

Management Information Systems			
Bachelor	TR-NQF-HE: Level 6	QF-EHEA: First Cycle	EQF-LLL: Level 6

## Course Introduction and Application Information

Course Code:	YBS312						
Course Name:	Machine Learning Applications						
Semester:	Spring						
Course Credits:	<table border="1"> <tr> <td>ECTS</td> </tr> <tr> <td>5</td> </tr> </table>			ECTS	5		
ECTS							
5							
Language of instruction:	Turkish						
Course Condition:							
Does the Course Require Work Experience?:	No						
Type of course:	Compulsory Courses						
Course Level:	<table border="1"> <tr> <td>Bachelor</td> <td>TR-NQF-HE:6. Master`s Degree</td> <td>QF- EHEA:First Cycle</td> <td>EQF-LLL:6. Master`s Degree</td> </tr> </table>			Bachelor	TR-NQF-HE:6. Master`s Degree	QF- EHEA:First Cycle	EQF-LLL:6. Master`s Degree
Bachelor	TR-NQF-HE:6. Master`s Degree	QF- EHEA:First Cycle	EQF-LLL:6. Master`s Degree				
Mode of Delivery:	Face to face						
Course Coordinator:	Doç. Dr. ŞEBNEM ÖZDEMİR						
Course Lecturer(s):	Şebnem Özdemir						
Course Assistants:							

## Course Objective and Content

Course Objectives:	The aim of this course is to teach how to construct machine learning models with the help of a data analysis language, together with its mathematical background.
Course Content:	Machine learning algorithm, R and Python applications

## Learning Outcomes

The students who have succeeded in this course;

- 1) Recognizes classical machine learning methods.
- 2) Explains the model generation process using R or Python
- 3) Creates a model using multiple algorithms.
- 4) Compares the models, chooses the performance one.

## Course Flow Plan

Week	Subject	Related Preparation
1)	Introduction to the Course – Basic Concepts – Overview of Content to be Learned and Assessment and Evaluation Activities for a Whole Semester	
2)	Regression concept, Linear and Logistic regression	
3)	Regression concept, Linear and Logistic regression	
4)	Bayesian methods, Naive Bayes	
5)	Bayesian methods, Naive Bayes	
6)	Neighborhood, similarity concept, KNN	
7)	Neighborhood, similarity concept, KNN	
8)	Support Vector Machines	
9)	Support Vector Machines	
10)	Support Vector Machines	
11)	Artificial neural networks	
12)	Artificial neural networks	
13)	Remodeling with CV Methods	
14)	Disruptive Concepts	
15)	Final Exam	

## Sources

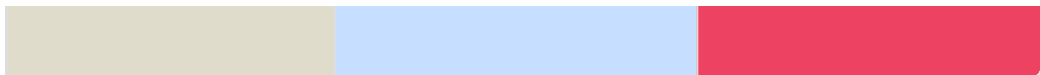
Course Notes / Textbooks:	Ek kaynak ihtiyacı bulunmamaktadır. - There is no need for additional resources.
References:	Ek kaynak ihtiyacı bulunmamaktadır. - There is no need for additional resources.

## Course - Program Learning Outcome Relationship

Course Learning Outcomes	1	2	3	4
Program Outcomes				
1) It has a wide range of interdisciplinary approaches to management information systems, primarily business and computer engineering.				
2) Comprehends the management information systems in terms of technical, organizational and managerial aspects and uses the current programming language by knowing the logic of programming.				
3) Uses different information technologies and systems for understanding and solving various business problems.				
4) Interpret the data, concepts and ideas in the field of management information systems with scientific and technological methods.				
5) Analyze the needs for an information system and analyze the processes of analysis, design and implementation of the database.				
6) Gains technical and managerial contributions to IT projects and takes responsibility.				
7) Solve complex business and informatics problems by using various statistical techniques and numerical methods and make analyzes using statistical programs effectively.				
8) Uses a foreign language at the B1 General Level in terms of European Language Portfolio criteria according to the level of education.				
9) Develops teamwork, negotiation, leadership and entrepreneurship skills.				
10) Has universal ethical values, social responsibility awareness and sufficient legal knowledge.				
11) Develops positive attitudes related to lifelong learning and identifies individual learning needs and carries out studies to correct them.				
12) Students will be able to communicate their ideas and solutions both written and orally, and present and publish them on both national and international platforms.				
13) It uses information and communication technologies together with computer software at the advanced level of European Computer Driving License required by the field.				

## Course - Learning Outcome Relationship

No Effect	1 Lowest	2 Average	3 Highest
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	Program Outcomes	Level of Contribution
1)	It has a wide range of interdisciplinary approaches to management information systems, primarily business and computer engineering.	2
2)	Comprehends the management information systems in terms of technical, organizational and managerial aspects and uses the current programming language by knowing the logic of programming.	3
3)	Uses different information technologies and systems for understanding and solving various business problems.	3
4)	Interpret the data, concepts and ideas in the field of management information systems with scientific and technological methods.	3
5)	Analyze the needs for an information system and analyze the processes of analysis, design and implementation of the database.	3
6)	Gains technical and managerial contributions to IT projects and takes responsibility.	2
7)	Solve complex business and informatics problems by using various statistical techniques and numerical methods and make analyzes using statistical programs effectively.	3
8)	Uses a foreign language at the B1 General Level in terms of European Language Portfolio criteria according to the level of education.	1
9)	Develops teamwork, negotiation, leadership and entrepreneurship skills.	1
10)	Has universal ethical values, social responsibility awareness and sufficient legal knowledge.	1
11)	Develops positive attitudes related to lifelong learning and identifies individual learning needs and carries out studies to correct them.	2
12)	Students will be able to communicate their ideas and solutions both written and orally, and present and publish them on both national and international platforms.	1
13)	It uses information and communication technologies together with computer software at the advanced level of European Computer Driving License required by the field.	3

### Assessment & Grading

Semester Requirements	Number of Activities	Level of Contribution

Homework Assignments	1	% 20
Midterms	1	% 35
Final	1	% 45
<b>total</b>		<b>% 100</b>
PERCENTAGE OF SEMESTER WORK		% 55
PERCENTAGE OF FINAL WORK		% 45
<b>total</b>		<b>% 100</b>

### Workload and ECTS Credit Calculation

Activities	Number of Activities	Workload
Course Hours	14	28
Application	14	42
Quizzes	7	10
Midterms	8	18
Final	12	24
<b>Total Workload</b>		<b>122</b>