BALLARI INSTITUTE OF TECHNOLOGY & MANAGEMENT – BALLARI
(AN AUTONOMOUS INSTITUTION AFFILIATED TO VISVESVARAYA TECHNOLOGICAL UNIVERSITY)
COMPUTER SCIENCE & ENGINEERING – DATA SCIENCE

CURRICULUM FOR I- VI   SEMESTER

SEMESTER I

Sl. No	Course code	Course Name
1	**22MATS11	Mathematics for CSE Stream-I
2	22PHYS12	Physics for CSE stream
3	22POP13	Principles of Programming Using C
4	22ESC14x	Engineering Science Course-I
5	22ETC15x	Emerging Technology Course-I
	OR	
	22PLC15x	Programming Languages Course-I
6	22ENG16	Communicative English
7	22KSK17 22KBK17	Samskrutika Kannada/ Balake Kannada
	OR	
	20ICO17	Indian Constitution
8	22IDT18	Innovation and Design Thinking
		OR
	22SFH18	Scientific Foundations of Health

SEMESTER II

Sl. No	Course Code	Course Name
1	**22MATS21	Mathematics for CSE Stream -II
2	22PHYS22	Physics for CSE Stream
3	22POP23	Principles of Programming Using C
4	22ESC24x	Engineering Science Course-II
5	22ETC25x	Programming Language Course-II
	OR	
	22PLC25x	Emerging Technology Course-II
6	22PWS26	Professional Writing Skills in English
7	22KSK27	Samskrutika Kannada/ Balake Kannada

	22KBK27	
	OR	
	20ICO27	Indian Constitution
8	22IDT28	Innovation and Design Thinking
	OR	
	22SFH28	Scientific Foundations of Health

SEMESTER III

SN	Course Code	Course Title
1	22MDA31	Graph theory and Discrete Mathematical Structures, Probability and Statistics
2	22CD32	Digital System Design and Computer Organization
3	22CD33	Operating System
4	22CD34	Data Structures and Applications
5	22CDL35	Data Structures Lab
6	22CD36X	ESC/ETC/PLC Object Oriented Programming With JAVA
7	22CD37	Social Connect and Responsibility
8	22CD38X	Ability Enhancement Course / Skill Enhancement Course - III
9	22NS39	National Service Scheme (NSS)
10	22PE39	Physical Education (PE) (Sports and Athletics)
11	22YO39	Yoga

Ability Enhancement Course – III			
22CD381	Unix and Shell Programming	22CD382	Version Controller with GiT
22CD383	R Programming		

SEMESTER IV

SN	Course and Course Code		Course Title
1	BSC	22BB41	Biology for Engineers
2	IPCC	22CD42	Introduction to Data Science
3	IPCC	22CD43	Database Management Systems
4	PCC	22CD44	Analysis and Design of Algorithms
5	PCCL	22CDL45	Algorithms Lab
6	ESC	22CD46X	ESC/ETC/PLC
7	AEC/ SEC	22SSA47	Soft Skill & Aptitude
8	UHV	22UH48	Universal human values course
9	MC	22NS49	National Service Scheme (NSS)
		22PE49	Physical Education (PE) (Sports and Athletics)
		22YO49	Yoga

Engineering Science Course (ESC/ETC/PLC)			
22CD461	System Software	22CD462	Object Oriented Programming with Python
22CD463	Introduction to Data Analytics		

SEMESTER V

Sl. No	Course and Course Code		Course Title
1	HSMS	22CD51	Software Engineering & Project Management
2	IPCC	22CD52	Computer Networks
3	PCC	22CD53	Artificial Intelligence
4	PCCL	22CDL54	Artificial Intelligence Lab
5	PEC	22CD55X	Professional Elective Course
6	PROJ	22CDMN56	Mini Project
7	AEC	22ADA57	Advanced Aptitude(Ability Enhancement Course / Skill Development Course)
8	MC	22ES58	Environmental Studies
9	MC	22NS59	National Service Scheme (NSS)
		22PE59	Physical Education (PE) (Sports and Athletics)
		22YO59	Yoga

ROFESSIONAL ELECTIVE COURSES	
22CD551	Automata Theory & Compiler Design
22CD552	Computer Graphics & Visualization
22CD553	NoSQL
22CD554	UI / UX

SEMESTER VI

Sl. No	Course and Course Code		Course Title
1	IPCC	22CD61	Big Data Analytics
2	PCC	22CD62	Machine Learning
3	PEC	22CD63X	Professional Elective Course
4	OEC	22CD64X	Open Elective Course
5	PROJ	22CDP65	Project Work – Phase I
6	PCCL	22CDL66	Machine Learning Lab
7	AEC	22RM67	Research Methodology & IPR
8	MC	22NS68	National Service Scheme (NSS)
		22PE68	Physical Education (PE) (Sports and Athletics)
		22YO68	Yoga

PROFESSIONAL ELECTIVE COURSES	
22CD631	DevOps
22CD632	Natural Language Processing
22CD633	Data Visualization
22CD634	Block Chain Technology

OPEN ELECTIVE COURSES	
22CD641	Data Structures and Applications
22CD642	Data Base Management System
22CD643	Operating System
22CD644	UI / UX