

FIRST YEAR B. TECH CURRICULUM 2024 (Common to all branches)

Semester	GROUP A (FIRST SEMESTER) PHYSICS GROUP						GROUP B (FIRST SEMESTER) CHEMISTRY GROUP					
	Sub. Cod e	Subject Name	L	T	P	C	Sub. Cod e	Subject Name	L	T	P	C
I		Engineering Mathematics–I	3	1	0	4		Engineering Mathematics–I	3	1	0	4
		Elements of Civil Engineering	2	1	0	3		Element of Mechanical Engineering	2	1	0	3
		Engineering Physics	3	1	0	4		Engineering Chemistry	3	1	0	4
		Basic Electronics	2	1	0	3		Element of Electrical engineering	2	1	0	3
		Communication Skills	2	0	0	2	CS101A1	Computer Programming in C	3	1	0	4
		Engineering Graphics	1	0	2	2		Environmental Science	2	0	0	1
		Constitution of India	2	0	0	1						
		Workshop Practice	0	0	2	1	CS101A4	Computer Programming Lab	0	0	2	1
		Engineering Physics Lab	0	0	2	1		Engineering Chemistry Lab	0	0	2	1
			15	4	6	21			15	5	4	21
	Total Contact Hours (L + T + P)		25			Total Contact Hours (L + T + P)		24				
	*Mandatory audit course					*Mandatory audit course						
II	GROUP A (SECOND SEMESTER)						GROUP B (SECOND SEMESTER)					
		Engineering Mathematics–II	3	1	0	4		Engineering Mathematics–II	3	1	0	4
		Element of Mechanical Engineering	2	1	0	3		Elements of Civil Engineering	2	1	0	3
		Engineering Chemistry	3	1	0	4		Engineering Physics	3	1	0	4
		Element of Electricalengineering	2	1	0	3		Basic Electronics	2	1	0	3
	CS101A1	Computer Programming in C	3	1	0	4		Communication Skills	2	0	0	2
		Environmental Science	2	0	0	1		Engineering Graphics	1	0	2	2
								Constitution of India	2	0	0	1
	CS101A4	Computer Programming Lab	0	0	2	1		Workshop Practice	0	0	2	1
		Engineering Chemistry Lab	0	0	2	1		Engineering Physics Lab	0	0	2	1
		15	5	4	21			15	4	6	21	
	Total Contact Hours (L + T + P)		24			Total Contact Hours (L + T + P)		25				

Note: UHV–I has been introduced under Mandatory Induction Program.

B.TECH. COURSE STRUCTURE – SEMESTER WISE

THIRD SEMESTER							
Year	Course Code	Course Title	Total Number of Contact Hours				Credits
			Lecture (L)	Tutorial (T)	Practical (P)	Total Hours	
2 nd	MA205A1	Discrete Mathematics	3	1	0	4	4
	IT211A1	Digital Design and Computer Organization	3	1	0	4	4
	IT212A1	Data Structures	3	1	0	4	4
	IT213A1	Object Oriented Programming using C++	3	1	0	4	4
	IT2**A3	Program Elective-I	3	1	0	4	4
	IT2**A2/ IT2**A8	Open Elective-I/Minor/NCC	3	1	0	4	4
	IT214A4	Data Structures Laboratory	0	0	2	2	1
	IT215A4	Object Oriented Programming using C++ Laboratory	0	0	2	2	1
	IT216A5	Project Based Learning- I	0	0	2	2	1
TOTAL			18	6	6	30	27

FOURTH SEMESTER							
Year	Course Code	Course Title	Total Number of Contact Hours				Credits
			Lecture (L)	Tutorial (T)	Practical (P)	Total Hours	
2 nd	MA206A1	Probability, Statistics, and Stochastic Processes	3	1	0	4	4
	IT221A1	JAVA Programming	3	1	0	4	4
	IT222A1	Database Management Systems	3	1	0	4	4
	IT2**A3	Program Elective-II	3	1	0	4	4
	IT2**A2/ IT2**A8	Open Elective-II/Minor/NCC	3	1	0	4	4
	GN201A1	Universal Human Values- II Understanding harmony and Ethical Human Conduct	3	0	0	3	3
	IT223A4	JAVA Programming Laboratory	0	0	2	2	1
	IT224A4	Database Management Systems Laboratory	0	0	2	2	1
	IT225A5	Project Based Learning- II	0	0	2	2	1
TOTAL			18	5	6	29	26

FIFTH SEMESTER							
Year	Course Code	Course Title	Total Number of Contact Hours				Credits
			Lecture (L)	Tutorial (T)	Practical (P)	Total Hours	
3 rd	IT311A1	Artificial Intelligence	3	1	0	4	4
	IT312A1	Formal Languages and Automata Theory	3	1	0	4	4
	IT313A1	Computer Networks	3	1	0	4	4
	IT314A1	Software Engineering	3	1	0	4	4
	IT3**A3	Program Elective-III	3	0	0	3	3
	IT3**A2/ IT3**A8	Open Elective-III/Minor/NCC	3	1	0	4	4
	IT315A4	Artificial Intelligence Laboratory	0	0	2	2	1
	IT316A4	Computer Network Laboratory	0	0	2	2	1
	GN301A1	Quantitative Aptitude and Logical Reasoning -I	1	0	0	1	1
	IT317A5	Project Based Learning- III	0	0	2	2	1
	IT318A9	Industrial Training-I	0	0	2	2	1
TOTAL			18	6	8	32	28

SIXTH SEMESTER							
Year	Course Code	Course Title	Total Number of Contact Hours				Credits
			Lecture (L)	Tutorial (T)	Practical (P)	Total Hours	
3 rd	BA346A1	Industrial Management	2	0	0	2	2
	IT321A1	Operating System	3	1	0	4	4
	IT322A1	Web Technology and Web Services	3	1	0	4	4
	IT3**A3	Program Elective-IV	3	1	0	4	4
	IT3**A3	Program Elective-V	3	1	0	4	4
	IT3**A2/ IT3**A8	Open Elective-IV /Minor	3	1	0	4	4
	IT323A4	Operating System Laboratory	0	0	2	2	1
	IT324A4	Web Technology and Web Services Laboratory	0	0	2	2	1
	GN302A1	Quantitative Aptitude and Logical Reasoning -II	1	0	0	1	1
	IT325A5	Mini Project	0	0	2	1	1
TOTAL			16	5	08	31	26

SEVENTH SEMESTER							
Year	Course Code	Course Title	Total Number of Contact Hours				Credits
			Lecture (L)	Tutorial (T)	Practical (P)	Total Hours	
4 th	IT4**A2/ IT4**A8	Open Elective-V/Minor	3	1	0	4	4
	IT4**A2	Choice-Based Elective	3	0	0	3	3
	IT411A6	Major Project -Phase-I	0	0	20	20	10
	IT412A9	Industrial Training-II	0	0	2	2	1
	TOTAL		6	1	22	29	18

EIGHTH SEMESTER							
Year	Course Code	Course Title	Total Number of Contact Hours				Credits
			Lecture (L)	Tutorial (T)	Practical (P)	Total Hours	
4 th	IT4**A2/ IT4**A8	Open Elective-VI /Minor	3	1	0	4	4
	IT421A6	Major Project -Phase-II	0	0	18	18	9
	TOTAL		3	1	18	22	13

LIST OF ELECTIVES FOR 3 rd SEMESTER			
PROGRAM ELECTIVE-I			
Year	COURSE CODE	COURSE TITLE	CREDIT
2 nd	IT211A3	Python Programming	4
	IT212A3	System Simulation and Modelling	4
	IT213A3	Information Systems and Security	4
	IT214A3	Microprocessors & Peripheral Devices	4
	IT215A3	E-Commerce	4
	IT216A3	Soft Skills and Interpersonal Communication	4

LIST OF ELECTIVES FOR 4 TH SEMESTER			
PROGRAM ELECTIVE-II			
Year	COURSE CODE	COURSE TITLE	CREDIT
2 nd	IT221A3	Design and Analysis of Algorithms	4
	IT222A3	Microcontrollers	4
	IT223A3	Computer Graphics	4

LIST OF ELECTIVES FOR 5 TH SEMESTER			
PROGRAM ELECTIVE-III			
Year	COURSE CODE	COURSE TITLE	CREDIT
3 rd	IT311A3	User Interaction(UI)- User Experience(UX)	3
	IT312A3	Digital Image Processing	3
	IT313A3	Information Retrieval	3
	IT314A3	Design Thinking	3
	IT315A3	Data Warehousing & Data Mining	3
	IT316A3	Big Data Analytics	3
	IT317A3	Optimization Techniques	3
	IT318A3	Internet of Things (IOT)	3

LIST OF ELECTIVES FOR 6 TH SEMESTER			
PROGRAM ELECTIVE-IV			
Year	COURSE CODE	COURSE TITLE	CREDIT
3 rd	IT321A3	Machine Learning	4
	IT322A3	Natural language Processing	4
	IT323A3	Latest Trends in Information Technology	4
	IT324A3	System Programming	4
	IT325A3	Bio Inspired Computing	4
	IT326A3	Autonomous Mobile Robotics and Computational Intelligence	4
	IT327A3	Real Time Systems	4
	IT328A3	Cloud Computing	4
	IT337A3	Ad-hoc Wireless Networks	4
	IT338A3	High Performance Computing	4
	PROGRAM ELECTIVE-V		
	IT329A3	Deep Learning	4
	IT330A3	Pattern Recognition	4
	IT331A3	Web Content Management and Web 3.0	4
	IT332A3	Soft Computing	4
	IT333A3	Cyber Physical Systems	4
	IT334A3	Social Network Analysis	4
	IT335A3	Remote Sensing And Geographic Information System	4
	IT336A3	Wireless Sensor Networks	4
	IT339A3	Augmented Reality	4

LIST OF ELECTIVES FOR 7 TH SEMESTER			
CHOICE BASED ELECTIVE			
Year	COURSE CODE	COURSE TITLE	CREDIT
4 th	IT481A2	Science, Technology and Society	3
	IT482A2	Essence of Indian Traditional Knowledge	3

OPEN ELECTIVE/ MINOR - Cyber Security			
SEMESTER	COURSE CODE	COURSE TITLE	CREDIT
3 rd	IT210A2/ IT210A8	Introduction to Cryptography	4
4 th	IT220A2/ IT220A8	Introduction to Cyber Security	4
5 th	IT310A2/ IT310A8	Cyber Security Solutions	4
6 th	IT320A2/ IT320A8	Cyber Digital Forensics	4
7 th	IT410A2/ IT410A8	Block Chain Technology	4
8 th	IT420A2/ IT420A8	Ethical Hacking and Data Privacy	4

OPEN ELECTIVE/MINOR - Multimedia Computing and Communications			
SEMESTER	COURSE CODE	COURSE TITLE	CREDIT
3 rd	IT219A2/ IT219A8	Multimedia fundamentals	4
4 th	IT229A2/ IT229A8	Mobile Computing and Communication	4
5 th	IT319A2/ IT319A8	Digital Signal Processing	4
6 th	IT329A2/ IT329A8	Multimedia Animation and Modeling	4
7 th	IT419A2/ IT419A8	Speech Processing	4
8 th	IT429A2/ IT429A8	Information Theory and Error Correcting Codes	4