



M.Sc. ARTIFICIAL INTELLIGENCE
COURSE OUTCOMES

Course Title	Course Code	Course Outcomes
Semester I		
COMPUTER ARCHITECTURE AND PARALLEL PROGRAMMING	AI 010101	<p>CO1-Understand basic concepts of parallel processing on high performance computers</p> <p>CO2-Understand the principles behind the designing of parallel algorithms and use different techniques to improve parallelism</p> <p>CO3-Analyse the communication between processes in simple interconnection networks</p> <p>CO4-Identify the sources of overhead in parallel programs and estimate the performance of parallel systems</p> <p>CO5-Perform parallel computing on GPU using CUDA toolkit</p>
Introduction to Artificial Intelligence	AI 010102	<p>CO1-Understanding the AI Introduction and History</p> <p>CO2-Apply the appropriate search strategies</p> <p>CO3-Analyse the different knowledge representation schemes and understand inconsistencies & uncertainties in reasoning</p> <p>CO4-Examining Game playing procedures & understanding the planning system in AI</p>

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		CO5-Understanding Natural Language and Learning machines
Database technology and NoSql	AI 010103	CO1 - Summarize the overview of database systems CO 2 – Illustrate relational model CO 3 – Familiarize with the concepts of SQL CO 4 – Understanding the concepts of transaction management, concurrency control and distributed systems. CO 5 – Apply NoSql data Management techniques
Mathematical Foundations of AI	AI 010104	CO1:Explaine the concept of vector algebra and system of linear equations CO2:Analyse vector space and affine spaces CO3: Determine matrix characterstics CO4:Formulate derivatives and partial derivatives CO5: Solve gradient of a vector
Software Development Lab- I a.OOP using Java b.Database Technology Lab (Mysql & Mongodb)	AI 010105	CO1-Develop program s based on oops concepts CO2-Implement concepts like interface, package, thread and exception CO3Create applet programs CO4-Implement the java programs using Swing controls

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		<p>CO5-Develop GUI applications with database connectivity.</p> <p>CO1: Develop query using MySql and Mongodb</p> <p>CO2: Creation of collection and fields.</p> <p>CO3: Implement data manipulation on My Sql and Mongodb</p> <p>CO4: Develop advanced query using MySql and Mongodb</p> <p>CO5: Handling conditional query in Mongodb</p>
Semester II		
Statistical Computing	AI 010201	<p>CO1, Analyze Probability Distribution</p> <p>CO2, Evaluate Sampling Distribution</p> <p>CO3, Test the given Hypothesis</p> <p>CO4, Examine Regression</p> <p>CO5, Test Analysis of Variance</p>
SOFT COMPUTING	AI 010202	<p>CO1-Understand fundamental concepts of artificial neural networks</p> <p>CO2-Acquire knowledge on various supervised neural networks and their functioning</p> <p>CO3-Apply associative memory networks for pattern association</p> <p>CO4-Understand fuzzy logic and use</p>

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		<p>membership functions to represent fuzzy sets</p> <p>CO5-Differentiate various hybrid intelligent systems including evolutionary neural networks</p>
Data mining Techniques	AI 010203	<p>CO1-Illustrate Data Warehousing And Mining Principles.</p> <p>CO2-Demonstrate KDD, Data Mining Techniques, Data Cleaning, and Feature Selection</p> <p>CO3-Demonstrate Association Rules in Data Mining.</p> <p>CO4- -Examine the Performance Of Classification Algorithms</p> <p>CO5-Examine the Performance Of Clustering Algorithms</p>
Data Structures and Algorithm Analysis:	AI010204	<p>CO1 - Summarize the concepts of various data structure</p> <p>CO 2 – Understanding the concepts of linked list</p> <p>CO 3 - Illustrate searching and sorting in DS</p> <p>CO 4 - Provide complete knowledge of Divide and conquer and greedy method</p> <p>CO 5 – Familiarize dynamic programming model, backtracking and brank and bound method.</p>

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<p>Software Development Lab-II</p> <p>a) Soft Computing using Python</p>	<p>AI 010205</p>	<p>CO1 Implement programs based on different data types, control structures, functions, class, constructor and methods</p> <p>CO2 Perform file handling operations, modules, built-in-exceptions and user defined exceptions and to implement database connectivity using SQLite</p> <p>CO3 Perform data preprocessing with pandas and numeric analysis using NumPy</p> <p>CO4 Develop programs for implementing plots and linear regression</p> <p>CO5 Develop classification and clustering algorithm using Scikit-learn</p>
<p>b) Statistical Techniques with R.</p>		<p>CO1 Understand the basics of R programming</p> <p>CO2 Import and export data using data frames in R</p> <p>CO3 Perform data pre-processing operations and statistical operations using R</p> <p>CO4 Apply KNN classification techniques in disease-diagnosis problem</p> <p>CO5 Analyse market basket using Association Rules</p>
<p>Semester III</p>		
<p>Machine Learning</p>	<p>AI 010301</p>	<p>CO 1- Summarizing the basic principles of Machine Learning</p> <p>CO 2- Illustrate the basic principles of Deep</p>

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		<p>Learning</p> <p>CO 3 -Applying the concept of Convolutional Neural Network</p> <p>CO 4- Modeling different Deep unsupervised techniques</p> <p>CO 5-Experimenting the applications of Deep Learning</p>
Introduction to Data analytics	AI 010302	<p>CO 1- Overview of Data Science</p> <p>CO 2- Outline Supervised learning estimation techniques and solve problems including predictor and response variables</p> <p>CO 3-Build Supervised learning classification models</p> <p>CO 4- Understand and apply data reduction techniques</p> <p>CO5 - Application of SVM, Decision tree and Random forest algorithm</p>
Pattern Recognition	AI 010303	<p>CO1 -Understand the basic concepts in Pattern Recognition</p> <p>CO 2-Understand the Pattern Recognition Theories such as Bayes Classifier.</p> <p>CO 3: Analyze the concepts of Maximum Likelihood and Bayesian Parameter Estimation.</p> <p>CO 4-Differentiate among types of classifier for algorithm independent machine learning.</p> <p>CO 5-Understand the various clustering techniques in Pattern Recognition.</p>
Social Media Mining	AI 800301	<p>CO1 -Understand how accurately analyse voluminous complex data set in social media</p>

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		<p>and other sources</p> <p>CO2 -Examine the models and algorithms to process large data sets</p> <p>CO3 -Compartmentalize various methods for community detection</p> <p>CO4 -Differentiate types of information diffusion</p> <p>CO5 -Familiarize methodologies for social media recommender system</p>
AI 010304	<p>Software Development Lab-III</p> <p>Mini Project</p>	<p>CO1:- -Develop skills in doing project, technical presentations and report preparation</p> <p>CO 2-Identification and execution of preliminary works on final semester projects</p> <p>CO 3-. Develop ability to acquire and apply Machine Learning Techniques on real world applications using python or R</p>
	b)Data Analytics with R	<p>CO1: Implement Linear, Multiple Linear and logistic regression on different datasets.</p> <p>CO 2-Build machine learning models using Decision Tree and Random Forest.</p> <p>CO3- Create machine Learning models using Naive Bayes and K-Nearest Neighbor.</p>

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Semester IV		
Digital Image Processing	AI010401	CO1 Understand the fundamental concepts of a digital image processing system. CO2 Familiarize the various digital processing operations. CO3 Familiarize Image enhancement and restoration CO4 Understand Image segmentation and compression CO 5 Differentiate types of Morphological operations
Internet of Things	AI 800404	CO1-understand IoT Networking Core and Network Fundamentals CO2-understand the architecture of Internet of Things CO3-Analyze IoT Application development

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		<p>CO4-Realize the revolution of Internet in Mobile Devices, Cloud, Sensor Networks</p> <p>CO5-Analyze the advanced application areas of IoT.</p>
Information Retrieval and Management	AI 810406	<p>CO1-Understand an open source search engine framework and explore its capabilities</p> <p>CO 2-Discuss representation of documents in different ways and discuss its effect on similarity calculations and on search</p> <p>CO 3-Illustrate Modify Page Rank algorithm and HITS algorithm or Personalization or Semantic aspects</p> <p>CO 4- Demonstrate design and implementation of an innovative feature in a search engine and explain the search components affected by the innovation</p>

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		CO5-Depict design of smart information management system with Information Retrieval components
Main Project	AI 010402	CO1-Recognize the scope and requirements of the proposed system CO2-Perform Data acquisition CO3-Implement Data Exploration techniques CO4-Develop an environment sustainable model. CO5-Test and implement the model developed .



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