MALLA REDDY COLLEGE OF ENGINEERING & TECHNOLOGY

(Autonomous Institution – UGC, Govt. of India)

(Affiliated to JNTUH, Hyderabad, Approved by AICTE - Accredited by NBA & NAAC – 'A' Grade - ISO 9001:2015 Certified) Maisammaguda, Dhulapally (Post Via. Hakimpet), Secunderabad – 500100, Telangana State, INDIA.

DEPARTMENT OF INFORMATION TECHNOLOGY

COURSE OUTCOMES (SUBJECT WISE)

B.TECH II-I

COMPUTER ORGANIZATION AND ARCHITECTURE

C201.1	At the End of the course the Students are able to Draw the functional block diagram of a single bus architecture of a computer and apply algorithms to perform arithmetic operations
C201.2	Write assembly language program for specified microprocessor for computing16 bit multiplication, division and I/O device interface
C201.3	Write a flowchart for Concurrent access to memory and cache coherency in Parallel Processors and describe the process
C201.4	Describe a memory module and analyze its operation by interfacing with the CPU.
C201.5	Learn the techniques to enhance the performance using pipelining, parallelism and RISC methodology

OPERATING SYSTEMS

C203.1	At the End of the course the Students are able to Create processes and threads.
C203.2	Develop algorithms for process scheduling for a given specification of CPU utilization, Throughput, Turnaround Time, Waiting Time, Response Time

C203.3	For a given specification of memory organization the students will develop the techniques for optimally allocating memory to processes by increasing memory utilization and for improving the access time.
C203.4	Design and Implement file management system
C203.5	For a given I/O devices and OS (specify) develop the I/O management functions in OS as part of a uniform device abstraction by performing operations for synchronization between CPU and I/O controllers.

PROBABILTY AND STATISTICS

C205.1	At the End of the course the Students are able to Describe randomness in certain realistic situation which can be either discrete or continuous type
C205.2	Provide very good insight which is essential for industrial applications by learning probability distributions
C205.3	Make data-driven decisions by using correlation and regression.
C205.4	Understand the importance of sampling distribution of a given statistic of a random sample.
C205.5	Draw statistical inference using samples of a given size which is taken from a population and to apply statistical methods for analyzing experimental data.

OPERATING SYSTEMS LAB

C207.1	At the End of the course the Students are able to Ability to implement Inter process communication between two processes.
C207.2	Ability to design and solve synchronization problems
C207.3	Ability to simulate and implement operating system concepts such as scheduling, Deadlock management, file management, and memory management

B.TECH II-II

SOFTWARE ENGINEERING

C210.1	At the End of the course the Students are able to compare and select a process model for a business system.
C210.2	To identify and specify the requirements for the development of an application.
C210.3	To develop and maintain efficient, reliable and cost effective software solutions.
C210.4	To critically think and evaluate assumptions and arguments of the client.
C210.5	Gain knowledge in risk Management and quality standards

AUTOMATA & COMPILER DESIGN

C211.1	At the End of the course the Students are able to Understand the necessity and types of different language translators in use.
C211.2	Apply the techniques and design different components (phases) of a compiler.
C211.3	Ability to implement practical aspects of automata theory.
C211.4	Use the tools Lex, Yacc in compiler construction.
C211.5	Describe the code generation algorithms using DAG representation

JAVA PROGRAMMING

C212.1	At the End of the course the Students are able to An understanding of the principles and practice of object oriented analysis an design in the construction of robust, maintainable programs that satisfy their requirements
C212.2	Demonstrate the ability to employ various types of selection constructs in a Java program. Be able to employ a hierarchy of Java classes to provide a solution to a given set of requirements
C212.3	Apply exception handlers for smooth execution and know the techniques to synchronise threads in multi threading.
C212.4	Apply collection framework and implement methods to connect to databases.
C212.5	Develop GUI using toolkits and knowledge in design patterns to implement the design patterns.

DATABASE MANAGEMENT SYSTEMS

C213.1	At the End of the course the Students are able to Demonstrate the basic elements of a relational database management system
C213.2	Express an ability to identify the data models for relevant problems
C213.3	Design entity relationship and convert entity relationship diagrams into RDBMS and formulate SQL queries on the respect data
C213.4	Apply normalization for the development of application software
C213.5	Identify recovery techniques in concurrent transactions

MANAGERIAL ECONOMICS AND FINANCIAL ANALYSIS

C214.1	At the End of the course the Students are able to apply the basic economic principles, forecast the demand and supply
C214.2	To estimate cost and understand market structure and pricing practices
C214.3	To interpret the financial results of the organization

JAVA PROGRAMMING LAB

C215.1	At the End of the course the Students are able to analyze the necessity for Object Oriented Programming paradigm and over structured programming and become familiar with the fundamental concepts in OOP.
C215.2	Demonstrate an ability to design and develop java programs, analyze, and interpret object oriented data and report results.
C215.3	Demonstrate an ability to design an object oriented system, AWT components or multithreaded process as per user needs and specifications.
C215.4	Demonstrate an ability to visualize and work on laboratory and multidisciplinary tasks like console and windows applications both for standalone and Applets program

DATABASE MANAGEMENT SYSTEMS LAB

C216.1	At the End of the course the Students are able to In drawing the ER, EER, and UML Diagrams.
C216.2	In analyzing the business requirements and producing a viable model for the implementation of the database.
C216.3	In converting the entity-relationship diagrams into relational tables.
C216.4	To develop appropriate Databases to a given problem that integrates ethical,social, legal, and economic concerns.

ENVIRONMENTAL SCIENCES

C217.1	At the End of the course the Students are able to Based on this course, the Engineering graduate will understand /evaluate / develop technologies on the basis of Ecological principles and environmental regulations which in turn will help in sustainable development
C217.2	the course will sensitise the students through activities assigned to them after every unit
C217.3	This course will help the students understand the complex relationships between natural and human systems

B.TECH III-I

DESIGN AND ANALYSIS OF ALGORITHMS

C301.1	At the End of the course the Students are able to Understand different computational models, Asymptotic notations and various complexity measures
C301.2	Evaluate and Analyze the complexity of certain divide and conquer, greedy, and dynamic programming algorithms.
C301.3	Demonstratethe use of graph theory concepts and apply them in solving the real life problems.
C301.4	Formulate the criteria and specifications appropriate to new problems, and design algorithms using appropriate algorithmic design technique.
C301.5	Distinguish the classes P, NP, and NP-Complete and examine whether a problem is NP Complete or not.

COMPUTER NETWORKS

C302.1	At the End of the course the Students are able to Exploration of the various Computer Networks, Protocols and routing algorithms.
C302.2	Employ the World Wide Web concepts and will be able to express the need for network security.
C302.3	Ability to administrate a network and flow of information.
C302.4	Describe the transport layer services and classify the flow control mechanisms
C302.5	Identify the application layer services.

WEB TECHNOLOGIES

C303.1	At the End of the course the Students are able to Analyze a web page and identify its elements and attributes.
C303.2	Create web pages using client side scripting languages.
C303.3	Install web servers and apply server side packages that includes security
C303.4	Establish connection to various databases and web applications.
C303.5	Build dynamic flexible web applications based on standard technologies.

DISTRIBUTED SYSTEMS

C304.1	At the End of the course the Students are able to Identification and analysis of the core concepts of distributed systems.
C304.2	To design and implement sample distributed systems.
C304.3	To examine state-of-the-art distributed systems.
C304.4	Summarize the file systems in a distributed environment
C304.5	Explain concurrent transactions and identify the control mechanisms

COMPUTER NETWORKS LAB

C305.1	At the End of the course the Students are able to Understand fundamental underlying principles of computer networking and implement the functionaliites of data link layer
C305.2	Implement network routing algorithms.
C305.3	Apply mathematical foundations to solve computational problems in computer network security

WEB TECHNOLOGIES LAB

C306.1	At the End of the course the Students are able to Use WAMP Stack for web applications
C306.2	Use Tomcat Server for Servlets and JSPs
C306.3	Write simple applications with Technologies like HTML, Javascript, AJAX, PHP, Servlets and JSPs
C306.4	Connect to Database and generate optimum results
C306.5	Parse XML files using Java (DOM and SAX parsers)

TECHNICAL COMMUNICATION AND SOFT SKILLS

C307.1	At the End of the course the Students are able to The students will be able to understand information which assists in completion of the assigned job tasks more successfully.
C307.2	Students will be able to communicate their ideas by writing projects, reports, instructions, diagrams and many other forms of professional writing.
C307.3	Students will be able to strengthen their individual and collaborative work strategies
C307.4	Students will also be able to adhere to ethical norms of scientific communication.

B.TECH III-II

SOFTWARE PROCESS & PROJECT MANAGEMENT

C310.1	At the End of the course the Students are able to Apply suitable capability Maturity model for specific scenarios & determine the effectiveness.
C310.2	Describe and determine the purpose and importance of project management from the perspectives of planning, tracking and completion of project
C310.3	Compare and differentiate organization structures and project structures.
C310.4	Implement a project to manage project schedule, expenses and resource with the application of suitable project management tools
C310.5	Summarize the modern process tansitions and the next generation software economics

DATA WAREHOUSING AND DATA MINING

C311.1	At the End of the course the Students are able to Understand the main characteristics of different data warehousing and data mining techniques and Knowledge discovery process
C311.2	Design a data warehouse or data mart to present information needed by management in a form that is usable for managers
C311.3	Describe and implement the main algorithms in data warehousing and data mining in a computationally efficient way.
C311.4	Apply data mining techniques to solve classification and clustering problems in other disciplines
C311.5	Apply data mining methodologies with information systems and which can be used by strategic level decision makers in well-defined business problems

LINUX PROGRAMMING

C312.1	At the End of the course the Students are able to Identify and use Linux utilities to create and manage simple file processing operations
C312.2	Develop shell scripts to perform more complex tasks.
C312.3	Illustrate file processing operations such as standard I/O and formatted I/O.
C312.4	Develop client server Inter Process Communication (IPC) Mechanisms. Generalize Signal generation and handling signals.
C312.5	Illustrate multithreading concepts to reduce the wastage of CPU time.

ARTIFICIAL INTELLIGENCE

C313.1	At the End of the course the Students are able to Ability to analyze & select a search algorithm for a problem.
C313.2	Formalize a given problem using a suitable AI representation.
C313.3	Ability to apply AI techniques to solve problems of expert systems , game playing,machine learning & neural networks.
C313.4	Apply machine learning algorithms and summarize the design issues of them.
C313.5	Describe NlP algorithms

INFORMATION SECURITY

C314.1	At the End of the course the Students are able to Student will be able to apply basic cryptographic algorithms on a given text/ message and identify web authentication and security issues.
C314.2	Ability to identify information system requirements for both of them such as client and server.
C314.3	Ability to understand the current legal issues towards information security
C314.4	Gain knowledge in IP security
C314.5	Explain the web security threats and its content measures.

MOBILE COMPUTING

C315.1	At the End of the course the Students are able to think and develop new mobile application.
C315.2	Able to take any new technical issue related to this new paradigm and come up with a solution(s).
C315.3	Able to develop new ad hoc network applications and/or algorithms/protocols.
C315.4	Able to understand & develop any existing or new protocol related to mobile environment
C315.5	Tell data dissemination methods and ways for synchronisation.

DATAWARE HOUSING & DATAMINING LAB

C316.1	At the End of the course the Students are able to Gain knowledge in data warehouse schemas and algorithms for preprocesing data
C316.2	Develop algorithms for data extraction and transformation
C316.3	Ability to apply mining techniques for real world data
C316.4	Ability to add mining algorithms as a component to the existing tools
C316.5	Construct classification algorithms for data analysis

LINUX PROGRAMMING LAB

C317.1	At the End of the course the Students are able to understand the Linux environment
C317.2	Ability to perform the file management and multiple tasks using shell scripts in Linux environment
C317.3	Ability to verify the attributes of files
C317.4	Ability to create processes and enable communication between them in shared mode
C317.5	Develop interaction between server and client process using sockets

Mini Project

Interpret literature with the purpose of formulating a project proposal
Planning, analyzing, designing and implementing a software project using SDLC model.
Finding the solution of identified problem with help of modern technology
Giving priority to real life problem
Learning to work as a team and to focus on getting a working project done within a stipulated period of time.

B.TECH IV-I

PROGRAMMING FOR APPLICATION DEVELOPMENT

C401.1	At the End of the course the Students are able to Implementation of OOPs Concepts in ASP.net
C401.2	Develop console applications
C401.3	Implement, Compile, Test & Run Applications Programs
C401.4	Demonstrate the ability to use Exception Handling Mechanisms.
C401.5	Able to Develop Applications using .NET framework

MOBILE APPLICATION DEVELOPMENT

C402.1	At the End of the course the Students are able to Appreciate the Mobility landscape
C402.2	Familiarize with Mobile apps development aspects
C402.3	Design and develop mobile apps, using Android as development platform, with key focus on user experience design, native data handling and background tasks and notifications.

C402.4	Perform testing, signing, packaging and distribution of mobile apps.
C402.5	The student can design and develop mobile application using J2ME

CLOUD COMPUTING

C403.1	At the End of the course the Students are able to To distinguish the different models and computing paradigms.
C403.2	To realise the levels of virtualization and resources virtualization.
C403.3	To analyze the reasons for migrating into cloud.
C403.4	To effectively use the cloud services in various operating platforms.
C403.5	To apply the services in the cloud for real world scenarios

BUSINESS DATA ANALYTICS

C404.1	At the End of the course the Students are able to Summarize Big data concepts and its deployment in business market
C404.2	Categorize the different big data analytics
C404.3	Apply statistical tools to solve complex problems
C404.4	Gain knowledge in data analytic tools
C404.5	Apply machine learning algorithms for a real world dataset

MACHINE LEARNING

C405.1	At the End of the course the Students are able to Explain theory underlying machine learning
C405.2	Construct algorithms to learn linear and non-linear models
C405.3	Implement data clustering algorithms
C405.4	Construct algorithms to learn tree and rule-based models
C405.5	Apply reinforcement learning techniques

INTERNET OF THINGS

C406.1	At the End of the course the Students are able to Explain the importance and usage of IOT.
C406.2	Describe the various IOT levels and protocols.
C406.3	Design IoT applications in different domain and be able to analyze their performance
C406.4	Implementation of web based services on IoT devices
C406.5	Relate IOT to cloud computing and web applications

SOFTWARE TESTING METHODOLOGIES

C407.1	At the End of the course the Students are able to test a process for continuous quality improvement
C407.2	Generation of test cases from user requirements
C407.3	Analyse of Modeling techniques: UML: FSM and State charts, Combinatorial designetc.
C407.4	Apply logical based testing
C407.5	Apply regression and transition testing

PROGRAMMING FOR APPLICATION DEVELOPMENT LAB

C408.1	At the End of the course the Students are able to Gain knowledge in visual Studio Development Environment and able to develop a console application project
C408.2	Able to apply object oriented concepts and develop classes to handle exceptions
C408.3	Able to develop applications and establish communication between server and client

MOBILE APPLICATION DEVELOPMENT LAB

C409.1	At the End of the course the Students are able to Design and Implement various mobile applications using emulators
C409.2	Deploy applications to hand-held devices
C409.3	Develop an application using basic graphical primitives and databases

Project-1

C410.1	Interpret literature with the purpose of formulating a project proposal
C410.2	Planning, analyzing, designing and implementing a software project using SDLC model.
C410.3	Finding the solution of identified problem with help of modern technology
C410.4	Giving priority to real life problem
C410.5	Learning to work as a team and to focus on getting a working project done within a stipulated period of time.

B.TECH IV-II

TOOLS AND TECHNIQUES OF DATA SCIENCES

C410.1	At the End of the course the Students are able to Demonstrate the basic knowledge of data science process.
C410.2	Setup the software environment for Python and R Lanaguage and apply various techniques to work with data.
C410.3	Able to handle and manage data andits workflow
C410.4	Apply regression models on real world data using modern tools
C410.5	Manipulate and visualize the data using tools like Pandas and Matplotlib.

ADHOC AND SENSOR NETWORKS

C411.1	At the End of the course the Students are able to Explain the Concepts, Network Architecture and Applications of Ad-hoc and Wireless Sensor Networks
C411.2	Analyze the protocol design issues of Ad-hoc Networks.
C411.3	Describe the Concepts, Architecture of ad-hoc and sensor networks and MAC layer protocols.
C411.4	Comprehend the design of routing protocols for ad-hoc and wireless networks
C411.5	Evaluate the QOS related performance measurements of ad-hoc and sensor networks.

Service Oriented Architecture

C412.1	At the End of the course the Students are able to Build applications based on XML.
C412.2	Gained knowledge on various service oriented analysis techniques and also understand the technology underlying the service design.
C412.3	Develop web services using technology elements.
C412.4	Learn standards related to Web services: Web Services Description Language (WSDL), Simple Object Access Protocol (SOAP), and Universal Description, Discovery and Integration (UDDI)
C412.5	Build SOA-based applications for intra-enterprise and inter-enterprise applications.

BLOCK CHAIN TECHNOLOGY

C413.1	At the End of the course the Students are able to Understand the fundamentals of Blockchain technology.
C413.2	Apply knowledge of implementation of Bitcoin
C413.3	Analyze the incentive structure in a Blockchain based system and critically assess its functions, benefits and vulnerabilities;
C413.4	Explain the security issues of Bitcoin and Ethereum
C413.5	Attain awareness of the new challenges that exist in monetizing businesses around blockchains and smart contracts

Project – 2

C414.1	Understand programming language Concepts, Object oriented concepts as well as software engineering principles or go through the research work and gather knowledge over the field and develop an ability to apply them to software design of real life problems in an industry/ commercial environment
C414.2	Plan, analyze, design a software project and demonstrate the ability to communicate effectively in speech and writing
C414.3	Demonstrate originality in the application of knowledge, together with a practical understanding of how established techniques professional enquiries are used to create and interpret knowledge in their discipline.
C414.4	Introduce with major software engineering topics and position them to lead medium sized software projects in industry or propose any new model over the selected field of research that will be useful for future activities
C414.5	Advance their knowledge and to develop new skills to a high level with complex issues both systematically and creatively, make sound judgments on the complete data, and communicate their conclusions clearly to specialist and non-specialist audiences

THANKS