

DEPARTMENT OF INFORMATION TECHNOLOGY

NATIONAL INSTITUTE OF TECHNOLOGY SRINAGAR



REGULAR SCHEME OF COURSES

FOR

B. TECH. INFORMATION TECHNOLOGY

2023 BATCH

DEPARTMENT OF INFORMATION TECHNOLOGY
NATIONAL INSTITUTE OF TECHNOLOGY SRINAGAR

Semester - I

| S.No. | Course | Code | L T P | Credits |
|-------|--|---------|-------|-----------|
| 1 | Basic English and Communication skills | HST 101 | 2 1 0 | 3 |
| 2 | Mathematics I | MAT 101 | 2 1 0 | 3 |
| 3 | Elements of Mechanical Engineering | MET 101 | 2 1 0 | 3 |
| 4 | Engineering Physics | PHT 101 | 2 1 0 | 3 |
| 5 | Environmental studies | CHT 102 | 2 1 0 | 3 |
| 6 | Engineering Mechanics | CVT 102 | 2 1 0 | 3 |
| 7 | English Language Lab | HSL 101 | 0 0 2 | 1 |
| 8 | Engineering and Applied Physics Lab | PHL 101 | 0 0 2 | 1 |
| 9 | Workshop Practice | WSL 101 | 0 0 4 | 2 |
| | Total credits | | | 22 |

Semester - II

| S.No. | Course | Code | L T P | Credits |
|-------|--|---------|-------|-----------|
| 1 | Advanced English & Comm. Skills | HST 102 | 2 1 0 | 3 |
| 2 | Mathematics II | MAT 102 | 2 1 0 | 3 |
| 3 | Basic Electrical Engineering | EET 101 | 2 1 0 | 3 |
| 4 | Computer Programming | ITT 101 | 2 1 0 | 3 |
| 5 | Engineering Chemistry | CHT 101 | 2 1 0 | 3 |
| 6 | Engineering Drawing | CVT 101 | 1 0 4 | 3 |
| 7 | Chemistry Lab | CHL 101 | 0 0 2 | 1 |
| 8 | Computer Programming Lab | ITL 101 | 0 0 2 | 1 |
| 9 | Fundamental Knowledge of Accreditation | NBA 101 | 2 0 0 | 0 |
| | Total credits | | | 20 |

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Semester - III

| S.No. | Course | Code | L T P | Credits |
|-------|-----------------------------------|---------|-------|-----------|
| 1 | Data Structures | ITT 201 | 2 1 0 | 3 |
| 2 | Control System | EET 254 | 3 0 0 | 3 |
| 3 | Logic and Graph Theory | ITT 202 | 2 1 0 | 3 |
| 4 | Object Oriented Programming | ITT 203 | 2 1 0 | 3 |
| 5 | Electronic Devices & Circuits | ECT 206 | 2 1 0 | 3 |
| 6 | Discrete Mathematics | MAT 208 | 3 0 0 | 3 |
| 7 | Data Structures Lab | ITL 201 | 0 0 2 | 1 |
| 8 | Object-Oriented Programming Lab | ITL 203 | 0 0 2 | 1 |
| 9 | Electronic Devices & Circuits Lab | ECL 207 | 0 0 2 | 1 |
| 10 | Web Programming | ITT 204 | 1 0 2 | 2 |
| | Total credits | | | 23 |

Semester - IV

| S.No. | Course | Code | L T P | Credits |
|-------|--|---------|-------|-----------|
| 1 | Operating Systems | ITT 251 | 2 1 0 | 3 |
| 2 | Software Engineering | ITT 252 | 3 0 0 | 3 |
| 3 | Digital Electronics & Logic Design | ECT 251 | 2 1 0 | 3 |
| 4 | Database Management System | ITT 253 | 2 1 0 | 3 |
| 5 | Introduction to Probability and Statistics | MAT 218 | 3 0 0 | 3 |
| 6 | Signal and Systems | ECT 257 | 2 1 0 | 3 |
| 7 | Digital Electronics & Logic Design Lab | ECL 255 | 0 0 2 | 1 |
| 8 | Operating System Lab | ITL 251 | 0 0 2 | 1 |
| 9 | Database Management System Lab | ITL 253 | 0 0 2 | 1 |
| | Total credits | | | 21 |

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Semester - V

| S.No. | Course | Code | L T P | Credits |
|-------|--------------------------------------|---------|---------------------------|-----------|
| 1 | Design & Analysis of Algorithms | ITT 301 | 2 1 0 | 3 |
| 2 | Artificial Intelligence | ITT 302 | 3 0 0 | 3 |
| 3 | Computer Organization & Architecture | ITT 303 | 2 1 0 | 3 |
| 4 | Theory of Computation | ITT 304 | 2 1 0 | 3 |
| 5 | Elective I | ITx0xx | Refer to Elective List | 3 |
| 6 | Institute Open Elective I | OPEN | 3 0 0 | 3 |
| 7 | Design & Analysis of Algorithms Lab | ITL 301 | 0 0 2 | 1 |
| 8 | Artificial Intelligence Lab | ITL 302 | 0 0 2 | 1 |
| | Total credits | | | 20 |

Semester - VI

| S.No. | Course | Code | L T P | Credits |
|-------|------------------------------------|---------|---------------------------|-----------|
| 1 | Computer Networks | ITT 351 | 2 1 0 | 3 |
| 2 | Machine Learning | ITT 352 | 2 1 0 | 3 |
| 3 | Big Data | ITT 353 | 2 1 0 | 3 |
| 4 | Elective II | ITx0xx | Refer to Elective List | 3 |
| 5 | Institute Open Elective II | OPEN | 3 0 0 | 3 |
| 6 | Computer Networks Lab | ITL 351 | 0 0 2 | 1 |
| 7 | Machine Learning Lab | ITL 352 | 0 0 2 | 1 |
| 8 | Seminar | ITS 354 | 0 0 2 | 1 |
| 9 | Industrial Training and Internship | ITI 355 | 0 0 2 | 1 |
| 10 | Elective III | ITL0xx | 0 0 2 | 1 |
| | Total credits | | | 20 |

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Semester - VII

| S.No. | Course | Code | L | T | P | Credits |
|----------------------|------------------------------|---------|---------------------------|---|---|-----------|
| 1 | Image Processing | ITT 401 | 2 | 1 | 0 | 3 |
| 2 | Entrepreneurship Development | HST 006 | 3 | 0 | 0 | 3 |
| 3 | Elective IV | ITx0xx | Refer to Elective List | | | 3 |
| 4 | Elective V | ITx0xx | Refer to Elective List | | | 3 |
| 5 | Elective VI | ITx0xx | Refer to Elective List | | | 3 |
| 6 | Image Processing Lab | ITL 401 | 0 | 0 | 2 | 1 |
| 7 | Elective VII | ITL0xx | 0 | 0 | 2 | 1 |
| 8 | Pre-project | ITP 402 | 0 | 0 | 4 | 2 |
| Total credits | | | | | | 19 |

Semester - VIII

| S. No. | Course | Code | L | T | P | Credits |
|----------------------|------------------------------------|---------|---------------------------|---|----|-----------|
| 1 | Project | ITP 451 | 0 | 0 | 12 | 6 |
| 2 | Elective VIII | ITx0xx | Refer to Elective List | | | 3 |
| 3 | Elective IX | ITx0xx | Refer to Elective List | | | 3 |
| 4 | Engineering Economics & Management | HST 004 | 3 | 0 | 0 | 3 |
| Total credits | | | | | | 15 |

List of Electives

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List of Electives

| S. No. | Subject | Code | L | T | P | Credits |
|--------|--|--------|---|---|---|---------|
| 1. | Management Information Systems | ITT001 | 3 | 0 | 0 | 3 |
| 2. | Software Project Management | ITT002 | 3 | 0 | 0 | 3 |
| 3. | Realtime Operating System | ITT003 | 3 | 0 | 0 | 3 |
| 4. | Embedded Systems | ITT004 | 3 | 0 | 0 | 3 |
| 5. | Simulation using Matlab and Python | ITL005 | 1 | 0 | 2 | 3 |
| 6. | Geographic Information System | ITT006 | 3 | 0 | 0 | 3 |
| 7. | E-Health | ITT007 | 3 | 0 | 0 | 3 |
| 8. | System Design | ITT008 | 3 | 0 | 0 | 3 |
| 9. | Network Management & Administration | ITT009 | 3 | 0 | 0 | 3 |
| 10. | Parallel Programming | ITT010 | 3 | 0 | 0 | 3 |
| 11. | Bioinformatics | ITT011 | 3 | 0 | 0 | 3 |
| 12. | Ad hoc and Wireless Sensor Networks | ITT012 | 3 | 0 | 0 | 3 |
| 13. | Blockchain | ITT013 | 3 | 0 | 0 | 3 |
| 14. | Foundations of Automatic Verification | ITT014 | 3 | 0 | 0 | 3 |
| 15. | Synthesis of Digital Systems | ITT015 | 3 | 0 | 0 | 3 |
| 16. | Cyber Security & Forensics | ITT016 | 3 | 0 | 0 | 3 |
| 17. | Natural Language Processing | ITT017 | 3 | 0 | 0 | 3 |
| 18. | Distributed Computing | ITT018 | 3 | 0 | 0 | 3 |
| 19. | Expert Systems | ITT019 | 3 | 0 | 0 | 3 |
| 20. | Natural Algorithms | ITT020 | 3 | 0 | 0 | 3 |
| 21. | Advanced Artificial Intelligence | ITT021 | 3 | 0 | 0 | 3 |
| 22. | Advanced Computer Graphics | ITT022 | 3 | 0 | 0 | 3 |
| 23. | High-Performance Computing | ITT023 | 3 | 0 | 0 | 3 |
| 24. | Advanced Database Management Systems | ITT024 | 3 | 0 | 0 | 3 |
| 25. | Introduction to Logic and Functional Programming | ITT025 | 2 | 1 | 0 | 3 |
| 26. | Biometrics and Network Security | ITT026 | 3 | 0 | 0 | 3 |
| 27. | Deep learning | ITT027 | 3 | 0 | 0 | 3 |
| 28. | Pervasive Computing | ITT028 | 3 | 0 | 0 | 3 |
| 29. | Advanced Algorithms | ITT029 | 3 | 0 | 0 | 3 |
| 30. | Advanced Image Processing | ITT030 | 3 | 0 | 0 | 3 |
| 31. | Virtualization and Cloud | ITT031 | 3 | 0 | 0 | 3 |
| 32. | Computer vision and Robotics | ITT032 | 3 | 0 | 0 | 3 |
| 33. | Green Computing | ITT033 | 3 | 0 | 0 | 3 |
| 34. | Advanced Computer Networks | ITT034 | 3 | 0 | 0 | 3 |
| 35. | Compiler Design | ITT035 | 3 | 0 | 0 | 3 |
| 36. | Data Communication | ITT036 | 3 | 0 | 0 | 3 |
| 37. | Computer Graphics | ITT037 | 3 | 0 | 0 | 3 |
| 38. | Cloud Computing | ITT038 | 3 | 0 | 0 | 3 |

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| S. No. | Subject | Code | L | T | P | Credits |
|--------|----------------------------------|--------|---|---|---|---------|
| 39. | Information Security | ITT039 | 3 | 0 | 0 | 3 |
| 40. | Internet of Things | ITT040 | 3 | 0 | 0 | 3 |
| 41. | Information Security Lab | ITL041 | 0 | 0 | 2 | 1 |
| 42. | Compiler Design Lab | ITL042 | 0 | 0 | 2 | 1 |
| 43. | Computer Graphics Lab | ITL043 | 0 | 0 | 2 | 1 |
| 44. | Python Programming | ITT044 | 2 | 0 | 2 | 3 |
| 45. | Fundamentals of Machine Learning | ITT045 | 2 | 1 | 0 | 3 |
| 46. | Web Development | ITT046 | 2 | 0 | 2 | 3 |
| 47. | Big Data Analytics | ITT047 | 2 | 1 | 0 | 3 |

Note: Under all electives, students can also opt for subjects offered by other sister departments