

# BONAM VENKATA CHALAMAYYA INSTITUTE OF TECHNOLOGY AND SCIENCE (A) :: BATLAPALEM

## MASTER OF COMPUTER APPLICATIONS (MCA) (For Two-Year PG Programme)

<b>III Semester</b>		<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>
		0	0	3	1.5
<b>MACHINE LEARNING WITH PYTHON LAB (23MC3L07)</b>					

**Course Objectives:**

- Make use of Data sets in implementing the machine learning algorithms
- Implement the machine learning concepts and algorithms in any suitable language of choice.
- Design Python programs for various Learning algorithms.

**Course Outcomes(COs):** At the end of the course, student will be able to

- Implement procedures for the machine learning algorithms
- Design Python programs for various Learning algorithms
- Apply appropriate data sets to the Machine Learning algorithms
- Identify and apply Machine Learning algorithms to solve real world problems

**Note:** Consider any dataset from kaggle

**Experiment 1:**

Installation of Python and its packages (Pandas, NumPy, SciPy, matplotlib and scikit-learn)  
(Install Anaconda, Jupyter Notebook. Programs covering basic concepts in Python Programming)

**Basics of Python:**

Write a program to read two numbers from user and display the result using bitwise & , | and operators on the numbers.

Write a program to calculate the sum of numbers from 1 to 20 which are not divisible by 2, 3 or 5.

Write a program to find the maximum of two numbers using functions.

Implement slicing operation on strings and lists.

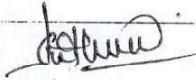
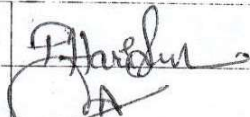
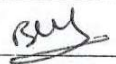




**Experiment 2:**

Implement python program to load structured data onto DataFrame and perform exploratory data analysis

Implement python program for data preparation activities such as filtering, grouping, ordering and joining of datasets.

**Experiment 3:**

Implement Python program to prepare plots such as bar plot, histogram, distribution plot, box plot.

University Nominee: Dr. Suneetha Eluri		Alumni Member Mr. Harisuresh Poliseti	
Subject Expert:1 Dr. B Kezia Rani,		Chairman : Mr. AVS M Ganesh	
Subject Expert: 2 Dr. Suneel Kumar Duvvuri		Member: Mr. G L N V S Kumar	
Representative from Industry. Mr. Narina Saikrishna			

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scatter plot.

### Experiment 4:

Implement Simple Linear regression algorithm in Python

Implement Gradient Descent algorithm for the above linear regression model

### Experiment 5:

Implement Multiple linear regression algorithm using Python.

### Experiment 6:

Implement Python Program to build logistic regression and decision tree models using the Python package statsmodel and sklearn APIs.

### Experiment 7:

Implement Python Program to perform the activities such as

- splitting the data set into training and validation datasets
- building model using Python package on training dataset and test on the validation dataset

### Experiment 8:

Write a Python program to implement k-Nearest Neighbour algorithm to classify the iris data set. Print both correct and wrong predictions.

### Experiment 9:

Implement Support vector Machine algorithm on any data set

### Experiment 10:

Write a program to implement the naive Bayesian classifier for a sample training data set stored as a .csv file. Compute the accuracy of the classifier, considering few test data sets.

### Experiment 11:

Write a Python program to construct a Bayesian network considering medical data. Use this model to demonstrate the diagnosis of heart patients using standard Heart Disease Data Set.

### Experiment 12:

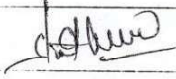
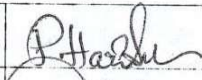




Assuming a set of documents that need to be classified, use the naive Bayesian Classifier model to perform this task. Built-in Java classes/API can be used to write the program. Calculate the accuracy, precision and recall for your data set.

### Experiment 13:

Implement PCA on any Image dataset for dimensionality reduction and classification of images into different classes

### Experiment 14:

Implement the non-parametric Locally Weighted Regression algorithm in order to fit data points. Select appropriate data set for your experiment and draw graphs.

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