

BIRLA INSTITUTE OF TECHNOLOGY MESRA, RANCHI, INDIA

Year wise Course Structure for Bachelor of Engineering (Bio Technology)

First Year

I SEMESTER				II SEMESTER			
Course No	Course Title	Units	Hours/week	Course No	Course Title	Units	Hours/week
HU1001	Tech English	1.0	4	MA1001	Mathematics-I	1.0	4
PH1001	Physics-I	1.0	4	CH1001	Engineering Chemistry	1.0	4
CP2003	Unix & C Programming	1.0	4	CH2005	Environmental Science	1.0	4
MA1004 /	Introduction to Engg. Mathematics /	1.0	4	PL4001	Advanced Organic Chemistry	1.0	4
BT1001	Fundamentals of biology			ME1001	Eng. Mech.	1.0	4
CP1101	Introduction to Information Tech.	1.0	4	EE2001	Basic Electrical Engineering	1.0	4
ME1003	Engineering Graphics	1.0	4	CH1002	Chemistry Lab	0.5	2-3
CP1102	Prog Lab I(IT)	0.5	2-3	PE1001	Workshop Practice1	0.5	2-3
CP2004	PL-II (U & C)	0.5	2-3	PL4002	Org. Chemistry Lab	0.5	2-3
PH1002	Physics lab -1	0.5	2-3	ME1002	Eng. Mech. Lab	0.5	2-3
ME1004	Eng Gr.Lab-1	0.5	2-3	GA2001	NCC/NSS/PT & Games/Creative Arts	0.5	2-3
GA1001	NCC/NSS/PT & Games/Creative Arts	0.5	2-3				
Total Units		8.5	34-39	Total Units		8.5	34-39

Second Year

III SEMESTER				IV SEMESTER			
MA3003	Statistics for Biologists	1.0	4	BT4001	Cell Biology	1.0	4
PH3003	Physics II	1.0	4	BT4003	Microbiology	1.0	4
CP3005	OOPS in C++	1.0	4	BT4009	Biomolecules	1.0	4
EC3001	Basic Electronics	1.0	4	BT4010	Modern Methods of Analysis	1.0	4
BT3001	Chemical Engineering –I	1.0	4	BT4005	Chemical Engineering-II	1.0	4
ME3005	Thermodynamics	1.0	4	BT4007	Natural products	1.0	4
PE3304	Workshop Practice-II	0.5	2-3	BT4004	Microbiology Lab	0.5	2-3
EE3302	Electrical Engineering Lab	0.5	2-3	BT4002	Cell Bio Lab	0.5	2-3
CP3006	PI-III(C++)	0.5	2-3	BT4008	Natural products Lab	0.5	2-3
EC3002	Basic Electronics Lab	0.5	2-3	BT4006	Chemical Engineering I Lab	0.5	2-3
GA3001	NCC/NSS/PT & Games/Creative Arts	0.5	2-3	GA4001	NCC/NSS/PT & Games/Creative Arts	0.5	2-3
Total Units		8.5	34-39	Total Units		8.5	34-39

Third Year

V SEMESTER				VI SEMESTER			
BT5001	Chemical Engineering-III	1.0	4	BT6007	Food Science & Tech	1.0	4
BT5009	Reaction Engineering	1.0	4	BT6001	Bio-separation Engineering	1.0	4
BT5010	Microbial Interactions	1.0	4	BT6003	Genetic Engineering	1.0	4
BT5003	Bioenergetics & Metabolism	1.0	4	BT6005	Immunology	1.0	4
BT5005	Molecular Biology	1.0	4	BT6008	Process Measurement and control	1.0	4
BT5007	Bioprocess Engineering	1.0	4	BT6009	Bioreactor and Bioprocess design	1.0	4
BT5002	Chemical Engineering Lab	0.5	2-3	BT6004	Genetic Engineering Lab	0.5	2-3
BT5004	Biochemistry Lab	0.5	2-3	BT6006	Immunology Lab	0.5	2-3
BT5008	Bioprocess Engineering Lab	0.5	2-3	BT6002	Bio separation Lab	0.5	2-3
BT5006	Molecular Bio Lab	0.5	2-3	BT6010	Deptt Project-1	0.5	2-3
Total Units		8	32-36	Total Units		8	32-36

Fourth Year

VII SEMESTER				VIII SEMESTER			
BT7001	Biological Waste Management	1.0	4	BT8003	Animal Cell Tech	1.0	4
BT7003	Enzyme Technology	1.0	4	BT8004	Intro. To Bioinformatics	1.0	4
BT7005	Plant Cell Technology	1.0	4	BT8001	Process Biotechnology	1.0	4
MB6001	Principles of Management	1.0	4	PE7124	Engineering Economy	1.0	4
	Elective –I-Any one of following				Elective III – Ay one of the following		
BT7011	Bio Resources	1.0	4		Pharmaceutical Biotechnology	1.0	4
BT7010	Agricultural Biotechnology			BT8011	Marine Biotech and Aquaculture		
	Elective–II-Any one of the following				Elective –IV		
BT7015	Biomaterials	1.0	4	BT8015	Legal and social Issues in Biotech	1.0	4
BT7016	Thermo. Of Biological System			BT8016	Mineral Biotechnology		
BT7002	Waste water treatment Lab	0.5	2-3	BT8002	Bio processing lab	0.5	2-3
BT7004	Enzyme Tech Lab	0.5	2-3	BT8009	Colloquium	0.5	2-3
BT7006	Plant Cell Tech Lab	0.5	2-3	BT8010	Project	1.0	4-6
BT7010	Dept. Lab. -II	0.5	2-3				
Total Units		8	32-36	Total Units		8	32-36
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