

SYLLABUS

REGARDING THE QUALIFICATION CYCLE 2024/2025-2027/2028

Academic Year 2026/2027

1. BASIC COURSE/MODULE INFORMATION

Course/Module title	Meadmaking
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 Food Chemistry and Toxicology
Field of study	Food Technology and Human Nutrition
Qualification level	1 st
Profile	General academic
Study mode	full-time studies
Year and semester of studies	Year III, semester 5
Course type	specialized/ Fermentation processes in food production
Language of instruction	English
Coordinator	prof. dr hab. inż. Małgorzata Dżugan
Course instructor	Lecture: prof. dr hab. inż. Małgorzata Dżugan Laboratory classes: Michał Miłek, PhD Eng. Monika Tomczyk, PhD 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
5	10			20					3

1.2. Course delivery methods

☒- conducted in a traditional way

☐- classes carried out with the use of distance learning methods and techniques

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

- pass with a grade

2. PREREQUISITES

Completed courses: food chemistry, general food technology and preservation, food microbiology.

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

3.1. Course/Module objectives

O ₁	Gaining knowledge about the origin and properties of varietal honeys used in mead-making
O ₂	Learning about the process of producing and assessing the quality of mead
O ₃	Acquiring skills in home production and assessing the quality of mead

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
LO_01	knows the technologies of producing mead and other honey-based fermented products	K_W11
LO_02	Distinguishes honey varieties and is able to design the honey fermentation process taking into account the differences in varieties	K_U08
LO_03	is ready to restore and develop the tradition of mead production	K_K05

3.3 Course content

A. Lectures

Content outline
Raw material conditions of mead quality - honey characteristics (production, chemical composition and medicinal properties, varietal differences, honey quality requirements).
Mead production process - preparation of wort and yeast starter, course and interruption of fermentation, maturation and clarification of beverages, bottling and storage, defects and refinement procedures, mead-making equipment (vessels and necessary equipment for mead production, disinfection procedures).
Heated and unheated mead, fruit mead - production, properties and recipes.
Classification of meads according to national regulations and BJCP.
Other fermented beverages: alcoholic (fruit and honey wines, sparkling wines, honey beer) and non-alcoholic (mead acid).

B. Laboratory classes

Content outline
Assessment of honey quality according to legal requirements - analysis of water content, pH, acidity, reducing sugar content, conductivity..
Comparison of health-promoting properties of varietal honeys - analysis of antioxidant activity (DPPH and FRAP methods) and total phenolic content
Mead production stages - preparation of wort (półtorak, dwójniak, trójniak), saturating and skimming the wort, introducing fruit additives (seasoning the wort), preparation of fermentation starter, setting fermentation.
Assessment of the quality of commercial meads (classic and fruit) - content of sugar extract, alcohol, sulfur oxide (IV), assessment of antioxidant properties, organoleptic assessment.
Implementation of the mead production process in practice - laboratory classes at a regional mead-making facility.

3.4 Methods of Instruction

Lecture with multimedia presentation

Laboratory classes: experimental work in laboratory

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, ...)
LO-01	test	Lecture
LO-02	test	Lab
LO-03	test	Lecture, Lab

4.2 Course assessment criteria

Exercises: pass with grade. Grade determined based on the arithmetic mean of partial grades from tests and active participation in all laboratory classes, passing written reports of performed exercises, passing partial tests. Lecture: Mandatory attendance at the lecture, passing the final test. Passing the final test (single-choice test) requires obtaining at least 60% of points. The condition for passing the subject is to achieve all the assumed learning outcomes.
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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	10+20/1,2

Other contact hours involving the teacher (consultation hours, examinations)	participation in consultations 2/0,08
Non-contact hours - student's own work (preparation for classes or examinations, projects, etc.)	preparation for classes 15/0,28 preparation for test 13/0,4 preparation of reports 15/0,28
Total number of hours	75
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	

7. Instructional materials

Literatura podstawowa:	
1.	Strong G., England K. 2015. Mead Style Guidelines. BJCP, Inc., dostępne on-line https://www.bjcp.org/docs/2015_Guidelines_Mead.pdf
2.	Marciniak E. 2019. Miody pitne. Pitne miody owocowe. Nalewki miodowe. Wyd. Humana Divinis, Toruń.
3.	Rozporządzenie Ministra Rolnictwa i Rozwoju Wsi z dnia 22 maja 2013 roku w sprawie rodzajów fermentowanych napojów winiarskich oraz szczegółowych wymagań organoleptycznych.
4.	Normy: PN-90/A-79120/07 Wina i miody pitne. Przygotowanie próbek i metody badań. Oznaczanie kwasowości ogółem; PN-90/A-79120/10 Wina i miody pitne. Przygotowanie próbek i metody badań. Oznaczanie zawartości dwutlenku siarki; PN-90/A-79120/08 Wina i miody pitne. Przygotowanie próbek i metody badań. Oznaczanie kwasowości lotnej; PN-88/A-77626 Miód pszczeli
Complementary literature:	
1.	Tomczyk M., Zaguła G., Dżugan M. 2020. A simple method of enrichment of honey powder with phytochemicals and its potential application in isotonic drink industry. LWT – Food Science and Technology, 12, 109204, https://doi.org/10.1016/j.lwt.2020.109204
2.	Kallscheuer N. 2018. Engineered Microorganisms for the Production of Food Additives Approved by the European Union - A Systematic Analysis. Front. Microbiol., 03 August 2018, https://doi.org/10.3389/fmicb.2018.01746
3.	Bednarski W., Reps A. (red.) 2017. Biotechnologia żywności, PWN Warszawa.
4.	Articles from scientific journals in English.

Approved by the Head of the Department or an authorised person