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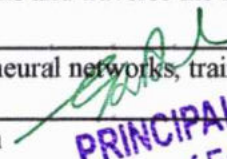(Approved by AICTE, Recg. By Govt. of T.S & Affiliated to JNTUH, Hyderabad)

NAAC "B++" Accredited Institute

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M.Tech Computer Science Engineering I & II SEM Course Outcomes For the A.Y 2022-23

S.no	Year/Sem	Course Name	Course Outcomes
1	I-I	MATHEMATICAL FOUNDATIONS OF COMPUTER SCIENCE (PC-I)	CO1:Ability to understand and construct precise mathematical proofs.
			CO2: Ability to use logic and set theory to formulate precise statements.
			CO3: Ability to analyze and solve counting problems on finite and discrete structures.
			CO4:Ability to describe and manipulate sequences.
			CO5: Ability to apply graph theory in solving computing problems.
2	I-I	ADVANCED DATA STRUCTURES (PC-II)	CO1: Ability to select the data structures that efficiently model the information in a problem
			CO2; Ability to understand how the choice of data structures impact the performance of programs
			CO3:Design programs using a variety of data structures, including hash tables, search structures and digital search structures
3	I-I	DATABASE PROGRAMMING WITH PL/SQL (PE-I)	CO1:Understand importance of PL/SQL basics
			CO2: Implement functions and procedures using PL/SQL
			CO3: Understand the importance of triggers in database
4	I-I	DEEP LEARNING (PE-I)	CO1: Implement deep learning algorithms, understand neural networks and traverse the layers of data
			CO2: Learn topics such as convolutional neural networks, recurrent neural networks, training deep networks and high-level interfaces
			CO3: Understand applications of Deep Learning to Computer Vision
			CO4: Understand and analyze Applications of Deep Learning to NLP

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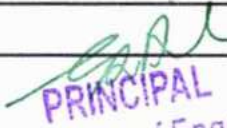|			
5	I-I	NATURAL LANGUAGE PROCESSING (PE-I)	CO1: Show sensitivity to linguistic phenomena and an ability to model them with formal grammars.
			CO2: Understand and carry out proper experimental methodology for training and evaluating empirical NLP systems
			CO3: Able to manipulate probabilities, construct statistical models over strings and trees, and estimate parameters using supervised and unsupervised training methods
			CO4: Able to design, implement, and analyze NLP algorithms Able to design different language modeling Techniques
			CO5: Able to design different language modeling Techniques.
6	I-I	ADVANCED CRYPTOGRAPHY (PE-II)	CO1: Understand the various cryptographic protocols
			CO2:Analyze key length and algorithm types and modes
			CO3:Illustrate different public key algorithms in cryptosystems
			CO4: Understand special algorithms for protocols and usage in the real world.
7	I-I	SOFTWARE QUALITY ENGINEERING (PE-II)	CO1: Understand software quality and its perspectives
			CO2 :Analyze defect prevention and defect reduction in software quality assurance.
			CO3:Illustrate software quality engineering activities and its process.
8	I-I	QUANTUM COMPUTING (PE-II)	CO1: Understand basics of quantum computing
			CO2:Understand physical implementation of Qubit
			CO3: Understand Quantum algorithms and their implementation
			CO4: Understand The Impact of Quantum Computing on Cryptography

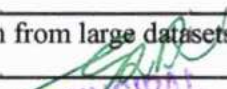|				
9	I-I	ADVANCED DATA STRUCTURES LAB	CO1:Ability to select the data structures that efficiently model the information in a problem.	
			CO2:Ability to assess efficiency trade-offs among different data structure implementations or combinations	
			CO3: Implement and know the application of algorithms for sorting and pattern matching.	
			CO4:Design programs using a variety of data structures, including hash tables, binary and general tree structures, search trees, tries, heaps, graphs, and B-trees.	
10	I-I	DATABASE PROGRAMMING WITH PL/SQL LAB	CO1: Understand importance of PL/SQL basics	
			CO2:Implement functions and procedures using PL/SQL	
			CO3:Understand the importance of triggers in database	
11	I-I	DEEP LEARNING LAB	CO1:Learn The Fundamental Principles Of Deep Learning..	
			CO2:Identify The Deep Learning Algorithms For Various Types of Learning Tasks in various domains.	
			CO3: Implement Deep Learning Algorithms And Solve Real-world problems.	
12	I-I	NATURAL LANGUAGE PROCESSING LAB	CO1:Show sensitivity to linguistic phenomena and an ability to model them with formal grammars	
			CO2:Able to manipulate probabilities, construct statistical models over strings and trees, and estimate parameters using supervised and unsupervised training methods.	
13	I-I	RESEARCH METHODOLOGY & IPR	CO1: To understand the research problem	
			CO2:To know the literature studies, plagiarism and ethics	
			CO3:To get the knowledge about technical writing	
			CO4:To analyze the nature of intellectual property rights and new developments.	
			CO5: To know thepatent rights	

14	I-II	ADVANCED ALGORITHMS (PC-III)	CO1: Analyze the complexity/performance of different algorithms.
			CO2:Attain the knowledge of functional diagrams and applications of IC 555 and IC 565
			CO3:Acquire the knowledge about the Data converters
15	I-II	ADVANCED COMPUTER ARCHITECTURE (PC-III)	CO1: Computational models and Computer Architectures.
			CO2: Concepts of parallel computer models
			CO3: Scalable Architectures, Pipelining, Superscalar processors
16	I-II	ENTERPRISE CLOUD CONCEPTS (PE-III)	CO1:Understand importance of cloud architecture
			CO2: Illustrating the fundamental concepts of cloud security
			CO3: Analyze various cloud computing mechanisms
			CO4: Understanding the architecture and working of cloud computing.
17	I-II	ADVANCED COMPUTER NETWORKS (PE-III)	CO1:Understanding of holistic approach to computer networking
			CO2: Ability to understand the computer network protocols and their applications 3. Ability to design simulation concepts related to packet forwarding in networks.
18	I-II	EDGE ANALYTICS (PE-III)	CO1:Understand the concepts of Edge Analytics, both in theory and in practical application.
			CO2: Demonstrate a comprehensive understanding of different tools used at edge analytics.
			CO3:Formulate, Design and Implement the solutions for real world edge analytics.

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19	I-II	BIO INFORMATICS (PE-IV)	CO1:Understand the Central Dogma & XML (Bio XML) for Bioinformatics.
			CO2:Analyze Perl (Bioperl) for Bioinformatics
			CO3: Illustrate Databases technology, architecture and its interfaces
			CO4: Understand Sequence Alignment Algorithms, Phylogenetic Analysis
20	I-II	NATURE INSPIRED COMPUTING (PE-IV)	CO1: Familiar with Genetic algorithm and its applications.
			CO2: Compare different Ant Colony Optimization algorithmic models
			CO3: Compare different Artificial Bee Colony Optimization algorithmic models.
			CO4: Illustrate Particle swam optimization algorithm with an example.
21	I-II	ROBOTIC PROCESS AUTOMATION (PE-IV)	CO1: Describe RPA, where it can be applied and how it's implemented.
			CO2: Identify and understand Web Control Room and Client Introduction
			CO3: Understand how to handle various devices and the workload
			CO4: Understand Bot creators, Web recorders and task editors
22	I-II	ADVANCED ALGORITHMS LAB	CO1: The student can able to analyze the performance of algorithms
23	I-II	ENTERPRISE CLOUD CONCEPTS LAB	CO1:Understand importance of cloud architecture
			CO2: Illustrating the fundamental concepts of cloud security
			CO3: Analyze various cloud computing mechanisms
			CO4: Understanding the architecture and working of cloud computing.
24	I-II	ADVANCED COMPUTER NETWORKS LAB	CO1: Ability of acquiring the practical exposure to existing protocols

25	I-II	EDGE ANALYTICS LAB	CO1:Identify the benefits of edge computing
			CO2: Develop the microservices in iofog
			CO3: Develop user defined services in the edge
			CO4: Create use cases in IOT with edge computing
			CO5: Develop services in MEC
			CO6: Implement use cases in MEC
26	II-I	DIGITAL FORENSICS (PE-V)	CO1: Interpret and appropriately apply the laws and procedures associated with identifying, acquiring, examining and presenting digital evidence
			CO2: Create a method for gathering, assessing and applying new and existing legislation and industry trends specific to the practice of digital forensics
27	II-I	HIGH PERFORMANCE COMPUTING	CO1:Understanding the concepts in grid computing
			CO2:Ability to set up cluster and run parallel applications.
			CO3: Ability to understand the cluster projects and cluster OS
			CO4: Understanding the concepts of pervasive computing & quantum computing.
28	II-I	MINING MASSIVE DATASETS (PE-V)	CO1:Handle massive data using MapReduce.
			CO2: Develop and implement algorithms for massive data sets and methodologies in the context of data mining.
			CO3: Understand the algorithms for extracting models and information from large datasets
			CO4: Develop recommendation systems.
			CO5: Gain experience in matching various algorithms for particular classes of problems.

29	II-I	IPR (OE)	CO1: Understand types of Intellectual Property
			CO2: Analyze trademarks and its functionality
			CO3: Illustrate law of copy rights and law of patents
30	II-I	FAULT TOLERANCE SYSTEMS (OE)	CO1:Become familiar with general and state of the art techniques used in design and analysis of fault tolerant digital systems.
			CO2:Be familiar with making system fault tolerant, modeling and testing, and benchmarking to evaluate and compare systems.
31	II-I	INTRUSION DETECTION SYSTEMS (OE)	CO1: Possess a fundamental knowledge of Cyber Security.
			CO2: Understand what vulnerability is and how to address most common vulnerabilities.
			CO3: Know basic and fundamental risk management principles as it relates to Cyber Security and Mobile Computing
			CO4: Have the knowledge needed to practice safer computing and safeguard your information using Digital Forensics
			CO5: Understand basic technical controls in use today, such as firewalls and Intrusion Detection systems
			CO6 : Understand legal perspectives of Cyber Crimes and Cyber Security.
32	II-I	DIGITAL FORENSICS (OE)	CO1: Interpret and appropriately apply the laws and procedures associated with identifying, acquiring, examining and presenting digital evidence.
			CO2: Create a method for gathering, assessing and applying new and existing legislation and industry trends specific to the practice of digital forensics

33	II-I	OPTIMIZATION TECHNIQUES (OE)	CO1: explain the need of optimization of engineering systems.
			CO2: understand optimization of electrical and electronics engineering problems
			CO3: apply classical optimization techniques, linear programming, simplex algorithm, transportation problem
			CO4: apply unconstrained optimization and constrained non-linear programming and dynamic programming
			CO5: Formulate optimization problems.
34	II-I	CYBER PHYSICAL SYSTEMS (OE)	CO1 : Understand the core principles behind CPS
			CO2: Identify Security mechanisms of Cyber physical systems
			CO3: Understand Synchronization in Distributed Cyber-Physical Systems