

Bio Technology

Semester III

Subject code	Subject name	Teaching Scheme (Hours)			Credits	Theory Marks		Practical Marks		Total Marks	Branch Code
		Theory	Tutorial	Practical		ESE(E)	PA (M)	Viva (V)	PA(I)		
	Advanced Engineering Mathematics	3	2	0	5	70	30	30	20	150	4
	Mechanics of solids	4	0	2	6	70	30	30	20	150	4
	Introductory Biology	3	0	0	3	70	30	0	0	100	4
	Basic Biochemistry	3	0	3	6	70	30	30	20	150	4
	Organic Chemistry and Unit Processes	3	0	3	6	70	30	30	20	150	4
	Thermodynamics	3	1	0	4	70	30	30	20	150	4
	Total	19	3	8	30						

Semester IV

Subject code	Subject name	Teaching Scheme (Hours)			Credits	Theory Marks		Practical Marks		Total Marks	Branch Code
		Theory	Tutorial	Practical		ESE(E)	PA (M)	Viva (V)	PA(I)		
	Process Calculation	3	2	0	5	70	30	30	20	150	4
	Engineering Economics and Management	3	0	0	3	70	30	0	0	100	4
	Molecular Biology and Genetics	3	0	3	6	70	30	30	20	150	4
	Basic Taxonomy and Techniques	3	0	2	5	70	30	30	20	150	4
	Principles of Process Engineering-I	3	0	3	6	70	30	30	20	150	4
	Basics of Cell Biology	3	0	2	5	70	30	30	20	150	4
	Total	18	2	10	30						

Semester V

Subject code	Subject name	Teaching Scheme (Hours)			Credits	Theory Marks		Practical Marks		Total Marks	Branch Code
		Theory	Tutorial	Practical		ESE(E)	PA (M)	Viva (V)	PA(I)		
	Open Elective / Institute Elective	3	0	2	5	70	30	30	20	150	4
	Biostatistics	2	2	0	4	70	30	30	20	150	4
	Advanced Molecular Biology ñI	3	0	0	3	70	30	0	0	100	4
	Immunology	3	0	2	5	70	30	30	20	150	4
	Chemical Reaction Engineering	4	0	3	7	70	30	30	20	150	4
	Principles of Process Engineering-II	3	0	3	6	70	30	30	20	150	4
	Total	18	2	10	30						

Semester VI

Subject code	Subject name	Teaching Scheme (Hours)			Credits	Theory Marks		Practical Marks		Total Marks	Branch Code
		Theory	Tutorial	Practical		ESE(E)	PA (M)	Viva (V)	PA(I)		
	Fundamentals of Industrial Biotechnology	3	0	2	5	70	30	30	20	150	4
	Environmental Biotechnology	3	0	2	5	70	30	30	20	150	4
	Instrumentation and Process Control	3	0	3	6	70	30	30	20	150	4
	Principles of Process Engineering-III	3	0	3	6	70	30	30	20	150	4
	Instrumental Methods of Analysis and Biotechniques	3	0	0	3	70	30	0	0	100	4
	Enzymes and Proteins	3	0	2	5	70	30	30	20	150	4
	Total	18	0	12	30						

Semester VII

Subject code	Subject name	Teaching Scheme (Hours)			Credits	Theory Marks		Practical Marks		Total Marks	Branch Code
		Theory	Tutorial	Practical		ESE(E)	PA (M)	Viva (V)	PA(I)		
	Department Elective-I	3	0	3	6	70	30	30	20	150	4
	Agricultural and Food Biotechnology	3	0	2	5	70	30	30	20	150	4
	Advanced Molecular Biology-II	3	0	3	6	70	30	30	20	150	4
	Bioprocess Plant Design	3	2	0	5	70	30	30	20	150	4
	Biochemical Engineering-I	2	0	2	4	70	30	30	20	150	4
	Project - I	0	0	4	4	0	0	100	50	150	4
	Total	14	2	14	30						

Semester VIII

Subject code	Subject name	Teaching Scheme (Hours)			Credits	Theory Marks		Practical Marks		Total Marks	Branch Code
		Theory	Tutorial	Practical		ESE(E)	PA (M)	Viva (V)	PA(I)		
	Department Elective-II	3	3	0	6	70	30	30	20	150	4
	Department Elective-III	3	3	0	6	70	30	30	20	150	4
	Bioethics, Patents and IPR	2	0	0	2	70	30	0	0	100	4
	Biochemical Engineering-II	3	0	0	3	70	30	0	0	100	4
	Animal and Plant Biotechnology	3	0	2	5	70	30	30	20	150	4
	Project - II	0	0	8	8	0	0	100	50	150	4
	Total	14	6	10	30						

Departmental Elective I:

Metabolic Engineering
Bioinformatics

Departmental Elective II:

Genomics and Proteomics
Modeling and Simulations of Bioprocess

Departmental Elective III:

Nano-Biotechnology
Research Methodologies

Institute Elective

The Science of Life

Note: ALA Component, OEP Component and Design Module I, II and III (to be offered in 2nd Year , 3rd year and 4th year respectively) shall be displayed in the final teaching scheme