



(Autonomous)

Department of Computer Science & Engineering

UR-19 Course Structure

I YEAR I SEMESTER							
S.No	Course Code	Courses	L	T	P	Contact Hrs./Wk	C
1	C111	Communicative English	2	0	0	2	2
2	C112	Mathematics – I Linear Algebra & Calculus	3	1	0	4	4
3	C113	Applied Chemistry	3	0	0	3	3
4	C114	Mathematics – III - Numerical Methods & Statistics	3	0	0	3	3
5	C115	Fundamentals of Computer Science	3	0	0	3	3
6	C116	Communicative English Lab - I	0	0	2	2	1
7	C117	Applied Chemistry Lab	0	0	3	3	1.5
8	C118	IT Workshop & Engineering Workshop Lab	0	0	3	3	1.5
Total			14	1	8		19

I YEAR II SEMESTER							
S.No	Course Code	Courses	L	T	P	Contact Hrs./Wk	C
1	C121	Professional English	2	0	0	2	2
2	C122	Mathematics – II - Differential equation & Vector Calculus	3	0	0	3	3
3	C123	Applied Physics	3	0	0	3	3
4	C124	Engineering Graphics & Drafting	1	0	3	4	2.5
5	C125	Digital Logic & Design	3	0	0	3	3
6	C126	Problem Solving and Programming using C	3	0	0	3	3
7	C127	Professional English Lab	0	0	3	3	1.5
8	C128	Applied Physics Lab	0	0	3	3	1.5
9	C129	Problem Solving and Programming Using C Lab	0	0	3	3	1.5
Mandatory Courses							
10	C129A	Environmental Studies	0	0	0	2	0
11	C129B	Applied Physics – Virtual lab	0	0	0	2	0
Total			18	0	14		21

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II YEAR I SEMESTER							
S.No	Course Code	Courses	L	T	P	Contact Hrs./Wk	C
1	C211	Mathematical Foundations of Computer Science	3	0	0	3	3
2	C212	Software Engineering	3	0	0	3	3
3	C213	Python Programming	3	0	0	3	3
4	C214	Data Structures	3	0	0	3	3
5	C215	Object Oriented Programming through C++	3	0	0	3	3
6	C216	Computer Organization and Architecture	3	0	0	3	3
7	C217	Python Programming Lab	0	0	3	3	1.5
8	C218	Data Structures through C++ Lab	0	0	3	3	1.5
Mandatory Courses							
9	C219	Essence of Indian Traditional Knowledge	3	0	0	3	0
10	C220	Employability Skills- I*	2	0	0	2	0
11		Self Learning* (Technical Certificate)	0	0	0	2	0
Total			23	0	6		21
	*Internal Evaluation						

II YEAR II SEMESTER							
S.No	Course Code	Courses	L	T	P	Contact Hrs./Wk	C
1	C221	Statistics With R programming	3	0	0	3	3
2	C222	Java Programming	2	1	0	3	3
3	C223	Operating Systems	3	0	0	3	3
4	C224	Data Base Management Systems	3	0	0	3	3
5	C225	Formal Languages and Automata Theory	3	0	0	3	3
6	C226	Java Programming Lab	0	0	3	3	1.5
7	C227	UNIX Operating System Lab	0	0	3	3	1.5
8	C228	Data Base Management Systems Lab	0	0	3	3	1.5
Mandatory Courses							
9	C229	Professional Ethics & Human Values	3	0	0	3	0
10	C230	Mini Projects – I*	0	0	0	2	0
Total			17	1	9		19.5
	*Internal Evaluation						

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III YEAR I SEMESTER							
S.No	Course Code	Courses	L	T	P	Contact Hrs./Wk	C
1	C311	Data Warehousing and Data Mining	3	0	0	3	3
2	C312	Computer Networks	3	0	0	3	3
3	C313	Compiler Design	3	0	0	3	3
4	C314	Artificial Intelligence	3	0	0	3	3
5	C315	Professional Elective- I 1. Software Analysis and Design 2. Data Storage Technologies & Networks 3. Big-Data with Hadoop 4. Cloud computing 5. Advanced Data Structures	3	0	0	3	3
6	C316	Computer Networks & Compiler Design Lab	0	0	3	3	1.5
7	C317	AI Tools & Techniques Lab	0	0	3	3	1.5
8	C318	Data Mining Lab	0	0	3	3	1.5
Mandatory Courses							
9	C319	Employability Skills -II*	2	0	0	2	0
10	C320	Self Learning* (Technical Certificate)	0	0	0	2	0
Total			17	0	9		19.5
*Internal Evaluation							

ISO 9001 : 2015 Certified Institution

CODE:URCE



USHARAMA

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III YEAR II SEMESTER							
S.No	Course Code	Courses	L	T	P	Contact Hrs./Wk	C
1	C321	Web Technologies	3	0	0	3	3
2	C322	Internet of Things	1	0	0	1	1
3	C323	Design and Analysis of Algorithms	3	0	0	3	3
4	C324	Professional Elective -II 1. Software Architecture 2. Malware Analysis & Reverse Engineering 3. Nosql Databases 4. Cloud Analytics 5. Principles of Programming Language	3	0	0	3	3
5	C325	Open Elective- I (Inter Disciplinary)	3	0	0	3	3
6	C326	Managerial Economics and Financial Accountancy	3	0	0	3	3
7	C327	Web Technologies Lab	0	0	3	3	1.5
8	C328	Internet of Things & Application Lab	0	0	3	3	1.5
Mandatory Courses							
9	C329	Mini Project – II(* Minimum 15 hours)	0	0	0	2	0
*Internal Evaluation Total			16	0	6	0	19

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IV YEAR I SEMESTER							
S.No	Course Code	Courses	L	T	P	Contact Hrs./Wk	C
1	C411	Cryptography and Network Security	3	0	0	3	3
2	C412	UML & Design Patterns	3	0	0	3	3
3	C413	Machine Learning	3	0	0	3	3
4	C414	Open Elective -II (Inter Disciplinary)	3	0	0	3	3
5	C415	Professional Elective- III 1. Software Testing Methodologies 2. Digital Forensics 3. Big Data Analytics 4. Cluster and Grid Computing 5. Full Stack Development	3	0	0	3	3
6	C416	Professional Elective- IV 1. Software Project Management 2. Cyber Security & Forensics 3. Python with Data Science 4. Soft Computing 5. Deep Learning	3	0	0	3	3
7	C417	UML Lab	0	0	3	3	1.5
8	C418	Project (Phase -I)	0	0	3	3	1.5
9	C419	Internships	0	0	0	0	2
Total			18	0	3		23
IV YEAR II SEMESTER							
S.No	Course Code	Courses	L	T	P	Contact Hrs./Wk	C
1	C421	Management and Organizational Behavior	3	0	0	3	3
2	C422	Open Elective- III (Inter Disciplinary)	3	0	0	3	3
3	C423	Professional Elective-V 1. Software Security Essentials 2. Cyber Laws 3. Knowledge Discovery 4. Cloud Security 5. Block Chain Technologies	3	0	0	3	3
4	C424	Project (Phase -II)	0	0	9	9	9
Total			9	0	9		18

Total credits=(19+21)+(21+19.5)+(19.5+19)+(23+18)=40+40.5+38.5+41=160

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Department of Computer Science & Engineering

UR-19 Course Structure

Open Electives to be offered by CSE for Other Branches:

Open Elective I: 1. Java Programming 2. Data Base Management Systems 3. C++ Programming	Open Elective II: 1. Distributed Computing 2. Deep Learning 3. AI and ML for Robotics
Open Elective III: 1. AI Tools & Techniques 2. Information Security 3. Big Data	

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Open Electives to be offered by other Departments for Computer Science & Engineering

Electronics & Communication Engineering 1. Information Coding Theory 2. VLSI 3. Signals & Systems 4. Digital Signal Processing 5. Medical Image Processing 6. RFID, Sensors & Data Acquisition	Mathematics 1. Statistics with R 2. Cryptography, number theory and cryptanalysis 3. Fuzzy Sets, Logic and Systems
Electrical and Electronics Engineering 1. Networking Analysis 2. Fuzzy Systems & Controllers 3. Green Energy Models 4. Power Systems for Data Centers 5. Power Safety and Management	Civil Engineering 1. Intelligent transportation engineering 2. Geospatial Systems (GIS, Remote Sensing etc.,) 3. Engineering Mechanics 4. Smart City Planning 5. Smart & Safety Building Design
Mechanical Engineering 1. Industrial Management 2. Robotics and Autonomous Driving Systems 3. CAD and MATLAB 4. Basics of Mechatronics 5. Alternative Energy Systems 6. Optimization Techniques	