Symbiosis School of Biological Sciences, Pune
Master of Science (Biotechnology)
Programme Structure 2020-22

1.	**OBJECTIVE**	1. Provide expertise in laboratory-based techniques. 2. Impart skill sets to formulate and execute independent research project. 3. Enable students with skill sets to carve a career as a researcher in the field of biotechnology. 4. Empower students with an ability to translate biotechnology research skill set to provide sustainable solutions to societal issues.			
2.	**DURATION (IN MONTHS)**	24 (Full Time)			
3.	**INTAKE**	40			
4.	**RESERVATION**	**I.Within the sanctioned intake**	**a) SC (In Percentage)**	**b) ST (In Percentage)**	**c) Differently abled (In Percentage)**
			15	7.5	3
		II.Over and above the sanctioned intake	**a) Kashmiri Migrants (In Seats)**	**b) International Students (In Percentage)**	
			2	15	
5.	**ELIGIBILITY**	Graduate in Life Science/ Health Sciences/ Biotechnology/ any other Biological Sciences OR Graduate of Engineering in Biotechnology/ Graduate of Technology in Biotechnology from any recognized University/ Institution of National Importance with a minimum of 50% marks or equivalent grade (45% or equivalent grade for Scheduled Caste/ Scheduled Tribes)			
6.	**SELECTION PROCEDURE**	Written Test / Personal Interaction			
7.	**MEDIUM OF INSTRUCTION**	English			
8.	**PROGRAMME PATTERN**	Semester			
9.	**COURSE & SPECIALIZATION**	As per Annexure A			
10.	**FEE**		**Academic Fee p.a**	**Institute Deposit**	**Total**
		Indian Students	210000	20000	230000
		International Students (USD equivalent to INR)	315000	20000	335000
M.Sc. Biotechnology (By Research) 1st Year					

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		Indian Students	210000	20000	230000
		International Students (USD equivalent to INR)	315000	20000	335000
M.Sc. Biotechnology (By Research) 2nd Year					
		Indian Students	420000	0	420000
		International Students (USD equivalent to INR)	630000	0	630000
11.	**ASSESSMENT**	All internal courses will have 100% component as internal evaluation at the institute level. All external courses will have 60% internal component and 40% component as external (University) examination.			
12.	**STANDARD OF PASSING**	The assessment of the student for each examination is done, based on relative performance. Maximum Grade Point (GP) is 10 corresponding to O (Oustanding). For all courses, a student is required to pass both internal and external examination separately with a minimum Grade Point of 4.000 corresponding to Grade P. Students securing less than 40% absolute marks in each head of passing will be declared FAIL. The University awards a degree to the student who has achieved a minimum CGPA of 4.000 out of maximum of 10 CGPA for the program.			
13.	**AWARD OF DEGREE/ DIPLOMA/ CERTIFICATE**	Students opting for Stream-A of the programme will be awarded Master of Science (Biotechnology) at the end of semester IV examination after taking into consideration the performance of all semester examinations after obtaining minimum 4.00 CGPA out of 10 CGPA. Students opting for Stream-B of the programme will be awarded Master of Science (Biotechnology) with specific mention of “By Research” on the degree certificate after taking into consideration the performance of all semester examinations after obtaining minimum 4.00 CGPA out of 10 CGPA.			
14.	**NATURE WISE DISTRIBUTION OF CREDITS**				

Semester	Generic Core	Generic Elective	Specialization Core	Specialization Elective	Open Elective	Audit	Total
1	20	0	0	0	0	0	20
2	20	0	0	0	0	1*	20
3	15	5	0	0	0	1*	20
4	20	0	0	0	0	0	20
Total	**75**	**5**	**0**	**0**	**0**	**0**	**80**

* Satisfactory completion of the non letter- grade courses 'Integrated Disaster Management' and 'Research Publication' is mandatory for award of degree.

Programme Structure is approved by the Academic Council subject to its norms & conditions. Any provision in the Programme Structure which violates the basic rules & regulations is deemed to be termed "Null & Void".

Head-Academics

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Annexure A

Catalog Course Code	Course Code	Course Title	Specialization	Credit	Internal Marks	External Marks	Total Marks
Semester : 1							
Generic Core Courses							
TH4076	0403420101	Biochemistry		3	90	60	150
TH4072	0403420102	Microbiology		3	90	60	150
TH4073	0403420103	Advanced Molecular Biology		3	90	60	150
TH4069	0403420104	Research Methodology and Biostatistics		3	90	60	150
TH4089	0403420105	Recombinant DNA Technology		3	90	60	150
TH4090	0403420106	Cell Biology		3	90	60	150
TH4064	0403420107	Genetic Analysis		2	60	40	100
			Total	**20**	**600**	**400**	**1000**
Semester : 2							
Generic Core Courses							
TH4059	0403420201	Practicals in Biochemistry		3	90	60	150
TH4060	0403420202	Practicals in Microbiology		3	90	60	150
TH4071	0403420203	Practicals in Animal Tissue Culture		3	90	60	150
TH4075	0403420204	Practicals in Molecular Biology		3	90	60	150
TH4067	0403420205	Practical in Recombinant DNA Technology		3	90	60	150
TH4068	0403420206	Molecular Immunology		3	90	60	150
TH4065	0403420207	Genomics and Proteomics		2	60	40	100
T4005	0403420208	Integrated Disaster Management *		0	0	0	Non Letter Grade
			Total	**20**	**600**	**400**	**1000**
Semester : 3							
STREAM-A Generic Core Courses							
T4703	0403420301	Intellectual Property Rights		3	90	60	150
TH4061	0403420302	Practicals in Immunology and Virology		3	90	60	150
TH4062	0403420303	Stem cell biology		3	90	60	150
TH4070	0403420304	Virology		3	90	60	150
TH4066	0403420305	Practicals in Industrial and Clinical Biotechnology		3	90	60	150
T0100	0403420306	Research Publication *		0	0	0	Non Letter Grade
			Total	**15**	**450**	**300**	**750**
STREAM-B (By Research) Generic Core Courses							
T0100	0403420306	Research Publication *		0	0	0	Non Letter Grade

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Catalog Course Code	Course Code	Course Title	Specialization	Credit	Internal Marks	External Marks	Total Marks
T4820	0403420307	Project (Part I)		20	600	400	1000
			Total	**20**	**600**	**400**	**1000**
STREAM-A Generic Elective Courses Group							
TH4063	0403420308	Bioinformatics		2	60	40	100
TH4074	0403420309	Environmental Biotechnology		2	60	40	100
			Total Required Credits	**2**	**60**	**40**	**100**
STREAM-A Generic Elective Courses Group							
TH4088	0403420311	Clinical Biochemistry		3	90	60	150
TH4091	0403420310	Bioprocess Engineering		3	90	60	150
			Total Required Credits	**3**	**90**	**60**	**150**
Semester : 4							
STREAM-A Generic Core Courses							
T4820	0403420401	Project		20	600	400	1000
			Total	**20**	**600**	**400**	**1000**
STREAM-B (By Research) Generic Core Courses							
T4820	0403420402	Project (Part II)		20	600	400	1000
			Total	**20**	**600**	**400**	**1000**

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Semester	Internal Credits	External Credits	Total Credits	Total Marks
Semester1	0	20	20	1000
Semester2	0	20	20	1000
Semester3	0	20	20	1000
Semester4	0	20	20	1000
Total	**0**	**80**	**80**	**4000**