Program of Study BTZA_2A-Biotechnology 2nd level
Biotechnology in animal production and environmental protection

1st semester

			Lecture	Class	Lab	Sem	ECTS
1	Basics of information science	2	2				
2	Foreign language	30	30				3
3	Humanistic subjects (3 of 6)	45	45				3
4	Health and safety in laboratory	15	15				1
5	Procedures of intellectual property and industrial protection in biotechnology	15	15				1
6	Quality management systems in biotechnology	20	10		10		1
7	Ethic, legal and economic aspects of biotechnology	30		30			2
8	Planning and analysing of experiment	30	15		15		2
9	Basics of contemporary microscopy	40	20		20		4
10	Bioinformatics **(Ex.)**	45	15		30		4
11	Animal embryology **(Ex.)**	30	15	5	10		3
12	Elective subjest (1st group; 1 of 2)	30	15	15			3
13	Elective subject (2nd group; 1 of 2)	30	15	15			3
	Total	**362**	**212**	**65**	**85**	**0**	**30**

	1st group
1.1	Molecular breeding

1.2	Methods of monitoring of reproductive processes in animals

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

	Humanistic subjects
1.	Social communication and negotiation techniques
2.	Sociology of cybersociety
3.	Lobbing in public life
4.	Business ethics
5.	Bioethics
6.	Professional ethics

2nd semester

			Lecture	**Class**	**Lab**	**Sem**	**ECTS**
1	Genomics and transcriptomics	45	15	15	15		4
2	Proteomics	30	10		20		3
3	Cellular engineering in animal reproduction **(Ex.)**	30	10	10	10		3
4	Genetic responses to environmental change	30	10	10	10		3
5	Environmental toxicology	30	15	15			3
6	Elective subject (3rd group; 1 of 2)	30	15	15			3

7	Elective subject (4th group; 1 of 2)	30	15	15			3
8	Elective subject (5th group; 1 of 2)	30	15	15			3
9	Elective subject (6th group; 1 of 2)	30	15	15			3
10	Master seminar	30				30	2
	Total	**315**	**120**	**110**	**55**	**30**	**30**

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

	4th group
4.1	Medical microbiology
4.2	Veterinary microbiology

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

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

3rd semester

			Lecture	Class	Lab	Sem	ECTS
1	Enzyme engineering **(Ex.)**	45	15	15	15		4
2	Biological methods for environmental quality assessment	30	15	15			2
3	Abiotic stress in environmental protection	30	15		15		2
4	Food and nutrition in relation to human health	30	15		15		2
5	Diploma thesis						20
	Total	**135**	**60**	**30**	**45**		**30**