Course Outcomes (II Year) 2020-21 I Sem		
Course Name: Mathematical Foundations of Computer Science		
NO	**Course Outcome**	**Taxonomy**
C211.1	Evaluate basic logic statements using truth tables and properties of logic and find the PCNF and PDNF	Evaluate
C211.2	Describe the properties of sets ,functions and groups	Understand
C211.3	Understand the concepts of algebraic	Understand
C211.4	Explain the fundamental principle of counting and identify the relationship between permutations and combinations	Understand
C211.5	Determine the recurrence relation using generating functions	Apply
C211.6	Understand the concepts of graphs &Apply the concepts of functions to identify the isomorphic graphs ,DFS,BFS and spanning trees	Apply
Course Name: Digital Logic Design		
NO	**Course Outcome**	**Taxonomy**
C212.1	Differentiate various number systems, binary codes	Understand
C212.2	Solve the Boolean Expressions using basic postulates of Boolean algebra.	Apply
C212.3	Solve the Boolean Expressions using k-maps and other minimization methods .	Apply
C212.4	Design different combinational circuits.	Create
C212.5	Analyze different Sequential circuits.	Analyze
C212.6	Understand different types of Programmable Logic Devices and Transistor Logic Circuits.	Understand
Course Name: Design Thinking		
NO	**Course Outcome**	**Taxonomy**
C213.1	Explain about Design and Process of Product Development	Understand
C213.2	Describe about benefits, principles , innovation and various case studies in design thinking	Understand
C213.3	Identify the Idea generation techniques and methods used for Product development	Remember
C213.4	Analyze the design thinking process in IT and Agile software development	Analyze
C213.5	Use TILES toolkit and cloud implementation for Design thinking activities in IT	Apply
C213.6	Describe about design techniques related to Variety of Software services.	Understand
Course Name: Database Management Systems		
NO	**Course Outcome**	**Taxonomy**
C214.1	Analyse database concepts and structures and query language	Analyse

C214.2	Develop the E R model and relational model	Create
C214.3	Apply various Normalization techniques	Apply
C214.4	Build various advance SQL queries related to Transaction Processing & Locking using concept of Concurrency control.	Create
C214.5	Describe query processing and techniques involved in query optimization.	Understand
C214.6	Determine the principles of storage structure and recovery management.	Apply
Course Name: Object Oriented Programming Through Java		
NO	**Course Outcome**	**Taxonomy**
C215.1	Understand the syntax, semantics, various string handling functions indulging type conversion and casting of Java Programming Language.	Understand
C215.2	Illustrate code reusability through inheritance, packages and interfaces	Apply
C215.3	Create User defined Exceptions with exception handling	Create
C215.4	Identify the difference between various files and streams	Remember
C215.5	Use multithreading, prebuilt generic data structures framework and Collections.	Apply
C215.6	Use the JDBC API to access database, build GUIs and handle events generated by user interactions.	Apply
Course Name: Python Programming		
NO	**Course Outcome**	**Taxonomy**
C216.1	Apply the basic concepts, modular approach to solve the problems.	Apply
C216.2	Design the programs using conditional execution, recursion, built in functions, turtle	Create
C216.3	Design programs to manipulate strings	Create
C216.4	Apply python programs to read and write data from/to files.	Apply
C216.5	Design the programs by choosing appropriate data structures like lists, dictionaries, tuples.	Create
C216.6	Apply object oriented programming concepts	Apply
Course Name: Universal Human Values		
NO	**Course Outcome**	**Taxonomy**
C217.1	Discuss the concept value-education in individual's lifefor happiness & prosperity	Understand
C217.2	Explain the term self-exploration and its application for self-evaluation and development.	Understand
C217.3	Discuss the importance of values in human relationships	Understand
C217.4	Explain the holistic perception of harmony at level of self, family, society and nature.	Understand
C217.5	Outline the co-existence of nature and human being	Analyze
C217.6	Use professional ethics in their future profession for making a value-based	Apply

	society	
Course Name: Database Management Systems Lab		
NO	**Course Outcome**	**Taxonomy**
C218.1	Describe the basic concept of Database System and Applications	Remember
C218.2	Use the Basic of SQL and construct queries using SQL	Apply
C218.3	Develop Program in PL/SQL including Procedures, Functions .	Create
C218.4	Develop PL/SQL programming using concept of Package and Triggers	Create
C218.5	Design of database using Normalization.	Create
C218.6	Design of Database Applications	Create
Course Name: Object Oriented Programming Through Java Lab		
C219.1	Understand syntax and semantics of Java Programming Language.	Understand
C219.2	Write portable programs which work in all environments.	Create
C219.3	Solve the problem using object oriented concepts.	Apply
C219.4	Use Multi-threading and Applet Programming.	Apply
C219.5	Create user friendly interfaces.	Create
C219.6	Use Exception Handling.	Apply
Course Name: Python Programming Lab		
C2110.1	Design solutions to solve mathematical problems	create
C2110.2	Develop python programs that read and write data from & to files	create
C2110.3	Build Python user defined functions for solving problems	create
C2110.4	Design object-oriented programs with Python classes	create
C2110.5	Illustrate Conditionals and Loops for Python Programs	Analyse
C2110.6	Develop graphics using python turtle library	create
Course Name: Environmental Science		
C2111.1	Gain the knowledge about environment , natural resources and different techniques involved in its conservation.	Understand
C2111.2	Get the information about different eco-systems and its functions.	Understand
C2111.3	Recognize the types of bio-diversity along with values and conservation methods.	Analyse

C2111.4	Gain the knowledge about various environmental pollutions and able to design the environmental friendly process in engineering.	Apply
C2111.5	Gain the knowledge about sustainable development concept and practice it in life, society and Industry.	Apply
C2111.6	Understand the both impacts of population growth on environment and needed measures to protect the environment .	Understand

Course Outcomes (III Year) 2020-21 I Sem		
Course Name: Operating Systems		
NO	**Course Outcome**	**Taxonomy**
C311.1	Explain the role of Operating System, its functions and types	Understand
C311.2	Illustrate the concepts of process, Multi processing, Thread and Multi threading	Analyse
C311.3	Compare the performance of various CPU scheduling algorithms	Evaluate
C311.4	Outline different ways to handle the deadlocks and process synchronization	Analyse
C311.5	Compare and contrast various memory management techniques	Evaluate
C311.6	Describe the concepts of File system, I/O management, protection and security	Understand
Course Name: Computer Networks		
NO	**Course Outcome**	**Taxonomy**
C312.1	Analyse types of networks, network topologies and functions of each layer in OSI, TCP/IP reference models.	Analyse
C312.2	Analyse types of switching and transmission media with real time applications.	Analyse
C312.3	Describe functions of data link layer and explain data link layer protocols.	Understand
C312.4	Classify routing and congestion control algorithms and analyse how to assign IP addresses for given network	Analyse
C312.5	Describe transport layer design issues and protocols of transport layer.	Understand
C312.6	Describe application layer design issues and protocols of application layer.	Understand
Course Name: Object Oriented Analysis and Design		
NO	**Course Outcome**	**Taxonomy**
C313.1	Design the solutions to the complex problems using object oriented Approach	Create
C313.2	Explain classes, objects and responsibilities of the problem domain	Understand
C313.3	Explain Conceptual model of UML	Understand
C313.4	Create Structural Modeling to the given problem using UML concepts	Create
C313.5	Analyse Behavioral modelling Diagrams	Analyse
C313.6	Develop Behavioral modeling to the given problem using UML concepts	Create
Course Name: Principles of Programming Languages		
NO	**Course Outcome**	**Taxonomy**
C314.1	Choose software development process and software design models	Analyze
C314.2	Apply data types and type systems of various programming languages.	Apply
C314.3	Analyze the structure of program and computation	Analyze
C314.4	Analyze the concepts of programming languages.	Analyze
C314.5	Apply functional programming languages and their syntaxes	Apply

C314.6	Apply logic programming languages and their syntaxes.	Apply
Course Name: Software Testing		
NO	**Course Outcome**	**Taxonomy**
C315.1	Understand the basic testing procedures	Understand
C315.2	List transaction flows ,data flow testing, their techniques and implementation comments in software testing	Remember
C315.3	Understand domains and interface testing and their testability tips.	Understand
C315.4	develop paths, regular expressions and logic based testing	Create
C315.5	Design and implement state graph, state testing, good state graph, bad state graph and their testability tips	Create
C315.6	Describe graph matrices, matrix properties and node reduction algorithm	Understand
Course Name: Introduction to Big Data		
NO	**Course Outcome**	**Taxonomy**
C316.1	Demonstrate client – Server architecture and illustrate the components of cloud.	Apply
C316.2	Assess and Process Data on Distributed File System	Evaluate
C316.3	Design Job Execution in Hadoop Environment	Create
C316.4	Develop Big Data Solutions using Hadoop Eco System	Create
C316.5	Analyze Info sphere Big Insights Big Data Recommendations.	Analyze
C316.6	Develop a Map Reduce Environment	Create
Course Name: Object Oriented Analysis & Design and Software Testing Laboratory		
NO	**Course Outcome**	**Taxonomy**
C317.1	design UML diagrams to the College information system using UML notations and object oriented approach	Create
C317.2	develop UML diagrams to the Hostel management using UML notations and object oriented approach	Create
C317.3	create UML diagrams to the ATM system using UML notations and object oriented approach	Create
C317.4	demonstrate the programs and its failures	Apply
C317.5	support in generating test plan, test cases and test suites	Evaluate
C317.6	Analyze of Testing Tools	Analyze
Course Name: Operating Systems Laboratory		
NO	**Course Outcome**	**Taxonomy**
C318.1	Choose the best CPU scheduling algorithm for a given problem instance	Evaluate
C318.2	Build code to for file allocation and file organization techniques	Create
C318.3	Assess the performance of page replacement algorithms	Evaluate
C318.4	Analyze various classical Synchronization problems	Analyze
C318.5	Classify various memory management techniques	Analyze
C318.6	Develop algorithm for deadlock avoidance and detection	Create
Course Name: Social Values and Ethics		
NO	**Course Outcome**	**Taxonomy**

C319.1	Discuss the ethical values and social context of problems	Understand
C319.2	Outline the social responsibilities of an engineer, rights and qualities of moral Leadership.	Analyze
C319.3	Explain philosophy of Life and Individual qualities	Understand
C319.4	Discuss the core values that shape the ethical behavior of an engineer.	Understand
C319.5	Develop appropriate technologies and management patterns to create harmony in professional and personal life.	Create
C319.6	Outline environment conservation, enrichment and sustainability	Analyze

Course Outcomes(IV Year) 2020-21 I Sem		
Course Name: Management Science		
NO	**Course Outcome**	**Taxonomy**
C411.1	Explain the basic concepts of management in modern contexts.	Understand
C411.2	Define organization structures and principles.	Remember
C411.3	Demonstrate production and marketing aspects.	Apply
C411.4	Outline the roles and responsibilities of Human Resource Manager.	Analyze
C411.5	Formulate strategies in the modern management.	Create
C411.6	Compare the modern management practices based on the requirement of the projects.	Evaluate
Course Name: Grid & Cloud Computing		
NO	**Course Outcome**	**Taxonomy**
C412.1	Classify Grid and Cloud Computing Services such as PASS, SAAS, and IAAS	Understand
C412.2	Explain cloud architecture and applications on different cloud platforms	Understand
C412.3	Compare grid architecture and applications on different platforms	Analyze
C412.4	Summarize various grid and cloud computing tools	Evaluate
C412.5	Compare various security models in the grid and the cloud environment	Evaluate
C412.6	Design grid computing techniques to solve large scale scientific problems	Analyze
Course Name: Information Security		
NO	**Course Outcome**	**Taxonomy**
C413.1	List the information security requirements for a client and server	Remember
C413.2	Explain cryptographic algorithms, authentication and security issues	Understand
C413.3	Develop algorithms and methods for web security with IPV4 and IPV6.	Create
C413.4	Analyze the Security and legal issues towards information security.	Analyse
C413.5	Assess the fundamentals of secret and public cryptography.	Evaluate
C413.6	Design a secure network with available solutions like PGP, SSL, etc.	Create
Course Name: Mobile Application Development		
NO	**Course Outcome**	**Taxonomy**
C414.1	Describe mobile application software development tools	Understand
C414.2	Use various widgets in mobile applications	Apply
C414.3	Compare various layouts in mobile application design	Analyse
C414.4	Use external resources in mobile applications	Apply

C414.5	Build mobile application with selection widgets, dialogs and Fragments	Create
C414.6	Design and develop menus, database and notifications in mobile applications	Create
Course Name: Software Architecture		
NO	**Course Outcome**	**Taxonomy**
C415.1	Able to understand the basic concepts of software architecture and software architecture Business cycle.	Understand
C415.2	Understand the various architectural styles with case studies	Understand
C415.3	Define various quality attributes of software architecture and explain the techniques to them.	Remember
C415.4	Understand the concepts of various architectural patterns and some design patterns.	Understand
C415.5	Acquire solid foundation in the field of designing and documenting Software architecture.	Create
C415.6	Use well-understood paradigms for designing new systems	Create
Course Name: Software Project Management		
NO	**Course Outcome**	**Taxonomy**
C416.1	To understand the concepts of Conventional Software Management Performance, models and Software Economics.	Understand
C416.2	To Evaluate and improve the software processes to achieve required quality.	Evaluate
C416.3	To understand the concepts about principles of modern software management.	Understand
C416.4	To design and to integrate life cycle phases and artifacts of various process to model a software based architecture.	Create
C416.5	To classify the process workflow, analyse about periodic status assessment, planning and project organization responsibilities.	Analyze
C416.6	To recognize about the project control and process instrumentation using metrics and indicators.	Understand
Course Name: Grid & Cloud Computing Laboratory		
NO	**Course Outcome**	**Taxonomy**
C417.1	Design and Implement applications on the Microsoft Azure.	Create
C417.2	Design and Implement applications on the Zoho cloud.	Create
C417.3	Develop software's using and Google Play Store.	Create
C417.4	Implement grid Security architecture.	Evaluate
C417.5	Develop Globus tool kit and develop applications.	Create
C417.6	Implement Google drive effectively and efficiently.	Evaluate
Course Name: Mobile Application Development Laboratory		
NO	**Course Outcome**	**Taxonomy**
C418.1	Setup applications on mobile application development environment	Create
C418.2	Operate mobile applications on handheld devices	Apply
C418.3	Develop various widgets in mobile applications	Create
C418.4	Design mobile applications with various layouts	Create
C418.5	Build mobile application along with Media	Create
C418.6	Design and develop menus in mobile applications	Create