

Module title:	Meat hygiene (1)	ECTS	3
Polish translation:	Badanie zwierząt rzeźnych i mięsa (1)		
Course:	Veterinary Medicine		

Module language: English	Stage: JM-FVM		
Form of studies: <input checked="" type="checkbox"/> intramural <input checked="" type="checkbox"/> extramural	Type of module: <input checked="" type="checkbox"/> basic <input checked="" type="checkbox"/> directional	<input checked="" type="checkbox"/> mandatory <input checked="" type="checkbox"/> elective	Semester: 6 <input checked="" type="checkbox"/> winter semester <input checked="" type="checkbox"/> summer semester
Academic year:	2022/2023	Catalogue number:	FVM-V-JMSS-065-007_22

Module coordinator:	Krzysztof Anusz			
Teachers responsible for the module:	Academic teachers of the Institute of Veterinary Medicine; Department of Food Safety and Public Health Protection; 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 fork" 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 also learn about conduct sanitary and veterinary assessments of meat. Students also acquire the knowledge from the field of sanitary and veterinary supervision over animal buying-in points, transport, slaughterhouses, which are responsibilities of the Veterinary Inspection, and they learn about veterinary legislation related to the sanitary and veterinary examination and assessment of slaughter animals and meat. Particular attention is paid to issues related to the welfare of slaughter animals.			
Teaching forms, number of hours:	a) Lectures; hours 15; b) Laboratory classes; hours 12; c) Field exercises; hours 18;			
Teaching methods:	Lectures can be conducted with the use of audio-visual aid (original multimedia presentations, video). During the seminar classes, original multimedia presentations and films can be used. Field exercises covering the matter of ante-mortem and post-mortem inspection of slaughter animals take place in slaughterhouses. 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:	Subjects passed: Animal Anatomy 2, Topographic Anatomy, Parasitology and Invasiology 2, Pathomorphology 1, Veterinary Pharmacology 1, Microbiology 2, Veterinary Epidemiology. Administrative requirements: Medical certificate for sanitary and epidemiological purposes.			
Learning effects	Course outcomes:	Learning outcomes relative to the course outcomes	Impact on the course outcomes*	
Knowledge:	1	Student knows and understands the biology of infectious agents that cause inter-animal diseases and anthro-po-zoonoses, including disease transfer mechanisms and the body's defence mechanisms	A.W.13	3
	2	Student knows and understands the basics of microbiological diagnostics	A.W.15	3
	3	Student knows and understands the principles of animal welfare	B.W.9	3
	4	Student knows and understands ways of managing and utilizing animal by-products and waste associated with animal production	B.W.15	3
	5	Student knows and understands the principles of functioning of the Veterinary Inspection, also in the aspect of public health protection	B.W.16	3

	6	Student 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
	7	Student knows and understands control systems in accordance with HACCP (Hazard Analysis and Critical Control Point) procedures	B.W.18	3
	8	Student knows and understands pre-and post-mortem inspection procedures	B.W.19	3
	9	Student knows and understands the principles of food law	B.W.21	3
	10	Student knows and understands the principles of occupational health and safety in veterinary activities	C.W.3	3
Skills:	1	Student is able to explain the basics of physical examination, including different animal species	A.U.6	2
	2	Student can handle animals safely and humanely, and instruct others in this regard	B.U.1	3
	3	Student is able to conduct a veterinary-medical history in order to obtain accurate information about a single animal or group of animals and its or their habitat	B.U.2	3
	4	Student is able to collect and secure test samples and perform standard laboratory tests, as well as correctly analyse and interpret laboratory test results	B.U.6	3
	5	Student is able to implement appropriate procedures in the event of a disease that is subject to the mandatory control and registration	B.U.8	3
	6	Student is able to obtain and use information on authorized veterinary medicinal products	B.U.9	2
	7	Student can perform ante-mortem and post-mortem inspection	B.U.17	3
	8	Student 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	B.U.23	3
	9	Student can assess compliance with the requirements for the protection of slaughter animals, in regard to various methods of slaughter	B.U.24	3
Competences:	1	Student is ready to demonstrate responsibility for decisions made towards people, animals and the natural environment	KS.1	3
	2	Student is ready to formulate conclusions from his own survey and observations	KS.5	3
	3	Student is ready to deepen knowledge and improve skills	KS.8	3
	4	Student is ready to act in conditions of uncertainty and stress	KS.10	3
	5	Student is ready to cooperate with representatives of other professions in the field of public health protection	KS.11	3
Objectives of the module required to obtain learning effects:	<p>Subject area of lectures: veterinary legislation related to the sanitary and veterinary examination and assessment of slaughter animals and meat and the Veterinary Inspection, ante-mortem and post-mortem inspection, procedure after bringing the animal to the slaughterhouse, ante-mortem inspection of slaughter animals, handling of animals after ante-mortem inspection, post-mortem inspection of animals for slaughter; veterinary supervision over animals for slaughter buying-in points, their roundups and transport, disinfection of means of transport and the impact of transport on the animals and their meat; sanitary requirements for slaughter plants (HACCP), the place of slaughter, preparing the animals for slaughter, pre-slaughter rest and fasting, arriving of animals at a slaughterhouse, veterinary and sanitary recognition and assessment with respect to meat quality deviations: unborn and stillborn animals, dead animals, simulated slaughter, animal immaturity, emaciation; changes in meat colour: poor bleeding, lipochromatosis, jaundice, yellow fat disease; discoloration - melanoma, ochronosis, xanthosis, porphyria; with meat flavour and aroma deviations due to nutrition, sex odour, uraemia, diseases, medications, deviations resulting from meat absorption; PSE and DFD syndrome, dorsal muscle necrosis, stress cardiomyopathy; conditions - sepsis, pyaemia, toxemia, viremia; issues of utilization and environmental protection, issues of slaughter animal welfare.</p> <p>Subject area of laboratory classes: administrative activities of the Veterinary Inspection in a slaughterhouse; administrative activities of a veterinarian examining slaughter animals and meat in</p>			

	a slaughterhouse: discussion and film on the technique of pre-and post-mortem inspection; differentiation of internal organs of slaughter animals based on anatomical features; field classes on the following subjects: livestock warehouse, sanitary slaughterhouse, slaughterhouses, trichinoscopy, questioned meat warehouse; pre-mortem and post-mortem inspection (routine and detailed inspection of the carcass and internal organs) of cattle, pigs, calves, sheep, horses; labelling of carcasses after post-mortem inspection of all animal species.
Assessment methods:	Written test, practical skills evaluation (pre- and post-mortem evaluation). In case of unforeseen, unusual circumstances mandatory remote teaching and remote assessment methods might be adopted.
Detail description of assessment methods; Formal documentation of learning outcome:	Preliminary written test (4 open questions - 5 points / question) covering the procedures for pre- and post-mortem inspection of slaughter animals. A minimum score required to pass a test is 12 points (60%) The date of the repeat preliminary written test takes place in the same form. Grading scale: 60-67% - sufficient 68-75% - a sufficient plus 76-83% - good 84-92% - a good plus 93-100% - very good. Practical test at the slaughterhouse under the supervision of the lecturer - traditional scale 2-5 (the test includes the practical implementation of the indicated part of the procedure for pre- and post-mortem inspection of a selected species of slaughter animal). Repeat practical test takes place in the same form. The final grade of the semester makes the average grade of the written test and practical test. 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:	Lecture - Written test - 60%. Laboratory exercises - Test (written or computer based) - 20%. Field exercises - Assessment of activity during classes - 20%.
Teaching base:	Faculty of Veterinary Medicine; Department of Food Safety and Public Health Protection; external stakeholders - slaughterhouses
Mandatory and supportive materials :	
<ol style="list-style-type: none"> 1. European and Polish legal acts. 2. Grist A. 2005.: Bovine Meat Inspection. Anatomy, physiology and disease conditions. Nottingham University Press. 3. Grist A. 2005.: Ovine Meat Inspection. Anatomy, physiology and disease conditions. Nottingham University Press. 4. Grist A. 2008.: Porcine Meat Inspection. Anatomy, physiology and disease conditions. Nottingham University Press. 5. Doyle M.P., Beuchat L.R., Montwille T.J.: Food microbiology: Fundamentals and frontiers. USA 2001. ASM Press. 6. Wilson W. G. 2005.: Wilson's Practical Meat Inspection.VII Edition, Blackwell Publishing 7. Taylor M. A., Coop R. L, Wall R. L. 2016. : Veterinary Parasitology. Fourth Edition. Wiley Blackwell 8. Warriss P.D: Meat science. An introductory text.: UK 2000, Cabi Publishing, UK. 9. Schmidt R.H., Rodrick G.E: Food safety handbook. USA 2003, Wyd. John Wiley & Sons, Inc., USA 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 12. Shared Health Risks. Elsevier 	
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:	75 h
Total ECTS points, accumulated by students during contact learning:	3 ECTS