



**Symbiosis Statistical Institute, Pune**  
**Master of Science (Applied Statistics)**  
**Programme Structure 2020-22**

1.	<b>OBJECTIVE</b>	To Provide a sound foundation and exposure to statistical ideas.To steer students towards developing a keen interest in statistical thinking.To instill the rational that Statistics is important for scientific research which forms the basic grounds of decision making in every aspect of life.			
2.	<b>DURATION (IN MONTHS)</b>	24 (Full Time)			
3.	<b>INTAKE</b>	45			
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	15	
5.	<b>ELIGIBILITY</b>	Graduate from any statutory/recognized University with minimum of 50% marks (45% for SC/ST) in 1. B.Sc. (Second class) with Statistics as principal and Mathematics at subsidiary level 2. B.Sc. (Second class) with Mathematics as principal and Statistics at subsidiary level 3. B.Sc. (Second class) in Actuarial Science with Mathematics and Statistics at subsidiary level 4. B.Sc. (Second class), with Statistics as one of the subjects 5. B C S (Second class), with Statistics as one of the subjects 6. B C A (Second class), with Statistics as one of the subjects 7. B.E. with Mathematics/Statistics at subsidiary level			
6.	<b>SELECTION PROCEDURE</b>	Selection of students is based on: 1. Academic record with minimum 50 percent (45% for SC/ST) at graduation level 2. Performance at the "Writing Aptitude Test (Technical and Academic)" (WAT) and Personal Interaction (PI) which will be conducted in Kolkata, Noida and Pune. WAT is a written test that will be scheduled along with a comprehensive Personal Interaction (PI). 3. Technical and Academic Writing Test - Essay type written test on a general topic to comprehend the writing skills of the candidate. Personal Interaction - Interaction with a panel of experts			
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>



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		<b>Indian Students</b>	210000	10000	220000		
		<b>International Students (USD equivalent to INR)</b>	315000	10000	325000		
<b>11. 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% external component [University] examination.						
<b>12. 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 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.						
<b>13. AWARD OF DEGREE/ DIPLOMA/ CERTIFICATE</b>	Master of Science (Applied Statistics) will be awarded at the end of semester IV examination by taking into consideration the performance of all semester examinations after obtaining minimum CGPA of 4 out of maximum of 10 CGPA						
<b>14. NATURE WISE DISTRIBUTION OF CREDITS</b>							
Semester	Generic Core	Generic Elective	Specialization Core	Specialization Elective	Open Elective	Audit	Total
1	22	0	0	0	0	1*	22
2	23	0	0	0	0	0	23
3	16	4	3	0	0	1*	23
4	8	0	0	4	0	0	12
<b>Total</b>	<b>69</b>	<b>4</b>	<b>3</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>80</b>

\* 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
<b>Semester : 1</b>							
<b>Generic Core Courses</b>							
T6684	0606410101	Probability Distributions		4	120	80	200
T6685	0606410102	Linear Algebra		4	120	80	200
T6686	0606410103	Mathematical Analysis		4	120	80	200
T6687	0606410104	Sampling Theory		4	120	80	200
T6688	0606410105	Statistical Computing		4	120	80	200
T4725	0606410106	Research Methodology		2	60	40	100
T4005	0606410107	Integrated Disaster Management *		0	0	0	Non Letter Grade
<b>Total</b>				<b>22</b>	<b>660</b>	<b>440</b>	<b>1100</b>
<b>Semester : 2</b>							
<b>Generic Core Courses</b>							
T6695	0606410201	Probability Theory and Applications		4	120	80	200
T6696	0606410202	Linear Models		4	120	80	200
T6697	0606410203	Statistical Inference		4	120	80	200
T6698	0606410204	Stochastic Processes		4	120	80	200
T6700	0606410205	Design of Experiments		4	120	80	200
T6699	0606410206	Multivariate Statistics-1		3	90	60	150
<b>Total</b>				<b>23</b>	<b>690</b>	<b>460</b>	<b>1150</b>
<b>Semester : 3</b>							
<b>Generic Core Courses</b>							
T6701	0606410301	Multivariate Statistical Analysis-2		4	120	80	200
T6702	0606410302	Computer Intensive Statistical Methods		4	120	80	200
T6703	0606410303	Statistical Learning and Data Mining		4	120	80	200
T6904	0606410304	Internship		4	200	0	200
T0100	0606410305	Research Publication *		0	0	0	Non Letter Grade
<b>Total</b>				<b>16</b>	<b>560</b>	<b>240</b>	<b>800</b>
<b>Specialization Core Courses : Bio-Statistics and Data Analysis</b>							
T6724	0606410306	Survival Analysis	Bio-Statistics and Data Analysis	3	90	60	150
<b>Total</b>				<b>3</b>	<b>90</b>	<b>60</b>	<b>150</b>
<b>Specialization Core Courses : Data Science</b>							
T6705	0606410307	Statistical Simulation	Data Science	3	90	60	150
<b>Total</b>				<b>3</b>	<b>90</b>	<b>60</b>	<b>150</b>
<b>Specialization Core Courses : Industrial Statistics and Operations Research</b>							
T6725	0606410308	Time Series Analysis	Industrial Statistics and Operations Research	3	90	60	150
<b>Total</b>				<b>3</b>	<b>90</b>	<b>60</b>	<b>150</b>
<b>Generic Elective Courses Group</b>							
F0004	0606410309	Flexi-Credit Course		4	200	0	200
F0004	0606410310	Flexi-Credit Course		4	200	0	200
<b>Total Required Credits</b>				<b>4</b>	<b>200</b>	<b>0</b>	<b>200</b>
<b>Semester : 4</b>							
<b>Generic Core Courses</b>							
T6706	0606410401	Statistical Machine Learning		4	120	80	200
T6804	0606410402	Industry Project In Specialization		4	200	0	200
<b>Total</b>				<b>8</b>	<b>320</b>	<b>80</b>	<b>400</b>
<b>Specialisation Elective Courses</b>							
<b>Specialization : Bio-Statistics and Data Analysis</b>							
F0004	0606410403	Flexi-Credit Course		4	200	0	200
F0004	0606410404	Flexi-Credit Course		4	200	0	200
<b>Specialization : Data Science</b>							
F0004	0606410405	Flexi-Credit Course		4	200	0	200



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F0004	0606410406	Flexi-Credit Course		4	200	0	200
<b>Specialization : Industrial Statistics and Operations Research</b>							
F0004	0606410407	Flexi-Credit Course		4	200	0	200
F0004	0606410408	Flexi-Credit Course		4	200	0	200
<b>Total Required Credits</b>				<b>4</b>	<b>200</b>	<b>0</b>	<b>200</b>



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Semester	Internal Credits	External Credits	Total Credits	Total Marks
<b>Bio-Statistics and Data Analysis</b>				
Semester1	0	22	22	1100
Semester2	0	23	23	1150
Semester3	8	15	23	1150
Semester4	8	4	12	600
<b>Total</b>	<b>16</b>	<b>64</b>	<b>80</b>	<b>4000</b>
<b>Data Science</b>				
Semester1	0	22	22	1100
Semester2	0	23	23	1150
Semester3	8	15	23	1150
Semester4	8	4	12	600
<b>Total</b>	<b>16</b>	<b>64</b>	<b>80</b>	<b>4000</b>
<b>Industrial Statistics and Operations Research</b>				
Semester1	0	22	22	1100
Semester2	0	23	23	1150
Semester3	8	15	23	1150
Semester4	8	4	12	600
<b>Total</b>	<b>16</b>	<b>64</b>	<b>80</b>	<b>4000</b>