CO/PO

DEPARTMENT	PROGRAMME SPECIFIC OUTCOME
	 PSO1: Understand the theoretical and mathematical foundations of Artificial Intelligence PSO2:Understand the concepts of system architecture, hardware, software and network configuration PSO3:Acquire logical thinking and problem-solving skills
BSc Artificial Intelligence(BSc AI)	to find solutions in the software domain PSO4:Design, analyse and develop code-based solutions for the algorithms PSO5: Address the industry demands and assimilate
	technical, logical and ethical skills needed for the industry PSO6: Adapt to emerging trends and tackle the challenges in the field of AI.
	PROGRAMME OUTCOME
	PO1:Knowledge Acquisition:
	and their impact on the chosen discipline of study.
	PO2:Communication, Collaboration, Inclusiveness, and

Leadership:
Become a team player who drives positive change through effective communication, collaborative acumen, transformative
leadership, and a dedication to inclusivity.
PO3:Professional Skills:
Demonstrate professional skills to navigate diverse career paths with confidence and adaptability.
PO4:Digital Intelligence:
Demonstrate proficiency in varied digital and technological tools to understand and interact with the digital world, thus effectively processing complex information.
PO5:Scientific Awareness and Critical Thinking:
Emerge as an innovative problem-solver and impactful mediator, applying scientific understanding and critical thinking to address challenges and advance sustainable solutions.
PO6:Human Values, Professional Ethics, and Societal and Environmental Responsibility:
Become a responsible leader, characterized by an unwavering commitment to human values, ethical conduct, and a fervent dedication to the well-being of society and the environment.
PO7:Research, Innovation, and Entrepreneurship:
Emerge as a researcher and entrepreneurial leader, forging collaborative partnerships with industry, academia, and communities to contribute enduring solutions for local, regional, and global development.

Programme : BSc Artificial Intelligence(BSc AI)		
COURSE CODE & COURSE NAME	COURSE OUTCOME At the end of this BSc AI course the student will able to	COGNITIV E LEVEL
Cognitive level- Remember –(R),Understand –(U), Apply- (Ap),Evaluate- (E), Create- (C)Analyse(An)
	Semester 1	
AIN1CJ101/ AIN1MN100 Fundamentals of Computers and Computational Thinking	CO1: Develop a foundational knowledge of computing systems, encompassing their historical development, evolutionary milestones, and the notable contributions of key figures in the field.	U
	CO2: Acquire familiarity with diverse hardware components constituting a computer system.	U
	CO3: Gain practical expertise by engaging in hands-on activities focused on the installation and configuration of diverse hardware components within a computer system.	Ар
	CO4: Explore the spectrum of software types, and actively participate in the partitioning, installation, and configuration of operating systems to cultivate a comprehensive understanding of software systems.	Ар
	CO5: Develop a foundational understanding of computer science as a discipline, examining problems through the lens of computational thinking and cultivating analytical skills to address challenges in the field.	An
	CO6: Represent complex problems using algorithmic approaches and enhance problem-solving skills by visualizing solutions through the utilization of various software tools.	Ар
Semester 2		

Programme : BSc Artificial Intelligence(BSc AI)			
COURSE CODE & COURSE NAME	COURSE OUTCOME At the end of this BSc AI course the student will able to	COGNITIV E LEVEL	
	CO1:Acquire a comprehensive understanding of propositional logic and its applications, with a focus on constructing and interpreting truth tables.	U	
	CO2:Able to proficiently define and manipulate sets, analyse relations and functions and their representation by Venn diagrams	U	
	CO3:Acquire a basic understanding of graph theory including representations, types of graphs, their properties such as connectivity, cycles, paths and degrees.	U	
AIN2CJ101/ AIN2MN100			
Computational Logic for Artificial Intelligence	CO4:Able to demonstrate a deep understanding of advanced graph theory concepts, focusing on Euler's graph,Hamiltonian graphs, Isomorphism and Homeomorphism.	U	
	CO5:Able to proficiently understand the tree data structures, spanning trees and associated algorithms for solving problems such as Prim's and Kruskal.	U	
	CO6:Represent various mathematical problems using algorithmic approaches and enhance problem-solving skills by visualizing solutions through the utilization of software tools.	U,Ap	
	Semester 3		

Programme : BSc Artificial Intelligence(BSc AI)		
COURSE CODE & COURSE NAME	COURSE OUTCOME At the end of this BSc AI course the student will able to	COGNITIV E LEVEL
AIN3CJ201 Mathematical Foundation for Artificial Intelligence	CO1:Reflect the concept of matrices and determinants as a way to depict and streamline mathematical ideas to perform basic operations. CO2:Able to find the inverse of squarematrices using different methods and demonstrate a solid understanding of eigen values.	U U
	CO3: Proficiency in solving linear equations using different techniques and understanding the geometric interpretation of solutions.	U
	CO4: Gain proficiency in representing vectors geometrically and algebraically,understanding vector addition, dot and cross products.	U
	CO5: Able to apply differential and integral calculus to various functions encountered in computer applications such as polynomials, exponentials and logarithmic functions.	U
	CO6: Represent various mathematical problems using algorithmic approaches and enhance problem-solving skills by visualizing solutions through the utilization of software tools.	U,Ap
AIN3CJ202/ AIN3MN200 Data Structures and Algorithm	CO1: Differentiate basic data structures(arrays, linked lists, stacks, queues)based on their characteristics, operations, and real-world applications.	U

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COURSE CODE & COURSE NAME	COURSE OUTCOME At the end of this BSc AI course the student will able to	COGNITIV E LEVEL
	CO2: Perform basic operations (e.g., insertion, deletion, search) on fundamental data structures using a chosen programming language.	Ap
	CO3 Identify the properties and applications of advanced data structures (trees,graphs).	Ар
	CO4 Investigate the properties of various searching and sorting Techniques	U
	CO5 Demonstrate critical thinking and problem-solving skills by applying data structures and algorithms to address complex computational challenges.	Ap
	CO6 Implement and analyse different data structure algorithms (to solve practical problems.	Ар
	Semester 4	
AIN4CJ203 Object Oriented Programming in Java	CO1: To understand the concepts and features of Object-Oriented Programming (OOPs)	U
	CO2: To practice programming in Java	Ар
	CO3: To learn java's exception handling mechanism, I/O operations and multithreading.	Ap
	CO4 : To learn java's O operations and multithreading.	Ар

Programme : BSc Artificial Intelligence(BSc AI)		
COURSE CODE & COURSE NAME	COURSE OUTCOME At the end of this BSc AI course the student will able to	COGNITIV E LEVEL
	CO5 :Implement programs using Java Database Connectivity	Ар
	CO6: Students will be capable of developing Graphical User Interface (GUI) applications using Swing, understanding layout management, and implementing basic event handling.	Ap
AIN4CJ204 Database Management System	CO1: A comprehensive understanding of fundamental concepts in database management systems and its application	U
	CO2 :Understand concepts of Relational Data Model and Normalization Techniques	U
	CO3: Apply principles of entity-relationship modeling and normalization techniques to design efficient and well-structured databases that meet specified requirements.	Ap
	CO4: Acquire expertise in crafting and executing SQL queries for the retrieval, updating, and manipulation of data, showcasing adept skills in database querying and data manipulation	Ap
	CO5: Comprehend and apply strategies for managing transactions and implementing mechanisms for controlling concurrency, ensuring the database's consistency and reliability in environments with multiple users.	Ap

Programme : BSc Artificial Intelligence(BSc AI)		
COURSE CODE & COURSE NAME	COURSE OUTCOME At the end of this BSc AI course the student will able to	COGNITIV E LEVEL
	CO6: Explore and analyze recent trends in database management systems, with a focus on unstructured databases, NoSQL technologies	An
AIN4CJ205 Foundations of Artificial Intelligence and Machine learning	CO1: Differentiate various knowledge representation methods, AI operations, Machine learning approaches and real-world applications.	U
	CO2: Master Problem-Solving Techniques (search algorithms, heuristic approaches, and informed search strategies). Analyse and evaluate its efficiency.	Ap
	CO3: Investigate the properties and applications of various machine learning techniques	Ар
	CO4: Evaluate Artificial Intelligence Search algorithms and Machine learning approaches' efficiency.	U
	CO5 Implement and analyse Machine learning algorithms to solve practical problems.	Ap
	CO6 Apply Concepts in Real-World Projects	Ар
	Semester 5	
AIN5CJ301 Python Programming	CO1: Understand the basic concepts of Python programming language.	U

Programme : BSc Artificial Intelligence(BSc AI)			
COURSE CODE & COURSE NAME	COURSE OUTCOME At the end of this BSc AI course the student will able to	COGNITIV E LEVEL	
	CO2: Apply problem-solving skills using the basic constructs in Python programming	Ap	
	CO3: Apply modular programming using functions in Python	Ар	
	CO4: Analyze the various data structures and operations on it using Python	An	
	CO5 Apply various packages available in Python	Ар	
	CO6 Apply visualization tools in Python	Ap	
AIN5CJ302 Operating System	CO1: Summarize the History, Objectives and Functions of an operating system	U	
	CO2 :Understand process management concepts: Process Control Block,States, Scheduling, Operations, Inter process Communication	U	
	CO3 :Evaluate various processor scheduling strategies, algorithms	E	
	CO4 :Apply process synchronisation concepts for effective process management	Ар	

Programme : BSc Artificial Intelligence(BSc AI)		
COURSE CODE & COURSE NAME	COURSE OUTCOME At the end of this BSc AI course the student will able to	COGNITIV E LEVEL
	CO5 :Analyse conditions for deadlock occurrence and methods of resolving.	An
	CO6: Describe various memory management techniques, including paging, segmentation and virtual memory	U
	CO7: Develop Shell Scripts using Linux	С
AIN5CJ303 Expert Systems and Fuzzy Logic	CO1: Explain the fundamental concepts of fuzzy set theory and interpret membership functions and linguistic variables.	U
	CO2: Design and implement fuzzy controllers for decision-making.Develop fuzzy inference systems (FIS) for various applications and apply fuzzy clustering techniques for pattern recognition.	U
	CO3: Describe the role of expert systems in artificial intelligence and Understand knowledge representation techniques in expert systems.	Ар
	CO4: Explain the functioning of inference engines in rule-based systems.	Ар
	CO5: Acquire domain knowledge for expert system development.	An
	CO6 Construct a knowledge base and define rules for an expert system and implement validation and refinement techniques for expert systems.	Ар

Programme : BSc Artificial Intelligence(BSc AI)		
COURSE CODE &	COURSE OUTCOME	COGNITIV
COURSE NAME	At the end of this BSc AI course the student will able to	E LEVEL
	Semester 6	
AIN6CJ304/ AIN8MN304	CO1: Understand the production systems and	U
Automation and Robotics	automation, enabling them to analyse,optimize and evaluate the different levels of automation.	
	CO2: Able to recognize the difference between the process industries, manufacturing industries, continuous and discrete control system.	U
	CO3: Proficiency in understanding the various forms of process control which includes the direct digital control, programmable logic control, distributable control systems etc.	U
	CO4:Familiarize with the various hardware components used for automation and process control such as sensors, actuators analog-digital converters etc.	U
	CO5: Understand the present developments in the field of automation and robotics and how integrating artificial intelligence can contribute to the future of these systems.	U
	CO6:Represent various problems using algorithmic approaches and enhance problem-solving skills by visualizing solutions through the utilization of software tools.	U, Ap
	CO1:Proficiency in Excel Basics and Data Handling	U

Programme : BSc Artificial Intelligence(BSc AI)		
COURSE CODE & COURSE NAME	COURSE OUTCOME At the end of this BSc AI course the student will able to	COGNITIV E LEVEL
	CO2:Data Visualization Skills	U
	CO3 Understanding of Data Analytical Techniques	U
AIN6CJ305/ AIN8MN305 Fundamentals of Data	CO4 Data Cleaning and Formatting Proficiency	Ар
Science	CO5 Advanced Excel Operations and Analysis	An
	CO6 Application of Data Analytics in Practical Scenarios	U
	CO7 Effective Report Generation and Presentation Skills	С
AIN6CJ306/ AIN8MN306 Machine Learning Algorithms	CO1 Understand basic concepts of machine learning, including supervised learning, unsupervised learning, and reinforcement learning	U
	CO2 Understand the mathematical foundations of machine learning algorithms, including concepts such as optimization, linear algebra, probability, and statistics	U
	CO3 Demonstrate proficiency in various machine learning algorithms, such as linear regression, logistic regression, decision trees, support vector machines, k-nearest neighbours, clustering algorithms, and neural network	U
	CO4 Explore techniques for feature engineering and feature selection to improve the performance of machine learning models.	U
	CO5 Evaluate machine learning models using appropriate metrics and techniques, including crossvalidation, precision, recall, F1 score, ROC curves, and confusion matrices.	Ap

Programme : BSc Artificial Intelligence(BSc AI)				
COURSE CODE & COURSE NAME	COURSE OUTCOME At the end of this BSc AI course the student will able to	COGNITIV E LEVEL		
	CO6 Develop critical thinking skills to analyse and solve complex problems using machine learning approaches.	Ар		
AIN7CJ401 Natural Language Processing	CO1 Application of NLP techniques and key issues	U		
	CO2 Different analysis levels used for NLP	U		
	CO3 Feature extraction from texts, feature engineering	Е		
	CO4 Developing text classifier	Ар		
	CO5 Evaluating performance of model.	An		
	CO6 Building pipelines for NLP	U		
	CO7 Develop NLP techniques using python libraries	С		
AIN7CJ402 Knowledge Engineering	CO1 Understand basics of Knowledge Engineering	U		
	CO2 Apply methodologies and modelling for agent design and development	AP		
	CO3 Design and develop ontologies	AP		
	CO4 Apply reasoning with ontologies and rules	AP		
	CO5 Understand learning and rule learning	U		
	CO6 Develop theoretical knowledge to design a knowledge based system	AP		
AIN7CJ403 SOFT COMPUTING	CO1 Understand the foundational principles of soft computing and the historical factors influencing its development.	U		
	CO2 Analyse the properties of Fuzzy sets and Fuzzy relations	AP		
	CO3 Apply fuzzy logic concepts to solve real-world problems, showcasing proficiency in designing and implementing fuzzy systems.	AP		

Programme : BSc Artificial Intelligence(BSc AI)				
COURSE CODE & COURSE NAME	COURSE OUTCOME At the end of this BSc AI course the student will able to	COGNITIV E LEVEL		
	CO4 Master the concepts of Genetic algorithms and their operations	U		
	CO5 Design and implement solutions using fuzzy logic, neural networks, and genetic algorithms for diverse applications.	AP		
	CO6 Evaluate and present real-world scenarios where soft computing techniques can be effectively applied	Ар		
AIN7CJ404 Introduction to	CO1 Understand Basics of Generative models.	U		
Generative Models Type of Course Major	CO2 Study of tools And practical implementation of models.	AP		
	CO3 Understand the operations of different generative models	U		
	CO4 Learn different applications of Generative models.	U		
	CO5 Understand the future scope and limitations of Generative models.	E		
AIN7CJ405 Data Science Programming using R	CO1 Demonstrate how to install and configure RStudio	U		
	CO2 Apply OOP concepts in R programming	U		
	CO3 Explain the use of data structure and loop functions	U		
	CO4 Understand the concept of data frames	U		
	CO5 Implement the DPLYR package and Data Visualization	AP		
	CO6 Implementation of R Programming concepts	AP		
AIN8CJ406 Data Mining	CO1 Understand the fundamental concepts and principles of data mining.	U		
	CO2 Demonstrate proficiency in preprocessing techniques such as cleaning, transformation, and reduction of data.	U		

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COURSE CODE & COURSE NAME	COURSE OUTCOME At the end of this BSc AI course the student will able to	COGNITIV E LEVEL		
	CO3 Understand popular data mining algorithms and models, such as decision trees, k-means clustering, and association rule algorithms.	U		
	CO4 Explore various methods to Evaluate and interpret the results of data mining models using appropriate performance metrics.	U		
	CO5 Understand the role of data mining in extracting patterns and knowledge from large datasets.	U		
	CO6 Apply data mining techniques to real-world problems and datasets, emphasizing practical applications in various domains	AP		
AIN8CJ407 BLOCKCHAIN TECHNOLOGY	CO1 Understand the basics of cryptographic building blocks in blockchain technology.	U		
	CO2 Explain the fundamental concepts of blockchain technology.	U		
	CO3 Summarize the classification of consensus algorithms	U		
	CO4 Explain the concepts of first decentralized cryptocurrency bitcoin	U		
	CO5 Describe the use of smart contracts and its use cases	U		
	CO6 Develop simple block chain applications	U		
AIN8CJ408 Deep Learning	CO1 Master key concepts of machine learning, understanding various layers of neural network.	U		
	CO2 Understand and implement the backpropagation algorithm for training neural networks, demonstrating the ability to compute gradients and update weights.	U		
	CO3 Analyze and compare different activation functions used in neural networks, explaining their role in the learning process.	U		

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COURSE CODE & COURSE NAME	COURSE OUTCOME At the end of this BSc AI course the student will able to	COGNITIV E LEVEL		
	CO4 Design and implement feedforward neural networks for various applications, considering aspects such as model architecture, activation functions, and initialization methods.	Ap		
	CO5 Master the principles of convolutional neural networks, including convolutional layers, pooling layers, and their applications in computer vision. Master various regularization	U		
	CO6 Apply deep learning concepts to solve real-world problems, demonstrating the ability to choose appropriate architectures and hyperparameters.	Ap		
AIN8CJ489 Research Methodology	CO1 Understand the psychology of research which includes different perspectives and necessity of research.	U		
	CO2 Apply the research knowledge to formulate a suitable problem statement by adopting different research methods and models	U		
	CO3 Understand different methods of Collection, Validation and Testing of Data	U		
	CO4 To understand the data processing and analysis techniques	U		
	CO5 Analyze the research outcome by using suitable statistical tool.	U		