Module code	M_WE_SEM4 EPI
Field of study	Veterinary medicine
Module name	Veterinary Epidemiology
	Epidemiologia weterynaryjna
Language of instruction	English
Module type	obligatory
Cycle	Long-cycle Master's Degree studies
Mode of study	Full-time
Year of study	2
Semester of study	4
ECTS credits, divided into contact/non-contact	3.0 (2.0/1.0)
Academic title/degree, name of the person responsible for the module	dr n. wet. Marcin Kalinowski
Unit teaching the module	Department of Epizootiology and Clinic of Infectious Diseases
Module objective	The aim of teaching the module is to familiarise students with basic concepts and definitions used in epidemiology, concepts describing the origin, course and occurrence of diseases in a population, theoretical bases for interpreting diagnostic test results, principles of screening and observational studies, principles of evidence-based medicine, principles of survey and clinical research, information systems used in animal health and principles of animal disease control. Students acquire practical skills in carrying out the different types of epidemiological studies and diagnostic tests, in interpreting the results obtained from these studies and tests, and in using computer programs to calculate epidemiological studies, especially as related to infectious diseases in animal populations. Students also improve their ability to work in a team by taking responsibility for their decisions.
The learning outcomes for the module are a description of the knowledge, skills and social competences that the student will gain after completing the module.	Knowledge:
	K1. Knows and understands the meaning of concepts and definitions used in epidemiology in relation to the principles and mechanisms underlying the health of animal populations
	K2. Knows the mechanism of origin and course and incidence of diseases in the population
	K3. Knows the basic types of epidemiological studies
	Skills:
	S1. Is able to plan the employment of epidemiological studies
	S2. Is able to interpret the results of epidemiological studies and diagnostic tests
	S3. Is able to use available computer software to plan and interpret the results of epidemiological studies
	Social competences:
	C1. Understands the importance and diversity of epidemiological studies in populations, is able to apply this knowledge to further studies in clinical research

	C2. Is aware of the interdisciplinary importance of epidemiological knowledge and studies in the process of assessing the health of animal populations
	C3. Critically assesses the extent of his/her knowledge and skills in epidemiological studies and is willing to extend this knowledge and improve these skills
Entry and additional requirements	according to the Sequence of subjects
Module curriculum	Lectures: - Basic concepts of epidemiology. Diseases and their division. - Incidence and course of disease in a population. Causes of disease. Prevalence of disease Epidemic - Prevalence of disease in a population. - Diagnostic tests. Sensitivity and specificity of diagnostic tests. Predictive values. - Diagnostic tests. Limit value and methods of its determination. ROC curve and its interpretation. Verification of validity of tests Multiple tests. - Screening Principles for conducting screening. Sampling methods. - Screening Determining sample size. - Observational studies. Cohort, case-control and cross-sectional study types of observational studies. - Evidence-based medicine. Systematic review and meta-analysis. Validity of test results. - Clinical trials Surveys. Clinical trial protocol. Sponsor, monitor, researcher. - Survey questions. Method of conducting surveys. - Principles of disease control. Data and methods of data collection. Monitoring. Population health surveillance. - Information systems in animal health care. National information systems. Information systems used in EU countries. - Principles of animal disease control. Programmes for Disease Control Contingency plans. Classes: - Epidemiology and its division. Population and its characteristics. - Methods and tools of analytic epidemiology. - Use of computer software and statistical methods for calculations. - Prevalence measures - calculation of basic measures. Interpretation of results. - Diagnostic tests - solving the tasks of sensitivity and specificity of tests and predictive values using WinEpi software designed for epidemiological studies. Interpretation of results. - Diagnostic tests - solving tasks related to the interpretation of the ROC curve. Interpretation of results. - Diagnostic tests - solving tasks related to test validity and multiple tests (serial and parallel) using WinEpi software designed for epidemiological studies. Interpretation of results.

	- Screening - sampling methods and sample size determination, solving tasks using WinEpi software and interpretation of the results obtained. - Observational studies - calculating relative risk and risk attributed to exposure. Interpretation of results. - Clinical trials - solving tasks using the WinEpi software and interpretation of the obtained results. - Principles of disease control - discussing the principles and types of disinfection, disinfestation and rodent control
List of core and supplementary literature	Core literature: 1. Cases given to students for self-study 2. Thrusfield M. (2018) Veterinary Epidemiology. Blackwell Science Supplementary literature: 1. Noordhuizen J.P.T.M., Frankena K., van der Hoofd C.M., Graat E.A.M. (1996) Application of Quantitative Methods in Veterinary Epidemilogy. Wageningen Pers 2. Smith R.D. (1995) Veterinary Clinical Epidemiology. CRC Press 3. Toma B., Dufour B., Sanna M., Benet J.J., Moutou F., Louza A., Ellis: Applied Veterinary Epidemiology and the control of disease in population. AEEMA, 1999 4. Web page of OIE - https://www.oie.int/en/home/
Planned forms/activities/teaching methods	Lectures, individual solving of tasks and epidemiological issues, work in a computer lab, multimedia presentations, case studies, discussion

Verification methods and ways of documenting the achieved learning outcomes	Credits for the module shall be obtained after proving the possession of theoretical knowledge and practical skills included in the curriculum of a given module.
	K - credit for theoretical knowledge is obtained on the basis of positive results of a written test (open-ended questions/descriptive test, test). Information on the form and method of assessment shall be presented by the lecturer during the first course of the module, in accordance with the recommendations set by the Academic Standards and Book of Education Quality
	- Descriptive test consists of 5 theoretical questions from the scope of the module curriculum, scored 3 points each. The total of 15 points can be obtained. - The minimum score for getting a passing grade is 60%.
	- The test is a single-choice test (10 questions/1 point - 1 question)
	- the minimum score for getting a passing grade is 60%.
	S - solving tasks in the field of epidemiology and discussion of the obtained results with the teacher (work in the computer lab), case studies, participation in discussion.
	- credit for practical skills is obtained on the basis of positive results of a written test (open-ended questions/descriptive test, test). Information on the form and method of assessment shall be presented by the lecturer during the first course of the module, in accordance with the recommendations set by the Academic Standards and Book of Education Quality.
	- The descriptive test consists of 5 practical tasks from the scope of the module curriculum the results of which must be interpreted, scored 3 points each. The total of 15 points can be obtained. - The minimum score for getting a passing grade is 60%.
	The test is a single-choice test (10 questions/1 point - 1 question)
	- the minimum score for getting a passing grade is 60%.
	In the case of the written test, tests taken in dates 1, 2, and 3 are in the same form.
	Criteria used in grading the exam:
	0 - 59% - 2
	60 - 67% - 3
	68 - 75% - 3.5
	76 - 84% - 4
	85 - 92% - 4.5
	93 - 100% - 5
	C - participation in discussion, case studies, assessment of student's approach to self-education, assessment of ability to cooperate and work in a team.
	One unexcused absence from classes is allowed. The final exam consists of all knowledge and skills from the scope of the curriculum discussed during the semester. Credit for the module is obtained after acquiring passing grade on the written test.
ECTS credits	CONTACT

		Hours	ECTS
	Lectures	15	0.6
	Classes	30	1.2
	Conferences	3	0.12
	Getting credit for classes	2	0.08
	TOTAL	**50**	**2.0**
	NON-CONTACT		
	Preparation for classes	15	0.6
	Preparation for examination	10	0.4
	TOTAL	**31**	**1.0**
The workload of activities that require direct participation of an academic teacher	Lecture attendance	15	0.6
	Class attendance	30	1.2
	Conferences	3	0.12
	Getting credit for classes	2	0.08
	TOTAL	**50**	**2.0**
Comparison of module learning outcomes and major learning outcomes	K1 – A.W10++ K2 – A.W10++, A.W13++ K3 – B.W6++, B.W16++ S1 – A.U12++, A.U13++, A.U15++, A.U20+ S2 – A.U13++, A.U19++, A.U20+, A.U23++, B.U7+ S3 – A.U19++, A.U20+, A.U23++ C1 – K4+++, K5+++, K6+++, K8+++ C2 – K4+++, K8+++, K9+++ C3 – K4+++, K8+++, K9+++		
Elements and weighting factors affecting final grade	The grade obtained for the module is calculated on the basis of the final examinations grades comprising the theoretical knowledge (weight - 50%) and the practical skills (weight - 50%)		