

Syllabus for M.Sc. Integrated Biotechnology Program

Semester I		Semester II		Semester III	
1	Physics-I	1	Physics-II	1	Physical and Inorganic Chemistry
2	Organic Chemistry	2	Biophysical Chemistry-II	2	Biochemistry-I
3	Introduction to Computers	3	Computer Applications	3	Microbial Physiology
4	Plant Sciences	4	Microbiology-I	4	Microbiology-II
5	Animal Sciences	5	Cell Biology	5	Molecular Biology-I
6	Biomathematics	6	Biostatistics	6	Introduction to Genetics
7	Labs.	7	Labs.	7	Labs.
Semester IV		Semester V		Semester VI	
1	Bioenergetics	1	Enzymology	1	Fundamentals of Immunology
2	Biochemistry-II	2	Recombinant DNA Technology	2	Genetic Engineering
3	Environmental Biology	3	Industrial Microbiology	3	Biotechnology-Principles and Practices
4	Developmental Biology	4	Animal Physiology	4	Biosensors and
5	Molecular Biology-II	5	Bioinstrumentation	5	Bioanalytical Techniques
6	Virology	6	Plant Physiology	6	Bioinformatics
7	Labs.	7	Labs.	7	Labs.
Major disciplines is offered from 7th Semester					
Semester VII		Semester VII		Semester VII	
1	Regulation of Metabolic Pathways	1	Regulation of Metabolic Pathways	1	Environmental Chem. and Toxicology
2	Biodiversity and Bioresources	2	Biodiversity and Bioresources	2	Biodiversity and Bioresources
3	Animal Cell Tissue Culture Technique	3	Plants and Animal Cell Culture Techniques	3	Environmental Microbiology
4	Advanced Molecular Biology	4	Advanced Molecular Biology	4	Advanced Molecular Biology
5	Labs.	5	Labs.	5	Labs.
Semester VIII		Semester VIII		Semester VIII	
1	Applied Environmental Biotechnology	1	Applied Environmental Biotechnology	1	Applied Environmental Biotechnology
2	Advanced Cell Biology	2	Advanced Cell Biology	2	Novel Methods for Pollution Control
3	Advanced Immunology	3	Microbial Biotechnology	3	Biodeterioration, Prevention and control
4	Plant Cell Tissue Culture Techniques	4	Agricultural and Food Biotechnology	4	Biogeotechnology
5	Labs.	5	Labs.	5	Labs.
					1 Medical Microbiology-I
					2 Molecular Diagnostic Techniques-I
					3 Advanced Immunology
					4 Essentials of Pharmacology
					5 Labs.

Semester IX		Semester IX		Semester IX		Semester IX	
1	Agricultural and Food Biotechnology	1	Technological Adv. in Downstream Process.	1	Water Pollution and Remediation	1	Tissue Culture and Cytogenetics
2	Metabolic Engineering	2	Nanobiotechnology and Diagnostics	2	Air and Soil Pollution and Remediation	2	Medical Microbiology-II
3	Molecular Medicine	3	Biopharmaceuticals and Biotherapeutics	3	Bioremediation Techniques	3	Vaccinology
4	Bioprocess Engineering	4	Bioprocess Engineering	4	Eco-friendly Technology	4	Molecular Diagnostic Techniques-II
5	Labs.	5	Labs.	5	Labs.	5	Labs.
Semester X		Semester X		Semester X		Semester X	
1	Genomics and Proteomics	1	Biotechnology of Milk Products	1	Environmental Impact Assessment and Legislation	1	Gene therapy
2	Drug Discovery Design and Development	2	Drug Discovery Design and Development	2	Renewable and Non-renewable Resources Conversation	2	Drug Discovery Design and Development
3	Biotechnology Management	3	Biotechnology Management	3	Industrial Waste Management	3	Assisted Reproductive Techniques
4	Biosafety, Bioethics and IPR	4	Biosafety, Bioethics and IPR	4	Biosafety, Bioethics and IPR	4	Biosafety, Bioethics and IPR
5	Labs.	5	Labs.	5	Labs.	5	Labs.