

**Symbiosis Statistical Institute, Pune**  
**Bachelor of Science (Applied Statistics and Data Science) Honours/ Honours with Research**  
**Programme Structure 2023-27**

1.	OBJECTIVE	<ul style="list-style-type: none"><li>-To provide scientific skills and intensive training in Statistics and Data Science to develop data analytics insight with hands-on training</li><li>-To impart identified set of skills and values at each stage of learning at graduation and post- graduation level through integrated course</li><li>-To empower candidates to apply relevant statistics and Data Science techniques to solve business and domain specific complex problems</li><li>-To help developing holistic individuals and responsible citizens.</li></ul>				
2.	DURATION (IN MONTHS)	48 (Full Time) With Multiple Entry and Multiple Exit Options				
3.	INTAKE	60				
4.	RESERVATION	<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>	<b>d) Defence (In Percentage)</b>
			15	7.5	3	0
		<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.	ELIGIBILITY	Passed Standard XII (10+2) or equivalent examination from any recognised Board with a minimum of 50% marks or equivalent grade (45% Marks or equivalent grade for Scheduled Caste / Scheduled Tribes) with Mathematics as one of the subjects.				

		Students who wish to opt for Honours with Research must earn a 7.5 CGPA and above at the end of Semester-6. Eligibility Criteria for the Multiple entries would be as per University's Lateral Entry Rules for FYUG Programmes.			
6.	<b>SELECTION PROCEDURE</b>	1. Symbiosis Entrance Test (SET) 2. Personal Interaction and Written Ability Test (PI-WAT) for shortlisted candidates based on SET 3. The selection Procedure for the Multiple Entry would be as per the University's Lateral Entry Rules for FYUG Programmes.			
7.	<b>MEDIUM OF INSTRUCTION</b>	English			
8.	<b>PROGRAMME PATTERN</b>	Semester			
9.	<b>COURSE &amp; SPECIALIZATION</b>	<b>As per Annexure A</b> <b>Offered Major:</b> Applied Statistics and Data Science <b>Offered Minor:</b> Business Studies			
10.	<b>FEE</b>			<b>Academic Fee p.a</b>	<b>Institute Deposit</b>
		<b>Indian Students (Amount in INR)</b>		2,36,500	20,000
		<b>International Students</b>	<b>NRI/ PIO/ OCI Category (Amount in US\$)</b>	4,625	275
			<b>Foreign National Category (Amount in US\$)</b>	1,300	275

	<b>Note</b> - The exiting students will have to complete the additional 4 credit vocational course for the award of a Certificate/ Diploma by paying additional fees at the time of intimation of the exit. The additional fees of 4 credit vocational course will be informed in due course of time.	
11.	<b>ASSESSMENT</b>	The courses will have 40% Continuous Assessment and 60% Term End [University] examination however, some courses (not more than 30% of the total programme credits) may have 100% Continuous Assessment.
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 Continuous Assessment and Term End examinations separately with a minimum Grade Point of 4 corresponding to Grade P. Students securing less than 40% marks in any head of passing will be declared FAIL. The University awards a Certificate/Diploma/ Degree to the student who has achieved a minimum CGPA of 4 out of a maximum of 10 CGPA for the Programme.
13.	<b>AWARD OF DEGREE/ DIPLOMA/ CERTIFICATE</b>	<p><b>Certificate</b> in Applied Statistics and Data Science will be awarded at the end of the semester-2 by taking into consideration the performance of all semester examinations subject to obtaining a minimum 4.00 CGPA out of 10 CGPA and the successful completion of the 4 credit Vocational Course in the summer.</p> <p><b>Diploma</b> in Applied Statistics and Data Science will be awarded at the end of the semester-4 by taking into consideration the performance of all semester examinations subject to obtaining a minimum 4.00 CGPA out of 10 CGPA and the successful completion of the 4 credit Vocational Course in the summer.</p> <p><b>Bachelor</b> of Science (Applied Statistics and Data Science) with the Minor in Business Studies will be awarded at the end of the semester-6 by taking into consideration the performance of all semester examinations subject to obtaining a minimum of 4.00 CGPA out of 10 CGPA.</p> <p><b>Bachelor</b> of Science (Applied Statistics and Data Science) <b>Honours</b> with the Minor in Business Studies will be awarded at the end of the semester-8 by taking into consideration the performance of all semester examinations subject to obtaining a minimum 4.00 CGPA out of 10 CGPA.</p> <p><b>Bachelor</b> of Science (Applied Statistics and Data Science) <b>Honours with Research</b> with the Minor in Business Studies will be awarded at the end of the semester- 8 by taking into consideration the performance of all semester examinations subject to obtaining a minimum 7.5 CGPA out of 10 CGPA.</p>

14.	CLASSIFICATION OF CREDITS AND NUMBER OF NON-CREDIT COURSES											
Semester	Major	Minor	Multi-disciplinary	Ability Enhancement	Skill Enhancement	Common Value Added	Summer Internship	Research Project / Dissertation	Total Credits	No. of Mandatory Non-Credit Course/s	No. of Non-Credit Audit Course/s	
1	6	4	3	2	4	2	0	0	21	1	As per the Student's Choice	
2	8	4	3	2	2	2	0	0	21	1		
3	4	4	3	2	3	2	0	0	18	1		
4	14	6	0	3	0	0	0	0	23	1		
5	16	4	0	0	0	0	4	0	24	1		
6	18	4	0	0	0	0	0	0	22	0		
Total	66	26	9	9	9	6	4	0	129			
Honours												
7	14	4	0	0	0	0	0	0	18	0		
8	16	4	0	0	0	0	0	0	20	0		
Total	96	34	9	9	9	6	4	0	167			
Honours with Research												
7	14	4	0	0	0	0	0	0	18	0		
8	4	4	0	0	0	0	0	12	20	0		
Total	84	34	9	9	9	6	4	12	167			
1. The students exiting the Programme after Semester – 2 OR Semester - 4 should complete vocational courses of total 4 credits in the summer to obtain the Certificate/Diploma.												
2. Passing Mandatory Non-Credit Courses is a requirement for the award of the degree.												

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.

**Symbiosis Statistical Institute, Pune**  
**Bachelor of Science (Applied Statistics and Data Science) Honours/Honours with Research**  
**Programme Structure 2023-27**

**Annexure A**

Catalogue Course Code	Course Code	Course Title	Major / Minor	Credits	Continuous Assessment Marks	Term End Examination Marks	Total Marks
<b>Semester - 1</b>							
<b>Major Course</b>							
THM6034	0606220101	Introductory Probability and Statistics		6	60	90	150
<b>Minor Course</b>							
T2780	0606220102	Introduction to Contemporary Business Practices		4	40	60	100
<b>Ability Enhancement Course</b>							
T2495	0606220103	Business Communication		2	20	30	50
<b>Skill Enhancement Courses</b>							
T6983	0606220104	Statistical Data Analysis Using Microsoft Excel		4	40	60	100
<b>Common Value-Added Course</b>							
T6925	0606220105	Cultural and Heritage Education		2	50	0	50
<b>Mandatory Non-Credit Course</b>							
T4005	0606220106	Integrated Disaster Management		0	0	0	0

Catalogue Course Code	Course Code	Course Title	Major / Minor	Credits	Continuous Assessment Marks	Term End Examination Marks	Total Marks
<b>Multidisciplinary Course</b>							
<b>(Choose Any One Course from the University Basket of Multidisciplinary Courses given in Annexure B)</b>							
-	-	MD1		3	75	0	75
<b>Grand Total</b>				<b>21</b>	<b>285</b>	<b>240</b>	<b>525</b>
<b>Semester – 2</b>							
<b>Major Courses</b>							
T6980	0606220201	Probability Distributions		4	40	60	100
THM6040	0606220202	Design and Analysis of Sample Survey		4	40	60	100
<b>Minor Course</b>							
<b>(Choose any one course)</b>							
TM2054	0606220203	Business Accounting		4	40	60	100
T2456	0606220204	Financial Management		4	40	60	100
<b>Total Required Credits</b>				<b>4</b>	<b>40</b>	<b>60</b>	<b>100</b>
<b>Ability Enhancement Course</b>							
<b>(Choose any one course)</b>							
THM6027	0606220205	Technical or Report Writing		2	50	0	50
THM6024	0606220206	Statistical Lyrics		2	50	0	50
<b>Total Required Credits</b>				<b>2</b>	<b>50</b>	<b>0</b>	<b>50</b>
<b>Skill Enhancement Course</b>							
<b>(Choose any one course)</b>							
THM6029	0606220207	Questionnaire Development		2	50	0	50
THM6026	0606220208	Data Acquisition Tools		2	50	0	50

Catalogue Course Code	Course Code	Course Title	Major / Minor	Credits	Continuous Assessment Marks	Term End Examination Marks	Total Marks
<b>Total Required Credits</b>				<b>2</b>	<b>50</b>	<b>0</b>	<b>50</b>
<b>Common Value-Added Course</b>							
THM6025	0606220209	Shruti Ganit		2	50	0	50
<b>Mandatory Non-Credit Courses</b>							
TH4095	0606220210	Fitness for Life		0	0	0	0
<b>Multidisciplinary Courses</b>							
<b>(Choose Any One Course from the University Basket of Multidisciplinary Courses given in Annexure B)</b>							
-	-	MD2		3	75	0	75
<b>Grand Total</b>				<b>21</b>	<b>345</b>	<b>180</b>	<b>525</b>
<b>Vocational Courses (Summer)</b>							
<b>(Only for students who wish to exit after the First Year with a Certificate)</b>							
T3747	0606220211	R Programming for Statistics		4	100	0	100
<b>Note: Students exiting at the end of the second semester and earning 42 credits will be awarded a "Certificate in Applied Statistics and Data Science" provided they successfully complete the additional 4 credits of vocational courses offered during the summer term.</b>							
<b>Semester – 3</b>							
<b>Major Course</b>							
T6986	0606220301	Statistical Inference		4	40	60	100
<b>Minor Course</b>							
T2465	0606220302	Fundamentals of Marketing		4	40	60	100
<b>Ability Enhancement Courses</b>							
THM6069	0606220303	Basics of Indian Languages through Natural Language		2	50	0	50

Catalogue Course Code	Course Code	Course Title	Major / Minor	Credits	Continuous Assessment Marks	Term End Examination Marks	Total Marks
		Processing					
<b>Skill Enhancement Courses</b>							
THM6067	0606220304	Lilavati: Primer of Mathematics		3	30	45	75
<b>Common Value Added Courses</b>							
THM6030	0606220305	Statistics in Sports		2	50	0	50
<b>Mandatory Non-Credit Course</b>							
TH4535	0606220306	Emotional Well-being		0	0	0	0
<b>Multidisciplinary Courses</b>							
<b>(Choose Any One Course from the University Basket of Multidisciplinary Courses given in Annexure B)</b>							
-	-	MD3		3	75	0	75
<b>Grand Total</b>				<b>18</b>	<b>285</b>	<b>165</b>	<b>450</b>
<b>Semester - 4</b>							
<b>Major Courses</b>							
THM6033	0606220401	Design of Experiments		6	60	90	150
T3745	0606220402	Introduction to Python		4	40	60	100
T6967	0606220403	Data Science I		4	40	60	100
<b>Minor Courses</b>							
T3680	0606220404	Digital Marketing		4	40	60	100
T8000	0606220405	Service Learning		2	50	0	50
<b>Ability Enhancement Courses</b>							
<b>(Choose any one course)</b>							
T2279	0606220406	Organizational Behaviour		3	30	45	75

Catalogue Course Code	Course Code	Course Title	Major / Minor	Credits	Continuous Assessment Marks	Term End Examination Marks	Total Marks
T8732	0606220407	Design Thinking		3	30	45	75
<b>Total Required Credits</b>				<b>3</b>	<b>30</b>	<b>45</b>	<b>75</b>
<b>Mandatory Non-Credit Course</b>							
SMC001	0606220408	Vasudhaiva Kutumbakam		0	0	0	0
<b>Grand Total</b>				<b>23</b>	<b>260</b>	<b>315</b>	<b>575</b>
<b>Vocational Courses (Summer)</b>							
<b>(Only for students who wish to exit after the Second Year with a Diploma)</b>							
THM6028	0606220409	Tableau		4	100	0	100
<b>Note: Students exiting at the end of the fourth semester and earning 83 credits will be awarded a "Diploma in Applied Statistics and Data Science," provided they successfully complete the additional 4 credits of vocational courses offered during the summer term.</b>							
<b>Semester - 5</b>							
<b>Major Courses</b>							
THM6038	0606220501	Optimization Techniques		4	40	60	100
THM6124	0606220502	Statistical Quality Control		4	40	60	100
THM6068	0606220503	Calculus for Data Science		4	40	60	100
T3780	0606220504	Advanced Data Science		4	40	60	100
<b>Minor Course</b>							
TM2135	0606220505	Retail Marketing		4	40	60	100
<b>Summer Internship</b>							

Catalogue Course Code	Course Code	Course Title	Major / Minor	Credits	Continuous Assessment Marks	Term End Examination Marks	Total Marks
T6904	0606220506	Summer Internship		4	100	0	100
<b>Mandatory Non-Credit Course</b>							
SMC002	0606220507	Core Environmental Studies		0	0	0	0
<b>Grand Total</b>				<b>24</b>	<b>300</b>	<b>300</b>	<b>600</b>
<b>Semester – 6</b>							
<b>Major Courses</b>							
T6975	0606220601	Hypothesis Testing		4	40	60	100
T3744	0606220602	R Programming		4	100	0	100
T3746	0606220603	Database Management System with SQL		2	50	0	50
THM6039	0606220604	Research Methodology		2	50	0	50
T6806	0606220605	Industry Project		6	150	0	150
<b>Minor Course</b>							
TM2145	0606220606	Supply chain Management		4	40	60	100
<b>Grand Total</b>				<b>22</b>	<b>430</b>	<b>120</b>	<b>550</b>
<b>Note: Students exiting at the end of the sixth semester and earning 129 credits will be awarded a "Bachelor of Science (Applied Statistics and Data Science)" with a Minor in Business Studies degree. Total Credits at the end of the Third year (Major 66, Minor 26, Multidisciplinary 9, Ability Enhancement Courses 9, Skill Enhancement Courses 9, Summer Internship 4, Common Value-Added Courses 6).</b>							
<b>Semester – 7</b>							
<b>(Honours / Honours with Research)</b>							

Catalogue Course Code	Course Code	Course Title	Major / Minor	Credits	Continuous Assessment Marks	Term End Examination Marks	Total Marks
<b>Major Courses</b>							
THM6032	0606220701	Stochastic Process		6	60	90	150
THM6035	0606220702	Reliability and Survival Analysis		4	40	60	100
THM6031	0606220703	Bayesian Inference		4	40	60	100
<b>Minor Course</b>							
TM2208	0606220704	Financial Modeling		4	40	60	100
<b>Grand Total</b>				<b>18</b>	<b>180</b>	<b>270</b>	<b>450</b>
<b>Semester – 8</b>							
<b>(Honours)</b>							
<b>Major Courses</b>							
TEE7019	0606220801	Machine learning		6	60	90	150
THM6066	0606220802	Time Series		6	60	90	150
THM6041	0606220803	Demography		4	40	60	100
<b>Minor Course</b>							
T3779	0606220804	Health Care Analytics		4	40	60	100
<b>Grand Total</b>				<b>20</b>	<b>200</b>	<b>300</b>	<b>500</b>
<b>(Honours with Research)</b>							
<b>Major Courses</b>							
T7523	0606220805	Data Mining		4	40	60	100
<b>Minor Course</b>							
F0004	0606220806	Flexi-credit Course		4	100	0	100
<b>Research Project</b>							

# **B.Sc. (Applied Statistics and Data Science) - Honours/ Honours with Research 2023-27**

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Catalogue Course Code	Course Code	Course Title	Major / Minor	Credits	Continuous Assessment Marks	Term End Examination Marks	Total Marks
T6812	0606220807	Research Project		12	300	0	300
		<b>Grand Total</b>		<b>20</b>	<b>440</b>	<b>60</b>	<b>500</b>

## **Note:**

**Total Credits at the end of Fourth year for "Bachelor of Science (Applied Statistics and Data Science) – Honours" with a Minor in Business Studies – 167 (Major 96, Minor 34, Multidisciplinary 9, Ability Enhancement Courses 9, Skill Enhancement Courses 9, Summer Internship 4, Common Value-Added Courses 6).**

**Total Credits at the end of Fourth year for "Bachelor of Science (Applied Statistics and Data Science) - Honours with Research" and a Minor in Business Studies – 167 (Major 84, Minor 34, Multidisciplinary 9, Ability Enhancement Courses 9, Skill Enhancement Courses 9, Summer Internship 4, Research Project 12, Common Value-Added Courses 6).**

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**Programme Structure 2023-27**

**SUMMARY**

Semester	100% Continuous Assessment Credits	Term End (University) Examination Credits	Total Credits	Total Marks
<b>1</b>	5	16	21	525
<b>2</b>	9	12	21	525
<b>3</b>	7	11	18	450
<b>4</b>	2	21	23	575
<b>5</b>	4	20	24	600
<b>6</b>	14	8	22	550
<b>Total</b>	<b>41</b>	<b>88</b>	<b>129</b>	<b>3225</b>
<b>Honours</b>				
<b>7</b>	0	18	18	450
<b>8</b>	0	20	20	500
<b>Total</b>	<b>41</b>	<b>126</b>	<b>167</b>	<b>4175</b>
<b>Honours with Research</b>				
<b>7</b>	0	18	18	450
<b>8</b>	16	4	20	500
<b>Total</b>	<b>57</b>	<b>110</b>	<b>167</b>	<b>4175</b>

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**Annexure B**


**List of Multidisciplinary Courses**

S. No.	Catalogue Course Code	Course Code			Course Title	Credit
		Semester 1	Semester 2	Semester 3		
1	T1454	0606220107	0606220212	0606220307	Constitutional Law I	3
2	T2119	0606220108	0606220213	0606220308	Consumer Behaviour and Insights	3
3	TH4542	0606220109	0606220214	0606220309	Dancercise	3
4	T5787	0606220110	0606220215	0606220310	Digital Design Tools - Visual Media	3
5	TH4539	0606220111	0606220216	0606220311	Fitness and Sports	3
6	T2467	0606220112	0606220217	0606220312	Fundamentals of Brand Management	3
7	T3754	0606220113	0606220218	0606220313	Fundamentals of Cloud Computing	3
8	TE7456	0606220114	0606220219	0606220314	Fundamentals of Cyber Security	3
9	TM2055	0606220115	0606220220	0606220315	Fundamentals of Marketing Research	3
10	T4729	0606220116	0606220221	0606220316	Intellectual Property Rights	3
11	T1471	0606220117	0606220222	0606220317	Law of Contracts	3
12	T5953	0606220118	0606220223	0606220318	Public Relations and Corporate Communication	3
13	T2489	0606220119	0606220224	0606220319	Renewable Energy Sources	3
14	TH4540	0606220120	0606220225	0606220320	Self-Defence	3
15	TE7223	0606220121	0606220226	0606220321	Smart Urban Planning	3
16	T2701	0606220122	0606220227	0606220322	Social Entrepreneurship	3
17	T3741	0606220123	0606220228	0606220323	Web Development using CMS	3
18	TH4538	0606220124	0606220229	0606220324	Weight Training and Conditioning	3
19	TH4537	0606220125	0606220230	0606220325	Well for Life	3

20	TH4536	0606220126	0606220231	0606220326	Yoga and Stress Management	3
21	TH4363	0606220127	0606220232	0606220327	Cognitive Psychology	3
22	T6767	0606220128	0606220233	0606220328	Public Policy in India	3
23	T6769	0606220129	0606220234	0606220329	India's Foreign Policy	3
24	TH4569	--	0606220235	0606220330	Brain Fit Body Fit	3
25	T2273	--	0606220236	0606220331	Emotional Intelligence for Personal Growth	3
26	T2276	--	0606220237	0606220332	Cross Cultural Management	3
27	T6002	--	0606220238	0606220333	Communication Theories	3
28	T6008	--	0606220239	0606220334	Communication for Creative Industry	3
29	T6023	--	0606220240	0606220335	Film, Documentary & TV Appreciation	3
30	T6359	--	0606220241	0606220336	Introduction to Culture and India	3
31	T6614	--	0606220242	0606220337	Voice and Accent Neutralization	3
32	T6736	--	0606220243	0606220338	Economic Journalism	3
33	T6756	--	0606220244	0606220339	Economics	3
34	T6763	--	0606220245	0606220340	Political Science I	3
35	T6768	--	0606220246	0606220341	India's Political Economy and Development	3
36	T8461	--	0606220247	0606220342	Introduction to User Experience Design	3
37	THM6015	--	0606220248	0606220343	Principles of Economics	3
38	THM6017	--	0606220249	0606220344	Macroeconomics for Business	3
39	T2383	--	--	0606220345	International Relations and Strategy	3
40	T6876	--	--	0606220346	Introduction to Behavioral Economics and Finance	3
41	T5519	--	--	0606220347	Language, Culture & Communication	3
42	T5534	--	--	0606220348	Indian Popular Culture	3
43	T8982	--	--	0606220349	Introduction to Graphic Design	3
44	T6160	--	--	0606220350	Post liberalization Indian economy	3
45	T6357	--	--	0606220351	Indian Kaleidoscope	3
46	T6733	--	--	0606220352	Content and Language Integrated Learning	3
47	T8372	--	--	0606220353	Brand Identity Design	3

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48	T8395	--	--	0606220354	Design processes and thinking	3
49	T8428	--	--	0606220355	Game Design for UX	3
50	T8460	--	--	0606220356	Introduction to Product Design	3
51	TD8039	--	--	0606220357	Design Fundamentals	3

  
Director - Academics  
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