



University of Engineering and Management, Kolkata

B.Tech - Biotechnology (4-years degree programme)

Syllabus for Admission Batch 2024-2028

SEMESTER I

S. No	Course Code	Course Title	L	T	P	C
1	BSC 102	Chemistry	3	1	0	4
2	BSC 103	Mathematics I	3	1	0	4
3	BSC 109	Biology for engineers	2	1	0	3
4	ESC 101	Basic Electrical Engineering	3	1	0	4
5	ESC 103	Engineering mechanics I	1	1	0	2
6	HSMC 102	Essential studies for professionals- I	2	0	0	0.5
7	IVC 103	Programing for Problem Solving using Python	0	0	1	0
8	IVC 104	Design Thinking & Innovation-Basic	0	0	1	0
9	IVC 105	Economics, finance and Entrepreneurship Skills-Foundation	0	0	3	0
10	BSC 192	Chemistry Laboratory	0	0	3	1.5
11	ESC 191	Basic Electrical Engineering laboratory	0	0	2	1
12	ESC 194	Workshop/ Manufacturing practices	0	0	6	3
13	HSMC 182	Skill Development for professionals- I	0	0	2	0.5
		TOTAL				23.5

SEMESTER II

S. No.	Course Code	Course Title	L	T	P	C
1	BSC 201	Physics	3	1	0	4
2	BSC 204	Mathematics II	3	1	0	4
3	ESC 202	Engineering mechanics II	1	1	0	2
4	ESC 203	Programing for problem solving	3	1	0	4
5	HSMC 201	English	2	0	0	2
6	HSMC 202	Essential studies for professionals- II	2	0	0	0.5
7	IVC 201	Basic Electronics engineering	0	0	1	0
8	IVC 202	Design Thinking & Innovation-Advance	0	0	1	0
9	IVC 203	Economics, finance and Entrepreneurship Skills- Advance	0	0	1	0
10	BSC 291	Physics Laboratory	0	0	3	1.5
11	HSMC 291	English Laboratory	0	0	2	1
12	ESC 292	Engineering Graphics & design	0	0	6	3
13	ESC 293	Programing for problem solving	0	0	2	1
14	HSMC 282	Skill Development for professionals- II	0	0	1	0.5
		TOTAL				23.5

SEMESTER III

S. No.	Course Code	Course Title	L	T	P	C
1	BSBT301	Biochemistry	2	0	0	2
2	BSBT302	Microbiology	2	0	0	2
3	BSBT 303	Genetics	2	0	0	2
4	BSBT306	Biophysics	2	0	0	2
5	BSBT304	Cell & Molecular Biology	2	0	0	2
6	BSBT305	Plant Biology	2	0	0	2
7	HSMC301	Effective Technical Communication	3	0	0	3
8	BSBT391	Biochemistry Lab	0	0	2	1
9	BSBT392	Microbiology Lab	0	0	2	1
7	BSBT393	Genetics Lab	0	0	2	1
10	BSBT394	Cell & Molecular Biology Lab	0	0	2	1
11	BSBT395	Plant Biology Lab	0	0	2	1
12	PSBT381	Technical Seminar	0	0	6	3
13	ESEP301	Essential Studies for Engineering Professionals III	2	0	0	2
		TOTAL	17	0	18	25

SEMESTER IV

S. No.	Course Code	Course Title	L	T	P	C
1	HSMC401	Engineering Economics	2	0	0	2
2	PCCBT401	Bioprocess Engineering	2	1	0	3
3	PCCBT402	Green Biotechnology and Pollution Abatement	2	0	0	2
4	PCCBT403	Immunology & Immuno- technology	2	0	0	2
5	PCCBT404	Structural Biology	2	1	0	3
6	PCCBT405	rDNA Technology	2	1	0	3
7	AUBT401	Environmental Science	1	0	0	0
8	PCCBT406	Bioinformatics & Computational Biology	2	1	0	3
9	PCCBT491	Bioprocess Engineering Lab	0	0	2	1
10	PCCBT 493	Immunology & Immuno- technology Lab	0	0	4	2
11	PCCBT495	rDNATechnology Lab	0	0	4	2
12	PCCBT 496	Bioinformatics & Computational Biology Lab	0	0	4	2
13	PSBT481	Comprehensive viva voce	0	0	2	1
14	ESEP401	Essential Studies for Engineering Professionals – IV	2	0	0	2
		Total	18	4	14	28

SEMESTER V

S. No.	Course Code	Course Title	L	T	P	C
1	HSMC501	Entrepreneurship and Startups	1	1	0	2
2	PCCBT501	Analytical Techniques	2	0	0	2
3	PCCBT502	Metabolic Engineering	2	0	0	2
4	PCCBT503	Cheminformatics & Medicinal Chemistry	2	0	0	2
5	PECBT501	Biosimilars Technology	2	0	0	2
6	OSCBT501	Biomaterials	2	0	0	2
7	OSCBT581	Data Structure and Algorithm	0	0	2	1
8	AUBT501	Indian Constitution	1	0	0	0
9	PCCBT591	Analytical Techniques Lab	0	0	2	1
10	PCCBT592	Metabolic Engineering Lab	0	0	2	1
11	PCCBT593	Cheminformatics & Medicinal Chemistry Lab	0	0	2	1
12	PECBT591	Biosimilars Technology Lab	0	0	2	1
13	OSCBT591	Biomaterials Lab	0	0	2	1
14	PCCBT506	Good Manufacturing and Laboratory Practice	2	1	0	3
15	PSBT581	Summer Internship- I	0	0	4	2
16	ESEP501	Essential Studies for Engineering Professionals – V	2	0	0	2
		Total	16	2	18	25

SEMESTER VI

S. No.	Course Code	Course Title	L	T	P	C
1	PCCBT601	Bioseparation Engineering	2	0	0	2
2	PCCBT602	Synthetic & Systems Biology	2	1	0	3
3	PCCBT603	Animal & Plant Biotechnology	2	1	0	3
4	PECBT601	Waste Management & Upcycling	2	0	0	2
5	OECBT601	Database Management System	2	0	0	2
6	PCCBT691	Bioseparation Engineering Lab	0	0	2	1
7	PCCBT692	Synthetic & Systems Biology Lab	0	0	2	1
8	PCCBT693	Animal & Plant Biotechnology Lab	0	0	2	1
9	PECBT691	Waste Management & Upcycling Lab	0	0	2	1
10	OECBT691	Database Management System Lab	0	0	2	1
11	ESEP 601	Essential Studies for Engineering Professionals – VI	2	0	0	2
TOTAL			12	0	12	19

SEMESTER VII

S. No.	Course Code	Course Title	L	T	P	C
1	HSMC702	Intellectual Property Rights (IPR) & Regulatory	2	0	0	2
2	OSCBT701	Data analysis and Simulations	2	1	0	3
3	PECBT701	State-of-the-art Imaging	2	0	0	2
4	PCCBT701	Food and Nutrition Technology	2	1	0	3
5	PECBT702	Nano Biotechnology	2	1	0	3
6	OSCBT702	Bioterrorism and National Security	2	0	0	2
7	OSCBT 791	Data analysis and Simulations Lab	0	0	2	1
8	PECBT791	State-of-the-art Imaging Lab	0	0	2	1
9	PCCBT791	Food and Nutrition Technology Lab	0	0	2	1
10	PSCBT791	Project-I	0	0	8	4
11	PSCBT781	Summer Internship- II	0	0	4	2
12	ESEP701	Essential Studies for Engineering Professionals – VII	2	0	0	2
TOTAL			15	4	20	26

SEMESTER VIII

S. No.	Course Code	Name	L	T	P	C
1	PSCBT891	Project-II	0	0	18	9
2	PSCBT881	Grand Viva	0	0	0	5
3	ESEP801	Essential Studies for Engineering Professionals – VIII	2	0	0	2
TOTAL			2	0	20	16