



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 Applications

Program: MCA

Academic Year :2022-2023


S.No	Course Code	Course Title	CO#	Course Outcome Description
1	22CA4101	COMPUTATIONAL THINKING AND DATA STRUCTURES	CO1	Understand the Fundamentals of C Programming.
			CO2	Apply concepts of Arrays, Functions and Strings
			CO3	Analyze the concepts of pointers, Derived Data Types and IO
			CO4	Evaluate Data structures - Stacks, arrays , Linked Lists, Trees, Graphs, Searching and Sorting methods
			CO5	Create applications using control structures and linear and non-linear data structure
2	22CA4104	DATABASE MANAGEMENT SYSTEM	CO1	Remembering Database and File System and Applying different kinds of data models with functional components of DBMS
			CO2	Applying design, SQL, PL/SQL and correlating appropriate strategies for optimization of queries with Tuple Relational Calculus and Domain Relational Calculus
			CO3	Analysing normal forms based on functional dependency and Apply normalization techniques to eliminate redundancy with the ACID properties
			CO4	Applying concurrency techniques to demonstrate the organization of Databases with log mechanism and check pointing techniques for system recovery
			CO5	Analysing and apply in Identifying variety of methods for effective processing of given queries
3	22UC2106	Communication and Logical Skills	CO1	Developing basic grammar
			CO2	Discovering and practicing functional grammar
			CO3	Developing Intrapersonal skills
			CO4	Developing Speaking and Writing Skills

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4	22CA4103	OPERATING SYSTEMS	CO1	Understand the concepts of Operating System and Process Management
			CO2	Apply Process Synchronization and Deadlocks mechanisms
			CO3	Analyze the concept of Memory Management, File System Implementation, Mass-storage structure
			CO4	Analyze Protection and Case Study of LINUX and Windows
5	22CA4102	RESEARCH EXPLORATION	CO1	Understand objectives and the steps involved in research process, articulate appropriate research questions and perform literature review in a scholarly style.
			CO2	Represent the data in tabular or graphical form
			CO3	Perform Statistical Modeling and Analysis and optimize the data, based on various techniques
			CO4	Use techniques for empathetic research and prepare an appropriate research report
6	22CA4100	COMPUTER NETWORKS	CO 1	Understand the fundamentals of computer networks and data communication
			CO2	Understand Data Link Layer, IEEE Standards, design issues in networks
			CO3	Analyze Internet Transport Protocols and different types of protocols
			CO4	Analyze various types of Network Devices and different types of Networks
7	22CA4205	Data Analytics	CO1	Understand the importance of Data Analytics and Fundamentals of R.
			CO2	Descriptions of R-datypes, R-operators and R-functions
			CO3	Applications of statistical functions on data frames
			CO4	Analyzing imported data through different graphical method
			CO5	Evaluate data frames in R

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8	22CA4206	Object Oriented Programming	CO1	Understand Principles of OOP and Inheritance
			CO2	Design and Implement interfaces, Packages and Enumeration, Exceptions & Assertions
			CO3	Analyze Multi-Threading and Applets
			CO4	Apply Event Handling and Abstract Window Toolkit.
			CO5	Create user interfaces using awt package classes
9	22CA4207	Software Engineering	CO1	Understand Fundamentals Object Oriented Software Engineering
			CO2	Design UML diagrams for Echo Systems
			CO3	Design and apply software architectures
			CO4	Analyze software testing and software process models
10	22CA4209	IoT Technology and Applications	CO1	Understand the IoT technology's and vision of IoT from a global context Understand the application of IoT.
			CO2	Apply the Market perspective of IoT
			CO3	Analyze state of the art architecture in IoT
			CO4	Evaluate Opinions on IoT Application and Value for Industry
11	22CA5110	Web Technologies	CO 1	Illustrate the basic concepts of HTML and CSS & apply those concepts to design static web pages
			CO 2	Identify and understand various concepts related to dynamic web pages and validate them using JavaScript
			CO 3	Outline the concepts of Extensible markup language
			CO 4	Develop web Applications using Scripting Languages & Frameworks
			CO 5	Create and deploy secure, usable database driven web applications using PHP and RUBY

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12	22CA5111	Automation and intelligence	CO 1	Explain different concepts in Automation and Intelligence, shall be capable of understanding and analyzing, Basic Automation technologies used across various applications.
			CO 2	Discuss about different types of dynamic control and Industrial, field/service using Automation and Intelligence.
			CO 3	Demonstrate the work of Sensing, perception, planning, and control applied to Automation and Intelligence.
			CO 4	Identify the working of different Applications using Artificial Intelligence in Automation and Intelligence.
			CO 5	Develop different types of Design Automation and Intelligence systems for new applications
13	22CA5112	Intellectual Property Right	CO 1	Explain PRINCIPLES OF IPR
			CO 2	Discuss about PATENT LAW AND PRACTICES
			CO 3	Demonstrate COPYRIGHT LAW AND PRACTICES
			CO 4	Identify TRADEMARK LAW AND PRACTICES
14	22CA5115	Machine Learning	CO1	To understand the basic concepts of statistical learning methods and models
			CO2	To understand the importance of supervised learning in classifying class labels for prediction
			CO3	To understand the different algorithms related to classification techniques
			CO4	To understand the assumptions in estimating regression coefficients using OLS method
			CO5	Evaluate applications using classification techniques
15	22CA5116	Soft Computing	CO 1	Interpret fuzzy logic system
			CO 2	Analyze Artificial Neural Network Models
			CO 3	Demonstrate Swarm and Evolutionary Algorithms
			CO 4	Illustrate Hybrid Fuzzy-Neural- Evolutionary-Swarm Models
			CO5	Demonstration of neuro, fuzzy, evolutionary, and swarm algorithms using open source tools

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16	22CA5217	PATTERN RECOGNITION	CO1	To understand the concept of pattern recognition
			CO2	To explore Statistical pattern recognition
			CO3	To classify Syntactic pattern recognition
			CO4	To apply pattern recognition techniques in real time scenario
17	22CA5218	DEEP LEARNING	CO1	Able to understand and remember the concepts of Perception, Back Propagation, PCA, Singular Value Decomposition
			CO2	Able to understand auto encoders- and apply Regularization, Denoising, Sparse, Contractive, Vectoral Representations of words Convolutional Neural Networks, LeNet, AlexNet
			CO3	Apply Long Short Term Memory (LSTM) Restricted Boltzmann Machines, Deep Dream, GRU, Neural style transfer, Deep learning for computer vision, text and sequences.
			CO4	Build Markov models, Markov networks, Markov chains, Variational autoencoders, Autoregressive Models: NADE, MADE, PixelRNN, Generative Adversarial Networks (GANs), how to train DCGAN, limitations of deep learning
			CO5	Implement basic Neural Networks, optimization algorithms, engine vector decomposition, various types of auto encoders, batch normalization, convolutional neural networks
18	22CA5120	Big Data Analytics	CO1	To understand the basic concept of Bigdata, different types of Data
			CO2	To understand architecture of Hadoop and YARz
			CO3	To understand about Processing and Storage Layer of Hadoop, internal concept of MapReduce
			CO4	understand the concept of Master and Slave Architecture
			CO5	Apply the concept of cluster management using YARN

K. Kiran Kumar


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19	22CA5221	Data Visualization	CO1	Understand the need of visualization techniques
			CO2	To explain Static Graphical Techniques
			CO3	To apply Multivariate Graphical Techniques
			CO4	To explain the concept of Graphical Validation and customization
20	22CA5222	Cognitive computing	CO1	Understand and discuss what cognitive computing is, and how it differs from traditional approaches
			CO2	Applying the primary tools associated with cognitive computing
			CO3	Develop a project that leverages cognitive computing
			CO4	Understand and discuss the business implications of cognitive computing
			CO5	Evaluate Applications using cognitive computing methods
21	22CA5123	Cloud Computing	CO1	To understand the basic concepts of statistical learning methods and models
			CO2	To understand the importance of supervised learning in classifying class labels for prediction
			CO3	To understand the different algorithms related to classification techniques
			CO4	To understand the assumptions in estimating regression coefficients using OLS method
			CO5	Evaluate applications using classification techniques
22	22CA5124	Cloud Information Security	CO 1	Explain importance of Information Security in the Cloud Context
			CO 2	Discuss various concepts of cloud security
			CO 3	Develop the cloud vulnerabilities and threats
			CO 4	Identify how cloud and Security works in a seamless model
			CO 5	Evaluate Applications on Cloud Security

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23	22CA5225	Cloud Architecture	CO 1	Understand the main concepts, key technologies, strengths and limitations of cloud computing.
			CO 2	Understanding the Cloud Architecture and infrastructure of cloud computing
			CO 3	Understanding the cloud services.
			CO 4	To understand and define the multi-tenant cloud architecture, its advantage and requirements.
24	22CA5226	Cloud Web Services	CO 1	Understand the model of Cloud Computing As A Service
			CO 2	Understand the Networking Basics required for cloud services
			CO 3	Demonstrate the Control of workflow in cloud services
			CO 4	Explain the method of fault tolerance in cloud
			CO 5	Experiment with the cloud

K. Laxman Kumar
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