



Symbiosis School of Biological Sciences, Pune
Master of Science (Biotechnology)
Programme Structure 2021-23

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 Sciences/ 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 and must have obtained a minimum of 50% marks or equivalent grade (45% or equivalent grade for Scheduled Caste/ Scheduled Tribes) at graduation			
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
M.Sc. (Biotechnology)					
		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 (Outstanding). 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	<p>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.</p> <p>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.</p>					
14.	NATURE WISE DISTRIBUTION OF CREDITS						
Semester	Generic Core	Generic Elective	Specialization Core	Specialization Elective	Open Elective	Audit	Total
Stream A							
1	20	0	0	0	0	1*	20
2	20	0	0	0	0	1*	20
3	18	2	0	0	0	1*	20
4	20	0	0	0	0	0	20
Total	78	2	0	0	0	0	80
Stream B							
1	20	0	0	0	0	1*	20
2	20	0	0	0	0	1*	20
3	20	0	0	0	0	1*	20
4	20	0	0	0	0	0	20

Total	80	0	0	0	0	0	80
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* Satisfactory completion of the non letter grade courses 'Integrated Disaster Management' and 'Research Publication' and 'Certificate in COVID-19 Care for the Community' is mandatory for award of degree.

The revised programme structure supersedes the previously approved programme structure dated 21/05/2021 for the programme.

This Programme Structure is aligned with the norms laid down by the University and is approved by the Academic Council. Hereafter changes (if any) which conform to the policy on "Curriculum Development and Review" would be permissible, subject to revision of the Programme Structure, following the specified processes.

Head - Academics

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Celebrating 50 Years of Excellence

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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							
TH4099	0403420101	Biochemistry		3	90	60	150
TH4097	0403420102	Advanced Immunology		3	90	60	150
TH4098	0403420103	Advanced Molecular Biology		3	90	60	150
TH4107	0403420104	Microbiology		3	90	60	150
TH4104	0403420105	Genetic Engineering		3	90	60	150
TH4116	0403420106	Research Methodology and Biostatistics		3	90	60	150
TH4103	0403420107	Genetic analysis		2	60	40	100
TH4272	0403420108	Certificate in COVID-19 Care for the Community *		0	0	0	Non Letter Grade
Total				20	600	400	1000
Semester : 2							
Generic Core Courses							
TH4113	0403420201	Practicals in microbiology		3	90	60	150
TH4110	0403420202	Practicals in Biochemistry		3	90	60	150
TH4101	0403420203	Cell Biology		3	90	60	150
TH4114	0403420204	Practicals in molecular biology		3	90	60	150
TH4108	0403420205	Practicals in Animal Tissue Culture		2	60	40	100
TH4115	0403420206	Practicals in Recombinant DNA Technology		2	60	40	100
TH4111	0403420207	Practicals in Bioinformatics		2	60	40	100
TH4105	0403420208	Genomics, Proteomics and Bioinformatics		2	60	40	100
T4005	0403420209	Integrated Disaster Management *		0	0	0	Non Letter Grade
Total				20	600	400	1000
Semester : 3							
Stream - A							
Generic Core Courses							
T0100	0403420301	Research Publication *		0	0	0	Non Letter Grade
TH4109	0403420302	Practicals in Bioanalytical Techniques		3	90	60	150
TH4118	0403420303	Virology		3	90	60	150
TH4112	0403420304	Practicals in Immunology and Virology		3	90	60	150
TH4100	0403420305	Bioprocess engineering		3	90	60	150
TH4106	0403420306	Introduction to Laboratory Animal Science		2	60	40	100



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Catalog Course Code	Course Code	Course Title	Specialization	Credit	Internal Marks	External Marks	Total Marks
TH4117	0403420307	Stem Cell Biology		2	60	40	100
T1656	0403420308	Intellectual Property Rights		2	60	40	100
Total Required Credits				18	540	360	900
Stream - A							
Generic Elective Courses							
TH4096	0403420309	Advanced Genomics and Proteomics		2	60	40	100
TH4102	0403420310	Environmental Biotechnology		2	60	40	100
Total Required Credits				2	60	40	100
Stream-B (By Research)							
Generic Core Courses							
T0100	0403420301	Research Publication *		0	0	0	Non Letter Grade
T4820	0403420311	Project (Part I)		20	600	400	1000
Total Required Credits				20	600	400	1000
Semester : 4							
Stream - A							
Generic Core Courses							
T4820	0403420401	Project		20	600	400	1000
Total Required Credits				20	600	400	1000
Stream - B (By Research)							
Generic Core Courses							
T4820	0403420402	Project (Part II)		20	600	400	1000
Total Required Credits				20	600	400	1000



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Semester	Internal Credits	External Credits	Total Credits	Total Marks
Semester 1	0	20	20	1000
Semester 2	0	20	20	1000
Semester 3	0	20	20	1000
Semester 4	0	20	20	1000
Total	0	80	80	4000