Syllabus: B.Tech (CSE)

1st Year (Semester: I)						
Theoretical Papers						
Sl No.	Code No.	Subject	Class load/week			Credits
			L	T	P	
1		Mathematics – I (Linear Algebra)	3	1	0	4
2		Physics (Quantum Mechanics, Optics 50% and Solid State Physics 50%)	3	0	0	3
3		Analog Electronics	3	0	0	3
4		Computer Fundamentals and Programming with C	3	1	0	4
5		English for Communication	3	0	0	3
Sessional Papers						
6		Computer Fundamentals and Programming with C	0	0	3	2
7		Analog Electronics	0	0	3	2
Total			**15**	**2**	**6**	**21**

1st Year (Semester: II)

Sl No.	Code No.	Subject	Class load/week			Credits
			L	T	P	
1		Mathematics – II (Probability and Statistics)	3	1	0	4
2		Digital Electronics	3	0	0	3
3		Data Structure	3	0	0	3
4		Discrete Mathematics	3	1	0	4
5		Humanities I	3	0	0	3
6		Biology	2	0	0	2
Sessional Papers						
7		Digital Electronics	0	0	3	2
8		Data Structure	0	0	3	2
9		Environmental Science and Practices	1	0	2	2
Total			**18**	**2**	**8**	**25**

2ndYear (Semester: III)

Sl No.	Code No.	Subject	Class load/week			Credits
			L	T	P	
1		Mathematics – III (Differential Calculus)	2	0	0	2
2		Mathematics – IV (Transform Calculus)	2	0	0	2
3		Computer Organization and Architecture	3	0	0	3

5		Algorithm - I	3	1	0	4
6		Humanities II	3	0	0	3
Sessional Papers						
7		Computer Organization and Architecture	0	0	3	2
8		Algorithm – I	0	0	3	2
9		IT Workshop – I (Python)	2	0	3	4
Total			**18**	**1**	**9**	**22**

2nd Year (Semester: IV)						
Theoretical Papers						
Sl No.	Code No.	Subject	Class load/week			Credits
			L	T	P	
1		Operating Systems	3	0	0	3
2		Formal Language and Automata	3	1	0	4
3		Algorithm - II	3	1	0	4
4		Microcontroller Systems	3	0	0	3
5		Signals and Systems	3	0	0	3
Sessional Papers						
6		Operating Systems	0	0	3	2
7		Microcontroller Systems	0	0	3	2
8		IT Workshop – II (SciLab)	0	0	3	2
Total			**15**	**1**	**9**	**23**

3rd Year (Semester: V)						
Theoretical Papers						
Sl No.	Code No.	Subject	Class load/week			Credits
			L	T	P	
1		Database Management Systems (DBMS)	3	0	0	3
2		Computer Networks	3	0	0	3
3		Artificial Intelligence	3	0	0	3
4		Object Oriented Programming	3	0	0	3
5		Elective – I	3	0	0	3
6		Management – I	3	0	0	3
Sessional Papers						
7		DBMS	0	0	3	2
8		Networking Lab	0	0	3	2
9		Object Oriented Programming	0	0	3	2
Total			**18**	**0**	**12**	**24**

3rdYear (Semester: VI)						
Theoretical Papers						
Sl No.	Code No.	Subject	Class load/week			Credits
			L	T	P	
1		Complier Design	3	0	0	3
2		Graph Theory	3	0	0	3
3		Machine Learning	3	0	0	3
4		Elective – II	3	0	0	3
5		Software Engineering	3	0	0	3
6		Management – II/Humanities	3	0	0	3
Sessional Papers						
7		Complier Design	0	0	3	2
8		Software Engineering	0	0	3	2
9		Project – I	0	0	3	2
Total			**18**	**0**	**9**	**24**

4thYear (Semester: VII)						
Theoretical Papers						
Sl No.	Code No.	Subject	Class load/week			Credits
			L	T	P	
1		Cryptography and Network Security	3	0	0	3
2		Elective – III	3	0	0	3
3		Elective – IV	3	0	0	3
4		Open Elective – I	3	0	0	3
5		Humanities	3	0	0	3
Sessional Papers						
6		Project – II	0	0	6	6
Total			**15**	**0**	**6**	**21**

4thYear (Semester: VIII)						
Theoretical Papers						
Sl No.	Code No.	Subject	Class load/week			Credits
			L	T	P	
1		Elective – V	3	0	0	3
2		Elective – VI	3	0	0	3
3		Open-Elective-II	3	0	0	3
4		Cyber Law and Ethics	2	0	0	2
Sessional Papers						
5		Project – III	0	0	6	6
6		Comprehensive Viva	0	0	3	2
Total			**11**	**0**	**9**	**19**

From Semester III onwards, there will be an optional 2 credits for Innovation (Innovative Projects). These will be awarded special mentions in the Grade Card with Bonus points.

For internship, besides working in academic institutions or industries, working with NGOs on Social Projects or undertaking some other Creative Activities are encouraged. Reports will have to be submitted for the internships.

Electives:

Electives will be introduced in 5 threads,

A. **Theory** B. **Systems** C. **Data Science** E. **Applications** and F. **Open Electives**

The students will have options of selecting the electives from the different threads depending on the specialization they wish to acquire. **There should be at least two electives from the open elective choices; the rest can be taken from the other threads, if intended.**

Pls. see the Table.

The Electives are shown in different threads.

The list is suggestive.
The actual list of electives will depend on the availability of faculty and their research interests. **However, there should be courses available in each thread.**

On-line MOOC courses may contribute upto 20% of the credits, with in-house examination being conducted.

Theory and Algorithms	**Systems**	**Data Science and Machine Intelligence**	**Applications**	**Open Electives**
Theory of Computation	Advanced Computer Architecture	Artificial Intelligence	Image Processing	Soft Skills and Interpersonal Communication
Advanced Algorithms	Distributed Systems	Machine Learning	Digital Signal Processing	Human Resource Development and Organizational Behavior
Parallel and Distributed Algorithms	Embedded Systems	Data Mining	Cloud Computing	Cyber Law and Ethics
Computational Complexity	Advanced Operating Systems	Soft Computing	Human Computer Interaction	Introduction to Philosophical Thoughts
Computational Geometry	Low Power Circuits and Systems	Speech and Natural Language Processing	Electronic Design Automation	Comparative Study of Literature
Queuing Theory and	Fault Tolerant Computing	Data Analytics	Computer Graphics	Indian Music System

Modeling				
Computational Number Theory	Real Time Systems	Information Retrieval	VLSI System Design	History of Science & Engineering
Quantum Computing	Ad-Hoc and Sensor Networks	Neural Networks and Deep Learning	Optimization Techniques	Introduction to Art and Aesthetics
Information Theory and Coding	Signals and Networks	Multi-agent Intelligent Systems	Web and Internet Technology	Economic Policies in India