



JOY UNIVERSITY
semper paratus

School of Health and Life Sciences

Department of Biotechnology

B.Tech Biotechnology – I Semester

Sl.No	Course Code	Course Title	L	T	P	Contact Hrs / Wk	Credits
1.	BTBT 1101	Engineering Mathematics-I	3	1	0	4	4
2.	BTBT 1102	Engineering Physics	3	1	3	7	6
3.	BTBT 1103	Engineering Drawing	0	0	3	3	2
4.	BTBT 1104	Introduction to Computing	2	0	3	5	4
5.	BAEN 1101	Communication skills in English	2	0	0	2	2
		TOTAL					18

B.Tech Biotechnology – II Semester

Sl.No	Course Code	Course Title	L	T	P	Contact Hrs / Wk	Credits
1.	BTBT 1201	Engineering Mathematics-II	3	1	0	4	4
2.	BTBT 1202	Environmental Science/Engineering Chemistry	3	1	3	7	6
3.	BTBT 1203	Workshop/Manufacturing Practice	2	0	3	5	4
4.	BTBT 1204	Basic Electronics Engineering	3	0	3	6	5
5.	AU101	Sports/Yoga/Music/Creative writing	2 [^]	0	0		0
		TOTAL					19

B.Tech Biotechnology – III Semester

Sl.No	Course Code	Course Title	L	T	P	Contact Hrs / Wk	Credits
1.	BTBT 2101	Biochemistry	3	0	3	6	5
2.	BTBT 2102	Microbiology	3	0	3	6	5
3.	BTBT 2103	Genetics	3	0	0	3	3
4.	BTBT 2104	Cell and molecular Biology	3	0	3	6	5
5.	BTBT 2105	Transfer Operations-1	3	0	3	6	5
6.	HSMC (H-102)	Universal Human values: Understanding harmony	3	0	0	3	3
		TOTAL					26

B.Tech Biotechnology – IV Semester

Sl.No	Course Code	Course Title	L	T	P	Contact Hrs / Wk	Credits
1.	BTPC 2201	Bioprocess Engineering	3	0	0	3	3
2.	BTPC 2202	Environmental Biotechnology	3	0	0	3	3
3.	BTPC 2203	rDNA technology	3	0	0	3	3
4.	BTBT 2204	Data structure and algorithm	3	0	3	6	5
5.	HS 202	Engineering Economics	2	0	0	2	2
6	BTBT 2205	Transfer Operations-II	3	0	3	6	5
		TOTAL					21

B.Tech Biotechnology – V Semester

Sl.No	Course Code	Course Title	L	T	P	Contact Hrs / Wk	Credits
1.	BTBS 3101	Principles of Management (Entrepreneurship and start-ups)	2	0	0	2	2
2.	BTPC 3102	Metabolic Engineering	3	0	0	3	3
3.	BTPC 3103	Immunology and Immunotechnology	3	0	0	3	3
4.	BTBT 3104	Database management systems and computer network	3	0	0	3	3
5.	BTBT 3105	Bioinformatics and Computational Biology	3	0	0	3	3
6.	BTPS	Project-I	0	0	6	3	3
7.	BTOS-1	Open subject-I	2	0	0	2	2
8.	BTPE-II	Professional Elective-I	3	0	0	3	3
9.	AU301	Indian Constitution	2 [^]	0	0	2	0
		TOTAL					22

Open subjects-I

1. 3D Printing and Design
2. Internet of things
3. Image Processing
4. Biomaterials

Professional Elective-I

1. Molecular modelling and Drug designing
2. Biosensors and Diagnostics
3. Biofertilizers and Biopesticides
4. Big Data Analytics
5. Genome Editing
6. Biosimilars Technology

B.Tech Biotechnology – VI Semester

Sl.No	Course Code	Course Title	L	T	P	Contact Hrs / Wk	Credits
1.	BTBT 3201	Bioseparation Technology and Downstream processing	3	0	0	3	3
2.	BTBT3202	Synthetic and System Biology	3	0	0	3	3
3.	BTBT3203	Animal Biotechnology	3	0	3	6	5
4.	BTPE	Professional Elective -II	4	0	0	4	4
5.	BTOS	Open Subject-II	2	0	0	2	2
6.	BTPS	Project-I	0	0	6	6	3
TOTAL							20

Open subjects-II

1. Artificial Intelligence
2. Quantum Computing
3. Cyber Security

Professional Elective-II

1. Human Genomics
2. Proteomics
3. Machine learning
4. Waste management and upcycling
5. Stem-cell technology

B.Tech Biotechnology – VII Semester

Sl.No	Course Code	Course Title	L	T	P	Contact Hrs / Wk	Credits
1.	BTBT 3201	Bioethics and Intellectual Property Rights	2	0	0	2	2
2.	BTBT3202	Food Biotechnology	3	0	0	3	3
3.	BTBT3203	Plant Biotechnology	3	0	3	6	5
4.	BTPS 3201	Professional Elective-III	3	0	0	3	3
5.	BTPS 3202	Professional Elective-IV	3	0	0	3	3
6.	OS 3201	Open Subject-III	3	0	3	6	5
7.	OS 3202	Open Subject-IV	3	0	0	3	3
TOTAL							24

Open subjects-III

1. Data Sciences
2. Robotics
3. Biophysics
4. Virtual Reality

Open subjects-IV

1. Block chain
2. Bioterrorism and National Security

Professional Elective-III

1. Gene expression and transgenics
2. Rational Drug Delivery
3. State of the art imaging

Professional Elective-IV

1. Precision medicine and wellness
2. Tissue engineering
3. Nano Biotechnology

B.Tech Biotechnology – VIII Semester

Sl.No	Course Code	Course Title	L	T	P	Contact Hrs / Wk	Credits
1.	BTBT 4201	Biomaterials	3	0	0	3	3
2.	BTBT4202	Renewable energy technology	2	0	0	2	2
3.	BTBT4203	Medicinal and pharmaceutical Biotechnology	3	0	0		3
4.	BTPS 4204	Project-II (Biotech Industrial or Biotech In house project or Bioentrepreneurship/Startups)				-	4
5.	BTBT4205	Comprehensive Viva Voce				-	4
		TOTAL					16

TOTAL CREDITS = 166