M.SC. BIOTECHNOLOGY

	Semester	r-I	Take ho	ome credi	its for								
						Examin	ation Scheme						
Sr. No.	Course Code	Subject	Periods	(in Hours	/week)	Theoreti	cal Evaluation		Practical Examination		Credit Sch	neme	
			Lectur e	Tutori al	Practicals	Theory	Internal assessment	Total	Total	Lecture	Tutorial	Practicals	Total
1	BT-111	Cell Biology	4	0	4	80	20	100	40	4	0	2	6
2	BT-112	Biomolecules and Metabolism	4	0	4	80	20	100	40	4	0	2	6
3	BT-113	Microbiology	4	0	4	80	20	100	40	4	0	2	6
4	BT-114	Molecular Biology	4	0	4	80	20	100	40	4	0	2	6
5	BT-115	Choice Based Paper*	4	0	4	80	20	100	40	4	0	2	6
6	BT-116	Communicative Skills	0	0	4	0	100	100	0	0	0	2	2
7	BT-117	Self Study paper	0	0	4**	0	0	0	0	0	0	1	1
		Total						600	200				33
	*Choice l Biostatist	Based Paper: Biostatistics	stics/comp	outer appl	ications in								

M.SC. BIOTECHNOLOGY 2011-12

	Semester	r-II	Take he student	ome cred	lits for								
						Examin	ation Scheme	:					
Sr. No.	Course Code	Subject	Periods	(in Hour	s/week)	Theoret	ical Evaluation	1	Practical Examination		Credit Sc	heme	
			Lectur e	Tutori al	Practical s	Theor y	Internal assessment	Total	Total	Lectur e	Tutorial	Practicals	Total
1	BT-211	Immunology	4	0	4	80	20	100	40	4	0	2	6
2	BT-212	Bioinformatics	4	0	4	80	20	100	40	4	0	2	6
3	BT-213	Plant Physiology and Developmental Genetics	4	0	4	80	20	100	40	4	0	2	6
4	BT-214	Human Physiology and Developmental Genetics	4	0	4	80	20	100	40	4	0	2	6
5	BT-215	Choice Based Paper*	4	0	4	80	20	100	40	4	0	2	6
6	BT-216	Seminars	0	0	4	0	50	50	0	0	0	2	2
7	BT-217	Self Study paper	0	0	4**	0	0	0	0	0	0	1	1
		Total						550	200				33
		Based Paper: Funda and Vaccinology / Mi				l ing and al	 gorithms/ Plai	 nt Cell Cu	 ulture/Animal C	ell			

M.SC. BIOTECHNOLOGY 2011-12

	Semester	·-III	Take ho students	me credit	s for								
						Examina	ation Scheme						
Sr. No.	Course Code	Subject	Periods (in Hours/v	week)	Theoreti	cal Evaluation		Practical Examination		Credit Sch	eme	
			Lectur e	Tutoria 1	Practicals	Theory	Internal assessment	Total	Total	Lecture	Tutorial	Practicals	Total
1	BT-311	Bioprocess engineering	4	0	4	80	20	100	40	4	0	2	6
2	BT-312	Plant Biotechnology	4	0	4	80	20	100	40	4	0	2	6
3	BT-313	Animal Biotechnology	4	0	4	80	20	100	40	4	0	2	6
4	BT-314	Genetic Engineering	4	0	4	80	20	100	40	4	0	2	6
5	BT-315	Choice based paper*	4	0	4	80	20	100	40	4	0	2	6
6	BT-316	Seminars	0	0	4	0	50	50	0	0	0	2	2
7	BT-317	Self Study paper	0	0	4**	0	0	0	0	0	0	1	1
		Total						550	200				33
	*Choice I	Based Paper: Drug De	esign and Cl	nemiinforn	natics/ Envir	onmental	 Biotechnology	 /Plant stre	ess biology/Diagr	nostics			

M.SC. BIOTECHNOLOGY 2011-12

	Semeste	r-IV	Take he student	ome credi	its for								
						Exami	nation Schem	ie					
Sr. No.	Course Code	Subject	Periods	(in Hours	/week)	Theore	tical Evaluatio	on	Practical Examinatio n		Credit S	cheme	
			Lectur e	Tutori al	Practical s	Theor y	Internal assessmen t	Total	Total	Lectur e	Tutoria 1	Practical s	Total
1	BT-411	Choice Based Paper-I*	4	0	0	80	20	100	0	4	0	0	4
2	BT-412	Choice Based Paper-II*	4	0	0	80	20	100	0	4	0	0	4
3	BT-413	Dissertation	0	0	36	0	0	0	300	0	0	18	18
		Total						200	300				26
		D. I. M.					1.						

*Choice Based Paper-I: Management issues in Biotechnology / Bioentrepreneurship

*Choice Based Paper-II: Ethical, Legal, Social issues in Biotechnology/ IPR and Biotechnology

M.Sc AGRICULTURE BIOTECHNOLOGY

	Semester	r-I	Take ho	ome credit	s for								
						Examin	ation Scheme						
Sr. No.	Course Code	Subject	Periods	(in Hours/v	week)	Theoreti	cal Evaluation		Practical Examination		Credit Sc	heme	
			Lectur e	Tutoria 1	Practical s	Theor v	Internal assessment	Total	Total	Lectur e	Tutorial	Practical s	Total
1	ABT- 111	Cell Biology	4	0	4	80	20	100	40	4	0	2	6
2	ABT- 112	Biomolecules and Metabolism	4	0	4	80	20	100	40	4	0	2	6
3	ABT- 113	Microbiology	4	0	4	80	20	100	40	4	0	2	6
4	ABT- 114	Molecular Biology	4	0	4	80	20	100	40	4	0	2	6
5	ABT- 115	Choice Based Paper*	4	0	4	80	20	100	40	4	0	2	6
6	ABT- 116	Communicative Skills	0	0	4	0	100	100	0	0	0	2	2
7	ABT- 117	Self Study paper	0	0	4**	0	0	0	0	0	0	1	1
		Total						600	200				33
	*Choice Biostatis	Based Paper: Biostati stics	 stics/comp	uter applic	eations in								

M.Sc. AGRICULTURE BIOTECHNOLOGY

	Semester-II		Take ho	ome credit s	ts for								
						Examir	ation Scheme	9					
Sr. No.	Course Code	Subject	Periods	(in Hours/	week)	Theoret	ical Evaluation	n	Practical Examinatio n		Credit	Scheme	
			Lectur	Tutoria	Practical	Theor	Internal	Total	Total	Lectur	Tutori	Practica	Total
			e	1	s	у	assessment			e	al	ls	
1	ABT-211	Genetic		0			20	100	40			2	6
		Engineering	4		4	80				4	0		
2	ABT-212	Bioinformatics		0			20	100	40			2	6
			4		4	80				4	0		
3	ABT-213	Molecular		0			20	100	40			2	6
		Breeding	4		4	80				4	0		
4	ABT-214	Plant Molecular		0			20	100	40			2	6
		Biol.	4		4	80				4	0		
5	ABT-215	Choice Based		0			20	100	40			2	6
		Paper*	4		4	80				4	0		
6	ABT-216	Seminars		0			50		0			2	
			0		4	0		50		0	0		2
7	ABT-217	Self Study paper		0			0		0			1	
			0		4**	0		0		0	0		1
	ŗ	Γotal						550	200				33

^{*}Choice Based Paper: Fundamentals of computer programming and algorithms/ **Plant Tissue Culture** /Animal Cell Culture and Vaccinology /Microbial Technology

M.Sc. AGRICULTURE BIOTECHNOLOGY

	Semester	r-III	Take hom students	e credits f	or								
						Examin	ation Scheme						
Sr. No.	Course Code	Subject	Periods (in	Hours/wee	ek)	Theoreti	cal Evaluation		Practical Examination		Credit S	Scheme	
			Lecture	Tutoria 1	Practical s	Theor y	Internal assessment	Total	Total	Lectur e	Tutori al	Practical s	Total
1	ABT- 311	Plant Genetic Engineering	4	0	4	80	20	100	40	4	0	2	6
2	ABT- 312	Plant Metabolic Engineering and Molecular Farming	4	0	4	80	20	100	40	4	0	2	6
3	ABT- 313	Genomics and Proteomics	4	0	4	80	20	100	40	4	0	2	6
4	ABT- 314	Biotic and abiotic stress biology	4	0	4	80	20	100	40	4	0	2	6
5	ABT- 315	Choice Based Paper*	4	0	4	80	20	100	40	4	0	2	6
6	ABT- 316	Seminars	0	0	4	0	50	50	0	0	0	2	2
7	ABT- 317	Self Study paper	0	0	4**	0	0	0	0	0	0	1	1
		Total						550	200				33

*Choice Based Paper: Drug Design and Chemiinformatics/Environmental Biotechnology/ Industrial & Food Biotech /Diagnostics

M.SC. AGRICULTURE BIOTECHNOLOGY

	Semester	·-IV	Take hor	me credits	for								
						Examin	ation Scheme						
Sr.	Course	Subject	Periods (in Hours/w	reek)	Theoreti	cal Evaluation		Practical		Credit Sch	ieme	
No.	Code								Examination				
			Lecture	Tutorial	Practicals	Theory	Internal	Total	Total	Lecture	Tutorial	Practicals	Total
							assessment						
1	ABT-	Choice Based	4	0	0	80	20	100	00	4	0	0	4
	411	Paper-I*											
2	ABT-	Choice Based	4	0	0	80	20	100	00	4	0	0	4
	412	Paper-II*											
3	ABT-	Dissertation	0	0		0	0	0	300	0	0	18	18
	413				36								
		Total							300				26
		10441						200	300				20

^{*}Choice Based Paper-I: Management issues in Biotechnology/ Bioentrepreneurship

^{*}Choice Based Paper-II: Ethical, Legal, Social issues in Biotechnology/ IPR and Biotechnology

M.SC. BIOINFORMATICS-2011-12

	Semester	·-I	Take hor	me credits	for								
						Examin	ation Scheme						
Sr. No.	Course Code	Subject	Periods (in Hours/w	eek)	Theoreti	cal Evaluation		Practical Examination		Credit Sch	eme	
			Lecture	Tutorial	Practicals	Theory	Internal	Total	Total	Lecture	Tutorial	Practicals	Total
							assessment						
1	BIN- 131	Cell Biology	4	0	4	80	20	100	40	4	0	2	6
2	BIN- 132	Biomolecules and Metabolism	4	0	4	80	20	100	40	4	0	2	6
3	BIN- 133	Microbiology	4	0	4	80	20	100	40	4	0	2	6
4	BIN- 134	Molecular Biology	4	0	4	80	20	100	40	4	0	2	6
5	BIN- 135	Choice Based Paper*(P.E.)*	4	0	4	80	20	100	40	4	0	2	6
6	BIN- 136	Communicative Skills (O.E.)	0	0	4	0	100	100	0	0	0	2	2
7	BIN- 137	Self Study paper	0	0	4**	0	0	0	0	0	0	1	1
		Total						600	200				33
	*Choice Biostatist	Based Paper: Biostatist	ics/compute	er applicati	ons in								

M.SC. BIOINFORMATICS 2011-12

	Semeste	r-II	Take ho	ome credit s	s for								
						Examin	ation Scheme	;					
Sr. No.	Course Code	Subject	Periods	(in Hours/	week)	Theoret	ical Evaluatior	1	Practical Examinati on		Credit Sc	heme	
			Lectur e	Tutoria 1	Practical s	Theor y	Internal assessment	Total	Total	Lecture	Tutori al	Practical s	Total
1	BIN- 231	Immunology	4	0	4	80	20	100	40	4	0	2	6
2	BIN- 232	Bioinformatics	4	0	4	80	20	100	40	4	0	2	6
3	BIN- 233	Human Physiology and Developmental Genetics	4	0	4	80	20	100	40	4	0	2	6
4	BIN- 234	Biophysics	4	0	4	80	20	100	40	4	0	2	6
5	BIN- 235	Choice Based Paper*	4	0	4	80	20	100	40	4	0	2	6
6	BIN- 236	Seminars	0	0	4	0	50	50	0	0	0	2	2
7	BIN- 237	Self Study paper	0	0	4**	0	0	0	0	0	0	1	1
		Total						550	200				33

Choice Based Paper: Fundamentals of Computer Programming and Algorithms/ Plant Cell Culture/Animal Cell Culture/Microbial Technology

M.SC. BIOINFORMATICS 2011-12

	Semester-	·III	Take hom	e credits fo	r students								
						Examina	ation Scheme						
Sr. No.	Course Code	Subject	Periods (in	Hours/weel	k)	Theoretic	cal Evaluation		Practical Examinat ion		Credit Sc	heme	
			Lecture	Tutorial	Practicals	Theory	Internal assessment	Total	Total	Lectur e	Tutorial	Practicals	Tota 1
1	BIN-331	Genomics & Proteomics	4	0	4	80	20	100	40	4	0	2	6
2	BIN-332	Object oriented and relational databases	4	0	4	80	20	100	40	4	0	2	6
3	BIN-333	Tools and techniques for biological data-mining	4	0	4	80	20	100	40	4	0	2	6
4	BIN-334	Biological databases and data analysis	4	0	4	80	20	100	40	4	0	2	6
5	BIN-335	Choice Based Paper* (P.E.)	4	0	4	80	20	100	40	4	0	2	6
6	BIN-336	Seminars	0	0	4	0	50	50	0	0	0	2	2
7	BIN-337	Self Study paper	0	0	4**	0	0	0	0	0	0	1	1
		Total						550	200				33

*Choice Based Paper: **Drug Design and Chemiinformatics**/Environmental Biotechnology/Plant stress biology/Diagnostics

Practical Examination will be conducted in two phases: Phase 1 shall include the practical evaluation of Cell Biology; Bimolecules and Metabolism and Choice Based paper: Phase 2 shall include Microbiology and Molecular Biology

M.SC. BIOINFORMATICS 2011-12

	Semester	r-IV	Take ho	ome credit s	ts for								
						Examin	nation Schemo	e					
Sr. No.	Course Code	Subject	Periods	(in Hours/	week)	Theoret	ical Evaluatio	n	Practical Examinati on		Credit Sche	me	
			Lectur	Tutoria	Practical	Theor	Internal	Total	Total	Lecture	Tutorial	Practicals	Total
			e	1	S	у	assessment						
1	BIN-	Choice Based		0			20	100	0	4	0	0	4
	431	Paper-I*	4		0	80							
2	BIN-	Choice Based		0			20	100	0	4	0	0	4
	432	Paper-II*	4		0	80							
3	BIN-	Dissertation		0			0	0	300	0	0	18	18
	433		0		36	0							
		Total						200	300				26
		D 1 M											

*Choice Based Paper-I: Management issues in Biotechnology//Bioentrepreneurship

^{*}Choice Based Paper-II: Ethical, Legal, Social issues in Biotechnology IPR and Biotechnology

	Semester-I		Take home credits for students										
						Examin	ation Scheme						
Sr. No.	Course Code	Subject	Periods (in Hours/week)			Theoreti	Theoretical Evaluation				Credit Scl	neme	
			Lectur e	Tutori al	Practical s	Theor y	Internal assessment	Total	Total	Lecture	Tutoria 1	Practicals	Total
1	MBT- 131	Cell Biology	4	0	4	80	20	100	40	4	0	2	6
2	MBT- 132	Biomolecules and Metabolism	4	0	4	80	20	100	40	4	0	2	6
3	MBT- 133	Microbiology	4	0	4	80	20	100	40	4	0	2	6
4	MBT- 134	Molecular Biology	4	0	4	80	20	100	40	4	0	2	6
5	MBT- 135	Choice Based Paper*	4	0	4	80	20	100	40	4	0	2	6
6	MBT- 136	Communicative Skills	0	0	4	0	100	100	0	0	0	2	2
7	MBT- 137	Self Study paper	0	0	4**	0	0	0	0	0	0	1	1
		Total						600	200				33
	Choice B Biostatist	lased Paper: Biostatis tics	tics/comp	l uter appli	cations in								

	Semester-II		Take home credits for students										
						Examina	ation Scheme						
Sr. No.	Course Code	Subject	Periods (in Hours/week)			Theoretic	Theoretical Evaluation			Credit Scheme			
			Lectur e	Tutori al	Practicals	Theory	Internal assessment	Total	Total	Lecture	Tutorial	Practicals	Total
1	MBT- 231	Immunology	4	0	4	80	20	100	40	4	0	2	6
2	MBT- 232	Bioinformatics	4	0	4	80	20	100	40	4	0	2	6
3	MBT- 233	Human Physiology and Developmental Genetics	4	0	4	80	20	100	40	4	0	2	6
4	MBT- 234	Genetic Engineering	4	0	4	80	20	100	40	4	0	2	6
5	MBT- 235	Choice Based Paper*	4	0	4	80	20	100	40	4	0	2	6
6	MBT- 236	Seminars	0	0	4	0	50	50	0	0	0	2	2
7	MBT- 237	Self Study paper	0	0	4**	0	0	0	0	0	0	1	1
		Total						550	200				33

Choice Based Paper: Fundamentals of computer programming and algorithms/ Plant Cell Culture/Animal Cell Culture and Vaccinology / Microbial Technology

	Semester-III		Take home credits for students										
						Examination Scheme							
Sr. No.	Course Code	Subject	Periods (in Hours/week)			Theoreti	Theoretical Evaluation				Credit Sch	neme	
			Lectur	Tutori	Practical	Theory	Internal	Total	Total	Lecture	Tutorial	Practicals	Total
			e	al	S		assessment						
1	MBT-	Biology of			4	80	20	100	40	4	0	2	6
	331	Infectious diseases	4	0									
2	MBT-	Stem Cell Biology			4	80	20	100	40	4	0	2	6
	332	and somatic and	4	0									
		germ cell											
		engineering											
3	MBT-	Human Genetics			4	80	20	100	40	4	0	2	6
	333	and Genomics	4	0									
4	MBT-	Molecular			4	80	20	100	40	4	0	2	6
	334	Modelling and	4	0									
		Drug Designing											
5	MBT-	Choice Based			4	80	20	100	40	4	0	2	6
	335	Paper*	4	0									
6	MBT-	Seminars			4	0	50	50	0	0	0	2	
	336		0	0									2
7	MBT-	Self Study paper			4**	0	0	0	0	0	0	1	
	337		0	0									1
		Total						550	200				
													33
	Choice B	ased Paper: Drug Des	sign and C	hemiinfor	matics/Envi	ronmental	Biotechnology	y/Plant str	ess biology/ Dia	gnostics			

Practical Examination will be conducted in two phases: Phase 1 shall include the practical evaluation of Taxonomic and Phylogenetic analysis; Comparative Genomics and Proteomics and Tools and techniques for biological data-mining. Phase 2 shall include Databases and data analysis and Choice Based Paper.

	Semester-IV		Take home credits for students											
						Examination Scheme								
Sr. No	Course Code	Subject	Periods (in Hours/week)			Theoretical Evaluation			Practical Examinatio	Credit Scheme				
			Lectur	Tutori	Practica	Theor	Internal	Total	Total	Lectur	Tutoria	Practicals	Total	
			e	al	ls	у	assessmen t			e	1			
1	MBT-	Choice Based					20		0		0	0	4	
	431	Paper-I*	4	0	0	80		100		4				
2	MBT-	Choice Based					20		0		0	0	4	
	432	Paper-II*	4	0	0	80		100		4				
3	MBT-	Dissertation					0		300		0	18	18	
	433		0	0	36	0		0		0				
		Total						200	300				26	

^{*}Choice Based Paper-I: Management issues in Biotechnology/ Bioentrepreneurship

^{*} Choice Based Paper-II: Ethical, Legal, Social issues in Biotechnology/ IPR and Biotechnology