



**SARAJEVO UNIVERSITY  
FACULTY OF HEALTH STUDIES  
IN SARAJEVO**



**CURRICULUM FOR STUDY PROGRAMME 2:  
LABORATORY TECHNOLOGIES**

**FOR TITLE OF:  
BACHELOR OF LABORATORY TECHNOLOGIES**



**Study programme for laboratory technologies** educates competent cadre for work in laboratories which process human material. Study programme is multidisciplinary, and it includes fields: clinical chemistry, morphological technologies (haematology, cytodiagnosics, histopathology), microbiology and cytogenetics. Professionals in this field work in clinical chemistry laboratories on autoanalyzers, in morphological laboratories they work on creation of adequate preparations manually and automatically with preliminary examination of preparation, in microbiological laboratories they work on proving the cause of illness manually and automatically, in molecular biology laboratories, and other laboratories need this type of professionals. They abide good practice principles in their work.

### **Competencies of Bachelor of laboratory technologies**

**Bachelor (BA) of laboratory technologies with** university degree (VII level of qualification – 4-year study programme) is enabled to carry out following tasks independently and as a team member:

- Application of IT in laboratory medicine in the fields of clinical chemistry, haematology, cytology, histopathology, immunology, microbiology, cytogenetics,
- Introduction into work, understands and values advanced laboratory technologies and methods applicable to professional and scientific field of laboratory medicine,
- Implementation and provision of quality control in laboratories of all profiles,
- Work in line with ethical and professional competencies with patients and human biological material and in biomedical research,
- Organisation of and collection of human material, in charge of its transport and processing, as well as storing,
- Rendering services in field of clinical chemistry and biochemistry – work on automatic analysers, their calibration and quality control,
- Rendering services in field of haematology – work on automatic blood elements counters, making peripheral blood smear and bone marrow, carry out standard preparation dyeing as well as cytochemical dyeing, differentiates blood elements in peripheral blood smear as well as rapid examination of bone marrow,
- Rendering services in field of cytodiagnosics – prepares cytology tissues preparations, bodily fluids, processes them manually or automatically, rapid examination of derived preparations,
- Rendering services in field of microbiology – processes collected material manually or automatically and carries out preliminary examination of results,
- Rendering basic services in molecular biology laboratories,
- Application of immunological laboratory methods,
- Is enabled for cultivation of cell, tissue and organ cultures,
- Organizing work in field of everyday work programme of technicians and engineers involved in the work process,
- Administrative works related to everyday work and plans for work process,
- Educational work in educational institutions.



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**Bachelor (BA) of laboratory technologies upon** completions of studies, given the competencies, may have a wide range of employment opportunities in institutions on all levels of healthcare system, as well as in the non-health related sector.



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<b>FIRST YEAR, SEMESTER I</b>				
<b>CODE, STATUS AND COURSE NAME</b>	Class contact hours: H= L + P	Independent work hours	Total work hours	ECTS credits
<b>COMPULSORY GENERAL AND PROFESSIONAL COURSES</b>				
RB.0111 Healthcare systems	90 = 45 + 45	60	150	6
RB.0112 Human anatomy	90 = 45 + 45	160	250	10
RB.0113 Health ecology	90 = 30 + 60	60	150	6
RB.0114 Sociology of health	60 = 30 + 30	90	150	6
RB.0115 Physical education	45 = 15 + 30	5	50	2
<b>TOTAL FOR SEMESTER I</b>				
<b>5 compulsory courses</b>	<b>375 = 165 + 210</b>	<b>375</b>	<b>750</b>	<b>30</b>

<b>FIRST YEAR, SEMESTER II</b>				
<b>CODE, STATUS AND COURSE NAME</b>	Class contact hours: H= L + P	Independent work hours	Total work hours	ECTS credits
RB.0121 Introduction to health statistics and informatics	60 = 30 + 30	65	125	5
RB.0122 Improvement of health and health education	90 = 45 + 45	35	125	5
RB.0123 Human physiology	90 = 45 + 45	160	250	10
RB.2124 Occupational safety in laboratories	75 = 30 + 45	50	125	5
RB.0125 English language	30 = 15 + 15	95	125	5
<b>TOTAL FOR SEMESTER II</b>				
<b>5 compulsory courses</b>	<b>345 = 165 + 180</b>	<b>405</b>	<b>750</b>	<b>30</b>
<b>TOTAL FOR THE FIRST YEAR</b>				
<b>10 compulsory courses</b>	<b>720 = 330 + 390</b>	<b>780</b>	<b>1500</b>	<b>60</b>



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<b>SECOND YEAR, SEMESTER III</b>				
<b>CODE AND COURSES</b>	<b>Class contact hours: H= L + P</b>	<b>Independent work hours</b>	<b>Total work hours</b>	<b>ECTS credits</b>
RB.0231 Dysfunction of human organism	75 = 45 + 30	125	200	8
RB.0232 Applied epidemiology	75 = 45 + 30	50	125	5
RB.0233 Microbiology fundamentals	75 = 45 + 30	75	150	6
RB.0234 Healthcare quality management	60 = 30 + 30	40	100	4
RB.6235 General, inorganic and organic chemistry	150 = 60 + 90	25	175	7
<b>TOTAL FOR SEMESTER III</b>				
<b>5 compulsory courses</b>	<b>435 = 225 + 210</b>	<b>315</b>	<b>750</b>	<b>30</b>

<b>SECOND YEAR, SEMESTER IV</b>				
<b>CODE AND COURSES</b>	<b>Class contact hours: H= L + P</b>	<b>Independent work hours</b>	<b>Total work hours</b>	<b>ECTS credits</b>
RB.0241 Biochemistry	90 = 60 + 30	60	150	6
RB.2242 Morphology in diagnostics (17.5.)	60 = 30 + 30	90	150	6
RB.2243 Laboratory technologies in immunology (17.1)	60 = 30 + 30	90	150	6
RB.2244 Clinical laboratory diagnostics (16.12.)	60 = 30 + 30	90	150	6
RB.2245 Methods in microbiology (19.4.)	120 = 45 + 75	30	150	6



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FACULTY OF HEALTH STUDIES  
IN SARAJEVO**



<b>TOTAL FOR SEMESTER IV</b>				
<b>5 compulsory courses</b>	<b>390 = 195 + 195</b>	<b>360</b>	<b>750</b>	<b>30</b>
<b>TOTAL FOR THE SECOND YEAR</b>				
<b>10 compulsory courses</b>	<b>825 = 420 + 405</b>	<b>675</b>	<b>1500</b>	<b>60</b>



**SARAJEVO UNIVERSITY**  
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<b>THIRD YEAR, SEMESTER V</b>				
<b>CODE AND COURSES</b>	<b>Class contact hours: H= L + P</b>	<b>Independent work hours</b>	<b>Total work hours</b>	<b>ECTS credits</b>
RB.2351 Methods in cytodiagnostics	90 = 30 + 60	60	150	6
RB.2352 Clinical-chemical laboratory technologies I	150 = 75 + 75	150	300	12
RB.2353 Instrumentation and radiation physics	75 = 45 + 30	75	150	6
RB.2354 Cell dynamics	60 = 30 + 30	90	150	6
<b>TOTAL FOR SEMESTER V</b>				
<b>4 compulsory courses</b>	<b>375 = 180 + 195</b>	<b>375</b>	<b>750</b>	<b>30</b>

<b>THIRD YEAR, SEMESTER VI</b>				
<b>CODE, STATUS AND COURSE NAME</b>	<b>Class contact hours: H= L + P</b>	<b>Independent work hours</b>	<b>Total work hours</b>	<b>ECTS credits</b>
RB.2361 Clinical-chemical laboratory technologies II	120 = 60 + 60	30	150	6
RB.2362 Fundamentals of molecular biology technology	60 = 30 + 30	90	150	6
RB.2363 Methods in morphology	60 = 30 + 30	40	100	4
RB.2364 Professional practice I	120 = 0 + 120	130	250	10
RB.2365 Processing of laboratory data	60 = 30 + 30	40	100	4
<b>TOTAL FOR SEMESTER VI</b>				
<b>5 compulsory courses</b>	<b>420 = 150 + 270</b>	<b>330</b>	<b>750</b>	<b>30</b>
<b>TOTAL FOR THE THIRD YEAR</b>				
<b>9 compulsory courses</b>	<b>795 = 330 + 465</b>	<b>705</b>	<b>1500</b>	<b>60</b>





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<b>FOURTH YEAR, SEMESTER VII</b>				
<b>CODE AND COURSES</b>	Class contact hours: H= L + P	Independent work hours	Total work hours	ECTS credits
RB.2471 Laboratory technologies in haematology	90 = 30 + 60	60	150	6
RB.2472 Biochemical laboratory diagnostics of malignant tumours	60 = 30 + 30	40	100	4
RB.2473 Work quality control	60 = 30 + 30	40	100	4
RB.2474 Professional practice II	120 = 0 + 120	130	250	10
RB.2475 Laboratory technologies in molecular biology	60 = 30 + 30	90	150	6
<b>TOTAL FOR SEMESTER V</b>				
<b>5 compulsory courses</b>	<b>390 = 120 + 270</b>	<b>360</b>	<b>750</b>	<b>30</b>

<b>FOURTH YEAR, SEMESTER VIII</b>				
<b>CODE AND COURSES</b>	Class contact hours: H= L + P	Independent work hours	Total work hours	ECTS credits
RB.2481 Pathohistological techniques	60 = 15 + 45	40	100	4
RB.2482 Experimental laboratory technologies	60 = 30 + 30	90	150	6
RB.2483 Professional practice III	120 = 0 + 120	130	250	10
RB.2484 Applicative methods in human cell cultivation	60 = 30 + 30	90	150	6
RB.2485 Emergencies in laboratory practice	60 = 30 + 30	40	100	4
<b>TOTAL FOR SEMESTER VIII</b>				
<b>5 compulsory courses</b>	<b>360 = 105 + 255</b>	<b>390</b>	<b>750</b>	<b>30</b>
<b>TOTAL FOR THE FOURTH YEAR</b>				
<b>10 compulsory courses</b>	<b>750 = 225 + 525</b>	<b>750</b>	<b>1500</b>	<b>60</b>
<b>TOTAL FOR THE FOUR-YEAR UNDERGRADUATE PROGRAMME, THE FIRST CYCLE, FOR THE BACHELOR'S (BA) DEGREE</b>				
<b>39 compulsory courses</b>	<b>3090 = 1305 + 1785</b>	<b>2910</b>	<b>6000</b>	<b>240</b>