

Department of **Computer Science and Engineering**
 B. Tech. in **Computer Science and Engineering**

I-Year I-Semester

Sl. No.	Course Code	Course Name	Category Code	I	P	No. of Credits
1	DS101	Differential and Integral Calculus	BSC	3	0	3
2	DS102	Engineering Mechanics	BSC	3	0	3
3	CS101 EC101	Problem Solving and Computer Programming (or) Basic Electrical and Electronics Engineering	BEC	3	0	3
			BEC	3	0	3
4	ME101 ME102	Concepts in Engineering Design (or) Science and Engineering of Materials	DES	3	0	3
			BEC	3	0	3
5	DS103 DS11x	Technical and Professional Communication (or) Humanities Course 1	HMC	2	2	3
			HMC	2	0	2
6	DS12x DS104	Humanities Course 2 (or) Earth, Environment and Design	DES	2	0	0
			DES	2	0	0
7	ME103	Engineering Graphics	DES	0	3	2
8	DS105	Engineering Mechanics Practice	BSC	0	3	2
9	CS102 DS106	Problem Solving and Computer Programming Practice (or) Measurement and Data Analysis	BEC	0	3	2
			BSC	0	3	2
10	ME104	Engineering Skills Practice	BEC	0	3	2
Total				16	17	23
				16	15	22

I-Year II-Semester

Sl. No.	Course Code	Course Name	Category Code	I	P	No. of Credits
1	DS107	Differential Equations	BSC	3	0	3
2	DS108	Engineering Electromagnetics	BSC	3	0	3
3	EC101 CS101	Electrical and Electronics Engineering (or) Problem Solving and Computer Programming Basic	BEC	3	0	3
			BEC	3	0	3
4	ME102 ME101	Science and Engineering of Materials (or) Concepts in Engineering Design	BEC	3	0	3
			DES	3	0	3
5	DS11x DS103	Humanities Course 1 (or) Technical and Professional Communication	HMC	2	0	2
			HMC	2	2	3
6	DS104 DS12x	Earth, Environment and Design (or) Humanities Course 2	DES	2	0	0
			DES	2	0	0
7	ME105	Design Realization	DES	0	3	2
8	DS109	Engineering Electromagnetics Practice	BSC	0	3	2
9	CS102 DS106	Problem Solving and Computer Programming Practice (or) Measurement and Data Analysis	BEC	0	3	2
			BSC	0	3	2
10	ME106	Industrial Sketching	BEC	0	3	2
Total				16	12	22
				16	14	23

Semester III						
Sl. No.	Course Code	Course Name	Category Code	I	P	No. of Credits
1	DS201	Linear Algebra	BSC	3	0	3
2	DS202	Sociology of Design	DES	2	0	2
3	CS201	Python Programming	PEC	2	2	3
4	CS202	Data Structures and Algorithms	PEC	4	0	4
5	CS203	Discrete Mathematics	PEC	3	0	3
6	EC209	Digital and Analog Circuits Design	PEC	3	0	3
7	CS204	Data Structures and Algorithms Practice	PEC	0	3	2
8	EC210	Digital and Analog Circuits Design Practice	PEC	0	3	2
Total Credits						22

Semester IV						
Sl. No.	Course Code	Course Name	Category code	I	P	No.of Credits
1	DS203	Probability and Statistics	BSC	3	0	3
2	CS251	Object Oriented Programming	PEC	3	2	4
3	CS252	Design and Analysis of Algorithms	PEC	3	0	3
4	CS253	Database Management Systems	PEC	3	0	3
5	CS254	Computer Organization and Architecture	PEC	3	0	3
6	CS255	Design and Analysis of Algorithms Practice	PEC	0	3	2
7	CS256	Database Management Systems Practice	PEC	0	3	2
8	CS257	Computer Organization and Architecture Practice	PEC	0	3	2
Total Credits						22

Semester V						
Sl. No.	Course Code	Course Name	Category code	I	P	No.of. Credits
1	DS301	Entrepreneurship and Management Functions	HMC	2	0	2
2	CS301	Operating Systems	PEC	3	0	3
3	CS302	Data Communication and Computer Networks	PEC	3	0	3
4	CS303	Theory of Computation	PEC	3	0	3
	CS304	Data Warehousing and Data Mining	PEC	3	0	3
6	CS305	Operating Systems Practice	PEC	0	3	2
7	CS306	Data Communication and Networking Practice	PEC	0	3	2
8	CS307	Knowledge Engineering Practice	PEC	0	3	2
Total Credits						20

Semester VI						
Sl. No.	Course Code	Course Name	Category code	I	P	No.of. Credits
1	DS205	Engineering Economics/ Managerial Economics and Financial Accountancy	HMC	2	0	2
2	CS351	Compiler Design	PEC	3	0	3
3	CS352	Software Engineering	PEC	3	2	4
4	CS353	Cryptography and Network Security	PEC	3	0	3
5	CS36X	Departmental Elective – I	PEC	3	0	3
6	CS37Y	Departmental Elective – II	PEC	3	0	3
7	CS354	Compiler Design Practice	PEC	0	3	2
8	CS355	Cryptography and Network Security Practice	PEC	0	3	2
Total Credits						22

Semester VII						
Sl. No.	Course Code	Course Name	Category code	I	P	No.of. Credits
1	CS401	Industry Internship	PCD	0	10	5
2	CS46X	Departmental Elective – III	ELE	3	0	3
3	CS449	Design Project	DES	0	10	5
Total Credits						13
Semester VIII						
Sl. No.	Course Code	Course Name	Category code	I	P	No.of. Credits
1	CS451	Design Elective	DES	3	0	3
2	CS47X	Departmental Elective – IV	ELE	3	0	3
3	XXXX	Open Elective	ELE	3	0	3
4	CS499	Project	PCD	0	20	10
Total Credits						19

HMC Humanities & Management Courses

BSC Basic Science Courses (Physics/ Chemistry/Mathematics / Life Science)

BEC Basic Engineering Courses

PEC Professional Engineering Courses

ELE Elective

PCD Professional / Career Development (Industrial Lecture / Internships/Projects)

DES Design Courses

List of Electives for III Year (I, II)					
Sl. No.	Course Code	Course Name	Category	I-P	Credit
1	CS361	Advanced Data Structures and Algorithms	PEC	3-0	3
2	CS362	Foundations of Machine Learning	PEC	3-0	3
3	CS363	Approximation and Randomized Algorithms	PEC	3-0	3
4	CS364	Introduction to Game Theory	PEC	3-0	3
5	CS365	Computer Graphics and Multimedia	PEC	3-0	3
6	CS366	Advanced Database Systems	PEC	3-0	3
6	CS371	Soft Computing	PEC	3-0	3
7	CS372	Computer Vision	PEC	3-0	3
8	CS373	Digital Image Processing	PEC	3-0	3
9	CS374	Pattern Recognition	PEC	3-0	3
10	CS375	Internet of Things	PEC	3-0	3
11	CS376	Web Technologies	PEC	3-0	3

List of Electives for IV Year (III and IV)					
Sl. No.	Course Code	Course Name	Category	I-P	Credit
1	CS461	Information Retrieval	PEC	3-0	3
2	CS462	Data Science for Engineers	PEC	3-0	3
3	CS463	Parallel and Distributed Systems	PEC	3-0	3
4	CS464	Deep Learning	PEC	3-0	3
5	CS465	Social Network Analysis	PEC	3-0	3
6	CS466	Cloud Computing	PEC	3-0	3
7	CS467	Natural Language Processing	PEC	3-0	3
8	CS468	Business Intelligence	PEC	3-0	3
9	CS469	Optimization Techniques	PEC	3-0	3
9	CS471	Big Data Analytics	PEC	3-0	3
10	CS472	Quantum Computing	PEC	3-0	3
11	CS473	Mobile Computing	PEC	3-0	3
12	CS474	Distributed Computing	PEC	3-0	3
13	CS475	Service oriented Architecture	PEC	3-0	3
14	CS476	Artificial Intelligence	PEC	3-0	3
15	CS477	Blockchain Architecture and Design	PEC	3-0	3
16	CS478	Real Time Systems	PEC	3-0	3
17	CS479	Scalable Data Science	PEC	3-0	3