

Module title:	Meat hygiene 2	ECTS	3
Polish translation:	Badanie zwierząt rzeźnych i mięsa 2		
Course:	Veterinary Medicine		

Module language: English		Stage: JM-FVM	
Form of studies: ☒ intramural ☐ extramural	Type of module: ☐ basic ☒ mandatory ☒ directional ☐ elective	Semester: 7.....	☒ winter semester ☐ summer semester
Academic year:		Intake 2022/2023	Catalogue number: FVM-V-JMSS-07W-D07_20

Module coordinator:		Dr hab. Krzysztof Anusz, prof.		
Teachers responsible for the module:		Academic teachers of the Institute ...; Department.../Laboratory of Veterinary Epidemiology and Economics; PhD students in accordance to the internal legal acts; visiting professors; other specialists in the field of study		
Objectives of the module:		The educational aim is to prepare students to work as either an official veterinarian or a private practitioner within the scope of consumer veterinary health protection, according to the "from field to table" principle. Students learn and master in practice the methods of sanitary and veterinary examination of slaughter animals (cattle, pigs, horses, poultry, rabbits, nutria) as well as quarry and game, they practically master and perform methods of macroscopic, bacteriological, serological, parasitological, physicochemical and organoleptic examination of meat, as well as perform sanitary and veterinary assessment of meat based on the above tests. The aim of education is also to learn about veterinary legislation related to the sanitary and veterinary examination and assessment of slaughter animals and meat Subject area of lectures (each lecture unit takes 1 hour) Pre-and post-mortem diagnosis of infectious diseases of pigs, cattle, sheep and horses - diseases of viral, bacterial, parasitic aetiology, as well as sanitary and veterinary evaluation of meat (5x 1h). Diagnosis of exotic diseases (FAD) in slaughter animals (5x1h). Diagnosis of viral, bacterial, parasitic diseases in wild game and sanitary and veterinary evaluation of venison (2x1h). Applicable regulations and procedures for the accreditation of veterinary laboratories (1 h). Residues in meat of antibiotics and other inhibitory substances and hormones, their detection and sanitary and veterinary evaluation of meat (2x1 h). Subject area of laboratory classes (each laboratory class takes 3 hours) Examination and assessment of poultry meat (overview and film) (3 h); poultry slaughterhouse (field exercises) (3 h); examination and assessment of meat of rabbits and game (3 h); characteristics and recognition of Enterobacteriaceae (Escherichia, Salmonella, Shigella, Proteus, Yersinia, Serratia); characteristics and recognition: Pseudomonas, Vibrio, Bacillus, Clostridium; characteristics and recognition of Micrococcaceae (Staphylococcus, Streptococcus, Micrococcus) and fungi (yeast and mould) (5 x 3h); microbiological examination of meat: bacteriological culture in accordance with applicable regulations (3h); microbiological examination of meat; reading bacteriological cultures and interpretation of test results (3 h); recognition and differentiation of meat of different species of animals: organoleptic and serological tests and familiarization with other methods (chromatography, PCR) (3 h); Parasitological examination of meat: Trichinella examination using a compressor method (3 h); parasitological examination of meat: trichinosis digestion test (3h); parasitological examination of meat - sarcocystosis, cysticercosis, liver fluke, muscular fluke (3 h); interpretation of results of parasitological tests (3 h)		
Teaching forms, number of hours:		a) Lectures; hours 15...; b) Laboratory classes; hours 42...; c) Seminars; hours ...; d) Clinical laboratories; hours ...; e) Field exercises; hours 3...;		
Teaching methods:		Lectures are conducted with the use of audio-visual aid (original multimedia presentations, video). During the theoretical part of the seminar classes, original multimedia presentations and films are used. During laboratory classes, students perform bacteriological and parasitological tests of meat, interpret and discuss the results. Field exercises - study visit (3h), take place in the Poultry Plant in the Masovian Voivodeship (slaughterhouse and processing). 1h / week consultations for students. The manner of organizing consultations will be determined by the subject coordinator at the beginning of the semester. Detailed schedule will be defined by the coordinator of the course at the beginning of semester. Detailed organization of consultations will be defined by the coordinator of the course at the beginning of semester.		
Formal prerequisites and initial requirements:		Passed subjects: Animal anatomy, Pathomorphology, Microbiology, Parasitology and Invasionology, Veterinary pharmacology (module 1 and 2), Veterinary epidemiology Medical report for sanitary and epidemiological purposes		
Learning effects		Course outcomes:	Learning outcomes relative to the course outcomes	Impact on the course outcomes*
Knowledge:	1	Knows and understands the biology of infectious agents that cause inter-animal diseases and anthroozoonosis, including disease transfer mechanisms and the body's defence mechanisms	A.W.13	3
	2	Knows and understands the basics of microbiological diagnostics.	A.W.15	3

	3	Knows and understands the principles of functioning of the Veterinary Inspection, also in the aspect of public health protection	B.W.16	3
	4	Knows and understands the principles of consumer health protection ensured by proper supervision over the production of foodstuffs of animal origin	B.W.17	3
	5	Knows and understands control systems in accordance with HACCP (Hazard Analysis and Critical Control Point) procedures	B.W.18	3
	6	Knows and understands the principles of food law	B.W.21	3
	7	Knows and understands the principles of occupational health and safety in veterinary activities	C.W.3	3
Skills:	1	Can conduct basic microbiological evaluation;	A.U.10	3
	2	Can collect and safeguard the biological material, conduct basic laboratory analyses, properly evaluate and interpret results of laboratory analyses;	B.U.6	3
	3	Is able to implement appropriate procedures in the event of a disease that is subject to the mandatory control and registration	B.U.8	2
	4	Is able to obtain and use information on authorized veterinary medicinal products	B.U.9	2
	5	Is able to evaluate quality of the products of animal origin;	B.U.18	3
	6	is able to take samples for monitoring tests for the presence of unauthorized substances, chemical and biological residues, medicinal products and radioactive contamination in animals, in their secretions, excreta, in tissues or organs, in products of animal origin, food, in water and feed for animals	BU23	3
Competences:	1	Is ready to demonstrate responsibility for decisions made towards people, animals and the natural environment	K.S.1	3
	2	Is ready to formulate conclusions from his own survey and observations	K.S.5	3
	3	Is ready to deepen knowledge and improve skills	K.S.8	3
	4	Is ready to act in conditions of uncertainty and stress	K.S.10	3
	5	Is ready to cooperate with representatives of other professions in the field of public health protection	K.S.11	3
Objectives of the module required to obtain learning effects:		Aim is to prepare students to work as either an official veterinarian or a private practitioner within the scope of consumer veterinary health protection, according to the "from field to table" principle. Students learn and master in practice the methods of sanitary and veterinary examination of slaughter animals (cattle, pigs, horses, poultry, rabbits, nutria) as well as quarry and game, they practically master and perform methods of macroscopic, bacteriological, serological, parasitological, physicochemical and organoleptic examination of meat, as well as perform sanitary and veterinary assessment of meat based on the above tests. The aim of education is also to learn about veterinary legislation related to the sanitary and veterinary examination and assessment of slaughter animals and meat.		
Assessment methods:		3 written tests during the classes (4 open questions - 5 points / question). A minimum score required to pass a test is 12 points (60%). Grading scale: 60-67% - sufficient 68-75% - sufficient plus 76-83% - good 84-92% - very good 93-100% - excellent Practical effects verified by the teacher during the exercises. Students perform activities under the supervision of the teacher. Students prepare documentation - a report on tests performed and interpretation of the results obtained. Documentation is discussed after consultation with the teacher. The final written exam, covering the lecture material of semesters 6 and 7, can be taken by students who passed semester 6 and the practical part of semester 7 (passing 3 written tests by obtaining a minimum of 12 points from each, two potential trials). The exam consists of 10 open questions (5 points / question). Grading scale identical as for written tests. The exam and retake have the same form. Three absences from exercises are allowed. No extra assessment methods are anticipated. In case of unforeseen, unusual circumstances mandatory remote teaching and remote assessment methods might be adopted. In case of unforeseen, unusual circumstances mandatory remote teaching and remote assessment methods might be adopted.		
Detail description of assessment methods;		... No extra assessment methods are anticipated.		
Formal documentation of learning outcome:		eHMS entry. Records collected in the course portfolio i.e. individual records of student results, presence lists, database of oral and written questions, written assessments of the students.		
Elements impelling final grade:		Final grade: test 1 / semester 6 -5% of the final grade, test 2 / semester 6 -5% of the final grade, colloquium 1,2,3 / semester 7 - 5% of the final grade each, written exam - 75% of the final grade.		

Teaching base:	Department of Meat Hygiene and Public Health, IVM lecture rooms
Mandatory and supportive materials : 1. Doyle M.P., Beuchat L.R., Montwille T.J.: Food microbiology: Fundamentals and frontiers. USA 2001. ASM Press. 2. Grist A. 2004.: Poultry Inspection. Anatomy, physiology and disease conditions. Nottingham University Press. 3. Grist A. 2005.: Bovine Meat Inspection. Anatomy, physiology and disease conditions. Nottingham University Press. 4. Grist A. 2005.: Ovine Meat Inspection. Anatomy, physiology and disease conditions. Nottingham University Press. 5. Grist A. 2008.: Porcine Meat Inspection. Anatomy, physiology and disease conditions. Nottingham University Press. 6. Schmidt R.H., Rodrick G.E: Food safety handbook. USA 2003, Wyd. John Wiley & Sons, Inc., USA 7. Warriss P.D: Meat science. An introductory text.: UK 2000, Cabi Publishing, UK. 8. Wilson W. G. 2005.: Wilson's Practical Meat Inspection.VII Edition, Blackwell Publishing 9. Cianciara J., Juszczuk J. 2007.: Choroby zakaźne i pasożytnicze, Wydawnictwo Czelej, Lublin 10. Sing A. 2015: Zoonoses – Infections Affecting Humans and Animals, Springer. 11. Rabinowitz P. M., Conti L. A. 2010.: human-Animal Medicine. Clinical Approaches to Zoonoses, Toxicants and Other Shared Health Risks. Elsevier 12. Taylor M. A., Coop R. L, Wall R. L. 2016. : Veterinary Pasitology. Fourth Edition. Willey Blacwell. Relevant scientific publications, including those of the module coordinator. Relevant scientific publications, including those of the module coordinator. ANNOTATIONS	

* 3 – complete and detailed, 2 – moderate, 1 – basic.

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:	90 h
Total ECTS points, accumulated by students during contact learning:	3..... ECTS