Applied Biochemistry and Biotechnology

	Course Title	ECTS	Contact hours	Prerequisites	Semesters		Instructor	Course Status
					Autumn	Spring		
Obligatory courses - 96 credits								
1	Main principles of cell regulation	6	33		x		D.Mikeladze; L. Shanshiashvili	**req'd**
2	Systems' biochemistry and metabolomics	6	51		x		D.Mikeladze; L. Shanshiashvili; M. Kikvidze	**req'd**
3	Selected chapters of Molecular Biology	6	66		x		R.Solomonia; E.Tevdoradze	**req'd**
4	Molecular Pharmacology	6	46	Main principles of cell regulation		x	E.Zhuravliova	**req'd**
5	Molecular Immunology	6	38			x	L.Shanshiashvili	**req'd**
6	Biotechnological Approaches	6	47	Selected chapters of Molecular Biology		x	N.Datukishvili	**req'd**
7	Pharmacogenomics, toxicogenomics and drug-resistance mechanisms	6	33			x	T.Barbakadze; E.Zhuravliova	**req'd**
8	Metabolisms of xenobiotics ans principles of biotransformation	6	32	Systems' biochemistry and metabolomics	x		T.Barbakadze	**req'd**
9	Drug design and delivery	6	34	Systems' biochemistry and metabolomics	x		L.Shanshiashvili	**req'd**
10	Recent methods of applied biochemistry, omics-technology and bioethics	6	60	Systems' biochemistry and metabolomics; Biotechnological Approaches	x		D.Dzneladze; T.Barbakadze	**req'd**
11	Academic Writing	6	34		x		M.Asatiani	**req'd**
12	Master Thesis	30		Academic Writing; Recent methods of applied biochemistry, omics-technology and bioethics		x		**req'd**

Elective courses - 24 credits*

1	Natural biologically active compounds	6	33		x		N.Narmania	elective
2	Molecular Endocrinology and molecular mechanisms of adaptation	6	32		x		D.Mikeladze; T.Barbakadze	elective
3	Molecular toxicology	6	32	Systems' biochemistry and metabolomics	x		E.Zhuravliova	elective
4	Antioxidants and Chemoprevention	6	33		x		E.Zhuravliova	elective
5	Apoptosis and Cell Proliferation	6	34			x	L.Shanshiashvili	elective
6	English special course for biosciencists	6	47			x	M. Sepashvili	elective
7	Cell Physiology	6	32			×	G.Gamkrelidze	elective
8	Genetically Modified Organisms and their detection in Food	6	41	Biotechnological Approaches	×		N.Datukishvili	elective
9	Introduction in programming for bioinformatics (ENG)	6	48	Statistics for Biologists		×	V.Lagani	elective
10	Statistics for Biologists	6	44		×	×	D.TarkhniShvili; A.Gavashelishvili; L.Mumladze	elective
	Basics of R and Statistics for Ecologists		44				L. Mumladze	elective
	Applied Statistics using R software		32				Al. Gavashelishvili	elective
11	Plant Biochemistry	6	32			×	M.Sepashvili	elective
12	Regulation of Gene Expression and Basics of Epigenetics	6	54			×	R.Solomonia; E.Tevdoradze	elective

* Within 6 credits, students can take courses from other Master's programs.