GPCET
Pioneering Innovative Education

G PULLAIAH COLLEGE OF ENGINEERING & TECHNOLOGY

(Autonomous)

(Approved by AICTE | NAAC Accreditation with 'A' Grade |
Accredited by NBA (CIV, CSE, ECE & EEE) | Affiliated to JNTUA)
Nandikotkur Road, Venkayapalli (V), Kurnool - 518452, Andhra Pradesh

Program Outcomes (PO's):

Engineering Graduates will be able to

- **PO 1. Engineering Knowledge:** Apply the knowledge of mathematics, science, engineering Fundamentals and an engineering specialization to the solution of complex engineering problems.
- **PO 2. Problem analysis:** Identify, formulate, review research literature, and analyze complex Engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.
- **PO 3. Design / development of solutions:** Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and Environmental considerations.
- **PO 4. Conduct investigations of complex problems:** Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.
- **PO 5. Modern tool usage:** Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modelling to complex engineering activities with an understanding of the limitations.
- **PO 6. The engineer and society:** Apply reasoning informed by the contextual knowledge to assess Societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.
- **PO 7. Environment and sustainability:** Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of and need for sustainable development.
- **PO 8. Ethics:** Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
- **PO 9. Individual and team work:** Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
- **PO 10. Communications:** Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give receive clear instructions.
- **PO 11. Project management and finance:** Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.
- **PO 12. Life-long learning:** Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

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Department of Computer Science Engineering

Course Outcomes-R18

COURSE NAME	**OBJECT ORIENTED PROGRAMMING USING JAVA**
COURSE OUTCOMES	After successful completion of the course, the student will be able to
1	Analyze the necessity for Object Oriented Programming paradigm over structured programming and become familiar with the fundamental concepts in OOP like encapsulation, Inheritance and Polymorphism.
2	Demonstrate an ability to design and develop java programs, analyze, and interpret objectoriented data and report results
3	Demonstrate an ability to design an object oriented system, swing components and multithreaded processes as per needs and specifications
4	Demonstrate an ability to visualize and work on laboratory and multidisciplinary tasks likeconsole and windows applications both for standalone and Applets programs
5	Demonstrate skills to use latest object oriented programming language and software toanalyze OOP problems.
6	Develop confidence for self education and ability for life-long learning needed foradvanced java technologies.

COURSE NAME	**DATABASE MANAGEMENT SYSTEMS**
COURSE OUTCOMES	After successful completion of the course, the student will be able to
1	Understand the basic concepts of database, data models and to apply the same to get the solution for database related problems using Entity Relationship model.
2	Understand the relational database and be able to write relational algebra and calculus expressions. Ability to design database by applying appropriate normalization techniques.
3	Apply optimized SQL queries to solve real time problems.
4	Create data elements and index structures.
5	Analyze the system failures and concurrency control.
6	Apply the concepts for the latest technologies and techniques

COURSE NAME	**DISCRETE MATHEMATICS**
COURSE OUTCOMES	After successful completion of the course, the student will be able to
1	Understand definitions and proofs using basic discrete mathematics.
2	Create and interpret statements presented in Boolean logic.
3	Create short proofs using direct proof, indirect proof, proof by contradiction, and case analysis..

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4	Demonstrate a working knowledge of set notation and elementary set theory, recognize the connection between set operations and logic, prove elementary results involving sets
5	Apply the different properties of injections, surjection, bisections, compositions, and inverse functions.
6	Solve the mathematical problems that involve computing permutations and combinations of a set, fundamental enumeration principles and graph theory

COURSE NAME	**Digital logic and Computer Organization**
COURSE OUTCOMES	After successful completion of the course, the student will be able to
1	Understand the fundamental concepts of digital circuits.
2	Apply the knowledge of digital circuits concepts to minimize a digital circuit for the given parameters using mapping techniques.
3	Construct and analyze various combinational circuits used in digital systems such as adders, subtractors, code-convertors, decoders, encoders, and multiplexers
4	Construct and analyze various sequential circuits used in digital systems such as flipflops, registers and counters.
5	Understand the basic concepts of computer and computer arithmetic
6	Analyze the basic processing unit and pipelining .

COURSE NAME	**MANAGERIAL ECONOMICS & FINANCIAL ANALYSIS**
COURSE OUTCOMES	After successful completion of the course, the student will be able to
1	Understand, Concepts of economics, managerial economics, scope, nature and importance of managerial economics, demand determinants, law of demand and its exceptions.
2	Understand elasticity of demand, types and measurement of elasticity of demand, demand forecasting, methods of demand forecasting.
3	Understand production function, isoquants and isocosts, MRTS, least cost combination of inputs, Cobb-Douglas production function and law of return to scale. Types of cost, BEA, BEP.
4	Understand market structure, types of markets, price-output determination under perfect competition, monopoly, monopolistic competition and pricing methods.
5	Understand types of business organizations and LPG.
6	Understand capital, types, sources, estimation of capital requirements, capital budgeting and techniques of capital budgeting.

COURSE NAME	**DATABASE MANAGEMENT SYSTEMS LABORATORY**
COURSE OUTCOMES	After successful completion of the course, the student will be able to

1	Gain knowledge and understand the data models used for structuring data in database systems
2	Understand the general principles of Retrieving information from databases
3	Analyze the best possible ways of solving a given query.
4	Evaluate the complex nested queries on multiple relations.
5	Implement various integrity constraints, triggers and views in database design
6	Analyze the latest technologies and techniques

COURSE NAME	**JAVA PROGRAMMING LABORATORY**
COURSE OUTCOMES	After successful completion of the course, the student will be able to
1	Apply of data types , variables and control structures to solve problems
2	Apply object-oriented concepts to solve problems including generating series primes, searching a pattern in a file
3	Design, write, debug and execute applet programs using Integrated Development Environment
4	Develop programs using threads and swing concepts
5	Apply I/O stream and networking classes to develop client and server interaction
6	Apply the concepts and create solution effectively as a member or leader in a team during the development of a software project.

COURSE NAME	**PROBABILITY AND STATISTICS**
COURSE OUTCOMES	After successful completion of the course, the student will be able to
1	Understand basic concepts of probability and statistics and apply them in solving practical engineering problems
2	Apply discrete and continuous probability distributions to evaluate the probability of real world problems
3	Conduct hypotheses tests concerning population parameters for single and multiple populations based on sample data.
4	Understand concepts of t-test f-test and chi-square test for small samples
5	Demonstrate the ability to design, use, and interpret control charts for variables
6	Demonstrate the knowledge and understand various queuing models

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COURSE NAME	SOFTWARE ENGINEERING
COURSE OUTCOMES	After successful completion of the course, the student will be able to
1	Possess knowledge on evolving role of software, process and maturity models
2	Understand the various phases of software development life cycles and software requirements
3	Possess necessary skills to elicit the requirements of a software system and to create well written software documentation involving appropriate system models.
4	Design, implement and evaluate a computer based system, process, component or program to meet desired needs within realistic constraints specific to the field
5	Construct software projects by integrating components with appropriate user interface
6	Apply various testing strategies to verify, validate and to release error free software

COURSE NAME	OPERATING SYSTEMS
COURSE OUTCOMES	After successful completion of the course, the student will be able to
1	Identify and understand the history of operating systems, functions, structures and design issues associated with operating systems.
2	Understand the process management concepts including scheduling-criteria, algorithms, their evaluation and Thread scheduling.
3	Apply the solutions to process synchronization problems and implementation methods.
4	Solve the memory management problems with techniques like paging and segmentation and also use page replacement algorithms
5	Understand the principles of dead lock
6	Understand the issues related to file system interface and implementation

COURSE NAME	DESIGN &ANALYSIS OF ALGORITHMS
COURSE OUTCOMES	After successful completion of the course, the student will be able to
1	Analyze the efficiency of algorithm
2	Understand the running time and space complexity of algorithms by using the concepts of big Oh, Omega and Theta notations
3	Formulate the time order analysis for an algorithm.
4	Use the mathematical techniques required to prove the time complexity of a program/algorithm

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5	Apply algorithmic methods (such as divide and conquer, greedy method, dynamic programming, local search, branch & bound, and randomized algorithms) to the realworld problems to design an algorithm
6	Analyze the latest technologies and techniques.

COURSE NAME	**FORMAL LANGUAGES AND AUTOMATA THEORY**
COURSE OUTCOMES	After successful completion of the course, the student will be able to
1	Design an Automata to accept strings from various simple languages
2	Understand the functioning of Finite-State Machines, Deterministic Finite-State Automata, Nondeterministic Finite-State Automata and Pushdown Automata
3	Design grammars and recognizers for different formal languages
4	Design automata, regular expressions and context-free grammars accepting or generating a certain language
5	Understand the relation between types of languages and types of finite automata
6	Describe the language accepted by an automata or generated by a regular expression or a context-free grammar

COURSE NAME	**R PROGRAMMING LABORATORY**
COURSE OUTCOMES	After successful completion of the course, the student will be able to
1	Implement R Analytics to create Business Insights
2	Analyze the data and results using R.
3	Apply analytical methods and produce presentation quality graphics.
4	Explore data-sets to create testable hypotheses
5	Perform appropriate statistical tests using R.
6	Create and edit visualizations with R.

COURSE NAME	**DESIGN AND ANALYSIS OF ALGORITHMS LABORATORY**
COURSE OUTCOMES	After successful completion of the course, the student will be able to
1	Demonstrate the complexity of the algorithms
2	Analyze various algorithms and design techniques
3	Demonstrate the techniques of divide and conquer, greedy, dynamic programming, backtracking, branch and bound to solve the problems.
4	Identify and analyze criteria and specifications appropriate to new problems
5	Understand the appropriate algorithmic design technique for the solution.

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6	Demonstrate with proof that a certain problem is NP-Complete

COURSE NAME	**WEB PROGRAMMING LABORATORY**
COURSE OUTCOMES	After successful completion of the course, the student will be able to
1	Apply the design principles of HTML and Java Script for creating static and dynamic web pages
2	Analyze the differences between various scripting languages
3	Demonstrate a structural framework for dynamic web apps using AngularJS
4	Analyze the client side validation procedure in web applications.
5	Design solutions using web servers and database servers
6	Identify the user requirements and design appropriate business solutions

COURSE NAME	**COMPUTER NETWORKS**
COURSE OUTCOMES	After successful completion of the course, the student will be able to
1	Apply the networking concepts in configuring the systems.
2	Illustrates error handling mechanism in data link layer
3	Analyze the routing algorithms in finding the shortest path.
4	Apply transport protocols in network communications
5	Implements domain name service and network security in the communication segment.

COURSE NAME	**DATA MINING**
COURSE OUTCOMES	After successful completion of the course, the student will be able to
1	Apply the principles of business intelligence in the commercial segment
2	Make use of pre-processing techniques for data organization
3	Implement association, clustering and rule based mining for Market based analysis
4	Analyze the data mining classification technique for data differentiation
5	Design the unsupervised clustering algorithms for data analysis

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COURSE NAME	**COMPILER DESIGN**
COURSE OUTCOMES	After successful completion of the course, the student will be able to
1	Identify tokens in the source program using lexical analyzer technique
2	Develop top-down and bottom-up parsers for the given grammar
3	Construct type checking semantic rules using synthesized and inherited attributes
4	Develop optimized intermediate code using code optimization techniques
5	Generate target code using flow graph and DAG
COURSE NAME	**DISTRIBUTED DATABASES**
COURSE OUTCOMES	After successful completion of the course, the student will be able to
1	Analyze distributed database design to address architectural issues
2	Apply partitioning techniques to enhance data storage and security
3	Design various query processing strategies for query optimization
4	Develop a concurrent system for transaction management
5	Design parallel architecture to counter the failures of parallel databases

COURSE NAME	**ENTERPRISE STORAGE SYSTEM**
COURSE OUTCOMES	After successful completion of the course, the student will be able to
CO1	Analyze the architecture of an intelligent storage system for rapid data accessing
CO2	Justify the implementation of storage solutions to enable business continuity
CO3	Apply Storage Area Network for virtualization
CO4	Design a storage solution based on organizations requirements
CO5	Provide Storage Infrastructure Virtualization for better storage management

COURSE NAME	**TCP/IP Protocol**
COURSE OUTCOMES	After successful completion of the course, the student will be able to

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1	Analyze the layers of the OSI and TCP/IP for efficient data transmission.
2	Distinguish between reliable and unreliable protocols for interconnections in application level and network level
3	Design routing mechanisms for congestion avoidance
4	Apply buffer management techniques to enhance performance
5	Apply flow, error and congestion control mechanisms for efficient data transmission

COURSE NAME	**ANGULAR JS**
COURSE OUTCOMES	After successful completion of the course, the student will be able to
1	Apply single-page application designs in developing web applications
2	Implement the type scripts layers for web applications
3	Build Angular forms for client interaction
4	Implement efficient Angular routings to protect components from unauthorized access
5	Design view components for chatting applications

COURSE NAME	**COMPUTER NETWORKS LABORATORY**
COURSE OUTCOMES	After successful completion of the course, the student will be able to
1	Apply the network principles in establishing network communications
2	Make use of layered network architecture functionalities in connecting systems
3	Apply mathematical concepts in solving the computational problems
4	Analyze performance of protocols in information exchange
5	Compare routing algorithms for dynamic routing

COURSE NAME	**DATA MINING LABORATORY**
COURSE OUTCOMES	After successful completion of the course, the student will be able to
1	Execute data mining algorithms for extraction of appropriate datasets
2	Apply data preprocessing techniques on raw input data for data cleansing

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3	Appraise the classification techniques on large datasets fordifferentiation
4	Apply the data mining algorithms to perform association rule mining and clustering tasks
5	Differentiate the outlier data from cluster data for statistical analysis
COURSE NAME	**PYTHON PROGRAMMING LABORATORY**
COURSE OUTCOMES	After successful completion of the course, the student will be able to
1	Apply fundamental programming concepts of python for solving general purpose problems
2	Implement sequences to solve complex problems
3	Build functions to increase code reusability
4	Design web applications using Django framework

COURSE NAME	**HUMAN VALUES & PROFESSIONAL ETHICS**
COURSE OUTCOMES	After successful completion of the course, the student will be able to
1	Apply human values and ethics in professional life
2	Develop the moral ideals to maintain good relationships with people
3	olve environmental related problems by keeping health of human being into consideration
4	Make use of the fundamental rights and human rights in life for individual dignity
5	Build the sound health system both physically and mentally by practicing yoga, karate, sports etc

COURSE NAME	**CLOUD COMPUTING**
COURSE OUTCOMES	After successful completion of the course, the student will be able to
1	Analyze cloud delivery models for better architecture.
2	Implement infrastructure as a service model for industrial applications.
3	Organize the cloud platform model for optimization services.
4	Develop various application software with software as service.
5	Design cloud computing reference architecture for deliverymodels

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COURSE NAME	**SOFTWARE TESTING TECHNIQUES**
COURSE OUTCOMES	After successful completion of the course, the student will be able to
1	Derive test cases for any given problem
2	Compare the different testing techniques to produce quality software
3	Identify the problem to its suitable testing model for errordetection
4	Apply the appropriate technique for the design of data flow and integration of software
5	Create appropriate document for the software artifact

COURSE NAME	**ARTIFICIAL INTELLIGENCE**
COURSE OUTCOMES	After successful completion of the course, the student will be able to
1	Apply suitable search strategies in finding better solutions for a given problem
2	Analyze performance of an algorithm as per given parameters
3	Analyze the efficient problem state space search for a problem
4	Implement the appropriate AI techniques to solve uncertainty problems
5	Apply AI techniques to solve real time problems
COURSE NAME	**BIG DATA**
COURSE OUTCOMES	After successful completion of the course, the student will be able to
1	Analyze distributed programs for formation of large scale clusters
2	Apply enabling techniques of Hadoop and Map Reduce for distributed processing
3	Assemble the components of Hadoop and its Eco-System for efficient data storage and processing
4	Develop Map-Reduce programs in Java for performing large scale data analysis
5	Apply K-means clustering and Mahout Techniques for efficient data analysis

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COURSE NAME	PARALLEL ALGORITHMS
COURSE OUTCOMES	After successful completion of the course, the student will be able to
1	Design parallel random access machines algorithms for standard problems and applications
2	Analyze efficiency of different parallel algorithms
3	Choose the mapping on multi computers for efficient data processing. (Assess multiprocessors and multi computers for efficient data processing).
4	Design the matrix algorithms to reduce complexity.
5	Apply the graph algorithms to solve complex numeric problems

COURSE NAME	NETWORKING ARCHITECTURE AND DESIGN
COURSE OUTCOMES	After successful completion of the course, the student will be able to
1	Apply computer design and instruction set principles as per system requirements
2	Analyze system requirements to remove redundancy
3	Propose sub-netting and routing strategies in addressing architectural issues
4	Apply network management mechanisms for data security and privacy
5	Develop hybrid mechanisms for effective interconnection
COURSE NAME	DESIGN PATTERNS
COURSE OUTCOMES	After successful completion of the course, the student will be able to
1	Apply the model-view-controller architecture for a given application
2	Propose the most suitable design pattern to solve a design problem
3	Inspect existing code to perform software refactoring
4	Apply the basic design principles for quality software

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COURSE NAME	**DATA ANALYTICS**
COURSE OUTCOMES	After successful completion of the course, the student will be able to
1	Analyze different datasets, file types for effective data visualization
2	Apply central limit theorem for summarizing data
3	create connection between R and NoSQL Database for processing multidimensional data
4	Implement correlation and regression models for better analysis
5	Analyze various business problems for effective decision making

COURSE NAME	**CLOUD CRYPTOGRAPHY**
COURSE OUTCOMES	After successful completion of the course, the student will be able to
1	Apply various security mechanisms for the data stored in a cloud
2	Inspect various classical encryption techniques and block cipher structure for data transmission
3	nalyze advanced encryption standard, cryptographic hash functions and digital signatures for non-repudiation
4	Identify various attacks on virtualization systems
5	Adapt modern security standards to achieve greater security

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COURSE NAME	**ETHICAL HACKING**
COURSE OUTCOMES	After successful completion of the course, the student will be able to
1	Analyze threats and attacks by cryptographic algorithms for robust applications
2	Perform security auditing and testing to achieve full proof security system
3	Identify issues related to ethical hacking to prevent system attacks
4	Apply network defence measures to prevent hacking
5	Implement penetration and security testing to overcome malware attacks

COURSE NAME	**DevOps**
COURSE OUTCOMES	After successful completion of the course, the student will be able to
1	Analyze DevOps methodologies in collaboration with the Development and Operations team
2	Apply configuration management strategies for better integrations and deployment
3	Make use of various DevOps tools to ease of collaboration and development
4	Determine the speed of productivity for in-time delivery
5	Implement application deployment and configuration for uninterrupted usage

COURSE NAME	**ARTIFICIAL INTELLIGENCELABORATORY**
COURSE OUTCOMES	After successful completion of the course, the student will be able to
1	Execute statistical problems to produce appropriate solutions
2	Categorize the problem for selection of an appropriate algorithm
3	Compare computational complexity of AI problems for better efficiency
4	Demonstrate various AI algorithms based on empirical and theoretical proofs for performance statist

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COURSE NAME	CLOUD COMPUTING LABORATORY
COURSE OUTCOMES	After successful completion of the course, the student will be able to
1	Develop and deploy applications for better cloud utility
2	Design web services for modern commercialapplications
3	Analyze the performance, scalability, and availability of the underlying cloud technologies for business requirements
4	Implement software installation for utility of its applications
5	Compare various cloud computing platforms for better cloud services

COURSE NAME	ADVANCED ENGLISH LANGUAGE COMMUNICATION SKILLS
COURSE OUTCOMES	After successful completion of the course, the student will be able to
1	Recall vocabulary and enhance accuracy in grammar
2	Understand and communicate effectively in speaking and in writing
3	Apply language structures to construct good relations.
4	Identify and develop effective technical writing skills
5	Determine and develop personal presentation techniques.
6	Design necessary skills to deliver presentation confidently for improving in respective domains

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COURSE NAME	CRYPTOGRAPHY AND NETWORK SECURITY
COURSE OUTCOMES	After completion of the course, the learner will be able to:
1	Understand cryptography and network security concepts and application
2	Apply security principles to system design
3	Identify and investigate network security threat
4	Analyze and design network security protocols
5	Conduct research in network security

COURSE NAME	MOBILE APPLICATION DEVELOPMENT
COURSE OUTCOMES	After completion of the course, the learner will be able to:
1	Able to recognize the importance of knowledge on Android programming basics
2	Able to construct the various aspects of user interfaces.
3	Able to apply knowledge on displaying pictures, menus and data services.
4	Able to develop application on content provider and messaging services
5	Able to substitute on the fundamentals of location based services, and creating your own services.

COURSE NAME	MACHINE LEARNING
COURSE OUTCOMES	After completion of the course, the learner will be able to:
1	Distinguish between, supervised, unsupervised and semi-supervised learning
2	Apply the opt machine learning strategy for any given problem
3	Suggest supervised, unsupervised or semi-supervised learning algorithms for any given problem
4	Design a system that uses the appropriate graph models of machine learning
5	Modify existing machine learning algorithms to improve classification efficiency

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COURSE NAME	**DATA VISUALIZATION TECHNIQUES**
COURSE OUTCOMES	After completion of the course, the learner will be able to:
1	Make use of Tableau for effective communication of data.
2	Create advanced visualizations, formatting and calculations using Tableau
3	Analyze changes in data visualization over time
4	Create different types of dash boards
5	Analyze and recommend effective business decisions/solutions using a systematic, evaluative, and information-based approach.

COURSE NAME	**SOFTWARE DEFINED NETWORKS**
COURSE OUTCOMES	After completion of the course, the learner will be able to:
1	Explain the key benefits of SDN by the separation of data and control planes.
2	Interpret the SDN data plane devices and Openflow Protocols
3	Implement the operation of SDN control plane with different controllers.
4	Apply techniques that enable applications to control the underlying network using SDN.
5	Describe Network Functions Virtualization components and their roles in SDN

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COURSE NAME	NATURAL LANGUAGE PROCESSING
COURSE OUTCOMES	After completion of the course, the learner will be able to:
1	Understand various phases in natural language processing
2	Understand different linguistic resources software tools
3	Understand parts of speech tagging with HMM, TBL.
4	Illustrate natural language grammar and context free grammar.
5	Understand applications of NLP and machine translation.

COURSE NAME	SOLUTION STACK
COURSE OUTCOMES	After completion of the course, the learner will be able to:
1	Develop front end of an application using HTML, CSS and JavaScript along with ReactJs
2	Develop back end of an application using NodeJs
3	Implement MVC and responsive design to scale well across PC, tablet and Mobile Phone
4	Develop a website and deploy on a web server
5	Authenticate, store, and structure user data.

COURSE NAME	MOBILE APPLICATION DEVELOPMENT LAB
COURSE OUTCOMES	After completion of the course, the learner will be able to:
1	Able to acquire practical knowledge on Android programming.
2	Able to understand the implementation aspects of user interfaces.
3	Able to understand the implementation of image view and persistent data services.
4	Able to acquire practical knowledge on messaging services.
5	Able to understand the practical exposure on implementation of location based services.

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COURSE NAME	**MACHINE LEARNING LAB**
COURSE OUTCOMES	After completion of the course, the learner will be able to:
1	Distinguish between, supervised, unsupervised and semi-supervised learning
2	Apply the opt machine learning strategy for any given problem
3	Suggest supervised, unsupervised or semi-supervised learning algorithms for any given problem
4	Design a system that uses the appropriate graph models of machine learning
5	Modify existing machine learning algorithms to improve classification efficiency

COURSE NAME	**DEEP LEARNING**
COURSE OUTCOMES	After completion of the course, the learner will be able to:
1	Understand the historical trends in deep learning and use Tensor flow for performing Linear Regression, Gradient Descent, optimizers, graph visualization
2	Summarize the fundamentals of Artificial Neural Networks.
3	Understand the training of Deep Neural Nets.
4	Understand the Convolutional Neural Networks Architecture
5	Understand the Recurrent Neural Networks and deep RNN training.

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COURSE NAME	**BLOCK CHAIN TECHNOLOGY**
COURSE OUTCOMES	After completion of the course, the learner will be able to:
1	Understand and explore the process of Block chain technology in payment and funding processing.
2	Analyze the working of Smart Contracts
3	Perform basic operations in hyper ledges and block chain networks.
4	Apply Ethereum and its Smart Contracts in application development
5	Describe and deploy the smart contracts.
6	Identify the risks involved in building Block chain applications.

COURSE NAME	**CYBER SECURITY**
COURSE OUTCOMES	After completion of the course, the learner will be able to:
1	Analyze cyber-attack on different online web applications.
2	Apply different techniques to classify different types of cybercrimes
3	Get an understanding over different government cyber laws and cyber forensics techniques.
4	Understand how to protect them self and ultimately society from cyber-attacks.
5	Understanding cybercrime investigating methods using previous case studies.

COURSE NAME	**USER INTERFACE DESIGN**
COURSE OUTCOMES	After completion of the course, the learner will be able to:
1	Understand the concepts and principles of graphical user interface and its design process
2	Select appropriate tool for user interface design
3	Identify appropriate user devices for better user interaction.
4	Create effective screen design using screen elements, windows and components.

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Department of Computer Science Engineering

Course Outcomes-R19

COURSE NAME	MANAGERIAL ECONOMICS & FINANCIAL ANALYSIS
COUSE OUTCOMES	**After completion of the course, the learner will be able to:**
1	Apply the knowledge of managerial economics and financial accounting to solve business problems.
2	Analyze the demand, production cost and break even with suitable methods.
3	Classify the market structure to decide the fixation of suitable price.
4	Apply capital budgeting techniques to select best investment opportunity.
5	Prepare financial statements to assess financial health of business.

COURSE NAME	OBJECT ORIENTED PROGRAMMING THROUGH JAVA
COUSE OUTCOMES	**After completion of the course, the learner will be able to:**
1	Apply object oriented concepts for solving general purpose problems
2	Use inheritance, user defined packages and interfaces for code reusability
3	Apply exception handling and multithreading concepts for robust and efficient applica-tion development
4	Implement collection frameworks to store and retrieve data efficiently
5	Build GUI applications using swings for user interface design

COURSE NAME	DATABASE MANAGEMENT SYSTEMS
COUSE OUTCOMES	**After completion of the course, the learner will be able to:**
1	Apply suitable data model for given application
2	Construct optimized SQL queries to solve real time problems
3	Apply suitable normal form to eliminate data redundancy
4	Use suitable transaction model to avoid Deadlock
5	Choose appropriate index structure to improve performance

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COURSE NAME	SOFTWARE ENGINEERING
COUSE OUTCOMES	**After completion of the course, the learner will be able to:**
1	Identify the phases of software development life cycle for better design
2	Apply different agile principles in developing a project
3	Adapt appropriate requirement engineering process for change management
4	Propose design as per functional and non-functional requirements using design principles
5	Implement various testing techniques for software systems

COURSE NAME	DISCRETE MATHEMATICS
COUSE OUTCOMES	**After completion of the course, the learner will be able to:**
1	Apply the logic statements and connectives to solve real time problems
2	Classify algebraic structure and relations for a given mathematical problem
3	Analyze the basic results in combinatorics and binomial thermos for accuracy
4	Apply various recurrence relations to find solutions for numeric sequences
5	Apply graph theory techniques to solve network problems

COURSE NAME	OBJECT ORIENTED PROGRAMMING USING JAVA LABORATORY
COUSE OUTCOMES	**After completion of the course, the learner will be able to:**
1	Design solutions for the problems of general purpose applications using objectoriented concepts.
2	Generate reusable code using inheritance, user defined packages and interface
3	Write robust and efficient code using exception handling and multithreading concepts
4	Implement collection frameworks and file handling techniques to store and retrieve data
5	Design user interface using swings

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COURSE NAME	DATABASE MANAGEMENT SYSTEMS LABORATORY
COUSE OUTCOMES	**After completion of the course, the learner will be able to:**
1	Design Database tables for the given problem
2	Use appropriate querying processing technique to access the data
3	Apply suitable normal form to eliminate data redundancy
4	Develop PL/SQL routines for reusability of code
5	Apply appropriate triggering concepts for automation and performance

COURSE NAME	IOT AND ROBOTICS LABORATORY
COUSE OUTCOMES	**After completion of the course, the learner will be able to:**
1	Apply concepts of Internet to Mobile Devices, Cloud and Sensor Networks
2	Analyze building blocks of Internet of Things and characteristics
3	Implement a Robot for a specific application
4	Compare various Servo and hardware components with Controller based projects
5	Develop small pervasive applications with the help of Robotics

COURSE NAME	QUANTITATIVE APTITUDE AND REASONING – I
COUSE OUTCOMES	**After completion of the course, the learner will be able to:**
1	Identify the problems by applying mathematical fundamentals
2	Apply the suitable logical methods to solve the problems
3	Solve the various problems by using quantitative mathematical fundamentals
4	Analyse the comprehensive data with logical ability
5	

COURSE NAME	ENVIRONMENTAL SCIENCE
COUSE OUTCOMES	**After completion of the course, the learner will be able to:**
1	Solve environmental problems through higher level of personal involvement and interest
2	Apply ecological morals to keep up amicable connection among nature and human beings
3	Recognize the interconnectedness of human dependence on the

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	earth's ecosystems.
4	Apply environmental laws for the protection of environment and wildlife.
5	Influence society in proper utilization of goods and services.

COURSE NAME	FORMAL LANGUAGE AUTOMATA THEORY
COUSE OUTCOMES	**After completion of the course, the learner will be able to:**
1	Apply knowledge of computing and mathematics appropriate to thediscipline.
2	Apply and solve Regular Expressions in Real Time Applications
3	Relate the concept of the grammar with the concept of programming language.
4	Design solutions for the problems related to Finite Automata, RE, CFG, PDA and TuringMachine.
5	Acquire a fundamental understanding of core concepts relating to the theory of com-putation and computational models including decidability and intractability.

COURSE NAME	WEB TECHNOLOGIES
COUSE OUTCOMES	**After completion of the course, the learner will be able to:**
1	Construct a basic website using HTML and Cascading StyleSheets.
2	Build dynamic web page using Java Script objects and event handling mechanisms
3	Develop server side programs using Servlets and Java Server Page.
4	Construct web pages in PHP to represent data in XML format
5	Use AJAX and web services to develop interactive webapplications

COURSE NAME	DESIGN AND ANALYSIS OF ALGORITHMS
COUSE OUTCOMES	**After completion of the course, the learner will be able to:**
1	Analyze the efficiency of algorithm for a given problem
2	Formulate the time order analysis for givenalgorithm.
3	Identify the mathematical techniques required to prove the time complexity of analgorithm.
4	Design appropriate algorithm to solve real world problems
5	Design and analysis to solve problems

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COURSE NAME	OPERATING SYSTEMS
COUSE OUTCOMES	**After completion of the course, the learner will be able to:**
1	Apply the basic principles of Operating Systems in system programming
2	Apply the process synchronization concepts in multiprogramming environment
3	Solve the memory management problems with paging and segmentation techniques
4	Design algorithmic strategies to handle deadlock problems
5	Implement the concepts of secured file system for confidentiality and authentica-tion.

COURSE NAME	COMPUTER NETWORKS
COUSE OUTCOMES	**After completion of the course, the learner will be able to:**
1	Apply the networking concepts in configuring the systems
2	Illustrates error handling mechanism in data link layer
3	Analyze the routing algorithms in finding the shortest path
4	Apply transport protocols in network communications
5	Implements domain name service and network security in the communicationsegment.

COURSE NAME	WEB TECHNOLOGIES LABORATORY
COUSE OUTCOMES	**After completion of the course, the learner will be able to:**
1	Construct Web pages using HTML/XML and style sheets
2	Build dynamic web pages with validation using Java Script objects and by applying dif-ferent event handling mechanisms.
3	Develop dynamic web pages using server side scripting.
4	Use PHP programming to develop web applications.
5	Construct web applications using AJAX and webservices.

COURSE NAME	ALGORITHMS AND NETWORKS LABORATORY
COUSE OUTCOMES	**After completion of the course, the learner will be able to:**
1	Apply basic programming techniques in solving given problem.
2	Design an algorithm for a given application program.
3	Utilize wrapper classes as per the demand of problem.
4	Apply the appropriate algorithmic technique for efficient problem solving.
5	Execute collection classes for dynamic programming.

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COURSE NAME	OPERATING SYSTEMS LABORATORY
COUSE OUTCOMES	**After completion of the course, the learner will be able to:**
1	Apply appropriate CPU scheduling algorithm for the given problem
2	Perform resource management for optimal utility of CPU.
3	Implement algorithms handling deadlock problems
4	Implement the concepts of secured file system for confidentiality and authentication.
5	Apply threading concepts to handle concurrency.

COURSE NAME	QUANTITATIVE APTITUDE AND REASONING – II
COUSE OUTCOMES	**After completion of the course, the learner will be able to:**
1	Identify the problems by applying mathematical fundamentals.
2	Apply the suitable logical method to solve theproblems
3	Solve the various problems by using quantitative mathematical fundamentals.
4	Analyse the comprehensive data with logical ability.
5	

COURSE NAME	HUMAN VALUES & PROFESSIONAL ETHICS
COUSE OUTCOMES	**After completion of the course, the learner will be able to:**
1	Apply human values and ethics in professional life
2	Develop the moral ideals to maintain good relationships withpeople
3	Solve environmental related problems by keeping health of human being into consid-eration
4	Make use of the fundamental rights and human rights in life for individual dignity
5	Build the sound health system both physically and mentally by practicing yoga, karate, sports etc

COURSE NAME	**CLOUD COMPUTING**
COUSE OUTCOMES	**After completion of the course, the learner will be able to:**
1	Apply the principles of business intelligence in the commercial segment
2	Make use of pre-processing techniques for data organization
3	Analyze the efficient problem state space search for a problem

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4	Implement the appropriate AI techniques to solve uncertainty problems
COURSE NAME	DATA MINING
COUSE OUTCOMES	**After completion of the course, the learner will be able to:**
1	Apply the principles of business intelligence in the commercial segment
2	Make use of pre-processing techniques for data organization
3	Implement association, clustering and rule based mining for Market based analysis
4	Analyze the data mining classification technique for data differentiation
5	Design the unsupervised clustering algorithms for data analysis
5	Apply AI techniques to solve real time problems

COURSE NAME	ARTIFICAL INTELLIGENCE
COUSE OUTCOMES	**After completion of the course, the learner will be able to:**
1	Apply suitable search strategies in finding better solutions for a given problem
2	Analyze performance of an algorithm as per given parameters
3	Analyze the efficient problem state space search for a problem
4	Implement the appropriate AI techniques to solve uncertainty problems
5	Apply AI techniques to solve real time problems

COURSE NAME	**DISTRIBUTED DATABASES**
COUSE OUTCOMES	**After completion of the course, the learner will be able to:**
1	Analyze distributed database design to address architectural issues
2	Apply partitioning techniques to enhance data storage and security
3	Design various query processing strategies for query optimization
4	Develop a concurrent system for transaction management
5	Design parallel architecture to counter the failures of parallel databases

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COURSE NAME	**ENTERPRISE STORAGE SYSTEM**
COUSE OUTCOMES	**After completion of the course, the learner will be able to:**
1	Analyze the architecture of an intelligent storage system for rapid data accessing
2	Justify the implementation of storage solutions to enable business continuity
3	Apply Storage Area Network for virtualization
4	Design a storage solution based on organizations requirements
5	Provide StorageInfrastructure Virtualization for better storage management

COURSE NAME	**TCP/IP Protocol**
COUSE OUTCOMES	**After completion of the course, the learner will be able to:**
1	Analyze the layers of the OSI and TCP/IP for efficient data transmission.
2	Distinguish between reliable and unreliable protocols for interconnections in application level and networklevel
3	Design routing mechanisms for congestion avoidance
4	Apply buffer management techniques to enhance performance
5	Apply flow, error and congestion control mechanisms for efficient data transmission

COURSE NAME	ANGULAR
COUSE OUTCOMES	**After completion of the course, the learner will be able to:**
1	Apply single-page application designs in developing web applications
2	Implement the type scripts layers for web applications
3	Build Angular forms for client interaction
4	Implement efficient Angular routings to protect components from unauthorized access
5	Design view components for chatting applications

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COURSE NAME	**CLOUD COMPUTING LABORATORY**
COUSE OUTCOMES	**After completion of the course, the learner will be able to:**
1	Develop and deploy applications for better cloud utility
2	Design web services for modern commercial applications
3	Analyze the performance, scalability, and availability of the underlying cloud technologies for business requirements
4	Implement software installation for utility of its applications
5	Compare various cloud computing platforms for better cloud services

COURSE NAME	**DATA MINING LABORATORY**
COUSE OUTCOMES	**After completion of the course, the learner will be able to:**
1	Execute data mining algorithms for extraction of appropriate datasets
2	Apply data pre-processing techniques on raw input data for data cleansing
3	Appraise the classification techniques on large datasets for differentiation
4	Apply the data mining algorithms to perform association rule mining and clustering tasks
5	Differentiate the outlier data from cluster data for statistical analysis

COURSE NAME	**ARTIFICIAL INTELLIGENCE LABORATORY**
COUSE OUTCOMES	After completion of the course, the learner will be able to:
1	Execute statistical problems to produce appropriate solutions
2	Categorize the problem forselection of an appropriate algorithm
3	Compare computational complexity of AI problems for better efficiency
4	Demonstrate various AI algorithms based on empirical and theoretical proofs for performance statistics
5	

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COURSE NAME	GENDER SENSITIZATION
COUSE OUTCOMES	**After completion of the course, the learner will be able to:**
1	Develop a better understanding of important issues related to gender in contemporary India
2	Sensitize to basic dimensions of the biological, sociological, psychological and legal aspects of gender
3	Acquire insight into the gendered division of labour and its relation to politics and economics
4	Equip to work and live together as equals
5	Develop a sense of appreciation of women in all walks of life

COURSE NAME	MOBILE APPLICATION DEVELOPMENT
COUSE OUTCOMES	**After completion of the course, the learner will be able to:**
1	Able to recognize the importance of knowledge on Android programming basics
2	Able to construct the various aspects of user interfaces.
3	Able to apply knowledge on displaying pictures, menus and data services
4	Able to develop application on content provider and messaging services.
5	Able to substitute on the fundamentals of location based services, and creating your own services

COURSE NAME	**Machine Learning**
COUSE OUTCOMES	**After completion of the course, the learner will be able to:**
1	Distinguish between, supervised, unsupervised and semi-supervised learning
2	Apply the opt machine learning strategy for any given problem
3	Suggest supervised, unsupervised or semi-supervised learning algorithms for any given problem
4	Design a system that uses the appropriate graph models of machine learning
5	Modify existing machine learning algorithms to improve classification efficiency

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COURSE NAME	COMPILER DESIGN
COUSE OUTCOMES	**After completion of the course, the learner will be able to:**
1	Identify tokens in the source program using lexical analyzer technique
2	Develop top-down and bottom-up parsers for the given grammar
3	Construct type checking semantic rules using synthesized and inherited attributes
4	Develop optimized intermediate code using code optimization techniques
5	Generate target code using flow graph and DAG

COURSE NAME	**BIGDATA**
COUSE OUTCOMES	**After completion of the course, the learner will be able to:**
1	Analyze distributed programsfor formation of large scale clusters
2	Apply enabling techniques of Hadoop and Map Reduce for distributed processing
3	Assemble the components of Hadoop and its Eco-System for efficient data storage and processing
4	Develop Map-Reduce programs in Java for performing large scale data analysis
5	Apply K-means clustering and Mahout Techniques for efficient data analysis

COURSE NAME	**PARALLEL ALGORITHMS**
COUSE OUTCOMES	
1	Design parallel random access machines algorithms for standard problems and applications
2	Analyze efficiency of different parallel algorithms
3	Choose the mapping on multi computers for efficient data processing. (Assess multiprocessors and multicomputer for efficient data processing).
4	Design the matrix algorithms to reduce complexity
5	Apply the graph algorithms to solve complex numeric problems

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COURSE NAME	NETWORKING ARCHITECTURE AND DESIGN
COUSE OUTCOMES	**After completion of the course, the learner will be able to:**
1	Apply computer design and instruction set principles as per system requirement
2	Analyze system requirements to remove redundancy
3	Propose sub-netting and routing strategies in addressing architectural issues
4	Apply network management mechanisms for data security and privacy
5	Develop hybrid mechanisms for effective interconnection

COURSE NAME	DESIGN PATTERNS
COUSE OUTCOMES	**After completion of the course, the learner will be able to:**
1	Apply basic programming techniques in solving given problem.
2	Design an algorithm for a given application program.
3	Utilize wrapper classes as per the demand of problem.
4	Apply the appropriate algorithmic technique for efficient problem solving.
5	Execute collection classes for dynamic programming.

COURSE NAME	MOBILE APPLICATION DEVELOPMENT LAB
COUSE OUTCOMES	**After completion of the course, the learner will be able to:**
1	Able to acquire practical knowledge on Android programming.
2	Able to understand the implementation aspects of user interfaces
3	Able to understand the implementation of image view and persistent data services.
4	Able to acquire practical knowledge on messaging services
5	Able to understand the practical exposure on implementation of location based services.

COURSE NAME	MACHINE LEARNING LAB
COUSE OUTCOMES	**After completion of the course, the learner will be able to:**
1	Distinguish between, supervised, unsupervised and semi-supervised learning
2	Apply the opt machine learning strategy for any given problem
3	Suggest supervised, unsupervised or semi-supervised learning algorithms for any given problem

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4	Design a system that uses the appropriate graph models of machine learning
5	Modify existing machine learning algorithmsto improve classification efficiency

COURSE NAME	Professional English Communication Skills
COUSE OUTCOMES	**After completion of the course, the learner will be able to:**
1	Achieve proficiency in English language skills
2	Build confidence through active listening, articulate expression and communication
3	Demonstrate the ability to play effective roles with multi-disciplinary teams
4	Apply language proficiency in professional contexts, mastering communication skills and adapting communication styles to diverse audience
5	Personality development of learners through enhanced communication skills and confidence
COURSE NAME	Indian Constitution
COUSE OUTCOMES	**After completion of the course, the learner will be able to:**
1	Understand historical background of the constitution making and its importance for building a democratic India.
2	Explain the role of President and Prime Minister.
3	Understand the functioning of three wings of the government ie., executive, legislative and judiciary.
4	Understand the value of the fundamental rights and duties for becoming good citizen of India
5	Analyze the decentralization of power between central, state and local self-government.

COURSE NAME	NATURAL LANGUAGE PROCESSING
COUSE OUTCOMES	**After completion of the course, the learner will be able to:**
1	Understand various phases in natural language processing.
2	Understand different linguistic resources software tools.
3	Understand parts of speech tagging with HMM, TBL.
4	Illustrate natural language grammar and context free grammar.
5	Understand applications of NLP and machine translation.

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COURSE NAME	SOFTWARE TESTING
COUSE OUTCOMES	**After completion of the course, the learner will be able to:**
1	Derive test cases for any given problem
2	Compare the different testing techniques to produce quality software
3	Identify the problem to its suitable testing model for error detection
4	Apply the appropriate technique for the design of data flow and integration of software
5	Create appropriate document for the software artifact

COURSE NAME	CRYPTOGRAPHY AND NETWORK SECURITY
COUSE OUTCOMES	**After completion of the course, the learner will be able to:**
1	Understand cryptography and network security concepts and application
2	Apply security principles to system design
3	Identify and investigate network security threat
4	Analyze and design network security protocols
5	Conduct research in network security

COURSE NAME	SOFTWARE TESTING LABORATORY
COUSE OUTCOMES	**After completion of the course, the learner will be able to:**
1	Identify the customer requirements for the given problem
2	Apply decision table testing for select problems
3	Derive different test cases for any given problem
4	Apply the appropriate testing technique for the design of flow graphs
5	Create software testing document for the software artifact

COURSE NAME	DATA VISUALIZATION TECHNIQUES
COUSE OUTCOMES	**After completion of the course, the learner will be able to:**
1	Make use of Tableau for effective communication of data.
2	Creae advanced visualizations, formatting and calculations using Tableau
3	Analyze changes in data visualization over time.
4	Create different types of dashboards.
5	Analyze and recommend effective business decisions/solutions using a systematic, evaluative, and information-based approach.

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COURSE NAME	ADHOC SENSOR NETWORKS
COUSE OUTCOMES	**After completion of the course, the learner will be able to:**
1	Introduce the concepts of Adhoc and Sensor Networks.
2	Explain Routing algorithms suitable for Adhoc Networks.
3	Understand the transport protocols for Adhoc networks
4	Familiarize with the security issues of adhoc and sensor networks
5	Adhoc and sensor networking, an emerging paradigm in computer networking that allows a logically centralized software program

COURSE NAME	SOFTWARE DEFINED NETWORKS
COUSE OUTCOMES	**After completion of the course, the learner will be able to:**
1	Benefits of SDN by the separation of data and control planes.
2	Interpret the SDN data plane devices and Open flow Protocols.
3	Implement the operation of SDN control plane with different controllers.
4	Apply techniques that enable applications to control the underlying
	network using SDN.
5	Describe Network Functions Virtualization components and their roles in SDN

COURSE NAME	RESEARCH METHODOLOGY
COUSE OUTCOMES	**After completion of the course, the learner will be able to:**
1	Understand basic concepts and its methodologies
2	Demonstrate the knowledge of research processes
3	Read. comprehend and explain research articles in their academic discipline
4	Analyze various types of testing tools used in research
5	Design a research paper without any ethical issues

COURSE NAME	BLOCK CHAIN TECHNOLOGY
COUSE OUTCOMES	**After completion of the course, the learner will be able to:**
1	Understand and explore the process of Block chain technology in payment and funding processing.
2	Analyze the working of Smart Contracts
3	Perform basic operations in hyper ledges and block chain networks.
4	Describe and deploy the smart contracts.
5	Identify the risks involved in building Block chain applications.

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COURSE NAME	**DEVOPS**
COUSE OUTCOMES	**After completion of the course, the learner will be able to:**
1	Analyze DevOps methodologies in collaboration with the Development and Operation s team
2	Apply configuration management strategies for better integrations and deployment
3	Make use of various DevOps tools to ease of collaboration and development
4	Determine the speed of productivity for in time delivery
5	Application deployment and configuration for uninterrupted usage

COURSE NAME	IMAGE PROCESSING
COUSE OUTCOMES	**After completion of the course, the learner will be able to:**
1	Interpret fundamental concepts of digital and colour image
	processing.
2	Exemplify image enhancement.
3	Analyze the various terminologies involved in image segmentation like edge, boundary detection etc.
4	Summarize segmentation techniques for digital images
5	Assess image compression techniques for digital images.

COURSE NAME	**DESIGN THINKING**
COUSE OUTCOMES	**After completion of the course, the learner will be able to:**
1	Appreciate various design processesfor creativity and innovation
2	Develop design ideas through different techniques
3	Identify the significance of reverse engineering about products
4	Make use of design drawings to communicate ideas effectively
5	Build organizations thatsupport creative and innovative thinking

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Department of Computer Science Engineering

Course Outcomes-R20

CourseName: MANAGERIALECONOMICSANDFINANCIALANALYSIS

S.NO	COURSEOUTCOMES
1	Analyze the concepts of managerial economics and financial accounting to Make better decisions in the organization
2	Analyzethedemand,production,costandbreakeventoknow interrelationshipamongvariablesandtheirimpact
3	Classifythemarketstructuretodecidethefixationofsuitableprice
4	Applycapitalbudgetingtechniquestoselectbestinvestmentopportunity
5	Analyzeandpreparefinancialstatementstoassess financialhealthofbusiness.

CourseName: OBJECTORIENTEDPROGRAMMINGTHROUGHJAVA

S.NO	COURSEOUTCOMES
1	Applyobjectorientedconceptsforsolvinggeneralpurposeproblems
2	Useinheritance,userdefinedpackagesandinterfacesfor code reusability
3	Applyexceptionhandlingandmultithreadingforrobustandefficientapplication development
4	Implementcollectionframeworkstostoreandretrievedataefficiently
5	BuildGUIapplicationsusingswingsfor user interface design

CourseName: DATABASEMANAGEMENTSYSTEMS

S.NO	COURSEOUTCOMES
1	Applysuitabledatamodelforgivenapplication
2	ConstructoptimizedSQLqueriestosolverealtimeproblems
3	Applysuitablenormalformtoeliminatedataredundancy
4	UsesuitabletransactionmodeltoavoidDeadlock
5	Choose appropriate indexstructuretoimprove performance

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CourseName:DISCRETEMATHEMATICS

S.NO	COURSEOUTCOMES
1	Applythelogicstatementsandconnectivestosolverealtimeproblems
2	Classifyalgebraicstructureandrelationsforagivenmathematical
	problem
3	Analyzethebasicresultsincombinatoricsandbinomialthermosforaccuracy
4	Applyvariousrecurrencerelationstofindsolutionsfornumericsequences
5	Applygraphtheorytechniquestosolvenetworkproblems

CourseName:DIGITALELECTRONICS

S.NO	COURSEOUTCOMES
1	Performarithmeticoperationsondifferentnumbersystemsandtoapply theprinciples ofBoolean algebra tominimize logic expressions.
2	Makeuseofk-mapandtabulationmethodstominimizeBoolean functionsandtoimplementwithlogicgates.
3	Analyse basic components used in digital systems such as adder and subtractor,decoder, encoder, multiplexer,flip-flops, registers and counters
4	Distinguishcombinationalandsequentiallogicin termsoftheirfunctions.
5	DesignvariousPLDssuchasROMs,PALs,PLAsandPROMs.

CourseName:OBJECTORIENTEDPROGRAMMINGTHROUGH JAVA LABORATORY

S.NO	COURSEOUTCOMES
1	Designsolutionsfortheproblemsofgeneralpurposeapplicationsusingobject orientedconcepts.
2	Generatereusablecodesusinginheritance,userdefined packages andinterface
3	Writerobustandefficientcodeusingexceptionhandlingand multithreadingconcepts
4	Implementcollectionframeworksandfilehandlingtechniquestostoreand retrievedata

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5	Designuserinterfaceusingswings

CourseName:DATABASEMANAGEMENTSYSTEMSLABORATORY

S.NO	COURSEOUTCOMES
1	DesignDatabasetablesforthegivenproblem
2	Useappropriatequeryingprocessingtechniquetoaccessthedata
3	Applysuitablenormalformtoeliminatedataredundancy
4	DevelopPL/SQLroutinesforreusabilityofcode
5	Applyappropriatetriggeringconceptsforautomation and

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CourseName:DIGITALELECTRONICLABORATORY

S.NO	COURSEOUTCOMES
1	Designdigitallogiccircuitsusingsoftware
2	Verifythe logicaloperationsofthedigitallogicgatesin the laboratory.
3	Analyze the functionalityof Combinational and Sequential Circuits using LogiSIM.
4	DesignandanalyzethecodeconvertersusingLogiSIM.
5	DesignandanalyzethecountersusingLogiSIM

CourseName:ANDROIDAPPLICATIONDEVELOPMENT

S.NO	COURSEOUTCOMES
1	Understandthedifferenttypesofmobiledevices
2	LearnhowtoapplyAndroidOperatingSystemonmobile.
3	Theycanunderstandthesystemsmobileapplication distribution.
4	Implementationofmobiledesignprinciples.
	Implementationofpromptprototypingtechniquesto designanddevelopmobileinterfaces

CourseName:ENVIRONMENTALSCIENCE

S.NO	COUSREOUTCOMES
1	Solveenvironmentalproblemsthroughhigherlevelofpersonalinvolvement andinterest.
2	Applyecologicalmoralstokeepupamicable connectionamong natureandhumanbeings.

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3	Recognizetheinterconnectedness ofhumandependenceonthe earth'secosystems.
4	Applyenvironmentallawsfortheprotectionofenvironmentandwildlife.
5	Influencesocietyinproperutilizationofgoodsandservices.

CourseName:PROBABILITYANDSTATISTICS

S.NO	COURSEOUTCOMES
1	Adoptcorrelationmethodsandprincipleofleastsquares,regressionanalysis
2	Applydiscreteandcontinuousprobabilitydistributions.
3	Classifytheconceptsofdatascienceanditsimportance.
4	Interprettheassociationofcharacteristicsand throughcorrelation and regression tools.
5	Designthecomponentsof aclassicalhypothesistest.

CourseName:WEBTECHNOLOGIES

S.NO	COURSEOUTCOMES
1	ConstructabasicwebsiteusingHTMLandCascadingStyleSheets.
2	BuilddynamicwebpageusingJavaScriptobjectsandeventhandling mechanisms.
3	DevelopserversideprogramsusingServletsandJavaServer Page.
4	ConstructwebpagesinPHPtorepresentdatainXMLformat.
5	UseAJAXandwebservicestodevelopinteractiveweb applications

CourseName: DESIGNANDANALYSISOFALGORITHMS

S.NO	COURSEOUTCOMES
1	Analyzetheefficiencyofalgorithmforagivenproblem.
2	Formulatethetimeorderanalysisforgivenalgorithm.

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3	Identify themathematical techniques required toprovethe time complexity of analgorithm.
4	Designappropriatealgorithmtosolverealworldproblems.
5	Developanapplicationwiththedesignedalgorithms.

CourseName:OPERATINGSYSTEMS

S.NO	COURSEOUTCOMES
1	ApplythebasicprinciplesofOperatingSystemsinsystemprogramming
2	Applytheprocesssynchronizationconceptsinmultiprogramming environment
3	Solvethememorymanagementproblemswithpagingand segmentationtechniques

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4	Designalgorithmicstrategiestohandledeadlockproblems
5	Implementtheconceptsofsecuredfilesystemfor confidentialityandauthentication.

CourseName:SOFTWAREENGINEERING

S.NO	COURSEOUTCOMES
1	Understandthevariousphasesofsoftwaredevelopmentlifecyclesand softwareRequirements.
2	Possessnecessaryskillstoelicittherequirementsofasoftwaresystemandto create well written software documentation involving appropriate system models.
3	Design,implementandevaluateacomputerbasedsystem,process,component or program to meet desired needs within realistic constraints specific to the field
4	Constructsoftwareprojectsbyintegratingcomponentswithappropriateuser interface
5	Applyvarioustestingstrategiestoverify,validateandto releaseerrorfreesoftware

CourseName:WEBTECHNOLOGYLABORATORY

S.NO	COURSEOUTCOMES
1	ConstructWebpagesusingHTML/XMLandstylesheets
2	Builddynamicwebpageswithvalidationusing JavaScript objects andbyapplyingdifferenteventhandlingmechanisms.
3	Developdynamicwebpagesusingserversidescripting.
4	UsePHPprogrammingtodevelopwebapplications.
5	ConstructwebapplicationsusingAJAXandwebservices.

CourseName:DESIGNANDANALYSISOFALGORITHMSLABORATORY

S.NO	COURSEOUTCOMES
1	Applybasicprogrammingtechniquesinsolvinggivenproblem.
2	Designanalgorithmforagivenapplicationprogram.

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3	Utilizewrapperclassesasperthedemandofproblem.
4	Apply theappropriatealgorithmictechniqueforefficientproblemsolving.
5	Executecollectionclassesfordynamicprogramming.

CourseName:OPERATINGSYSTEMSLABORATORY

S.NO	COURSEOUTCOMES
1	ApplyappropriateCPUschedulingalgorithmforthegivenproblem.
2	Performresourcemanagementforoptimalutilityof CPU.
3	Implementalgorithmshandlingdeadlockproblems
4	Implementtheconceptsofsecuredfilesystemforconfidentialityand authentication.
5	Applythreading conceptstohandleconcurrency.

CourseName:WEBDESIGNING

S.NO	COURSEOUTCOMES
1	Applytheprinciplesofcreatinganeffectivewebpage.
2	Applytheelementsofdesignwithregardtotheweb.
3	Createthelanguageoftheweb:HTMLandCSS.
4	Developskillsinanalyzingtheusabilityofawebsite.
5	Understandhowtoplanandconductuserrelatedtoweb usability.

CourseName: COMPUTER NETWORKS

S.NO	COURSEOUTCOMES
1	Applythenetworkingconceptsinconfiguringthe systems
2	Illustrateserrorhandlingmechanismindatalinklayer
3	Analyzetheroutingalgorithmsinfindingtheshortest path
4	Applytransportprotocolsinnetworkcommunications
5	Implementsdomainnameserviceandnetworksecurityin thecommunicationsegment.

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CourseName:MOBILEAPPLICATIONDEVELOPMENT

S.NO	COURSEOUTCOMES
1	AbletorecognizetheimportanceofknowledgeonAndroidprogrammingbasics
2	Abletoconstructthevariousaspectsofuser interfaces.
3	Abletoapplyknowledgeondisplayingpictures,menusand data services.
4	Abletodevelopapplicationoncontentproviderandmessagingservices.

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5	Abletosubstituteonthefundamentalsoflocationbased services,andcreatingyourownservices.

CourseName: ARTIFICIALINTELLIGENCE

S.NO	COURSEOUTCOMES
1	UnderstandthefundamentalconceptsofArtificialIntelligence.
2	Solveproblemsbyapplying asuitablesearchmethod.
3	Solveproblemsbyapplyingtheheuristicsearchmethod.
4	Understandconstraint satisfactionproblems.
5	UnderstandtheKnowledgeRepresentationtechniques.

CourseName:MOBILEAPPLICATIONDEVELOPMENTLAB

S.NO	COURSEOUTCOMES
1	AbletoacquirepracticalknowledgeonAndroidprogramming.
2	Abletounderstandtheimplementationaspectsofuserinterfaces.
3	Abletounderstandtheimplementationofimageviewand persistent data services.
4	Abletoacquirepracticalknowledgeonmessagingservices.
5	Abletounderstandthepracticalexposure on implementationoflocationbasedservices.

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CourseName:ARTIFICIALINTELLIGENCELABORATORY

S.NO	COURSEOUTCOMES
1	Executestatisticalproblemstoproduceappropriatesolutions
2	Categorizetheproblemforselectionofanappropriatealgorithm
3	ComparecomputationalcomplexityofAIproblemsforbetter efficiency
4	DemonstratevariousAIalgorithmsbasedonempiricalandtheoreticalproofs for performance statistics
5	Design and develop an Expert System that operates in a realisticproblemdomainandcommunicateeffectivelyina teamorindividualandpreparereports

CourseName: RPROGRAMMING

S.NO	COURSEOUTCOMES
1	UnderstandandapplythebasicsinRprogrammingintermsofconstructs,control statements,string functions
2	Applythefunctionsonmatrixrowsandcolumnsandlistoperators
3	WorkonDataframesandtabular typeofDATA
4	UnderstandandwritereliablecodeusingOOPconceptsinR
5	UnderstandandapplyRInterfacesforOther languages

CourseName: GENDERSENSITIZATION

S.NO	COURSEOUTCOMES
1	Developabetterunderstandingofimportantissuesrelatedtogenderin contemporaryIndia.
2	Sensitizetobasicdimensionsofthebiological,sociological, psychologicalandlegalaspectsofgender.
3	Acquireinsightintothegendereddivisionoflabourandits relation to politics and economics.
4	Equiptoworkandlivetogetheras equals
5	Developasenseofappreciationofwomeninallwalksoflife

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CourseName: DATAMINING

S.NO	COURSEOUTCOMES
1	Applytheprinciplesofbusinessintelligenceinthecommercialsegment
2	Makeuseofpre-processingtechniquesfordataorganization
3	Implementassociation,clusteringandrulebasedminingfor Market based analysis
4	Analyzethedataminingclassificationtechniquefordatadifferentiation
5	Designtheunsupervisedclusteringalgorithmsfor data analysis

CourseName:IMAGEPROCESSING

S.NO	COURSEOUTCOMES
1	Interpretfundamentalconceptsofdigitalandcolourimageprocessing.
2	Exemplifyimageenhancement.
3	Analyze the various terminologies involved in image segmentationlikeedge,boundarydetectionetc.Assessimage compressiontechniquesfordigitalimages.
4	Summarizesegmentationtechniquesfordigitalimages.
5	Designalgorithmstosolveimageprocessingproblemsand meetdesignspecifications.

CourseName:SOFTWARETESTING

S.NO	COURSEOUTCOMES
1	Listarangeofdifferentsoftwaretestingtechniquesandstrategiesandbeableto apply specific (automated) unit testing method to the projects.
2	Distinguishcharacteristicsofstructuraltestingmethods.
3	Demonstrate the integration testingwhich aimsto uncover interaction andcompatibilityproblems as early as possible.
4	Discussaboutthefunctionalandsystemtestingmethods
5	Demonstratevariousissuesforobjectorientedtesting.

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CourseName:**DevOps**

S.No	CourseOutcome
1	AnalyseDevOpsmethodologiesincollaborationwiththeDevelopmentand Operations team
2	Applyconfigurationmanagementstrategiesforbetterintegrationsand deployment
3	MakeuseofvariousDevOpstoolstoeaseofcollaborationanddevelopment
4	Determinethespeedofproductivityforintimedelivery
5	Applicationdeploymentandconfigurationforuninterruptedusage

CourseName:**MachineLearning**

S.No	CourseOutcome
1	Distinguishbetween,supervised,unsupervisedandsemi-supervisedlearning
2	Applytheoptmachinelearningstrategyforanygivenproblem
3	Suggestsupervised,unsupervisedorsemi-supervisedlearningalgorithmsforany given problem
4	Designasystemthatusestheappropriategraph modelsofmachinelearning
5	Modifyexistingmachinelearningalgorithmstoimproveclassificationefficiency

CourseName:**BigDataTechnologies**

S.No	CourseOutcome
1	analysedistributedprogramsforformationoflarge-scaleclusters
2	ApplyenablingtechniquesofHadoopandMapReducefordistributedprocessing
3	AssemblethecomponentsofHadoopanditsEco-Systemforefficientdata storage and processing
4	DevelopMap-ReduceprogramsinJavaforperforminglargescaledataanalysis
5	ApplyK-meansclusteringandMahoutTechniquesforefficientdataanalysis

CourseName:**ParallelAlgorithms**

S.No	CourseOutcome
1	Designparallelrandomaccessmachinesalgorithmsforstandardproblemsand applications
2	Analyzeefficiencyofdifferentparallelalgorithms
3	Choosethemappingonmulticomputersforefficientdataprocessing.(Assess multiprocessors and multicomputer for efficient data processing).
4	Designthematrixalgorithmstoreducecomplexity).
5	Applythegraphalgorithmstosolvecomplexnumericproblems

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CourseName: **AdhocandSensorNetworks**

S.No	CourseOutcome
1	Applycomputerdesignandinstructionsetprinciplesaspersystemrequirements
2	analysesystemrequirementstoremoveredundancy
3	Proposesub-nettingandroutingstrategiesinaddressingarchitecturalissues
4	Applynetworkmanagementmechanismsfordatasecurityandprivacy
5	Develophybridmechanismsforeffectiveinterconnection

CourseName:**DesignPatterns**

S.No	CourseOutcome
1	Applythemodel-view-controllerarchitectureforagivenapplication
2	Proposethemostsuitabledesignpatterntosolveadesignproblem
3	Inspectexistingcodetoperformsoftwarerefactoring
4	Applythebasicdesignprinciplesforqualitysoftware
5	Constructdesignsolutionsbyusingbehaviouralpatterns.

CourseName:**CloudComputing**

S.No	CourseOutcome
1	analyseclouddeliverymodelsforbetterarchitecture.
2	Implementinfrastructureasaservicemodelforindustrialapplications.
3	Organizethecloudplatformmodelforoptimizationservices.
4	Developvariousapplicationsoftwarewithsoftwareasservice.
5	Designcloudcomputingreferencearchitecturefordeliverymodels.

CourseName:**CloudComputingLaboratory**

S.No	CourseOutcome
1	Developanddeployapplicationsforbettercloudutility
2	Designwebservicesformoderncommercialapplications
3	analysetheperformance,scalability,andavailabilityoftheunderlyingcloudtechnologies for business requirements
4	Implementsoftwareinstallationforutilityofitsapplications
5	Comparevariouscloudcomputingplatformsforbettercloudservices

CourseName:**DevOpsLaboratory**

S.No	CourseOutcome
1	UnderstandthebackgroundanddrivingforcesfortakinganAgileApproachtoSoftware Development
2	Makeuseofdifferentopen-sourceagiletools
3	ApplyDesignprincipleandRefactoringtoachieveagility
4	ImplementTestDrivenDevelopmentusingXUnit

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5	Testwebappsusingselenium

CourseName:**IndianConstitutionand multiculturalism**

S.No	CourseOutcome
1	Understandhistoricalbackgroundoftheconstitutionmakinganditsimportancefor building a democratic India
2	ExplaintheroleofPresidentandPrimeMinister.
3	Understandthefunctioningofthreewingsofthegovernmentie.,executive,legislative and judiciary.
4	Understandthevalueofthefundamentalrightsanddutiesforbecominggoodcitizenof India
5	analysethedecentralizationofpowerbetweencentral,stateandlocalself-government.

CourseName:**BasicDataStructures**

S.No	CourseOutcome
1	Analyzethetimeandspacecomplexitiesofalgorithms
2	Applyvariousoperationsonlineardatastructures
3	Designsearchingandsortingtechniquesforagivenapplication
4	Developnonlinearprogrammingforoptimizationtechniques
5	Developprogramsforefficientdataorganisationwithreducetimecomplexity.

CourseName:**Fundamentalsof DBMS**

S.No	CourseOutcome
1	Applysuitabledatamodelsforgivenapplication
2	DesigndatabaseusingintegrityconstraintsandACIDproperties
3	ConstructoptimizedSQLqueriestosolverealtimeproblems
4	Applysuitablenormalformtoeliminatedataredundancy
5	Chooseappropriateindexstructuretoimproveperformance

CourseName:**Basicsofsoftwareengineering**

S.No	CourseOutcome
1	Applythephasesofsoftwaredevelopmentlifecycleinapplicationdevelopment
2	Identifysoftwarerequirementsforconstruction
3	Designrequirementengineeringprocessforchangemanagement
4	Applythedesignconceptsfordesignmodels
5	Constructthevarioustestingtechniquesforsoftwaresystems

CourseName:**PythonforEveryone**

S.No	CourseOutcome
1	ApplythebasicconstructsofPythontosolveproblems
2	Organizelists,tuplesanddictionariesappropriatelytosolvecomplexproblems

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3	Buildfunctionstoincreasecodereusability
4	Implement modularprogrammingfororganizedsoftwaredevelopment
5	Makeuseofexceptionhandlingforrobustprogramming

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CourseName:**ComputerOrganizationandOperatingSystems**

S.No	CourseOutcome
1	analysethefundamentalsofcomputerorganizationindesigningasystem
2	Applytheconceptsofprogramminglanguagetosolvesystemproblems
3	MakeuseoftheOperatingSystemsdesignstructureanditsservicesforsystem programming
4	DevelopProcessSchedulingalgorithmsandInter-ProcessCommunicationsystemsfor resourcemanagement
5	Classifymemorymanagementtechniquesandvirtualmemorymechanismsforapt implementations

CourseName:**FundamentalsofArtificialIntelligenceandMachineLearning**

S.No	CourseOutcome
1	analysedifferentfieldsinwhichAIisapplied
2	Applysuitablesearchstrategiesinfindingbettersolutionforagivenproblem
3	Identifylinearregressionwithsingleandmultiplevariables
4	Performpredictiveanalysisusingdecisiontreesandrandomforestclassifier
5	ImplementdeeplearningneuralnetworkmodelswithTensorFlow

CourseName:**FundamentalsofWebTechnologies**

S.No	CourseOutcome
1	ConstructabasicwebsiteusingHTMLandCascadingStyleSheets.
2	BuilddynamicwebpageusingJavaScriptobjectsandeventhandlingmechanisms.
3	DevelopserversideprogramsusingServletsandJavaServerPage.
4	ConstructwebpagesinPHPtorepresentdatainXMLformat.
5	UseAJAXandwebservicestodevelopinteractivewebapplications

CourseName:**FundamentalsofJavaProgramming**

S.No	CourseOutcome
1	Applyobjectorientedconceptsforsolvinggeneralpurposeproblems
2	Useinheritance,userdefinedpackagesandinterfacesforcodereusability
3	Applyexceptionhandlingandmultithreadingforrobustandefficientapplication development
4	Implementcollectionframeworkstostoreandretrievedataefficiently
5	BuildGUIapplicationsusingswingsforuserinterfacedesign

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CourseName:**InformationSecurity**

S.No	CourseOutcome
1	IntroductiontoInformationSecurity,ConventionalCryptographicTechniques.
2	Understandbasiccryptographicalgorithms,
3	UnderstandAuthentication techniquesandDigitalSignatures.
4	DemonstratehowtosecureaProgram
5	UnderstandthenetworkSecurityIssues.

CourseName:**LinuxEnvironmentSystems**

S.No	CourseOutcome
1	ToteachprinciplesofoperatingsystemincludingFilehandlingutilities,Securitybyfile permissions,Processutilities,Diskutilities,NetworkingCommands,BasicLinux commands, Scripts and filters.
2	Tofamiliarize fundamentals of the Bourne againshell (bash),shell programming,pipes, inputandoutputredirectionControlstructures,arithmeticinshellinterruptprocessing, functions,debuggingshellscripts
3	Toimpartfundamentalsoffileconceptskernelsupportforfile,Filestructurerelated system calls (file API's).
4	TofacilitatestudentsinunderstandingInterprocesscommunication
5	Tofacilitatestudentsinunderstandingsemaphoreandsharedmemory

CourseName:**NaturalLanguageProcessing**

S.No	CourseOutcome
1	Tounderstandthetheoreticalfoundations,algorithmsandmethodologiesof Neural Network
2	Todesignanddevelopanapplicationusingspecificdeeplearningmodels
3	Toprovidethepracticalknowledgeinhandlingandanalysingrealworld applications
4	ToenhancetheEncoderandDecodersequencetosequence
5	TodesigntheAutomaticImagecaptioninginDeeplearning

CourseName:**DataVisualizationTechniques**

S.No	CourseOutcome
1	MakeuseofTableauforeffectivecommunicationofdata
2	Createadvancedvisualizations,formattingandcalculationsusing
3	analysechangesindatavisualizationovertime.
4	Createdifferenttypesofdashboards.
5	analyseandrecommendeffectivebusinessdecisions/solutionsusingasystematic, evaluative, and information-based approach.

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CourseName:**ObjectOrientedAnalysisanddesign**

S.No	CourseOutcome
1	Learnthefundamentalprinciplesofobject-orientedmodelling
2	Understandclassandobjectdiagramsforsoftwaresystems
3	Identifythesystembehaviourusingusecaseandinteractiondiagrams
4	Modellingstatesandstategraphsusingadvancedbehaviouralmodel
5	Analysingandimplementingsystemarchitecturebyusingarchitecturalconcepts

CourseName:**WirelessSensorNetwork**

S.No	CourseOutcome
1	UnderstandtheConceptsofWirelessSensorNetworks
2	ApplyknowledgeofArchitecturetoWirelessSensorNetworks
3	UnderstandtheKnowledgeofSensorDevices.
4	ExaminetheapplicationsofWirelessSensorNetworks
5	Establishinginfrastructureandsimulations

CourseName:**ParallelAlgorithms**

S.No	CourseOutcome
1	Designparallelrandomaccessmachinesalgorithmsforstandardproblemsand applications
2	analyseefficiencyofdifferentparallelalgorithms
3	Choosethemappingonmulticomputersforefficientdataprocessing.(Assess multiprocessors and multicomputer for efficient data processing).
4	Designthematrixalgorithmstoreducecomplexity.
5	Applythegraphalgorithmstosolvecomplexnumericproblems

CourseName:**Computergraphics**

S.No	CourseOutcome
1	Implementthecoreconceptsofcomputergraphics,includingviewing,projection, perspective, modelling and transformation in two and three dimensions.
2	Applytheconceptsofcolourmodels,lightingandshadingmodels,textures,raytracing, hiddensurfaceelimination,anti-aliasing,andrendering.
3	Interpretthemathematicalfoundationoftheconceptsofcomputergraphics.
4	Describethefundamentalsofanimation,parametriccurvesandsurfaces,and spotlighting.
5	Identifyatypicalgraphicspipelineandapplygraphicsprogrammingtechniquestodesign andcreatecomputergraphics

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CourseName:**BlockChainTechnology**

S.No	CourseOutcome
1	UnderstandandexploretheprocessofBlockchaintechnologyinpaymentandfunding processing.
2	AnalyzetheworkingofSmartContracts
3	Performbasicoperationsinhyperledgesandblockchainnetworks.
4	Describeanddeploythesmartcontracts.
5	IdentifytherisksinvolvedinbuildingBlockchainapplications.

CourseName:**SoftwareDefinedNetworks**

S.No	CourseOutcome
1	ExplainthekeybenefitsofSDNbytheseparationofdataandcontrolplanes
2	InterprettheSDNdataplanedevicesandOpenflowProtocols.
3	ImplementtheoperationofSDNcontrolplanewithdifferentcontrollers.
4	Applytechniquesthatenableapplicationstocontroltheunderlyingnet,workusingSDN
5	DescribeNetworkFunctionsVirtualizationcomponentsandtheirrolesinSDN

CourseName:**DeepLearning**

S.No	CourseOutcome
1	Tounderstandthetheoreticalfoundations,algorithmsandmethodologiesof Neural Network
2	Todesignanddevelopanapplicationusingspecificdeeplearningmodels
3	Toprovidethepracticalknowledgeinhandlingandanalysingrealworld applications.
4	ToenhancetheEncoderandDecodersequencetosequence
5	TodesigntheAutomaticImagecaptioninginDeeplearning

CourseName:**DistributedComputing**

S.No	CourseOutcome
1	Toexposestudentstoboththeabstractionanddetailsoffilesystems
2	Tointroduceconceptsrelatedtodistributedcomputingsystems.
3	Tofocusonperformanceandflexibilityissuesrelatedtosystemsdesigndecisions.
4	Tounderstandwhyandnotjustthememorizethedetails
5	Toexposestudentstocurrentliteratureindistributedsystems.

CourseName:**AZURETechnologies**

S.No	CourseOutcome
1	ApplyappropriatetoolsforDataCollectionandManipulation
2	UnderstandandapplyappropriateDataCleaningtechniquesforDataPreparation
3	Applystatisticalmeasurestoanalysethenatureof Data.
4	ImplementDataVisualizationMethodsforgettinginsightsofData.
5	analyseDatabyimplementingConceptsofDataPreparation.

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