

Department of Computer Science and Systems Engineering

Approved Course Structure

Program: B.Tech.-COMPUTER SCIENCE AND SYSTEMS ENGINEERING

Regulations: SVEC-20

Mandatory Induction Program	03 weeks duration
Induction program offered before commencement of the I-Semester coursework	Physical activity
	Creative Arts
	Universal Human Values
	Literary
	Proficiency Modules
	Lectures by Eminent People
	Visits to local Areas
	Familiarization to Department/Branch and Innovations

I B.Tech. – I Semester

Sl. No.	Course Code	Course Title	Contact Periods per week				C	Scheme of Examination Max. Marks		
			L	T	P	Total		Int. Marks	Ext. Marks	Total Marks
1	20BT1BS01	Differential Equations and Multivariable Calculus	3	-	-	3	3	30	70	100
2	20BT1BS02	Engineering Chemistry	3	-	-	3	3	30	70	100
3	20BT1HS01	Communicative English	3	-	-	3	3	30	70	100
4	20BT11201	Programming for Problem Solving	3	-	-	3	3	30	70	100
5	20BT10201	Basic Electrical and Electronics Engineering	3	-	-	3	3	30	70	100
6	20BT1BS31	Engineering Chemistry Lab	-	-	3	3	1.5	30	70	100
7	20BT1HS31	Communicative English Lab	-	-	3	3	1.5	30	70	100
8	20BT11231	Programming for Problem Solving Lab	-	-	3	3	1.5	30	70	100
9	20BT1MC01	Universal Human Values (Mandatory Course)	2	-	-	2	-	30	-	30
Total:			17	-	09	26	19.5	270	560	830

I B.Tech. – II Semester

Sl. No.	Course Code	Course Title	Contact Periods per week				C	Scheme of Examination Max. Marks		
			L	T	P	Total		Int. Marks	Ext. Marks	Total Marks
			1	20BT2BS01	Transformation Techniques and Linear Algebra	3		-	-	3
2	20BT1BS03	Engineering Physics	3	-	-	3	3	30	70	100
3	20BT20501	Digital Logic Design	3	-	-	3	3	30	70	100
4	20BT21501	Object Oriented Programming through Java	3	-	-	3	3	30	70	100
5	20BT10331	Computer Aided Engineering Drawing	-	1	4	5	3	30	70	100
6	20BT1BS32	Engineering Physics Lab	-	-	3	3	1.5	30	70	100
7	20BT10332	Engineering Workshop	-	-	3	3	1.5	30	70	100
8	20BT21531	Object Oriented Programming through Java Lab	-	-	3	3	1.5	30	70	100
9	20BT1HSAC	Spoken English (Audit Course)	2	-	-	2	-	-	-	-
Total:			14	1	13	28	19.5	240	560	800

II B.Tech I–Semester

S. No.	Course Code	Course Title	Contact Periods per Week				Credits (c)	Scheme of Examination Max. Marks		
			L	T	P	Total		Int. Marks	Ext. Marks	Total Marks
			1.	20BT3BS01	Numerical Methods, Probability and Statistics	3		-	-	3
2.	20BT30501	Computer Organization	3	-	-	3	3	30	70	100
3.	20BT31201	Software Engineering	3	-	-	3	3	30	70	100
4.	20BT22901	Data Structures and Algorithms	3	-	-	3	3	30	70	100
5.	20BT31501	Operating Systems	3	-	-	3	3	30	70	100
6.	20BT31231	Software Engineering Lab	-	-	3	3	1.5	30	70	100
7.	20BT22931	Data Structures and Algorithms Lab	-	-	3	3	1.5	30	70	100
8.	20BT31531	Operating Systems Lab	-	-	3	3	1.5	30	70	100
9.	20BT31232	Programming with Python Lab	-	1	2	3	2	30	70	100
Total			16	-	11	26	21.5	270	630	900
10.	20BT315AC	Design Thinking	2	-	-	2	-	-	-	-

II B.Tech II–Semester

S. No.	Course Code	Course Title	Contact Periods per Week				Credits (C)	Scheme of Examination Max. Marks		
			L	T	P	Total		Int. Marks	Ext. Marks	Total Marks
1.	20BT40501	Database Management Systems	3	-	-	3	3	30	70	100
2.	20BT50502	Design and Analysis of algorithms	3	-	-	3	3	30	70	100
3.	20BT12901	Discrete Mathematical Structures	3	-	-	3	3	30	70	100
4.	20BT41501	Theory of Computation	3	-	-	3	3	30	70	100
5.	Open Elective-2		3	-	-	3	3	30	70	100
6.	20BT40531	Database Management Systems Lab	-	-	3	3	1.5	30	70	100
7.	20BT41531	Design and Analysis of Algorithms Lab	-	-	3	3	1.5	30	70	100
8.	20BT41532	Workshop in Open source tools	-	-	3	3	1.5	30	70	100
9.	20BT3HS31	Soft Skills Lab	-	1	2	3	2	30	70	100
Total			16	-	11	26	21.5	270	630	900
10.	20BT3MC01	Environmental Science	2	-	-	2	-	30	-	30

III B.Tech I–Semester

S. No.	Course Code	Course Title	Contact Periods per Week				Credits (C)	Scheme of Examination Max. Marks		
			L	T	P	Total		Int. Marks	Ext. Marks	Total Marks
1.	20BT5HS01	Organizational Behaviour	3	-	-	3	3	30	70	100
2.	20BT50501	Computer Networks	3	-	-	3	3	30	70	100
3.	20BT51201	Data Warehousing and Data Mining	3	-	-	3	3	30	70	100
4.	Open Elective-1		3	-	-	3	3	30	70	100
5.	Professional Elective- 1		3	-	-	3	3	30	70	100
	20BT51502	Performance Evaluation of Computer Systems								
	20BT51503	Natural Language Processing								
	20BT51504	Modern Cryptography								
	20BT51505	Parallel Computer Architectures								
	20BT51506	Software Testing								
6.	20BT50531	Computer Networks Lab	-	-	3	3	1.5	30	70	100
7.	20BT51231	Data Warehousing and Data Mining Lab	-	-	3	3	1.5	30	70	100
8.	20BT51531	Linux Programming Lab	-	1	2	3	2	30	70	100
9.	20BT51532	Summer Internship-1	-	-	-	-	1.5	-	100	100
Total			16	-	8	23	21.5	240	660	900
10.	20BT5MC01	Professional Ethics	2	-	-	2	-	30	-	30

III B.Tech II–Semester

S. No.	Course Code	Course Title	Contact Periods per Week				Credits (C)	Scheme of Examination Max. Marks		
			L	T	P	Total		Int. Marks	Ext. Marks	Total Marks
1.	20BT5HS02	Principles of Business Economics and Accountancy	3	-	-	3	3	30	70	100
2.	20BT60501	Machine Learning	3	-	-	3	3	30	70	100
3.	20BT51202	Web Technologies	3	-	-	3	3	30	70	100
4.	Professional Elective-2		3	-	-	3	3	30	70	100
	20BT61501	Systems Engineering								
	20BT61502	Data Visualization Techniques								
	20BT61503	Information Security								
	20BT61504	Parallel and Distributed Systems								
	20BT60503	Soft Computing								
5.	Professional Elective-3		3	-	-	3	3	30	70	100
	20BT61505	Systems Reliability								
	20BT71203	Big Data Technologies								
	20BT60541	Ad Hoc and Wireless Sensor networks								
	20BT51203	Advanced Databases								
	20BT61506	User Interface Design								
6.	Inter disciplinary Elective-1		3	-	-	3	3	30	70	100
	20BT40201	Control Systems								
	20BT60314	Optimization Techniques								
	20BT61241	IoT Architecture and Protocols								
	20BT61041	Sensors and Applications								
7.	20BT60531	Machine Learning Lab	-	-	3	3	1.5	30	70	100
8.	20BT51232	Web Technologies Lab	-	-	3	3	1.5	30	70	100
9.	20BT61531	Handheld computing: design and Application Development Lab	-	1	2	3	2	30	70	100
Total			19	-	11	23	23	270	630	900
10.	20BT503AC	Foundations of Entrepreneurship	2	-	-	2	-	-	-	-

IV B.Tech I–Semester


S. No.	Course Code	Course Title	Contact Periods per Week				Credits (C)	Scheme of Examination Max. Marks		
			L	T	P	Total		Int. Marks	Ext. Marks	Total Marks
1.	20BT71202	Data Analytics	3	-	-	3	3	30	70	100
2.	20BT71501	System Simulation and Modeling	3	-	-	3	3	30	70	100
3.	Professional Elective-4									
	20BT71207	Decision Support and Intelligent Systems								
	20BT43101	Artificial Intelligence								
	20BT70505	Blockchain Technologies	3	-	-	3	3	3	70	100
	20BT61201	Cloud Computing								
	20BT71502	Computational Statistics								
4.	Professional Elective-5									
	20BT70504	Augmented Reality and Virtual Reality								
	20BT70503	Data Science	3	-	-	3	3	30	70	100
	20BT50504	Cyber Security								
	20BT71503	High Performance Computing								
	20BT71504	Deep Learning								
5.	Inter disciplinary Elective-2									
	20BT70315	Industrial Internet of Things								
	20BT60406	Image Processing	3	-	-	3	3	30	70	100
	20BT70441	Pattern Recognition								
	20BT70401	Embedded Systems								
6.	20BT71232	Data Analytics Lab	-	-	3	3	1.5	30	70	100
7.	20BT71531	System Simulation and Modeling Lab	-	-	3	3	1.5	30	70	100
8.	20BT71532	Data Science using R Lab	-	1	2	3	2	30	70	100
9.	20BT71533	Summer Internship-2					1.5	-	100	100
Total			15	-	9	24	21.5	240	660	900
10.	20BT715AC	Kernel Programming	2	-	-	2	-	-	-	-


IV B.Tech II-Semester

S. No.	Course Code	Course Title	Contact Periods per Week				Credits (C)	Scheme of Examination Max. Marks		
			L	T	P	Total		Int. Marks	Ext. Marks	Total Marks
1.	20BT81531	Project Work	-	-	-	-	12	100	100	200
2.	20BT81532	Internship	-	-	-	-	-	-	-	-
Total			-	-	-	-	12	100	100	200

LIST OF COURSES FOR OPEN ELECTIVE-1 & OPEN ELECTIVE-2

Course Code	Open Elective -1	Course Code	Open Elective -2
20BT4BS01	Material Science	20BT4HS01	Banking and Insurance
20BT4HS02	Business Communication and Career Skills	20BT4HS03	Cost Accounting and Financial Management
20BT4HS04	Entrepreneurship for Micro, Small and Medium Enterprises	20BT4HS05	Gender and Environment
20BT4HS06	German Language	20BT4HS07	Indian Economy
20BT4HS08	Indian History	20BT4HS09	Life Skills
20BT4HS10	Personality Development	20BT4HS11	Indian Tradition and Culture
20BT4HS12	Women Empowerment	20BT4HS13	Constitution of India
20BT40205	Reliability and Safety Engineering	20BT50106	Disaster Mitigation and Management
20BT40105	Environmental Pollution and Control	20BT50107	Sustainable Engineering
20BT40106	Planning for Sustainable Development	20BT50108	Contract Laws and Regulations
20BT40107	Rural Technology	20BT50310	Global Strategy and Technology
20BT40305	Human Resource Management	20BT50311	Management Science
20BT50506	Ethical Hacking	20BT40502	Cyber Laws and Security
20BT51205	AI in Healthcare	20BT50206	Intellectual Property Rights
20BT51501	Bioinformatics	20BT50406	Green Technologies


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