FARMACEUTSKI FAKULTET
SVEUČILIŠTE U MOSTARU

UNIVERSITY OF MOSTAR

LABORATORY BIOMEDICINE UNDERGRADUATE UNIVERISTY STUDY PROGRAMME CURRICULUM

Mostar, April 2023

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1. INTRODUCTION

The curriculum of the undergraduate university study Laboratory Biomedicine was developed according to the Ordinance on the procedure for adopting new and revisions of existing study programs (eds. no. 01-993-1/22), which provides that the development of the revised curriculum is coordinated by the Committee, in which representatives of students and external beneficiaries are also represented, and whose proposal the scientific and teaching council of the organizational unit submits to the Senate of the University for adoption.

The Faculty of Pharmacy of the University of Mostar, as the holder of the study laboratory biomedicine, in accordance with the will of the Scientific and Teaching Council, and at the proposal of the Dean of the Faculty, made a decision on the proposal to initiate the procedure for adopting a new study program, on the appointment of the Committee for the development of the curriculum of the undergraduate university study of Laboratory Biomedicine and on the appointment of reviewers for this university study. By decision (ed. no. 09-01-97/23 of February 16, 2023) at the 49th session of the Scientific and Teaching Council of the Faculty of Pharmacy of the University of Mostar, the following committee was appointed, consisting of:

1. Full Professor Ivica Brizić, PhD, representative of the management, President of the Commission,
2. Full Professor Dubravka Šimić, PhD, representative of the academic staff, member of the Commission,
3. Assistant Professor Martin Kondža, PhD, representative of the academic staff, member of the Commission,
4. Marko Kvesić, student representative,
5. Marija Hrkać, MPharm, representative of external users, member of the Commission,
6. Igor Azinović, MBiol et MChem, head of the laboratory,

7. Franjo Jurilj, quality coordinator.

A committee consisting of:

1. Associate Professor Ivanka Mikulić, PhD, University of Mostar Faculty of Pharmacy,
2. Assistant Professor Ivana Ćelap, Faculty of Pharmacy and Biochemistry, University of Zagreb,
3. Associate Professor Stanislava Talić, University of Mostar Faculty of Science and Education.

In order to involve all interested parties in the process of improving the study program, a public hearing was conducted, which was held on March 24, 2023, starting at 11:00 am in the premises of the Faculty of Science. The public hearing was attended by representatives of the Commission, representatives of faculties, representatives of the economy, students and other interested parties in this process.

The conclusions of the public hearing were taken into account when developing the curriculum.

In addition to the conclusions of the public hearing, the recommendations of the panel of experts from the last institutional accreditation from 2020 related to the inclusion of practical work outside the University (where applicable), the application of the provisions of legal and internal acts on the minimum share of pre-examination obligations in the final assessment in all courses and the application of modern teaching methods with the student at the center of the teaching process were taken into account.

Also, during the development of the curriculum, all strategic tasks in the strategic field of education from the University Development Strategy 2017-2023 related to the curriculum and the curriculum were implemented (more in chapter 3.1. Connection with the university's development strategy).

In addition, when making decisions on the type of changes, all relevant statistical data and results of surveys that were collected and conducted due to the adoption of a new study program were analyzed:

- on the deficiency of this classification of occupations in the labor market,
- on the interest of the profession and those responsible for launching this study programme,
- on the interest of the general public in the launch of this study programme,
- on the importance of improving health professions for the population of Bosnia and Herzegovina, which according to the latest statistical indicators, is mostly of middle and older age,
- on compliance with the Strategic Health Development Plan in the Federation of Bosnia and Herzegovina,
- on acting in accordance with the environment, in particular the European Union and *the EU Health Programme 2021-2027,* in accordance with European Union Regulation 2021/522 of the European Parliament and of the Council,
- on the lack of a study programme of this kind in Bosnia and Herzegovina, which is present at only two public higher education institutions,
- on the lack of a study programme of this kind in The Croatian language in Bosnia and Herzegovina,
- on a number of other statistical indicators and questions.

2. GENERAL INFORMATION ABOUT THE STUDY PROGRAMME

Study programme:	Laboratory Biomedicine
Cycle:	1st (undergraduate study programme)
Type:	University study programme
Scientific area:	Biomedicine and Health
Scientific field:	Pharmacy
Academic title:	Bachelor of Laboratory Biomedicine (*univ. bacc. lab. biomed.*)
EQF qualification level:	6
Duration of the study programme:	6 semesters (3 years)
ECTS:	180
Language:	Croatian language
Mode of study:	Full-time
Awarding institution:	University of Mostar
Institution administering study programme:	University of Mostar, Faculty of Pharmacy
Study programme objectives:	- education of highly qualified professionals for jobs in medical laboratories in various narrow areas of laboratory medicine, in scientific institutions and for jobs in laboratory medicine activities - training for continuation of studies at master's and/or specialist level and for lifelong professional and scientific training.
Study programme competencies:	- ability to analyse, critically evaluate, find solutions and solve specific professional laboratory problems that occur in different work environments, - appropriate competence for independence in performing professional work and analysis of professional problems, - competence for independent professional and research work, for group work and knowledge necessary for communicating and publishing results, - appropriate knowledge for understanding, getting to know, using and evaluating modern techniques and methods applicable in the professional and research field of laboratory medicine, - competence to ensure the quality of procedures, - appropriate ethical professional personality for working with patients and biological human material and for working in biomedical research
Study programme learning outcomes:	1. FARFLBIU1: explains and links the basic scientific principles of biology, chemistry, physics and mathematics and applies them to understand the mechanisms of disease and develop new diagnostic and therapeutic solutions, 2. FARFLBIU2: uses laboratory techniques and procedures, including cell culture, microscopy, PCR, Western blotting, ELISA,

	chromatography and genetic engineering; 3. FARFLBIU3: Critical thinking and problem solving by analysing and interpreting experimental data, designing experiments and solving problems in laboratory procedures, 4. FARFLBIU4: uses ethical and regulatory considerations relating to biomedical research, including informed consent, human and animal welfare and responsible conduct of research; 5. FARFLBIU5: effectively communicates and demonstrates teamwork skills through working on joint research projects and presenting its findings to a scientific audience, 6. FARFLBIU6: explains the mechanisms of disease and use treatment strategies, diseases and current treatment and disease prevention strategies, how to develop new therapeutic agents, evaluate their effectiveness and translate the results of laboratory research into clinical practice.
Opportunities after graduation:	Upon completion of this study, Bachelors of Laboratory Biomedicine are trained to work in the following positions: 1. Medical-biochemical laboratories: Bachelors of laboratory biomedicine are trained to work at all levels of health care, especially in medical-biochemical laboratories, pharmaceutical companies and health institutes in the field of preparation, processing and analysis of laboratory and diagnostic procedures 2. Research associates: Graduates can work as researchers in academic or industrial research laboratories, assisting with experimental design, data collection, analysis, and interpretation. 3. Secondary and higher education: Bachelors of Laboratory Biomedicine are trained to work at institutions of higher and secondary education as educators in groups of subjects in the field of biomedicine and health. 4. Biotech Lab Workers: Bachelors of Laboratory Biomedicine can work as laboratory specialists in biotech companies, helping develop and manufacture biologics, medical devices, and diagnostics. 5. Quality Control Specialist: Bachelors of Laboratory Biomedicine can work as quality control specialists in pharmaceutical or biotech companies, ensuring that products meet regulatory requirements and standards. 6. Sales Representative: Bachelors of Laboratory Biomedicine can work as sales representatives for scientific equipment or pharmaceutical companies, promoting and selling laboratory equipment, reagents, and stocks.

	7. Scientific creativity: Bachelors of Laboratory Biomedicine can work as science writers or editors for scientific journals, educational institutions or public health organizations, communicating complex scientific concepts and discoveries to the general public. 8. Continuing education: Bachelors of Laboratory Biomedicine can pursue their education at a graduate degree in laboratory biomedicine or similar scientific fields and upgrade their education to the degree of Master of Laboratory Biomedicine.
Accreditation:	On January 14, 2020, the University of Mostar received a decision on institutional re-accreditation from the competent Ministry of Education, Science, Culture and Sports of Herzegovina-Neretva County according to the recommendation of the Agency for Development of Higher Education and Quality Assurance of Bosnia and Herzegovina, after which the University was registered in the State Register of Accredited Higher Education Institutions.

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3. BASIC CHARACTERISTICS OF THE STUDY PROGRAMME

3.1. Connection with the Development strategy of the University of Mostar

In the Development Strategy of the University of Mostar 2018-2023 in the strategic area of education, several strategic goals refer to the curriculum and its elements.

Goal 1 defines that the University, in cooperation with stakeholders, will develop, approve, implement and continuously monitor and improve study programs at all levels, with clearly defined learning outcomes related to labor market needs, in accordance with the European Qualifications Framework (EQF), from which the following tasks result:

- task 1: clearly define the objectives and envisaged learning outcomes of each study programme and harmonize with them the content of the study programme, in accordance with the appropriate level of the EQF and the qualification standard;
- task 2: introduce a transparent and consistent process of auditing and improving study programs with the participation of students and other stakeholders,
- task 5: ensure the real allocation of ECTS credits, through a defined system of ECTS coordination at all levels of studies,
- task 6: to improve the interdisciplinarity of all study programs by enabling the electiveness of courses at the University level.

Objective 3 refers to the development of a wide network of teaching bases, i.e. organisations from different fields of activity, and to the establishment of cooperation that will enable the linking of practice, science and art and higher education, which results in the following tasks:

- task 2: increase the number of hours and share of teaching practice in study programmes and the acquired share of ECTS credits,
- task 3: increase the number of final/graduate theses that are related to the topic and content related to the practice.

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3.2. Compliance with the achievements of a certain scientific area and labour market and connection with the standards of occupations/qualifications

The objectives, competences and learning outcomes at the level of the study program are defined in such a way that they are aligned with the achievements of a particular scientific field and labor market and related to occupational/qualification standards.

In order to comply with the achievements of the scientific field, representatives of teachers in the Commission for the development of the curriculum and other teachers who participated in the development of syllabi of a particular course took into account modern achievements and trends in the scientific field of biomedicine and health, the field of pharmacy, branches of pharmacy and medical biochemistry, related to the study of laboratory biomedicine.

In order to comply with the labor market, representatives of students and external beneficiaries were appointed to the Curriculum Committee, and a public debate was organized, attended by experts from practice and economy (University Clinical Hospital in Mostar), whose suggestions were taken into account in the development of the curriculum.

Since neither occupational standard nor qualification standard are defined at any level in BiH, the following documents were taken into account:

- Decision on standard classification of occupations in the FB&H (Official Gazette of the FBiH, No. 40, No. 8, 2004), in which under the category Gender 2. Experts and scientists list the occupation of health experts, experts in biological, biotechnical, biochemical and related sciences, classifications under the ordinal number 2212 pharmacologists, pathologists and other specialists, whose jobs include:

a) research, improvement and development of concepts, theories and methods in certain areas,

b) the study and performance of experiments relating to the shape, structure and other anatomical features of living organisms;

c) study and conduct experiments related to the chemical composition and processes of living organisms,

d) study and perform experiments related to the life processes and functions of human, animal and plant organs, tissues, cells and systems under normal and abnormal or exceptional conditions,
e) study and conduct experiments related to the nature, causes and development of human, animal and plant diseases and disorders,
f) study and conduct experiments related to the influence of drugs and other substances on tissues, organs and physiological processes of human beings and animals, and improvement of existing and development of new drugs,
g) improvement of industrial, medical and other applications of knowledge in individual activities,
h) preparation of scientific papers,
i) related jobs,
j) supervision of other associates,

In addition to the above document, the following documents were taken into account:

- Directive 2005/36/EC of the European Parliament and of the Council of 7 September 2005 on the recognition of professional qualifications
- Directive 2001/83/EC of the European Parliament and of the Council of 6 November 2001 concerning the Community code relating to medicinal products for human use.

Jobs/competences/learning outcomes from all of the above documents are implemented in the competences and learning outcomes of the various study programs listed in Chapter 2. General information about the study program is realized in core courses, in order to ensure that they are achieved by all students with the acquired qualification. The coverage of these learning outcomes at the study programme level by learning outcomes at the level of core courses is presented in Chapter 3.12. Matrix of learning outcomes.

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3.3. Comparability with the study programmes in the country and abroad

The curriculum of the undergraduate university study programme Laboratory Biomedicine is comparable to study programmes in Bosnia and Herzegovina, but also to study programmes abroad and the environment.

Comparability with study programmes in Bosnia and Herzegovina is achieved with the following study programmes:

- Study of Laboratory Technology at the Faculty of Health Studies, University of Sarajevo,
- Study of Medical Laboratory Diagnostics at the Faculty of Medicine, University of Banja Luka.

Comparability with study programmes abroad and the environment is achieved with the following study programmes:

- Study of Medical Biochemistry at the Faculty of Pharmacy and Biochemistry, University of Zagreb,
- Study of Laboratory Biomedicine at the Faculty of Pharmacy, University of Ljubljana.

Comparability is reflected exclusively by competences and learning outcomes at the level of study programs and in the duration of studies, while the study program retains its specifics mainly through structure, course names and ECTS credits.

3.4. Openness to student mobility

Student mobility is defined in the Ordinance on International Mobility, which refers to administrative support to students, student mobility documents, insurance, application method, mobility recognition procedure and information package. The unique methodology of recognition is defined at the University level by the Decision of the Senate on the adoption of a single form for the Decision on recognition of courses, ECTS credits,

grades and professional practice in student mobility, which is recorded in the diploma supplement. Students can find information about mobility programs and accompanying forms on the University's website, and through the Vice Dean for Teaching at the Faculty of Pharmacy of the University of Mostar, who forwards the information of the University Office for International Cooperation to student representatives.

3.5. Conditions for enrolment in the study programme and transfer from other study programmes

The University Regulations on Study defines the right to enrol in undergraduate, graduate and integrated study programs, which is carried out through a public tender. The Senate, at the proposal of the Scientific and Teaching Council of the Faculty of Pharmacy, and with the consent of the Governing Council of the University and the competent Ministry of Education, Science, Culture and Sports of Herzegovina-Neretva County, announces a public tender, which is published in the daily press, on the University's website and on the website and bulletin board of the Faculty of Pharmacy, which contains information on the conditions for admission, the classification procedure, the amount of tuition fees, the criteria for the selection of candidates and other data.

The criteria for enrolment of students will be determined by the classification procedure. The classification process is based on:

- Evaluating general success in high school,
- Test knowledge with a test (entrance exam).

The applicant in the entrance exam can earn a maximum of 1000 points, a maximum of 400 points based on high school performance and 600 points based on success in the entrance exam in physics, chemistry and biology.

When transferring from other study programs, an application is submitted to the Dean of the Faculty of Pharmacy on the basis of which the decision on the possibilities and conditions for enrolment is made by the appropriate committee. As a rule, crossings are

allowed from other public higher education institutions in the same scientific field of biomedicine and health with an individual approach to each application.

3.6. Conditions for enrolment in the next semester and year of study and graduation

The conditions for enrolment in the next semester and the higher year of study are defined by the university Regulations on Studying and the Ordinance and other acts of the Faculty of Pharmacy. The study program ends with the writing and defence of the Bachelor's thesis, which carries 10 ECTS credits.

The method and procedure of defending the Bachelor's thesis and the methodology of its preparation are defined in the regulations of the Faculty of Pharmacy.

3.7. Organization of study programme

The study program is organized in two semesters in the academic year, and classes are conducted according to the schedule of classes through tours.

Professional practice is carried out in accordance with the defined criteria of the Federal Ministry of Health within the equipment and premises of the teaching bases of the Faculty of Pharmacy, with the primary support at the University Clinical Hospital in Mostar.

3.8. Structure of the study programme

The structure of the study program is reflected in the number of hours of each type of teaching and teaching in total, the number of hours of practice and the number of hours of independent work of the student in the total student load, which is 180 ECTS credits, or 5,400 hours of work.

Since, according to the Ordinance on the procedure for adopting new and revisions of existing study programs (ed. no. 01-993-1/22), only core courses are listed in the curriculum, while the elective ones are adopted in the annual study plan of each academic year, the table will indicate the number of hours of a particular type of teaching and

teaching in total, the number of hours of practice and the number of hours of independent work only on core courses.

In relation to the total number of ECTS credits in elective courses, up to 7 ECTS credits are acquired, and the student can choose 2 elective courses.

In addition to compulsory courses and elective courses at the level of the study program and at the level of the organizational unit, i.e. in addition to 30 ECTS credits per semester, the student can also choose university elective courses, from the list adopted by the Senate every academic year, which are recorded to the student in the diploma supplement.

The purpose of elective courses at the level of the study program is a more detailed elaboration of learning outcomes already acquired in core courses, in accordance with the preferences of students, and the purpose of university elective courses is to acquire competencies that are not foreseen by the study program, and for which the student assesses that they can make him more competitive in the labour market and contribute to building his own personality through education.

The structure of the study programme with shares of individual types of teaching, practice and independent work is presented in Table 2.

Year of study: 1st									
Winter semester									
Course code	Course title	Hours of teaching			I. Teaching, in total	II. Hours of practice	III. Independent work	Workload hours, in total (I.+II.+III.)	ECTS
		L	T	S					
FARFLB101	Introduction to the Study	15	0	0	15	0	15	30	1
FARFLB102	General Chemistry and Stoichiometry	30	30	20	80	0	130	210	7
FARFLB103	Mathematics and Statistics	30	0	30	60	0	60	120	4
FARFLB104	Physics	30	15	15	60	0	60	120	4
FARFLB105	Cell Biology and Genetics	30	25	20	75	0	135	210	7
FARFLB106	Physical Chemistry 1	25	20	15	60	0	30	90	3
FARFLB107	Anatomy and Histology	30	30	0	60	0	60	120	4
In total		190	120	100	410	0	490	900	30

ECTS for core courses	30
ECTS for elective courses	0
ECTS IN TOTAL	30

Year of study: 1st									
Summer semester									
Course code	Course title	Hours of teaching			I. Teaching, in total	II. Hours of practice	III. Independent work	Workload hours, in total (I.+II.+III.)	ECTS
		L	T	S					
FARFLB201	Physical Chemistry 2	20	25	15	60	0	30	90	3
FARFLB202	Biomedical Informatics	30	15	15	60	0	60	120	4
FARFLB203	Analytical Chemistry	45	45	20	110	0	100	210	7
FARFLB204	Organic Chemistry	45	30	15	90	0	120	210	7
FARFLB205	Physiology	45	0	30	75	0	45	120	4
FARFLB206	Pathophysiology and Pathology	60	0	30	90	0	30	120	4
FARFLB207	English Language	0	0	25	25	0	5	30	1
In total		245	115	150	510	0	390	900	30
ECTS for core courses									30
ECTS for elective courses									0
ECTS IN TOTAL									30

Year of study: 2nd									
Winter semester									
Course code	Course title	Hours of teaching			I. Teaching, in total	II. Hours of practice	III. Independent work	Workload hours, in total (I.+II.+III.)	ECTS
		L	T	S					
FARFLB301	Microbiology and Parasitology 1	30	15	0	45	0	45	90	3
FARFLB302	Introduction to Biomedical Analytics	30	30	0	60	0	60	120	4
FARFLB303	Work with Biological Samples	30	30	0	60	0	60	120	4
FARFLB304	Biochemistry 1	35	30	10	75	0	45	120	4
FARFLB305	Biomedical Analytics	75	75	0	150	0	180	330	11
FARFLB306	Immunology and Immunochemistry	30	15	15	60	0	60	120	4
In total		230	195	25	450	0	450	900	30
ECTS for core courses									30
ECTS for elective courses									0
ECTS IN TOTAL									30

Year of study: 2nd									
Summer semester									
Course code	Course title	Hours of teaching			I. Teaching, in total	II. Hours of practice	III. Independent work	Workload hours, in total (I.+II.+III.)	ECTS
		L	T	S					
FARFLB401	Microbiology and Parasitology 2	30	15	0	45	0	45	90	3
FARFLB402	Biochemistry 2	30	0	10	40	0	20	60	2
FARFLB403	Laboratory Histopathological Methods	30	15	15	60	0	60	120	4
FARFLB404	Clinical Biochemistry 1	75	60	30	165	0	225	390	13
FARFLB405	Pharmaceutical Chemistry	30	0	0	30	0	30	60	2
FARFLB406	Sociology and Healthcare	15	0	15	30	0	30	60	2
FARFLB407	Professional Practice 1	0	0	15	15	30	75	120	4
In total		210	90	85	385	30	485	900	30
ECTS for core courses									30
ECTS for elective courses									0
ECTS IN TOTAL									30

Year of study: 3rd									
Winter semester									
Course code	Course title	Hours of teaching			I. Teaching, in total	II. Hours of practice	III. Independent work	Workload hours, in total (I.+II.+III.)	ECTS
		L	T	S					
FARFLB501	Clinical Haematology	45	45	0	90	0	150	240	8
FARFLB502	Clinical Biochemistry	45	60	30	135	0	165	300	10
FARFLB503	Transfusion Medicine and Transplantation	15	15	0	30	0	60	90	3
FARFLB504	Haemostasis	30	0	30	60	0	90	150	5
In total		135	120	60	315	0	465	780	26
ECTS for core courses									26
ECTS for elective courses									4
ECTS IN TOTAL									30

Year of study: 3rd									
Summer semester									
Course code	Course title	Hours of teaching			I. Teaching, in total	II. Hours of practice	III. Independent work	Workload hours, in total (I.+II.+III.)	ECTS
		L	T	S					
FARFLB601	Methods of Molecular Biology	40	25	10	75	0	75	150	5
FARFLB602	Legislation and Ethics	15	0	30	45	0	45	90	3
FARFLB603	Proteomics	30	0	30	60	0	30	90	3
FARFLB604	Professional practice 2	0	0	15	15	105	60	180	6
FARFLB605	Bachelor's Thesis	0	0	0	0	0	300	300	10
In total		85	25	85	195	105	500	810	27
ECTS for core courses									27
ECTS for elective courses									3
ECTS IN TOTAL									30

3.9. The optimal number of enrolled students concerning space, equipment, and number of teachers

Enrolment quotas are adopted before the beginning of each academic year by the Governing Council of the University on the proposal of the Senate and with the consent of the competent ministry. Students can study this program as a full-time student. Regular students are those who study according to the program with full teaching hours. The study costs of full-time students are paid by the students themselves or their costs are borne by the competent Ministry of Education, Science, Culture and Sports of the founding counties of the University of Mostar.

3.10. Resources required to conduct the study programme

During the implementation of the study programme, teachers from the University and teachers from reference higher education institutions in scientific-teaching titles from the corresponding scientific field, field and branch participate. Data on the structure of the teaching staff according to title and professional training, gender and age structure,

scientific research productivity, mobility and project activities of the teaching staff are regularly monitored through the bodies from the quality assurance system. The aforementioned data are processed at the level of study program, organizational unit and study program and are published in annual reports.

Physical resources for the execution of study programs require:

- Classroom with a capacity of 30 students,
- Basic computer equipment and infrastructure,
- Laboratory with basic medical-biochemical resources,
- Basic chemicals and reagents needed to perform the exercises,
- Consumables and accessories for work in the medical-biochemical laboratory.

On the basis of the signed cooperation agreements, the resources of other institutions are also used in the implementation of the study program / professional practice:

- Faculty of Medicine, University of Mostar
- Faculty of Health Studies, University of Mostar
- Faculty of Natural Sciences, Mathematics and Educational Sciences of the University of Mostar,
- Faculty of Agronomy and Food Technology, University of Mostar,
- University Clinical Hospital in Mostar,
- Institute for Public Health of the Federation of Bosnia and Herzegovina,
- Veterinary Institute of Herzegovina-Neretva County,
- Medical-biochemical laboratories in private practice.

3.11. Study programme quality assurance system

The purpose, goal, organization and operation and areas of evaluation of the quality assurance system of the University of Mostar are defined by the Rulebook on the organization and operation of the quality assurance system of the University of Mostar. According to the aforementioned Rulebook, the quality assurance system at the

University of Mostar consists of the permanent bodies of the quality assurance system at the University level: the Committee for Quality Assurance and Improvement and the Office for Quality Assurance and Improvement. The Faculty of Pharmacy has a Committee for Quality Assurance and Improvement, which consists of the vice dean for teaching, a quality coordinator, a representative of the teaching staff, a representative of the students, and a representative of the administrative and technical staff. The Quality Coordinator of the Faculty of Pharmacy is also a member of the Committee for Quality Assurance and Improvement.

The aforementioned Ordinance defines the competences and activities of each body from the quality assurance system. Bodies from the quality assurance system carry out regular activities defined by the University Manual for Quality Assurance at the University of Mostar, which relate to conducting surveys and monitoring and processing data. Based on the activities carried out, annual reports are prepared at the level of the study program, organizational unit and the University.

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3.12. Matrix of learning outcomes

IU-Study programe / IU-course	FARFLBIU1	FARFLBIU2	FARFLBIU3	FARFLBIU4	FARFLBIU5	FARFLBIU6
FARFLB101	x					
FARFLB102	x					
FARFLB103	x					
FARFLB104	x					
FARFLB105			x		x	
FARFLB106	x					
FARFLB107						x
FARFLB201	x					
FARFLB202			x		x	
FARFLB203	x					
FARFLB204	x					
FARFLB205	x					x
FARFLB206	x		x		x	
FARFLB207					x	
FARFLB301		x	x			x
FARFLB302		x	x			x
FARFLB303						x
FARFLB304		x	x			x
FARFLB305	X	x				x
FARFLB306	X	x	x			x
FARFLB401		x	x			x
FARFLB402		x	x			x
FARFLB403		x	x			x
FARFLB404		x	x			x
FARFLB405			x			x
FARFLB406				x	x	
FARFLB407		x	x			x
FARFLB501		x	x			x
FARFLB502		x	x			x
FARFLB503		x	x			x
FARFLB504		x	x			x
FARFLB601		x	x			x
FARFLB602				x		x
FARFLB603		x	x			x
FARFLB604		x	x			x
FARFLB605	x	x	x	x	x	

4. STUDY PLAN

5. Year of study: 1st							
Winter semester							
Course code	Course title	Course status	Teaching hours			Hours of practice	ECTS
			L	T	S		
FARFLB101	Introduction to the Study	core	15	0	0	0	1
FARFLB102	General Chemistry and Stoichiometry	core	30	30	20	0	7
FARFLB103	Mathematics and Statistics	core	30	0	30	0	4
FARFLB104	Physics	core	30	15	15	0	4
FARFLB105	Cell Biology and Genetics	core	30	25	20	0	7
FARFLB106	Physical Chemistry 1	core	25	20	15	0	3
FARFLB107	Anatomy and Histology	core	30	30	0	0	4
ECTS for core courses							30
ECTS for elective courses							0
ECTS IN TOTAL							30

Year of study: 1st							
Summer semester							
Course code	Course title	Course status	Teaching hours			Hours of practice	ECTS
			L	T	S		
FARFLB201	Physical Chemistry 2	core	20	25	15	0	3
FARFLB202	Biomedical Informatics	core	30	15	15	0	4
FARFLB203	Analytical Chemistry	core	45	45	20	0	7
FARFLB204	Organic Chemistry	core	45	30	15	0	7
FARFLB205	Physiology	core	45	0	30	0	4
FARFLB206	Pathophysiology and Pathology	core	60	0	30	0	4
FARFLB207	English Language	core	0	0	25	0	1
ECTS for core courses							30
ECTS for elective courses							0
ECTS IN TOTAL							30

Year of study: 2nd							
Winter semester							
Course code	Course title	Course status	Teaching hours			Hours of practice	ECTS
			L	T	S		
FARFLB301	Microbiology and Parasitology 1	core	30	15	0	0	3
FARFLB302	Introduction to Biomedical Analytics	core	30	30	0	0	4
FARFLB303	Work with Biological Samples	core	30	30	0	0	4
FARFLB304	Biochemistry 1	core	35	30	10	0	4
FARFLB305	Biomedical Analytics	core	75	75	0	0	11
FARFLB306	Immunology and Immunochemistry	core	30	15	15	0	4
ECTS for core courses							30
ECTS for elective courses							0
ECTS IN TOTAL							30

Year of study: 2nd							
Summer semester							
Course code	Course title	Course status	Teaching hours			Hours of practice	ECTS
			L	T	S		
FARFLB401	Microbiology and Parasitology 2	core	30	15	0	0	3
FARFLB402	Biochemistry 2	core	30	0	10	0	2
FARFLB403	Laboratory Histopathological Methods	core	30	15	15	0	4
FARFLB404	Clinical Biochemistry 1	core	75	60	30	0	13
FARFLB405	Pharmaceutical Chemistry	core	30	0	0	0	2
FARFLB406	Sociology and Healthcare	core	15	0	15	0	2
FARFLB407	Professional Practice 1	core	0	0	15	30	4
ECTS for core courses							30
ECTS for elective courses							0
ECTS IN TOTAL							30

Year of study: 3rd							
Winter semester							
Course code	Course title	Course status	Teaching hours			Hours of practice	ECTS
			L	T	S		
FARFLB501	Clinical Haematology	core	45	45	0	0	8
FARFLB502	Clinical Biochemistry 2	core	45	60	30	0	10
FARFLB503	Transfusion and Transplantation Medicine	core	15	15	0	0	3
FARFLB504	Haemostasis	core	30	0	30	0	5
ECTS for core courses							26
ECTS for elective courses							4
ECTS IN TOTAL							30

Year of study: 3rd							
Summer semester							
Course code	Course title	Course status	Teaching hours			Hours of practice	ECTS
			L	T	S		
FARFLB601	Methods of Molecular Biology	core	15	15	0	0	5
FARFLB602	Legislation and Ethics	core	30	0	30	0	3
FARFLB603	Proteomics	core	30	0	30	0	3
FARFLB604	Professional Practice 2	core	0	0	15	105	6
FARFLB605	Bachelor's Thesis	core	0	0	0	0	10
ECTS for core courses							27
ECTS for elective courses							3
ECTS IN TOTAL							30