- and mutual assessment.
MLO 3. To use information from local and foreign sources to develop diagnostic, preventive and treatment strategies for communicable diseases; to find up-to-date information in accordance with international and national standards to ensure the epizootic welfare of livestock and avoid the danger of biological waste	+			+			+	Project evaluation Analisisof scientific articles in a given topics
MLO 4. To make plans, organize and carry out measures aimed at preventing the introduction and spread of infectious / invading pathogens, the management of animals suffering from infectious diseases, and the elimination of epizootic foci	+		+		+			Simulation exercises Development of plans for disease-control measures
MLO 5. To evaluate professionally the effectiveness of control and eliminational measures			+		+			Case studies
MLO 6. To demonstrate advanced problem-solving skills and effective communication with people who are interested in human and animal health					+	+		Participation in focus groups, simulation exercises

3. MODULE INDICATIVE CONTENT

Topics	Distribution of hours				Learning resources
	Directed study			Self-directed study	
	Lec	Pr	Labs		
11 semester					
Lecture 1: **Biosecurity to prevent the introduction of the pathogens into the herds.** Plan: 1. Epidemiological surveillance 2. Prevent the introduction of the pathogens into the herds 3. Controlled of animals flows 4. Biosecurity rules	2		2 - Making a project for prevention the introduction of the pathogens into the herds	4	Terrestrial Animal Health Code (2017) (http://www.oie.int/standard-setting/terrestrial-code/)
Lecture 2: **Laboratory diagnosis as entrance control** 1. Taking samples 2. Serological tests 3. Microbiological tests 4. Helminthological and parasitological investigations 5. Feed examinations	2		2 - Making an order for taking, packing, delivering and investigating of samples accordingly to the individual task	4	Terrestrial Animal Health Code (2017) (http://www.oie.int/standard-setting/terrestrial-code/) Manual of Diagnostic Tests and Vaccines for Terrestrial Animals 2018 (http://www.oie.int/standard-setting/terrestrial-
Lecture 3: **Vaccination to increase herd immunity and provide maternal protection for the newborns** Plan: 1. Herd immunity 2. Active immunological methods (vaccination) 3. Vaccination programme 4. Strategy of immunization	2		Making a list of permitted vaccines against the diseases by task and build the vaccination program.	4	Manual of Diagnostic Tests and Vaccines for Terrestrial Animals 2018 (http://www.oie.int/standard-setting/terrestrial-manual/access-online/)
Lecture 4: **Disease prevention** Plan: 1. Measures against the introduction of diseases 2. Epizootiological protection of country territory 3. Active creation of animal population 4. General preventive measures in animal population	2		2 - Considering of the measures for epizootiological protection of country territory from the disease introduction	4	MSD Veterinary Manual (https://www.msdvetmanual.com/generalized-conditions)
Lecture 5: **Disease control** Plan: 1.Investigation of epizootiological situation 2.Epizootiological strategy and measures 3.Animal population specific health recovery	2		2 - Cases of epizootiological situation`s investigation	4	

Lecture 6: **Emerging and Re-emerging Diseases of Animals** Plan: 1. OIE-listed diseases, 2. Zoonotic diseases with serious public health implications, 3. other important diseases either impacting or with the potential to impact the major animal species 4. Application of risk analysis	2		2 - Making project for vector of transmission control	4	AHP Disease Manual http://lrd.spc.int/ext/Disease_Manual_Final https://en.wikivet.net/Learning_Resources
Lecture 7: **Disease eradication programs** Plan: 1. Prioritization in national emergency disease eradication programmes 2. Zoning 3. Methods of animal disease eradication 4. Measures against zoonotic diseases 5. Strategies for dealing with special circumstances 6. The endgame-verified freedom from infection	2		2 - Elucidation of essential key elements supporting eradication/elimination of infectious diseases	4	
			2 - Final lesson	4	
Total	14		16	30	

12 semester					
Topic 1. Diseases of ruminants	2		2 - Consideration of situations and organization of measures to combat emerging and transboundary diseases of ruminants. 2 - Consideration of situations and organization of measures to combat local diseases of ruminants. aking a contingency plan (by tasks)	6	http://lrd.spc.int/ext/Disease_Manual_Final/b115_bovine_spongiform_encephalopathy.html http://lrd.spc.int/ext/Disease_Manual_Final/b160_scrapie.html http://lrd.spc.int/ext/Disease_Manual_Final/a070_lumpy_skin_disease.html http://lrd.spc.int/ext/Disease_Manual_Final/a090_bluetongue.html http://lrd.spc.int/ext/Disease_Manual_Final/a040_rinderpest.html http://lrd.spc.int/ext/Disease_Manual_Final/a100_sheep_pox_and_goat_pox.html http://lrd.spc.int/ext/Disease_Manual_Final/b110_infectious_bovine_rhinotracheitis.html http://lrd.spc.int/ext/Disease_Manual_Final/a050_peste_des_petits_ruminants.html http://lrd.spc.int/ext/Disease_Manual_Final/b108_enzootic_bovine_leukosis.html http://lrd.spc.int/ext/Disease_Manual_Final/a160_contagious_bovine_pleuropneumonia.html http://lrd.spc.int/ext/Disease_Manual_Final/b155_contagious_caprine_pleuropneumonia.html http://lrd.spc.int/ext/Disease_Manual_Final/b154_contagious_agalactiae.html http://lrd.spc.int/ext/Disease_Manual_Final/b153_caprine_arthritisencephalitis.html http://lrd.spc.int/ext/Disease_Manual_Final/b161_maedivisna.html

Topic 2. Diseases of horses	2		2 - Consideration of specific situations for diagnosis and organization of measures to combat in horse breeding 2 – Making a contingency plan (by tasks)	8	http://lrd.spc.int/ext/Disease_Manual_Final/b211_equine_viral_arteritis.html http://lrd.spc.int/ext/Disease_Manual_Final/b205_equine_infectious_anaemia.html http://lrd.spc.int/ext/Disease_Manual_Final/b206_equine_influenza.html http://lrd.spc.int/ext/Disease_Manual_Final/b204_equine_viral_encephalomyelitis.html http://lrd.spc.int/ext/Disease_Manual_Final/b201_contagious_equine_metritis.html http://lrd.spc.int/ext/Disease_Manual_Final/a110_african_horse_sickness.html http://lrd.spc.int/ext/Disease_Manual_Final/b203_epizootic_lymphangitis.html http://lrd.spc.int/ext/Disease_Manual_Final/b208_equine_rhinopneumonitis.html
Topic 3. Swine Diseases	2		2 - Consideration of specific situations for diagnosis and organization of measures to combat diseases in piggery 2 – Making a contingency plan (by tasks)	8	http://lrd.spc.int/ext/Disease_Manual_Final/a120_african_swine_fever.html http://lrd.spc.int/ext/Disease_Manual_Final/a130_classical_swine_fever_hog_cholera.html http://lrd.spc.int/ext/Disease_Manual_Final/swine_influenza.html http://lrd.spc.int/ext/Disease_Manual_Final/b052_aujeszkys_disease.html http://lrd.spc.int/ext/Disease_Manual_Final/enzootic_pneumonia_of_pigs.html http://lrd.spc.int/ext/Disease_Manual_Final/b254_transmissible_gastroenteritis.html http://lrd.spc.int/ext/Disease_Manual_Final/b256_enterovirus_encephalomyelitis.html http://lrd.spc.int/ext/Disease_Manual_Final/porcine_parvovirus.html http://lrd.spc.int/ext/Disease_Manual_Final/b257_porcine_reproductive_and_respiratory_syndrome.html http://lrd.spc.int/ext/Disease_Manual_Final/a030_swine_vesicular_disease.html

Topic 4. Factoral diseases of the young animals.	2		2 - Diagnosis of diseases of young animals with a predominant lesion of the digestive tract. Principles of treatment, prevention and measures to combat them. 2 - Diagnosis and differential diagnosis of diseases of young animals with predominant lesions of the respiratory system.	6	https://en.wikivet.net/Learning_Resources
Topic 5. Diseases of dogs, cats and fur animals.	2		2 - Diseases of dogs; 2 - Diseases of cats;	6	http://ird.spc.int/ext/Disease_Manual_Final/canine_parvovirus.html http://www.cfsph.iastate.edu/DiseaseInfo/disease.php?name=canine-influenza&lang=en http://ird.spc.int/ext/Disease_Manual_Final/feline_viral_rhinotracheitis.html http://ird.spc.int/ext/Disease_Manual_Final/feline_panleucopaenia.html http://ird.spc.int/ext/Disease_Manual_Final/feline_infectious_peritonitis.html http://www.cfsph.iastate.edu/DiseaseInfo/disease.php?name=feline-spongiform-encephalopathy&lang=en http://www.cfsph.iastate.edu/DiseaseInfo/disease.php?name=rabbit-hemorrhagic-disease&lang=en

Topic 6. Avian Diseases	2		2 - Acute viral infections of birds 2 - Bacterial infections of poultry	6	http://lrd.spc.int/ext/Disease_Manual_Final/a150_avian_influenza.html http://lrd.spc.int/ext/Disease_Manual_Final/a160_newcastle_disease.html http://lrd.spc.int/ext/Disease_Manual_Final/b307_fowl_pox.html http://lrd.spc.int/ext/Disease_Manual_Final/b307_fowl_typhoid.html http://lrd.spc.int/ext/Disease_Manual_Final/b313_pullorum_disease.html http://lrd.spc.int/ext/Disease_Manual_Final/b309_infectious_bursal_disease.html http://lrd.spc.int/ext/Disease_Manual_Final/b301_avian_infectious_bronchitis.html http://lrd.spc.int/ext/Disease_Manual_Final/b302_avian_infectious_laryngotracheitis.html http://lrd.spc.int/ext/Disease_Manual_Final/b311_mycoplasmosis_m_gallisepticum.html http://lrd.spc.int/ext/Disease_Manual_Final/b306_fowl_cholera.html http://lrd.spc.int/ext/Disease_Manual_Final/b310_mareks_disease.html http://lrd.spc.int/ext/Disease_Manual_Final/c853_avian_encephalomyelitis.html http://lrd.spc.int/ext/Disease_Manual_Final/b312_avian_chlamydiosis.html
Topic 7. Bee diseases	-		2 - Anti-epizootic measures in apiaries.	6	http://lrd.spc.int/ext/Disease_Manual_Final/b452_american_foulbrood.html http://lrd.spc.int/ext/Disease_Manual_Final/b453_european_foulbrood.htmlhttps://www.wur.nl/en/Research-Results/Research-Institutes/plant-research/Biointeractions-Plant-Health/Bees-1/Bee-diseases.htm https://www.uaex.edu/farm-ranch/special-programs/beekeeping/hive-pests-diseases.aspx http://lrd.spc.int/ext/Disease_Manual_Final/chalkbrood.html
Topic 8. Fish Diseases	-		2 - Anti-epizootic measures for fish farms.	6	http://www.cfsph.iastate.edu/DiseaseInfo/disease.php?name=viral-hemorrhagic-septicemia&lang=en http://www.cfsph.iastate.edu/DiseaseInfo/disease.php?name=spring-viremia-of-carp&lang=en
Total	12		26	52	

4. TEACHING AND LEARNING METHODS

MLOs	Teaching methods (directed study)	Learning methods (self-directed study)
MLO 1. To recognize the risks of infection or invasion for protection of the population from contagious animal diseases (including zoonoses)	Explanation of possible situations with the risk of infecting people from infected animals. Consideration of cases with emphasis on precautionary measures and measures to eliminate zoonoses.	To study the main zoonoses: signs of their presence in animals, ways of human infection and transmission factors, as well as measures to prevent or eliminate the disease in case of occurrence.
MLO 2. To use of tools, special devices, laboratory equipment, software and other technical means for monitoring, diagnostic tests, preventive vaccinations, other necessary manipulations during professional activities	Demonstration of available equipment and devices, as well as videos of their use during diagnostic, preventive, veterinary and sanitary works Demonstration of capabilities for working with software for geographic information monitoring systems	Learn the types of tools, devices, equipment, their purpose and features of application
MLO 3. To use information from local and foreign sources to develop diagnostic, preventive and treatment strategies for communicable diseases; to find up-to-date information in accordance with international and national standards to ensure the epizootic welfare of livestock and avoid the danger of biological waste	Familiarization with the main official sources of information on communicable animal and poultry diseases, especially those that require a rapid response as they are extremely dangerous and notifiable	To practice the skills of obtaining up-to-date information on infectious diseases and the current epizootic situation, performing tasks
MLO 4. To make plans, organize and carry out measures aimed at preventing the introduction and spread of infectious / invading pathogens, the management of animals suffering from infectious diseases, and the elimination of epizootic foci	Explain the purpose and principles of anti-epizootic measures. Consideration and analysis of items of action plans for the prevention of major communicable diseases and plans for the elimination of diseases (health measures)	Using the instructions on measures to combat specific infectious diseases (according to the tasks and according to the subject of training) to develop action plans to eliminate the outbreak (or recovery of livestock)
MLO 5. To evaluate professionally the effectiveness of control and eliminational measures	Explanation of the principles of determining the effectiveness of measures and possible ways to improve it	Analyze the provided action plans and the current epizootic situation, make judgments about the effectiveness of certain measures and propose changes, justifying their feasibility.
MLO 6. To demonstrate advanced problem-solving skills and effective communication with people who are interested in human and animal health	Conducting focus groups and simulation exercises	Find in the relevant instructions on disease control measures a list of prohibitions and restrictions, as well as a list of measures regulated for a particular case

5. ASSESSMENT

5.1. Diagnostic assessment

5.2. Summative assessment

5.2.1. Intended learning outcomes methods:

No	Summative assessment methods	Grades	Deadline
	2 semester		
1	Assessment of the ability to plan the location and arrangement of veterinary passages, barriers, isolators for infected animals or other objects of protection of the farm from the introduction of infectious agents	10/10%	By the end of the 2 weeks
2	Assessment of the ability to sample for laboratory tests, compile an accompanying document and describe the metods of confirming diagnosis	10/10%	By the end of the 5th week
3	Testing the ability to navigate the range of vaccines, medicines, desinfectants, rodenticides and insecticides when choosing products for control, treating and disinsection. Debate	10/10%	By the end of the 15th week
4	Development of the plan of control or eradicational measures against infectious disease and make the project	20/20%	By the end of the 11th week
5	Computer testing (multiple choice) in Moodle	10/10%	By the end of the 15th week
6	Attestation	15/15%	By the end of the 8th week
7	Performing the tasks in Google spreadsheets	25/25%	By the end of the 15th week
	Total in semester	100/100%	
	3 semester		
1	Simulation exercise "Elimination of an outbreak of transboundary disease "	10/10%	In the 2nd lesson
2	Simulation exercise "Recovery farm in case of chronic diseases"	10/10%	In the 3 lesson
3	Simulation exercise "At the reception. Diagnosis of infectious diseases of dogs, cats and fur animals "and "Call to the bird yard"	15/15%	In the 7- 10th lessons
4	Performing the tasks in Google spreadsheets	10/10%	By the end of the 15th week
5	Computer testing (multiple choice)	10/10%	By the end of the 15th week
6	Attestation	15/15%	By the end of the 8th week
8	Exam	30/30%	
	Total in semester	100/100%	

5.2.2. Grading criteria

Summative assessment method	Unsatisfactory	Satisfactory	Good	Excellent
Assessment of the ability to plan the location and arrangement of veterinary passages, barriers, isolators for infected animals or other objects of protection of the farm from the introduction of infectious agents	0-2	3	4	5
	The requirements are not oriented	Requirements are not met all or with errors	Requirements are taken into account, the plan of arrangement and arrangement is substantiated	Requirements are considered, the plan of arrangement and arrangement is grounded
Assessment of the ability to sample for laboratory tests, compile an accompanying document and describe the metods of confirming diagnosis	0-2	3	4	5
	Does not guided in the procedure.	The sequence of the procedure is followed with gross errors	The procedure is quite correctly performed on the object. Documents and descriptions are not fully filled	The procedure is explained in detail and correctly performed on a living object. Documents and descriptions are full
Development of the plan of control or eradicational measures against infectious disease and make the project	0-4	5-7	8-9	10
	Task requirements not met	Most requirements are met, but some components are missing or insufficiently met	All task requirements are met	Task requirements are met, while creativity and thoughtfulness are demonstrated
Testing the ability to navigate the range of vaccines, medicines, desinfectants, rodenticides and insecticides when choosing products for control, treating and disinsection. Debate	0-2	3	4	5
	Task requirements not met	Most requirements are met, but some components are missing or insufficiently met	All task requirements are met	Task requirements are met, while creativity and thoughtfulness are demonstrated
Simulation exercise on topics with the distribution of points on the basis of mutual evaluation	0-4	5-7	8-9	10
	Role not completed	The role is generally fulfilled, with hints and corrections	The role is fulfilled, knowledge of the instruction on struggle against illness is shown, uncertainty is shown	The role is performed with creativity, demonstrated knowledge of instructions for combating the disease, the ability to communicate, argue and show determination in defending their position
Plan of anti-	0-4 (×2, ×3)	5-7 (×2, ×3)	8-9 (×2, ×3)	10 (×2, ×3)

epizootic measures to eliminate the disease (by options)	Task requirements not met	Most requirements are met, but some components are missing or insufficiently met	All task requirements are met	Task requirements are met, while creativity and thoughtfulness are demonstrated

5.3. Formative assessment

Formative exercises are designed to enable students to develop particular aspects of their learning, prior to summative assessments. Formative exercises are designed to help students use feedback and self-reflection to manage and develop their learning so that they can see how to improve their work.

No	Formative Assessment elements	Date
	Autumn semester	
1.	Feedback aimed at supporting the student in understanding the correctness of the documentation	Each time you check the completed acts and accompanying
2.	Self-check for knowledge of the sequence of actions when performing procedures (diagnostic, preventive, veterinary and sanitary) based on the results of the analysis of performed blitz tasks	Blitz control at the beginning of 2,3,4,7,8,10, 14 and 15 classes (in the 6th semester)
	Evaluation of the activity and effectiveness of applicants' participation in focus groups and role-playing in simulation exercises. Comments and tips.	Each time in the form of focus groups or simulation exercises
	Feedback with comments and recommendations on how to solve problems	11th week
	Oral review and correction of plans of control or eradicational measures against infectious disease (by options)	According to the schedule by topics

Self-assessment can be used both an element of formative and summative assessment.

6. LEARNING RESOURCES

6.1. Key resources

1. D.U. Pfeiffer Veterinary Epidemiology - An Introduction, 2002
2. Veterinary epidemiology- 3rd ed. Michael Thrusfield, 2007
3. Václav Kouba Epizootiology: Principles and Methods, 2008
4. Veterinary infection prevention and control. (2012) Linda Caveney, Barbara Jones, with Kimberly Ellis.
5. Veterinary Medicine: A textbook of the diseases of cattle, horses, sheep, pigs and goats - two-volume set, 11th (2017) Peter D. and Kenneth W
6. Veterinary Clinical Epidemiology- 3rd ed. Ronald D. Smith., 2005
7. Aurora Villarroel Practical clinical epidemiology for the veterinarian, 2015

8. Veterinary microbiology and microbial disease – 2nd ed. P.J. Quinn, B.K. Markey, F.C. Leonard, E.S. FitzPatrick, S. Fanning, P.J. Hartigan, 2011
9. Barbara E. Straw ... [et al.]. Diseases of swine — 9th ed, 2006
10. Infectious diseases of dogs and cats – 4-th ed, edited by Creig E.Green, 2013
11. Veterinary Vaccines and Diagnostics (Volume 41) Ronald D. Schultz, 1999
12. B. Austin, D. A. Austin Bacterial Fish Pathogens. Diseases of Farmed and Wild Fish– 4th Edition, 2007

6.2. Guidelines

6.3. Additional resources

MSD Veterinary Manual (https://www.msdvetmanual.com/generalized-conditions)

Terrestrial Animal Health Code (2017) (http://www.oie.int/standard-setting/terrestrial-code/)

Manual of Diagnostic Tests and Vaccines for Terrestrial Animals 2018 (http://www.oie.int/standard-setting/terrestrial-manual/access-online/)

AHP Disease Manual http://lrd.spc.int/ext/Disease_Manual_Final

https://en.wikivet.net/Learning_Resources

6.4. Computer Applications and soft

https://five.epicollect.net/project/asfld/data

https://www.goconqr.com/p/987892-veterinary-epidemiology-final-exam--bacteria-flash_card_decks

https://kahoot.it/