



Animal hygiene
Educational subject description sheet

Basic information

Field of study Veterinary Medicine	Education cycle 2021/22	
Speciality -	Subject code WMWMWW-AJS.J4HS.0072.21	
Department The Faculty of Veterinary Medicine	Lecture languages English	
Study level Long-cycle programme	Mandatory mandatory	
Study form Full-time	Block humanities and social sciences	
Education profile General academic	Disciplines Veterinary medicine	
	Subject related to scientific research No	
	Subject shaping practical skills Yes	
Teacher responsible for the subject	Przemysław Cwynar	
Other teachers conducting classes	Przemysław Cwynar	
Period Semester 3	Examination graded credit	Number of ECTS points 2.0
	Activities and hours lecture: 15 laboratory classes: 15	
	Standard group A. Basic sciences	

Goals

C1	The aim of the course is to present the basic knowledge in the field of animal hygiene and animal welfare. The topics cover the environmental and living conditions for farm animals and includes: microclimatic conditions (UV radiation, lighting, air temperature and humidity, air movement, gas mixtures, dustiness, noise) on the health and productivity of animals, methods for optimizing environmental conditions in animal buildings (ventilation, heat balance in livestock buildings, heat protection and functionality of animal beddings), livestock keeping systems taking into account aspects of welfare, biosecurity, hygiene and environmental protection, principles of Good Breeding Practice in animal production as well as the animal transport.
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Subject's learning outcomes

Code	Outcomes in terms of	Effects	Examination methods
Knowledge - Student knows and understands:			
W1	knows to an extensive degree and describes in detail the principles and mechanisms underlying animal health, disease formation and their treatment - from the level of cells, through the organ, animal, to the entire animal population;	O.W1	written credit
W2	explains and interprets the etiology, pathogenesis and clinical symptoms of diseases occurring in individual animal species, and knows the principles of therapeutic procedure, as well as the methods of diagnostic and therapeutic procedure appropriate for the diseases occurring in animals;	O.W3	written credit
W3	presents the biology of infectious factors that cause diseases transmitted between animals, as well as anthroozoonoses, taking into account the mechanisms of disease transmission and defense mechanisms of the macroorganism;	O.W6	written credit
Skills - Student can:			
U1	monitors health of the herd, as well as undertakes action in the case of a disease that is subject to the obligation of disease eradication or its registration;	O.U4	project, observation of student's work, active participation, presentation
U2	performs activities that are associated with the veterinary supervision, including trade in animals, as well as sanitary and veterinary conditions of animal gathering locations and processing products of animal origin	O.U6	project, observation of student's work, active participation, presentation
U3	uses vocabulary and grammatical structures of a foreign language, which constitutes the language of international communication, in the scope of creating and understanding written and oral statements, both general and specialised in the scope of veterinary;	O.U11	project, observation of student's work, active participation, presentation
Social competences - Student is ready to:			
K1	exhibits responsibility for his/her decisions made in regard to the people, animals and the natural environment	O.K1	project, observation of student's work, active participation, presentation

K2	uses the objective sources of information	O.K4	project, observation of student's work, active participation, presentation
K3	participates in resolution of the conflicts and exhibits flexibility in reactions to social changes	O.K3	project, observation of student's work, active participation, presentation

Balance of ECTS points

Activity form	Activity hours*	
lecture	15	
laboratory classes	15	
lesson preparation	5	
presentation/report preparation	10	
exam / credit preparation	15	
Student workload	Hours 60	ECTS 2.0
Workload involving teacher	Hours 30	ECTS 1.0
Practical workload	Hours 15	ECTS 0.6

* hour means 45 minutes

Study content

No.	Course content	Activities
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1.	<p>Lecture 1 (2h): Introduction to animal hygiene and its role in veterinary sciences. The importance of zoohygiene and animal welfare in the protection of animal and public health.</p> <p>Lecture 2 (2h): The importance of welfare in animal husbandry and breeding. Criterias and valuation of animal welfare.</p> <p>Lecture 3 (2h): Impact of microclimatic factors on farm animals, with particular emphasis on lighting and thermo-humidity parameters.</p> <p>Lecture 4 (2h): Livestock systems and technological and functional conditions in livestock buildings. Ventilation in livestock buildings (ventilation, noise, sewerage, floors).</p> <p>Lecture 5 (2h): Disinfection, disinsection and deratization and their role in ensuring animal hygiene and welfare.</p> <p>Lecture 6 (2h): Biosecurity of farms. Methods for effective protection of livestock herds against infectious agents.</p> <p>Lecture 7 (2h): Legal basics of animal transport in Poland and European Union member states.</p> <p>Lecture 8 (1h): Summary of living conditions for selected farm animal species.</p>	lecture
2.	<p>Classes 1 (2h): Infrared and ultraviolet radiation (actinometry, radiometry, UV, infrared radiation). UV fractions, their measurement and calculation of the UV-C disinfection potential.</p> <p>Classes 2 (2h): Visible light and its role in the prevention and breeding of farm animals. Visible light measurements and calculations of illuminance for chosen species of farm animals.</p> <p>Classes 3 (2h): Thermometry and heat indifference zone. Temperature measurement methods using the minimum and maximum thermomentres, pyrometers and thermographic cameras. Calculation of thermo-humidity index (THI).</p> <p>Classes 4 (2h): Psychrometry and hygrometry. Basic hygrometric indicators and thermal-humidity systems, humidity measurement.</p> <p>Classes 5 (2h): Air movement. Anemometry and cataterometry. Measurement and calculation of air velocity, catatermometric cooling and thermal comfort.</p> <p>Classes 6 (2h): Heat balance and heat protection in livestock buildings. Objectives and principles of calculating the index of thermal properties of rooms.</p> <p>Classes 7 (3h): Practical methods of zoohygienic assessment of livestock buildings - SPIWET (field classes at RZD Swojec). Air pollution (mechanical, chemical and biological). Conimetry, gasometry, gas measurements i.e. ammonia, hydrogen sulfide, carbon dioxide. Olfaktometria.</p>	laboratory classes

Course advanced

Teaching methods:

case analysis, text analysis, brainstorming, educational film, foreign language (conversation classes), problem-solving method, situation-based learning, presentation / demonstration, discussion, lecture, classes

Activities	Examination methods	Percentage in subject assessment
lecture	written credit, observation of student's work	30%

Activities	Examination methods	Percentage in subject assessment
laboratory classes	project, active participation, presentation	70%

Literature

Obligatory

1. Aland A., Banhazi T., Livestock housing. Modern management to ensure optimal health and welfare of farm animals. Wageningen Academic Publishers 2013, <https://doi.org/10.3920/978-90-8686-771-4>.
2. Sossidou E., Szucs E. Farm animal welfare, environment & food quality interaction studies. Welfood Partners, 2007.
3. Banhazi T., Aland A., Hartung J. Air Quality and Livestock Farming. Routledge Taylor & Francis Group, 2018.

Optional

1. Ekesbo I., Gunnarsson S. Farm animal behaviour: characteristics for assessment of health and welfare. CABI, 2018.
2. Council Regulation (EC) No 1/2005 of 22 December 2004 on the protection of animals during transport and related operations and amending Directives 64/432/EEC and 93/119/EC and Regulation (EC) No 1255/97; OJ L 3, 5.1.2005, p. 1-44
3. Council Regulation (EC) No 1099/2009 of 24 September 2009 on the protection of animals at the time of killing (Text with EEA relevance); OJ L 303, 18.11.2009, p. 1-30

Effects

Code	Content
O.K1	Exhibits responsibility for his/her decisions made in regard to the people, animals and the natural environment
O.K3	Participates in resolution of the conflicts and exhibits flexibility in reactions to social changes
O.K4	Uses the objective sources of information
O.U4	Monitors health of the herd, as well as undertakes action in the case of a disease that is subject to the obligation of disease eradication or its registration;
O.U6	Performs activities that are associated with the veterinary supervision, including trade in animals, as well as sanitary and veterinary conditions of animal gathering locations and processing products of animal origin
O.U11	Uses vocabulary and grammatical structures of a foreign language, which constitutes the language of international communication, in the scope of creating and understanding written and oral statements, both general and specialised in the scope of veterinary;
O.W1	Knows to an extensive degree and describes in detail the principles and mechanisms underlying animal health, disease formation and their treatment - from the level of cells, through the organ, animal, to the entire animal population;
O.W3	Explains and interprets the etiology, pathogenesis and clinical symptoms of diseases occurring in individual animal species, and knows the principles of therapeutic procedure, as well as the methods of diagnostic and therapeutic procedure appropriate for the diseases occurring in animals;
O.W6	Presents the biology of infectious factors that cause diseases transmitted between animals, as well as anthroozoonoses, taking into account the mechanisms of disease transmission and defense mechanisms of the macroorganism;