VTU Virtual Internship Program

WEEK	DAY	Module Name	Module content	LAB
1	1	**Program Orientation**	Course orientation ,Evaluation metrics,Evaluation Criteria,Live and Recorded Classes deails	Pre -Peoject Development Courses
	2	**Pre-Project Development Courses**	Agile principle,Scrum Framework,User stories,	
	3		Repositories and Branching, Pull Requests and Code Reviews, GitHub Actions.	
	4		user-focused approach to solving problems through empathy, creativity, and iteration.	
2	1	**Machine Learning Basics**	Scikit -learn overview and understanding of ML models	Pre -requisites of ML
	2		Overview of Data Splitting and Model evaluation metrics	
	3			
	4		Data Aggreation using Python	
3	1	**Introduction to Machine Learning and IBM Watson**	Overview of machine learning, Key concepts, Types of machine learning,	LAB -exercise Based on ML and Case studies on Watson
	2		Supervised, unsupervised, and reinforcement learning,	
	3		Machine learning workflow, Introduction to IBM Watson, Capabilities, features, and services,	
	4			
4	1	**Exploratory Data Analysis (EDA)**	Building a simple ML sample model using Watson	Lab -Advance Data Analytics and Data visualization using pandas
	2		Data sources and types of data,handling missing data, Feature engineering.	
	3		Data transformation, Normalization, scaling, and encoding techniques	
	4		Data visualization, Data distributions, Data preprocessing with Pandas, Cleaning and transforming a dataset.	
5	1	**Supervised Learning - Regression and Classification**	tasks	Lab :Classification /regression Techniques using Supervised Learning
	2		models	
	3		Logistic regression, building a regression model, Classification with decision trees	
6	1	**Unsupervised Learning and Neural Networks**	Introduction to unsupervised learning, Clustering - K-means,	Lab :Clustering using unsupervised learning
	2			
	3		Dimensionality reduction , Hierarchical clustering	
7	1	**Unsupervised Learning and Neural Networks**	Principal component analysis (PCA),	Lab :Image classification Performace optimization
	2		Introduction to neural networks, and Architecture	
	3		Deep Learning,clustering with k-means	
8	1	**Neural Networks**	Building a neural network,Perceptron ,ANN	
	2		CNN -Image Classification,Understanding convolution layers, pooling, and flattening	
	3			
9	1	**Neural Networks**	RNN ,Sequence learning and temporal dependencies	Lab :RNN -Digit recognition using MNIST Data Sets
	2			
	3		Types of RNNs: LSTM	
10	1	**Natural Language Processing (NLP) and Model Evaluation**	Introduction to NLP, NLP pipeline and concepts,	Lab :Social Media Sentimental analysis
	2		Text preprocessing,	
	3		Classification techniques	
11	1	**Natural Language Processing (NLP) and Model Evaluation**	Bag of Words, TF-IDF, and word embeddings	Lab :Social Media Sentimental analysis
	2		Model evaluation metrics	
	3		Cross-validation and hyperparameter tuning, Sentiment analysis.	
12		**Project Work**		
13				
14				