

MACHINE LEARNING

1	Course Title:	MACHINE LEARNING
2	Course Code:	BLPS2414
3	Type of Course:	Optional
4	Level of Course:	Short Cycle
5	Year of Study:	2
6	Semester:	4
7	ECTS Credits Allocated:	3.00
8	Theoretical (hour/week):	2.00
9	Practice (hour/week):	0.00
10	Laboratory (hour/week):	0
11	Prerequisites:	None
12	Language:	Turkish
13	Mode of Delivery:	Face to face
14	Course Coordinator:	Öğr. Gör. AHMET DARTAR
15	Course Lecturers:	--
16	Contact information of the Course Coordinator:	ahmetdarta@uludag.edu.tr, (0 224) 294 26 62, Bursa Uludağ Üniversitesi Karacabey MYO Bilgisayar Programcılığı
17	Website:	
18	Objective of the Course:	The aim of this course is to provide students with the theoretical basis of machine learning algorithms and practical application of them on real-world data sets.
19	Contribution of the Course to Professional Development:	For a problem whose parameters are given, the student can reveal the advantages and disadvantages of different machine learning methods.
20	Learning Outcomes:	
	1	Describe basic machine learning concepts
	2	Solve a particular problem that includes one of the learning types
	3	Apply machine learning techniques on given dataset
	4	Develop a project with use of a machine learning approach
	5	Evaluate a learning model
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21	Course Content:	
	Course Content:	
Week	Theoretical	Practice
1	Introduction to Machine Learning	
2	Applications of Machine Learning	
3	Data Digitization	
4	Feature Selection/Extraction	
5	Regression Algorithms	

6	Classification Algorithms (Support Vector Machine)	
7	Classification Algorithms (Artificial Neural Network)	
8	Mid-term exam	
9	Classification Algorithms (K-nearest Neighbor Algorithm)	
10	Classification Algorithms (Naive Bayes Algorithm)	
11	Classification Algorithms (Decision Tree)	
12	Clustering Algorithms (K-Means Algorithm)	
13	Clustering Algorithms (Single Linkage Clustering Algorithm-SLINK/Complete Linkage Clustering Algorithm-CLINK)	
14	Ensemble Learning Algorithms and Classifier Performance	

22	Textbooks, References and/or Other Materials:	1-Ethem ALPAYDIN (2010). Introduction to Machine Learning, The MIT Press, second edition. 2-Tom Mitchell, McGraw-Hill. Machine Learning. ISBN 0070428077. 3-Atınç Yılmaz, Makine Öğrenmesi: Teorisi ve Algoritmaları, Papatya Bilim Yayınevi, 2018
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23	Assesment
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TERM LEARNING ACTIVITIES		NUMBER	WEIGHT		
Activites			Number	Duration (hour)	Total Work Load (hour)
Home work-project	0	0.00			
Theoretical	14	2.00			28.00
Final Exam	1	60.00			
Practicals/Labs	0	0.00			0.00
Total	14	60.00			
Self study and preperation	14	2.00			28.00
Contribution of Term (Year) Learning Activities to	14	40.00			
Homeworks	14	2.00			28.00
Projects	0	0.00			0.00
Contribution of Final Exam to Success Grade	60.00				
Field Studies	0	0.00			0.00
Midterm exams	1	3.00			3.00
Measurement and Evaluation Techniques Used in the	0	0.00			0.00
Others	0	0.00			0.00
Final Exams	Undergraduate Education	3.00			3.00
Total Work Load					93.00
Total work load/ 30 hr					3.00
ECTS Credit of the Course					3.00

25	CONTRIBUTION OF LEARNING OUTCOMES TO PROGRAMME QUALIFICATIONS															
	PQ1	PQ2	PQ3	PQ4	PQ5	PQ6	PQ7	PQ8	PQ9	PQ10	PQ11	PQ12	PQ13	PQ14	PQ15	PQ16
ÖK1	2	4	2	5	3	3	3	2	2	3	2	0	0	0	0	0
ÖK2	2	4	2	5	3	3	3	2	2	2	2	0	0	0	0	0
ÖK3	2	4	2	5	3	3	2	2	2	2	2	0	0	0	0	0
ÖK4	4	5	2	4	3	4	2	3	3	3	3	0	0	0	0	0

ÖK5	2	4	2	5	3	3	3	2	2	3	2	0	0	0	0	0
LO: Learning Objectives PQ: Program Qualifications																
Contrib ution Level:	1 very low			2 low			3 Medium			4 High			5 Very High			