INFORMATION ON STUDY PROGRAMME:
MOLECULAR BIOTECHNOLOGY

1. 1. Name of study programme	
Graduate university study programme Molecular Biotechnology	
1. 2. Field(s) of study (Croatian)	**Field(s) of study - ISCED-F**
04.04.	0512
1. 3. Length of programme	
Two years (four semesters)	
1. 4. Mode of study (full-time/part time/e-learning etc.)	
Full-time	
1. 5. Number of credits	
120	
1. 6. Qualification awarded	
Magistar/Magistra inženjer/inženjerka molekularne biotehnologije (mag. ing. biotechn.)	
1. 7. Level of qualification according to the National Qualification Framework	**Level of qualification according to the European Qualifications Framework**
7	7

1. 8. Occupational profiles of graduates

This study awards students competences and skills to perform complex jobs in the fields of molecular bio-sciences, in molecular biotechnology in particular. This involves:

- performing highly-complex jobs in research, control and diagnostic laboratories, but also in chemical, biochemical, instrumentation, microbiological and molecular genetics labs, including forensic labs for the detection and quantification of GMOs in products and raw materials;
- performing highly-complex jobs in labs where GMOs are stored, selected and constructed, for scientific purposes but also to be applied in biotechnological processes;
- educating, formally and informally, in the fields of molecular biotechnology, genetic engineering and genetically modified organisms;
- consulting companies and authorised legislative bodies in the fields of molecular biotechnology, genetic engineering and genetically modified organisms.

Students are educated and trained to perform in industrial settings powered by modern biotechnological processes falling within the Bio-Molecular Engineering domain (for instance, in industrial facilities producing antibiotics, enzymes, therapeutic proteins, vitamins, hormones and vaccines), in particular as staff members of Research, Development and Control & Analysis Departments of industrial corporations or scientific and public institutes and state agencies seeking experts knowledgeable in molecular/biological and biochemical/analytic methods.

This study, being the follow-up of the undergraduate study, develops new competencies needed for the performing of highly-complex jobs, such as work in research and development, control and diagnostics labs, managing and running of biotechnological processes. Masters of molecular biotechnology will also be trained to start and manage biotechnology companies.

1. 9. Programme learning outcomes

Learning outcomes

- integrate knowledge acquired from the fields of microbiology, microbe physiology, molecular biology, genetics and bioinformatics with the aim of producing traditional and modern biotechnological products
- apply knowledge acquired in order to construct genetically modified organisms of desired traits
- participate in biomedical and related biomolecular researches on account of basic knowledge of molecular and cellular biology and genetics, bioinformatics, immunology and human physiology
- use equipment and instruments in chemical, biochemical, microbiological and molecular-genetic laboratories
- conduct biological, microbiological, immunological and molecular-genetic tests and analyses
- recognize, analyse and eliminate common problems which occur during experimental work in microbiological, biochemical, and molecular-genetic laboratories
- select corresponding model organism for conducting of particular biological tests or scientific researches
- breed and characterize microorganisms and animal and plant cells
- participate in activities of advisory and legislative bodies in the field of molecular biotechnology
- manage particular laboratory units in biotechnology, food and pharmaceutical industry and other institutions owing to their knowledge of contemporary biochemical, microbiological, molecular genetic and instrumental methods
- use scientific literature in English, and present the existing results to experts and laymen, and convey their knowledge and skills to their peers
- present, valorize and popularize modern accomplishments and courses of development of molecular biotechnology
- participate actively in scientific paper discussion from the field of molecular biotechnology and related sciences
- act in accordance with ethical principles and acquire new knowledge and skills, as a part of lifelong learning and profession promotion, including PhD studies in molecular biotechnology and other bio-sciences

1. 10. Specific admission requirements (if applicable) and selection process

Defined by the Entrance Call for Enrolment ("Natječaj za upis", available at FFTB web pages)

1. 11. Qualification requirements and regulations

Defined by the Regulation on Undergraduate and Graduate programmes (Pravilnik o studiranju na preddiplomskom i diplomskom studiju).

1. 12. Progression regulations

A prerequisite to enrol into the next year of study is 50 ECTS credits that students need to have accumulated throughout the previous academic year.

Prerequisites, which are required in order to enrol particular subjects, and also to enrol the following semester and academic year, are defined by Course catalogues / Syllabi, or by the prescribed preconditions that need to be completed beforehand signing up for particular subjects.

1. 13. Examination regulations and grading scale

Throughout the term, a university lecturer or his/her assistant involved into a tuition of a certain course, tests and grades students' knowledge on each and every tuition segment) practicals, seminars, partial exams), based on which the final grade is earned. Students take one exam per course, which, however, may be subdivided into several partial exams, so as to provide for the continuous students' knowledge testing. Partial exams are scheduled throughout the course of the term, with the exception of the final partial exam, which may as well take place in the first week of the examination period. Examination regulations are defined in individual course descriptions.
The grades scale is as follows: "excellent" (5), "very good" (4), "good" (3), "satisfactory" (2), or "unsatisfactory" (1). The lowest grade needed to pass the exam is "satisfactory" (2).

1. 14. Specific arrangements for recognition of prior learning (formal, non-formal and informal) (if applicable)

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1. 15. List of other study programmes from which credits may be obtained

Other FFTB study programmes, other University of Zagreb study programmes, and study programmes of foreign universities covered by international cooperation agreements.

1. 16. Graduation requirements

Defined by the Regulation on Undergraduate and Graduate programmes (Pravilnik o studiranju na preddiplomskom i diplomskom studiju)

1. 17. Access to further studies

Following the successful completion of these graduate academic studies, students are entitled to enter the postgraduate studies offered by the Faculty of Food Technology and Biotechnology University of Zagreb.
Other academic institutions hosting postgraduate studies set their own entrance requirements.

1. 18. Readmission procedure (if applicable)

The full-time undergraduate or graduate student status at the Faculty of Food Technology and Biotechnology is acquired when students sign up for the “Become a student” (Postani student) system, or sign up for a graduate study after completing an undergraduate study, in compliance with the application requirements.

1. 19. ECTS coordinator

Branka Levaj, PhD, Full Professor