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:	ahmetdartar@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 leaning model
		6	
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		10	
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
23	Assesment	

TERM LEARNING ACTIVITIES	**NUMBER**	**WEIGHT**
Home work-project	0	0.00
Theoretical	14	2.00
Final Exam	1	60.00
Practicals/Labs	0	0.00
Total	2	100.00
Self study and preperation	14	2.00
Contribution of Term (Year) Learning Activities to		40.00
Homeworks	14	2.00
Projects	0	0.00
Contribution of Final Exam to Success Grade		60.00
Field Studies	0	0.00
Total		100.00
Midterm exams	1	3.00
Measurement and Evaluation Techniques Used in the	Measurement and evaluation is carried out according to	
Others	0	0.00
Final Exams	1	3.00

Activites	Number	Duration (hour)	Total Work Load (hour)
Theoretical	14	2.00	28.00
Practicals/Labs	0	0.00	0.00
Self study and preperation	14	2.00	28.00
Homeworks	14	2.00	28.00
Projects	0	0.00	0.00
Field Studies	0	0.00	0.00
Midterm exams	1	3.00	3.00
Others	0	0.00	0.00
Final Exams	1	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					
Contribution Level:	**1 very low**	**2 low**	**3 Medium**	**4 High**	**5 Very High**