Aror University of Art, Architecture, Design & Heritage Sukkur.

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BS(Artificial Intelligence)
Fall-2024
Artificial Intelligence

Course Title: Artificial Intelligence
Course Code: CSC205
Credit Hours: (2+1)
Course Instructor: Abdul Haseeb Shaikh
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Description:

Dive into the fundamentals of Artificial Intelligence in this comprehensive course designed for BS(AI) students. Explore key concepts such as machine learning, neural networks, natural language processing, and Generative AI. Through hands-on projects and real-world case studies, you'll gain practical experience in designing and implementing AI systems. This course emphasizes both theoretical understanding and practical application, preparing you for advanced studies and careers in the rapidly evolving field of AI.

Aims and Objectives:

• To understand and Implement the Basic Constructs of Python Language
• To Analyze and Visualize the Data using Pandas and Numpy
• To Implement ML and DL Models using (Scikit Learn, Tensorflow, keras)
• To Understand and Implement NLP Concepts using (Spacy, NLTK, Gensim)
• To Implement Generative AI Concepts and Use Vertex AI

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Assessment:

S. No	Assessment Activities	Percentage	Total Activities
1.	Sessional: Quizzes/ Assignments (Quizzes & Assignments)	30%	5
2.	Mid Term Exam	30%	1
3.	Final Exam	40%	1

Course Learning Outcomes (CLOs):

No.	Course Learning Outcome	Domain	Level	Assessment Tool
C1	**Master** core AI and ML Concepts	C	2	Class Participation, Quizzes, Mid Exams., Assignments
C2	**Develop and apply** Deep Learning Models	C	3	Class Activity, Quiz, Assignments
C3	**Implement and Evaluate** Generative AI Techniques	C	3	Worksheets, Project

Domains:
C=Cognitive, A=Affective, P=Psychomotor
Levels:
Cognitive = {1: Remembering, 2: Understanding, 3: Applying, 4: Analyzing, 5: Evaluating,
5: Creating}
Affective = {1: Receiving, 2: Responding, 3: Valuing, 4: Organizing, 5: Characterizing}
Psychomotor= {1: Imitation, 2: Manipulation, 3: Precision, 4: Articulation, 5: Naturalization}

Week Wise Lab Schedule:

Week No.	Lab Objectives
01	Use print() function to display output
	Use Input() function to get Input
	Use variables and Data Types
	Arithmetic and Relational Operators
02	Use Conditional Statements
	Use Logical Operators
	Use Loop Statements
03	Lists
	Tuples
	Sets
	Dictionaries
04	Data Analysis Using Pandas
05	Data Visualization using Matplotlib
06	Implementation of Decision Tree
	Implementation of SVM
07	Implementation of KNN Algorithm
08	Implementation of Linear Regression and Multivariate Regression
MID TERM EXAM	
09	Implementation of Clustering Algorithms
10,11	Implementation of BOW,TFID,N-GRAMS
12	Using Tensorflow and Keras to Implement Neural Network
13	Implementation of CNN
14	Using Pre-Trained CNN
15	Implementation of Generative AI
16	Vertex AI

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