MARRI LAXMAN REDDY
INSTITUTE OF TECHNOLOGY AND MANAGEMENT
(AN AUTONOMOUS INSTITUTION)
(Approved by AICTE, New Delhi & Affiliated to JNTUH, Hyderabad)
Accredited by NBA and NAAC with 'A' Grade & Recognized Under Section2(f) & 12(B)of the UGC act,1956

B.Tech - COMPUTER SCIENCE AND ENGINEERINGP
COURSE STRUCTURE (R24)
Applicable From 2024-25 Admitted Batch
Structure Breakup

S. No	Category	Breakup of credits (Total 160 credits)
1	Humanities and Social Sciences including Management courses (HSMC)	7
2	Basic Sciences Courses (BS)	20
3	Engineering Sciences courses including Workshop, Drawing basics of electrical/mechanical/computer etc.(ES)	26
4	Skill Development Course(SDC), Professional Core courses (PC)	61
5	Professional Electives (PE)	18
6	Open Electives (OE)	9
7	Experiential Learning, Project work, Seminar and Internship in industry or elsewhere (PS)	19
8	Mandatory Courses	-
	TOTAL	160

I YEAR I SEMESTER(I SEMESTER)

S. No.	Course Code	Course Title	Course Area	Hours Per Week			Credits	Scheme of Examination Maximum Marks		
				L	T	P		Internal (CIA)	External (SEE)	Total
		Theory								
1	2410001	Matrices and Calculus	BS	3	1	0	4	40	60	100
2	2410009	Engineering Chemistry	BS	3	0	0	3	40	60	100
3	2410501	Problem Solving using C and C++	ES	3	0	0	3	40	60	100
4	2410201	Principles of Electrical and Electronics Engineering	ES	3	0	0	3	40	60	100
		Laboratory								
1	2410072	Engineering Chemistry Laboratory	BS	0	0	2	1	40	60	100
2	2410371	Computer Aided Engineering Graphics	ES	1	0	4	3	40	60	100
3	2410271	Principles of Electrical and Electronics Engineering Laboratory	ES	0	0	2	1	40	60	100
4	2410571	Problem Solving using C and C++ Laboratory	ES	0	0	2	1	40	60	100
		Skill Development								
1	2410596	Web Application Development	SDC	0	0	2	1	40	60	100
		Mandatory								
1	2410026	Yoga and Inner Engineering	MC	0	0	0	0	-	-	-
		Induction Program	-	-	-	-	-	-	-	-
Total Credits				13	1	12	20	360	540	900

I YEAR II SEMESTER (II SEMESTER)

S. No.	Course Code	Course Title	Course Area	Hours Per Week			Credits	Scheme of Examination Maximum Marks		
				L	T	P		Internal (CIA)	External (SEE)	Total
		Theory								
1	2420002	Differential Equations and Vector Calculus	BS	3	1	0	4	40	60	100
2	2420008	Applied Physics	BS	3	0	0	3	40	60	100
3	2420010	English for Skill Enhancement	HSMC	3	0	0	3	40	60	100
4	2420502	Essentials of Problem Solving using Python	ES	3	0	0	3	40	60	100
		Laboratory								
1	2420372	Engineering Workshop	ES	0	1	4	3	40	60	100
2	2420071	Applied Physics Laboratory	BS	0	0	2	1	40	60	100
3	2420073	English Language and Communication Skills Laboratory	HSMC	0	0	2	1	40	60	100
4	2420572	Essentials of Problem Solving using Python Laboratory	ES	0	0	2	1	40	60	100
		Skill Development								
1	2420027	Public speaking skills	SDC	0	0	2	1	40	60	100
		Mandatory								
1		Foreign Language*	MC	0	0	0	0	-	-	-
		Induction Program								
		Total Credits		12	2	12	20	360	540	900

- **Students can choose any one of the foreign language from the given list**
  - i) **24X0FL1 French**
  - ii) **24X0FL2 German**
  - iii) **24X0FL3 Spanish**
  - iv) **24X0FL4 Korean**

II YEAR I SEMESTER (III SEMESTER)

S. No.	Course Code	Course Title	Course Area	Hours Per Week			Credits	Scheme of Examination Maximum Marks		
				L	T	P		Internal (CIA)	External (SEE)	Total
		Theory								
1	2430503	Database Management Systems	PC	3	0	0	3	40	60	100
2	2436703	Discrete Mathematics	PC	2	0	0	2	40	60	100
3	2430505	Software Engineering	PC	2	0	0	2	40	60	100
4	2436606	Computer system architecture	PC	3	1	0	4	40	60	100
5	2430507	Data Structures	ES	3	0	0	3	40	60	100
6	243EXL1	Design and Innovation	EL	0	0	2	1	40	60	100
		Laboratory								
1	2430573	Database Management Systems Laboratory	PC	0	0	2	1	40	60	100
2	2430574	Data visualization-Power BI	PC	0	0	2	1	40	60	100
3	2430575	Data Structures Laboratory Using Python	ES	0	0	2	1	40	60	100
	2430588	Internship-I *	PS	0	0	2	1	100	-	100
		Skill Development								
1	2430597	NO SQL Data Bases (MONGO DB)	SDC	0	0	2	1	40	60	100
		Mandatory								
1	2430021	Environmental Science	MC	0	0	0	0	-	-	-
		Total Credits		13	1	12	20	500	600	1100

**students have to complete internship in I year-II semester summer break with minimum 2 Weeks duration.

II YEAR II SEMESTER (IV SEMESTER)

S. No.	Course Code	Course Title	Course Area	L	T	P	Credits	Internal (CIA)	External (SEE)	Total
		Theory								
1	2440508	Design and Analysis of Algorithms	PC	2	0	0	2	40	60	100
2	2440004	Computer Oriented Statistical Methods	BS	3	1	0	4	40	60	100
3	2440512	Artificial Intelligence	PC	3	0	0	3	40	60	100
4	2440510	Operating Systems	PC	3	0	0	3	40	60	100
5	2440511	OOPS through JAVA	ES	3	0	0	3	40	60	100
6	244ExL2	Prototype/model development and Entrepreneurship	EL	0	0	2	1	40	60	100
		Laboratory								
1	2440576	Design and Analysis of Algorithms through JAVA Laboratory	ES	0	0	2	1	40	60	100
2	2440577	Operating Systems Laboratory	PC	0	0	2	1	40	60	100
3	2440581	Artificial Intelligence Laboratory	PC	0	0	2	1	40	60	100
		Skill Development								
1	24X0598	Parallel Computation - RUST	SDC	0	0	2	1	40	60	100
		Mandatory								
1		Indian Knowledge System*	MC	0	0	0	0	-	-	-
		Total Credits		**14**	**1**	**10**	**20**	**400**	**600**	**1000**

- **Students can choose any one of the following course**
  - i)   24XIKS1:Indian Science, Engineering and Technology
  - ii)   24XIKS2:Fundamentals and Applications of Vedic Mathematics
  - iii)   24XIKS3:Indian Health, Wellness and Psychology- including Ayurved
  - iv)   24XIKS4:Indian Town Planning and Architecture

III YEAR ISEMESTER (V SEMESTER)

S. No.	Course Code	Course Title	Course Area	Hours Per Week			Credits	Scheme of Examination Maximum Marks		
				L	T	P		Internal (CIA)	External (SEE)	Total
		Theory								
1	2450504	Formal Languages and Automata Theory	PC	3	0	0	3	40	60	100
2	2450513	Computer Networks	PC	3	1	0	4	40	60	100
3	2450544	Full Stack Development	PC	3	0	0	3	40	60	100
4		Open Elective-I	OE	3	0	0	3	40	60	100
5		Professional Elective-I	PE	3	0	0	3	40	60	100
		Laboratory								
1	2450579	Computer Networks Laboratory	PC	0	0	2	1	40	60	100
2	2450580	Full Stack Development Laboratory	PC	0	0	2	1	40	60	100
3	2456676	UI/UX Design Laboratory	PC	0	0	2	1	40	60	100
		Project								
1	2450587	Field based Project	PS	0	0	2	1	100	-	100
		Mandatory								
1	2450022	Gender Sensitization	MC	0	0	0	0	-	-	-
	Total Credits			15	1	8	20	420	480	900

*Students have to complete field based project in summer break Minimum 2 weeks after II year II semester

III YEARIISEMESTER (VI SEMESTER)

S. No.	Course Code	Course Title	Course Area	Hours Per Week			Credits	Scheme of Examination Maximum Marks		
				L	T	P		Internal (CIA)	External (SEE)	Total
		Theory								
1	2460515	Machine Learning	PC	3	0	0	3	40	60	100
2	2460516	Cryptography and Network Security	PC	3	1	0	4	40	60	100
3	2460517	Compiler Design	PC	3	1	0	4	40	60	100
4		Professional Elective-II	PE	3	0	0	3	40	60	100
5		Open Elective-II	OE	3	0	0	3	40	60	100
		Laboratory								
1	2460582	Cryptography and Network Security Laboratory	PC	0	0	2	1	40	60	100
2	2460583	Machine Learning Laboratory	PC	0	0	2	1	40	60	100
3	2460584	Compiler Design Laboratory	PC	0	0	2	1	40	60	100
		Mandatory								
1	2460025	Human Values and Professional Ethics	MC	0	0	0	0	-	-	-
Total Credits				15	2	6	20	320	480	900

IV YEAR I SEMESTER (VII SEMESTER)

S. No.	Course Code	Course Title	Course Area	Hours Per Week L	T	P	Credits	Scheme of Examination Maximum Marks Internal (CIA)	External (SEE)	Total
		Theory								
1	2470010	Business Economics and Financial Analysis	HSMC	3	0	0	3	40	60	100
2	2470518	Data Mining	PC	3	0	0	3	40	60	100
3	2470519	Devops	PC	2	0	0	2	40	60	100
4		Professional Elective - III	PE	3	0	0	3	40	60	100
5		Open Elective - III	OE	3	0	0	3	40	60	100
		Laboratory								
1	2470585	Devops Laboratory	PC	0	0	2	1	40	60	100
2	2470586	Data Mining Laboratory	PC	0	0	2	1	40	60	100
		Project								
1	2470594	Internship-II *	PS	0	0	2	1	100	-	100
	2470590	Project Stage –I	PS	0	0	6	3	100	-	100
		Mandatory								
1	2470023	Constitution of India	MC	0	0	0	0	-	-	-
		Total Credits		14	0	12	20	480	420	900

**students have to complete internship in III year-II semester summer break with minimum 2 Weeks duration.

IV YEAR II SEMESTER (VIII SEMESTER)

S. No.	Course Code	Course Title	Course Area	L	T	P	Credits	Internal (CIA)	External (SEE)	Total
		Theory								
1		Professional Elective-IV	PE	3	0	0	3	40	60	100
2		Professional Elective-V	PE	3	0	0	3	40	60	100
3		Professional Elective-VI	PE	3	0	0	3	40	60	100
		Project								
1	2480589	Technical Seminar	PS	0	0	4	2	100	-	100
2	2480591	Project Stage– II	PS	0	0	18	9	40	60	100
Total Credits				9	0	22	20	260	240	500

PE I-Professional Elective I

S. No	Course Code	Course Title
1	24X0520	Cyber Security
2	24X0521	Software Testing Methodologies
3	24X0522	Distributed Systems
4	24X0523	Internet of Things

PEII-Professional Elective II

S. No	Course Code	Course Title
1	24X0524	Scripting Languages
2	24X0525	Adhoc and Sensor Networks
3	24X0526	Software Project Management
4	24X0527	IoT Communication Protocols

PEIII– Professional Elective III

S. No	Course Code	Course Title
1	24X6704	Linux Programming
2	24X0529	Data Science
3	24X0530	Natural Language Processing
4	24X6702	Cyber Laws

PEIV –Professional Elective IV

S.No	Course Code	Course Title
1	24X0532	Cloud Computing
2	24X0533	Data Analytics
3	24X0534	Mobile Computing
4	24X6653	Database Security

PEV-Professional Elective V

S.No	Course Code	Course Title
1	24X0536	Cloud Security
2	24X6710	Introduction to Business Intelligence
3	24X6646	Information Retrieval Systems
4	24X0539	Design Patterns

PEVI-Professional Elective VI

S.No	Course Code	Course Title
1	24X0540	Block chain Technology
2	24X6610	Introduction to Deep Learning
3	24X0552	Web Services
4	24X6654	Generative AI