

Structure of Curriculum

SEMESTER - 1							
Course Code	Course Title	Course Type	Contact Hours			Credit	Pre-requisites
			L	T	P	C	
MA 101	Differential Calculus and Linear Algebra	Sc/HS	3	1	0	4	None
ME 101	Engineering Mechanics	BE	3	0	0	3	None
CY101/ PH101	Chemistry/Physics	Sc/HS	2/3	1	0	3/4	None
CE 101	Engineering Drawing	BE	1	0	4	3	None
EE101/ EC101	Basic Electrical Engineering /Basic Electronics Engineering	BE	2	0	0	2	None
HS 101	English Language Skills	Sc/HS	2	0	0	2	None
HS 151	English Language Skills Lab	L	0	0	2	1	None
CY151/ PH151	Chemistry Lab /Physics Lab	L	0	0	2	1	None
EE151/ EC151	Basic Electrical Lab /Basic Electronics Lab	L	0	0	2	1	None
Total Contact Hours – Component wise			13/ 14	2	10	---	
Total Contact Hours			25/26			20/21	---

SEMESTER – 2							
Course Code	Course Title	Course Type	Contact Hours			Credit	Pre-requisites
			L	T	P	C	
MA 102	Integral Calculus and Complex Variables	Sc/HS	3	1	0	4	None
EE101/ EC101	Basic Electrical Engineering /Basic Electronics Engineering	BE	2	0	0	2	None
PH101/ CY101	Chemistry/Physics	Sc/HS	2/3	1	0	3/4	None
CY 102	Environmental Science	Sc/HS	2	0	0	2	None
CS 102	Introduction to Computing	BE	2	1	0	3	None
ME 152	Workshop Practice	L	0	0	4	2	None
EE151/ EC151	Basic Electrical Lab/ Basic Electronics Lab	L	0	0	2	1	None
CY151/ PH151	Chemistry Lab /Physics Lab	L	0	0	2	1	None
CS 152	Computing Lab	L	0	0	2	1	None
Total Contact Hours – Component wise			11/ 12	3	10	---	
Total Contact Hours			24/25			19/20	---

SEMESTER - 3

Course Code	Course Title	Course Type	Contact Hours			Credit	Pre-requisites
			L	T	P	C	
MA 201	Integral Transforms and PDEs	M	3	1	0	4	None
Professional Core Courses - 1, 2, 3							
CS 201	Data Structures	PC	3	0	0	3	None
CS 203	Digital Logic Design	PC	3	1	0	4	None
CS 205	Discrete Mathematical Structures	PC	3	1	0	4	None
Special Course – 1							
ME 291	Safety Engineering	S	2	0	0	2	None
Lab Courses - 1, 2, 3							
CS 251	Data Structures Lab	L	0	1	2	2	None
CS 253	Digital Logic Design Lab	L	0	1	2	2	None
CS 255	Internet Web Technology Lab	L	0	0	2	1	None
Total Contact Hours – Component wise			14	5	6	---	
Total Contact Hours			25			22	---

SEMESTER – 4

Course Code	Course Title	Course Type	Contact Hours			Credit	Pre-requisites
			L	T	P	C	
Professional Core Courses - 4, 5, 6							
CS 202	Computer Organization	PC	3	1	0	4	CS 203
CS 204	Object Oriented Programming and Design	PC	3	1	0	4	CS 101
CS 206	Data Communication	PC	3	0	0	3	None
Professional Elective – 1							
CS 212	Analysis and Design of Algorithms	PE	3	0	0	3	None
CS 214	Computational Models for Real Time Systems	PE	3	0	0	3	None
CS 216	Cyber Physical Systems	PE	3	0	0	3	None
CS 218	Computer Arithmetic	PE	3	0	0	3	None
Professional Elective – 2							
CS 220	Principles of Programming Languages	PE	3	0	0	3	CS 101
CS 222	Programming in Java	PE	3	0	0	3	CS 101
CS 224	GUI Design and Programming	PE	3	0	0	3	CS 101
CS 226	Python Programming	PE	3	0	0	3	CS 101

Open Elective – 1							
CS 272	Object Oriented Programming	OE	2	0	0	2	CS 101
Lab Courses - 4, 5,6							
CS 252	Computer Organization Lab	L	0	0	2	1	CS 203
CS 254	Object Oriented Programming and Design Lab	L	0	1	2	2	CS 101
CS 256	Data Communication Lab	L	0	1	2	2	None
Total Contact Hours – Component wise			17	4	6	---	
Total Contact Hours			27			24	---

SEMESTER – 5							
Course Code	Course Title	Course Type	Contact Hours			Credit	Pre-requisites
			L	T	P	C	
Professional Core Courses - 7, 8, 9							
CS 301	Operating Systems	PC	3	1	0	4	CS 204
CS 303	Database Management Systems	PC	3	1	0	4	CS 201
CS 305	Computer Networks	PC	3	0	0	3	None
Professional Elective – 3							
CS 311	Microprocessors and Interfacing	PE	3	1	0	4	None
CS 313	Embedded Systems	PE	3	1	0	4	None
CS 315	E-commerce and Cyber Laws	PE	3	1	0	4	None
CS 317	Machine Vision	PE	3	1	0	4	None
Professional Elective – 4							
CS 319	Automata and Formal Language	PE	3	0	0	3	None
CS 321	Formal Verification	PE	3	0	0	3	None
CS 323	Computational Geometry	PE	3	0	0	3	None
CS 325	Modern Digital Arithmetic	PE	3	0	0	3	None
Open Elective – 2							
CS 371	Database System Concepts	OE	2	0	0	2	None
Lab Courses - 7, 8, 9							
CS 351	Operating Systems Lab	L	0	1	2	2	CS 204
CS 353	Database Management Systems Lab	L	0	1	2	2	CS 201
CS 355	Computer Networks Lab	L	0	0	2	1	None
Total Contact Hours – Component wise			17	5	6	---	
Total Contact Hours			28			25	---

SEMESTER – 6

Course Code	Course Title	Course Type	Contact Hours			Credit	Pre-requisites
			L	T	P	C	
Professional Core Courses – 10, 11							
CS 302	Software Engineering	PC	3	1	0	4	None
CS 304	Compiler Design	PC	3	1	0	4	None
Professional Elective – 5							
CS 312	Computer Graphics	PE	3	0	0	3	None
CS 314	Shell Programming	PE	3	0	0	3	None
CS 316	Augmented and Virtual Reality	PE	3	0	0	3	None
CS 318	Information Theory and Coding	PE	3	0	0	3	None
Professional Elective – 6							
CS 320	Machine Learning	PE	3	0	0	3	None
CS 322	Cryptography And Network Security	PE	3	0	0	3	None
CS 324	Data Analysis and Visualization	PE	3	0	0	3	None
CS 326	Multimedia	PE	3	0	0	3	None
CS 328	System Software	PE	3	0	0	3	None
Open Elective – 3							
CS 372	Introduction to Machine Learning	OE	2	0	0	2	None
Special HS Course – 2							
HS 392	Corporate Communication	S	2	0	0	2	None
Lab Courses – 10, 11							
CS 352	Software Engineering Lab	L	0	1	2	2	None
CS 354	Compiler Design Lab	L	0	1	2	2	None
CS 382	Minor Project	T	0	0	2	1	None
Total Contact Hours – Component wise			16	4	6	---	
Total Contact Hours			26			23	---

SEMESTER – 7

Course Code	Course Title	Course Type	Contact Hours			Credit	Pre-requisites
			L	T	P	C	
CS 401	Project – I	P	0	0	10	5	None
Professional Elective –7							
CS 411	Soft Computing	PE	3	0	0	3	None

CS 413	Pattern Recognition	PE	3	0	0	3	None
CS 415	Complex Networks	PE	3	0	0	3	None
CS 417	Blockchain Technologies	PE	3	0	0	3	None
CS 419	High Performance Architecture	PE	3	0	0	3	None
Professional Elective –8							
CS 421	Image Processing	PE	3	0	0	3	None
CS 423	Artificial Intelligence	PE	3	0	0	3	None
CS 425	Advanced Web Technology	PE	3	0	0	3	None
CS 427	Software Defined Network	PE	3	0	0	3	None
CS 429	Robotics and Automation	PE	3	0	0	3	None
Open Elective –4							
CS 471	Data Analytics using Python	OE	2	0	0	2	None
Special Course – 3							
CE 491	Disaster Management	S	2	0	0	2	None
Lab Courses– 12							
CS 461	Computational Intelligence Lab	L	0	1	2	2	None
CS 481	Summer Internship	I	0	0	0	1	None
Total Contact Hours – Component wise			10	1	12	---	
Total Contact Hours			23			18	---

SEMESTER –8							
Course Code	Course Title	Course Type	Contact Hours			Credit	Pre-requisites
			L	T	P	C	
CS 402	Project – II	P	0	0	18	9	None
Professional Elective –9							
CS 412	Mobile Computing	PE	3	0	0	3	None
CS 414	Cloud Computing	PE	3	0	0	3	None
CS 416	Wireless Sensor Network	PE	3	0	0	3	None
CS 418	Natural Language Processing	PE	3	0	0	3	None
CS 420	Cyber Forensics and Analysis	PE	3	0	0	3	None
Professional Elective –10							
CS 422	Data Mining	PE	3	0	0	3	None
CS 424	Distributed Computing	PE	3	0	0	3	None
CS 426	Bioinformatics	PE	3	0	0	3	None
CS 428	Internet of Things	PE	3	0	0	3	None

CS 430	Human Computer Interaction	PE	3	0	0	3	None
Special Course –4							
HS 492	Entrepreneurship	S	2	0	0	2	
Total Contact Hours – Component wise			8	0	18	---	
Total Contact Hours			26			17	---