Symbiosis School of Biological Sciences, Pune
Master of Science (Biotechnology)

Dual Degree in collaboration with Aston University, United Kingdom

Programme Structure 2025-2027

<table>
<tr><td>1.</td><td>OBJECTIVE</td><td colspan="5">1.Provide expertise in laboratory-based techniques.
2.Provide opportunities to experience diverse academic and cultural environments.
3.Impart skill sets to formulate and execute independent research project.
4.Enable students with skill sets to carve a career as a researcher in the field of biotechnology.
5.Empower students with an ability to translate biotechnology research skill set to provide sustainable solutions to societal issues.</td></tr>
<tr><td>2.</td><td>DURATION (IN MONTHS)</td><td colspan="5">24 (Full Time)</td></tr>
<tr><td>3.</td><td>INTAKE</td><td colspan="5">5</td></tr>
<tr><td rowspan="4">4.</td><td rowspan="4">RESERVATION</td><td rowspan="2">I.Within the sanctioned intake</td><td>a) SC (In Percentage)</td><td colspan="2">b) ST (In Percentage)</td><td>c) Differently abled (In Percentage)</td></tr>
<tr><td>15</td><td colspan="2">7.5</td><td>3</td></tr>
<tr><td rowspan="2">II.Over and above the sanctioned intake</td><td colspan="2">a) Kashmiri Migrants (In Seats)</td><td colspan="2">b) International Students (In Percentage)</td></tr>
<tr><td colspan="2">2</td><td colspan="2">25</td></tr>
<tr><td>5.</td><td>ELIGIBILITY</td><td colspan="5">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.</td></tr>
<tr><td>6.</td><td>SELECTION PROCEDURE</td><td colspan="5">Candidates will be selected on the basis of Personal Interaction</td></tr>
<tr><td>7.</td><td>MEDIUM OF INSTRUCTION</td><td colspan="5">English</td></tr>
<tr><td>8.</td><td>PROGRAMME PATTERN</td><td colspan="5">Semester</td></tr>
<tr><td>9.</td><td>COURSE & SPECIALISATION</td><td colspan="5">As per Annexure A</td></tr>
<tr><td>10.</td><td>FEE</td><td colspan="2"></td><td>Academic Fee p.a</td><td>Institute Deposit</td><td>Total</td></tr>
<tr><td colspan="7"></td></tr>
<tr><td></td><td colspan="2">Indian Students (Amount in INR)</td><td colspan="2">550000</td><td>20000</td><td>570000</td></tr>
<tr><td rowspan="2"></td><td rowspan="2">International Students</td><td>NRI/ PIO/ OCI Category (Amount in US$)</td><td colspan="2">6800</td><td>275</td><td>7075</td></tr>
<tr><td>Foreign National Category (Amount in US$)</td><td colspan="2">1950</td><td>275</td><td>2225</td></tr>
</table>

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2nd Year

Students opting for Aston University Dual Degree programme

(Students will pay only first year fees at SSBS, SIU and second year fees at Aston University, United Kingdom)

11.	**ASSESSMENT**	The courses will have 60% Continuous Assessment and 40% Term End [University] examination however, some courses (not more than 30% of the total programme credits) may have 100% Continuous Assessment. For Master of Science Stem Cell and Regenerative Medicine / MRes Biosciences Programme, Aston University, United Kingdom, the assessment standards will be as per Aston University norms
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 Continuous Assessment and Term End examinations separately with a minimum Grade Point of 4 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 out of maximum of 10 CGPA for the programme. For Master of Science Stem Cell and Regenerative Medicine / MRes Biosciences Programme, Aston University, United Kingdom, the Standard of Passing will be as per Aston University norms.
13.	**AWARD OF DEGREE**	The first year of the programme shall be completed at Symbiosis International (Deemed University) [SIU], and the second year at Aston University, United Kingdom and respective University's passing criteria shall be applicable. Master of Science (Biotechnology) degree will be awarded upon successful completion of the programme requirements and obtaining a minimum of 4 out of a maximum of 10 CGPA. Master of Science Stem Cell and Regenerative Medicine / MRes Biosciences degree will be awarded by Aston University, United Kingdom, upon successful completion of the programme requirements and satisfactory performance as per Aston University regulations.
14.	**CLASSIFICATION OF CREDITS**	

Semester	Generic Core	Generic Elective	Specialisa-tion Core	Specialisa-tion Elective	Open Elective	Mandatory Non-Credit Course/s	Non-Credit Audit Course/s	Total
Common								
1	22	0	0	0	0	0	As per the student's choice	22
2	20	0	0	0	0	2 *		20
3	Courses delivered as per the syllabus and structure of Master of Science Stem Cell and Regenerative Medicine / MRes Biosciences of Aston University.							

4	Courses delivered as per the syllabus and structure of Master of Science Stem Cell and Regenerative Medicine / MRes Biosciences of Aston University.

* Satisfactory completion of non credit courses 'Health and Wellness' and '*Vasudhaiva Kutumbakam*' is mandatory for award of degree.

Additional Note: #Health and Wellness Module I and Module II will be conducted during the semesters mentioned in the programme structure. However, the course will be listed on the students' grade sheets as "Health and Wellness" in the semester in which the institute's course code is officially assigned.

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

Director - Academics

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Annexure A

Catalog Course Code	Course Code	Course Title	Specialisation	Credit	Continuous Assessment	Term End Examination	Total Marks
Semester : 1							
Generic Core Courses							
TH4099	0403490101	Biochemistry		3	90	60	150
TH4110	0403490102	Practicals in Biochemistry		3	90	60	150
TH4098	0403490103	Advanced Molecular Biology		3	90	60	150
TH4107	0403490104	Microbiology		3	90	60	150
TH4114	0403490105	Practicals in Molecular Biology		3	90	60	150
TH4588	0403490106	Research Methodology and Biostatistics		3	90	60	150
TH4584	0403490107	Genetic Analysis		2	60	40	100
T1656	0403490108	Intellectual Property Rights		2	60	40	100
TH4788		Health and Wellness Module I #		0	0	0	0
			Total	**22**	**660**	**440**	**1100**
Semester : 2							
Generic Core Courses							
TH4113	0403490201	Practicals in Microbiology		3	90	60	150
TH4589	0403490202	Advanced Immunology		3	90	60	150
TH4101	0403490203	Cell Biology		3	90	60	150
TH4586	0403490204	Genetic Engineering		3	90	60	150
TH4108	0403490205	Practicals in Animal Tissue Culture		2	60	40	100
TH4587	0403490206	Practicals in Recombinant DNA Technology		2	60	40	100
TH4583	0403490207	Bioinformatics		2	60	40	100
TH4585	0403490208	Practicals in Bioinformatics		2	60	40	100
TH4789		Health and Wellness Module II #		0	0	0	0
SMC001	0403490209	*Vasudhaiva Kutumbakam* *		0	0	0	Mandatory Non-Credit Course
SMC003	0403490210	Health and Wellness *		0	0	0	Mandatory Non-Credit Course
			Total	**20**	**600**	**400**	**1000**

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Annexure A

Catalog Course Code	Course Code	Course Title	Specialisation	Credit	Continuous Assessment	Term End Examination	Total Marks
3rd and 4th semester Courses delivered as per the syllabus and structure of Master of Science Stem Cell and Regenerative Medicine / MRes Biosciences from Aston University. Students will take courses to fulfill the credit requirements of our programme.							

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Semester	Continuous Assessment	Term End Examination	Total Credits	Total Marks
Common				
Semester 1	0	22	22	1100
Semester 2	0	20	20	1000
Semester 3	Courses delivered as per the syllabus and structure of Master of Science Stem Cell and Regenerative Medicine / MRes Biosciences from Aston University.			
Semester 4	Courses delivered as per the syllabus and structure of Master of Science Stem Cell and Regenerative Medicine / MRes Biosciences from Aston University.			

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Annexure B
Course Mapping Sheet

Master of Science Stem Cell and Regenerative Medicine, Aston University					
Sr. No.	**Course Mapping Semester**	**Course Title**	**Course Credits**	**Aston University, United Kingdom**	
				University Course Title	**Credits**
1	3	Bioprocess Engineering	3	Applied Biotechnology	15
2	3	Environmental Biotechnology	2	Professional Development and Research Communication Skills	15
3	3	Introduction to Laboratory Animal Science	2	Essential Laboratory Skills	15
4	3	Practicals in Bioanalytical Techniques	3		
5	3	Practicals in Immunology and Virology	3		
6	3	Stem Cell Biology	2	Ageing and Regenerative Medicine	15
				Tissue regeneration	15
				Stem Cell Biology and Cellular Differentiation	15
7	3	Virology	3	Professional Development and Research Communication Skills	15
8	3	Genomics and Proteomics	2	Applied Biotechnology	15
9	4	Dissertation (Stream A)	20	Research Project	60
Total Credits			40		150
MRes Bioscience, Aston University					
Sr. No.	**Course Mapping Semester**	**Course Title**	**Course Credits**	**Aston University, United Kingdom**	
				University Course Title	**Credits**
1	3	Dissertation (Stream B)	20	Research Project	120
2	4	Dissertation (Stream B)	20		
Total Credits			40		120

***Course mapping is subject to change.**