

**DEPARTMENT OF INFORMATION TECHNOLOGY**

**NATIONAL INSTITUTE OF TECHNOLOGY SRINAGAR**



**SCHEME OF COURSES**

**FOR**

**B. TECH. INFORMATION TECHNOLOGY**

**2019 BATCH**

DEPARTMENT OF INFORMATION TECHNOLOGY  
NATIONAL INSTITUTE OF TECHNOLOGY SRINAGAR

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**Semester - I**

S.No.	Course	Code	L T P	Credits
1	Basic Electrical Engineering	EEL100	3 1 0	4
2	Basic English and Communication skills	HUL100	2 1 0	3
3	Computer Programming	ITL100	2 1 0	3
4	Engineering Chemistry	CYL100	3 1 0	4
5	Engineering Drawing	CIP100	1 0 6	4
6	Mathematics I	MAL100	3 1 0	4
7	Basic Electrical Engineering Lab	ELP100	0 0 2	1
8	Chemistry Lab	CYP100	0 0 2	1
9	Computer Programming Lab	ITP100	0 0 2	1
	<b>Total credits</b>			<b>25</b>

**Semester - II**

S.No.	Course	Code	L T P	Credits
1	Advanced English Comm. Skills & Organizational Behavior	HUL101	2 1 0	3
2	Engineering Physics	PHL100	3 1 0	4
3	Engineering Mechanics	CIL100	3 1 0	4
4	Elements of Mechanical Engineering	MEL100	2 1 0	3
5	Environmental studies	CYL101	2 1 0	3
6	Mathematics II	MAL101	3 1 0	4
7	Language Lab	HUP100	0 0 2	1
8	Physics Lab	PHP100	0 0 2	1
9	Workshop Practice	WSP100	0 0 4	2
	<b>Total credits</b>			<b>25</b>

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**Semester - III**

S.No.	Course	Code	L T P	Credits
1	Data Structures	ITT201	3 1 0	4
2	Signal and Systems	ITT202	2 1 0	3
3	Software Engineering	ITT203	3 0 0	3
4	Discrete Mathematics and Graph Theory	ITT204	3 1 0	4
5	Object Oriented Programming I	CST201	3 1 0	4
6	Electronics	ECT207	3 1 0	4
7	Object Oriented Programming I Lab	CSL203	0 0 2	1
8	Electronics Lab	ECL208	0 0 2	1
9	Data Structures Lab	ITL205	0 0 2	1
	<b>Total credits</b>			<b>25</b>

**Semester - IV**

S.No.	Course	Code	L T P	Credits
1	Operating Systems	ITT250	3 1 0	4
2	Database Management System	ITT251	3 1 0	4
3	Digital Electronics & Logic Design	ECT251	3 1 0	4
4	Communication System	ECT253	3 1 0	4
5	Control System	EET258	3 0 0	3
6	Digital Electronics & Logic Design Lab	ECL254	0 0 2	1
7	Communication System Lab	ECL255	0 0 2	1
8	Operating System Lab	ITL252	0 0 2	1
9	Database Management System Lab	ITL253	0 0 2	1
10	Web Programming	ITL254	0 0 4	2
	<b>Total credits</b>			<b>25</b>

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**Semester - V**

S.No.	Course	Code	L T P	Credits
1	Design & Analysis of Algorithms	ITT301	3 1 0	4
2	Microprocessor	ITT302	3 1 0	4
3	Computer Organization & Architecture	ITT303	3 1 0	4
4	Theory of Computation	ITT304	3 1 0	4
5	Data Communication	ITT305	3 1 0	4
6	Introduction to Probability and Statistics	MAT301	3 0 0	3
7	Design & Analysis of Algorithms Lab	ITL306	0 0 2	1
8	Microprocessor Lab	ITL307	0 0 2	1
	<b>Total credits</b>			<b>25</b>

**Semester - VI**

S.No.	Course	Code	L T P	Credits
1	Computer Networks	ITT350	3 1 0	4
2	Artificial Intelligence	ITT351	3 0 0	3
3	Computer Graphics	ITT352	3 0 0	3
4	Big Data	ITT353	3 0 2	4
5	Object-Oriented Programming II with Java	ITT354	3 0 0	3
6	Computer Networks Lab	ITL355	0 0 2	1
7	Artificial Intelligence Lab	ITL356	0 0 2	1
8	Computer Graphics Lab	ITL357	0 0 2	1
9	Object-Oriented Programming II with Java Lab	ITL358	0 0 2	1
10	Elective I	ITx0xx	Refer to Elective List	3
11	Tour & Training	ITI359	0 0 2	1
	<b>Total credits</b>			<b>25</b>

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**Semester - VII**

S.No.	Course	Code	L	T	P	Credits
1	Wireless & Mobile Communication	ITT401	3	1	0	4
2	Information Security	ITT402	3	1	0	4
3	Image Processing	ITT403	3	1	0	4
4	Cloud Computing	ITT404	3	1	0	4
5	Information Security Lab	ITL405	0	0	2	1
6	Image Processing Lab	ITL406	0	0	2	1
7	Cloud Computing Lab	ITL407	0	0	2	1
8	Elective II	ITx0xx	Refer to Elective List			3
9	Pre project	ITP408	0	0	4	2
10	Seminar	ITS409	0	0	2	1
	<b>Total credits</b>					<b>25</b>

**Semester - VIII**

S. No.	Course	Code	L	T	P	Credits
1	Machine Learning	ITT450	3	1	0	4
2	Elective III or SWAYAM Course I	ITx0xx	Refer to Elective List			4
3	Elective IV or SWAYAM Course II	ITx0xx				4
4	Project	ITP451	0	0	20	10
5	Economics & Business Management	HST450	3	0	0	3
	<b>Total credits</b>					<b>25</b>

# List of Open Electives

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**List of Open Electives**

S. No.	Subject	Code	L	T	P	Credits
1.	Green Computing	ITT001	3	0	0	3
2.	Management Information Systems	ITT002	3	0	0	3
3.	Geographic Information System	ITT003	3	0	0	3
4.	E-Health	ITT004	3	0	0	3
5.	Bioinformatics	ITT005	3	0	0	3
6.	Biometrics and Network Security	ITT006	3	0	0	3
7.	Software Project Management	ITT007	3	0	0	3
8.	Cyber Security & Forensics	ITT008	3	0	0	3
9.	Pervasive Computing	ITT009	3	0	0	3
10.	System Design	ITT010	3	0	0	3
11.	Advanced Image Processing	ITT011	3	1	0	4
12.	Virtualization and Cloud	ITT012	3	1	0	4
13.	Ad hoc & Wireless Sensor Networks	ITT013	3	1	0	4
14.	Natural Algorithms	ITT014	3	1	0	4
15.	Natural Language Processing	ITT015	3	1	0	4
16.	Network Management & administration	ITT016	3	1	0	4
17.	Distributed Computing	ITT017	3	1	0	4
18.	Advanced Artificial Intelligence	ITT018	3	1	0	4
19.	Foundations of Automatic Verification	ITT019	3	1	0	4
20.	Realtime Operating System	ITT020	3	1	0	4
21.	Advanced Database Management Systems	ITT021	3	1	0	4
22.	Deep learning	ITT022	3	1	0	4
23.	High Performance Computing	ITT023	3	1	0	4
24.	Synthesis of Digital Systems	ITT024	3	1	0	4
25.	Advanced Algorithms	ITT025	3	1	0	4
26.	Advanced Computer Networks	ITT026	3	1	0	4
27.	Simulation using Matlab and Python	ITL27	1	0	4	3
28.	Blockchain	ITT028	2	0	2	3
29.	Object Oriented Programming using JAVA	ITT029	2	0	2	3
30.	Digital Signal Processing	ITT030	3	1	0	4
31.	Introduction to Logic and Functional Programming	ITT031	3	1	0	4
32.	Advanced Computer Graphics	ITT032	3	1	0	4
33.	Embedded Systems	ITT033	3	0	2	4
34.	Computer vision and Robotics	ITT034	3	0	2	4
35.	Expert Systems	ITT035	3	0	2	4
36.	Internet of Things	ITT036	3	0	2	4
37.	Data Visualization using Tableau	ITT037	2	0	2	3
38.	Business Intelligence and Data Analytics	ITT038	2	0	2	3
39.	Machine Learning and Visualization	ITT039	2	0	2	3

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S. No.	Subject	Code	L	T	P	Credits
40.	Big Data Structuring	ITT040	2	0	2	3
41.	Data Virtualization	ITT041	2	0	2	3

**List of electives from other Departments**

S. No.	Subject	Code
1.	Compiler Design	CS0
2.	VLSI Design	EC0
3.	Operations Research	MA0
4.	Optimization Techniques	MA0
5.	Mathematical Modeling & Simulations	MA0
6.	Numerical Methods	MA0

*\* Electives relevant to the coursework offered by other departments may also be included*