


<p>C#</p> <ul style="list-style-type: none"> • Demonstrate Object Oriented Programming concepts in C# programming language • Design custom interfaces for applications and leverage the available built-in interfaces in building complex applications. • Illustrate the use of generics and collections in C# • Compose queries to query in-memory data and define own operator behaviour
<p>Question paper pattern:</p> <p>The question paper will have TEN questions. There will be TWO questions from each module. Each question will have questions covering all the topics under a module. The students will have to answer FIVE full questions, selecting ONE full question from each module.</p>
<p>Text Books:</p> <p>1. John Sharp, Microsoft Visual C# Step by Step, 8th Edition, PHI Learning Pvt. Ltd. 2016</p>
<p>Reference Books:</p> <p>1. Christian Nagel, "C# 6 and .NET Core 1.0", 1st Edition, Wiley India Pvt Ltd, 2016. Andrew Stellman and Jennifer Greene, "Head First C#", 3rd Edition, O'Reilly Publications, 2013. 2. Mark Michaelis, "Essential C# 6.0", 5th Edition, Pearson Education India, 2016. 3. Andrew Troelsen, "Prof C# 5.0 and the .NET 4.5 Framework", 6th Edition, Apress and Dreamtech Press, 2012.</p>

AI AND ML APPLICATION DEVELOPMENT LABORATORY (Effective from the academic year 2018 -2019) SEMESTER – VII			
Subject Code	18AIL76	CIE Marks	40
Number of Contact Hours/Week	0:2:2	SEE Marks	60
Total Number of Lab Contact Hours		Exam Hours	3 Hrs
Credits – 2			
Course Learning Objectives: This course will enable students to:			
<ul style="list-style-type: none"> • Explore the knowledge of AI and ML concepts and practice to groom students into well-informed application developers. • Demonstrate the knowledge of human cognition, Artificial Intelligence, Machine Learning and data engineering for designing intelligent systems • Apply computational knowledge and project development skills to provide innovative solutions. • Strong practice in AI and ML programming through a variety of AI and ML problems. • Develop AI and ML applications using front-end and back-end tools 			
<p>Descriptions (if any): 1. The programs can be implemented in either JAVA or Python.</p> <p>2. Data sets can be taken from standard repository</p>			


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Part A	
1.	Write a program to implement k-Nearest Neighbour algorithm to classify the iris data set. Print both correct and wrong predictions.
2.	Develop a program to apply K-means algorithm to cluster a set of data stored in .CSV file. Use the same data set for clustering using EM algorithm . Compare the results of these two algorithms and comment on the quality of clustering.
3.	Implement the non-parametric Locally Weighted Regression algorithm in order to fit data points. Select appropriate data set for your experiment and draw graphs
4.	Build an Artificial Neural Network by implementing the Backpropagation algorithm and test the same using appropriate data sets
5.	Demonstrate Genetic algorithm by taking a suitable data for any simple application.
6.	Demonstrate Q learning algorithm with suitable assumption for a problem statement.
PART B	
Mini Project	
<ul style="list-style-type: none"> Use Java, C#, PHP, Python, or any other similar front-end tool. Developed mini projects must be demonstrated on desktop/laptop as a stand-alone or web based application Installation procedure of the required software must be demonstrated, carried out in groups and documented in the journal. Indicative areas include: health care, education, agriculture, banking, library, agent based systems, registration systems, industry, reservation systems, facility management, super market etc., Similar to but not limited to: <ul style="list-style-type: none"> Handwritten Digit Recognition Prediction of Cardiac Arrhythmia type using Clustering and Regression Approach Hybrid Regression Technique for House Prices Prediction An Iris Recognition Algorithm for Identity Authentication An Approach to Maintain Attendance using Image Processing Techniques Unconstrained Face Recognition Vehicle Number Plate Detection System Detection of Fake News Stock Prediction using Linear Regression Prediction of Weather Report Analyzing Bike Sharing Trends Sentiment Analysis for Movie Reviews Analyzing and Recommendations of Music Trends Forecasting Stock and Commodity Prices Diabetes Prediction Speech Recognition Spam Detection using neural Networks in Python Combining satellite imagery and to predict poverty 	
Conduct of Practical Examination:	
<ul style="list-style-type: none"> Experiment distribution 	