BIG DATA ANALYTICS MASTER COURSE CONTENT

Course Code	Course Name	(T,A,L)	Credit	ECTS	Compulsary/Elective Course
BVA501	Introduction to Programming Languages	(3,0,0)	3	7,5	Compulsary
Data Types. Sequential Data Types. Objects and Graphics. Functions and Methods of Sequential Data Types. Defining Functions. Dictionaries. Sets. Logical Expressions. Loops. Input & Output.					

Course Code	Course Name	(T,A,L)	Credit	ECTS	Compulsary/Elective Course
BVA511	Applied Statistics		3	7.5	Compulsary
Basic consept,tables,graphs,Prevalence,incidence,Central Tendency measurements ;mean of arithmetic,mode,median,Homegenity measurements;Range,variance,standart deviations, coefficient of variation.Probability,Conditional probability,Bayes Rule ,Bernoulli distribution,Binom distribution,Poisson distribution,Normal distribution.					

Course Code	Course Name	(T,A,L)	Credit	ECTS	Compulsary/Elective Course
BVA509	Database Management	(3,0,0)	3	7,5	Elective
Introduction to Database Management, Service Oriented Database Systems, Relational Database Systems, MS SQL Server, No-SQL Database Systems, MongoDB, SQL, Data Definition Language (CREATE, ALTER, DROP), Data Manipulation Language (INSERT, UPDATE, DELETE, SELECT), Database diagrams based on Primary and Foreign Keys, INNER and OUTER JOINS, Aggregation Functions (SUM, COUNT, AVG, MIN, MAX), Index and Views, T-SQL, Variables, Functions, Stored Procedures, Triggers, Database Management related issues: BACKUP, RESTORE, Shrink, Configuration Management, Network Configurations.					

Course Code	Course Name	(T,A,L)	Credit	ECTS	Compulsary/Elective Course
BVA513	Data Mining	(3,0,0)	3	7,5	Elective
Introduction to Data Mining, Data, Data Exploration, OLAP, Data Normalization, Data Preprocessing, Feature Selection and Dimension Reduction, Classification, Regression, Machine Learning (SVM, MLP, Randomforest etc.), Machine Learning in Python, Association Rule Mining (Appriori, Fp-Growth), Clustering (Kmeans, SOM), Projects based on predictive and descriptive models.					

Course Code	Course Name	(T,A,L)	Credit	ECTS	Compulsary/Elective Course

Course Code	Course Name	(T,A,L)	Credit	ECTS	Compulsary/Elective Course
BVA523	Machine Learning for Big Data	(3,0,0)	3	7.5	Elective
In this course, we will focus on Big Data and the pillars of that emerging discipline: machine learning/data mining, and elements of high-performance computing, data visualization, and data privacy. Significant part of the course will be devoted to selected, efficient methods for building models from data using machine learning techniques. Introduction to Machine Learning, Supervised Learning and Linear Regression, Classification and Logistic Regression, Decision Tree and Random Forest, Naïve Bayes and Support Vector Machine, Unsupervised Learning, Natural Language Processing and Text Mining, Introduction to Deep Learning, Time Series Analysis.					