

B.Tech. in Mathematics & Computing

Semester-wise Course Structure (2025-29 Batch)

(w.e.f. AY 2025-26)

Semester I (1 Year: Odd Sem)

| Course/Subject | L | T | P | Credit |
|-----------------------------------------------|---|---|---|-----------|
| Classical Physics (IS) (PY111) | 3 | 1 | 0 | 11 |
| Inorganic and Physical Chemistry (IS) (CY111) | 3 | 1 | 0 | 11 |
| Real Analysis and Calculus (IS) (MA 111) | 3 | 1 | 0 | 11 |
| Computer Programming (IE) (CS101) | 3 | 1 | 2 | 13 |
| Chemistry Lab (IS) (CY111L) | 0 | 0 | 1 | 1 |
| Physics Lab (IS) (PY111L) | 0 | 0 | 1 | 1 |
| Engineering Visualization (EP) (ME121) | 0 | 1 | 3 | 5 |
| Total Credits | | | | 53 |
| Basic English (HU)* (LM101) | 1 | 2 | 0 | 7 |

Semester II (1 Year: Even Sem)

| Course/Subject | L | T | P | Credit |
|-----------------------------------------------------------------|---|---|---|-----------|
| Modern Physics (IS) (PY121) | 2 | 1 | 0 | 8 |
| Differential Equations (IS) (MA121) | 3 | 1 | 0 | 11 |
| Engineering Thermodynamics (IE) (CH161) | 3 | 1 | 0 | 11 |
| Fundamentals of Electronics Engineering (IE) (EC102) | 3 | 1 | 2 | 13 |
| Engineering Practices in Mathematics and Computing (EP) (MA122) | 1 | 0 | 2 | 5 |
| Physics Lab (IS) (PY121L) | 0 | 0 | 1 | 1 |
| Workshop Practices (EP) (ME131) | 0 | 0 | 3 | 3 |
| Total Credits | | | | 52 |
| Community Internship (HU) | 0 | 0 | 5 | 5 |

After Semester II

| Course/Subject | L | T | P | Credit |
|---------------------------------|---|---|----|--------|
| Summer Internship - I (2 weeks) | 0 | 0 | 14 | 2 |

Semester III (2 Year: Odd Sem)

| Course/Subject | L | T | P | Credit |
|----------------------------------------------------|---|---|---|-----------|
| Linear Algebra & Complex Analysis (IS) (MA 211) | 2 | 1 | 0 | 8 |
| Discrete Mathematics (DC) (MA213) | 3 | 0 | 0 | 9 |
| Data Structure and Algorithm (IE/CSE) (CS211) | 3 | 0 | 2 | 11 |
| Object Oriented Methodologies (DC/CSE) (CS224) | 3 | 0 | 2 | 11 |
| Elementary Number Theory and Algebra (DC) (MA 212) | 3 | 1 | 0 | 11 |
| Professional Communications (L) (PC101) | 2 | 1 | 0 | 8 |
| Total Credits | | | | 58 |

Semester IV (2 Year: Even Sem)

| Course/Subject | L | T | P | Credit |
|---------------------------------------------------------|---|---|---|-----------|
| Database Management Systems (DC/CSE) (CS212) | 3 | 0 | 2 | 11 |
| Computer Organization and Architecture (DC/CSE) (CS232) | 3 | 0 | 0 | 9 |
| Numerical Methods (IS) (MA 221) | 2 | 1 | 0 | 8 |
| Statistical Methods and Data Analysis (IS) (MA 231) | 2 | 1 | 0 | 8 |
| Design and Analysis of Algorithms (DC/CSE) (CS241) | 3 | 0 | 2 | 11 |
| Artificial Intelligence (DC/CSE) (CS360) | 3 | 0 | 2 | 11 |
| Financial Engineering-I (MA 241) (DE-1) | 3 | 0 | 0 | 9 |
| Total Credits | | | | 67 |

After Semester IV

| Course/Subject | L | T | P | Credit |
|----------------------------------|---|---|----|--------|
| Summer Internship - II (4 weeks) | 0 | 0 | 11 | 3 |

Semester V (3 Year: Odd Sem)

| Course/Subject | L | T | P | Credit |
|-----------------------------------------------|---|---|---|-----------|
| Operating Systems (DC/CSE) (CS311) | 3 | 0 | 2 | 11 |
| Introduction to Machine Learning (DC) (MA351) | 2 | 0 | 2 | 8 |
| Computational PDEs (DC) (MA 321) | 2 | 0 | 2 | 8 |
| Mathematical Finance (MA 341) (DE-2) | 3 | 0 | 0 | 9 |
| Data Analytics (DC/CSE) (CS457) | 3 | 0 | 0 | 9 |
| Theory of Computation (DC/CSE) (CS321) | 3 | 0 | 0 | 9 |
| Total Credits | | | | 54 |

Semester VI (3 Year: Even Sem)

| Course/Subject | L | T | P | Credit |
|-----------------------------------------|---|---|---|-----------|
| Computer Networks (DC/CSE) (CS351) | 3 | 0 | 2 | 11 |
| Data Mining (DC/CSE) (CS458) | 3 | 0 | 2 | 11 |
| Stochastic Processes (DC) (MA331) | 3 | 0 | 0 | 9 |
| Financial Engineering-II (MA342) (DE-3) | 3 | 0 | 0 | 9 |
| Operations Research (DC) (MA325) | 3 | 0 | 0 | 9 |
| Devops & Cloud (CS331) | 3 | 0 | 0 | 9 |
| Total Credits | | | | 58 |

After Semester VI

| Course/Subject | L | T | P | Credit |
|-----------------------------------|---|---|----|--------|
| Summer Internship - III (6 weeks) | 0 | 0 | 12 | 5 |

Semester VII (4 Year: Odd Sem)

| Course/Subject | L | T | P | Credit |
|-------------------------------------------------------------------------------------|---|---|---|-----------|
| Computational Intelligence (MA451) (DE-4) | 3 | 0 | 0 | 9 |
| OE-1 (OE) | 3 | 0 | 0 | 9 |
| OE-2 (OE) | 3 | 0 | 0 | 9 |
| Principles of Economics (MT5100) [LM-1] / Leadership and People Management [CDC] | 2 | 0 | 0 | 6 |
| Ethics and Corporate Governance (HU) [CDC] | 2 | 0 | 0 | 6 |
| Foundations of Management (MT5405) [LM-2] | 2 | 0 | 0 | 6 |
| Organizational Psychology (HU331) | 2 | 0 | 0 | 6 |
| Sociology of Industry and Work Culture (HU313) | 2 | 0 | 0 | 6 |
| Employability Skills and Industry Readiness [CDC] | 0 | 0 | 2 | 2 |
| Total Credits | | | | 59 |

Semester VIII (4 Year: Even Sem)

| Course/Subject | L | T | P | Credit |
|-------------------------|---|---|----|--------|
| BTP (Internal/External) | 0 | 0 | 40 | 40 |