



SCHOOL OF COMPUTER SCIENCE AND ENGINEERING
B.Tech (Computer Science and Engineering-Specialisation in IoT)
Proposed Curriculum – 2019 Batch

Sl.No	Category	Total No. of Credits
1	University Core (UC)	53
2	Programme Core (PC-CSE + PC-IOT)	65 (54 + 11)
3	University Elective (UE)	12
4	Programme Elective (PE-CSE + PE-IOT)	30
	Total	160

University Core [53 Credits]

L-Lecture, T-Tutorial, P-Practical, J-Project, C-Credits

Sl.No	Course Title	L	T	P	J	C
1	Effective English (Bridge Course)	0	0	4	0	Pass/ Fail
	English for Engineers	0	0	2	4	2
2	Engineering Chemistry	3	0	2	0	4
3	Engineering Physics	3	0	2	0	4
4	Calculus for Engineers	3	0	2	0	4
5	Probability and Statistics for Engineers*	2	1	2	0	4
6	Foreign Language	2	0	0	0	2
7	Ethics and Values	1	0	0	4	2
8	Problem Solving and Programming	0	0	6	0	3
9	Problem Solving and Object Oriented Programming	0	0	6	0	3
10	Lean Startup Management	1	0	0	4	2
11	Technical Answers to Real Word Problems	1	0	0	8	3
12	Industrial Internship					1
13	Capstone Project					12
14	Comprehensive Examination					1
15	Soft Skills (6 courses)					6
	Total					53 Credits

CSE- Core [53 credits]

Sl.No	Course Title	L	T	P	J	C
1.	Discrete Mathematics and Graph Theory	3	1	0	0	4
2.	Basic Electrical and Electronics Engineering	2	0	2	0	3
3.	Digital Logic and Design	3	0	2	0	4
4.	Computer Architecture and Organization	3	0	0	0	3
5.	Theory of Computation*	3	0	0	0	3
6.	Data Structures*	2	0	2	0	3
7.	Design and Analysis of Algorithms*	2	0	2	0	3
8.	Cryptography and Network Security*	3	0	0	0	3
9.	Computer and Communication Networks*	3	0	2	0	4
10.	Principles of Database Management Systems*	3	0	2	0	4
11.	Software Engineering	2	0	2	4	4
12.	Operating System Design*	3	0	2	0	4
13.	Internet Programming and Web Technologies*	3	0	2	0	4
14.	Microprocessor and Microcontrollers*	3	0	2	0	4
15.	Java Programming	3	0	2	0	4
	Total					54 Credits

IoT Core [11 credits]

Sl.No	Course Title	L	T	P	J	C
1.	Wireless Ad-hoc networks	3	0	0	4	4
2.	Embedded System Design	3	0	2	0	4
3.	IoT Architecture and its Protocols	3	0	0	0	3
	Total					11 Credits

Program Electives- CSE [6 Credits (minimum)]

Sl.No	Course Title	L	T	P	J	C
1.	Cyber Security	3	0	0	4	4
2.	Applied Linear Algebra	3	0	0	0	3
3.	Compiler Design	3	0	2	0	4
4.	Cloud Computing and Virtualization	3	0	0	4	4
5.	Artificial Intelligence	3	0	0	0	3
6.	Distributed Computing Systems	3	0	0	4	4
7.	Data Visualization and Presentation	3	0	0	4	4
8.	Machine Learning	3	0	0	4	4
9.	C# and .Net Programming	3	0	2	0	4
10.	Blockchain and Cryptocurrency Technologies	2	0	2	0	3
11.	Quantum Computing	3	0	0	0	3
12.	Data Science for Engineers	3	0	0	4	4
13.	Soft Computing	3	0	0	4	4
14.	Numerical Methods for Computer Science	3	0	2	0	4
15.	Game Programming	3	0	0	0	3
16.	Advanced Database Systems	3	0	0	4	4
17.	Mobile Computing	3	0	0	4	4
18.	Software Quality and Testing	3	0	0	0	3
19.	Data Modeling and Simulation	3	0	0	0	3
20.	Operations Research	3	0	0	0	3
21.	Advanced Java Programming	3	0	2	0	4
22.	Nature inspired Computing	3	0	0	0	3
23.	Agile Software Development	3	0	0	0	3

Program Electives CSE –IoT Specialization [10 Credits (minimum)]

Sl.No	Course Title	L	T	P	J	C
1.	Sensors and Actuator Devices for IoT	3	0	0	0	3
2.	Deep Learning	3	0	0	4	4
3.	Privacy and Security in IoT	3	0	0	4	4
4.	Introduction to FOG Computing	3	0	0	4	4
5.	Architecting smart IoT devices	3	0	0	4	4
6.	Wearable Computing	3	0	0	4	4
7.	Industrial and Medical IoT	2	0	0	4	3

8.	Design of Smart Systems	3	0	0	4	4
9.	Programming for IoT Boards	2	0	2	4	4
10.	Software Defined Networks	3	0	0	4	4
11.	Design of Smart Cities	2	0	0	4	3
12.	Introduction to Industry 4.0	2	0	0	4	3
13.	Cognitive IoT	3	0	0	0	3
14.	IoT and Multimedia Technology	3	0	0	0	3
15.	Image Processing	3	0	2	0	4
16.	Applications of IoT in Robotics	3	0	0	0	3
17.	Mobile Application Development for IoT	3	0	0	4	4
18.	Natural Language Processing	3	0	0	0	3
19.	Big Data Analytics	3	0	0	4	4
20.	Knowledge Engineering and Management	3	0	0	0	3
21.	Open Source Programming for IoT	3	0	0	4	4

University Elective-[12 Credits]

Course Title	Category
University Elective – I	E
University Elective – II	E
University Elective – III	E
University Elective – IV	E

Program Elective-[30 Credits]

Course Title	Category
Program Elective – I	E
Program Elective – II	E
Program Elective – III	E
Program Elective – IV	E
Program Elective – V	E
Program Elective – VI	E
Program Elective – VII	E
Program Elective – VIII	E