Computer Science & Engineering

POs, PSOs, Cos

Program Outcomes

1. **PO-1: Engineering Knowledge:** Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
2. **PO-2: Problem analysis:** Identify, formulate, research literature, and analyse complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.
3. **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.
4. **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.
5. **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.
6. **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.
7. **PO-7: Environment and Sustainability:** Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of need for sustainable development.
8. **PO-8: Ethics:** Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
9. **PO-9: Individual and Team Work:** Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
10. **PO-10: Communication:** 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 and receive clear instructions.
11. **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.
12. **PO-12: Life-long learning:** Recognise the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change

Program Specific Outcomes

1. **PSO-1: Problem-Solving Skills:** An ability to investigate and solve a problem by analysis, interpretation of data, design and implementation through appropriate techniques, tools and skills.
2. **PSO-2: Professional Skills:** An ability to apply algorithmic principles, computing skills and computer science theory in the modelling and design of computer-based systems.
3. **PSO-3: Entrepreneurial Ability:** An ability to apply design, development principles and management skills in the construction of software product of varying complexity to become an entrepreneur.

YEAR: 2 SEM: 3

Course Name: Transform Calculus, Fourier Series and Numerical Techniques Sub code: 18MAT31

CO	Course Outcomes
1.	Use Laplace transform and inverse Laplace transform in solving differential/ integral equation arising in network analysis, control systems and other fields of engineering.
2.	Demonstrate Fourier series to study the behaviour of periodic functions and their applications in system communications, digital signal processing and field theory.
3.	Make use of Fourier transform and Z-transform to illustrate discrete/continuous function arising in wave and heat propagation, signals and systems.
4.	Solve first and second order ordinary differential equations arising in engineering problems using single step and multistep numerical methods.
5.	Determine the externals of functionals using calculus of variations and solve problems arising in dynamics of rigid bodies and vibrational analysis.

Course Name: Electromagnetic Waves Subject code: 18CS32

CO	Course Outcomes
1.	Use different types of data structures, operations and algorithms
2.	**Apply searching and sorting operations on files**
3.	Use stack, Queue, Lists, Trees and Graphs in problem solving
4.	Implement all data structures in a high-level language for problem solving.

Course Name: Analog and Digital Electronics Subject code: 18CS33

CO	Course Outcomes
1.	Design and analyze application of analog circuits using photo devices, timer IC, power supply and regulator IC and op-amp.
2.	Explain the basic principles of A/D and D/A conversion circuits and develop the same.
3.	Simplify digital circuits using Karnaugh Map , and Quine-McClusky Methods
4.	Explain Gates and flip flops and make us in designing different data processing circuits, registers and counters and compare the types.
5.	Develop simple HDL programs

Course Name: COMPUTER ORGANIZATION Subject code: 18CS34

CO	Course Outcomes
1.	Explain the basic organization of a computer system.
2.	Demonstrate functioning of different sub systems, such as processor, Input/output,and memory.
3.	Illustrate hardwired control and micro programmed control, pipelining, embedded and other computing systems.
4.	Design and analyse simple arithmetic and logical units.

Course Name: SOFTWARE ENGINEERING Subject code: 18CS35

CO	Course Outcomes
1.	Design a software system, component, or process to meet desired needs within realistic constraints.
2.	Assess professional and ethical responsibility
3.	Function on multi-disciplinary teams
4.	Use the techniques, skills, and modern engineering tools necessary for engineering practice
5.	Analyze, design, implement, verify, validate, implement, apply, and maintain software systems or parts of software systems

Course Name: DISCRETE MATHEMATICAL STRUCTURES Subject code: 18CS36

CO	Course Outcomes
1.	Use propositional and predicate logic in knowledge representation and truth verification.
2.	Demonstrate the application of discrete structures in different fields of computer science.
3.	Solve problems using recurrence relations and generating functions.
4.	Application of different mathematical proofs techniques in proving theorems in the courses.
5.	Compare graphs, trees and their applications.

Course Name ANALOG AND DIGITAL ELECTRONICS LABORATORY Subject code: 18CSL37

CO	Course Outcomes
1.	Use appropriate design equations / methods to design the given circuit.
2.	Examine and verify the design of both analog and digital circuits using simulators.
3.	Make us of electronic components, ICs, instruments and tools for design and testing of circuits for the given the appropriate inputs.
4.	Compile a laboratory journal which includes; aim, tool/instruments/software/components used, design equations used and designs, schematics, program listing, procedure followed, relevant theory, results as graphs and tables, interpreting and concluding the findings.
5.	

Course Name: DATA STRUCTURES LABORATORY Subject code: 18CSL38

CO	Course Outcomes
1.	Analyze and Compare various linear and non-linear data structures
2.	Code, debug and demonstrate the working nature of different types of data structures and their applications
3.	Implement, analyze and evaluate the searching and sorting algorithms
4.	Choose the appropriate data structure for solving real world problem

Course Name: CONSTITUTION OF INDIA, PROFESSIONAL ETHICS AND CYBER LAW (CPC) Subject code: 18CPC39/49

CO	Course Outcomes
1.	Have constitutional knowledge and legal literacy.
2.	Understand Engineering and Professional ethics and responsibilities of Engineers.
3.	Understand the the cybercrimes and cyber laws for cyber safety measures.

Course Name: ADDITIONAL MATHEMATICS – I Subject code: 18MATDIP31

CO	Course Outcomes
1.	Apply concepts of complex numbers and vector algebra to analyze the problems arising in related area.
2.	Use derivatives and partial derivatives to calculate rate of change of multivariate functions.
3.	Analyze position, velocity and acceleration in two and three dimensions of vector valued functions.
4.	Learn techniques of integration including the evaluation of double and triple integrals.
5.	Identify and solve first order ordinary differential equations.

YEAR: 2 SEM: 4

Course Name: COMPLEX ANALYSIS, PROBABILITY AND STATISTICAL METHODS Subject code: 18MAT41

CO	Course Outcomes
1.	Use the concepts of analytic function and complex potentials to solve the problems arising in electromagnetic field theory.
2.	Utilize conformal transformation and complex integral arising in aerofoil theory, fluid flow visualization and image processing.
3.	Apply discrete and continuous probability distributions in analyzing the probability models arising in engineering field.
4.	Make use of the correlation and regression analysis to fit a suitable mathematical model for the statistical data.

Course Name: DESIGN AND ANALYSIS OF ALGORITHMS Subject code: 18CS42

CO	Course Outcomes
1.	Describe computational solution to well known problems like searching, sorting etc.
2.	Estimate the computational complexity of different algorithms.
3.	Devise an algorithm using appropriate design strategies for problem solving.

Course Name: OPERATING SYSTEMS Subject code: 18CS43

CO	Course Outcomes
1.	Demonstrate need for OS and different types of OS
2.	Apply suitable techniques for management of different resources
3.	Use processor, memory, storage and file system commands
4.	Realize the different concepts of OS in platform of usage through case studies

Course Name: MICROCONTROLLER AND EMBEDDED SYSTEMS Subject code: 18CS44

CO	Course Outcomes
1.	Describe the architectural features and instructions of ARM microcontroller
2.	Apply the knowledge gained for Programming ARM for different applications.
3.	Interface external devices and I/O with ARM microcontroller.
4.	Interpret the basic hardware components and their selection method based on the characteristics and attributes of an embedded system.
5.	Develop the hardware /software co-design and firmware design approaches.
6.	Demonstrate the need of real time operating system for embedded system applications

Course Name: OBJECT ORIENTED CONCEPTS Subject code: 18CS45

CO	Course Outcomes
1.	Explain the object-oriented concepts and JAVA.
2.	Develop computer programs to solve real world problems in Java.
3.	Develop simple GUI interfaces for a computer program to interact with users, and to understand the event-based GUI handling principles using swings.

Course Name: DATA COMMUNICATION Subject code: 18CS46

CO	Course Outcomes
1.	Explain the various components of data communication.
2.	Explain the fundamentals of digital communication and switching.
3.	Compare and contrast data link layer protocols.
4.	Summarize IEEE 802.xx standards

Course Name: DESIGN AND ANALYSIS OF ALGORITHMS LABORATORY Subject code: 18CSL47

CO	Course Outcomes
1.	Design algorithms using appropriate design techniques (brute-force, greedy, dynamic programming, etc.)
2.	Implement a variety of algorithms such assorting, graph related, combinatorial, etc., in a high level language.
3.	Analyze and compare the performance of algorithms using language features.
4.	Apply and implement learned algorithm design techniques and data structures to solve real-world problems.

Course Name: MICROCONTROLLER AND EMBEDDED SYSTEMS LABORATORY Subject code: 18CSL48

CO	Course Outcomes
1.	Develop and test program using ARM7TDMI/LPC2148
2.	Conduct the following experiments on an ARM7TDMI/LPC2148 evaluation board usingevaluation version of Embedded 'C' & Keil Uvision-4 tool/compiler.

Course Name: ADDITIONAL MATHEMATICS – II Subject code: 18MATDIP41

CO	Course Outcomes
1.	Solve systems of linear equations using matrix algebra.
2.	Apply the knowledge of numerical methods in modelling and solving engineering problems.
3.	Make use of analytical methods to solve higher order differential equations.
4.	Classify partial differential equations and solve them by exact methods.
5.	Apply elementary probability theory and solve related problems.

YEAR: 2 SEM: 5

Course Name: MANAGEMENT AND ENTREPRENEURSHIP FOR IT INDUSTRY Subject code: 18CS51

CO	Course Outcomes
1.	Define management, organization, entrepreneur, planning, staffing, ERP and outline their importance in entrepreneurship
2.	Utilize the resources available effectively through ERP
3.	Make use of IPRs and institutional support in entrepreneurship

Course Name: COMPUTER NETWORKS AND SECURITY Subject code: 18CS52

CO	Course Outcomes
1.	Explain principles of application layer protocols
2.	Recognize transport layer services and infer UDP and TCP protocols
3.	Classify routers, IP and Routing Algorithms in network layer
4.	Understand the Wireless and Mobile Networks covering IEEE 802.11 Standard
5.	Describe Multimedia Networking and Network Management

Course Name: DATABASE MANAGEMENT SYSTEM Subject code: 18CS53

CO	Course Outcomes
1.	Identify, analyze and define database objects, enforce integrity constraints on a database using RDBMS.
2.	Use Structured Query Language (SQL) for database manipulation.
3.	Design and build simple database systems
4.	Develop application to interact with databases

Course Name: AUTOMATA THEORY AND COMPUTABILITY Subject code: 18CS54

CO	Course Outcomes
1.	Acquire fundamental understanding of the core concepts in automata theory and Theory of Computation
2.	Learn how to translate between different models of Computation (e.g., Deterministic and Non-deterministic and Software models).
3.	Design Grammars and Automata (recognizers) for different language classes and become knowledgeable about restricted models of Computation (Regular, Context Free) and their relative powers.
4.	Develop skills in formal reasoning and reduction of a problem to a formal model, with an emphasis on semantic precision and conciseness.
5.	Classify a problem with respect to different models of Computation

Course Name: APPLICATION DEVELOPMENT USING PYTHON Subject code: 18CS55

CO	Course Outcomes
1.	Demonstrate proficiency in handling of loops and creation of functions.
2.	Identify the methods to create and manipulate lists, tuples and dictionaries.
3.	Discover the commonly used operations involving regular expressions and file system.
4.	Interpret the concepts of Object-Oriented Programming as used in Python.
5.	Determine the need for scraping websites and working with CSV, JSON and other file formats.

Course Name: UNIX PROGRAMMING Subject code: 18CS56

CO	Course Outcomes
1.	Explain Unix Architecture, File system and use of Basic Commands
2.	Illustrate Shell Programming and to write Shell Scripts
3.	Categorize, compare and make use of Unix System Calls
4.	Build an application/service over a Unix system.

Course Name: COMPUTER NETWORK LABORATORY Subject code: 18CSL57

CO	Course Outcomes
1.	Analyze and Compare various networking protocols.
2.	Demonstrate the working of different concepts of networking.
3.	Implement, analyze and evaluate networking protocols in NS2 / NS3 and JAVA programming language

Course Name: DBMS LABORATORY WITH MINI PROJECT Subject code: 18CSL58

CO	Course Outcomes
1.	Create, Update and query on the database.
2.	Demonstrate the working of different concepts of DBMS
3.	Implement, analyze and evaluate the project developed for an application.

Course Name: ENVIRONMENTAL STUDIES Subject code: 18CIV59

CO	Course Outcomes
1.	Understand the principles of ecology and environmental issues that apply to air, land, and water issues on a global scale,
2.	Develop critical thinking and/or observation skills, and apply them to the analysis of a problemor question related to the environment.
3.	Demonstrate ecology knowledge of a complex relationship between biotic and abiotic components.
4.	Apply their ecological knowledge to illustrate and graph a problem and describe the realities that managers face when dealing with complex issues.

YEAR: 2 SEM: 6

Course Name: SYSTEM SOFTWARE AND COMPILERS Subject code: 18CS61

CO	Course Outcomes
1.	Explain system software
2.	Design and develop lexical analyzers, parsers and code generators
3.	Utilize lex and yacc tools for implementing different concepts of system software

Course Name: COMUTER GRAPHICS AND VISUALIZATION Subject code: 18CS62

CO	Course Outcomes
1.	Design and implement algorithms for 2D graphics primitives and attributes.
2.	Illustrate Geometric transformations on both 2D and 3D objects.
3.	Apply concepts of clipping and visible surface detection in 2D and 3D viewing, and Illumination Models.
4.	Decide suitable hardware and software for developing graphics packages using OpenGL.

Course Name: WEB TECHNOLOGY AND ITS APPLICATIONS Subject code: 18CS63

CO	Course Outcomes
1.	Adapt HTML and CSS syntax and semantics to build web pages.
2.	Construct and visually format tables and forms using HTML and CSS
3.	Develop Client-Side Scripts using JavaScript and Server-Side Scripts using PHP to generate and display the contents dynamically.
4.	Appraise the principles of object oriented development using PHP
5.	Inspect JavaScript frameworks like jQuery and Backbone which facilitates developer to focus on core features.

Course Name: DATA MINING AND DATA WAREHOUSING Subject code: 18CS641

CO	Course Outcomes
1.	Identify data mining problems and implement the data warehouse
2.	Write association rules for a given data pattern.
3.	Choose between classification and clustering solution.

Course Name: OBJECT ORIENTED MODELING AND DESIGN Subject code: 8CS642

CO	Course Outcomes
1.	Describe the concepts of object-oriented and basic class modelling.
2.	Draw class diagrams, sequence diagrams and interaction diagrams to solve problems.
3.	Choose and apply a befitting design pattern for the given problem.

Course Name: CLOUD COMPUTING AND ITS APPLICATIONS Subject code: 18CS643

CO	Course Outcomes
1.	Explain cloud computing, virtualization and classify services of cloud computing
2.	Illustrate architecture and programming in cloud
3.	Describe the platforms for development of cloud applications and List the application of cloud.

Course Name: ADVANCED JAVA AND J2EE Subject code: 18CS644

CO	Course Outcomes
1.	Interpret the need for advanced Java concepts like enumerations and collections in developing modular and efficient programs
2.	Build client-server applications and TCP/IP socket programs
3.	Illustrate database access and details for managing information using the JDBC API
4.	Describe how servlets fit into Java-based web application architecture
5.	Develop reusable software components using Java Beans

Course Name: SYSTEM MODELLING AND SIMULATION Subject code: 18CS645

CO	Course Outcomes
1.	Explain the system concept and apply functional modeling method to model the activities of a static system
2.	Describe the behavior of a dynamic system and create an analogous model for a dynamic system;
3.	Simulate the operation of a dynamic system and make improvement according to the simulation results.

Course Name: MOBILE APPLICATION DEVELOPMENT Subject code: 18CS651

CO	Course Outcomes
1.	Create, test and debug Android application by setting up Android development environment
2.	Implement adaptive, responsive user interfaces that work across a wide range of devices.
3.	Infer long running tasks and background work in Android applications
4.	Demonstrate methods in storing, sharing and retrieving data in Android applications
5.	Analyze performance of android applications and understand the role of permissions and security
6.	Describe the steps involved in publishing Android application to share with the world

Course Name: INTRODUCTION TO DATA SRUCTURES AND ALGORITHM Subject code: 18CS652

CO	Course Outcomes
1.	Identify different data structures in C programming language
2.	Appraise the use of data structures in problem solving
3.	Implement data structures using C programming language.

Course Name: PROGRAMMING IN JAVA Subject code: 18CS653

CO	Course Outcomes
1.	Explain the object-oriented concepts and JAVA.
2.	Develop computer programs to solve real world problems in Java.
3.	Develop simple GUI interfaces for a computer program to interact with users

Course Name: INTRODUCTION TO OPERATING SYSTEM Subject code: 18CS654

CO	Course Outcomes
1.	Explain the fundamentals of operating system
2.	Comprehend process management, memory management and storage management.
3.	Familiar with various types of operating systems

Course Name: SYSTEM SOFTWARE LABORATORY Subject code: 18CSL66

CO	Course Outcomes
1.	• Implement and demonstrate Lexer's and Parser's
2.	• Evaluate different algorithms required for management, scheduling, allocation and communication used in operating system.

Course Name: COMPUTER GRAPHICS LABORATORY WITH MINI PROJECT Subject code: 18CSL67

CO	Course Outcomes
1.	Apply the concepts of computer graphics
2.	Implement computer graphics applications using OpenGL
3.	Animate real world problems using OpenGL

Course Name: MOBILE APPLICATION DEVELOPMENT Subject code: 18CSMP68

CO	Course Outcomes
1.	Create, test and debug Android application by setting up Android development environment.
2.	Implement adaptive, responsive user interfaces that work across a wide range of devices.
3.	Infer long running tasks and background work in Android applications.
4.	Demonstrate methods in storing, sharing and retrieving data in Android applications.
5.	Infer the role of permissions and security for Android applications.

YEAR: 4 SEM: 7

Course Name: ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING Subject code: 18CS71

CO	Course Outcomes
1.	Appaise the theory of Artificial intelligence and Machine Learning.
2.	Illustrate the working of AI and ML Algorithms.
3.	Demonstrate the applications of AI and ML.

Course Name: BIG DATA AND ANALYTICS Subject code: 18CS72

CO	Course Outcomes
1.	Understand fundamentals of Big Data analytics.
2.	Investigate Hadoop framework and Hadoop Distributed File system.
3.	Illustrate the concepts of NoSQL using MongoDB and Cassandra for Big Data.
4.	Demonstrate the MapReduce programming model to process the big data along with Hadoop tools.
5.	Use Machine Learning algorithms for real world big data.
6.	Analyze web contents and Social Networks to provide analytics with relevant visualization tools.

Course Name: SOFTWARE ARCHITECTURE AND DESIGN PATTERNS Subject code: 18CS731

CO	Course Outcomes
1.	Design and implement codes with higher performance and lower complexity
2.	Be aware of code qualities needed to keep code flexible
3.	Experience core design principles and be able to assess the quality of a design with respect to these principles.
4.	Capable of applying these principles in the design of object oriented systems.
5.	Demonstrate an understanding of a range of design patterns. Be capable of
6.	comprehending a design presented using this vocabulary.
7.	Be able to select and apply suitable patterns in specific contexts

Course Name: HIGH PERFORMANCE COMPUTING Subject code: 18CS732

CO	Course Outcomes
1.	Illustrate the key factors affecting performance of CSE applications
2.	Illusrate mapping of applications to high-performance computing systems
3.	Apply hardware/software co-design for achieving performance on real-world applications

Course Name: ADVANCED COMPUTER ARCHITECTURES Subject code: 18CS733

CO	Course Outcomes
1.	Explain the concepts of parallel computing and hardware technologies
2.	Compare and contrast the parallel architectures
3.	Illustrate parallel programming concepts

Course Name: USER INTERFACE DESIGN Subject code: 18CS734

CO	Course Outcomes
1.	Design the User Interface, design, menu creation, windows creation and connection between menus and windows

Course Name: DIGITAL IMAGE PROCESSING Subject code: 18CS741

CO	Course Outcomes
1.	Explain fundamentals of image processing
2.	Compare transformation algorithms
3.	Contrast enhancement, segmentation and compression techniques

Course Name: NETWORK MANAGEMENT Subject code: 18CS742

CO	Course Outcomes
1.	Analyze the issues and challenges pertaining to management of emerging network technologies such as wired/wireless networks and high-speed internets.
2.	Apply network management standards to manage practical networks
3.	Formulate possible approaches for managing OSI network model.
4.	Use on SNMP for managing the network
5.	Use RMON for monitoring the behavior of the network
6.	Identify the various components of network and formulate the scheme for the managing them

Course Name: NATURAL LANGUAGE PROCESSING Subject code: 18CS743

CO	Course Outcomes
1.	Analyze the natural language text.
2.	Define the importance of natural language.
3.	Understand the concepts Text mining.
4.	Illustrate information retrieval techniques.

Course Name: CRYPTOGRAPHY Subject code: 18CS744

CO	Course Outcomes
1.	Define cryptography and its principles
2.	Explain Cryptography algorithms
3.	Illustrate Public and Private key cryptography
4.	Explain Key management, distribution and ceritification
5.	Explain authentication protocols
6.	Tell about IPSec

Course Name: ROBOTIC PROCESS AUTOMATION DESIGN & DEVELOPMENT Subject code: 18CS745

CO	Course Outcomes
1.	To understand Basic Programming concepts and the underlying logic/structure
2.	To Describe RPA , where it can be applied and how its implemented
3.	To Describe the different types of variables, Control Flow and data manipulation techniques
4.	To Understand Image, Text and Data Tables Automation
5.	To Describe automation to Email and various types of Exceptions and strategies to handle

Course Name: INTRODUCTION TO BIG DATA ANALYTICS Subject code: 18CS751

CO	Course Outcomes
1.	Explain the importance of data and data analysis
2.	Interpret the probabilistic models for data
3.	Define hypothesis, uncertainty principle
4.	Evaluate regression analysis

Course Name: PYTHON APPLICATION PROGRAMMING Subject code: 18CS752

CO	Course Outcomes
1.	Examine Python syntax and semantics and be fluent in the use of Python flow control and functions.
2.	Demonstrate proficiency in handling Strings and File Systems.
3.	Create, run and manipulate Python Programs using core data structures like Lists, Dictionaries and use Regular Expressions.
4.	Interpret the concepts of Object-Oriented Programming as used in Python.
5.	Implement exemplary applications related to Network Programming, Web Services and Databases in Python.

Course Name: INTRODUCTION TO ARTIFICIAL INTELLIGENCE Subject code: 18CS753

CO	Course Outcomes
1.	Identify the AI based problems
2.	Apply techniques to solve the AI problems
3.	Define learning and explain various learning techniques
4.	Discuss on expert systems

Course Name: INTRODUCTION TO DOT NET FRAMEWORK FOR APPLICATION DEVELOPMENT Subject code: 18CS754

CO	Course Outcomes
1.	Build applications on Visual Studio .NET platform by understanding the syntax and semantics of C#.
2.	Demonstrate Object Oriented Programming concepts in C# programming language
3.	Design custom interfaces for applications and leverage the available built-in interfaces in building complex applications.
4.	Illustrate the use of generics and collections in C#
5.	Compose queries to query in-memory data and define own operator behaviour

Course Name: ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING LABORATORY Subject code: 18CSL76

CO	Course Outcomes
1.	Implement and demonstrate AI and ML algorithms.
2.	Evaluate different algorithms.

YEAR: 4 SEM: 8

Course Name: INTERNET OF THINGS Sub code: 18CS81

CO	Course Outcomes
1.	Interpret the impact and challenges posed by IoT networks leading to new architectural models.
2.	Compare and contrast the deployment of smart objects and the technologies to connect them to network.
3.	Appraise the role of IoT protocols for efficient network communication.
4.	Elaborate the need for Data Analytics and Security in IoT.
5.	Illustrate different sensor technologies for sensing real world entities and identify the applications of IoT in Industry.

Course Name: MOBILE COMPUTING Sub code: 18CS821

CO	Course Outcomes
1.	Explain state of art techniques in wireless communication.
2.	Discover CDMA, GSM. Mobile IP, WImax
3.	Demonstrate program for CLDC, MIDP let model and security concerns

Course Name: STORAGE AREA NETWORKS Sub code: 18CS822

CO	Course Outcomes
1.	Identify key challenges in managing information and analyze different storage networking technologies and virtualization
2.	Explain components and the implementation of NAS
3.	Describe CAS architecture and types of archives and forms of virtualization
4.	Illustrate the storage infrastructure and management activities

Course Name: NOSQL DATABASE Sub code: 18CS823

CO	Course Outcomes
1.	Define, compare and use the four types of NoSQL Databases (Document-oriented, KeyValue Pairs, Column-oriented and Graph).
2.	Demonstrate an understanding of the detailed architecture, define objects, load data, query data and performance tune Column-oriented NoSQL databases.
3.	Explain the detailed architecture, define objects, load data, query data and performance tune Document-oriented NoSQL databases.

Course Name: **MULTICORE ARCHITECTURE AND PROGRAMMING** Sub code: 18CS824

CO	Course Outcomes
1.	Identify the limitations of ILP and the need for multicore architectures
2.	Define fundamental concepts of parallel programming and its design issues
3.	Solve the issues related to multiprocessing and suggest solutions
4.	Make out the salient features of different multicore architectures and how they exploit parallelism

5	Demonstrate the role of OpenMP and programming concept