SCHOOL OF HEALTHCARE SCIENCE AND ENGINEERING (SHINE)
Curriculum and Programme Structure
Bachelor of Technology in Health Sciences and Technology

Programme Credit Structure	Credits
Foundation Core Courses	53
Basic Sciences and Mathematics	24
Engineering Sciences	14
Humanities, Social Sciences and Management (HSM)	15
Discipline-linked Engineering Science Courses	12
Discipline Core Courses	47
Discipline Elective Courses	15
Open Elective Courses	15
Project and Internship	09
Total Graded Credit Requirement	151
Non-Graded Credit Requirement	11

Basic Sciences and Mathematics   **24**

Code	Course	L	T	P	C
BLFS100N	Introduction to Life Sciences(NGC)	4	0	0	4
BMAT100N	Mathematics (NGC)	4	0	0	4
BPHY101L	Engineering Physics	3	0	0	3
BPHY101P	Engineering Physics Lab	0	0	2	1
BCHY101L	Engineering Chemistry	3	0	0	3
BCHY101P	Engineering Chemistry Lab	0	0	2	1
BMAT101L	Calculus	3	0	0	3
BMAT101P	Calculus Lab	0	0	2	1
BMAT102L	Differential Equations and Transforms	3	1	0	4
BMAT201L	Complex Variables and Linear Algebra	3	1	0	4
BMAT202L	Probability and Statistics	3	0	0	3
BMAT202P	Probability and Statistics Lab	0	0	2	1

Engineering Sciences   **14**

Code	Course	L	T	P	C
BEEE102L	Basic Electrical and Electronics Engineering	3	0	0	3
BEEE102P	Basic Electrical and Electronics Engineering Lab	0	0	2	1
BCSE101E	Computer Programming: Python	1	0	4	3
BCSE102L	Structured and Object-Oriented Programming	2	0	0	2
BCSE102P	Structured and Object-Oriented Programming Lab	0	0	4	2
BCSE103E	Computer Programming:Java	1	0	4	3

Humanities, Social Sciences and Management   **15**

Code	Course	L	T	P	C
BENG101N	Effective English Communication (NGC)	0	0	4	2
BENG101L	Technical English Communication	2	0	0	2
BENG101P	Technical English Communication Lab	0	0	2	1
BENG102P	Technical Report Writing	0	0	2	1
BSTS101P	Quantitative Skills Practice I	0	0	3	1.5
BSTS102P	Quantitative Skills Practice II	0	0	3	1.5
BSTS201P	Qualitative Skills Practice I	0	0	3	1.5
BSTS202P	Qualitative Skills Practice II	0	0	3	1.5
BFLE200L	Foreign Language	2	0	0	2
BHSM200L	HSM Elective	3	0	0	3

Discipline-linked Engineering Science Courses   **12**

Code	Course	L	T	P	C
BHST201L	Artificial Intelligence and Machine Learning in Healthcare	3	0	0	3
BHST202L	Signal Processing for Healthcare application	3	0	0	3
BHST203L	Fundamental principles of Biomechanics	3	0	0	3
BHST204L	Medical Electronics	3	0	0	3

Discipline Core Courses   **47**

Code	Course	L	T	P	C
BHST205L	Applied Human Anatomy and Physiology	3	0	0	3
BHST205P	Applied Human Anatomy and Physiology Lab	0	0	2	1
BHST206L	Fundamentals of Fluid Mechanics	3	0	0	3
BHST207L	Biochemistry and Molecular Pharmacology	3	0	0	3
BHST207P	Biochemistry and Molecular Pharmacology Lab	0	0	2	1
BHST208L	Engineering Design	2	0	0	2
BHST208P	Engineering Design Lab	0	0	4	2
BHST209L	Medical Imaging	3	0	0	3
BHST301L	Cell and Molecular Biology	3	0	0	3
BHST301P	Cell and Molecular Biology Lab	0	0	2	1
BHST302L	Materials in Healthcare	3	0	0	3
BHST303L	Image Processing and Data Analysis	3	0	0	3
BHST303P	Image Processing and Data Analysis Lab	0	0	2	1
BHST304L	Devices for Diagnostics and Therapeutics	3	0	0	3
BHST305L	Biomanufacturing	3	0	0	3
BHST306L	Biotechnology for Healthcare	3	0	0	3
BHST307L	Genetics and Evolution	3	0	0	3
BHST308L	Microbiology and Pathology	3	0	0	3
BHST308P	Microbiology and Pathology Lab	0	0	2	1
BHST309L	Fundamentals of Clinical Trials	2	0	0	2

Discipline Elective Courses   **15**

BHST401L	Medtech Entrepreneurship	3	0	0	3
BHST402L	Cell and Gene Therapy	3	0	0	3
BHST403L	Human Oncology	3	0	0	3
BHST404L	Regenerative Engineering	3	0	0	3
BHST405L	Drug Design and Discovery	3	0	0	3
BHST406L	Neurobiology	3	0	0	3
BHST407L	Evolutionary Medicine	3	0	0	3
BHST408L	Neutrigenomics	3	0	0	3
BHST409L	Microfluidics	3	0	0	3
BHST410L	Public Health and Epidemiology	3	0	0	3
BHST411L	Precision/Personalized Medicine	3	0	0	3
BHST412L	Healthcare Law and IPR	3	0	0	3
BHST413L	Advances in Healthcare Management	3	0	0	3
BHST414L	Advanced AI and ML in Healthcare	3	0	0	3
BHST415L	Medical Biophysics	3	0	0	3
BHST416L	Human Toxicology	3	0	0	3
BHST417L	Mechanobiology	3	0	0	3
BHST418L	Product Design and Analysis	3	0	0	3
BHST419L	Data Visualization and Analytics	3	0	0	3
BHST420L	Regulatory affairs	3	0	0	3
BHST391J	Technical Answers to Real Problems Project				3
BHST392J	Design Project				3
BHST393J	Laboratory Project				3
BHST394J	Product Development Project				3
BHST396J	Reading Course				3
BHST397J	Special Project				3
BHST398J	Simulation Project				3

Open Elective Courses   **15**

Engineering Disciplines | Projects | Sciences | Humanities | Social Sciences | Liberal Arts | Economics | Finance| Entrepreneurship | Management | Skills | Reading

Project and Internship   **9**

BHST299J	Clinical Science Internship	2
BHST399J	Industrial Internship	2
BHST499J	Project	5

Non-Graded Credit Requirement   **11**

BHST101N	Introduction to Engineering	1
BSSC101N	Essence of Traditional Knowledge	2
BSSC102N	Indian Constitution	2
BEXC100N	Extracurricular Activities	2
BCHY102N	Environmental Sciences	2
BHUM101N	Ethics and Values	2