Symbiosis Institute of Geoinformatics, Pune
Master of Science (Data Science & Spatial Analytics)

Dual Degree in collaboration with RUDN University, Russia

Programme Structure 2025-2027

1.	**OBJECTIVE**	To create a professional human resource in the field of Data Science and analytics, spatial computing, artificial intelligence, and machine learning with the complexities of space science, offering students a comprehensive understanding of cutting-edge technologies and their applications in data science, space science, and related industry equipped with IT and information management skills to cater to the global industry requirements.				
2.	**DURATION (IN MONTHS)**	24 (Full Time)				
3.	**INTAKE**	10				
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	25		
5.	**ELIGIBILITY**	Graduate in Engineering, IT, Science, Computer Science, Computer Application of any recognized university/ Institution of National Importance with a minimum of 50% marks or equivalent grade (45% Marks or equivalent grade for Scheduled Caste /Scheduled Tribes).				
6.	**SELECTION PROCEDURE**	Candidates will be selected on the basis of Personal Interaction				
7.	**MEDIUM OF INSTRUCTION**	English				
8.	**PROGRAMME PATTERN**	Semester				
9.	**COURSE & SPECIALISATION**	As per Annexure A				
10.	**FEE**		**Academic Fee p.a**	**Institute Deposit**	**Total**	
	Indian Students (Amount in INR)		450000	20000	470000	
	International Students	**NRI/ PIO/ OCI Category (Amount in US$)**	5600	275	5875	
		Foreign National Category (Amount in US$)	1950	275	2225	

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2nd Year

To be paid to RUDN University, Russia, based on their norms

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 the Master of Science Degree Technical Systems Control - Artificial Intelligence and Space Sciences, RUDN University, Russia the assessment standards will be as per RUDN 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 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. For the Master of Science Degree Technical Systems Control - Artificial Intelligence and Space Sciences, RUDN University, Russia the Standard of Passing will be as per RUDN 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 RUDN University, Russia, and respective University's passing criteria shall be applicable. Master of Science (Data Science & Spatial Analytics) 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 in Technical Systems Control - Artificial Intelligence and Space Sciences will be awarded by RUDN University, Russia, upon successful completion of the programme requirements and satisfactory performance as per RUDN 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	21	0	0	0	0	0	As per the student's choice	21
2	23	0	0	0	0	2 *		23
3	Courses delivered as per the syllabus and structure of the Master of Science Degree Technical Systems Control - Artificial Intelligence and Space Sciences programme at RUDN University, Russia. Please refer to the annexure for course and credit mapping. (Annexure B)							
4	Courses delivered as per the syllabus and structure of the Master of Science Degree Technical Systems							

	Control - Artificial Intelligence and Space Sciences programme at RUDN University, Russia. Please refer to the annexure for course and credit mapping. (Annexure B)

* 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.
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							
TE7444	0702440101	Mathematics for Spatial Sciences		4	120	80	200
TE7469	0702440102	Principles and Practices of Data Protection		3	90	60	150
TE7689	0702440103	Statistics and Probability		3	150	0	150
TE7931	0702440104	Python for Data Science		3	90	60	150
T2239	0702440105	Business Communication		2	100	0	100
T3244	0702440106	Introduction to Database Management System		2	60	40	100
TE7934	0702440107	Research Methodology in Computational Sciences		2	60	40	100
TEE7207	0702440108	Introduction to Geospatial Technology		2	60	40	100
TH4788		Health and Wellness Module I #		0	0	0	0
			Total	**21**	**730**	**320**	**1050**
Semester : 2							
Generic Core Courses							
T3447	0702440201	Machine learning		3	150	0	150
T3499	0702440202	Data Analysis Using Python		3	90	60	150
T3560	0702440203	Computer Vision		3	90	60	150
TE7930	0702440204	Programming for computational sciences		3	90	60	150
TEE7210	0702440205	SQL and Spatial Database management		3	90	60	150
F0002	0702440206	Flexi-Credit Course		2	100	0	100
TE7470	0702440207	Data Driven Governance		2	60	40	100
TEE7023	0702440208	Inferential Statistics		2	100	0	100
TEE7208	0702440209	Big Data Analytical Techniques and Practical Applications		2	60	40	100
SMC001	0702440210	*Vasudhaiva Kutumbakam* *		0	0	0	Mandatory Non-Credit Course
TH4789		Health and Wellness Module II #		0	0	0	0

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Annexure A

Catalog Course Code	Course Code	Course Title	Specialisation	Credit	Continuous Assessment	Term End Examination	Total Marks
SMC003	0702440211	Health and Wellness *		0	0	0	Mandatory Non-Credit Course
			Total	**23**	**830**	**320**	**1150**
Semester 3 and Semester 4 Courses delivered as per the syllabus and structure of Master of Science Degree Technical Systems Control - Artificial Intelligence and Space Sciences from the RUDN University Russia. Students will take courses to fulfill the credit requirements of SIU programme.							

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Semester	Continuous Assessment	Term End Examination	Total Credits	Total Marks
Semester 1	5	16	21	1050
Semester 2	7	16	23	1150
Semester 3	Courses delivered as per the syllabus and structure of the Master of Science Degree Technical Systems Control - Artificial Intelligence and Space Sciences programme at RUDN University, Russia. Please refer to the annexure for course and credit mapping. (Annexure B)			
Semester 4	Courses delivered as per the syllabus and structure of the Master of Science Degree Technical Systems Control - Artificial Intelligence and Space Sciences programme at RUDN University, Russia. Please refer to the annexure for course and credit mapping. (Annexure B)			

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Annexure B
Course Mapping Sheet

Sr. No.	Course Mapping Semester	Course Title	Course Credits	RUDN University, Russia	
				University Course Title	Credits
1	3	Deep learning	3	Artificial Neural Network (Deep Learning)	3
2	3	Artificial Intelligence	3	Artificial Neural Networks (Reinforcement Learning)	3
3	3	Spatial Modeling	2	Geoinformatics Systems and Applications	3
4	3	History of Science and Technology	2	History and Methodology of Science	2
5	3	Summer Project	4	Research Work	3
6	3	Block Chain Technology	3	Technological Hazards and Cyber Security System	3
7	3	Industry Project	12	Undergraduate Training	24
Total Credits			29		41

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