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ISO 9001 2008 Institute

Branch: Department of Computer Science Engineering-Artificial Intelligence & Machine Learning

Name of Subject: Data Structures &Algorithms

Subject Code: MTAL101

Student will be able to

CO1	Describe the hash function and concepts of collision and its resolution methods.
CO2	Discuss and analyse algorithms for skip lists and various types of trees.
CO3	Identify Develop and analyse algorithms for various variations of Heaps.
CO4	Discuss able to select a proper pattern matching algorithm for given problem.
CO5	Select tools to Identify suitable data structures and develop algorithms for Multidimensional Searching.

Name of Subject: Advances in Operating System

Subject Code: MTAL102

Student will be able to

CO1	Develop the concept of operating systems and its services.
CO2	Contrast file system along with disk scheduling algorithms.
CO3	Analyze different process scheduling algorithms and memory management techniques to achieve better performance of a computer system.
CO4	Determine techniques to deal with different Concurrent processes.
CO5	Examine case studies of Unix/Linux and Windows operating system.

Name of Subject: Mathematics for Machine Learning

Subject Code: MTAL 103

Student will be able to

CO1	Describe in-depth about mathematics used in machine learning and deep learning
CO2	Compare and analyzes different mathematical techniques used in machine learning.
CO3	Examine the nature of a problem at hand and determine best suitable mathematics technique.
CO4	Solve the real world problems using machine learning mathematics.
CO5	Estimate mean, median, mode, weighted average mean and measures of dispersion.

Name of Subject: Machine Learning

Subject Code: MTAL 104

Student will be able to

CO1	Describe in-depth about theories, methods, and algorithms in machine learning.
CO2	Find and analyze the optimal hyper parameters of the machine learning algorithms.
CO3	Examine the nature of a problem at hand and determine whether a machine learning can solve it efficiently enough.
CO4	Solve and implement the real world problems using machine learning.
CO5	Describe theoretical analysis of machine learning problems and algorithms

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Name of Subject: Elective I (Artificial Intelligence)
Subject Code: MTAL105

Student will be able to

CO1	Describe fundamentals of Artificial Intelligence (AI) and its foundations.
CO2	Understand formal methods of knowledge representation, logic and reasoning.
CO3	Apply basic principles of AI in solutions that require problem solving, inference, perception,knowledge representation, and learning.
CO4	Demonstrate awareness and understanding of various applications of AI techniques in intelligent agents, expert systemsand other machine learning models.
CO5	Apply AI techniques to various applications of AI in Game Playing, Natural Language Processing, Computer-Vision, Roboticsetc.

Name of Subject: Lab-I (101 and 102)
Subject Code: MTAL 106

Student will be able to

CO1	Describe self-balancing BSTs like AVL trees, Red-Black trees, or Splay trees using C++.
CO2	Discuss and analyse algorithms for Analyzing the time complexity of search operations.
CO3	Identify and analyse heaps for tasks like priority queues.
CO4	Implement synchronization mechanismsto ensure proper coordination among concurrent processes.
CO5	Apply Techniques such aspaging, segmentation, virtual memory, memory allocation strategies (like first-fit, best-fit, worst-fit) using C++.

Name of Subject: Lab-II (104 and Elective I)
Subject Code: MTAL 107

Student will be able to

CO1	Describe classical machine learning algorithms such as linear regression, logistic regression using TensorFlow.
CO2	Find and analyse the decision trees, k-nearest neighbors (KNN), support vector machines (SVM), and Naive Bayesmachine learning algorithms.
CO3	Examine machine learning algorithms for tasks like classification, regression, clustering, and anomaly detection using libraries.
CO4	Demonstrate awareness and understanding of various applications of AI techniques in intelligent agents, expert systems and other machine learning models.
CO5	Apply AI techniques to various applications of AI in Game Playing, Natural Language Processing, Computer-Vision, Robotics etc.

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Name of Subject: Software Project Management

Subject Code: MTAL 201

Student will be able to	
CO1	Contrast between conventional and modern software management techniques.
CO2	Apply the evaluation criteria to the various phases of the software management process.
CO3	Identify software development process workflow and put required checkpoints
CO4	To develop ability to monitor and control projects life cycle and risk involved.
CO5	Discuss the quality of the software products using software metrics.

Name of Subject: Computational Intelligence

Subject Code: MTAL 202

Student will be able to	
CO1	Describe in-depth about theories, methods, and algorithms in computation Intelligence.
CO2	Compare and contrast traditional algorithms with nature inspired algorithms.
CO3	Examine the nature of a problem at hand and determine whether a computation intelligenttechnique/algorithm can solve it efficiently enough.
CO4	Design and implement Computation Intelligence algorithms and approaches for solvingreal-life problems.
CO5	Compare Colony Optimization(ACO), Particle Swarm Optimization (PSO), Bee Colony Optimizationtechniques.

Name of Subject: Big Data
Subject Code: MTAL 203

Student will be able to	
CO1	Analyze the big data characteristics and challenges.
CO2	Interpret the big data infrastructure through hadoop.
CO3	Develop Big Data Solutions using Hadoop Eco System.
CO4	Determine data architectural patterns and its variations of
CO5	Compare NoSQL and MangoDB.

Name of Subject: Deep Learning
Subject Code: MTAL 204

Student will be able to	
CO1	Describe in-depth about theories, fundamentals, and techniques in Deep learning.
CO2	Understanding of the on-going research in computer vision and multimedia field.
CO3	Design and Implement, train, and validate their own deep neural network.
CO4	Solve and implement the real world problems using deep learning.
CO5	Describe Deep belief networks, Markov Networks,Markov Chains and various Autoregressive Models.

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Name of Subject: Elective II (Reinforcement Learning)	
Subject Code: MTAL 205	
Student will be able to	
CO1	Define the key features of reinforcement learning that distinguishes it from others machine learning techniques.
CO2	Describe multiple criteria for analyzing RL algorithms and evaluate algorithms on RL performance metrics.
CO3	Design and Implement, train, and validate their own RL models.
CO4	Solve and implement the real world problems using reinforcement learning.
CO5	Describe MAXQ,MAXQ value function decomposition Solving POMDP, applications of RL.

Name of Subject: LAB III	
Subject Code: MTAL 206	
Student will be able to	
CO1	Apply techniques for creating project charters, work breakdown structures (WBS), and Gantt charts to schedule tasks and allocate resources.
CO2	Identify software development process conducting risk assessments, creating risk registers, and developing risk response strategies.
CO3	Examine agile methodologies such as Scrum or Kanban.
CO4	Design different crossover and mutation operators to see their effects on convergence and solution quality.
CO5	Apply artificial neural networks using libraries like TensorFlow or PyTorch..

Name of Subject: Lab-IV	
Subject Code: MTAL 207	
Student will be able to	
CO1	Analyze the big data concepts using NoSQL and MangoDB.
CO2	Interpret the big data infrastructure algorithms usinghadoop.
CO3	Develop recurrent neural networks (RNNs) or transformer-based models like BERT or GPT for tasks such as sentiment analysis, named entity recognition, or text generation.
CO4	Determine Fine-tuning pre-trained language models on domain-specific text corpora for better performance.
CO5	Implement Autoregressive Models for Deep belief networks, Markov Networks, Markov Chains and various.

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Name of Subject: Elective III Natural Language Processing	
Subject Code: MTAL 301	
Student will be able to	
CO1	Define different data models used in Information Retrieval using NLP
CO2	Demonstrate current methods for statistical approaches to machine translation.
CO3	Apply syntactic parsing and semantic analysis on text.
CO4	Solve and implement real world problems using NLP.
CO5	Describe man machine interfaces.

Name of Subject: Elective IVMachine learning in Natural Language Processing	
Subject Code: MTAL302	
Student will be able to	
CO1	Definetext preprocessing, feature extraction, and representation of text data.
CO2	Describe machine learning algorithms commonly used in NLP tasks, such as Naive Bayes, Support Vector Machines (SVM), Decision Trees, Random Forests, and Neural Networks.
CO3	Solve real-world problems, such as text classification, sentiment analysis,
CO4	Design text data effectively, including bag-of-words, TF-IDF, word embedding
CO5	Apply practical experience of NLP libraries and frameworks like NLTK, spaCy, scikit-learn, TensorFlow, and PyTorch.

Name of Subject: Seminar	
Subject Code: MTAL 303	
Student will be able to	
CO1	Establish motivation for any topic of interest and develop a thought process for technical presentation.
CO2	Organize a detailed literature survey and build a document with respect to technical publications.
CO3	Analysis and comprehension of proof-of-concept and related data.
CO4	Effective presentation and improve soft skills.
CO5	Make use of new and recent technology (e.g. Latex) for creating technical reports.

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colspan	**Name of Subject: Name of Subject: Dissertation Part- I (Literature Review/Problem Formulation/ Synopsis)** **Subject Code: MTAL304**

Student will be able to	
CO1	Define your topic. The first step is defining your task -- choosing a topic and noting the questions you have about the topic. This will provide a focus that guides your strategy in step II and will provide potential words to use in searches in step III.
CO2	Develop a strategy. Strategy involves figuring out where the information might be and identifying the best tools for finding those types of sources. The strategy section identifies specific types of research databases to use for specific purposes.
CO3	Locate the information. In this step, you implement the strategy developed in II in order to actually locate specific articles, books, technical reports, etc.
CO4	Use and Evaluate the information. Having located relevant and useful material, in step IV you read and analyze the items to determine whether they have value for your project and credibility as sources.
CO5	Synthesize. In step V, you will make sense of what you've learned and demonstrate your knowledge. You will thoroughly understand, organize and integrate the information --become knowledgeable-- so that you are able to use your own words to support and explain your research project and its relationship to existing research by others.
CO6	Evaluate your work. At every step along the way, you should evaluate your work. However, this final step is a last check to make sure your work is complete and of high quality.

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Course Outcomes for M. Tech

Construction Technology

&

Management

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MVCT – 101 Advanced Mathematics

After completion of this course, student will be able to:	
CO1	Apply methods of Operation research
CO2	Analyse project progress using CPM and PERT techniques
CO3	Demonstrate various Evolutionary algorithms
CO4	Apply Hypothesis, Linear and Non-linear regression
CO5	Design the projects for Reliability considering the constraints

MVCT – 102 Construction Material

After completion of this course, student will be able to:	
CO1	Explain concept behind application of material science
CO2	Analyse various properties fresh & hardened concrete
CO3	Design concrete mix for specific requirements using codal provisions
CO4	Select new construction material as per the requirement
CO5	Apply the quality control methods in construction

MVCT – 103Advanced Geotechnical Engg.

After completion of this course, student will be able to:	
CO1	Explain stress distribution in soil
CO2	Design well foundation and coffer dam as per IRC codal provision
CO3	Apply concepts of vibration in design of Machine foundation.
CO4	Demonstrate techniques for construction on expansive soil
CO5	Explain the application of Rock mechanics in relation to civil engineering projects.

MVCT - 104Construction Technology

After completion of this course, student will be able to:	
CO1	Understand advanced pavement construction techniques
CO2	Design different types of Temporary Structures
CO3	Apply various construction techniquesin construction of steel structures
CO4	ExplainDifferent Techniques of Prestressing
CO5	Demonstrate Construction Techniques for Heavy and Special Structures

MVCT - 105Low-cost Build materials & cont. Technology

After completion of this course, student will be able to:	
CO1	Summarize the concept of low-cost material
CO2	Compare various low-costbuilding material product
CO3	Suggest suitableLow-cost construction Techniques and Equipment
CO4	Suggest Low-cost sanitation methods
CO5	Analyse cost-benefit of lowcost building material and techniques

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MVCT - 106Lab-I Computer Workshop

After completion of this course, student will be able to:	
CO1	Demonstrate basic concepts of the AutoCAD software
CO2	Apply basic concepts to develop construction (drawing) techniques
CO3	Manipulate drawings through editing and plotting techniques
CO4	Demonstrate dimensioning concepts and techniques
CO5	Understand geometric construction

MVCT – 107 Lab-II Ad. Construction -I

After completion of this course, student will be able to:	
CO1	Design high grade concrete and identify, carry out laboratory tests related to the use of concrete on site
CO2	Develop correlation between cube and cylinder of high strength concrete and analyze the stress-strain curve.
CO3	Interpret the mechanical properties of high strength concrete and examine the effect of cyclic loading on steel
CO4	Assess the quality of existing concrete members by Non-Destructive testing methods and study the behaviour of beams under flexure.
CO5	Analyse the behaviour of Self Compacting Concrete and understanding reinforcement details and corrosion levels in existing RC structures

MVCT – 201 Construction Management

After completion of this course, student will be able to:	
CO1	Prepare construction contract including the proves involved in making Contract documents
CO2	List the technical specifications of tender bond along with Termination rights and responsibility of various stakeholders
CO3	Apply the fundamentals of bid and tender management, including the process, roles, and legal aspects involved
CO4	Apply the legal implications of contract, common, and regulatory law to manage a construction project.
CO5	Explainsalient features of welfare and wage Legislations also to integrate the knowledge of Labour Law in General HRD Practice.

MVCT -202Prefabrication design & its construction tech

After completion of this course, student will be able to:	
CO1	Understand the procedure of prefabrication
CO2	Design prefabricated unit as per the National Building Code Specification
CO3	Analyse various prefabricated elements
CO4	Design various prefabricated elements
CO5	Apply advanced construction prefabricated techniques for control on construction

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MVCT - 203Construction Equipment and Material Management

After completion of this course, student will be able to:	
CO1	Select heavy equipment based on applications, utilization, productivity, and other factors
CO2	Analyse Cycle time capacity ratings of various construction equipment's.
CO3	DemonstrateEconomics of Construction Equipment
CO4	Apply fundamentals of CPM in equipment management.
CO5	Demonstrate inter relationship between purchasing parameters

MVCT - 204Financial Mgt. in Construction Industries

After completion of this course, student will be able to:	
CO1	Utilize diverse skills in personnel management, human resource allocation, and administrative policies.
CO2	Apply industrial relation and regulations during construction & Industrial acitivity
CO3	Apply waste management skills in construction to boost productivity and cost-efficiency through waste identification, reduction, and regulatory compliance
CO4	Apply managerial economics for effective decision-making, covering demand analysis, cost assessment, pricing, risk evaluation, financial analysis, and budgeting for project selection
CO5	Apply skills of capital generation, financial accounting, banking, construction bookkeeping, and government financial statement preparation

MVCT - 205Risk & Safety Management in Construction Industry

After completion of this course, student will be able to:	
CO1	Apply appropriate technology as per current contexts during construction
CO2	Acquire skills of rural housing and environmental tech proficiency with local materials, water systems, waste treatment, and sanitation solutions.
CO3	Apply concepts of rural road planning, socio-economic factors, material selection, design principles, drainage issues, and maintenance strategies in rural sectors.
CO4	Examine global energy trends, building design's impact on energy budgets, and assess the feasibility of solar, wind, and tidal energies
CO5	Explore low-energy materials, construction methods, and environmental control strategies

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MVCT - 206Lab-III Cont. mgt. software Lab

After completion of this course, student will be able to:	
CO1	Attain proficiency in Primavera software.
CO2	Gain hands-on experience in project planning and scheduling
CO3	Acquire effective resource management techniques
CO4	Develop skills in generating comprehensive project report
CO5	Apply the concepts of time and resource allocation in project management

MVCT - 207Lab-IV Ad. Construction - II

After completion of this course, student will be able to:	
CO1	Explore advanced construction techniques through practical laboratory exercises
CO2	Acquire skills in analyzing and solving complex construction challenges
CO3	Understand the importance of safety protocols and risk management in advanced construction environments
CO4	Demonstrate proficiency in utilizing advanced construction equipment and tools
CO5	Acquire practical knowledge of quality control measures and techniques in construction

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MVCT – 301Advance Highway Construction

After completion of this course, student will be able to:	
CO1	Classify highway construction methods, materials selection, quality control, and various road construction techniques in Indian conditions.
CO2	Classify bituminous construction materials, procedures, quality control, binder selection, and surface treatments per industry standards.
CO3	Understand the essentiality of base courses, selecting suitable materials, categorizing joints, and executing construction procedures for cement concrete roads in accordance with IRC specifications.
CO4	Justifyreinforcement necessity, mix selection, and construction methods for diverse cement concrete pavements, with tailored recommendations for Indian conditions.
CO5	Apply CPM & PERT techniques in highway construction

MVCT - 302Advanced Foundation Engineering

After completion of this course, student will be able to:	
CO1	Design shallow foundations as per given load parameters.
CO2	Design pile foundations effectively as per given load parameters.
CO3	Apply strength characteristics of reinforced soil in reinforced earth structures.
CO4	Understand bridge substructure elements, including well foundation stability analysis, pier and abutment design, and well sinking.
CO5	Design various hydraulic structures

MVCT - 303Seminar

After completion of this course, student will be able to:	
CO1	Demonstrate a sound technical knowledge of their selected seminar topic.
CO2	Undertake problem identification and formulation of solution
CO3	Design engineering solutions to complex problems utilising a systems approach
CO4	Communicate with engineers and the community at large
CO5	Demonstrate the knowledge, skills and attitudes of a professional engineer

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MVCT – 304Dissertation Part- I (Literature Review/Problem Formulation/ Synopsis)

After completion of this course, student will be able to:	
CO1	Gain in-depth knowledge and use adequate methods in field of study
CO2	Create, analyse and critically evaluate different technical/research solutions
CO3	Clearly present and discuss the conclusions as well as the knowledge and arguments that form the basis for these findings
CO4	Identify the issues that must be addressed within the framework of the specific dissertation in order to take into consideration
CO5	Describe how their data will be treated and analysed of their study

MVCT – 401 Dissertation Part- II

After completion of this course, student will be able to:	
CO1	Design a research investigation that incorporates appropriate theoretical approaches, conceptual models, and a review of the existing literature.
CO2	Summarize the key arguments and suitable coherent findings for discussion.
CO3	Draw valid conclusions, relating them to the research topic
CO4	Demonstrate a comprehensive review of the literature, including a review of other dissertation research related to their study
CO5	Develop a design of their study with discussion of the methodology to be used during study.

MCSE 101- Advanced Computational Mathematics

CO	Student will be able to
CO1	Implement partial differentiation and types of partial differential equations and vector operations
CO2	Evaluation classification of second partial differential equations, wave, heat equation and transmission lines.
CO3	Apply statistics including measures of central tendency, correlation, regression and their properties.
CO4	Analyze probability and random variables and various discrete and continuous probability distributions.
CO5	Examine statistical methods of studying data samples, hypothesis testing and statistical quality control charts.

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MCSE 102- Advanced Data Structures and Algorithm

CO	Student will be able to
CO1	Apply advanced abstract data type (ADT) and data structures in solving real world problem.
CO2	Implement different tree data structures and differentiate them with respect to their applications.
CO3	Design algorithms using graph structure and various string matching algorithm to solve real life problems.
CO4	Apply understanding of memory management concepts, allocation strategies, and garbage collection algorithms.
CO5	Demonstrate different sorting searching techniques and different data structure to develop application.

MCSE 103- Advanced Computer Architecture

CO	Student will be able to
CO1	Design different processor architectures, system-level design process, components of a memory hierarchy.
CO2	Understand and address data and control hazards in pipelined processors,
CO3	Apply parallel computing concepts to solve real-world problems effectively.
CO4	Manage task distributed across multiple processors efficiently.
CO5	Illustrate techniques for performance evaluation and optimization of pipelined and vector processor

MCSE 104- Object Oriented Technology

CO	Student will be able to
CO1	Grasp fundamental OOP concepts such as encapsulation, inheritance, polymorphism and abstraction.
CO2	Apply methodologies like Booch and Chen and Chen for modeling and designing software systems.
CO3	Discuss loops and control statements using file streams to read from and write to external files.
CO4	Hands-on experience with OODBMS like GemStone/ O2/orion
CO5	Understand how CORBA can work alongside other distributed technologies.

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CO	MCSE-105 ADVANCED COMPUTER NETWORKING
CO	Student will be able to
CO1	Understand network layered architecture of OSI model and LAN Standards with its protocols
CO2	Understand various protocols like TCP, UDP, SCTP and concepts comes under Transport layer.
CO3	Gain practical skills in configuring routers, including setting up IP addresses, routing tables, and security features.
CO4	Implement VPNs, ATM networks and routing equipment.
CO5	Discusss Wireless LAN, GSM Architecture and various concept of Mobile and Wireless Networks.

CO	MCSE 106 Lab-I MCSE-103 MCSE-105
CO	Student will be able to
CO1	Ability to design and optimize computer systems for performance, power, and reliability
CO2	Understanding of instruction-level parallelism and pipelining
CO3	Hands-on experience with advanced computer networking protocols and technologies like TCP/IP and IPv6
CO4	Understanding of network performance optimization and quality of service (QoS)
CO5	Familiarity with network simulation and emulation tools

CO	MCSE 107 Lab-I MCSE-102 MCSE-104
CO	Student will be able to
CO1	Develop code for real life problems like shortest path and MST using graph theory.
CO2	Apply various sorting, searching and hashing techniques
CO3	Ability to design and develop complex software systems using OOP principles
CO4	Apply OOAD techniques to design and develop software systems that meet real-world requirements
CO5	Build program for non linear data structures to solve various computing problems.

CO	MCSE 201 - Web Technology and Commerce
CO	Student will be able to
CO1	Apply networking technologies to design, implement, and troubleshoot networks in real-world scenarios
CO2	Analyze and develop static interactive web pages using HTML, CSS and XML.
CO3	Analyze the impact of E-commerce on business models and strategy.
CO4	Rectify problems in internet payment systems and e-governance.

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CO5	Apply knowledge of the benefits of WAP for e-commerce and Encryption schemes.
	MCSE- 202 Information theory, coding and cryptography
CO	Student will be able to
CO1	Applying mathematical techniques to communication systems
CO2	Apply stochastic processes to model real-world phenomena.
CO3	Utilize software tools for simulating and analyzing the performance of coded communication systems.
CO4	Design and develop secure communication systems using coding techniques.
CO5	Recognize the ethical responsibilities of using cryptographic techniques for secure communications.

	MCSE- 203 Advanced Concept in Data Bases
CO	Student will be able to
CO1	Implement databases for real-time applications using DBMS.
CO2	Explain in detail advanced query processing and techniques involved in query optimization
CO3	Analyze database with distributed database concepts and its structures
CO4	Implement data modeling and schema development
CO5	Discuss the principles and methodologies of data mining.

	MCSE- 204 System Programming
CO	Student will be able to
CO1	Implement language processors or programming tools.
CO2	Apply compiler construction techniques to solve real-world problems,
CO3	Develop compilers that generate efficient code for distributed systems
CO4	Understand resource allocation and scheduling principles
CO5	Case studies of prominent multiprocessor operating systems, such as Unix, Amoeba, and Andrew

	MCSE- 205 Soft Computing
CO	Student will be able to
CO1	Develop intelligent systems leveraging the paradigm of soft computing techniques
CO2	Demonstrate the models of artificial neural network systems for classification problem.
CO3	Apply unsupervised learning techniques like Kohonen's Self-Organizing Maps
CO4	Apply fuzzy logic and improve system performance and accuracy in pattern recognition
CO5	Understand the genetic algorithm concepts and their applications.

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\multicolumn{2}{l}{MCSE 206 Lab-I MCSE-203 MCSE-205}	
CO	Student will be able to
CO1	Develop intelligent database systems that support decision-making and automation
CO2	Create queries for interacting with database.
CO3	Build relational database application using MySQL.
CO4	Design and develop intelligent systems that can learn and adapt.
CO5	Apply soft computing techniques to solve real-world problems

MCSE 207 Lab-I MCSE-201 MCSE-204	
CO	Student will be able to
CO1	Developing web applications using HTML, CSS, JavaScript, and server-side programming
CO2	Implementing database integration and backend systems
CO3	Apply system programming concepts to real-world problems
CO4	Implement a compiler for a programming language
CO5	Build dynamic web applications with a robust frontend and backend.

MCSE 301 Data Warehousing & Mining	
CO	Student will be able to
CO1	Understand, apply and evaluate data mining techniques on real data.
CO2	Demonstrate proficiency in using clustering and association rule algorithms.
CO3	Apply advanced data mining techniques like neural networks, AI, and genetic algorithms.
CO4	Demonstrate proficiency in using various tools for time series analysis and event prediction.
CO5	Critically evaluate image and video mining methods for knowledge discovery and retrieval.

MCSE 302 (A) – Network Security	
CO	Student will be able to
CO1	Evaluate the security of conventional encryption algorithms in different scenarios.
CO2	Illustrate the mathematical concepts behind public key cryptography
CO3	Evaluate the performance and security characteristics of hash functions in real-world scenarios.
CO4	Analyze the security strengths and weaknesses of cryptographic systems
CO5	Implement innovative approaches to designing trusted systems that address evolving cybersecurity challenges

Director
Technocrats Institute of Technology
(Excellence)
Anand Nagar, Bhopal

TECHNOCRATS INSTITUTE OF TECHNOLOGY (EXCELLENCE)
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Affiliated To Rajeev Gandhi Proudyogiki Vishwavidyalaya, Bhopal
Anand Nagar Post Piplani, BHEL, Bhopal-21, Ph. No.- 0755-2751801 Fax- 0755-2751679 website:www.titexcellence.net

CO	MCSE 303 – Seminar
CO	Student will be able to
CO1	Identify relevant information, defining and explain topics under discussion.
CO2	Understand problem solving skills and apply theoretical knowledge.
CO3	Demonstrate the ability to learn and write both informal (scientific note taking) and formal (research paper) writing.
CO4	Calculate information, use and apply relevant theories.
CO5	Develop ideas through creating work.

CO	MCSE 304 – Dissertation Part- I
CO	Student will be able to
CO1	Identify the complex engineering problems and Understand different methodologies for documentation.
CO2	Identify the research topic/area in the field of Computer Science and Engineering to carry out independent research.
CO3	Examine the key stages to analize / develop the research.
CO4	Select the suitable method which leads to appropriate results.
CO5	Design engineering solutions to various problems used to benefit society.

CO	MCSE 401 – Dissertation Part- II
CO	Student will be able to
CO1	Understand the process to carry out research in written format with reference to existing literature.
CO2	Analyze and synthesize research finding to the agreed area of research.
CO3	Apply algorithm and methods to solve the specific research problem.
CO4	Develop result on the basis of evaluation and analysis undertake.
CO5	Develop your result and conclusion with reference to existing literature and proposed methodologies.

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