(SYLLABUS)

1.

(Course Title)		(Instructor)			
(Year)	2025	(Semester)	2	(Course No.)	2150034001
(Class)	01	(Open to)	3 IT ,	(Course Classification)	-IT / -
/	3.0 / 03 / 3		100		
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(Office)	051306	(Telephone)	02-820-0710	(e-mail)	chlee@ssu.ac.kr
	, (FL), (PBL)		+		
	(*) (ABEEK Classification)			(*) (ABEEK Requirement)	
	, , ,				
(Course Description)					

,	IT

	(100)	(100%)
	100	100

(Required Texts)		* /Hands-On Machine Learningwith Scikit Learn & Tensorflow/Aurelien Geron/O'reilly/2019/2/
	( )	* /Python for Data Analysis/Wes McKinney/O'reilly/2018/2/
	Python	Python . .
	Engaged learning . . . , . : 50%, 10%, 15%, 25%

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2.

(Week)	(Keyword)	(Description)		(Texts)
01	Introduction	Introduction, Types of machine learning, Machine learning application	,	1, ,
02	ML Tools, Classification	ML tool , Binary classifier, Performance measure, Problem:	, , , , , ,	3, ,
03	Classification	Multiclass/multioutput classification, error analysis, Problem: ,	, , ,	3 ,
04	Training model, Regression	Linear Regression, Gradient descent, Regularization, Learning curves, Problem:	, , ,	4, ,
05	Training model, Regression	Multiclass regression, Logistic and Softmax regression, Problem:	, , ,	4, ,
06	SVM	Linear SVM, Nonlinear SVM, SVM regression,	, , ,	5, , 10/7 (11/22)
07	KNN, Decision tree	k-Nearest Neighbor , Decision Tree, Estimating class probabilities, Regularization, Project: ,	, , ,	6, ,
08	Ensemble learning	Ensemble learning, Bagging and pasting, Random forest, Project:	, , ,	7, ,
09	Unsupervised Learning	Unsupervised learning , Clustering , Clustering , K-means, DBSCAN, Project:	, , , , , ,	9, , (11 12)
10	End-to-end project ( )	Framing problem, Data preparation, project: ,	, , ,	2, , ,
11	End-to-end project ( )	Select model and training, Evaluation, Project: , :	, , ,	2, , ,
12	Dimensionality reduction, Data analysis	Main approaches and PCA, : NumPy/Pandas (1),	, , ,	8, 4,5, , ,
13	Data analysis,	: NumPy/Pandas (2), Project: ,	, , , , ,	4 , ,
14	Data analysis,	: NumPy/Pandas (3), Project:	, , ,	5, , ,
15	Data analysis, ,	: NumPy/Pandas (4) ( ), Project:	, , ,	5, 11/22( ) 4:00 –6:30: ( ),

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	Open-ended problem			
	Teamwork			
	Communication skills			