

2021-2022

21CSU01	CORE: I PROGRAMMING IN C	SEMESTER	LEVEL
CO1	Recall the basics of C Tokens, Operators, Array and Files	I	K1
CO2	Summarize the concepts of input and output functions, decision making and looping, string functions, and pointers		K2
CO3	Classify Arrays and functions		K3
CO4	Analyse the functions of Pointers, Structures and files		K4
CO5	Determine the usage of pointers and files		K5
21CSU02	Core : II PROGRAMMING IN C-PRACTICAL	SEMESTER	LEVEL
CO 1	Define the basics of arithmetic operations using C tokens.	I	K 1
CO 2	Choose the True/ False statements for checking ODD / EVEN numbers.		K 2
CO 3	Calculate simple interest, Employee pay Bill, area of shapes and factorial value		K 3
CO 4	Experiment matrix addition		K 4
CO 5	Validating the file operations		K 5
21CSU03	COMPUTER ORGANIZATION AND ARCHITECTURE	SEMESTER	LEVEL
CO 1	Recall the arithmetic and logical operations	I	K 1
CO 2	Explain the basic computer organization and design		K 2
CO 3	Identify the input/output organization		K 3
CO 4	analyze the functions of the memory organization		K 4
CO 5	evaluate architectures and computational designs concepts related to architecture of memory organization		K 5

21FCU01	FOUNDATION: I ENVIRONMENTAL STUDIES	SEMESTER	LEVEL
CO 1	Define environment, ecosystem, biodiversity, environmental pollution and social issues.	I	K 1
CO 2	Explain the natural resources, types of ecosystem, geographical classification of India, causes of environmental pollution and the problems related to the society.		K 2
CO 3	Identify the information related to environment and the resources to protect it.		K 3
CO 4	Analyze the classification of natural resources, energy flow in the ecosystem, threats to biodiversity, disaster management and the role of information technology in environment and human health.		K 4
CO 5	Assess the environmental issues with a focus on sustainability.		K 5
21CSU05	CORE: V PROGRAMMING IN JAVA	SEMESTER	LEVEL
CO 1	Outline the basic concepts of Java Programming Language	II	K 1
CO 2	Explain the concepts of tokens, control structures and looping, arrays, applet programming and Exception handling		K 2
CO 3	Apply java programming for practical solutions		K 3
CO 4	Analyze wide range of Applications by using java programming		K 4
CO 5	Determine the usage of all given concepts in the development of programming solutions		K 5
21CSU06	CORE: VI PROGRAMMING IN JAVA- PRACTICAL	SEMESTER	LEVEL
CO 1	Outline the basic concepts of Java Programming Language	II	K 1
CO 2	Explain the concepts of tokens, control structures and looping, arrays, applet programming and Exception handling		K 2
CO 3	Apply java programming for practical solutions		K 3
CO 4	Analyze wide range of Applications by using java programming		K 4
CO 5	Determine the usage of all given concepts in the development of programming solutions		K 5

21CSU07	CORE: VII INTERNET PROGRAMMING	SEMESTER	LEVEL
CO 1	Outline the basics concepts of Internet, Web Browsers, XHTML, CSS and XML programming	II	K 1
CO 2	Explain the settings of Web Browsers and Programming aspects of CSS and XML		K 2
CO 3	Apply the programming concepts that can be used for practical solutions		K 3
CO 4	Analyze the wide range of application areas for the selection of appropriate internet programming language		K 4
CO 5	Determine the usage of all given concepts in the development of internet programming		K 5
21FCU02	FOUNDATION: II YOGA AND ETHICS	SEMESTER	LEVEL
CO 1	Recollect the basic terminologies in yoga and value education	II	K 1
CO 2	Demonstrate the importance of yoga, mental exercises, principles of life and components of values.		K 2
CO 3	Apply the techniques of dynamic & mental exercises and philosophical values in real life		K 3
CO 4	Classify the different types of asanas, stages of mind, analysis of thought, ethical values and social values.		K 4
CO 5	Evaluate how the yoga and value education make a person strong both physically and mentally		K 5
21CSU09	CORE: IX DATA STRUCTURES	SEMESTER	LEVEL
CO 1	Recall the various data structures, algorithms and sorting methods	III	K 1
CO 2	Describe the basic concepts of data structures, sorting and symbol table		K 2
CO 3	Use appropriate data structures for varied problems		K 3
CO 4	Examine different data structures and algorithms to find best solution for the real time applications		K 4
CO 5	Recommend a specific data structure and sorting algorithm for an application.		K 5

21CSU10	CORE: X LINUX AND SHELL PROGRAMMING	SEMESTER	LEVEL
CO 1	Recall the basic set of commands and utilities in Linux/UNIX systems	III	K 1
CO 2	Outline the file and its working		K 2
CO 3	Classify the Linux environment		K 3
CO 4	Inspect the Curses Terminology and its Concepts		K 4
CO 5	Examine terminals and termios structure		K 5
21CSU11	CORE: XI SHELL PROGRAMMING – PRACTICAL	SEMESTER	LEVEL
CO 1	Recall the basic set of commands and utilities in Linux/UNIX systems	III	K 1
CO 2	Outline the Binary search and its working		K 2
CO 3	Classify the Terminal Locking		K 3
CO 4	Inspect the File Terminology and its Concepts		K 4
CO 5	Examine Arithmetic and Logical Calculations		K 5
21CSU12	CORE: XII SOFTWARE ENGINEERING	SEMESTER	LEVEL
CO 1	Recall the software development life cycle and associated process models	III	K 1
CO 2	Illustrate Requirement modeling and design issues that are used in software development		K 2
CO 3	Explain the need in Planning, Software Cost Estimation, Documentation and Formal Verification		K 3
CO 4	Categorize various Design and testing techniques used for Software Development		K 4
CO 5	Examine dynamic design issues which are used in software development		K 5
21AEU01	ABILITY ENHANCEMENT: I	SEMESTER	LEVEL
CO 1	Recall the software development life cycle and associated process models	III	K 1
CO 2	Illustrate Requirement modeling and design issues that are used in software development		K 2
CO 3	Explain the need in Planning, Software Cost Estimation, Documentation and Formal Verification		K 3
CO 4	Categorize various Design and testing techniques used for Software Development		K 4

CO 5	Examine dynamic design issues which are used in software development		K 5
21AEU01	NON-MAJOR ELECTIVE: I INDIAN WOMEN AND SOCIETY	SEMESTER	LEVEL
CO 1	know women status in Indian society as an academic discipline	III	K 1
CO 2	interpret the various roles of women, challenges and issues faced by them in the society		K 2
CO 3	find out solutions to their legal issues and protect themselves from the violence against women emphasize on women entrepreneurship for their empowerment		K 3
CO 4	critically analyze the lifestyle and challenges of women		K 4
CO 5	discuss the importance of women health and issues related to women in general		K 5
21CSU14	CORE: XIV RELATIONAL DATABASE MANAGEMENT SYSTEMS	SEMESTER	LEVEL
CO 1	Recall the basic concepts of database system.	IV	K 1
CO 2	Explain Normalization and Query language.		K 2
CO 3	Apply appropriate SQL queries and PL/SQL Programs for database application.		K 3
CO 4	Analyze different normal forms to design effective database design.		K 4
CO 5	Verify data in tables against appropriate constraints.		K 5
21CSU15	CORE: XV PRACTICAL: IV SQL AND PL/SQL- PRACTICAL	SEMESTER	LEVEL
CO 1	Recall the basic concepts of database system.	IV	K 1
CO 2	Demonstrate the use of Queries.		K 2
CO 3	Apply appropriate SQL queries and PL/SQL Programs for database application.		K 3
CO 4	Examine different looping structures to design effective program		K 4
CO 5	Assess the data in tables against appropriate constraints.		K 5

21CSU16	CORE: XVI OPERATING SYSTEM	SEMESTER	LEVEL
CO 1	Recall the fundamental concepts of operating system	IV	K 1
CO 2	Demonstrate the function of Deadlock and storage management		K 2
CO 3	Utilise the policies of scheduling		K 3
CO 4	Analyse memory management		K 4
CO 5	Evaluate the concepts of storage management		K 5
21CSU17	CORE: XVII ALLIED: IV COMPUTER NETWORKS	SEMESTER	LEVEL
CO 1	Recall the concepts, reference models and various layers of computer networks	IV	K 1
CO 2	Explain the principles, protocols and algorithms of different layers of OSI reference models		K 2
CO 3	Apply the error detection and correction techniques and routing algorithms for efficient and error free transmission in networks		K 3
CO 4	Analyze the various routing algorithms for handling internal traffic efficiently		K 4
CO 5	Evaluate the data transmission services and connection establishment on network		K 5
21SECSU01	SKILL ENHANCEMENT: I ANIMATION- PRACTICAL:V	SEMESTER	LEVEL
CO 1	Recall the concepts of image tools	IV	K 1
CO 2	Explain the various effects in photoshop		K 2
CO 3	Identify appropriate steps for creating animation		K 3
CO 4	Analyze the techniques in flash		K 4
CO 5	Evaluate the special effects in flash		K 5
21AEU02	ABILITY ENHANCEMENT: II CONSUMER RIGHTS	SEMESTER	CO 1
CO 1	Memorize the procedure of redress of consumer complaints, and the role of different agencies in establishing product and service standards	IV	K 1
CO 2	Explain the Consumer Protection Law in India		K 2

CO 3	Impart sound practical grounding about the practice of consumer law and the procedure followed		K 3
CO 4	Evaluate the regulations and legal actions that helps to protect consumers		K 4
CO 5	Analyze the knowledge and skills needed for a career in this field		K 5
21CSU18	CORE: XVIII PROGRAMMING IN PYTHON	SEMESTER	LEVEL
CO 1	Recall syntax and semantics of various programming constructs.	IV	K 1
CO 2	Illustrate the process of structuring data using lists, tuples, and dictionaries		K 2
CO 3	Identify appropriate programming structure for a given problem.		K 3
CO 4	Convert an algorithm into a python program		K 4
CO 5	Infer the object-oriented concepts in python		K 5
21CSU19	CORE: XIX PRACTICAL: VI PROGRAMMING IN PYTHON - PRACTICAL	SEMESTER	LEVEL
CO 1	Recall the syntax and semantics of various programming constructs while writing simple programs	V	K 1
CO 2	Understand the basic programming concepts of python		K 2
CO 3	Organize data using lists, tuples, dictionaries and files and program using control structures, functions, class and objects		K 3
CO 4	Assume appropriate programming structure and data type to solve the given problem efficiently		K 4
CO 5	Interpret the given problem statement into a python program		K 5

21CSU20	CORE: XX COMPUTER GRAPHICS	SEMESTER	LEVEL
CO 1	Describe the basics of computer graphics	V	K 1
CO 2	Explain applications, principles, commonly used and techniques of computer graphics and algorithms for Line-Drawing, Circle- Generating and Ellipse Generating.		K 2
CO 3	apply two dimensional Geometric Transformations		K 3
CO 4	Analyze the attributes of output primitives		K 4
CO 5	Examine and appraise the two-dimensional viewing		K 5
21CSU21	CORE: XXI MINI PROJECT	SEMESTER	LEVEL
CO 1	Remember the thrust areas of project	V	K 1
CO 2	Demonstrate the problem pertaining to the domain		K 2
CO 3	Apply various algorithms in their relevant field		K 3
CO 4	Explorethe real time applications		K 4
CO 5	Evaluate demographic variables and factors influencing software development		K 5
21CSU22A	CORE: XXII ELECTIVE: I INTERNET OF THINGS	SEMESTER	LEVEL
CO 1	Recall the general concepts of Internet of Things (IoT)	V	K 1
CO 2	Illustrate various IoT sensors and applications		K 2
CO 3	Apply design concepts to IoT solutions		K 3
CO 4	Compare various IoT architectures		K 4
CO 5	Evaluate Design issues in IoT applications		K 5
21CSU22B	CORE: XXII ELECTIVE: I WEB PROGRAMMING WITH PHP	SEMESTER	LEVEL
CO 1	Learn basic development concepts of PHP	V	K 1
CO 2	Acquire knowledge about control structures		K 2
CO 3	Examine PHP arrays		K 3
CO 4	Analyze about OOPS and File concepts		K 4

CO 5	Implement database connectivity and XML		K 5
21CSU22C	CORE: XXII ELECTIVE: I ARTIFICIAL INTELLIGENCE	SEMESTER	LEVEL
CO 1	Outline the basic AI problems, techniques and knowledge representation issues	V	K 1
CO 2	Explain the AI problem designs and issues, heuristic techniques and knowledge representation methods		K 2
CO 3	Apply first order predicate logic rules to solve AI problems		K 3
CO 4	Analyse AI problems using various search techniques		K 4
CO 5	Compare procedural and declarative knowledge representation methods		K 5
21CSUOE1	CORE: XXIII OPEN ELECTIVE: INTERNET FOR EVERYONE	SEMESTER	LEVEL
CO 1	To get familiar with basics of the Internet, World Wide Web and Web browsers.	V	K 1
CO 2	Obtain the Knowledge of Finding Information in the Internet and awareness on Internet Security and Privacy.		K 2
CO 3	Understand How to email, tips for effective use of Email, Advantages and Disadvantages of Email.		K 3
CO 4	To illustrate the Possibilities of Social Networking. Learning discussion forum software & effective use of video conferencing.		K 4
CO 5	To learn Blogging & Making Money in the Internet.		K 5
21ITUOE1	CORE: XXIII OPEN ELECTIVE: BASICS OF COMPUTER TECHNOLOGY	SEMESTER	LEVEL
CO 1	Recall the basics of Computer	V	K 1
CO 2	Illustrate the concepts of data communication and Computer networks		K 2
CO 3	Utilize Middleware and Gateways		K 3
CO 4	Analyze the concepts of Mobile Computing		K 4
CO 5	Examine the DBMS Architecture		K 5

21CAUOE1	CORE: CORE: XXIII OPEN ELECTIVE: MACHINE LEARNING	SEMESTER	LEVEL
CO 1	Remember Machine Learning Fundamentals	V	K 1
CO 2	Understanding The Machine Learning Concepts		K 2
CO 3	Summarize The Impact of Machine Learning Applications		K 3
CO 4	Analyze How Machine Learning Support to Business Goals		K 4
CO 5	Evaluate The Knowledge of Machine Skills		K 5
21SEU02	SKILL ENHANCEMENT: II LIFE SKILLS	SEMESTER	LEVEL
CO 1	Identify the common communication problems, what good communication skills are and what they can do to improve their abilities	V	K 1
CO 2	Demonstrate communication through the digital media		K 2
CO 3	Prepare themselves to situations as an individual and as a team.		K 3
CO 4	Analyse various leadership models, strengths and abilities to create their leadership vision		K 4
CO 5	Appraise their potential as human beings and conduct themselves properly in the ways of the world.		K 5
21PECSU01	PROFICIENCY ENHANCEMENT : CASE TOOLS (Self-Study)	SEMESTER	LEVEL
CO 1	Outline the concepts of data modeling and its tools	V	K 1
CO 2	Describe DFD, DDT, Ubridge, and UML		K 2
CO 3	Analyze real time problems and draw appropriate data modeling diagrams		K 3
CO 4	Apply the relevant modeling tools to represent the problem using diagrams		K 4
CO 5	Assess the software development life cycle with DFD and UML diagrams		K 5
21CSU24	CORE: XXIV: DATA MINING	SEMESTER	LEVEL
CO 1	Remember the basics of Data Mining concepts	VI	K 1
CO 2	Explain the techniques of Data Mining		K 2
CO 3	Classify algorithms for mining the data efficiently		K 3
CO 4	Analyze clustering techniques and algorithms		K 4

CO 5	Evaluate the challenges of data mining in real world applications		K 5
21CSU25	CORE:XXV I: PROGRAMMING IN VB.NET	SEMESTER	LEVEL
CO 1	Outline the basic concepts of .Net Frame work, class and objects	VI	K 1
CO 2	Explain the concepts of data types, control statements, looping statements, arrays, structures, procedures and functions		K 2
CO 3	Illustrate the importance of windows form, interfaces, packages, inheritance and exception handling		K 3
CO 4	Analyse the various .NET controls and database controls		K 4
CO 5	Evaluate the use of ADO.Net connection		K 5
21CSU26	CORE:XXVI PRACTICAL:VII PROGRAMMING IN VB. NET – PRACTICAL	SEMESTER	LEVEL
CO 1	Recall the basic concepts of class and objects using console application	VI	K 1
CO 2	Illustrate the concepts of data types, control statements, looping statements, arrays, structures, procedures and functions using programs		K 2
CO 3	Build applications using windows form, interfaces, packages, inheritance and exception handling		K 3
CO 4	Analyze the usage of various .NET controls		K 4
CO 5	Examine the use of ADO.Net connection for real world applications		K 5
21CSU27A	CORE: XXVII ELECTIVE: I NETWORK SECURITY	SEMESTER	LEVEL
CO 1	Define the concepts of Symmetric Encryption	VI	K 1
CO 2	Illustrate various public key cryptographic techniques		K 2
CO 3	Classify Secure Socket Layer		K 3
CO 4	Examine authentication applications		K 4
CO 5	Sketch IP Security and web Security		K 5

21CSU27B	CORE: XXVII ELECTIVE: II INTRODUCTION TO COMPILER DESIGN	SEMESTER	LEVEL
CO 1	Recall to understand the basics of compilers and lexical analysis	VI	K 1
CO 2	Interpret the concept of syntactic specification of programming languages and parsing techniques		K 2
CO 3	Build knowledge on the syntax and symbol tables		K 3
CO 4	Analyze an insight on runtime storage and error recovery		K 4
CO 5	Interpret General introduction on code optimization		K 5
21CSU27C	CORE: XXVII ELECTIVE: II INFORMATICS	SEMESTER	LEVEL
CO 1	Recall the Basics of Informatics	VI	K 1
CO 2	Demonstrate strong understanding of security and Ethics issues related to informatics.		K 2
CO 3	Apply technology informatics skills to solve specific industry data and information management problems, with a focus on usability and designing for users.		K 3
CO 4	Ideate informatics products and services.		K 4
CO 5	Conduct informatics Analysis and visualization applied to different real-world fields.		K 5
21CSU28A	CORE: XXVIII ELECTIVE: III MULTIMEDIA SYSTEMS	SEMESTER	LEVEL
CO 1	Recognize the basic concepts of multimedia	VI	K 1
CO 2	Demonstrate different multimedia content		K 2
CO 3	Discover various effect in animated files		K 3
CO 4	Analyze multimedia processing techniques		K 4
CO 5	Determine multimedia requirements for designing		K 5
21CSU28B	CORE: XXVIII ELECTIVE: III DIGITAL IMAGE PROCESSING	SEMESTER	LEVEL
CO 1	Recall the concepts of image processing	VI	K 1
CO 2	Discuss the various image processing methods		K 2

CO 3	Illustrate sampling, filtering and detection methods		K 3
CO 4	Analyze the enhancement, segmentation, restoration and compression techniques		K 4
CO 5	Evaluate the different image processing techniques		K 5
22CSU28C	CORE: XXVIII ELECTIVE: III BIG DATA ANALYTICS	SEMESTER	LEVEL
CO 1	Recall the Big Data and Data Analytics concepts	VI	K 1
CO 2	Explain the NoSQL, Hadoop and Map Reduce Concepts with algorithms		K 2
CO 3	Illustrate Data Stream Management, Frequent Itemset Mining in clustering techniques		K 3
CO 4	Analyze Big Data Challenges, link analysis and Recommendation systems		K 4
CO 5	Summarize Hadoop architecture and types of Big Data approach		K 5
21SECSU03	SKILL ENHANCEMENT: III E-COMMERCE	SEMESTER	LEVEL
CO 1	Recall the basic technology of Ecommerce.	VI	K 1
CO 2	Explain the Ecommerce Technologies.		K 2
CO 3	Identify benefits of online marketing		K 3
CO 4	Analyze the security policies and digital certificates.		K 4
CO 5	Examine the risks in Online Payment methods in Online shopping		K 5