

Program of Study BTZA_2A-Biotechnology 2nd level

„Biotechnology in animal production and environmental protection”

1st semester

	1 st semester		Lecture	Tutorial	Class	Lab	Sem	ECTS
1	Basics of contemporary microscopy	45	30			15		4
2	Bioinformatics	45	15			30		4
3	Planning and analysing of experiment	30	15			15		3
4	Procedures of intellectual property and industrial protection in biotechnology	15	15					1
5	Biological assessment methods of the environment	30	15		15			2
6	Quality management systems in biotechnology	20	10		10			1
7	Master workshop	30				30		3
8	Foreign language	30				30		3
9	Ethic, legal and economic aspects of biotechnology	30		30				2
10	Health and safety in laboratory	15	15					1
11	Elective subject (1 st group)	30	15		15			3
12	Elective subject (2 nd group)	30	15		15			3
	Total	350	145	30	55	120		30

	1 st group
1.1	Medical and veterinary microbiology
1.2	Pharmaceutical Microbiology and Applied Microbiology

	2 nd group
2.1	Molecular genetic methods in diagnostics
2.2	Genetic diagnostic of animals

2nd semester

	2 nd semester		Lecture	Class	Lab	Sem	ECTS
13	Cellular engineering in animal reproduction	30	10	10	10		4
14	Proteomics	30	10		20		3
15	Animal embryology	30	15	5	10		3
16	Genomics and transcriptomics	50	15	20	15		4
17	Environmental toxicology	30	15	15			3
18	Master seminar	45				45	3
19	Foreign language	15			15		1
20	Elective subject (3 rd group)	30	15	15			3
21	Elective subject (4 th group)	30	15	15			3
22	Master workshop	30			30		3
	Total	320	95	80	100	45	30

	3 rd group
3.1	Monitoring of transgenic crops
3.2	Risks resulting from the use of GMOs

	4 th group
4.1	Molecular breeding
4.2	Methods of monitoring of reproductive processes in animals

3rd semester

3 rd semester			Lecture	Class	Lab	Semin	ECTS
23	Abiotic stress in environmental protection	30	15		15		3
24	Genetic responses to environmental change	30	10	10	10		3
25	Food and nutrition in relation to human health	30	15		15		3
26	Enzyme engineering	45	15	15	15		4
27	Elective subject (5 th group)	30	15	15			3
28	Elective subject (6 th group)	30	15	15			3
29	Diploma thesis						11
	Total	195	85	55	55		30

	5 th group
5.1	Molecular basis of evolution
5.2	Molecular modelling of enzymes

	6 th group
6.1	In vitro and in vivo methods in toxicological assessment of xenobiotics
6.2	In silico analysis of nucleotide sequence