

MGM University, Aurangabad – 431003

Approved Program Structure

Name of the College/Institute: Institute of Biosciences & Technology

Faculty of Basic & Applied Science

Name of the Program: B.Sc.(Hons) Microbiology

Approved by the Board of Studies on _____

Intake: 40 students

Program Approved vide Academic Council Meeting dt _____

Item No. -----

Program Type: UG Program

Duration: 8 Semesters

Curriculum Code: BT (this code will change when you change the Curriculum)

Eligibility: HSC Science of 10+2 equivalent program

Proposed Fees: Rs. 65,000/

Semester I

Course code*	Course Title	Type	Teaching Scheme			Evaluation Scheme						Minimum Passing					Credit		
						Internal			External			Total	Internal			External		Total	
						CA	MSE	TW	ESE	PR	CA		MSE	TW	ESE	PR			
	(Mandatory)		L	T	P	CA	MSE	TW	ESE	PR	Total	CA	MSE	TW	ESE	PR	Total		
BMI-111	English Communication Essentials	Audit	{2}	-	-	10	20	10	60	-	100	4	8	4	24	-	40	Audit	
BMI-112	Chemistry for Biology-I	Minor	2	-	-	10	20	10	60	-	100	8	8	-	24	-	40	2	
BMI-113	Biology: Concept, Connections, Investigation and applications	Core	3	-	-	20	20	20	90	-	150	8	8	8	36	-	60	3	
BMI-114	Biochemistry- The Building Blocks of Life	Core	2	-	-	10	20	10	60	-	100	4	8	4	24	-	40	2	
BMI-115	Microbial Structure, Identification and Distribution	Minor	3	-	-	20	20	20	90	-	150	8	8	8	36	-	60	3	
BMI-116	Physics for Biology	Minor	-	2	-	20	10	10	60	-	100	8	4	4	24	-	40	2	
UGL-01	Microbiology: Principle and Exploration-I	Core		-	6	20	25	15	90	60	150	-	-	-	36	24	60	3	
UGL-02	Micro building Block Lab	Core		-	6	20	25	15	90	60	150	-	-	-	36	24	60	3	
UGL-03	Micro Project-I	BRP	-	-	4	10	20	10	60	40	100	-	-	-	24	16	40	2	
UNC-01	Gandhian Thoughts	Audit	{2}	-	-	10	20	10	60	-	100	4	8	4	24	-	40	Audit	
UNC-02	Universal Human Values	Audit	{1}	-		10	10	-	30	0	50	8	8	-	12	0	20	Audit	
	Total		10{5}	2	16	110	140	90	750	160	1250							20	

Semester II

Course code*	Course Title	Type	Teaching Scheme			Evaluation Scheme						Minimum Passing					Credit	
						Internal			External			Total	Internal			External		Total
			L	T	P	CA	MSE	TW	ESE	PR	CA		MSE	TW	ESE	PR		
	(Mandatory)																	
BMI-121	Microbial Physiology and Metabolism	Core	3	-	-	20	20	20	90	-	150	8	8	8	36	-	60	3
BMI-122	Chemistry for Biology-II	Minor	3	-	-	20	20	20	90	-	150	8	8	8	36	-	60	3
BMI-123	Biology: Concept, Connections, Investigation and applications	Core	3	-	-	20	20	20	90	-	150	8	8	8	36	-	60	3
BMI-124	Immune System in health & Disease	Core	3	-	-	20	20	20	90	-	150	8	8	8	36	-	60	3
BMI-125	Numerical & Fundametrnals of Computer	Minor	2	0	-	10	20	10	60	-	100	4	8	4	24	-	40	2
UGL-01	Bio-Skills Sets Laboratory-I	Core	-	-	6	20	25	15	90	60	150	-	-	-	36	24	60	3
UGL-02	Explorations in Microbiology -I	Core	-	-	6	20	25	15	90	60	150	-	-	-	36	24	60	3
UGL-03	Micro Project-II	BRP	-	-	4	10	20	10	60	40	100	-	-	-	24	16	40	2
UNC-01	Communication skills	Audit	{2}	-	-	10	20	10	60	-	100	4	8	4	24	-	40	Audit
	Total		14(2)	0	16	100	120	100	720	160	1200							22

Semester III

Course code*	Course Title	Type	Teaching Scheme			Evaluation Scheme						Minimum Passing					Credit	
						Internal			External			Total	Internal			External		Total
			L	T	P	CA	MSE	TW	ESE	PR	CA		MSE	TW	ESE	PR		
	(Mandatory)																	
BMI-231	Molecular Biology of Gene	Core	3	-	-	20	20	20	90	-	150	8	8	8	36	-	60	3
BMI-232	Virology	Minor	3	-	-	20	20	20	90	-	150	8	8	8	36	-	60	3
BMI-233	Microbial Fermentation	Core	3	-	-	20	20	20	90	-	150	8	8	8	36	-	60	3
BMI-234	Enzymology	Minor	3	-	-	20	20	20	90	-	150	8	8	8	36	-	60	3
BMI-236	Seminar (Subject Base Seminar)	SBS	0	0	1	0	0	0	30	20	50	0	0	0	12	8	20	1
UGL-01	Molecular Chemical Biology Laboratory	Core	-	-	6	20	25	15	90	60	150	-	-	-	36	24	60	3
UGL-02	Fermentation Technology Laboratory	Core	-	-	4	10	20	10	60	40	100	-	-	-	24	16	40	2
UGL-03	Writing and Presentation Skills	Core	-	-	4	10	20	10	60	40	100	-	-	-	24	16	40	2
UGL-03	Mini Project	BRP	-	-	6	20	25	15	90	60	150	-	-	-	36	24	60	3
UNC-01	Environmental Studies	Audit	-	-	2	-	-	-	30	20	50	-	-	-	12	8	20	Audit
UNC-02	Gandhian Studies	Audit	-	-	2	-	-	-	30	20	50	-	-	-	12	8	20	Audit
	Total		10	2	21 {4}	70	100	70	750	260	1250							23

Semester IV

Course code*	Course Title	Type	Teaching Scheme			Evaluation Scheme						Minimum Passing					Credit	
						Internal			External			Total	Internal			External		Total
			L	T	P	CA	MSE	TW	ESE	PR	CA		MSE	TW	ESE	PR		
	(Mandatory)																	
BMI-241	Microbial Enzyme and Kinetics	Minor	3	-	-	20	20	20	90	-	150	8	8	8	36	-	60	3
BMI-242	Genome Maintenance and Regulation	Minor	3	-	-	20	20	20	90	-	150	8	8	8	36	-	60	3
BMI-243	Advance Fermentation Technology	Core	4	-	-	25	25	30	120	-	200	-	-	-	48	-	80	4
BMI-244	Molecular Basis of Bacterial Infection	Core	3	-	-	20	20	20	90	-	150	8	8	8	36	-	60	3
UGL-01	Genome Analysis Laboratory	Core	-	-	6	20	25	15	90	60	150	-	-	-	36	24	60	3
UGL-02	Advance Fermentation Laboratory	Core	-	-	6	20	25	15	90	60	150	-	-	-	36	24	60	3
UGL-03	Mini Project	BRP	-	-	6	20	25	15	90	60	150	-	-	-	36	24	60	3
BMI-246	Seminar (Subject Base Seminar)	SBS	1	-	-	10	10	-	30	-	50	4	4	-	12	-	20	1
	Total		12	2	18	100	110	70	690	180	1150							23

Semester V

Course code*	Course Title	Type	Teaching Scheme			Evaluation Scheme						Minimum Passing					Credit	
						Internal			External			Total	Internal			External		Total
			L	T	P	CA	MSE	TW	ESE	PR	CA		MSE	TW	ESE	PR		
	(Mandatory)																	
BMI-351	Soil and Environment Microbial Biotechnology	Core	2	-	-	20	20	-	60	-	100	8	8	-	24	-	40	2
BMI-352	Microbial Mechanisms of Foodborne disease	Minor	2	-	-	20	20	-	60	-	100	8	8	-	24	-	40	2
BMI-353	Wine and Brewing Microbiology	Core	2	-	-	20	20	-	60	-	100	8	8	-	24	-	40	2
BMI-354	Synthetic Biology & Molecular Microbiology	Core	2	-	-	20	20	-	60	-	100	8	8	-	24	-	40	2
BMI-355	Academic Tutorial-V	AT	-	2	-	10	20	10	60	-	100	4	8	4	24	-	40	2
UGL-01	Microbial Analysis and use Laboratory	Core	-	-	6	20	25	15	90	60	150	0	0	0	36	24	60	3
UGL-02	Microbial Genome analysis	Core	-	-	4	10	20	10	60	40	100	0	0	0	24	16	40	2
UGL-03	Mini Project	BRP	-	-	6	20	25	15	90	60	150	-	-	-	36	24	60	3
BMI-356	Seminar (Subject Base Seminar)	SBS	1	-	-	10	10	-	30	-	50	4	4	-	12	-	20	1
BMI-357	Foregin Language	SCC	6	-	0	20	20	20	90	0	150	8	8	8	36	0	60	3
	Total		15	2	16	120	130	30	660	160	1100							22

Semester VI

Course code*	Course Title	Type	Teaching Scheme			Evaluation Scheme						Minimum Passing					Credit	
						Internal			External			Total	Internal			External		Total
			L	T	P	CA	MSE	TW	ESE	PR	CA		MSE	TW	ESE	PR		
	(Mandatory)																	
BMI-361	Mycology	Minor	3	-	-	20	20	20	90	-	150	8	8	8	36	-	60	3
BMI-362	Pharmaceutical and Industrial Microbiology	Minor	2	-	-	20	20	-	60	-	100	8	8	-	24	-	40	2
BMI-363	Symbiosis, Plant Immunity and Disease	Core	3	-	-	20	20	20	90	-	150	8	8	8	36	-	60	3
BMI-364	Gene Editing Technologies for Microbiology & therapeutic	Core	3	-	-	20	20	20	90	-	150	8	8	8	36	-	60	3
BMI-365	Academic Tutorials-VI	AT	-	2	-	10	20	10	60	-	100	4	8	4	24	-	40	2
UGL-01	Diagnosis and Industrial Microbiology Lab.	Core	-	-	4	-	-	-	60	40	100	-	-	-	24	16	40	2
UGL-02	Biomufacturing Laboratory	Core	-	-	6	20	25	15	90	60	150	-	-	-	36	24	60	3
UGL-03	Open Elective: Genome and Human Diseases	SOE	-	-	4	10	20	10	60	-	100	4	8	4	24	-	40	2
UGL-04	Mini Project	BRP	-	-	6	20	25	15	90	60	150	-	-	-	36	24	60	3
BMI-366	Seminar (Research Paper Based)	RBS	1	-	-	10	10	-	30	-	50	4	4	-	12	-	20	1
	Total		12	2	20	110	130	80	720	160	1200							24

Semester VII

Course code*	Course Title	Type	Teaching Scheme			Evaluation Scheme						Minimum Passing					Credit	
						Internal			External			Total	Internal			External		Total
			L	T	P	CA	MSE	TW	ESE	PR	CA		MSE	TW	ESE	PR		
(Mandatory)																		
BMI-471	Biosafety, IPR and Bioethics	Core	2	-	-	20	20	-	60	-	100	8	8	-	24	-	40	2
BMI-472	Biofertilizer, Biopesticide, Bioinsecticides	Minor	3	-	-	20	20	20	90	-	150	8	8	8	36	-	60	3
BMI-473	Analysis of gene expression	Minor	3	-	-	20	20	20	90	-	150	8	8	8	36	-	60	3
UGL-01	Microbial Engineering Laboratory	Core	-	-	6	20	25	15	90	60	150	-	-	-	36	24	60	3
UGL-02	Open Elective:	SOE	-	-	6	20	25	15	90	60	150	-	-	-	36	24	60	3
UGL-03	Major Project	BRP	-	-	14	45	45	50	210	140	350	-	-	-	84	56	140	7
BMI-474	Seminar (Research Paper Based)	RBS	1	0	-	10	10	-	30	-	50	4	4	-	12	-	20	1
	Total		10	-	26	70	70	40	660	260	1100							22

Semester VIII

Course code*	Course Title	Type	Teaching Scheme			Evaluation Scheme						Minimum Passing					Credit	
						Internal			External			Total	Internal			External		Total
			L	T	P	CA	MSE	TW	ESE	PR	CA		MSE	TW	ESE	PR		
(Mandatory)																		
BMI-481	Research Methodology	SOE	2	-	-	20	20	-	60	-	100	8	8	-	24	-	40	2
UGL-01	Practical Based on Research Methodology	SOE	-	-	4	10	20	10	60	40	100	-	-	-	24	16	40	2
UGL-02	Big Idea	BRP	-	-	22	80	90	50	330	220	550	-	-	-	132	88	220	11
BMI-482	Seminar (Research Paper Based)	RBS	1	-	-	10	10	-	30	-	50	4	4	-	12	-	20	1
	Total		3	-	26	30	30	-	480	260	800							16

L- Lecture, T-Tutorial, P-Practical, CA- Continuous Assessment, MSE- Mid Semester Examination, ESE- End Semester Examination, PR-Practical, TW-Term Work