



SYMBIOSIS INTERNATIONAL (DEEMED UNIVERSITY)

(Established under section 3 of the UGC Act, 1956)

Re-accredited by NAAC with 'A++' Grade | Awarded Category - I by UGC

Founder: Prof. Dr. S. B. Mujumdar, M. Sc., Ph. D. (Awarded Padma Bhushan and Padma Shri by President of India)

SIU/ACAD/2024/1020

Date: 27/02/2024

To
The Director
Symbiosis Institute of Health Sciences
Pune

Subject: Approval of the Revised Programme Structure of Bachelor of Science (Medical Technology) Honours/ Honours with Research Programme for the batch 2023-27

Dear Madam,

Please find attached the Revised Programme Structure of Bachelor of Science (Medical Technology) Honours/ Honours with Research Programme Structure 2023-27 duly approved by the Academic Council

Sr. No.	Programme	Batch
1	Bachelor of Science (Medical Technology) Honours/ Honours with Research (Revision 01)	2023-27

The revised programme structure supersedes the previously approved programme structures referred in the above letter

Thanking you.

Sincerely,

Dr. Asmita Dani
Director- Academics

Copy to: Controller of Examinations, SIU



Symbiosis Institute of Health Sciences, Pune
Bachelor of Science (Medical Technology) Honours/ Honours with Research
Programme Structure 2023-27

1.	OBJECTIVE	To train students in the technological aspects of medical care with a good scientific foundation. These students will be in a position to competently assist the Physician or Surgeon, especially in high-tech medical procedures to cater to the health care industry globally.				
2.	DURATION (IN MONTHS)	48 (Full Time) With Multiple Entry and Multiple Exit Options				
3.	INTAKE	120				
4.	RESERVATION	I. Within the sanctioned intake	a) SC (In Percentage)	b) ST (In Percentage)	c) Differently abled (In Percentage)	d) Defence (In Percentage)
			15	7.5	3	0
		II. Over and above the sanctioned intake	a) Kashmiri Migrants (In Seats)		b) International Students (In Percentage)	
			2		20	
5.	ELIGIBILITY	<p>Passed Standard XII (10+2) or equivalent examination from any recognised Board with any two of the following subjects: Physics, Chemistry, Biology, Botany, Zoology, Biochemistry, Microbiology, Mathematics OR equivalent as decided by competent authority, with a minimum of 50% marks or equivalent grade (45% Marks or equivalent grade for Scheduled Caste / Scheduled Tribes).</p> <p>Students who wish to opt for Honours with Research must earn a 7.5 CGPA and above at the end of Semester-6.</p> <p>Eligibility Criteria for the Multiple entries would be as per University's Lateral Entry Rules for FYUG Programmes.</p>				
6.	SELECTION PROCEDURE	<p>Selection based on marks in Qualifying Examination followed by Entrance Examination, Personal Interaction and Written Ability Test.</p> <p>Selection Procedure for the Multiple Entry would be as per the University's Lateral Entry Rules for FYUG Programmes</p>				

7.	MEDIUM OF INSTRUCTION	English			
8.	PROGRAMME PATTERN	Semester			
9.	COURSE & SPECIALIZATION	<p>As per Annexure A</p> <p>Major Offered- Medical Technology</p> <p>List of Specializations-</p> <ol style="list-style-type: none"> 1.Cardiac Care 2.Respiratory Therapy 3.Imaging Sciences 4.Clinical Laboratory 5.Dialysis 6.Operation Theatre and Anaesthesia 7.Laparoscopy and Endoscopy 8.Ophthalmic Sciences 9.Neurosciences Technology <p>Minor Offered- Healthcare IT & Applied Management</p>			
10.	FEE		Academic Fee p. a.	Institute Deposit	Total
		Indian Students (Amount in INR)	1,66,000	20,000	1,86,000

		International Students	NRI/ PIO/ OCI Category (Amount in US\$)	3,250	275	3,625
			Foreign National Category (Amount in US\$)	1,300	275	1575
11.	ASSESSMENT	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.	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% 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.	AWARD OF DEGREE/ DIPLOMA/ CERTIFICATE	<p>Bachelor of Science (Medical Technology) with the applicable Minor 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>Bachelor of Science (Medical Technology) Honours with the applicable Minor 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>Bachelor of Science (Medical Technology) Honours with Research with the applicable Minor 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>				

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	10	5	0	2	3	3	0	0	23	1	As per the Student's Choice	
2	7	3	3	3	3	1	0	0	20	1		
3	11	3	3	1	0	2	0	0	20	1		
4	8	4	3	2	4	0	0	0	21	1		
5	14	4	0	0	0	0	4	0	22	1		
6	14	5	0	0	0	0	0	0	19	0		
Total	64	24	9	8	10	6	4	0	125	5		
Honours												
7	14	6	0	0	0	0	0	0	20	0		
8	6	2	0	0	0	0	0	12	20	0		
Total	84	32	9	8	10	6	4	12	165	0		
Honours with Research												
7	14	6	0	0	0	0	0	0	20	0		
8	6	2	0	0	0	0	0	12	20	0		
Total	84	32	9	8	10	6	4	12	165	0		

Note- In the case of missing Catalogue Course Codes in Annexure A, the Course Codes will be incorporated in the revised programme structure subject to the approval of the respective course outlines from the Academic Council.

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



Symbiosis Institute of Health Sciences, Pune
Bachelor of Science (Medical Technology) - Honours/ Honours with Research
Programme Structure 2023-27

Annexure A

Catalogue Course Code	Course Code	Course Title	Major / Minor	Credits	Continuous Assessment Marks (Theory)	Term End Examination Marks (Theory)	Continuous Assessment Marks (Practical)	Term End Examination Marks (Practical)	Total Marks
Semester - 1									
Discipline-Specific Courses/Major Courses									
TH4492	0401240101	Anatomy I		3	20	30	0	25	75
TH4491	0401240102	Physiology I		3	20	30	0	25	75
T4946	0401240103	Basic Sciences		2	20	0	0	30	50
TH4497	0401240104	Psychology and Sociology		2	20	30	0	0	50
Minor Courses									
T3755	0401240105	Basics of MS Office		3	75	0	0	0	75
TH4496	0401240106	Medical Physics		2	20	30	0	0	50
Ability Enhancement Course									
T6483	0401240107	Creative Writing		2	20	30	0	0	50
Skill Enhancement Courses									
TH4503	0401240108	Personality Development for Allied Health Professionals		3	30	45	0	0	75
Common Value-Added Course									
T6359	0401240109	Introduction to Culture & India		3	30	45	0	0	75
Mandatory Non-Credit Course									

Catalogue Course Code	Course Code	Course Title	Major / Minor	Credits	Continuous Assessment Marks (Theory)	Term End Examination Marks (Theory)	Continuous Assessment Marks (Practical)	Term End Examination Marks (Practical)	Total Marks
T4005	0401240110	Integrated Disaster Management		0	0	0	0	0	0
Grand Total				23	210	240	0	125	575
Semester – 2									
Major Courses									
TH4504	0401240201	Anatomy II		2	20	0	0	30	50
TH4505	0401240202	Physiology II		2	20	0	0	30	50
TH4506	0401240203	Basics of Epidemiology		3	30	45	0	0	75
Minor Course									
TH4507	0401240204	Hospital Information System		2	50	0	0	0	50
T4440	0401240205	Applied Mathematics		1	25	0	0	0	25
Ability Enhancement Course									
TH4493	0401240206	Communication Skills for Allied Health Professionals I		3	75	0	0	0	75
Skill Enhancement Courses									
TH4494	0401240207	Soft Skills for Allied Health Professionals		3	30	45	0	0	75
Common Value-Added Courses									
T4439	0401240208	Nutrition and Dietetics		1	25	0	0	0	25
Mandatory Non-Credit Courses									
TH4095	0401240209	Fitness for Life		0	0	0	0	0	0

Catalogue Course Code	Course Code	Course Title	Major / Minor	Credits	Continuous Assessment Marks (Theory)	Term End Examination Marks (Theory)	Continuous Assessment Marks (Practical)	Term End Examination Marks (Practical)	Total Marks
Multidisciplinary Courses (Choose Any One Course from the University Basket of Multidisciplinary Courses given in Annexure B)									
-	-	MD1		3	75	0	0	0	75
Grand Total				20	275	135	0	90	500
Semester – 3									
Discipline-Specific Courses/Major Courses									
T4948	0401240301	Basic Biochemistry		4	40	40	0	20	100
T4107	0401240302	Basic Pharmacology		2	20	30	0	0	50
Major Courses (Choose Any One Specialization)									
Specialization 1 (Cardiac Care)									
T4952	0401240303	Applied Clinical Sciences (Cardiac Care)		2	20	30	0	0	50
	0401240304	Electrocardiography I		3	20	30	0	25	75
Specialization 2 (Respiratory Therapy)									
T4956	0401240305	Applied Clinical Sciences (Respiratory Therapy)		2	20	30	0	0	50
	0401240306	Respiratory Therapy Technology		3	20	30	0	25	75
Specialization 3 (Imaging Sciences)									
T4959	0401240307	Applied Clinical Sciences & Image Interpretation		2	20	30	0	0	50
	0401240308	Conventional Radiographic Techniques,		3	20	30	0	25	75

Catalogue Course Code	Course Code	Course Title	Major / Minor	Credits	Continuous Assessment Marks (Theory)	Term End Examination Marks (Theory)	Continuous Assessment Marks (Practical)	Term End Examination Marks (Practical)	Total Marks
		Procedures & Radiation Protection							
Specialization 4 (Clinical Laboratory)									
T4964	0401240309	Applied Clinical Sciences (Clinical Laboratory)		2	20	30	0	0	50
T4937	0401240310	General & Clinical Biochemistry		3	20	30	0	25	75
Specialization 5 (Dialysis Technology)									
T4966	0401240311	Applied Clinical Sciences (Dialysis)		2	20	30	0	0	50
	0401240312	Principles of Haemodialysis		3	20	30	0	25	75
Specialization 6 (Operation Theatre and Anaesthesia)									
T4969	0401240313	Applied Clinical Sciences (Operation Theatre & Anaesthesia)		2	20	30	0	0	50
	0401240314	Fundamentals Concepts and Procedures Related to Operation Theatre		3	20	30	0	25	75
Specialization 7 (Laparoscopy and Endoscopy)									
T4875	0401240315	Applied Clinical Sciences (Laparoscopy & Endoscopy)		2	20	30	0	0	50
T4887	0401240316	Endoscopy Setup & Patient Preparation		3	20	30	0	25	75
Specialization 8									

Catalogue Course Code	Course Code	Course Title	Major / Minor	Credits	Continuous Assessment Marks (Theory)	Term End Examination Marks (Theory)	Continuous Assessment Marks (Practical)	Term End Examination Marks (Practical)	Total Marks
(Ophthalmic Sciences)									
T4879	0401240317	Applied Clinical Sciences (Ophthalmic Sciences)		2	20	30	0	0	50
T4931	0401240318	Ophthalmic Diagnostic & Minor Surgical Procedure		3	20	30	0	25	75
Specialization 9 (Neurosciences Technology)									
T4883	0401240319	Applied Clinical Sciences (Neurosciences)		2	20	30	0	0	50
TH4515	0401240320	Electroencephalography I		3	20	30	0	25	75
Total Required Credits				5	40	60	0	25	125
Minor Courses									
F0002	0401240321	Flexi Credit Course		2	50	0	0	0	50
T4427	0401240322	Medical Ethics and Legal Aspects		1	25	0	0	0	25
Ability Enhancement Courses (Choose any one course)									
T4435	0401240323	Communication Skills for Allied Health Professionals- Advanced		1	25	0	0	0	25
Common Value-Added Course									
T6518	0401240324	Contemporary India and The World		2	50	0	0	0	50
Mandatory Non-Credit Course									
TH4535	0401240325	Emotional Well-being		0	0	0	0	0	0
Multidisciplinary Courses (Choose Any One Course from the University Basket of Multidisciplinary Courses given in Annexure B)									

Catalogue Course Code	Course Code	Course Title	Major / Minor	Credits	Continuous Assessment Marks (Theory)	Term End Examination Marks (Theory)	Continuous Assessment Marks (Practical)	Term End Examination Marks (Practical)	Total Marks
-	-	MD2		3	75	0	0	0	75
Grand Total				20	325	130	0	45	500

Semester - 4

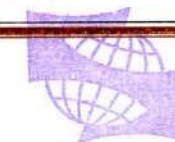
Discipline-Specific Courses/Major Courses

T4950	0401240401	Pathology		4	40	40	0	20	100
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Major Courses

(Choose Any One from the Following Courses)

TH4518	0401240402	Echocardiography Techniques	Cardiac Care	4	40	40	0	20	100
	0401240403	Mechanical Ventilation I	Respiratory Therapy	4	40	40	0	20	100
	0401240404	Physics & Fundamentals of Medical Image Processing (X-Ray & USG)	Imaging Sciences	4	40	40	0	20	100
T4965	0401240405	Haematology	Clinical Laboratory	4	40	40	0	20	100
TH4509	0401240406	Theory and Principles of Dialysis	Dialysis Technology	4	40	40	0	20	100
TH4510	0401240407	Procedures Prior to and During Anaesthesia	Operation Theatre and	4	40	40	0	20	100



Catalogue Course Code	Course Code	Course Title	Major / Minor	Credits	Continuous Assessment Marks (Theory)	Term End Examination Marks (Theory)	Continuous Assessment Marks (Practical)	Term End Examination Marks (Practical)	Total Marks
			Anaesthesia						
	0401240408	Fundamental Concepts and Principles of Endoscopy Techniques	Laparoscopy and Endoscopy	4	40	40	0	20	100
T4881	0401240409	Physical and Physiological Optics	Ophthalmic Sciences	4	40	40	0	20	100
TH4519	0401240410	Electroencephalography II	Neurosciences Technology	4	40	40	0	20	100
Total Required Credits				4	40	40	0	20	100
Minor Courses									
T8000	0401240411	Service Learning		4	100	0	0	0	100
Ability Enhancement Course (Choose Any One from the Following Courses)									
T6399	0401260412	Basic Marathi I		2	20	0	0	30	50
T6521	0401260413	Basic German I		2	20	0	0	30	50
T6523	0401260414	Basic French I		2	20	0	0	30	50
Total Required Credits				2	20	0	0	30	50
Skill Enhancement Course									
TH4514	0401240415	Hospital Practices and Patient Care		4	40	40	0	20	100
Mandatory Non-Credit Course									

Catalogue Course Code	Course Code	Course Title	Major / Minor	Credits	Continuous Assessment Marks (Theory)	Term End Examination Marks (Theory)	Continuous Assessment Marks (Practical)	Term End Examination Marks (Practical)	Total Marks
	0401240416	Vasudhaiva Kutumbakam		0	0	0	0	0	0
Multidisciplinary Course									
(Choose Any One Course from the University Basket of Multidisciplinary Courses given in Annexure B)									
-	-	MD3		3	75	0	0	0	75
Grand Total				21	315	120	0	90	525
Semester - 5									
Discipline-Specific Courses/Major Courses									
T4949	0401240501	Basic Microbiology & Parasitology		4	40	40	0	20	100
Major Courses									
(Choose Any One Specialization Group)									
Specialization 1									
(Cardiac Care)									
	0401240502	Cardiac Cath & Electrophysiology Procedure		4	40	40	0	20	100
T4954	0401240503	Cardiovascular Diseases		4	40	40	0	20	100
T4953	0401240504	Cardiac Pharmacology		2	20	30	0	0	50
Specialization 2									
(Respiratory Therapy)									
T4987	0401240505	Mechanical Ventilation II		4	40	40	0	20	100
T4819	0401240506	Cardiopulmonary Diseases		4	40	40	0	20	100
T4512	0401240507	Cardiopulmonary Pharmacology		2	20	30	0	0	50

Catalogue Course Code	Course Code	Course Title	Major / Minor	Credits	Continuous Assessment Marks (Theory)	Term End Examination Marks (Theory)	Continuous Assessment Marks (Practical)	Term End Examination Marks (Practical)	Total Marks
Specialization 3 (Imaging Sciences)									
TH4003	0401240508	Interventional Radiology		4	40	40	0	20	100
T4977	0401240509	Operations of Computed Tomography		4	40	40	0	20	100
	0401240510	Physics of Computed Tomography		2	20	30	0	0	50
Specialization 4 (Clinical Laboratory)									
T4471	0401240511	General and Clinical Pathology		4	40	40	0	20	100
T4991	0401240512	Blood Banking- Basic		4	40	40	0	20	100
T4981	0401240513	Bacteriology		2	20	30	0	0	50
Specialization 5 (Dialysis Technology)									
	0401240514	Water Treatment in Dialysis		4	40	40	0	20	100
	0401240515	Renal Diseases & Disease Management		4	40	40	0	20	100
TH4590	0401240516	Renal Pharmacology		2	20	30	0	0	50
Specialization 6 (Operation Theatre and Anaesthesia)									
T4971	0401240517	Pre-Operative Preparation & Anaesthetic Management of Surgical Procedures		4	40	40	0	20	100
	0401240518	Assistance in Perioperative Complications		4	40	40	0	20	100

Catalogue Course Code	Course Code	Course Title	Major / Minor	Credits	Continuous Assessment Marks (Theory)	Term End Examination Marks (Theory)	Continuous Assessment Marks (Practical)	Term End Examination Marks (Practical)	Total Marks
T4488	0401240519	Instrument Trays for Surgical Procedure		2	20	30	0	0	50
Specialization 7 (Laparoscopy and Endoscopy)									
	0401240520	OT setup for Laparoscopy & Patient preparation		4	40	40	0	20	100
T4894	0401240521	Basic Principles of Laparoscopy Technique		4	40	40	0	20	100
T4878	0401240522	Care of Specific Endoscope Procedures		2	20	30	0	0	50
Specialization 8 (Ophthalmic Sciences)									
	0401240523	Ocular Pharmacy and Pharmacology		4	40	40	0	20	100
TH4516	0401240524	Ophthalmic Procedures		4	40	40	0	20	100
T4882	0401240525	Ocular Microbiology		2	20	30	0	0	50
Specialization 9 (Neurosciences Technology)									
T4900	0401240526	Neurobiology		4	40	40	0	20	100
	0401240527	Neurological Diseases & Pharmacology		4	40	40	0	20	100
	0401240528	Vestibular Myography		2	20	30	0	0	50
Total Required Credits				10	100	110	0	40	350
Minor Course (Choose Any One from the Following Courses)									
T4973	0401240529	Introduction to Medical Devices & Instruments (Cardiac Care)	Cardiac Care	4	40	40	0	20	100

Catalogue Course Code	Course Code	Course Title	Major / Minor	Credits	Continuous Assessment Marks (Theory)	Term End Examination Marks (Theory)	Continuous Assessment Marks (Practical)	Term End Examination Marks (Practical)	Total Marks
T4975	0401240530	Introduction to Medical Devices & Instruments (Respiratory Therapy)	Respiratory Therapy	4	40	40	0	20	100
	0401240531	Introduction to Instrumentation in Medical Imaging	Imaging Sciences	4	40	40	0	20	100
	0401240532	Introduction to Equipment & Instruments (Clinical Laboratory)	Clinical Laboratory	4	40	40	0	20	100
T4980	0401240533	Introduction to Medical Devices and Instruments (Dialysis)	Dialysis Technology	4	40	40	0	20	100
T4984	0401240534	Introduction to medical Devices and Instruments (Operation Theatre & Anaesthesia)	Operation Theatre and Anaesthesia	4	40	40	0	20	100
T4877	0401240535	Introduction to Endoscopy Instruments	Laparoscopy and Endoscopy	4	40	40	0	20	100
T4890	0401240536	Introduction to Medical Devices & Instruments (Ophthalmic Sciences)	Ophthalmic Sciences	4	40	40	0	20	100
T4893	0401240537	Introduction to Medical Devices & Instruments (Neurosciences)	Neurosciences Technol	4	40	40	0	20	100

Catalogue Course Code	Course Code	Course Title	Major / Minor	Credits	Continuous Assessment Marks (Theory)	Term End Examination Marks (Theory)	Continuous Assessment Marks (Practical)	Term End Examination Marks (Practical)	Total Marks
			ogy						
Total Required Credits				4	40	40	0	20	100
Summer Internship									
T4904	0401240538	Internship		4	100	0	0	0	100
Mandatory Non-Credit Course									
T2883	0401240539	Core Environmental Studies		0	0	0			0
Grand Total				22	280	190	0	80	550
Semester – 6									
Discipline-Specific Courses/Major Courses									
T4725	0401240601	Research Methodology		2	20	30	0	0	50
T4451	0401240602	Basic Life Support		2	20	0	0	30	50
Major Courses (Choose Any One Group)									
Group 1 (Cardiac Care)									
	0401240603	Embryology of Heart & Congenital Abnormalities		4	40	40	0	20	100
T4798	0401240604	Clinical Cardiology		4	40	40	0	20	100
TH4498	0401240605	Electrocardiography II		2	20	0	0	30	50
Group 2 (Respiratory Therapy)									

Catalogue Course Code	Course Code	Course Title	Major / Minor	Credits	Continuous Assessment Marks (Theory)	Term End Examination Marks (Theory)	Continuous Assessment Marks (Practical)	Term End Examination Marks (Practical)	Total Marks
	0401240606	Emergency Procedures and Therapies in Respiratory Therapy		4	40	40	0	20	100
T4177	0401240607	Infection Control in Respiratory Care		4	40	40	0	20	100
	0401240608	Pulmonary Rehabilitation and Home Care		2	20	0	0	30	50
Group 3 (Imaging Sciences)									
T4989	0401240609	Operations of Magnetic Resonance Imaging		4	40	40	0	20	100
	0401240610	Physics of Magnetic Resonance Imaging		4	40	40	0	20	100
TH4002	0401240611	Cross Sectional Anatomy		2	20	0	0	30	50
Group 4 (Clinical Laboratory)									
	0401240612	Diagnostic Parasitology and Microbiology		4	40	40	0	20	100
TH4092	0401240613	Histopathology & Cytology		4	40	40	0	20	100
TH4006	0401240614	Basics of Diagnostic Immunology		2	20	0	0	30	50
Group 5 (Dialysis Technology)									
T4992	0401240615	Principles of Peritoneal Dialysis & Other Procedures		4	40	40	0	20	100
	0401240616	Safety Practices, Patient Care & Quality Assurance in Dialysis		4	40	40	0	20	100

Catalogue Course Code	Course Code	Course Title	Major / Minor	Credits	Continuous Assessment Marks (Theory)	Term End Examination Marks (Theory)	Continuous Assessment Marks (Practical)	Term End Examination Marks (Practical)	Total Marks
TH4009	0401240617	Common Investigations in Dialysis		2	20	0	0	30	50
Group 6 (Operation Theatre and Anaesthesia)									
T4994	0401240618	Advanced Sterilization Techniques & Infection Control in Operation Theatre		4	40	40	0	20	100
TH4011	0401240619	Assistance in Speciality Surgical Procedures		4	40	40	0	20	100
	0401240620	Post-Operative Care		2	20	0	0	30	50
Group 7 (Laparoscopy and Endoscopy)									
T4888	0401240621	Introduction to Laparoscopy Instruments		4	40	40	0	20	100
T4928	0401240622	Laparoscopy Procedures & Prerequisites		4	40	40	0	20	100
T4895	0401240623	Infection control & Sterilization in Laparoscopy Set up		2	20	0	0	30	50
Group 8 (Ophthalmic Sciences)									
T4897	0401240624	Investigative Ophthalmology & Refraction		4	40	40	0	20	100
T4930	0401240625	Ophthalmic Visual Diagnostic Equipment, Vision Aids & Dispense		4	40	40	0	20	100
T4880	0401240626	Ocular Biochemistry		2	20	0	0	30	50

Catalogue Course Code	Course Code	Course Title	Major / Minor	Credits	Continuous Assessment Marks (Theory)	Term End Examination Marks (Theory)	Continuous Assessment Marks (Practical)	Term End Examination Marks (Practical)	Total Marks
Group 9 (Neurosciences Technology)									
	0401240627	Balance Training		4	40	40	0	20	100
	0401240628	Repositioning & Testing		4	40	40	0	20	100
T4926	0401240629	Nerve Conduction Study		2	20	0	0	30	50
Total Required Credits				10	100	80	0	70	250
Minor Courses									
T2560	0401240630	Principles and Practices of Management		2	20	30	0	0	50
	0401240631	Quality in Healthcare		3	30	45	0	0	75
Grand Total				19	190	185	0	100	475
Note: Students exiting at the end of the sixth semester and earning 125 credits will be awarded a "Bachelor of Science (Medical Technology)" degree. Total Credits at the end of the Third year (Major 64, Minor 24, Multidisciplinary 9, Ability Enhancement Courses 8, Skill Enhancement Courses 10, Summer Internship 4, Common Value-Added Courses 6).									
Semester – 7 (Honours/ Honours with Research)									
Major Course									
	0401240701	Entrepreneurship in Healthcare		2	20	0	0	30	50
T4874	0401240702	Review of Literature -II		2	50	0	0	0	50
	0401240703	Biostatistics		2	20	30	0	0	50
	0401240704	Research Proposal Writing		2	20	0	0	30	50
Major Courses (Choose Any One Group)									

Catalogue Course Code	Course Code	Course Title	Major / Minor	Credits	Continuous Assessment Marks (Theory)	Term End Examination Marks (Theory)	Continuous Assessment Marks (Practical)	Term End Examination Marks (Practical)	Total Marks
Group 1 (Cardiac Care)									
T4996	0401240705	Advanced Cardiac Life Support (ACLS)		4	40	40	0	20	100
T4998	0401240706	Nuclear Medicine Technology		2	20	30	0	0	50
Group 2 (Respiratory Therapy)									
T4996	0401240705	Advanced Cardiac Life Support (ACLS)		4	40	40	0	20	100
TH4001	0401240707	Neonatal and Pediatric Respiratory Care – Basic		2	20	30	0	0	50
Group 3 (Imaging Sciences)									
T4470	0401240708	Latest Developments in Imaging		4	40	40	0	20	100
T4998	0401240706	Nuclear Medicine Technology		2	20	30	0	0	50
Group 4 (Clinical Laboratory)									
T4478	0401240709	Enzymology and Advanced Techniques		4	40	40	0	20	100
TH4007	0401240710	Virology and Mycology - Basic		2	20	30	0	0	50
Group 5 (Dialysis Technology)									
T4996	0401240705	Advanced Cardiac Life Support (ACLS)		4	40	40	0	20	100
	0401240711	Plasmapheresis & CRRT		2	20	30	0	0	50

Catalogue Course Code	Course Code	Course Title	Major / Minor	Credits	Continuous Assessment Marks (Theory)	Term End Examination Marks (Theory)	Continuous Assessment Marks (Practical)	Term End Examination Marks (Practical)	Total Marks
Group 6 (Operation Theatre and Anaesthesia)									
T4996	0401240705	Advanced Cardiac Life Support (ACLS)		4	40	40	0	20	100
	0401240712	Safety Measures in Operation Theatre		2	20	30	0	0	50
Group 7 (Laparoscopy and Endoscopy)									
T4996	0401240705	Advanced Cardiac Life Support (ACLS)		4	40	40	0	20	100
	0401240713	Post-operative care		2	20	30	0	0	50
Group 8 (Ophthalmic Sciences)									
T4996	0401240705	Advanced Cardiac Life Support (ACLS)		4	40	40	0	20	100
	0401240714	Advanced Ophthalmic Procedure		2	20	30	0	0	50
Group 9 (Neurosciences Technology)									
T4996	0401240705	Advanced Cardiac Life Support (ACLS)		4	40	40	0	20	100
	0401240715	Nanotechnology in Neurosciences		2	20	30	0	0	50
Total Required Credits				6	60	70	0	20	150
Minor Courses									
TH4163	0401240716	Telemedicine Technology		2	50	0	0	0	50
	0401240717	Artificial Intelligence in Healthcare		2	50	0	0	0	50
Minor Courses									

Catalogue Course Code	Course Code	Course Title	Major / Minor	Credits	Continuous Assessment Marks (Theory)	Term End Examination Marks (Theory)	Continuous Assessment Marks (Practical)	Term End Examination Marks (Practical)	Total Marks
(Choose Any One from the Following Courses)									
T4084	0401240718	Applied Management in Cardiac Care Unit		2	20	30	0	0	50
T4089	0401240719	Applied Management in Respiratory Therapy Unit		2	20	30	0	0	50
T4094	0401240720	Applied Management in Radiology Unit		2	20	30	0	0	50
T4543	0401240721	Applied Management in Clinical Laboratory Unit		2	20	30	0	0	50
T4551	0401240722	Applied Management in Renal Care Unit		2	20	30	0	0	50
T4561	0401240723	Applied Management in OT and Anaesthesia Unit		2	20	30	0	0	50
T4896	0401240724	Applied Management in Laparoscopy & Endoscopy Unit		2	20	30	0	0	50
T4899	0401240725	Applied Management in Ophthalmic Unit		2	20	30	0	0	50
T4927	0401240726	Applied Management in Neurosciences Unit		2	20	30	0	0	50
Total Required Credits				2	20	30	0	0	50
Grand Total				20	290	130	0	80	500

Semester – 8

(Honours)

Major Courses

	0401240801	Research Grant Writing		2	50	0	0	0	50
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Catalogue Course Code	Course Code	Course Title	Major / Minor	Credits	Continuous Assessment Marks (Theory)	Term End Examination Marks (Theory)	Continuous Assessment Marks (Practical)	Term End Examination Marks (Practical)	Total Marks
F0002	0401240802	Flexi Credit Course		2	50	0	0	0	50
	0401240803	Emerging Trends in Allied Health Care		2	50	0	0	0	50
Minor Courses									
	0401240804	Patent and Intellectual Property Rights		2	20	30	0	0	50
Research Project									
T4812	0401240805	Research Project		12	120	0	0	180	300
(Honours with Research)									
Major Courses									
	0401240801	Research Grant Writing		2	50	0	0	0	50
F0002	0401240802	Flexi Credit Course		2	50	0	0	0	50
	0401240803	Emerging Trends in Allied Health Care		2	50	0	0	0	50
Minor Courses									
	0401240804	Patent and Intellectual Property Rights		2	20	30	0	0	50
Research Project									
T4712	0401240806	Dissertation		12	120	0	0	180	300
Grand Total				20	290	30	0	180	500

Note:

Total Credits at the end of Fourth year for "Bachelor of Science (Medical Technology) – Honours" - 165 (Major 84, Minor 32, Multidisciplinary 9, Ability Enhancement Courses 8, Skill Enhancement Courses 10, Summer Internship 4, Research Project 12, Common Value-Added Courses 6).

Total Credits at the end of Fourth year for "Bachelor of Science (Medical Technology) - Honours with Research" - 165 (Major 84, Minor 32, Multidisciplinary 9, Ability Enhancement Courses 8, Skill Enhancement Courses 10, Summer Internship 4, Dissertation 12, Common Value-Added Courses 6).



Symbiosis Institute of Health Sciences, Pune
Bachelor of Science (Medical Technology) - Honours/ Honours with Research
Programme Structure 2023-27

SUMMARY

Semester	100% Continuous Assessment Credits	Term End (University) Examination Credits	Total Credits	Total Marks
1	3	20	23	575
2	10	10	20	500
3	9	11	20	500
4	7	14	21	525
5	4	18	22	550
6	0	19	19	475
Total	33	92	125	3125
Honours				
7	6	14	20	500
8	6	14	20	500
Total	45	120	165	4125
Honours with Research				
7	6	14	20	500
8	6	14	20	500
Total	45	120	165	4125



Symbiosis Institute of Health Sciences, Pune
Bachelor of Science (Medical Technology) - Honours/ Honours with Research
Programme Structure 2023-27

Annexure B
List of Multidisciplinary Courses

S. No.	Catalogue Course Code	Course Code			Course Title	Credit
		Semester 2	Semester 3	Semester 4		
1	THM6037	0401240210	0401240326	0401240417	Statistics of Nature	3
2	T1454	0401240211	0401240327	0401240418	Constitutional Law I	3
3	T2119	0401240212	0401240328	0401240419	Consumer Behaviour and Insights	3
4	TH4542	0401240213	0401240329	0401240420	Dancercise	3
5	T3499	0401240214	0401240330	0401240421	Data Analysis Using Python	3
6	TH4541	0401240215	0401240331	0401240422	Data Analytics in Sports	3
7	T5787	0401240216	0401240332	0401240423	Digital Design Tools – Visual Media	3
8	TH4539	0401240217	0401240333	0401240424	Fitness and Sports	3
9	T2467	0401240218	0401240334	0401240425	Fundamentals of Brand Management	3
10	T3754	0401240219	0401240335	0401240426	Fundamentals of Cloud Computing	3
11	TE7456	0401240220	0401240336	0401240427	Fundamentals of Cyber Security	3
12	TM2055	0401240221	0401240337	0401240428	Fundamentals of Marketing Research	3
13	THM6023	0401240222	0401240338	0401240429	Games of Uncertainty	3
14	T4729	0401240223	0401240339	0401240430	Intellectual Property Rights	3
15	T1471	0401240224	0401240340	0401240431	Law of Contracts	3
16	T3741	0401240225	0401240341	0401240432	Web Development using CMS	3
17	T5953	0401240226	0401240342	0401240433	Public Relations and Corporate Communication	3
18	T6767	0401240227	0401240343	0401240434	Public Policy in India	3
19	T2489	0401240228	0401240344	0401240435	Renewable Energy Sources	3
20	TE7223	0401240229	0401240345	0401240436	Smart Urban Planning	3
21	T2701	0401240230	0401240346	0401240437	Social Entrepreneurship	3

22	TH4569	0401240231	0401240347	0401240438	Brain Fit Body Fit	3
23	TM2154	0401240232	0401240348	0401240439	Personal Financial Planning and Wellbeing	3
24	T2016	0401240233	0401240349	0401240440	Financial Market and Institutions	3
25	T2273	0401240234	0401240350	0401240441	Emotional Intelligence for Personal Growth	3
26	T2276	0401240235	0401240351	0401240442	Cross Cultural Management	3
27	T2471	0401240236	0401240352	0401240443	Introduction to Digital Marketing	3
28	T3698	0401240237	0401240353	0401240444	Introduction to Python	3
29	T3757	0401240238	0401240354	0401240445	Applications of Spreadsheets in Business Statistics	3
30	T6002	0401240239	0401240355	0401240446	Communication Theories	3
31	T6008	0401240240	0401240356	0401240447	Communication for Creative Industry	3
32	T6023	0401240241	0401240357	0401240448	Film, Documentary & TV Appreciation	3
33	T6306	0401240242	0401240358	0401240449	Consumer Behavior	3
34	T6614	0401240243	0401240359	0401240450	Voice and Accent Neutralization	3
35	T6736	0401240244	0401240360	0401240451	Economic Journalism	3
36	T6756	0401240245	0401240361	0401240452	Economics	3
37	T6763	0401240246	0401240362	0401240453	Political Science I	3
38	T6768	0401240247	0401240363	0401240454	India's Political Economy and Development	3
39	T8461	0401240248	0401240364	0401240455	Introduction to User Experience	3
40	TH4363	0401240249	0401240365	0401240456	Cognitive Psychology	3
41	TH4536	0401240250	0401240366	0401240457	Yoga and Stress Management	3
42	TH4537	0401240251	0401240367	0401240458	Well for Life	3
43	TH4538	0401240252	0401240368	0401240459	Weight Training and Conditioning	3
44	TH4540	0401240253	0401240369	0401240460	Self Defence	3
45	THM6015	0401240254	0401240370	0401240461	Principles of Economics	3
46	THM6017	0401240255	0401240371	0401240462	Macroeconomics for Business	3



Director - Academics

Symbiosis International (Deemed University)
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27/02/2024 (01/05)



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