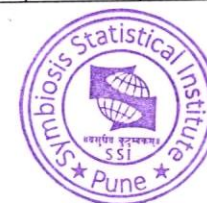


Name of Institute :- Symbiosis Statistical Institute Pune

Name of Programme :- M.Sc(Applied Statistics)

Institute Code	Institute Name	Programme Code	Program Name	Catalog Course	Catalog Course Name	Course Type	Batch 2020	Batch 2021	Change in T-	Change in course/Nature	Change in Pedagogy	Change in evaluation	Change in instruction	Add on course	Changes Yes:
606	SSI, Pune	60641	M.Sc.	GEN002	Project	Core	Base PS	Dropped	Yes						Yes
606	SSI, Pune	60641	M.Sc.	GEN003	Internship	Core	Base PS	Dropped	Yes						Yes
606	SSI, Pune	60641	M.Sc.	GEN005	Non Catalog Courses	Core	Base PS	Dropped	Yes						Yes
606	SSI, Pune	60641	M.Sc.			Elective	Base PS	Dropped	Yes						Yes
606	SSI, Pune	60641	M.Sc.	T0100	Research	Core	Base PS	No Change	No						No
606	SSI, Pune	60641	M.Sc.	T4005	Integrated Disaster	Core	Base PS	No Change	No						No
606	SSI, Pune	60641	M.Sc.	T4725	Research	Core	Base PS	No Change	No						No
606	SSI, Pune	60641	M.Sc.	T6684	Probability	Core	Base PS	No Change	No						No
606	SSI, Pune	60641	M.Sc.	T6685	Linear Algebra	Core	Base PS	Dropped	Yes						Yes
606	SSI, Pune	60641	M.Sc.	T6686	Mathematical	Core	Base PS	Dropped	Yes						Yes
606	SSI, Pune	60641	M.Sc.	T6687	Sampling Theory	Core	Base PS	No Change	No						No
606	SSI, Pune	60641	M.Sc.	T6688	Statistical	Core	Base PS	No Change	No						No
606	SSI, Pune	60641	M.Sc.	T6695	Probability Theory	Core	Base PS	No Change	No						No
606	SSI, Pune	60641	M.Sc.	T6696	Linear Models	Core	Base PS	No Change	No						No
606	SSI, Pune	60641	M.Sc.	T6697	Statistical Inference	Core	Base PS	No Change	No						No
606	SSI, Pune	60641	M.Sc.	T6698	Stochastic Processes	Core	Base PS	No Change	No						No
606	SSI, Pune	60641	M.Sc.	T6699	Multivariate	Core	Base PS	No Change	No						No
606	SSI, Pune	60641	M.Sc.	T6700	Design of	Core	Base PS	No Change	No						No
606	SSI, Pune	60641	M.Sc.	T6701	Multivariate	Core	Base PS	No Change	No						No
606	SSI, Pune	60641	M.Sc.	T6702	Computer Intensive	Core	Base PS	No Change	No						No
606	SSI, Pune	60641	M.Sc.	T6703	Statistical Learning	Core	Base PS	No Change	No						No
606	SSI, Pune	60641	M.Sc.	T6704	Optimization	Core		Added	Yes						Yes
606	SSI, Pune	60641	M.Sc.	T6705	Statistical	Core	Base PS	No Change	No						No
606	SSI, Pune	60641	M.Sc.	T6706	Statistical Machine	Core	Base PS	No Change	No						No

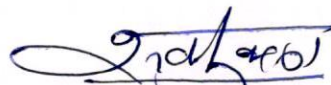


606	SSI, Pune	60641	M.Sc.	T6707	Demography and	Core		Added	Yes					Yes
606	SSI, Pune	60641	M.Sc.	T6708	Scientific and Report	Core		Added	Yes					Yes
606	SSI, Pune	60641	M.Sc.	T6709	Seminar	Core		Added	Yes					Yes
606	SSI, Pune	60641	M.Sc.	T6716	Time Series Analysis	Core		Added	Yes					Yes
606	SSI, Pune	60641	M.Sc.	T6717	Optimization	Elective	Base PS	Dropped	Yes					Yes
606	SSI, Pune	60641	M.Sc.	T6720	Demography and	Elective	Base PS	Dropped	Yes					Yes
606	SSI, Pune	60641	M.Sc.	T6724	Survival Analysis	Core	Base PS	No Change	No					No
606	SSI, Pune	60641	M.Sc.	T6725	Time Series Analysis	Core	Base PS	Dropped	Yes					Yes
606	SSI, Pune	60641	M.Sc.	T6746	Biostatistics for	Elective		Added	Yes					Yes
606	SSI, Pune	60641	M.Sc.	T6808	Introduction to	Core		Added	Yes					Yes
606	SSI, Pune	60641	M.Sc.	T6849	Big Data Analytics	Core		Added	Yes					Yes
606	SSI, Pune	60641	M.Sc.	T6851	Statistical Quality	Core		Added	Yes					Yes
606	SSI, Pune	60641	M.Sc.	T6852	Stochastic Models in	Core		Added	Yes					Yes
606	SSI, Pune	60641	M.Sc.	T6918	T6918	Elective		Added	Yes					Yes
606	SSI, Pune	60641	M.Sc.	TH4272	Certificate in COVID-	Core		Added	Yes					Yes

Total Numbers of Courses:- 39

Revision in number of courses :- 21

Revision% :- 53.84%



Prof. Dr. Sharvari Shukla

Director and Professor,

Symbiosis statistical Institute, Pune



Percentage of Programmes where syllabus revision was carried out

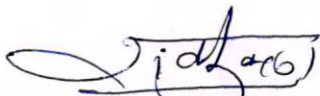
From AY 2020-21 to AY 2021-22

Name of Institute: Symbiosis Statistical Institute Pune

Name of Programme: M.Sc(Applied Statistics)

Index

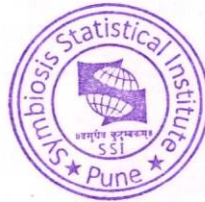
Academic Year and Batch	Details of Documents
2021-22(Batch 2020-22)	Approved Programme structure
2021-22(Batch 2021-23)	Approved Programme structure



Prof. Dr. Sharvari Shukla

Director and Professor,

Symbiosis statistical Institute, Pune





Celebrating 50 Years of Excellence

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

1.	OBJECTIVE	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.	DURATION (IN MONTHS)	24 (Full Time)			
3.	INTAKE	45			
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 from any recognised University/ Institution of National Importance with minimum of 50% marks (45% for Scheduled Caste/ Scheduled Tribes) in 1. B.Sc. with Statistics as principal and Mathematics at subsidiary level 2. B.Sc. with Mathematics as principal and Statistics at subsidiary level 3. B.Sc. in Actuarial Science with Mathematics and Statistics at subsidiary level 4. B.Sc. with Statistics as one of the subjects 5. B.C.S. with Statistics as one of the subjects 6. B.C.A. with Statistics as one of the subjects 7. B.E. with Mathematics/Statistics at subsidiary level			
6.	SELECTION PROCEDURE	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.	MEDIUM OF INSTRUCTION	English			
8.	PROGRAMME PATTERN	Semester			
9.	COURSE & SPECIALIZATION	As per Annexure A			
10.	FEE		Academic Fee p.a	Institute Deposit	Total



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

		Indian Students	210000	10000	220000		
		International Students (USD equivalent to INR)	315000	10000	325000		
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% external component [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 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.						
13. AWARD OF DEGREE/ DIPLOMA/ CERTIFICATE	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						
14. CLASSIFICATION OF CREDITS							
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	2*	23
4	8	0	0	4	0	0	12
Total	69	4	3	4	0	0	80

* Satisfactory completion of the non letter grade courses 'Integrated Disaster Management', 'Research Publication' '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 29/05/2021 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

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

Annexure A

Catalog Course Code	Course Code	Course Title	Specialization	Credit	Internal Marks	External Marks	Total Marks
Semester : 1							
Generic Core Courses							
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
Total				22	660	440	1100
Semester : 2							
Generic Core Courses							
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
Total				23	690	460	1150
Semester : 3							
Generic Core Courses							
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
TH4272	0606410311	Certificate in COVID-19 Care for the Community *		0	0	0	Non Letter Grade
Total				16	560	240	800
Specialization Core Courses : Bio-Statistics and Data Analysis							
T6724	0606410306	Survival Analysis	Bio-Statistics and Data Analysis	3	90	60	150
Total				3	90	60	150



Celebrating 50 Years of Excellence

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

Annexure A

Catalog Course Code	Course Code	Course Title	Specialization	Credit	Internal Marks	External Marks	Total Marks
Specialization Core Courses : Data Science							
T6705	0606410307	Statistical Simulation	Data Science	3	90	60	150
Total				3	90	60	150
Specialization Core Courses : Industrial Statistics and Operations Research							
T6725	0606410308	Time Series Analysis	Industrial Statistics and Operations Research	3	90	60	150
Total				3	90	60	150
Generic Elective Courses Group							
T6717	0606410309	Optimization Techniques		4	200	0	200
T6720	0606410310	Demography and Vital Statistics		4	200	0	200
Total Required Credits				4	200	0	200
Semester : 4							
Generic Core Courses							
T6706	0606410401	Statistical Machine Learning		4	120	80	200
T6804	0606410402	Industry Project In Specialization		4	200	0	200
Total				8	320	80	400
Specialisation Elective Courses							
Specialization : Bio-Statistics and Data Analysis							
T6710	0606410403	Statistical Methods in Micro-array Data Analysis	Bio-Statistics and Data Analysis	4	200	0	200
T6711	0606410404	Analysis of Clinical Trial Data	Bio-Statistics and Data Analysis	4	200	0	200
Specialization : Data Science							
T6721	0606410405	Big Data Analytics	Data Science	4	200	0	200
T6850	0606410406	Python for Data Science	Data Science	4	200	0	200
Specialization : Industrial Statistics and Operations Research							
T6715	0606410407	Statistical Methods for Quality Control	Industrial Statistics and Operations Research	4	200	0	200
T6713	0606410408	Statistical Methods for Reliability	Industrial Statistics and Operations Research	4	200	0	200
Total Required Credits				4	200	0	200



Celebrating 50 Years of Excellence

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

Semester	Internal Credits	External Credits	Total Credits	Total Marks
Bio-Statistics and Data Analysis				
Semester 1	0	22	22	1100
Semester 2	0	23	23	1150
Semester 3	8	15	23	1150
Semester 4	8	4	12	600
Total	16	64	80	4000
Data Science				
Semester 1	0	22	22	1100
Semester 2	0	23	23	1150
Semester 3	8	15	23	1150
Semester 4	8	4	12	600
Total	16	64	80	4000
Industrial Statistics and Operations Research				
Semester 1	0	22	22	1100
Semester 2	0	23	23	1150
Semester 3	8	15	23	1150
Semester 4	8	4	12	600
Total	16	64	80	4000



Symbiosis Statistical Institute, Pune
Master of Science (Applied Statistics)
Programme Structure 2021-23

1.	OBJECTIVE	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.	DURATION (IN MONTHS)	24 (Full Time)			
3.	INTAKE	45			
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 from any recognised University/ Institution of National Importance with minimum of 50% marks or equivalent grade (45% marks or equivalent grade for Scheduled Caste/ Scheduled Tribes) in 1. B.Sc. with Statistics as principal and Mathematics at subsidiary level 2. B.Sc. with Mathematics as principal and Statistics at subsidiary level 3. B.Sc. in Actuarial Science with Mathematics and Statistics at subsidiary level 4. B.Sc. with Statistics as one of the subjects 5. B.C.S. with Statistics as one of the subjects 6. B.C.A. with Statistics as one of the subjects 7. B.E. with Mathematics/Statistics at subsidiary level.			
6.	SELECTION PROCEDURE	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.	MEDIUM OF INSTRUCTION	English			
8.	PROGRAMME PATTERN	Semester			
9.	COURSE & SPECIALIZATION	As per Annexure A			
10.	FEE		Academic Fee p.a	Institute Deposit	Total



Symbiosis Statistical Institute, Pune Master of Science (Applied Statistics) Programme Structure 2021-23

		Indian Students	210000	10000	220000		
		International Students (USD equivalent to INR)	315000	10000	325000		
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% external component [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 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.						
13. AWARD OF DEGREE/ DIPLOMA/ CERTIFICATE	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						
14. CLASSIFICATION OF CREDITS							
Semester	Generic Core	Generic Elective	Specialization Core	Specialization Elective	Open Elective	Audit	Total
1	22	0	0	0	0	2*	22
2	23	0	0	0	0	0	23
3	13	3	6	0	0	1*	22
4	13	0	0	0	0	0	13
Total	71	3	6	0	0	0	80

* Satisfactory completion of the non letter grade courses 'Integrated Disaster Management', 'Research Publication' '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 16/06/2021 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

Symbiosis Statistical Institute, Pune
Master of Science (Applied Statistics)
Programme Structure 2021-23

Annexure A

Catalog Course Code	Course Code	Course Title	Specialization	Credit	Internal Marks	External Marks	Total Marks
Semester : 1							
Generic Core Courses							
T6684	0606410101	Probability Distributions		4	120	80	200
T6697	0606410102	Statistical Inference		4	120	80	200
T6698	0606410103	Stochastic Processes		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
TH4272	0606410108	Certificate in COVID-19 Care for the Community *		0	0	0	Non Letter Grade
Total				22	660	440	1100
Semester : 2							
Generic Core Courses							
T6695	0606410201	Probability Theory and Applications		4	120	80	200
T6696	0606410202	Linear Models		4	120	80	200
T6716	0606410203	Time Series Analysis		4	120	80	200
T6702	0606410204	Computer Intensive Statistical Methods		4	120	80	200
T6700	0606410205	Design of Experiments		4	120	80	200
T6699	0606410206	Multivariate Statistics-1		3	90	60	150
Total				23	690	460	1150
Semester : 3							
Generic Core Courses							
T6701	0606410301	Multivariate Statistical Analysis-2		4	120	80	200
T6703	0606410302	Statistical Learning and Data Mining		4	120	80	200
T6704	0606410303	Optimization Techniques		3	150	0	150
T6708	0606410304	Scientific and Report Writing		2	100	0	100
T0100	0606410305	Research Publication *		0	0	0	Non Letter Grade
Total				13	490	160	650
Generic Elective Courses Group							
T6918	0606410306	Bayesian Inference		3	150	0	150
T6746	0606410307	Biostatistics for Public Health - I		3	150	0	150
Total Required Credits				3	150	0	150
Specialization Core Courses : Bio-Statistics and Data Analysis							



Celebrating 50 Years of Excellence

Symbiosis Statistical Institute, Pune
Master of Science (Applied Statistics)
Programme Structure 2021-23

Annexure A

Catalog Course Code	Course Code	Course Title	Specialization	Credit	Internal Marks	External Marks	Total Marks
T6724	0606410308	Survival Analysis	Bio-Statistics and Data Analysis	3	90	60	150
T6707	0606410309	Demography and Vital Statistics	Bio-Statistics and Data Analysis	3	90	60	150
Total				6	180	120	300
Specialization Core Courses : Data Science							
T6705	0606410310	Statistical Simulation	Data Science	3	90	60	150
T6849	0606410311	Big Data Analytics	Data Science	3	90	60	150
Total				6	180	120	300
Specialization Core Courses : Industrial Statistics and Operations Research							
T6852	0606410312	Stochastic Models in Finance	Industrial Statistics and Operations Research	3	90	60	150
T6851	0606410313	Statistical Quality Control	Industrial Statistics and Operations Research	3	90	60	150
Total				6	180	120	300
Semester : 4							
Generic Core Courses							
T6706	0606410401	Statistical Machine Learning		4	120	80	200
T6808	0606410402	Industry Project in Specialization		8	200	200	400
T6709	0606410403	Seminar		1	50	0	50
Total				13	370	280	650



Celebrating 50 Years of Excellence

Symbiosis Statistical Institute, Pune
Master of Science (Applied Statistics)
Programme Structure 2021-23

Semester	Internal Credits	External Credits	Total Credits	Total Marks
Bio-Statistics and Data Analysis				
Semester 1	0	22	22	1100
Semester 2	0	23	23	1150
Semester 3	8	14	22	1100
Semester 4	1	12	13	650
Total	9	71	80	4000
Data Science				
Semester 1	0	22	22	1100
Semester 2	0	23	23	1150
Semester 3	8	14	22	1100
Semester 4	1	12	13	650
Total	9	71	80	4000
Industrial Statistics and Operations Research				
Semester 1	0	22	22	1100
Semester 2	0	23	23	1150
Semester 3	8	14	22	1100
Semester 4	1	12	13	650
Total	9	71	80	4000