Course name: Modern meat and dairy science and technology

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	MSc.
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_Z2_W1	the factors of quality and safety of animal origin products (meat products, fish products, milk and dairy products). Knows English vocabulary regarding meat and dairy science.	TŻ2_W01 TŻ2_W02 TŻ2_W05	RT
TS1_Z2_W2	methods of preservation and the importance of physiological and pathogenic microflora in shaping the quality of raw materials of animal origin.	TŻ2_W02 TŻ2_W03 TŻ2_W04	RT
TS1_Z2_W3	the importance of post-mortem exogenous and endogenous changes in shaping the quality of meat and animal fats. Identifies defects in ready-to-eat products.	TŻ2_W01 TŻ2_W02 TŻ2_W04	RT
TS1_Z2_W4	the chemical composition, physicochemical, microbiological and nutritional properties of selected products of animal origin.	TŻ2_W03 TŻ2_W04	RT
TS1_Z2_W5	the methods of treatment/utilization of production waste.	TŻ2_W02	RT
SKILLS – student is able to			
TS1_Z2_U1	listen and answer using understandable language, appropriate to the situation.	TŻ2_U02	RT
TS1_Z2_U2	assess the sensory, microbiological quality and physicochemical characteristics of animal products.	TŻ2_U04 TŻ2_U05 TŻ2_U08	RT
TS1_Z2_U3	interpret the obtained results and based on deviations from normative values, to conclude about the quality and safety of the above-mentioned raw materials.	TŻ2_U06 TŻ2_U08	RT
TS1_Z2_U4	use professional literature in English, including food law in force in Poland and the EU, and to use legal acts and to interpret them	TŻ2_U06	RT
SOCIAL COMPETENCIES – student is ready to:			
TS1_Z2_K1	understands the need to know English in the modern world. Is ready to inform the public about activities related to the production of safe food in accordance with current legal	TŻ2_K04 TŻ2_K05 TŻ2_K06	RT

	requirements. Is aware of the need to engage in the activities of professional and local government organizations.		
TS1_Z2_K2	be aware of social, ethical and professional responsibility for the safety of food production.	TŻ2_K04	RT

Teaching contents

Lectures		30 hours
Topics	Quality and food safety management systems at the stage of production of animal origin products (meat products, fish products, milk and dairy products).	
	Technology of production of long-lasting, semi-durable and non-durable cured meats.	
	Technology of production of fermented dairy products.	
	Biological, chemical and physical hazards in the traditional and industrial production of meat and dairy products.	
	Systems limiting the transmission of microflora in the area of meat prospecting and processing.	
	Methods of the evaluation of meat, fish, eggs and dairy products. National and EU requirements regarding the safety of animal products.	
	Hygiene of prospecting, transport and processing of milk. Laboratory evaluation of milk and its products.	
Accomplished learning outcomes		TS1_Z2_W1; TS1_Z2_W2; TS1_Z2_W3; TS1_Z2_W4; TS1_Z2_W5; TS1_Z2_K1; TS1_Z2_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	Critical points in the production of raw fermented meat products.	
	Critical points in the production of meat products smoked traditionally.	
	Critical points in the production of tinned meat products and block products.	
	Critical points in the production of offal products.	
	Critical points for processing fish and seafood.	
	Hygienic quality of raw milk.	
	Critical points in the production of fermented milks.	
	Critical points in the production of cheeses.	
	Monitoring of the quality of fermented milks.	
	Monitoring of the quality of cheeses.	
Accomplished learning outcomes		TS1_Z2_U1; TS1_Z2_U2; TS1_Z2_U3; TS1_Z2_U4; TS1_Z2_K1; TS1_Z2_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. Arvanitoyannis Ioannis S. HACCP and ISO 22000. Application to foods of animal origin. John Wiley & Sons, Ltd. Singapore 2009. 1997. 2. Yasmine Motorjemi, Huub Lelieveld. Food safety management. Academic Press, an imprint of Elsevier, 32 Jamestown Road, London, UK, 225 Wyman Street, Waltham, USA, 525 B Street, Suite 1800, San Diego, USA 2014 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. Parkhurst Carmen R., Mountney George J. Poultry meat and egg production. Van

	Nostrand Reinhold, New York 1998. 3. Tamime Adnan Yahia, Robinson Richard Kenneth. Yoghurt: science and technology. Woodhead Publishing Limited, Abington Hall, Abington Cambridge CB1 6AH 1999.

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