SYLLABUS

REGARDING THE QUALIFICATION CYCLE FROM 2024-2025 TO 2027-2028

Academic year 2026/2027

1. BASIC COURSE/MODULE INFORMATION

Course/Module title	**Fermentation processes in meat processing**
Course/Module code *	
Faculty (name of the unit offering the field of study)	Faculty of Technology and Life Sciences
Name of the unit running the course	Faculty of Technology and Life Sciences Institute of Food Technology and Nutrition, Department of Agricultural Processing and Commodity Science
Field of study	Food Technology and Human Nutrition
Qualification level	first-cycle
Profile	General academic
Study mode	full-time
Year and semester of studies	Year III, semester 6
Course type	Specialized / Fermentation processes in food production
Language of instruction	Polish
Coordinator	dr hab. Mariusz Rudy, prof. UR
Course instructor	Lectures: dr hab. Mariusz Rudy, prof. UR Classes: dr Renata Stanisławczyk eng dr Paulina Duma-Kocan eng.

* - as agreed at the faculty

1.1.Learning format – number of hours and ECTS credits

Semester (no.)	Lectures	Classes	Colloquia	Lab classes	Seminars	Practical classes	Internships	others	**ECTS credits**
6	15			30					3

1.2. Course delivery methods

× conducted in a traditional way

- involving distance education methods and techniques

1.3. Course/Module assessment (exam, pass with a grade, pass without a grade)

pass with a grade

2.PREREQUISITES

GENERAL FOOD TECHNOLOGY, MICROBIOLOGY, CHEMISTRY

3. OBJECTIVES, LEARNING OUTCOMES, COURSE CONTENT, AND INSTRUCTIONAL METHODS

3.1. Course/Module objectives

C1	To acquaint students with the technological properties of meat and the production technology of selected fermented meat products
C2	To develop correct attitudes about production hygiene

3.2 Course/Module Learning Outcomes

Learning Outcome	The description of the learning outcome defined for the course/module	Relation to the degree programme outcomes
EK_01	The graduate knows and understands at an advanced level the production technologies of selected meat products, including the selection of machines and devices	K_W11
EK_02	The graduate is able to critically analyze and notice the ethical aspects of the impact of technologies used in meat technology on the condition of the natural environment and human and animal health	K_U07
EK_03	The graduate is able to solve practical engineering tasks and select the appropriate methods of processing, packing and storing raw materials and meat products in accordance with applicable regulations	K_U09
EK_04	The graduate is ready to maintain and care for the achievements and traditions of the meat technologist profession	K_K05

3.3 Course content

A. Lectures

Content outline
Characteristics of the meat trimming process. Classification of trimmings.
Usefulness of essential parts obtained from cutting carcasses with particular emphasis on the technology of fermented products
Methods of preserving meat and meat products
Additional substances and spices used in the production of processed meat
Characteristics of microorganisms used in the meat industry
Characteristics of artificial and natural casings used in the meat industry, with particular emphasis on fermented products
Division, characteristics and production technology of fermented meat products
The use of bio-preservatives for the preservation of fish

A. Laboratory classes

Content outline
Familiarizing students with the operation of the cutting process line and the operation of equipment used in meat processing as well as with workplace health and safety rules
Carrying out cutting of half-carcasses and the trimming process
The use of microorganisms in the production technology of culinary beef
The use of microorganisms in the production technology of culinary horse meat
Development of technological recipes for the production of finely ground, medium ground and coarsely ground sausages including the microorganisms used in the meat industry. Production of fermented sausages
Development of technological recipes for the production of smoked meats including the microorganisms used in the meat industry. Production of fermented smoked meats
Development of technological recipes for the production of finely ground, medium-ground and coarsely ground sausages, including lactic acid, whey and other substances used in the meat industry. Production of fermented sausages
Development of technological recipes for the production of smoked meats including lactic acid, whey and other substances used in the meat industry. Production of fermented smoked meats
Development of technological recipes for the production of fermented fish including selected bio-preservatives. Production of fermented fish

3.3 **Methods of Instruction**

LECTURE: LECTURE WITH MULTIMEDIA PRESENTATION
LABORATORY CLASSES : PERFORMING EXPERIMENTS, DESIGNING EXPERIMENTS

4. Assessment techniques and criteria

4.1 Methods of evaluating learning outcomes

Learning outcome	Methods of assessment of learning outcomes (e.g. test, oral exam, written exam, project, report, observation during classes)	Learning format (lectures, classes, ...)
EK_ 01	written test	lectures, classes
EK_ 02	written test	lectures, classes
EK_03	observation during classes	classes
EK_04	written test, observation during classes	classes

4.2 Course assessment criteria

LECTURE: written test
LABORATORY CLASSES: credit with grade; preparing diagrams and presentations, conducting research and presenting their results orally, performing specific teaching work. Establishing the final grade on the basis of partial grades from tests.
The condition for completing the course is achieving all the assumed learning outcomes.
The number of points obtained (> 50% of the maximum number of points) determines the positive grade for the subject: satisfactory> 55%, satisfactory plus> 65%, good> 75.%, good plus> 85%, very good> 95%.

5. Total student workload needed to achieve the intended learning outcomes – number of hours and ECTS credits

Activity	Number of hours
Scheduled course contact hours	45/1,5
Other contact hours involving the teacher (consultation hours, examinations)	Participation in consultations: 5/0,16
Non-contact hours - student's own work (preparation for classes or examinations, projects, etc.)	Preparation for classes: 20/0,67 Preparation of diagrams and presentations: 20/0,67
Total number of hours	90
Total number of ECTS credits	3

* One ECTS point corresponds to 25-30 hours of total student workload

6. Internships related to the course/module

Number of hours	
Internship regulations and procedures	

6. Instructional materials

Compulsory literature:

1. Mięso : podstawy nauki i technologii. Pod red. nauk. Andrzeja Pisuli i Edwarda Pospiecha, Wydawnictwo SGGW, Warszawa 2011.
2. Olszewski A. Technologia przetwórstwa mięsa. Wydawnictwo Naukowo-Techniczne, Warszawa 2002.
3. Technologia żywności i żywienia. Pod. red. nauk. Marka Zina, Wydawnictwo Uniwersytetu Rzeszowskiego, Rzeszów 2014

Complementary literature:

1. Technologia produkcji wędlin. Wędzonki parzone. Część 2. Seria Mięso i Wędliny. Polskie Wydawnictwo Fachowe. Warszawa 2008.
2. Technologia produkcji wędlin. Wędzonki surowe. Część 3. Seria Mięso i Wędliny. Polskie Wydawnictwo Fachowe. Warszawa 2005.
3. Technologia produkcji wędlin. Kiełbasy surowe. Część 4. Seria Mięso i Wędliny. Polskie Wydawnictwo Fachowe. Warszawa 2004.
4. Technologia produkcji wędlin. Mięso i przetwory mięsne jako żywność funkcjonalna. Część 5. Seria Mięso i Wędliny. Polskie Wydawnictwo Fachowe. Warszawa 2007.
5. Czasopisma: Mięso i Wędliny, Gospodarka Mięsna, Przemysł Spożywczy, Przegląd Gastronomiczny.
6. Duma-Kocan, P.; Rudy, M.; Gil, M.; Stanisławczyk, R. The Influence of Temperature Differences in Smoking Chamber and Furnace and Smoking Time on the Quality of Medium-Ground Sausages. Molecules 2020, 25, 5515.
7. Stanisławczyk R., Rudy M., Gil M.: The influence of frozen storage and selected substances on the quality of horse meat. Meat Science, 155, 74-78, 2019.

Approved by the Head of the Department or an authorised person