Koneru Lakshmaiah Education Foundation

(Category -1, Deemed to be University estd. u/s. 3 of the UGC Act, 1956)

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Department of Computer Science and Engineering
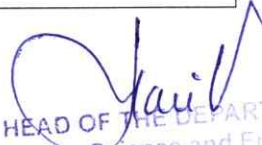
Program: M.Tech - CSE

Academic Year : 2019-2020

Course Code	Course Title	CO. No	Description of the course Outcome
18CS5101	MATHEMATICAL FOUNDATIONS OF COMPUTER	CO1	Utilize the sets and apply the knowledge of mathematical reasoning
		CO2	Apply combinatorial Analysis, Apply procedure to solve a recurrence relations and digraphs
		CO3	Model the different types of graphs, their usefulness in representing data and graph colouring problems perspective of problem solving.
		CO4	Make use of the concept of automata and the use of grammars in languages
18CS5102	COMPUTER ORGANIZATION & ARCHITECTURE	CO1	Apply the concepts of logic design and understand Computer abstractions and technology: Assemblers, Linkers, and the SPIM Simulator
		CO2	Analyze different RISC architectures with their instruction sets, desktops and servers
		CO3	Analyze the performance of different processors and mapping control to Hardware.
		CO4	Analyze Large and Fast: Exploiting Memory Hierarchy, Parallel Processors from Client to Cloud 500
18CS5103	DATA STRUCTURES & ALGORITHMS	CO1	Apply measures of efficiency to algorithms and Compare various linear data structures like Stack ADT, Queue ADT, Linked lists
		CO2	Analyze and compare linear data structures and analyze different searching and hashing techniques
		CO3	Analyze and compare various non – linear data structures like Trees and Graphs.
		CO4	Analyze and compare various Shortest Path and Pattern Matching algorithms, to select from a range of possible options, to provide justification for that selection, and to implement

			the algorithm in a particular context.
		CO5	Execute lab experiments and develop a small project along with his/her team members
18CS5104	DISTRIBUTED DATABASE MANAGEMENT SYSTEMS	CO1	Understand the fundamentals of query optimization and database recovery protocols.
		CO2	Analyze emerging database technologies and distributed databases.
		CO3	Discriminate object oriented and relational database systems.
		CO4	Analyze multimedia databases.
		CO5	Evaluate various SQL ,design ER diagrams and prediction using different algorithms with Matlab programming .
18CS5205	OPERATING SYSTEM DESIGN	CO1	Understand the internals of UNIX kernel architectures and explore design of File Subsystem, buffer cache, and File System Calls.
		CO2	Understand the internals of system call and explore design of structure of processes, process control, process system calls and scheduling in UNIX systems
		CO3	Understand Traps, interrupts, and drivers. Explore design tradeoffs and Implement parts of memory management policies, first address space, page tables and virtual memory in UNIX systems
		CO4	Analyse theory and implementation of inter-process communication, synchronization, concurrency, and Boot loader in UNIX variants.
		CO5	Implement parts of xv6 and develop Programs/commands using UNIX System Programming. Perform system administration.
18CS5206	COMPUTER NETWORKS & SECURITY	CO1	Outline OSI and TCP/IP reference models and classify the error control mechanisms like CRC and Hamming code.
		CO2	Infer Channel allocation problem and algorithms to avoid it.Classify list of static and dynamic routing algorithms like Dijkstra, Distance vector routing and link state.
		CO3	Identify the importance of IPv4 classful, classless addressing schemes and outline the functionalies of transport layer like TCP Connection management and congestion control.
		CO4	Identify the functionality of DNS, HTTP and SMTP protocols. Apply Encryption algorithms like DES and RSA on the given examples.

		CO5	To Analyze error detection and error correction methods, Routing Algorithms and Cryptographic algorithms
18CS5207	OBJECT ORIENTED ANALYSIS AND DESIGN	CO1	Understand the different phases involved in the Object Oriented Software development.
		CO2	Apply the concepts of system modelling and perform the analysis modelling for a given case study
		CO3	Examine the architecture and design specification of a given application
		CO4	Analyze and Test, verify and validate given piece of software code and Reusability.
		CO5	Implement and draw UML Diagrams (Lab Component)
18CS5208	ENTERPRISE PROGRAMMING	CO1	Understand the basic concepts of XML. Apply JDBC API and callable statements Learn Maven to build Enterprise Java applications. Implement servlets using Maven
		CO2	Implement enterprise application using JSP and Hibernate
		CO3	Implement enterprise application using Spring Framework
		CO4	Use Spring Boot, Rest APIs and Microservices for integrating Enterprise Java applications
		CO5	Develop the programs for enterprise application development.
18CS51A1	SOFT COMPUTING	CO1	Interpret fuzzy logic system
		CO2	Analyze Artificial Neural Network Models
		CO3	Demonstrate Swarm and Evolutionary Algorithms
		CO4	Illustrate Hybrid Fuzzy-Neural- Evolutionary- Swarm Models

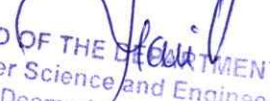|			
		CO5	Demonstration of neuro, fuzzy, evolutionary, and swarm algorithms using open source tools
18CS51A2	Machine Learning and Pattern Classification	CO1	The student will be able to understand Supervised Learning, Bayesian Decision Theory, and Parametric Methods.
		CO2	The students will be able to apply multivariate methods, Dimensionality reduction, and Clustering techniques.
		CO3	The students will be to apply non parametric methods, Decision trees and linear discrimination methods.
		CO4	The student will be able to analyze different machine learning techniques like MLP's, local methods, kernel machines, Hidden Markov Models and Bayesian Estimation
18CS51A3	DATA MINING	CO1	Illustration of Warehouse & Mining, ETL, OLAP & OLTP, Data Cube Operations and Data Warehouse architecture
		CO2	Demonstration of Data Preprocessing through different methods
		CO3	Apply Different Classification Algorithms to Segregate Input data into different class levels and find out Hidden relationship between transactional dataset using Association Rule Mining.
		CO4	Build different Clustering Models using the predefined dataset.
		CO5	Implementation of warehousing and mining algorithms using suitable tools and programming languages
18CS51A4	NATURAL LANGUAGE PROCESSING	CO1	Understand approaches to syntax and semantics in NLP
		CO2	Apply the statistical estimation and statistical alignment models
		CO3	Analyze grammar formalism and context free grammars
		CO4	Apply Rule based Techniques, Statistical Machine translation (SMT), word alignment
		CO5	Inspect and Evaluate Language Processing Methods using python

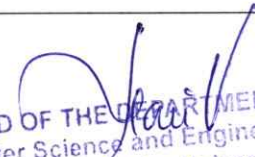|			
18CS51A5	MACHINE LEARNING	CO1	Apply Machine Learning Techniques using Decision Trees to solve Real World Problems
		CO2	Build Bayesian models for solving Classification and Prediction problems
		CO3	Apply Neural Network and Genetic Algorithm techniques to solve Classification, Prediction problems
		CO4	Demonstrates Learning First Order Rules, Analytical Learning ,Explanation-Based Learning and reinforcement learning
18CS51B1	REQUIREMENTS ENGINEERING	CO1	Explain about threats and its properties that target software and illustrate the resources that addresses these issues.
		CO2	Illustrate the process of analysing and validating security requirements.
		CO3	Apply software testing methods to analyse the software code to improve the quality and describe the assembly changes for system design.
		CO4	Apply the governance security policy to ensure enterprise security in project management
18CS51B2	PRINCIPLES OF PROGRAMMING LANGUAGES	CO1	Acquire the skills for expressing syntax and semantics in formal notation
		CO2	Identify and apply a suitable programming paradigm for a given computing application
		CO3	Gain knowledge of and able to compare the features of various programming languages
		CO4	An ability to program in different language paradigms and evaluate their relative benefits.
18CS51B3	COMPILER DESIGN	CO 1	Design lexical analysers for corresponding regular expressions
		CO 2	Design efficient parsers for a given context free grammar
		CO 3	Design intermediate code generator

		CO 4	Apply code optimization techniques and apply them to generate efficient code.
		CO 5	Design a simple compiler using LeX and YACC
18CS51B4	SOFTWARE TESTING & QUALITY ASSURANCE	CO1	Ability to define software systems by using various testing principles followed by test processes by inferring test generation methods and FSM models.
		CO2	Make test adequacy assessment with the help of various source tools and application of those techniques in commercial environment.
		CO3	Analyze and prepare quality management by considering governmental standards, pareto principles and up-front quality technique.
		CO4	Relate the concepts of software safety and its relation to software quality assurance for the development of small projects.
18CS51B5	SOFTWARE VERIFICATION & VALIDATION	CO1	Understand test cases suitable for a software development for different domains.
		CO2	Identify suitable tests to be carried out. Conduct an inspection or review of software source code for a small or medium sized software project.
		CO3	Prepare test planning based on the document using automatic testing tools
		CO4	Document test plans and test cases designed
		CO5	Test the software application completely and make it sure that it's performing well and as per the specifications
18CS52C1	CRYPTOGRAPHY AND NETWORK SECURITY	CO1	To understand basics of Cryptography and Network Security.
		CO2	To be able to secure a message over insecure channel by various means.
		CO3	To learn about how to maintain the Confidentiality, Integrity and Availability of a data
		CO4	To understand various protocols for network security to protect against the threats in the networks

18CS52C2	MOBILE COMPUTING	CO1	To understand concepts of Mobile Communication
		CO2	To analyse next generation Mobile Communication System
		CO3	To understand network and transport layers of Mobile Communication
		CO4	Analyse various protocols of all layers for mobile and ad hoc wireless communication networks.
18CS52C3	HIGH PERFORMANCE COMPUTING	CO1	Analyze the performance of GPU memory hierarchy and MPI programming
		CO2	Develop parallel programs using OpenCL library and understand FPGA-Based Supercomputer
		CO3	Develop mixed mode programs for Multicore, GPU and cluster optimization systems
		CO4	Generate parallel programs for matrix, graph and sorting problems using CUDA, OpenMP library
		CO5	Implementation and analysis of pre-defined services in the online cloud platform
18CS52C4	NETWORK MANAGEMENT SYSTEMS	CO1	Apply network management standards to manage practical networks
		CO2	Formulate possible approaches for managing OSI network model.
		CO3	Infer SNMP for managing the network and RMON for monitoring the behavior of the network
		CO4	Identify the various components of network and formulate the scheme for the managing them
18CS52D1	SERVICE ORIENTED ARCHITECTURE	CO1	To gain understanding of the basic principles of service orientation
		CO2	To learn service oriented analysis techniques

		CO3	To learn technology underlying the service design
		CO4	To learn advanced concepts such as service composition, orchestration and Choreography
18CS52D2	VISUAL PROGRAMMING	CO1	Understanding the basic concepts of .Net framework, C#.Net and Build console and desktop applications using C#.net framework
		CO2	Build C#.net desktop applications using ADO.NET
		CO3	Applying the concepts of ASP.NET Standard Server controls for visual programming application development
		CO4	Build the Visual programming applications using Web forms, Web Pages and MVC, Page and State management and master pages.
		CO5	Develop the programs for desktop, web and enterprise application development using Visual Programming Techniques.
18CS52D3	DIGITAL IMAGE PROCESSING	CO1	To understand the fundamental concepts of Digital Image Processing
		CO2	To understand the pre-processing process of remote sensing data
		CO3	To understand basic image processing operations
		CO4	To understand image classification techniques
		CO5	To apply digital image Processing techniques
18CS52D4	BIG DATA ANALYTICS	CO1	Understand the concepts of big data, Initial exploration of analysis of data and Data visualization.
		CO2	Analyze Initial exploration of data and advanced data analytics by using R
		CO3	Apply advanced algorithms & Statistical modelling for big data using HDFS, HIVE, and PIG.

		CO4	Apply advanced SQL functions for in-database analytics by MADlib, Greenplum along with common deliverables of analytics life cycle project
		CO5	Build and Evaluate the Big Data Analytical problems using R, Hadoop, HIVE Programming concepts.

M. Kavitha
Academic Professor I/C

HOD-CSE