

### **3.3.3. Current 1st Cycle of Studies - Bachelor programmes in food engineering and technology.**

#### **3.3.3.1. Analysis of current Curricula:**

Programme: Food engineering and technology

Bachelor level (BSc)

Objectives;

The objectives of the study program are:

- To enable students to design and advance technological processes in the food industry,
- To prepare students with professional knowledge on the needs of food industry development,
- To enable students with modern technological transformation methods,
- Enable students with conservation methods and quality and food safety management systems.

#### b) Competencies and skills

Food Engineering and Technology study program refers to academic competences, the ability to get adequate employment and meet the labor market needs, combining the theoretical aspect with the practical one and developing the student's personality in the areas of specialization.

The program Food Engineering and Technology offers a study program based on contemporary curricula, with scientific achievements and research accomplished in this field. The level of professional achievement and the scientific bases that students achieve with this study program are solid for the development of the food industry.

After finishing Bachelor studies, we evaluate that graduates will be prepared for:

- the work of the engineer, respectively of the technologist in the food industry,
- to lead the technological processes in the food industry,
- to perform laboratory tests,
- to use application of software in food engineering,
- to identify the factors that affect the quality of food,
- to be part of the engineering team in food engineering,
- gain basic knowledge for further studies in the field of engineering and food technology,

storage of raw materials and final products of plant and animal origin.

c) Potentially employment possibilities in private and public sector;

The basics gained in the undergraduate studies in this study program prepare adequate cadres for research institutes, public and private institutions and enterprises both in the country, in the region but also abroad, as well as in the education process for the education of future staffs in the field of Food Engineering and Technology.

Employment possibilities in public sector: ministry, municipality, food and veterinary agency, water regional companies, etc.

Employment possibilities in private sector: dairy industry, meat industry, flour industry, drink company, water production companies, wine industry, beer industry, bakery, packaging industry, private businesses, etc.

d) Structure, list of modules based on categories; ECTS workload; enrolment criteria;

Data related to program

**Table 1.** *Overview of the study program, FOOD ENGINEERING AND TECHNOLOGY, BACHELOR.*

I Year						
Semester I			Hours/week			
Code	M/E	Subjects	L	E	ECTS	Lecturer
101.ITU .I	M	Mathematics I	3	2	7	Mr. Mursel Ibrahim
102.ITU .I	M	Physics	3	2	6	Prof. Assoc. Dr. Besire Cena
103.ITU .I	M	General Chemistry	3	2	7	Prof. Dr. Aziz Behrami
104.ITU .I	M	Basis Of Informatics	2	2	6	Prof. Assoc. Dr. Mensur Kelmendi
105.ITU .I	E	English Language I	2	1	4	Prof. Ass. Dr. Edita Bekteshi
106.ITU .I	E	German Language	2	1	4	MSc. Etleva Blakaj
Semester II			Hours/week			

Code.	M/E	Subjects	L	E	ECTS	Lecturer
107.ITU .I	M	Mathematics II	3	2	7	Mr. Mursel Ibrahim
108.ITU .I	M	Inorganic Chemistry	3	2	7	Prof. Dr. Aziz Behrami
109.ITU .I	M	Organic Chemistry I	2	2	6	Prof. Assoc. Dr. Fatos Rexhepi
110.ITU .I	M	Biology	3	2	6	Prof. Ass. Dr. Mirsade Osmani
111.ITU .I	E	English Language II	2	1	4	Prof. Ass. Dr. Edita Bekteshi
112.ITU .I	E	German Language II	2	1	4	MSc. Etleva Blakaj
<b>II Year</b>						
<b>Semester III</b>			<b>Hours/week</b>			
No.	M/E	Subjects	L	E	ECTS	Lecturer
201.ITU .I	M	Engineering Thermodynamics	3	2	7	Prof. Assoc. Dr. Ismet Mulliqi
202.ITU .I	M	Physical Chemistry	3	2	6	Prof. Assoc. Dr. Mehush Aliu
203.ITU .I	M	Organic Chemistry II	3	2	7	Prof. Assoc. Dr. Fatos Rexhepi
204.ITU .I	M	Fluid Mechanics	2	2	6	Prof. Assoc. Dr. Ismet Mulliqi
205.ITU .I	E	Ecology In Food Industry	2	2	4	Prof. Assoc. Dr. Valdet Gjinovci
206.ITU .I	E	Materials of Plant Origin	2	2	4	Prof. Dr. Dilaver Salihu
<b>Semester IV</b>			<b>Hours/week</b>			
No.	M/E	Subjects	L	E	ECTS	Lecturer

207.ITU .I	M	General Microbiology	3	2	6	Prof. Dr. Mirela Lika
208.ITU .I	M	General Biochemistry	3	2	6	Prof. Ass. Dr. Mirsade Osmani
209.ITU .I	M	Heat and Mass Transfer	2	2	6	Prof. Assoc. Dr. Ismet Mulliqi
210.ITU .I	M	Analytical Chemistry	2	2	6	Prof. Assoc. Dr. Sadija Kadriu
211.ITU .I	E	Colloidal Chemistry	2	2	3	Prof. Dr. Nushe Lajçi
212.ITU .I	E	Sensor Analysis	2	2	3	Prof. Assoc. Dr. Sadija Kadriu
213.ITU .I	E	Materials of Animal Origin	2	2	3	Prof. Dr. Alush Musaj
III Year						
Semester V			Hours/week			
Code	M/E	Subjects	L	E	ECTS	Lecturer
301.ITU .I	M	Food Microbiology	3	2	7	Prof. Dr. Dilaver Salihu
302.ITU .I	M	Basics Reactors Engineering	2	2	7	Prof. Assoc. Dr. Milaim Sadiku
303.ITU .I	M	Food Quality Control	2	2	6	Prof. Dr. Alush Musaj
304.ITU .I	E	Milk Processing Technology	2	2	5	Prof. Dr. Dilaver Salihu
305.ITU .I	E	Vegetable and Fruit Processing Technology	2	2	5	Prof. Dr. Dilaver Salihu
306.ITU .I	E	Fermentation Technology	2	2	5	Prof. Dr. Dilaver Salihu
307.ITU .I	E	Applicative Software in Food Engineering	2	2	5	Prof. Assoc. Dr. Mensur Kelmendi

308.ITU .I	E	Meat Technology	2	2	5	Prof. Dr. Bizena Bijo
Semester VI			Hours/week			
Code	M/E	Subjects	L	E	ECTS	Lecturer
309.ITU .I	M	Basis Of Toxicology	3	2	5	Prof. Asoc. Dr. Valdet Gjinovci
310.ITU .I	M	Food Science I	3	2	5	Prof. Dr. Alush Musaj Prof. Dr. Rozana Troja
311.ITU .I	M	Processes in the Food Industry	3	2	5	Prof. Asoc. Dr. Milaim Sadiku
312.ITU .I	E	Water Technology and Processing of Wastewater From Food Industry	2	1	3	Prof. Asoc. Dr. Mehush Aliu
313.ITU .I	E	Technology of Packing And Disposal	2	1	3	Prof. Asoc. Dr. Valdet Gjinovci
314.ITU .I	E	Economy in Food Engineering	2	1	3	Prof. Dr. Isa Tahiri
315.ITU .I	M	Diploma Paper	-	-	12	Chosen mentor

**Table 2.** *The ratio between theoretical and practical part.*

EFT Bachelor	Theoretical part	Practical part
I Semester	60.00%	40.00%
II Semester	60.00%	40.00%
III Semester	55.56%	44.44%
IV Semester	53.33%	46.67%
V Semester	51.51%	48.49%

VI Semester	62.5%	37.5%
Total	57.15%	42.85

### Conditions for registration and acceptance of students

Right to apply at FFT have all candidates who have successfully completed secondary school in Kosovo and have a diploma for this.

In the FFT, accepted also the students from other countries, based on the quotas defined by MEST (Ministry of Education, Science and Technology), on the occasion on the competition, must have certified the school documents. The recognition or validation of the diploma is done at the Ministry of Education, Science and Technology.

The selection of candidates for all FFT study programs is done according to these criteria:

a. For the students who have a secondary school diploma and did not have a matura exam:

The maximum number of points according to the following criteria is 100 points, and that:

1. Success in the secondary school up to 30 points;
2. Success in the entrance exam up to 70 points.

b. For students who have a secondary school diploma and have successfully passed the matura exam: The maximum number of points according to the following criteria is 100 points, and that:

1. Success in secondary school up to 30 points;
2. Success in matura exam up to 30 points;
3. Success in the matura exam from the priority subjects for enrollment at the Faculty up to 40 points.

e) Practical part of curricula;

The theory-practice linking works well, as we have cooperation with many manufacturing companies in private sector and cooperation with institutions and enterprises in the public sector, where our students can realize their professional practice.

Practical work is organized in laboratory of the faculty, in public and private enterprises. The students are notified at the beginning with the course syllabus along with all subject specifications, including expected results, number of hours, forms of practical work reports that are compiled in conjunction with the subject professor and the supervisor in company.

Hours of course practical work are counted within the student's load.

### 3.3.3.2. Analysis of Academic staff (number, fulltime, part-time, quality of staff for theoretical and practical curricula)

**Table 3.** *Data on the academic staff involved on the study program*

The academic staff of the study program	Full time, Professor/assistant	Part time, Professor/assistant
Number of the academic staff on the study program	12/4	4/3

The academic staff of FFT is qualified with the scientific titles Master and Doctor, and academic grades, such us: Prof.dr., Prof.Asoc.Dr., and Prof.ass.dr., Assistant, in full accordance with the legal framework regarding the of teaching positions under Administrative Order No.15/2018 Accreditation of Educational Institutions High Republic of Kosovo, dated 28.09.2018.

In the study program are: 3 Full Professor (Prof. Dr.), 8 Associated Professor (Prof. Asoc.), 1 Assistant Professor (Prof. Ass.), 4 Assistant (Ass), PhD candidate.

### 3.3.3.3. Analysis of teaching capacities (labs, etc)

The organization of teaching at the FFT is based on and complies with the requirements of the legislation in force, while at the same time relying on the best local and international experiences.

The lesson is organized in separate halls in group work, where besides the part of the lecture, the interaction with the students during the teaching process is also practiced,

The University building has the following sections: foyer, recreation spaces, classroom(s) for theoretical teaching, administrative offices, space for group work, sanitary/hygienic units, library, laboratory appropriate to the specifics of the field, learning classrooms, archive.

Educational space is equipped with necessary facilities for educational programme, including teaching/scientific-research laboratories, inventory needed for implementing practical component, IT equipment, relevant stock (reagents, teaching materials, etc.) that ensures achieving programme objectives.

Regarding the number of seats in lecture halls, workshops, etc., are sufficient for the groups and subgroups of the students according to the specializations including curricula according to the curriculum plan. FFT is equipped with solid equipment for having lectures and exercises.

The total surface area of the Faculty is 11000 m<sup>2</sup>. However, the surface that is used directly for the teaching process, including 10 classrooms, 16 laboratories, 3 amphitheatres, 14 cabinets, 1 library, etc. is 4744.1 m<sup>2</sup>.

Taking into account the space possessed by UMIB University Library, it is noticed that FFT students have enough space to use, and the books used by students are in sections. The books are in Albanian and in foreign languages. The University Library of UMIB, contains a considerable number of physical and electronic books for the Engineering and Food Technology Program.

#### **3.3.3.4. Analysis of implementation of practical training of students**

Laboratories within the Faculty of Food Technology possess sufficient and modern equipments to perform laboratory exercises of the subjects in curricula.

The FFT has signed cooperation agreements and has ongoing cooperation with the University's administrative/service units. It has also concluded cooperation agreements with public and private companies.

In each of the subjects presented in the study curriculum, the ratio between the theoretical and practical part is presented. Practical work during the study process is given a special attention. The ratio between the theoretical and the practical part varies according to the specifics of the subject and the time it takes for the student to gain knowledge of the subject.

Study visits are an important component for students of the Faculty of food technology who relate academic learning with activity-based learning.

The Career Development Center at UIBM serves as a center that guides and advises students to link the academic process with the labor market and experience in professional practice and internship. The office offers professional counseling to students from the first day

of their studies, providing professional training in enhancing their skills as well as various services related to the application, preparation of CV, letters of motivation, as well as interviewing, until their graduation and employment, and it maintains records on the employment barometer of former students.

#### **3.3.3.5. Contribution of work life partners in the implementation of curricula.**

Programs are regularly evaluated and reviewed, including students and stakeholders from businesses. The collected information is analyzed and the program fits in to ensure it is up to date, feasible for the labor market.

Also within the UMIB is the alumni of the graduates to maintain the link and correspondence with the graduate students.

The questionnaire with external stakeholders is a questionnaire that is conducted once a year in coordination with all academic units through quality coordinators.



Through this questionnaire, external stakeholders evaluate cooperation with UMIB, areas of cooperation, student employment, skills satisfaction and student knowledge, needs for specific subjects and directions, etc.

The questions are intended to look at these key aspects:

- Student employment;
- Student preparation for career;
- Acquired skills and abilities of students;
- The need for new subjects and study programs;
- Cooperation with UMIB;
- Areas of cooperation;
- Suggestions and comments.

The reports from these instruments and the report from the evaluation of the activities of the academic year as part of the Strategic Plan, are part of the planning process of the next academic year, emphasizing the necessary improvements, and the commitment of each to enable the quality realization of academic year activities.

Also on the official website, UMIB publish information about the staff, their CV, their publications, students, etc.

### **3.3.3. Current 2nd Cycle of Studies-Master programmes in food engineering and technology.**

#### **3.3.3.1. Analysis of current Curricula:**

Programme: Food engineering and technology

Master level (MSc)

Objectives;

The objectives of the study program are:

To work in the production chain for the needs of the food industry development for manipulation and application of adequate technology,

To acquire, embrace and disseminate knowledge in the field of food science,

To be able to work on technological processes of processing, storage and packaging of food products.

Possess basic knowledge in guaranteeing the quality of processes and final products through the implementation of quality assurance systems and their management.

#### b) Competencies and skills

Food Engineering and Technology study program refers to academic competences, the ability to get adequate employment and meet the labor market needs, combining the theoretical aspect with the practical one and developing the student's personality in the areas of specialization. Master's program in Food Engineering and Technology are based on the previous Bachelor program, deepening and advancing the new knowledge in the field of sciences of Food Engineering and Technology.

The program Food Engineering and Technology offers a study program based on contemporary curricula, with scientific achievements and research accomplished in this field. The level of professional achievement and the scientific bases that students achieve with this study program are solid for the development of the food industry.

After completing Master's degree in the Engineering and Food Technology program, we evaluate that graduates will be prepared for:

to incorporate into technological processes of fruit and vegetable processing,

in the technological process of processing meat and eggs,

in technological processes of milk processing and its products,

in technological processes of production of confectionery products,

in the technological processes of packaging food products and their storage conditions,

in controlling the quality and safety of food products,

in the automation of technological processes,

#### c) Potentially employment possibilities in private and public sector;

Students who have completed master studies in the Engineering and Food Technology program at FFT are employed in prestigious institutions in the country and abroad: the Ministry, municipality, the food manufacturing enterprise, and some manage private businesses.

The basics gained in the master studies in this study program prepare adequate cadres for research institutes, public and private institutions and enterprises both in the country, in the

region but also abroad, as well as in the education process for the education of future staffs in the field of Food Engineering and Technology.

Employment possibilities in public sector: ministry, municipality, food and veterinary agency, water regional companies, etc.

Employment possibilities in private sector: research institutes, dairy industry, meat industry, flour industry, drink company, water production companies, wine industry, beer industry, bakery, confectionery, packaging industry, private busuinesses, etc.

d) Structure, list of modules based on categories, ECTS workload; enrolment criteria;

**Table 4.** Overview of the study Program: Food Engineering and Technology-Master.

Year I						
Semester I			Hours/week			
Code	M/E	Subjects	L	E	ECTS	Lecturer
401.ITU.I I	M	Physiology of Industrial Microorganisms	3	2	7	Prof. Dr. Alush Musaj Prof. Asoc. Dr. Rozeta Hasalliu
402.ITU.I I	M	Food Science II	2	2	6	Prof. Dr. Alush Musaj Prof. Dr. RozanaTroja
403.ITU.I I	M	Engineering of Bioprocesses	3	2	7	Prof. Asoc. Dr. Milaim Sadiku Acad.Asoc. Ilir Malollari
404.ITU.I I	E	Food Product Quality Control	2	1	5	Prof. Dr. Alush Musaj
405.ITU.I I	E	Molecular Genetics	2	2	5	Prof. Ass. Dr. Mirsade Osmani
406.ITU.I I	E	Chromatography (HPLC, GC)	2	2	5	Prof. Asoc. Dr. Fatos Rexhepi
407.ITU.I I	E	Production of Conditory Products	2	2	5	Prof. Asoc. Dr. Mehush Aliu
408.ITU.I I	E	Kinetics of Biotechnological Processes	2	2	5	Prof. Dr. Nushe Lajqi

Semester II			Hours/week			
Code	M/E	Subjects	L	E	ECTS	Lecturer
409.ITU.I I	M	Food Engineering	3	2	7	Prof. Asoc. Dr. Milaim Sadiku
410.ITU.I I	M	Chapters From Food Packaging Technology	2	2	6	Prof. Asoc. Dr. Mehush Aliu
411.ITU.I I	M	Food Toxicology	2	2	7	Prof. Asoc. Dr. Valdet Gjinovci
412.ITU.I I	M	Wine Technology	2	2	5	Prof.Asoc.Dr. Milaim Sadiku
413.ITU.I I	E	Meat and Egg Processing Technology	2	1	5	Prof. Dr. Bizena Bijo
414.ITU.I I	E	Chemistry and Technology of Milk and Its Products	2	2	5	Prof. Dr. Dilaver Salihu
415.ITU.I I	E	Chemistry and Technology of Grains	2	1	5	Prof. Dr. Dilaver Salihu
II Year						
Semester III			Hours/week			
Code	M/E	Subjects	L	E	ECTS	Lecturer
501.IT U.II	M	Biotechnological Processes In Food Industry	2	2	7	Prof. Asoc. Dr. Milaim Sadiku
502.IT U.II	M	Food Chemistry	2	2	7	Prof. Dr. Aziz Behrami
503.IT U.II	M	Scientific Research Work Methodology	2	2	6	Prof. Asoc. Dr. Mehush Aliu
504.IT U.II	E	Automation of Technological Processes	2	1	5	Prof. Asoc. Dr. Mehush Aliu
505.IT U.II	E	Instrumental Analysis of Foodstuffs	2	2	5	Prof. Asoc. Dr.Sadija Kadriu

506.IT U.II	E	Beer Technology	1	2	5	Prof. Dr. Nushe Lajçi
507.IT U.II	E	Design Basics	2	2	5	Prof. Asoc. Dr. Mensur Kelmendi
508.IT U.II	E	Enzymatic Engineering	2	1	5	Prof. Dr. Nushe Lajçi
509.IT U.II	M	Seminar Work	1	3	5	Chosen Mentor
510.IT U.II	M	Master Paper	1	3	25	Chosen Mentor

**Table 5.** *The ratio between theoretical and practical part.*

EFT Master	Theoretical part %	Practical part %
I Semester	54.55	45.45
II Semester	55.56	44.44
III Semester	51.72	48.28
Total	53.94	46.06

#### Conditions for registration and acceptance of students

In master studies can be accepted the candidates who have completed Bachelor studies or undergraduate studies prior to the entry into force of the Bologna Declaration in all Higher Education Institutions in Kosovo. Under equal conditions, priority in admission are the candidates who have completed Bachelor studies at the University of Mitrovica. All other candidates who have successfully completed basic studies abroad are eligible for admission to the University of Mitrovica. In such cases the candidate must present the evidence (confirmation

or decision) on the accreditation of the institution in which he has completed the preliminary studies.

The selection of candidates for admission to the master studies up to the assigned number is done according to the priority rank of middle grade grades achieved during studies 7.50 and above. In case the number of candidates is smaller than the number foreseen in the competition, then candidates with average grade lower than 7.50 may also be accepted but are subject to the entrance exam. The ranking of candidates in this case is based on:

- a) Average mark during studies,
- b) Outcomes of the entrance exam.

The maximum number of points achieved in the exam is 100.

- e) Practical part of curricula;

Practical work is organized in public and private enterprises. During internship, students will have the opportunity to practice in the field of Food Engineering and Technology. The students are notified at the beginning with the course syllabus along with all subject specifications, including expected results, number of hours, forms of practical work reports that are compiled in conjunction with the subject professor and the supervisor in company.

Hours of course practical work are counted within the student's load.

3.3.3.2. Analysis of Academic staff (number, fulltime, part-time, quality of staff for theoretical and practical curricula);

**Table 6.** *Data on the academic staff involved on the study program*

The academic staff of the study program	Full time, Professor/assistant	Part time, Professor/assistant
Number of the academic staff on the study program	10/3	4/-

Full-time employees of FFT academic staff, comprise over 50% of the academic staff in the study program and over 50% of the study program hours, according to Section 26, Section 5.3.3 of Administrative Instruction No.15/2018 on Accreditation of Higher Education Institutions in the Republic of Kosovo, dated 28.09.2018.

All of this is monitored strictly by the UMIB human resources office and FFT management, so that staff engagement to be in accordance with the Administrative Instruction on Accreditation, MEST guidelines, Labor Law, UMIB Statute and internal UMIB regulations.

The academic staff of FFT is qualified with the scientific titles Master and Doctor, and academic grades, such as: Prof.dr., Prof.Asoc.Dr., and Prof.ass.dr., Assistant, in full accordance with the legal framework regarding the of teaching positions under Administrative Order No.15/2018 Accreditation of Educational Institutions High Republic of Kosovo, dated 28.09.2018.

In the study program are: 3 Full Professor (Prof. Dr.), 6 Associated Professor (Prof. Asoc.), 1 Assistant Professor (Prof. Ass.), 3 Assistant (Ass), PhD candidate.

#### 3.3.3.3. Analysis of teaching capacities (labs, etc);

The organization of teaching at the FFT is based on and complies with the requirements of the legislation in force, while at the same time relying on the best local and international experiences.

The basic purpose of teaching is the preparation of quality students capable to prepare for the labor market.

Participation in the exercises is mandatory and evaluated with grades, students have continuous access to the laboratories, close interweaving between laboratory activities and lectures, technical support and laboratory sessions, which will be held by well-prepared staff who understand their problems and solutions, and adequately equipped laboratories.

The Higher Education Institution has signed cooperation agreements, contracts or other documents with public institutions, as well as public and private enterprises.

The University building has the following sections: foyer, recreation spaces, classroom(s) for theoretical teaching, administrative offices, space for group work, sanitary/hygienic units, library, laboratory appropriate to the specifics of the field, learning classrooms, archive.

Educational space is equipped with necessary facilities for educational programme, including teaching/scientific-research laboratories, inventory needed for implementing practical component, IT equipment, relevant stock (reagents, teaching materials, etc.) that ensures achieving programme objectives.

#### 3.3.3.4. Analysis of implementation of practical training of students.

Laboratories within the Faculty of Food Technology possess sufficient and modern equipments to perform laboratory exercises of the subjects in curricula.

The FFT has signed cooperation agreements and has ongoing cooperation with the University's administrative/service units. It has also concluded cooperation agreements with public and private companies.

In each of the subjects presented in the study curriculum, the ratio between the theoretical and practical part is presented. Practical work during the study process is given a special attention.

The ratio between the theoretical and the practical part varies according to the specifics of the subject and the time it takes for the student to gain knowledge of the subject.

Study visits are an important component for students of the Faculty of food technology who relate academic learning with activity-based learning.

#### 3.3.3.5. Contribution of work life partners in the implementation of curricula.

Programs are regularly evaluated and reviewed, including students and stakeholders from businesses. The collected information is analyzed and the program fits in to ensure it is up to date, feasible for the labor market.

Also within the UMIB is the alumni of the graduates to maintain the link and correspondence with the graduate students.

The questionnaire with external stakeholders is a questionnaire that is conducted once a year in coordination with all academic units through quality coordinators.

Through this questionnaire, external stakeholders evaluate cooperation with UMIB, areas of cooperation, student employment, skills satisfaction and student knowledge, needs for specific subjects and directions, etc.

The questions are intended to look at these key aspects:

- Student employment;
- Student preparation for career;
- Acquired skills and abilities of students;
- The need for new subjects and study programs;
- Cooperation with UMIB;
- Areas of cooperation;
- Suggestions and comments.

The reports from these instruments and the report from the evaluation of the activities of the academic year as part of the Strategic Plan, are part of the planning process of the next academic year, emphasizing the necessary improvements, and the commitment of each to enable the quality realization of academic year activities.

Also on the official website, UMIB publish information about the staff, their CV, their publications, students, etc.