



Celebrating 50 Years of Excellence

**Symbiosis School of Biological Sciences, Pune**  
**Master of Science (Biochemistry)**  
**Programme Structure 2023-25**

1.	<b>OBJECTIVE</b>	1. Provide expertise in laboratory-based biochemical 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 biochemistry. 4. Empower students with an ability to translate biochemistry research skill set to provide sustainable solutions to societal issues.			
2.	<b>DURATION (IN MONTHS)</b>	24 (Full Time)			
3.	<b>INTAKE</b>	30			
4.	<b>RESERVATION</b>	<b>I. Within the sanctioned intake</b>	<b>a) SC (In Percentage)</b>	<b>b) ST (In Percentage)</b>	<b>c) Differently abled (In Percentage)</b>
			15	7.5	3
		<b>II. Over and above the sanctioned intake</b>	<b>a) Kashmiri Migrants (In Seats)</b>	<b>b) International Students (In Percentage)</b>	
			2	20	
5.	<b>ELIGIBILITY</b>	Graduate in Science with Chemistry as one of the subjects in the third year OR Graduate in Life Sciences/ Health Sciences/ Biotechnology/ any other Biological Science 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.	<b>SELECTION PROCEDURE</b>	Written Test / Personal Interaction			
7.	<b>MEDIUM OF INSTRUCTION</b>	English			
8.	<b>PROGRAMME PATTERN</b>	Semester			
9.	<b>COURSE &amp; SPECIALIZATION</b>	As per Annexure A			
10.	<b>FEE</b>		<b>Academic Fee p.a</b>	<b>Institute Deposit</b>	<b>Total</b>
	<b>Indian Students (Amount in INR)</b>		240000	20000	260000
	<b>International Students</b>	<b>NRI/ PIO/ OCI Category (Amount in US\$)</b>	4700	275	4975
		<b>Foreign National Category (Amount in US\$)</b>	1950	275	2225

11.	<b>ASSESSMENT</b>	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.	<b>STANDARD OF PASSING</b>	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.	<b>AWARD OF DEGREE</b>	Master of Science (Biochemistry) will be awarded at the end of semester 4 examination by taking into consideration the performance of all semester examinations after obtaining minimum 4.00 CGPA out of 10 CGPA.						
14.	<b>CLASSIFICATION OF CREDITS</b>							
Semester	Generic Core	Generic Elective	Specialization Core	Specialization Elective	Open Elective	Non-Letter Grade Mandatory Course/s	Non-Letter Grade Audit Course/s	Total
<b>Common</b>								
1	20	0	0	0	0	0	As per the student's choice	20
2	18	2	0	0	0	1		20
3	20	0	0	0	0	0		20
4	20	0	0	0	0	0		20
<b>Total</b>	<b>78</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>		<b>80</b>

This Programme Structure is aligned with the norms laid down by the University and is approved by the Academic Council and Board of Management. 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.

Director - Academics

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**Annexure A**

Catalog Course Code	Course Code	Course Title	Specialization	Credit	Internal Marks	External Marks	Total Marks
<b>Semester : 1</b>							
<b>Generic Core Courses</b>							
TH4098	0403470101	Advanced Molecular Biology		3	90	60	150
TH4425	0403470102	Biomolecules		3	90	60	150
TH4107	0403470103	Microbiology		3	90	60	150
TH4275	0403470104	Practicals in Biochemical Techniques		3	90	60	150
TH4274	0403470105	Practicals in Microbiology and Molecular Biology		3	90	60	150
TH4116	0403470106	Research Methodology and Biostatistics		3	90	60	150
TH4103	0403470107	Genetic Analysis		2	60	40	100
<b>Total</b>				<b>20</b>	<b>600</b>	<b>400</b>	<b>1000</b>
<b>Semester : 2</b>							
<b>Generic Core Courses</b>							
TH4097	0403470201	Advanced Immunology		3	90	60	150
TH4101	0403470202	Cell Biology		3	90	60	150
TH4277	0403470203	Metabolism		3	90	60	150
TH4273	0403470204	Proteins and Enzymes		3	90	60	150
TH4278	0403470205	Biophysical Techniques		2	60	40	100
TH4105	0403470206	Genomics, Proteomics and Bioinformatics		2	60	40	100
TH4276	0403470207	Practicals in Enzymology		2	60	40	100
T4005	0403470208	Integrated Disaster Management		0	0	0	Non - Letter Grade Mandatory
<b>Total</b>				<b>18</b>	<b>540</b>	<b>360</b>	<b>900</b>
<b>Generic Elective Course Group (Choose any one Course)</b>							
TH4108	0403470209	Practicals in Animal Tissue Culture		2	60	40	100
TH4111	0403470210	Practicals in Bioinformatics		2	60	40	100
<b>Total Required Credits</b>				<b>2</b>	<b>60</b>	<b>40</b>	<b>100</b>
<b>Semester : 3</b>							
<b>Generic Core Courses</b>							
TH4282	0403470301	Drug Discovery and Pharmacology		3	90	60	150
TH4279	0403470302	Genetic and Metabolic Engineering		3	90	60	150
TH4109	0403470303	Practicals in Bioanalytical Techniques		3	90	60	150



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Catalog Course Code	Course Code	Course Title	Specialization	Credit	Internal Marks	External Marks	Total Marks
TH4281	0403470304	Practicals in Clinical Biochemistry		3	90	60	150
TH4280	0403470305	Clinical Biochemistry		2	60	40	100
T1656	0403470306	Intellectual Property Rights		2	60	40	100
TH4106	0403470307	Introduction to Laboratory Animal Science		2	60	40	100
TH4283	0403470308	Structural Biology		2	60	40	100
<b>Total</b>				<b>20</b>	<b>600</b>	<b>400</b>	<b>1000</b>
<b>Semester : 4</b>							
<b>Generic Core Courses</b>							
T4820	0403470401	Project		20	600	400	1000
<b>Total</b>				<b>20</b>	<b>600</b>	<b>400</b>	<b>1000</b>



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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
<b>Total</b>	<b>0</b>	<b>80</b>	<b>80</b>	<b>4000</b>