



Bachelor degree study programme: Biotechnology

Faculty of Natural Sciences

Curriculum

No.	Courses	Study subject code	ECTS Credits
I Year			
I Semester			
1.	Calculus 1	MAT1011	6
2.	General and analytical chemistry	BBKN2001	5
3.	General biology	BION1001	3
4.	Bionics and bioengineering	BIO2010	3
5.	Professional language of natural sciences	LGF2002	3
	A and B courses*		10
		Total:	30
II Semester			
1.	Calculus 2	MAT1014	6
2.	Biology of plants and animals	BIO2011	6
3.	Organic and bioorganic chemistry	BBK2002	6
4.	Physics I (Mechanics and molecular physics)	FIZN1007	6
5.	A and B courses*		10
		Total:	30
II Year			
III Semester			
1.	General genetics	BIO3005	6
2.	Physical and colloidal chemistry	BBK3003	6
3.	Physics II (Electromagnetism and optics)	FIZ1008	6
4.	Instrumental analysis	BBK2011	5
5.	A and B courses*		8
		Total:	31
IV Semester			
1.	General engineering and electronics	FIZ2010	5
2.	Databases and information systems	INF1010	4
3.	Biotechnology	BIO3010	5
4.	Microbiology and basic immunology	BBK3010	6
5.	A and B courses*		4
6.	Elective Courses (<i>individual work</i>)		
	Environment and Development	APLN2001	5
	Human Ecology	APLN3005	5



	Morphophysiology	BION4002	5
		Total:	29
III Year			
V Semester			
1.	Biochemistry	BBK3001	6
2.	Industrial biotechnology	BIO3020	3
3.	Cell cultures	BIO3016	4
4.	Introductory practice	BIO3019	3
5.	Purification and analysis of biopolymers	BBK3003	4
6.	A and B courses*		4
7.	Elective Courses		
	Pharmaceutical biotechnology and drug engineering	BIO3012	4
	Plant biochemistry	BBK3022	4
		Total:	28
VI Semester			
1.	Bioinformatics	BIO3022	4
2.	Biophysics	BION3006	5
3.	Molecular biology and genetic engineering	BIO4019	4
4.	Plant physiology and biotechnology	BIO3021	5
5.	Practice 2	BIO3017	6
6.	A and B courses*		4
7.	Elective Courses		
	Data visualization methods	INF3041	4
	Food biotechnology	BIO4022	4
	Design of biotechnological processes and plants	BTC3004	3
		Total:	32
IV Year			
VII Semester			
1.	Cell biology	BBK4001	6
2.	Engineering practice	BIO4020	6
3.	Animal biotechnology and tissue engineering	BIO4014	5
4.	Molecular modeling	BIO4010	3
5.	Statistical methods in environmental sciences and biology	MAT2012	6
6.	A and B courses*		4
	Elective Courses		
7.	Biological research methodology	BION3003	4
8.	Pharmaceutical biochemistry	BBK4012	4
9.	Physics III (Quantum mechanics)	FIZ2009	4
		Total:	34
VIII Semester			
1.	Bachelor thesis		15



2.	Material science	FIZ3012	3
3.	Patent law and foundations of law	TEI4024	3
	Elective Courses		
5.	Environmental engineering	APLN3006	5
6.	Special biotechnology	BIO3018	5
		Total:	26
	Total for the Programme:		240

*A, B – optional courses.

Note: there might be some changes in the programme.