Course name: Modern technologies of animal products processing

ECTS	5.0
Course status	*optional*
Course final assessment /evaluation of outcomes	*Exam*
Prerequisite	*No prerequisites*

Main field of study*: *Food Technology and Human Nutrition

Educational profile	General academic
Code of studies and education level	Master
Semester of studies	summer
Language of instruction	English

Course offered by:

Name of faculty offering the course	Faculty of Food Technology
Name of department offering the course	Department of Animal Product Technology
Course coordinator	dr hab. inż. Dorota Najgebauer-Lejko, prof. URK

Learning outcomes:

Symbol of outcome	Description of the learning outcome	Reference to main field of study outcomes	Area symbol*
KNOWLEDGE – student knows and understands			
TS1_Z1_W1	the factors of quality and safety of animal origin raw materials (culinary meat, animal fats, eggs, raw milk) and their products. Names and defines processes and technological operations used in animal products processing.	TŻ2_W01 TŻ2_W02 TŻ2_W05	RT
TS1_Z1_W2	the methods of monitoring the hygiene of rooms, machines, air and personnel at the stage of acquiring and storing of raw materials. Has the knowledge about methods of food preservation applicable to products of animal origin. Understands the importance of physiological and pathogenic microflora in shaping the quality of animal origin products.	TŻ2_W02 TŻ2_W03 TŻ2_W04	RT
TS1_Z1_W3	the methods of managing the inedible slaughter raw materials. Has the knowledge about the methods for the management of whey and buttermilk.	TŻ2_W02	RT
TS1_Z1_W4	the importance of post-mortem exogenous and endogenous changes in shaping the quality of meat and animal fats. Recognizes meat defects. Characterizes the processes of aging and spoiling of eggs.	TŻ2_W01 TŻ2_W02 TŻ2_W04	RT
TS1_Z1_W5	the chemical composition, physicochemical, microbiological and nutritional properties of raw materials of animal origin and their products.	TŻ2_W03 TŻ2_W04	RT
SKILLS – student is able to			
TS1_Z1_U1	listen and answer using understandable language, appropriate to the situation.	TŻ2_U02	RT
TS1_Z1_U2	produce selected animal products.	TŻ2_U05 TŻ2_U09	RT
TS1_Z1_U3	assess the basic chemical composition, physicochemical properties as well as the sensory and microbiological quality of raw materials and products of animal origin.	TŻ2_U04 TŻ2_U05 TŻ2_U08	RT

TS1_Z1_U4	interpret the obtained results comparing them with the normative values, to apply the food law in force in Poland and the EU, and to independently use legal acts and to interpret them.	TŻ2_U06	RT
SOCIAL COMPETENCIES – student is ready to:			
TS1_Z1_K1	work in a group, is aware of social, ethical and professional responsibility for the safety of food production	TŻ2_K04	RT
TS1_Z1_K2	understand the need to inform the public about activities related to the production of safe food in accordance with current legal requirements. Is aware of the need to engage in the activities of professional and local government organizations.	TŻ2_K04 TŻ2_K05 TŻ2_K06	RT

Teaching contents

Lectures		30 hours
Topics	Quality and food safety management systems at the stage of the production of animal origin raw materials (culinary meat, animal fat, fish, eggs, raw milk) and their processing.	
	Veterinary control of the primary and secondary raw materials, the carcass classification, the carcass separation into essential elements/culinary, the usefulness of the above elements for meat processing.	
	The importance of physiological and pathogenic microflora in shaping the quality of animal origin raw materials. Methods of the treatment of animal origin raw materials and products.	
	The importance of post mortem changes in shaping the quality of animal origin raw materials.	
	Planning, production and marketing of products manufactured with the use of animal origin raw materials and products.	
	The treatment/utilization of production waste.	
	Characterization of processes, technological operations and methods of preservation used in animal products processing.	
	Characterization of starter cultures used in animal products processing.	
	The food law in force in Poland and the EU regarding animal origin raw materials and their products.	
	Characterization of the chemical composition, physicochemical, microbiological and nutritional properties of raw materials of animal origin and their products.	
Accomplished learning outcomes		TS1_Z1_W1; TS1_Z1_W2; TS1_Z1_W3; TS1_Z1_W4; TS1_Z1_W5; TS1_Z1_K1; TS1_Z1_K2
Means of verification, rules and criteria of assessment		Written exam in the form of multiple-choice test (20 questions): adequate (10,5-12 p.), >adequate (12,5-14 p.), good (14,5-16 p.), >good (16,5-18 p.) and a very good grade (18,5-20 p). The final mark is the arithmetic average of the final test value and the exam grade.
Classes:		60 hours
Topics	Application of methods for the evaluation of microbiological, organoleptic and physicochemical characteristics in the quality control of poultry meat.	
	Application of methods for the evaluation of microbiological, organoleptic and physicochemical characteristics in the control of the quality of fish meat.	
	Application of methods for the evaluation of microbiological, organoleptic and physicochemical characteristics in the quality control of food eggs.	
	Methods of monitoring the hygiene of premises, machinery, equipment, air and personnel in food processing plants.	
	Application of methods for the evaluation of microbiological, organoleptic and physicochemical characteristics in the quality control of raw bovine milk.	
	Production of fermented milks.	
	Application of methods for the evaluation of microbiological, organoleptic and physicochemical characteristics in the quality control of fermented milks.	
	Production of cheese.	
	Application of methods for the evaluation of microbiological, organoleptic and physicochemical	

	characteristics in the quality control of cheeses.
Accomplished learning outcomes	TS1_Z1_U1; TS1_Z1_U2; TS1_Z1_U3; TS1_Z1_U4; TS1_Z1_K1; TS1_Z1_K2
Means of verification, rules and criteria of assessment	Final multiple-choice test verifying the knowledge and skills (30 questions): adequate (15,5-18 p.), >adequate (18,5-21 p.), good (21,5-24 p.), >good (24,5-27 p.) and a very good grade (27,5-30 p.).

References:

Basic	1. Gracey Joseph Forde, Storrar James Andrew. Gracey's meat hygiene. Eleventh edition. John Wiley & Sons, Ltd. The Atrium, Southern Gate, Chichester, West Sussex 2015. 2. Toldrá Fidel. Handbook of meat processing. John Wiley & Sons, Ltd. 2121 State Avenue, Ames, Iowa, USA 2010. 3. Bylund Gösta. Dairy processing handbook. Tetra Pak Processing Systems AB, S-221 86 Lund, Sweden 2003.
Supplementary	1. Ardö Ylva, Polychroniadou Anna. Laboratory manual for chemical analysis of cheese. European Communities, Luxembourg 1999 2. Da-Wen Sun. Emerging technologies for food processing. Second edition. Academic Press, USA 2014. 3. Parkhurst Carmen R., Mountney George J. Poultry meat and egg production. Van Nostrand Reinhold, New York 1998.

Structure of learning outcomes

Area of academic study: R – Agricultural, forestry and veterinary sciences		ECTS **
Area of academic study: T – technological sciences	5,0	ECTS**

Structure of student activity

Contact hours		94	hrs.	3.8	ECTS**
Including:	lectures	30	hrs.		
	classes and seminars	60	hrs.		
	consultations	2	hrs.		
	participation in research	0	hrs.		
	obligatory traineeships	0	hrs.		
	participation in examination	2	hrs.		
e-learning		0	hrs.	0.0	ECTS**
student own work		31	hrs.	1.2	ECTS**

*Areas of academic study in the fields of: H- humanities; S - social studies; P – biological sciences; T – technological sciences; M- medical, sport and health sciences; R – Agricultural, forestry and veterinary sciences; A – the arts

** stated with an accuracy to 0.1 ECTS, where 1 ECTS = 25 - 30 hours of classes