**SYLLABUS**

**regarding the qualification cycle FROM 2024TO 2025**

1. Basic Course/Module Information

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| --- | --- |
| Course/Module title | Food microbiology |
| Course/Module code \* |  |
| Faculty (name of the unit offering the field of study) | College of Natural Sciences  Institute of Food and Nutrition Technology |
| Name of the unit running the course | Department of Bioenergetics, Food Analysis and Microbiology |
| Field of study | Food technology and human nutrition |
| Qualification level |  |
| Profile | General academic |
| Study mode | Part-time |
| Year and semester of studies | Summer semester |
| Course type | Erasmus + program |
| Language of instruction | English |
| Coordinator | Dorota Grabek-Lejko PhD |
| Course instructor | Dorota Grabek-Lejko PhD |

\* - as agreed at the faculty

1.1.Learning format – number of hours and ECTS credits

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Semester  (n0.) | Lectures | Classes | Colloquia | Lab classes | Seminars | Practical classes | Internships | others | **ECTS credits** |
| Summer |  |  |  | 30 |  |  |  |  | 5 |

1.2. Course delivery methods

- conducted in a traditional way

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

pass with a grade

2. Prerequisites

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| Completed course: general and inorganic chemistry, organic chemistry, food microbiology, biochemistry |

3. Objectives, Learning Outcomes, Course Content, and Instructional Methods

3.1. Course/Module objectives

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| --- | --- |
| O1 | Discuss the characteristics and role of microorganisms in food production. |
| O2 | Discuss the mechanisms of fermentation processes in the food industry. |

3.2. Course/Module Learning Outcomes (to be completed by the coordinator)

|  |  |  |
| --- | --- | --- |
| Learning Outcome | The description of the learning outcome  defined for the course/module | Relation to the degree programme outcomes |
| LO\_01 | Has knowledge of the mechanisms of biochemical processes in microorganisms. | K\_W02 |
| LO\_02 | Has knowledge of the principles of safe production of food obtained from microbial food products. | K\_W09 |
| LO\_03 | Be able to analyse the ethical aspects a rising from the use of microorganisms in food production. | K\_U07 |
| LO\_04 | Understands and cares about the work ethic of the food technologist profession. | K\_K04 |

**3.3. Course content (to be completed by the coordinator)**

1. Lectures

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| Content outline |

1. Classes, tutorials/seminars, colloquia, laboratories, practical classes

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| Content outline |
| Getting to know health and safety rules in the workshop. Organizational activities. |
| Microbiological analysis of meat and meat products using standard methods. |
| Microbiological analysis of milk products using standard methods. |
| Microbiological analysis of fish and sea food using standard methods. |
| Identification of microorganisms using MALDI TOF MS Biotyper. |

3.4. Methods of Instruction

Laboratory: performing experiments, designing experiments, working in groups**.**

4. Assessment techniques and criteria

4.1 Methods of evaluating learning outcomes

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| --- | --- | --- |
| 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 | Colloquium, written assessment, exam | Lab |
| LO-o2 | Colloquium, written assessment, exam | Lab |
| LO-o3 | Colloquium, written assessment, exam | Lab |
| LO-o4 | Colloquium, written assessment, exam | Lab |

4.2 Course assessment criteria

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| A prerequisite for passing a course is the achievement of all the assumed learning outcomes. A positive grade in the course is determined by the number of points obtained in examinations (>50% of the maximum number of points): ): 2,0 (f); 50 % <; 3,0 (e) 51 - 65%; 3,5 (d); 66 - 75%, 4,0 (c); 76 - 85%, 4,5 (b); 86 - 92%; 5,0 (a) 93-100%. |

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 | 30 |
| Other contact hours involving the teacher (consultation hours, examinations) | 20 |
| Non-contact hours - student's own work (preparation for classes or examinations, projects, etc.) | 75 |
| Total number of hours | 125 |
| Total number of ECTS credits | 5 |

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

6. Internships related to the course/module

|  |  |
| --- | --- |
| Number of hours | 0 |
| Internship regulations and procedures | 0 |

7. Instructional materials

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| Compulsory literature:  1.Fundamental Food Microbiology By Bibek Ray, Arun Bhunia, 2014, CRC Press  ISBN 9781466564435  2. Food Microbiology, Martin Ray Adams, Maurice O. Moss, Peter McClure, Royal Society of Chemistry, 2015, ISBN-13 ‏ : ‎ 978-1849739603  3. Food Microbiology: An Introduction, Karl R. Matthews, Kalmia E. Kniel, Thomas J. Montville, Taylor & Francis Ltd., 2017, ISBN-13 ‏ : ‎ 978-1555819385 |
| Complementary literature:  1.Felšöciová S, Kačániová M, Hleba L, Petrová J, Pavelková A, Dżugan M, **Grabek-Lejko D** „Microscopic fungi isolated from polish honey” Journal of Microbiology Biotechnology and Food Sciences 2012/2013: 2(3) 1040-1049 |

Approved by the Head of the Department or an authorised person