Content

Course Code	Course Name	Semester	Theory	Practice	Lab	Credit	ECTS
VM 536	Applications of Data Science	3	0	4	0	3	8

Prerequisites	
Admission Requirements	

Language of Instruction	English
Course Type	Compulsory
Course Level	Masters Degree
Objective	The aim of this course is to introduce mathematical tools and applications that can be used to generate knowledge from data. The aim of this course is to examine the basic statistical concepts that will be used to define the data through case studies.
Content	Data Science: Technologies, mathematical tools and technologies. Basic statistical concepts to define the data. Sampling and measurement. Calculations for the sample based on the sample. Inferential statistics. Supervised learning. Regression analysis. Applications from business life.
References	Foundations of Data Science: Avrim Blum, John Hopcroft, and Ravindran Kannan An Introduction to Statical Learning with Applications: Gareth James, Daniela Witten, Trevor Hastie and Robert Tibshirani

Theory Topics

Week	Weekly Contents
1	Introduction to Data Science Define data with tables and graphs
2	Introduction to Statistical Methodology
3	Sampling and Measurement.
4	Artificial Intelligence and Machine Learning Applications, Case analysis I-Betting Sites
5	Data center, variability, position measurement
6	Statistical Inference: Estimation and Correlation Analysis
7	Midterm exam
8	Introduction to Data Science Computer Technologies, Case study II-Medicine and Biology
9	Case study III-Artificial Intelligence Solutions in Banking
10	Regression Methods
11	Case study IV-Database Formation Process in Banking
12	Case study V: Evaluation of banking sector based data models
13	Case study VI: Data analysis in the field of insurance: how to prepare a motor insurance / house insurance tariff and SAS applications
14	Case study VII: Artificial Intelligence in 50 questions