DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

IVA066 - Machine learning using Python

Course outcomes:

- Understand the basics of Machine Learning
- Learn about Classification in Machine Learning
- Implement Unsupervised Learning using python

Syllabus:

UNIT I

Introduction Machine Learning-Applications of Machine Learning-Introduction Machine Learning Classifiers-Real Time Application of ML- Skin Cancer Detection-Basic Program development using Python-Hands-on Training in Python Program-Real Time Application of ML- ECG Signal Classification System-Preprocessing section in Machine Learning-Different Filter's design for Image Processing Application-Hands-on Training in Different Filter's for Image Processing Applications.

UNIT II

Real time Application of Flood prediction based on Data science- Hands on Training-Segmentation technique for Image/ Data Processing-Real time Application of Diabetic Retinopathy finding System-Hands-on Training in Feature Extraction Techniques-Real time Application of Brain Tumor Detection System- Hands-on Training in Machine Learning Classifier Techniques-Hands-on Training in Brain Tumor detection using Python-Introduction about Micro Controller based Machine learning Classifiers-Basics Program classes about Micro Controller-Real time Application of IOT-Irrigation System-Hands-on Training in Arduino with devices interfacing using Python-Real time Application of IoT.

UNIT III

Wireless control of Covid monitoring System-Interfacing of ECG and Pulse Sensor with Controller for IOT based Health Monitoring Applications using Python-Real Time Application of Machine Learning- Disease Predictions-Hands-on Training in Battery Energy management monitoring using

Machine Learning Techniques-Real time Application of ML- Covid Identification System-Proto Type development for Covid Identification System-Test Session-Feedback Session and Certificate Distribution.

Reference Text Books:

1. Allen B. Downey, ``Think Python: How to Think Like a Computer Scientist‘‘, 2nd edition, Updated for Python 3, Shroff/O‘Reilly Publishers, 2016.

2. R. Nageswara Rao, “Core Python Programming”, dreamtech 3. Python Programming: A Modern Approach, Vamsi Kurama, Pearson