

# Bachelor of Technology in Computer Science and Engineering (Data Science)

School of Computer Science and Engineering

Programme Credit Structure		Credits	Programme Core Courses		40
<b>University Core Courses</b>		60	BACSE103	Computation Structures	3 0 2 4
<b>Professional Core Courses</b>		60	BACSE104	Structured and Object-Oriented Programming	2 0 4 4
Programme Core Concentration		40	BACSE105	Data Structures and Algorithm Analysis	3 0 2 4
Open Elective Courses		20	BACSE106	Operating Systems	3 0 2 4
<b>Total Graded Credit Requirement</b>		160	BACSE201	Models of Computation	3 1 0 4
<b>University Core Courses</b>		60	BACSE202	Database Systems	3 0 2 4
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BAPHY100 Physics*		4	BACSE204	Software Engineering	3 0 2 4
BACHY100 Chemistry*		4	BACSE205	Fundamentals of Artificial Intelligence and Machine Learning	3 0 2 4
BAMAT101 Multivariable Calculus and Differential Equations	3 0 2 4		BAMAT205	Discrete Mathematics and Linear Algebra	3 1 0 4
BAMAT200 Mathematics II*		4			
BAEEE101 Basic Engineering	3 0 2 4				
BACSE101 Problem Solving Using Python	0 0 4 2				
BACSE102 Problem Solving Using Java	0 0 4 2				
BAENG101 Technical English Communication	3 0 2 4				
BASTS101 Qualitative and Quantitative Skills Practice I	3 0 0 1				
BASTS102 Qualitative and Quantitative Skills Practice II	3 0 0 1				
BAFLC100 Foreign Language	1 0 2 2				
BAHSM100 Humanities, Social Science and Management	3 0 0 3				
BAHUM101 India Studies	1 0 0 1				
BACHY101 Environmental Sciences	2 0 0 2				
BAHUM100 Ethics and Values*		2			
BAMGT101 Entrepreneurship	3 0 0 3				
BACSE191 Basic Multidisciplinary Project	0 0 4 2				
BACSE291 Innovative Design Project	0 0 4 2				
BACSE391 Research / Design Project	0 0 6 3				
BACSE491 Technical Answers for Real World Problems	1 0 4 3				
BACSE399 Internship I	0 0 2 1				
BACSE499 Internship II / Capstone Project	0 0 12 6				
BAENG100 Effective English Communication (NCC)	0 0 4 2				
BAEXC100 Extracurricular Activities (NCCM)	0 0 4 2				
<b>*-Basket Details</b>					
BAPHY105 Engineering Physics	3 0 2 4				
BACHY105 Applied Chemistry	3 0 2 4				
BAMAT207 Probability and Statistics	3 0 2 4				
BAHUM103 Ethics and Values	2 0 0 2				

### Concentration

Data Science	20
BACSE304 Exploratory Data Analysis	3 0 2 4
BACSE305 Foundations of Data Science	3 0 2 4
BACSE306 MLOps	3 0 2 4
BACSE307 Mining Massive Data	3 0 2 4
BACSE402 Data Security	3 1 0 4

### Open Elective Courses

Engineering | Sciences | Humanities | Social Sciences | Liberal Arts | Economics | Finance | Management

**Ancillary (20 credits)** - Students can opt for "Ancillary" in other disciplines by earning 20 credits from the courses listed in the Ancillary options under Open Elective. Ancillary details will be mentioned only on the transcript.

**Additional Concentration (20 credits)** - Students can opt for "Additional Concentrations" in their own discipline by earning 20 credits from the courses listed in the Concentration options under Open Elective. Concentration details will be mentioned only on the transcript.

**Minor (additional 20 credits)** - Students can opt for a "Minor Degree" in other disciplines 20 credits in addition to the minimum credit requirement of the Undergraduate Degree from the courses listed in the Minor options

**Second Major (additional 40 credits)** - Students can opt for a "Second Major" in other disciplines by earning 40 credits in addition to the minimum credit requirement of the Undergraduate Degree from the courses listed in the Second Major options.