

Semester I	L-T-P-C
Introduction to ICT	1-0-2-2
Language and Literature	3-0-0-3
Calculus	3-1-0-4
Introduction to Programming	3-0-0-3
Programming Lab	0-0-2-1
Basic Electronic Circuits	3-0-2-4
Co-curricular Activities-1	0-0-2-1
<b>Total</b>	<b>17</b>

Semester II	LT-P-C
Approaches to Indian Society	3-0-0-3
Discrete Mathematics	3-1-0-4
Digital Logic and Computer Organization	3-0-2-4
Data Structures	3-0-0-3
Data Structures Lab using OOP	1-0-2-2
Electromagnetic Theory	3-1-0-4
Exploratory Project 1	0-1-0-1
Co-curricular Activities-2	0-0-2-1
<b>Total</b>	<b>20</b>

Semester III	L-T-P-C
Science, Technology, Society	3-0-0-3
Linear Algebra	3-1-0-4
Design and Analysis of Algorithms	3-1-0-4
Computer Systems Programming	3-0-2-4
Signal and Systems	3-0-2-4
Exploration Project 2	0-0-2-1
Co-curricular Activities-3	0-0-2-1
<b>TOTAL</b>	<b>19</b>

## Semester IV



Semester IV	L-T-P-C
Principles of Economics	3-0-0-3
Probability and Statistics	3-1-0-4
Database Management System	3-0-2-4
Embedded Hardware Design	3-0-2-4
Introduction to Communication Systems	3-0-2-4
Introduction to Computational Physics	3-0-3-4.5
Co-curricular Activities-4	0-0-2-1
<b>TOTAL</b>	<b>23.5</b>

## Semester V



Semester V	L-T-P-C
Software Engineering	3-0-2-4
Digital Communications	3-0-2-4
Computer Networks	3-0-2-4
ICTE-1	3-0-2-4
TE-1	3-0-0-3
Numerical and Computational Methods	3-0-3-4.5
<b>TOTAL</b>	<b>23.5</b>

## Semester VI



Semester VI	L-T-P-C
Environmental Science	3-0-0-3
SE-1	3-0-0-3
ICTE-2	3-0-2-4
TE-2	3-0-0-3
TE-3	3-0-0-3
Modeling and Simulation	3-0-3-4.5
High Performance Computing	3-0-3-4.5
<b>TOTAL</b>	<b>20.5</b>

## Semester VII



Semester VII	L-T-P-C
BTP-1	0-1-6-4
ICTE-3	3-0-2-4
TE-4	3-0-0-3
HASSE-1	3-0-0-3
SE-2	3-0-0-3
<b>TOTAL</b>	<b>17</b>

Semester VIII	L-T-P-C
BTP-2	0-2-12-8
OE-1	3-0-0-3
OE-2	3-0-0-3
<b>TOTAL</b>	<b>14</b>

**ICTE:** ICT Elective; **TE:** Technical Elective; **HASSE:** Humanities and Social Science Elective; **OE:** Open Elective; **BTP:** BTech Project

## Representative list of electives

- > Graph Theory and Algorithms
- > Approximation Algorithms
- > Computational Complexity
- > Randomized Algorithms
- > Quantum Computing
- > Introduction to Cryptography
- > Blockchain and Cryptocurrencies
- > Adversarial Machine Learning
- > Machine Learning and Security
- > Introduction to coding theory and Applications
- > Compiler Design
- > Digital Image Processing
- > Internet of Things
- > Digital Signal Processing
- > Statistical Communication
- > Wireless System Design
- > RF and Antenna Engineering
- > Microwave Propagation
- > Control Theory
- > Human Computer Interaction
- > Data Mining and Visualization
- > Human Computer Interaction
- > Natural Language Processing
- > Natural Computing
- > Software Engineering
- > Optimization
- > Computational Financial
- > Modern Algebra
- > Software Project Management
- > Specification and Verification of Systems
- > Models of Computation
- > System and Network Security
- > No SQL Database
- > Web Data Management
- > Speech Technology
- > Deep Learning
- > Recommendation Systems
- > Intro. to AI
- > Intro to Data Science
- > Introduction to Robotics
- > Introduction to Complex Network
- > Stochastic Simulation
- > Computational Number Theory
- > Einstein's Physics
- > Operating Systems
- > Nanoelectronics
- > Introduction to VLSI Circuits
- > Analog IC Design
- > Logic for Computer Science
- > Modern European Philosophy
- > Art: Ideas and Perspectives
- > Human Behaviour Management
- > Culture, Politics, Identity
- > Organisational Behaviour
- > Publics in South Asia: Contemporary Perspectives
- > Systems, Policies and Implications