DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING(AI&DS)

Faculty Teaching Methodologies Summary AY:2023-24

S. No	Course Code	Course	Course Instructor	CO No	Course Outcome	BT Level
					II SEM AY:2023-24	
1	ES202CS	Data Structures	Mr Senthil kumar Mr Murlidhar	ES202CS.1	Formulate simple algorithms for arithmetic and logical problem Translate the algorithms to programs	Understand
				ES202CS.2	Test and execute the programs and correct syntax and logical errors	Evaluate
				ES202CS.3	Implement conditional branching, iteration and recursion	Implement
				ES202CS.4	Decompose a problem into functions and synthesize a complete program using divide and conquer approach Use arrays, pointers, structures and file management to solve real world problems	Apply
				ES202CS.5	Construct recursive programs and use structures to formulate algorithms and programs	Implemt
2	ES252CS	Data Structures Lab	Mr Senthil kumar Mr Murlidhar	ES252CS.1	Understand and implement the abstract data type and reusability of a particular data structure.	Implement
				ES252CS.2	Implement linear data structures such as stacks, queues using array and linked list.	Implement
				ES252CS.3	Understand and implements non-linear data structures such as trees, graphs.	Analyze
				ES252CS.4	Implement various kinds of searching, sorting and traversal techniques and know when to choose which technique.	Implement
				ES252CS.5	Understand and implementing hashing techniques.	Understand

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I SEM AY:2023-24						
S. No	Course Code	Course	Course Instructor	CO No	Course Outcome	BT Level
1	ES101CS	Programming for Problem Solving	Mr Mujtaba Ms Radhika	ES101CS.1	Understand algorithms and learn fundamental program methodologies of C programming.	Understanding
				ES101CS.2	Understand control statements and derived data types with mathematical and engineering problems.	Applyinging
				ES101CS.3	Interpret control statements and derived data types with mathematical and engineering problems.	Evaluating
				ES101CS.4	Enhance skills in modular programming for solving a variety of computational challenges, including searching, sorting, and file system operations.	Analyzing
				ES101CS.5	Recognize pre-processor directives and user defined usage.	Creating
2	ES151CS	Programming for Problem Solving Lab	Mr Mujtaba Ms Radhika	ES151CS.1	Choose appropriate data type for implementing programs in C	Create
				ES151CS.2	Design modular programs involving I/O operations, decision	Understand
				ES151CS.3	Implement modular programs involving I/O operations, decision	Create
				ES151CS.4	Apply derived data types and implement programs to store a	Understand
				ES151CS.5	Develop confidence for self education and ability towards	Applying

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III SEM AY:2023-24						
S. No	Course Code	Course	Course Instructor	CO No	Course Outcome	BT Level
1	1BS305HS	Probability & Statistics	Ms.Hima Bindu	1BS305HS.1	To understand concepts of probability and random variables	Applyinging Remembering
				1BS305HS.2	Apply various probability distributions to solve practical problems, to estimate unknown parameters of populations	Applyinging
				1BS305HS.3	Find Mean, variance, moment generating function and statistical parameters of continuous probability distributions	Applyinging
				1BS305HS.4	To perform a regression analysis and to compute and interpret the coefficient of correlation	Remembering Analyzing
				1BS305HS.5	Evaluate t-distribution, F-distribution and chisquare distributions. Fitting of straight line, parabola and exponential curves	Applyinging Evaluating
2	1ES301 EC	Switching Theory and Logic Design	Mrs.B.Sowjanya Mrs.J.Sowmya	1ES301 EC.1	Illustrate the basic principles of Binary Systems, Boolean algebra and Logic Gates.	Understanding
				1ES301 EC.2	Design & Measure various physical parameters Memory and Programmable Logic & understanding of memories	Applyinging
				1ES301 EC.3	Apply the principles of Analysis Procedure , Design Procedure , for Binary Adder Substractor ,Decimal Subs tractor Binary Multiplier	Remembering
				1ES301EC.4	Design & Use various types of Synchronous Sequential Logic & Sequential Circuits. Latches. Flip-flops etc.	Analyzing
				1ES301 EC.5	Identify and understand Identify and classify types of Combinational Logic Design or Sequential Logic Design.	Understanding

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3	1PC302AD	Database Management Systems	Mr T Vijay kumar Dr.Syed Azahad	1PC302AD.1	Explain Fundamental DBMS Concepts: Students will explain the foundational concepts and principles of database management systems	Understanding
				1PC302AD.2	Analyze Relational Database Design: Students will analyze and evaluate different approaches to relational database design.	Analyzing
				1PC302AD.3	Interpret SQL Querying: Students will interpret and explain complex SQL queries and their output.	Analyzing Understanding
				1PC302AD.4	Discuss Data Integrity and Security: Students will discuss and compare various techniques for ensuring data integrity and implementing security measures	Evaluating
				1PC302AD.5	Evaluate Query Optimization Techniques: Students will evaluate and compare query optimization techniques used to enhance database performance.	Evaluating
4	1PC301AD	Discrete Mathematics	Ms J Sowmya Mr. Venkatram Vennam	1PC301AD.1	Apply mathematical logic to solve problems	Applyinging
				1PC301AD.2	Illustrate by examples the basic terminology of functions, relations, and sets and demonstrate knowledge of their associated operations.	Understanding
				1PC301AD.3	Identify structures of algebraic nature and apply basic counting techniques to solve combinatorial problems.	Applyinging/Analyzing
				1PC301AD.4	Formulate problems and solve recurrence relations	Creating
				1PC301AD.5	Apply Graph Theory in solving computer science problems	Applyinging
5	1PC303AD	Computer Organization and Microprocessor	Mr. Venkatram Vennam Dr Diana Moses	1PC303AD.1	Explain the organization and architecture of a basic computer (CPU) with different instruction formats and addressing modes	Understanding
				1PC303AD.2	Describe the internal architecture and register organization of 8086 and the addressing modes in 8086	Understanding
				1PC303AD.3	Design and develop Assembly level programs using 8086 microprocessor instruction set	Applyinging
				1PC303AD.4	Analyze various I/O Interfacing mechanisms and memory organization techniques	Analyzing
				1PC303AD.5	Applies the knowledge of program execution and its internal hardware operations during design and development of Assemble language programs.	Applyinging

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6	1MC302HS	Essence of Indian Traditional Knowledge	Mrs. Prashanthi Mr Satyapal Reddy	1MC302HS.1	To outline the history of civilization in Indian context since pre-Vedic times	Understanding
				1MC302HS.2	To outline the various schools of Indian Philosophy	Understanding
				1MC302HS.3	To demonstrate the diversity in Indian Thought ,Languages , regional culture , dress, living style etc.	Understanding
				1MC302HS.4	To Identify the various religious and social reform movements which took place in the past few centuries	Applyinging
				1MC302HS.5	To classify the wealth of Indian Fine Arts and the diversity associated with it over the length and breadth of the country	Understanding
7	1PC351AD	Database Management Systems Lab	Mr T Vijay Kumar Dr. Syed Azahad	1PC351AD.1	Understand Database Concepts: Students will demonstrate an understanding of fundamental concepts in databases, including data models, schemas, and normalization.	Remembering
				1PC351AD.2	Design and Implement Databases: Students will be able to design and implement relational databases using appropriate schema design techniques.	Applyinging
				1PC351AD.3	SQL Querying: Students will write complex SQL queries to retrieve and manipulate data from databases.	Applyinging
				1PC351AD.4	Data Integrity and Security: Students will apply techniques to ensure data integrity and implement security mechanisms to protect databases from unauthorized access.	Applyinging Analyzing
				1PC351AD.5	Performance Tuning: Students will identify and optimize query and database performance issues using indexing, query optimization, and tuning strategies. Database Application Development: Students will develop database-driven applications using programming languages and tools like JDBC or ORM frameworks.	Analyzing Evaluating
8	1PC353AD	Computer Organization and Microprocessor Lab	Mr. Venkatram Vennam Dr Diana Moses	1PC353AD.1	Interpret the principles of Assembly Language Programming, instruction set in developing microprocessor based applications	Applying
				1PC353AD.2	Design and implement programs on 8086 microprocessor	Applying
				1PC353AD.3	Understand working of instruction set and addressing modes of 8086	Applying
				1PC353AD.4	Explore and implement the interfacing of various peripheral devices with 8086	Applying
				1PC353AD.5	Analyze the function of traffic light controller.	Analyze

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9	1PC352AD	Python Programming Lab	Mr. Shaik Rasool Ms Keerthi	1PC352AD.1	Demonstrate solutions to computational problems using python programs.	Understanding
				1PC352AD2	Solve complex problems using python functions and control structures.	Applyinging
				1PC352AD.3	Use Python lists, tuples and dictionaries for representing compound data.	Evaluating
				1PC352AD.4	Develop object-oriented programs with python classes	Applyinging
				1PC352AD.5	Develop Python programs for GUI applications	Creating
10	1PW354AD	Skill Development Course – I (IOT)	Mr M Krishnamurthy Dr. G Saritha	1PW354AD.1	Understand IoT Fundamentals: Students will comprehend the fundamental concepts and components of the Internet of Things (IoT)	Understanding
				1PW354AD.2	Sensor Integration: Students will be able to integrate various sensors into IoT systems to collect real-world data.	Applyinging
				1PW354AD.3	Data Processing and Analysis: Students will process and analyze data collected from IoT devices using appropriate techniques and tools.	Analyzing
				1PW354AD.4	Connectivity Protocols: Students will understand and apply different communication protocols for connecting IoT devices to networks.	Applyinging
				1PW354AD.5	IoT Application Development: Students will develop IoT applications using programming languages and platforms.	Creating

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S. No	Course Code	Course	Course Instructor	CO No	Course Outcome	BT Level
					IV SEM AY:2023-24	
1	1PC404AD	Operating Systems	Dr. Syed Azahad / Dr Sharada Varalakshmi	1PC404AD.1	Explains the concepts of OS aong with an Understand of the process, memory and file managements and also defines the disk structure and I/O sub system	Understand
				1PC404AD.2	Applies the knowledge of process, memory and file managements and implements the respective algorithms to find the efficacy and performance	Applying
				1PC404AD.3	Applies the OS system calls, process synchronization ,page replacement, directory and disk scheduling algorithms	Applying
				1PC404AD.4	Analyzes various scheduling algorithms, inter process communication methods such as Readers -Writers problems	Analyzing
				1PC404AD.5	Evaluates the performance of the Disk structure	Evaluating
2	1PC405AD	Statistical Analytics and Computing	Ms Harika / Dr T Praveen Kumar	1PC405AD.1	Recalling basic concepts and syntax of Python, as well as the fundamentals of pandas data structures and file formats.	Remembering
				1PC405AD.2	Understand the NumPy ndarray, essential pandas functionality, hierarchical indexing, and time series data types and tools.	Understand
				1PC405AD.3	Apply the knowledge of Python, NumPy, pandas, and data cleaning and preparation techniques to solve real-world problems, as well as create and manipulate arrays, use universal functions, read and write data in various formats, group and aggregate data, and perform various time series operations.	Applying
				1PC405AD.4	Analyze and evaluate data sets, functions, and files using NumPy, pandas, and other Python tools, as well as use data wrangling techniques to combine and reshape datasets, handle missing data, and perform string manipulation.	Analyzing
				1PC405AD.5	Evaluate the effectiveness of different data aggregation and group operation strategies, and recommend appropriate methods based on specific use cases and data sets.	Evaluating

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3	1PC406AD	Foundations of Artificial Intelligence	Dr P Lavanya Dr U Moulali	1PC406AD.1	Understand the core principles and concepts of AI and exhibit proficiency in problem solving using search strategies, ML techniques to address real world	Understand
				1PC406AD.2	Examine the issues involved in knowledge bases, reasoning systems ,planning and Automatic Speech Recognition.	Analyze
				1PC406AD.3	Design and evaluate intelligent agent and expert models for perception and prediction from intelligent environment.	Apply
				1PC406AD.4	Understand and apply fuzzy logic, utility theory and various algorithms of Machine learningenabling them to make informed decisions and manage uncertainties and consider utility in AI applications	Understand
				1PC406AD.5	Understand and Apply Natural Language Processing and Machine Learning Techniques to develop intelligent systems.	Understand
4	1PC407AD	Software Engineering	Dr G Saritha/ Mr Krishnamurthy	1PC407AD.1	Outline working knowledge of alternative approaches and techniques for each phase of SDLC.	Understand
				1PC407AD.2	Judge an appropriate process model(s) for software project attributes and analyze requirements for project development.	Evaluate
				1PC407AD.3	Discover skills necessary as an independent or as part of a team for architecting a complete software project by identifying solutions for recurring problems exerting	Analyze
				1PC407AD.4	Apply appropriate metrics conceding product quality with testing techniques by Understand the practical challenges associated with the development of a	Apply
				1PC407AD.5	Apply the software engineering principles in real time project development.	Apply
5	1HS403HS	Human Values and Professional Ethics	Mrs Jayashree/ Mrs Hephzabah	1HS403HS.1	Understand the significance of value inputs in a classroom and start applying them in their life and profession.	Understand
				1HS403HS.2	Assess their own ethical values and the social context of problems.	Understand
				1HS403HS.3	Distinguish between values and skills, happiness and accumulation of physical facilities, the Self and the Body, Intention and Competence of an individual, etc.	Analyzing
				1HS403HS.4	Understand the role of a human being in ensuring harmony in society and nature.	Understand
				1HS403HS.5	Distinguish between ethical and unethical practices, and start working out the strategy to actualize a harmonious environment wherever they work.	Analyzing

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6	1PC455AD	OperatingSyst emsLab	Dr. Syed Azahad / Dr Sharada Varalakshmi	1PC455AD.1	Evaluate the performance of different types of CPU scheduling algorithms.	Evaluating
				1PC455AD.2	Implement producer-consumer problem, reader-writers problem, Dining philosopher's problem.	Applying
				1PC455AD.3	Simulate Banker's algorithm for deadlock avoidance.	Creating
				1PC455AD.4	Implement paging replacement and disk scheduling techniques.	Applying
				1PC455AD.5	Ability to implement inter process communication between two processes.	Applying
7	1PC456AD	Java Programming Lab	Ms K Keerthi/ Ms Sana mateen	1PC456AD.1	Demonstrate the use of java syntax and semantics, classes, objects and their roles and benefit.	Understand
				1PC456AD.2	Develop Java programs that effectively use arrays, packages, inheritance, String Tokenizer and interface to promote code organization, reusability and flexibility.	Apply
				1PC456AD.3	Develop java programs that effectively handle exceptions and ensure error-free code.	Apply
				1PC456AD.4	Analyze java programs on Method Overloading and Method Overriding.	Analyze
				1PC456AD.5	Implement java programs for multithreading and java collection framework.	Apply
8	1PC457AD	Statistical Analytics and Computing using PythonLab	Ms Harika / Dr T Praveen Kumar	1PC457AD.1	Install Numpy and Pandas	Applying
				1PC457AD.2	Work with1Dand 2D arrayin Numpy and process data in arrays	Understand, Analyzing
				1PC457AD.3	Exploremulti-dimensional arraysin Numpy and perform conversions	Analyzing, Applying
				1PC457AD.4	Perform statistical analysis using Numpyby calculating measures od central tendency, deviation,distances and correlation	Analyzing, Applying
				1PC457AD.5	Perform statistical analysis using Pandas	Analyzing, Applying

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9	1PW458AD	Skill Development Course-II	Ms Sanamateen/ Ms A Sowjanya	1PW458AD.1	Explain network technologies , networking model and how devices access local and remote networks.	Understand
				1PW458AD.2	Describe router hardware and Explain how switching operates in a small to medium-sized business network	Understand
				1PW458AD.3	Design an IPv4 and IPv6 addressing scheme to provide network connectivity for a small to medium-sized business network	Create
				1PW458AD.4	Configure initial settings on a network device using Cisco command-line interface (CLI) and Implement various types of LANs and trunking in a switched network	Create
				1PW458AD.5	Develop critical thinking and problem solving skills using Cisco Packet Tracer.	Create

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1	1PC508AD	Design and Analysis of Algorithms	Mrs. Unnati Khanapurkar	1PC508AD .1	Understand to compute the complexities in different algorithmic approaches like brute force, divide and conquer, greedy method, dynamic programming , describe the classes P, NP, NP-Complete problems and graph traversals	Understand
				1PC508AD .2	Solve recurrence relation using different methods and compare the different methods to generate a minimum cost spanning tree using greedy approach and implement Dijkstra's algorithm	Applying
				1PC508AD .3	Solve problems using algorithm design methods such as backtracking and branch and bound, apply the concept of graph colouring to various practical problems	Applying
				1PC508AD .4	Analyze the best approach to solve various problems like Knapsack problem, Travelling salesman problem, parallel algorithms and Differentiate deterministic and non deterministic algorithms	Analyze
				1PC508AD .5	Determine the best sorting and searching algorithm, optimal Hamiltonian circuit and whether a problem is satisfiable or not and perform asymptotic analysis	Evaluate
2	1PC509AD	Data Science	Dr. Shaik Khaleel Ahamed/ Mr. Deva Rajashekar	1PC509AD.1	Recognize the different levels of Data Science concepts for visualization of data.	Analyze
				1PC509AD.2	Demonstrate the data visualization and statistical techniques, for describing data structure property.	Understand
				1PC509AD.3	Analyze the basics of probability and statistics models for data exploration	Analyze
				1PC509AD.4	Make use of Hypothesis testing for statistical analytics for destroying target based on the mission requirements.	Applying
				1PC509AD.5	Demonstrate numerous open source data science tools to solve real-world problems through industrial case studies	Applying

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3	1ES501AD	Digital Image Processing	Dr.G.Saritha Dr. Diana Moses	1ES501AD.1	Explain the fundamentals of digital image and its processing	
				1ES501AD.2	Understand the enhancement, segmentation, restoration, compression processes on an image	
				1ES501AD.3	Explore the fundamental relation between pixels and apply image enhancement, filtering techniques, morphological operations for image processing	
				1ES501AD.4	Explore the utility of 2-D transforms and analyze the different linear image restoration techniques	
				1ES501AD.5	Evaluate point processing techniques, histogram manipulation, compression techniques and mathematical model for image restoration	
4	1PE504AD	PE-Principles of Prograrnming	Mr.K.Muralidhar	1PE504AD.1	Expresses syntax and semantics in formal notation	Understand
				1PE504AD.2	Apply suitable programming paradigm for the application scenario	Applying
				1PE504AD.3	Compare the features of various programming languages.	Analyze
				1PE504AD.4	Describes the programming paradigms of modern programming languages	Understand
				1PE504AD.5	Describes the concepts of ADT and OOP.	Understand
5	1PE502AD	PE-Data Mining	Mrs.A.Sowjanya	1PE502AD.1	Preprocesses data and apply mining techniques on it.	Applying
				1PE502AD.2	Generates association rules using different algorithms	Creating
				1PE502AD.3	Applies classification algorithms and evaluates its efficiency	Applying
				1PE502AD.4	Understands various clustering algorithms	Understand
				1PE502AD.5	Explains web and text mining methods	Understand
6	OE501CE	O.E–I (Disaster Mitigation)	Ms.Madhuri	OE501CE.1	Demonstrate the concepts of disaster management	Understand
				OE501CE.2	Identify different types of disasters	Applying
				OE501CE.3	Explain the disaster management cycle	Analyzing
				OE501CE.4	Illustrate the role of NDMA in disaster management	Understand
				OE501CE.5	Explain the development of disaster mitigation plan	Evaluating

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7	1MC503HS	Indian Constitution	Mr. Satyapal Reddy	1MC503HS.1	Read, Remember, understand the background and making of Indian constitution and Its importance.	Understanding
				1MC503HS.2	Remember and understand the working of the Central, state and provincial levels of administration.	Understanding
				1MC503HS.3	Remember and understand the fundamental duties, responsibilities and rights as an ideal citizen of India.	Understanding
				1MC503HS.4	Understand and interpret the functioning and distribution of resources between Union and state.	Applying
				1MC503HS.5	Understand the existing hierarchy of the social structure, election process and Grievance redressal in a democracy.	Understanding
8	1PC559AD	Data Science Lab	Dr. Shaik Khaleel Ahamed Mr. Deva Rajashekar	1PC559AD.1	Understand the concept of Setup R Programming Environment.	Understand
				1PC559AD.2	Develop programming logic using R-data types, R-Data Structures and R – Packages.	Create
				1PC559AD.3	Analyze data sets using R – programming capabilities.	Analyze
				1PC559AD.4	Apply various classification and regression models.	Applying
				1PC559AD.5	Apply various clustering techniques on different data sets	Applying
9	1ES551CS	Digital Image Processing Lab	Dr.G.Saritha Dr. Diana Moses	1ES551CS.1	Understand how the images are read as grayscale and RGB	Understand
				1ES551CS.2	Apply the different techniques to convert the images in different forms	Apply
				1ES551CS.3	Understand the processing and implement different images filtering techniques	Understand
				1ES551CS.4	Implement edge dection	Apply
				1ES551CS.5	Comapre the different DFT,DCT and DWT techniques	Apply

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10	1HS553HS	Soft Skills Lab - I	Dr. Sunil Solomon	1HS553HS.1	Listen to a variety of speakers and texts and will be able to comprehend and perform the required tasks.	Understand
				1HS553HS.2	Interact in a group professionally and communicate confidently in terms of both the spoken and written communication.	Applyinging
				1HS553HS.3	Develop the skills and strategies of reading and writing.	Applyinging
				1HS553HS.4	Face any Interview confidently by managing time, making decisions by speaking appropriately according to the context.	Applyinging
				1HS553HS.5	Demonstrate right attitude and right skills to cope with team and communicate professionally.	Applyinging
11	1PW560AD	Skill Development Course - III	Mrs. A.Sowjanya Dr T Praveen Kumar	1PW560AD.1	Understand the basics of Android development, including the Android Studio IDE, the Android SDK, and the Android Manifest.xml file.	Understand
				1PW560AD.2	Create an app with multiple activities that can communicate with each other using intents	Create
				1PW560AD.3	Create a variety of user interface elements, such as buttons, text fields, and checkboxes	Create
				1PW560AD.4	Use layouts to arrange their user interface elements in a logical and efficient way.	Apply
				1PW560AD.5	Understand how to store data in Android apps, using both local and remote storage options	Understand

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1	1PC610AD	Computer Networks	Ms Radhika/ Mr Venkatram	1PC610AD.1	Understand the concept of Computer Networks, OSI & TCP/IP reference models and discuss the functionalities of each layer in these models.	Understand
				1PC610AD.2	Apply bandwidth utilization techniques , Framming techniques ,flow and error control protocols and various addressing schemes for an efficient transmission of data through the layers.	Apply
				1PC610AD.3	Analyze various Layered architectures , transmission media , data link control protocols , MAC protocols ,address mapping protocols ,routing protocols and various application layer protocols	Analyze
				1PC610AD.4	Evaluate various routing algorithms such as unicast and multicast routing algorithms.	Evaluate
				1PC610AD.5	Discuss various classes of IP addressing and NAT with examples	Create
2	1PC611AD	Machine Learning	Dr Deva Rajashekar/ Dr U Moulali	1PC611AD.1	Extract features that can be used for a particular machine learning approach in various applications.	Analyze
				1PC611AD.2	Compare and contrast pros and cons of various machine learning techniques and to get an insight when to apply particular machine learning approach.	Understand
				1PC611AD.3	Understand different machine learning types along with algorithms.	Analyze
				1PC611AD.4	Understand how to apply machine learning in various applications.	Understand
				1PC611AD.5	Apply ensemble techniques for improvement of classifiers	Analyze
3	1PC612AD	Automata Languages and Compiler Design	Mr Shrikarshobit/ Ms unnati K	1PC612AD.1	Understand the basics of automata, regular expression, push down automata, turing machine, compiler, parser ,code optimization techniques	Understand
				1PC612AD.2	Construct equivalently powerful notations for a language, including DFAs, NFAs, and regular expressions, between PDAs and CFGs	Apply
				1PC612AD.3	Design Push down automata, Turing machine	Create
				1PC612AD.4	Construct parsing tables for different types of parsing techniques and syntax directed translations	Apply
				1PC612AD.5	Compare different memory management techniques in runtime environment and understand process of code generation	Understand

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(An UGC-AUTONOMOUS INSTITUTION)
Accredited by NAAC with A+ and NBA

Estd : 2008 Affiliated to Osmania University & Approved by AICTE

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING(AI&DS)
Faculty Teaching Methodologies Summary AY:2023-24

4	1PE608 AD	Professional Elective – II(SPM)	Dr Shaik khaleel ahamed/ Ms Radhika	1PE608 AD.1	Understand the basic project management concepts, framework and the process models	Understand
				1PE608AD.2	Apply appropriate software process model and software effort estimation techniques	Apply
				1PE608 AD.3	Estimate risks involved in various project activities, staff and issues related to people management	Evaluate
				1PE608 AD.4	Analyze checkpoints, project reporting structure, projectprogress and tracking mechanisms using project managementprinciples.	Analyze
				1PE608 AD.5	Apply project management concepts through working in a group as team leader	Apply
5	6OE602ME	OE– II(3D Printing)	Ms I Sowjanya	6OE602ME.1	Describe the fundamentals of 3d printing,classify and explain advantages and disadvantages of3D Printing technologies	Understand
				6OE602ME.2	Identify the appropriate CAD file formats and software utilized in 3D printing technology.	Understand
				6OE602ME.3	Describe the operating principles, capabilities and limitations of liquid, solid & powder based 3D Printing Technologies.	Understand
				6OE602ME.4	Compare different 3D printing technologies based on their process capabilities and applications	Understand
				6OE602ME.5	Apply the capabilities and knowledge of 3D printing in different industrial sectors.	Apply
6	1HS652HS	Effective Technical Communication	Dr Sunil Solomon/ Ms Jayashree	1HS652HS.1	Listen to a variety of speakers and texts and will be able to comprehend and perform the required tasks.	Understand
				1HS652HS.2	Interact in a group professionally and communicate confidently in terms of both the spoken and written communication.	Applying
				1HS652HS.3	Develop the skills and strategies of reading and writing.	Applying
				1HS652HS.4	Face any Interview confidently by managing time, making decisions by speaking appropriately according to the context.	Applying
				1HS652HS.5	Demonstrate right attitude and right skills to cope with team and communicate professionally.	Applying
7	1PC661AD	Machine Learning Lab	Mr D Raja sekhar/ Dr U Moulali	1PC661AD.1	Apply machinelearning algorithms: data set preparation, model selection, model building etc.	Applying
				1PC661AD.2	Evaluate various Machine Learning approaches.	Evaluate
				1PC661AD.3	Use scikit-learn,Keras and Tensorflow to apply ML techniques.	Applying
				1PC661AD.4	Design and develop solutions to real world problems using ML techniques.	Analyze
				1PC661AD.5	Apply unsupervised learning and interprettheresults	Understand

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8	1PC662AD	Data Visualization Lab	Dr Diana Moses/ Ms P Nandini	1PC662AD.1	Understand the basics of data visualization and the best practices for creating effective visualizations.	Understand
				1PC662AD.2	Connect to data sources and create basic visualizations in Tableau Desktop.	Applying
				1PC662AD.3	Create more advanced visualizations and dashboards using table calculations, filters, and actions.	Applying
				1PC662AD.4	Present data stories using Tableau by creating interactive visualizations and dashboards.	Applying
				1PC662AD.5	Analyze the impact of different Visualization components and their use in various business sectors.	Analysing
9	1PW663AD	MiniProject	Dr U Moulali/ Dr Shaik Khaleel Ahmed	1PW663AD.1	Interpret a variety of approaches and perspectives of system development.	Understand
				1PW663AD.2	Identify the requirements which are relevant to the design of a system.	Applying
				1PW663AD.3	Model software design with a set of objects and their relationships using structural modeling.	Applying
				1PW663AD.4	Take part in using advanced & behavioral modeling to develop a case study.	Analysing
				1PW663AD.5	Develop components through architectural modeling.	Creating

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VII SEM AY:2023-24

S. No	Course Code	Course	Course Instructor	CO No	Course Outcome	BT Level
1	PC701AD	Deep Learning	Mrs. K.Radhika	PC701AD.1	Demonstrate the fundamentals of neural networks and their training.	Understand
				PC701AD.2	Illustrate the optimization methods for deep neural networks.	Understand
				PC701AD.3	Differentiate between various architectures of CNNs, RNN	Analyzing
				PC701AD.4	Apply the relevant architecture to applications of Computer Vision and NLP	Applying
				PC701AD.5	Illustrate architecture of GANs and their applications	Understand
2	PC702AD	Mining of Massive DataSets	Mrs Harika	PC702AD.1	Understand various massive datasets and apply pre-processing Techniques and evaluate with various statistical methods for any given raw data.	Remember/under stand
				PC702AD.2	Extract interesting patterns from large amounts of data.	Applying
				PC702AD.3	Choose suitable data mining algorithm for clustering, on data stream and analyse page rank algorithms.	analyse
				PC702AD.4	Discover the role played by data mining in social network	Remember/under stand
				PC702AD.5	Discover the role played by data mining in advertising. 6.Case studies on mining of social network and advertising on the web	Applying
3	PC703AD	Software Project Management	Mr.M.Krishnamur thy	PC703AD.1	Explain the basic project management concepts, framework and the process models	Understanding
				PC703AD.2	Apply appropriate software process model and software effort estimation techniques	Applyinging
				PC703AD.3	Estimate risks involved in various project activities, staff and issues related to people management	Evaluating
				PC703AD.4	Analyze checkpoints, project reporting structure, projectprogress and tracking mechanisms using project managementprinciples.	Analyzing
				PC703AD.5	Apply project management concepts through working in a group as team leader	Applyinging

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4	PE742AD	PE–IV(NLP)	Dr. Syed Azhaad	PE742AD.1	Apply normalization techniques on a document and evaluate a language model.	Applying
				PE742AD.2	Implement parts of speech tagging and classification techniques on the words	Applying
				PE742AD.3	Establish relationships among words of a sentence using word net and also build the question answering system.	Analyze and Evaluate
				PE742AD.4	Understand the WSD and understand to use WORDNET.	Analyze
				PE742AD.5	Analyse Chabot's, dialogue systems, and automatic speech recognition systems	Analyze
5	PC751AD	Deep Learning Lab	Mrs. K.Radhika	PC751AD.1	Develop ANN without using Machine Learning/Deep learning library	Creating
				PC751AD.2	Understand the Training ANN model with back propagation	Understanding
				PC751AD.3	Develop model for sequence learning using RNN	Creating
				PC751AD.4	Develop image classification model using ANN and CNN.	Creating
				PC751AD.5	Generate a new image with auto-encoder and GAN.	Applying
6	PC752AD	Mining of Massive DataSets Lab	Mrs Harika	PC752AD.1	Able to understand and implement different methods in Mining the Data.	Remember understand
				PC752AD.2	able to apply statistics and other mathematical functions for mining the data	Applying
				PC752AD.3	Able to analyse various association rules and implement the algorithms	analyse
				PC752AD.4	Able to understand the Stream Data Model	Remember
				PC752AD.5	Able to implement various clustering algorithms	Applying
7	PW761AD	Project Work(Phase-I)	Dr.P.Lavanya	PW761AD.1	Demonstrate the ability to synthesize and apply the knowledge and skills acquired in the academic program to the real-world problems.	Applyinging
				PW761AD.2	Evaluate different solutions based on economic and technical feasibility	Evaluating
				PW761AD.3	Effectively plan a project and confidently perform all aspects of project management	Analyzing
				PW761AD.4	Demonstrate effective written and oral communication skill	Underatanding
				PW761AD.5	Communicate effectively by comprehending, documenting, making effective presentation and exchanging clear instructions	Evaluating

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8	SI671AD	Summer Internship	Dr Syed Azahad	SI671AD.1	Design/ develop a small and simple product in hardware or software	Creating
				SI671AD.2	Build the task or realize a pre-specified target, with limited scope, rather taking up a COMPLEX TASK AND LEAVE IT	Analyzing
				SI671AD.3	Determine the challenges and future potential for his / her intenship organization in	Analyzing
				SI671AD.4	Apply various soft skills such as time management, positive attitude and	Applying
				SI671AD.5	analyze the functioning of internship organization and recommend changes for	Analyzing

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S. No	Course Code	Course	Course Instructor	CO No	Course Outcome	BT Level
					VIII SEM AY:2023-24	
1	OE805CE	Essentials of Road Safety Engineering	Ms Madhuri	OE805CE.1	Explain the fundamentals of road safety analysis	Analysing
				OE805CE.2	analyze accident data	Analysing
				OE805CE.3	illustrate the concepts of road safty audit	Understand
				OE805CE.4	Demonstrate the applications of road signs and markings	Understand
				OE805CE.5	Illustrate the traffic systems from road safty point of view	Understand
2	PE851AD	PE-V(Data Engineering)	Mrs J Sowmya	PE851AD.1	The objective of this course is to introduce data engineering and role of data engineers.	Understand
				PE851AD.2	Familiarize students with the basic and advanced techniques of data engineering, data modeling and data acquisition.	Understand
				PE851AD.3	To learn key techniques of the data modeling framework and Big data tools.	Applying
				PE851AD.4	To learn categories of API and data science projects using API.	Applying
				PE851AD.5	to design, develop, and optimize ETL pipelines to process and integrate data from multiple sources into centralized systems.	Analysing
3	PW861AD	Project Work-II	Dr. P. Lavanya	PW861AD.1	Demonstrate the ability to synthesize and apply the knowledge and skills acquired in the academic program to the real-world problems.	Applying
				PW861AD.2	Evaluate different solutions based on economic and technical feasibility	Evaluating
				PW861AD.3	Effectively plan a project and confidently perform all aspects of project management	Analyzing
				PW861AD.4	Demonstrate effective written and oral communication skill	Understand
				PW861AD.5	Communicate effectively by comprehending, documenting, making effective presentation and exchanging clear instructions	Evaluating

B Sowjanya

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