Course Name: **Machine Learning Algorithms**
Duration: **60 Hours**

Module	Topics	Sub-Topics	Duration (in Hours)
Basics of Machine Learning	Basics of Machine Learning	Python Revision (numpy, Pandas, scikit learn, matplotlib)	12
		What is Machine Learning?	
		Machine Learning Use-Cases	
		Machine Learning Process Flow	
		Machine Learning Categories	
		Linear regression	
		Gradient descent	
		What is Classification and its use cases?	
		What is Decision Tree?	
		Algorithm for Decision Tree Induction	
		Creating a Perfect Decision Tree	
		Confusion Matrix	
		What is Random Forest?	
Supervised Machine Learning Algorithms (Regression)	Linear Regression	Simple Linear Regression	8
		Simple Linear Regression In Python	
		Multiple Linear Regression	
		Multiple Linear Regression In Python	
		Industry Relevance Of Linear Regression	
	Logistic Regression	Univariate Logistic Regression	8
		Multivariate Logistic Regression: Model	
		Building And Evaluation	
		Industry Applications	
Supervised Machine Learning Algorithms (Classification)	KNN Classifier	Data mining classifier technique	4
		Application of KNN classifier	
		Lazy learner classifier	
		Altering Hyperparameter(k) for better accuracy	
	Support Vector Classifier	Black box	4
		SVM hyperplane	
		Max margin hyperplane	
		Kernel tricks for nonlinear spaces	
		Kernel function	
		Multiple classification techniques	
	Decision Tree Classifer	Rule based classification method	4
		Different nodes for develop decision trees	
		Discretization	
		Entropy	
		Greedy approach	
		Information gain	
		Difference between Supervised and Unsupervised Learning	
		Prelims of clustering	

Unsupervised Machine Learning Algorithms	Clustering	Measuring distance between record and groups	5
		Linkage functions	
		Dendrogram	
	Dimensionality Reduction	Dimension reduction	5
		Application of PCA	
		PCA & it's working	
		SVD & it's working	
	Market Basket Analysis	Point of Sale	5
		Application of Association rules	
		Measure of association rules	
		Drawback of measure of association rules	
		Condition probability	
		Lift ratio	
Ensemble Learning	Ensemble Learning	Challenges with standalone model	5
		Reliability and performance of a standalone model	
		Homogeneous & Heterogeneous Ensemble Technique	
		Bagging & Boosting	
		Random forest	
		Stacking	
		Voting & Averaging technique	
Total Duration			**60**