Course title:	Diversification of animal products
Course title in Polish:	Dywersyfikacja produktów pochodzenia zwierzęcego
Course for discipline:	Animal Science and Fisheries

Semester:	4	**Status of course:**	faculty	**Language:**	english
Academic year:	2026/27	**Catalog number:**	147/2025/26		

Coordinator of course:	dr Jakub Urban
Lecturer od course:	Academic staff of the Institute of Animal Sciences and external stakeholders
Executing unit:	Department of Animal Breeding and Nutrition
Ordering unit:	Doctoral School SGGW
Assumptions, goals and description of the course:	The aim of the course is to familiarize doctoral students with the scale of production and the genetic resources of farm animals worldwide, in Poland, and within the European Union. The course will introduce the issue of globalization in animal breeding, including its causes and consequences. Attention will also be given to qualitative limitations associated with long-term intensive selection in animal production. Furthermore, the course will present the main alternative animal housing and production systems. The course will be delivered in several thematic modules focusing on selected species of farm animals (poultry, pigs, and cattle). The following topics will be addressed: • Advantages and disadvantages of intensive production systems, including the effects of long-term selection and its impact on the quality of animal-derived raw materials; • New legal regulations concerning the reduction of antibiotic use in animal production and the environmental impact of livestock production; • Global trends in animal production; • Organization of production systems within specific species, with reference to emerging housing systems. In poultry production, particular attention will be paid to the Label Rouge system in comparison with organic and certified production systems in Poland (e.g., free-range chicken, corn-fed chicken, premium products), as well as exclusive products such as capon and poulard. In pig production, the quality of pork from extensive systems (organic vs. intensive production), meat from native breeds, and the PQS (Pork Quality System) will be discussed. In dairy cattle production, special emphasis will be placed on reducing the phenomenon of antimicrobial resistance through the synergistic use of silver and copper nanoparticles in preparations supporting the treatment of subclinical mastitis.
Didactic form, number of hours:	15 hours
Teaching methods:	Lecture, discussion, analysis and interpretation of source materials, consultations
Limit of people in the group:	

Learning outcomes

KNOWLEDGE - the graduate knows and understands:	**SKILLS - the graduate is able to:**	**COMPETENCES - the graduate is ready to:**
To the extent enabling to revise the existing pradigms in the field/discipline - the world achievments, gathering theoretical background as well as general and selected detailed issues	Carry out critical assessment of the scientific research findings and expert activities and their contribution to the knowledge development in the field/discipline	Critically evaluate the achievments in the field/discipline represented
Major general development trends in the field/discipline		Recognise knowledge in solving cognitive and practical problems characteristic for the area of research (field/discipline) and in an interdisciplinary aspect
		Support the ethos of scientific circles and conduct independent research

The method of verification of learning outcomes:	Final project prepared in subgroups
Form of documentation of achieved learning outcomes:	Final project grade
Elements and weights of the final grade:	100% – final project
Place of the course:	Lecture room, MSTeams

Basic and supplementary literature

Industry journals and textbooks: Poultry Science, Polish Journal of Food and Nutrition Sciences, Journal of the Science of Food and Agriculture, Journal of Dairy Science, Journal of Food Science, Annals of Warsaw University of Life Sciences – SGGW, Animal Science, The Journal of Animal & Plant Sciences, International Dairy Journal, Meat Science, Animal Science, as well as textbooks on beef cattle production, pig production, and poultry production.

Comments:	

Estimated number of hours of work of the doctoral student necessary to achieve the assumed learning outcomes:	10h

Leraning outcomes reference to the second degree characteristics of the National Qualification Framework (level 8) covering doctoral competences:		
Symbol:	**Learning outcomes:**	**8 level NQF**

SD1_KW01	To the extent enabling to revise the existing pradigms in the field/discipline - the world achievments, gathering theoretical background as well as general and selected detailed issues	P8S_WG
SD1_KW02	Major general development trends in the field/discipline	P8S_WG
SD1_KU05	Carry out critical assessment of the scientific research findings and expert activities and their contribution to the knowledge development in the field/discipline	P8S_UW
SD1_KK01	Critically evaluate the achievments in the field/discipline represented	P8S_KK
SD1_KK03	Recognise knowledge in solving cognitive and practical problems characteristic for the area of research (field/discipline) and in an interdisciplinary aspect	P8S_KK
SD1_KK08	Support the ethos of scientific circles and conduct independent research	P8S_KR