

Course Structure Computer Science and Engineering - MLR 20

I B.Tech.- I-Semester									
Course Code	Course Title	Course Area	Hours per Week			Credits	Scheme of Examination Maximum Marks		
			L	T	P		Internal (CIE)	External (SEE)	Total
A5BS02	Linear Algebra and Calculus	BSC	3	1	-	4	30	70	100
A5BS08	Applied Physics	BSC	3	1	-	4	30	70	100
A5EE70	Basic Electrical and Electronics Engineering	ESC	3	1	-	4	30	70	100
A5ME02	Engineering Graphics	ESC	1	-	4	3	30	70	100
A5BS15	Applied Physics Lab	BSC	-	-	3	1.5	30	70	100
A5EC01	Introduction to Internet of Things	ESC	-	-	3	1.5	30	70	100
A5ME04	Engineering Workshop	ESC	-	-	2	1	30	70	100
Total			10	03	12	19	210	490	700
Mandatory Course (Non-Credit)									
A5MC01	Seminar-I	MC	-	-	2	-	30	70	100

I B.Tech.- II-Semester									
Course Code	Course Title	Course Area	Hours per Week			Credits	Scheme of Examination Maximum Marks		
			L	T	P		Internal (CIE)	External (SEE)	Total
A5BS04	Advanced Calculus	BSC	3	1	-	4	30	70	100
A5BS11	Applied Chemistry	BSC	4	-	-	4	30	70	100
A5CS01	Programming for Problem Solving	ESC	3	-	-	3	30	70	100
A5HS01	English	HSMC	2	-	-	2	30	70	100
A5CS02	Programming for Problem Solving Lab	ESC	-	-	3	1.5	30	70	100
A5BS12	Applied Chemistry Lab	BSC	-	-	3	1.5	30	70	100
A5HS02	English Language and Communication Skills Lab	HSMC	-	-	2	1	30	70	100
Total			12	01	08	17	210	490	700
Mandatory Course (Non-Credit)									
A5MC02	Seminar-II	MC	-	-	2	-	30	70	100

II B.Tech.- I Semester									
Course Code	Course Title	Course Area	Hours per Week			Credits	Scheme of Examination Maximum Marks		
			L	T	P		Internal (CIE)	External (SEE)	Total
A5BS05	Probability and Statistics	BSC	3	-	-	3	30	70	100
A5BS16	Discrete Mathematics	BSC	3	1	-	4	30	70	100
A5CS03	Data Structures	ESC	3	1	-	4	30	70	100
A5CS05	Database Management Systems	PCC	3	1	-	4	30	70	100
A5IT03	Python Programming	PCC	3	1	-	4	30	70	100
A5CS04	Data Structures Lab	ESC	-	-	3	1.5	30	70	100
A5CS06	Database Management Systems Lab	PCC	-	-	3	1.5	30	70	100
Total			15	04	06	22	210	490	700
Mandatory Course (Non-Credit)									
A5MC03	Environmental Studies	MC	2	-	-	-	30	70	100

II B.Tech.- II Semester									
Course Code	Course Title	Course Area	Hours per Week			Credits	Scheme of Examination Maximum Marks		
			L	T	P		Internal (CIE)	External (SEE)	Total
A5EC72	Digital Electronics and Computer Organization	ESC	3	1	-	4	30	70	100
A5HS06	Business Economics and Financial Analysis	HSMC	3	-	-	3	30	70	100
A5IT01	Object Oriented Programming	PCC	3	1	-	4	30	70	100
A5CS08	Design and Analysis of Algorithms	PCC	3	1	-	4	30	70	100
A5CS09	Advanced Data Structures	PCC	3	1	-	4	30	70	100
A5CS10	Advanced Data Structures Lab	PCC	-	-	3	1.5	30	70	100
A5IT02	Object Oriented Programming Lab	PCC	-	-	3	1.5	30	70	100
Total			15	04	06	22	210	490	700
Mandatory Course (Non-Credit)									
A5HS03	Gender Sensitization	HSMC	-	-	2	-	30	70	100

III B.Tech.- I Semester									
Course Code	Course Title	Course Area	Hours per Week			Credits	Scheme of Examination Maximum Marks		
			L	T	P		Internal (CIE)	External (SEE)	Total
A5CS11	Web Technologies	PCC	3	1	-	4	30	70	100
A5IT04	Automata and Compiler Design	PCC	3	-	-	3	30	70	100
A5CS13	Operating Systems	PCC	3	1	-	4	30	70	100
PEC	Professional Elective - I	PEC	3	-	-	3	30	70	100
OEC	Open Elective-I	OEC	3	-	-	3	30	70	100
A5CS12	Web Technologies Lab	PCC	-	-	3	1.5	30	70	100
A5IT07	Linux Programming Lab	PCC	-	-	3	1.5	30	70	100
A5CS36	Mini Project	PWC	-	-	-	2	30	70	100
Total			15	02	06	22	260	540	800

III B.Tech.- II Semester									
Course Code	Course Title	Course Area	Hours per Week			Credits	Scheme of Examination Maximum Marks		
			L	T	P		Internal (CIE)	External (SEE)	Total
A5CS14	Software Engineering	PCC	3	-	-	3	30	70	100
A5CS15	Computer Networks	PCC	3	1	-	4	30	70	100
A5AI19	Machine Learning	PCC	3	-	-	3	30	70	100
PEC	Professional Elective-II	PEC	3	-	-	3	30	70	100
OEC	Open Elective-II	OEC	3	-	-	3	30	70	100
A5CS16	Network Simulation Lab	PCC	-	-	3	1.5	30	70	100
A5AI20	Machine Learning Lab	PCC	-	-	3	1.5	30	70	100
A5CS37	Independent Study/MOOCs	PWC	-	-	-	1	-	100	100
Total			15	01	06	20	210	590	800

IV B.Tech.- I Semester									
Course Code	Course Title	Course Area	Hours per Week			Credits	Scheme of Examination Maximum Marks		
			L	T	P		Internal (CIE)	External (SEE)	Total
A5CS17	BigData Analytics	PCC	3	1	-	4	30	70	100
PEC	Professional Elective-III	PEC	3	-	-	3	30	70	100
PEC	Professional Elective-IV	PEC	3	-	-	3	30	70	100
PEC	Professional Elective-V	PEC	3	-	-	3	30	70	100
OEC	Open Elective-III	OEC	3	-	-	3	30	70	100
A5CS18	BigData Analytics Lab	PCC	-	-	2	1	30	70	100
A5CS38	Major Project Phase - 1	PWC	-	-	8	4	100	-	100
Total			15	01	10	21	280	420	700

IV B.Tech. - II Semester									
Course Code	Course Title	Course Area	Hours per Week			Credits	Scheme of Examination Maximum Marks		
			L	T	P		Internal (CIE)	External (SEE)	Total
PEC	Professional Elective-VI	PEC	3	-	-	3	30	70	100
A5HS15	Management Science	HSMC	3	-	-	3	30	70	100
OEC	Open Elective-IV	OEC	3	-	-	3	30	70	100
A5CS39	Major Project Phase - 2	PWC	-	-	16	8	50	150	200
Total			09	-	16	17	140	360	500

PROFESSIONAL ELECTIVES			
PE - I		PE - II	
A5CS19	Data Mining	A5CS21	Multimedia Computing
A5CS20	Distributed Databases	A5CS22	Introduction to Data Analytics
A5IT11	Human Computer Interaction	A5AI03	Artificial Intelligence
PE - III		PE - IV	
A5CS23	Cloud Computing	A5CS24	Software Testing
A5CS40	Soft Computing	A5CS27	Mobile Application Development
A5IT16	Natural Language Processing	A5IT17	Angular JS
PE - V		PE - VI	
A5CS25	Cryptography and Network Security	A5CS28	Predictive Analytics
A5CS26	Agile Software Development	A5CS29	Software Project Management
A5IT44	E-Commerce	A5IT25	Information Retrieval System

OPEN ELECTIVES

OPEN ELECTIVE - I			
S. No.	Course Code	Course Name	Offering Department
1	A5AE62	Fundamentals of Avionics	Aeronautical Engineering
2	A5CS30	Core Java Programming	Computer Science and Engineering
3	A5CS26	Introduction to Data Analytics	
4	A5EC54	Microprocessors and Interfacing	Electronics and Communication Engineering
5	A5EC55	Principles of Communications	
6	A5EE52	Electrical Wiring and Safety Measures	Electrical and Electronics Engineering
7	A5EE53	Electrical Materials	
8	A5IT20	Fundamentals of Data Structures	Information Technology
9	A5ME72	Fundamentals of Engineering Materials	Mechanical Engineering
10	A5HS06	Business Economics and Financial Analysis	MBA
11	A5HS07	Basics of Entrepreneurship	
12	A5HS08	Human Values and Professional Ethics	
OPEN ELECTIVE - II			
S. No.	Course Code	Course Name	Offering Department
1	A5AE65	Non-Destructive Testing Methods	Aeronautical Engineering
2	A5CS31	Fundamentals of DBMS	Computer Science and Engineering
3	A5CS32	Introduction to Machine Learning	
4	A5CS07	Introduction to Design and Analysis of Algorithms	
5	A5EC58	Microcontrollers and Applications	Electronics and Communication Engineering
6	A5EC61	Fundamentals of Image processing	
7	A5EE56	Analysis of Linear Systems	Electrical and Electronics Engineering
8	A5EE57	Neural Networks and Fuzzy Logic	
9	A5IT29	Basics of Python Programming	Information Technology
10	A5IT11	Human Computer Interaction	
11	A5IT31	Software Testing Fundamentals	
12	A5ME73	Fundamentals of Mechatronics	Mechanical Engineering
13	A5HS09	Advanced Entrepreneurship	MBA
OPEN ELECTIVE - III			
S. No.	Course Code	Course Name	Offering Department
1	A5AE67	Unmanned Aerial Vehicles	Aeronautical Engineering
2	A5CS33	Introduction to Cloud Computing	Computer Science and Engineering
3	A5CS34	Computer Organization and Operating Systems	
4	A5CS29	Software Project Management	
5	A5EC62	Introduction to Sensors and Actuators	Electronics and Communication Engineering
6	A5EC63	Introduction to Computer Vision	
7	A5EE60	Solar Energy and Applications	Electrical and Electronics Engineering
8	A5IT34	Introduction to AI	Information Technology
9	A5ME75	Basics of Robotics	Mechanical Engineering
10	A5ME76	Fundamentals of Operation Research	
11	A5HS10	Indian Ethos and Business Ethics	MBA

OPEN ELECTIVE - IV			
S. No.	Course Code	Course Name	Offering Department
1	A5AE68	Fundamentals of Wind Power Technology	Aeronautical Engineering
2	A5CS20	Distributed Databases	Computer Science and Engineering
3	A5CS35	Fundamentals of Software Testing	
4	A5EC64	Introduction to Mobile Communications	Electronics and Communication Engineering
5	A5EC65	Basics of Embedded System Design	
6	A5EE61	Instrumentation and Control	Electrical and Electronics Engineering
7	A5EE63	Energy Storage Systems	
8	A5IT35	Introduction to Mobile Application Development	Information Technology
9	A5IT36	Big Data	
10	A5ME78	Renewable Energy Sources	Mechanical Engineering
11	A5HS15	Management Science	MBA
12	A5HS16	Intellectual Property Rights	