SCHEME OF INSTRUCTION

NBKR INSTITUTE OF SCIENCE & TECHNOLOGY: VIDYANAGAR (AUTONOMOUS)

COMPUTER SCIENCE & ENGINEERING – OVERALL SCHEME OF INSTRUCTION (With effect from the academic year (2023-24) R23)

S. No	I B. Tech — I Sem	L	T	P	C	II B. Tech — I Sem	L	T	P	C	III B. Tech — I Sem	L	T	P	C	IV B. Tech — I Sem	L	T	P	C
1.	BS&H - Chemistry 23BS11T2	3	0	0	3	BS&H - Discrete Mathematics & Graph Theory 23BS21T5	3	0	0	3	PC - Machine Learning	3	0	0	3	PC - Deep Learning	3	0	0	3
2.	BS&H - Linear Algebra & Calculus 23BS11T3	3	0	0	3	BS&H - Universal Human Values–Understanding Harmony and Ethical Human Conduct 23BS21T6	2	1	0	3	PC - Computer Networks	3	0	0	3	MC-II - Human Resource Management	2	0	0	2
3.	BS&H - Communicative English 23BS11T4	2	0	0	2	ES - Digital Logic & Computer Organization 23AD21T2	3	0	0	3	PC - Formal Languages and Automata Theory	3	0	0	3	Professional Elective – IV	3	0	0	3
4.	ES - Introduction to Programming 23ES11T1	3	0	0	3	PC - Advanced Data Structures & Algorithms Analysis 23CS21T1	3	0	0	3	Professional Elective - I	3	0	0	3	Professional Elective - V	3	0	0	3
5.	ES - Basic Civil & Mechanical Engineering 23ES11T2	3	0	0	3	PC - Object Oriented Programming Through Java 23CS21T2	3	0	0	3	Open Elective - I / Minor -1	3	0	0	3	Open Elective-III / Minor-III	3	0	0	3
6.	BS&H - Chemistry Lab 23BS11P2	0	0	2	1	PC - Advanced Data Structures and Algorithms Lab 23CS21P1	0	0	3	1.5	PC - Machine Learning Lab	0	0	3	1.5	Open Elective-IV / Minor-IV	3	0	0	3
7.	BS&H - Communicative English Lab 23BS11P3	0	0	2	1	PC - Object Oriented Programming Through Java Lab 23CS21P2	0	0	3	1.5	PC - Computer Networks Lab	0	0	3	1.5	SEC - Prompt Engineering	0	1	2	2
8.	ES - Computer Programming Lab 23ES11P1	0	0	3	1.5	SEC- Python programming 23CS21SC	0	1	2	2	SEC - Full Stack development - II	0	1	2	2	AC - Gender Sensitization	2	0	0	-
9.	ES - Engineering Workshop 23ES11P4	0	0	3	1.5	AC - Environmental Science 23AC21T1	2	0	0	-	ES - Tinkering Lab	0	0	2	1	Internship	-	-	-	2
10	BS&H - Health and wellness, Yoga and Sports 23BS11P5	-	-	1	0.5	-	-	-	-	-	ECSI - Summer Internship (CSP)	-	-	-	2		-	-	-	-
	TOTAL	**14**	**0**	**11**	**19.5**	**TOTAL**	**16**	**2**	**8**	**20**	**TOTAL**	**15**	**1**	**10**	**23**	**TOTAL**	**19**	**1**	**2**	**21**
	I B. Tech — II Sem	**L**	**T**	**P**	**C**	**II Sem**	**L**	**T**	**P**	**C**	**II Sem**	**L**	**T**	**P**	**C**	**II Sem**	**L**	**T**	**P**	**C**
1.	BS&H - Engineering Physics 23BS12T1	3	0	0	3	MC-I - Business Environment 23BS22T5	2	0	0	2	PC - Compiler Design	3	0	0	3	Internship & Project Work	0	0	24	12
2.	BS&H - Differential Equations & Vector Calculus 23BS12T4	3	0	0	3	ES/BS - Probability & Statistics 23BS22T2	3	0	0	3	PC - Cloud Computing	3	0	0	3	-	-	-	-	-
3.	ES - Basic Electrical and Electronics Engineering 23ES12T2	3	0	0	3	PC - Operating Systems 23CS22T1	3	0	0	3	PC - Cryptography & Network Security	3	0	0	3	-	-	-	-	-
4.	ES - Engineering Graphics 23ES12T6	1	0	4	3	PC - Database Management Systems 23AD22T1	3	0	0	3	Professional Elective - II	3	0	0	3	-	-	-	-	-
5.	PC - Data Structures 23CS12T1	3	0	0	3	PC - Software Engineering 23CS22T2	3	0	0	3	Professional Elective - III	3	0	0	3	-	-	-	-	-
6.	BS&H - Engineering Physics Lab 23BS12P1	0	0	2	1	PC - Operating Systems Lab 23CS22P1	0	0	3	1.5	Open Elective - II / Minor - II	3	0	0	3	-	-	-	-	-
7.	ES - Electrical and Electronics Engineering Workshop 23ES12P1	0	0	3	1.5	PC - Database Management Systems Lab 23AD22P1	0	0	3	1.5	PC - Cloud Computing Lab	0	0	3	1.5	-	-	-	-	-
8.	ES - IT Workshop 23ES12P2	0	0	2	1	SEC - Full Stack development – 1 23CS22SC	0	1	2	2	PC - Cryptography & Network Security Lab	0	0	3	1.5	-	-	-	-	-
9.	PC - Data Structures Lab 23CS12P1	0	0	3	1.5	BS&H - Design Thinking &Innovation 23ES22T1	1	0	2	2	SEC - Soft skills OR IELTS	0	1	2	2	-	-	-	-	-
10.	BS&H - NSS/NCC/Scouts & Guides/Community Service 23BS12P6	-	-	1	0.5	-	-	-	-	-	AC - Technical Paper Writing & IPR	2	0	0	-	-	-	-	-	-
	TOTAL	**13**	**0**	**15**	**20.5**	**TOTAL**	**15**	**1**	**10**	**21**	**TOTAL**	**20**	**1**	**8**	**23**	**TOTAL**	**0**	**0**	**24**	**12**
	-					**Mandatory Community Service Project Internship of 08 weeks duration during summer vacation**					**Mandatory Industry Internship of 08 weeks duration during summer vacation**					-				

III - I	III - II	III - II	IV - I
PROFESSIONAL ELECTIVE – I 23XXXXX - Object Oriented Analysis and Design 23XXXXX - Microprocessors & Microcontrollers 23XXXXX - Artificial Intelligence 23XXXXX - Data Warehousing & Data Mining 23XXXXX - 12 week MOOC Swayam/NPTEL course recommended by the BoS	***PROFESSIONAL ELECTIVE – II*** 23XXXXX - Software Testing Methodologies 23XXXXX - Cyber Security 23XXXXX - DevOps 23XXXXX - Embedded Systems 23XXXXX - 12 week MOOC Swayam/NPTEL course recommended by the BoS	***PROFESSIONAL ELECTIVE –III*** 23XXXXX - Software Project Management 23XXXXX - Mobile Adhoc Networks 23XXXXX - Natural Language Processing 23XXXXX - Distributed Operating System 23XXXXX - 12 week MOOC Swayam/NPTEL course recommended by the BoS	***PROFESSIONAL ELECTIVE – IV*** 23XXXXX - Software Architecture & Design Pattern 23XXXXX - Block chain Technology 23XXXXX - Augmented Reality & Virtual Reality 23XXXXX - Internet of Things 23XXXXX -12 week MOOC Swayam / NPTEL course recommended by the BoS
IV - I	IV - I		
PROFESSIONAL ELECTIVE – V 23XXXXX - Agile methodologies 23XXXXX - Metaverse 23XXXXX - Computer Vision 23XXXXX - Cyber Physical Systems 23XXXXX - 12 week MOOC Swayam/NPTEL course recommended by the BoS	***HSMC ELECTIVE*** 23XXXXX - Management Science 23XXXXX - Customer Relationship Management 23XXXXX - Strategic Management 23XXXXX - Corporate Governance and Business Ethics		