(Syllabus)

(Course Information)			

/ (Year/Semester)	2021 / 2	(Campus)	(Seoul Campus)

(Course No.)	30187	(Class No.)	01	(Credit)	3

(Course Title)	(2)(DATA MINING(2))	/ (Time/Room)	00 000000 (10:30~11:45) / (10:30~11:45)(00 000000 MON(10:30~11:45) / WED(10:30~11:45))
(Course Classification)	(Major)	(Lecture Type)	(Lone-teaching course)
(Course Type)	(Theoretical course)	(Medium of Instruction)	A(ENGLISH A)
(Accreditation)		(Accreditation of Engineering Education)	
(College)	(College of Business & Economics)	( ) (Department)	(Department of Applied Statistics)

e-class (Usage of e-class)	Yes		

(Instructor Information)			

(Name)	(IL YOUP KWAK)	(Department)	(Department of Applied Statistics)
(Office Phone No.)		(Contact No.)	
E-mail (E-mail)		(Department Phone No.)	
(Office Hour)	Monday 2pm-4pm or by appointment	(Office Location)	1006
(Course Web-site)	https://ikwak2.github.io/		

[2] / (Learning Objectives/Outcomes)

(Course Description)

- scikit-learn, tensorflow   .

-                    1   ,   python
                                 .

- Hands-On Machine Learning with Scikit-Learn and TensorFlow   .

-   .

- e-class   ,   .
-                          e-class   .

-   .

- 2   ,   ,   .

(Prerequisites and Co-requisites)

1,   ,   (ex.   https://wikidocs.net/book/1 2~4   )

(Learning Objectives)

- python   sckkit-learn   .

- python   tensorflow   .

(Learning Outcomes)

-                 1   ,   2   python   .
-   ,   .

[3]   (Course Methods)

(Teaching and Learning Methods)

(Teaching and Learning Methods)	(Additional Description)
(Lecture)	[Davinci pre,] pre class will be provided using e-class. [Davinci mid/after, /] mid and after class will be done using Zoom.
(Mid-term Exam)	Mid term exam using e-class.
(Group)	Team project is participating open competition that you can use machine learning using scikit-learn or tensorflow.

(Assignments)

(Assignments)	(No.)	(, ,)(Assignments Description)
(Practice)	3	About 3 times of HW
(Group)	1	We will have a final project, participating an open competition.
(Report)	1	You need to submit final report. (team project report)
(Group)	2	mid presentation and final presentation related to group project

	(Textbooks, Reading, and other Materials)					
(Textbook/Reference)	(Title)	(Author)	/ (Year of Publication/etc)	/ (Publisher/Name of Journal)	/ (No. of Edition)
(Main Textbook)	Hands-On Machine Learning with Scikit-Learn and TensorFlow	Aurélien Géron	2019	O'Reilly Media	2nd edition

[4]   (Student Assessment)

(Assessment Item)	(%)(Assessment Ratio)	(Additional Description)
(Attendance)	5	Zoom class attendance. Missing one class will take 0.5 point away.
(Mid-term Exam)	30	
(Assignment)	20	
(Final Exam)	40	Team project
(Others)	5	Pre-class attendance. Missing one pre-class will take 0.5 point away.

[5]   (Course Schedule)

(Week)	(Instructor)	(Topic & Content)	(Student Assignment)	(Additional Description & Instructor Assignment)
1	Il-Youp Kwak	[DL] (pre)Introduction, chapter 1 The Machine Learning Landscape (mid) Course introduction, colab practice (using Zoom)		Pre-class lectures will be uploaded in e-class [DL mid] Course introduction using Zoom.
2	Il-Youp Kwak	[DL] (pre) Chapter 2 End-to-End Machine Learning Project, (mid) Chapter 2 coding practice (using Zoom)		Pre-class lectures will be uploaded in e-class. You must take it before the Zoom class. - Team selection in week 2 or 3. this is for the final project.
3	Il-Youp Kwak	[DL] (pre) Chapter 3 Classification (mid) Chapter 3 coding practice	HW1	Pre-class lectures will be uploaded in e-class. You must take it before the Zoom class. - Team selection in week 2 or 3. this is for the final project.
4	Il-Youp Kwak	[DL] (pre) Chapter 4 Training Models, Chapter 5 Support Vector Machines (mid) Chapter 4,5 coding practice		Pre-class lectures will be uploaded in e-class. You must take it before the Zoom class. - Make team name.
5	Il-Youp Kwak	[DL] (pre) Chapter 6 Decision Tree (Mid) Chapter 6 coding practice		Pre-class lectures will be uploaded in e-class. You must take it before the Zoom class. - Discuss personal interests from team members.
6	Il-Youp Kwak	[DL] (pre) Chapter 7 Ensemble Learning and Random Forests, Chapter 8 Dimensionality Reduction (mid) Chapter 7,8 coding practice	HW2	Pre-class lectures will be uploaded in e-class. You must take it before the Zoom class.
7	Il-Youp Kwak	[DL] (pre) Chapter 9 Unsupervised Learning Techniques (mid)Chapter 9 coding practice		Pre-class lectures will be uploaded in e-class. You must take it before the Zoom class. - Discuss open competitions.
8	Il-Youp Kwak	Mid-term exam		using e-classs

(Week)	(Instructor)	(Topic & Content)	(Student Assignment)	(Additional Description & Instructor Assignment)
9	Il-Youp Kwak	[DL] (pre) Chapter 10 Introduction to Artificial Neural Networks with Keras (mid) Chapter 10 coding practice		Pre-class lectures will be uploaded in e-class. You must take it before the Zoom class.
10	Il-Youp Kwak	[DL] (pre) Chapter 11 Training Deep Neural Nets (after) Talk from data scientist		Pre-class lectures will be uploaded in e-class. You must take it before the Zoom class. - Talk from Data Scientist.
11	Il-Youp Kwak	[DL] (pre) Chapter 12 Custom Models and Trainingwith TensorFlow (mid) Chapter 12 coding practice		Pre-class lectures will be uploaded in e-class. You must take it before the Zoom class.
12	Il-Youp Kwak	[DL] (pre) Chapter 12 Custom Models and Trainingwith TensorFlow (after) project plan presentation by each team	submit project plan presentation ppt	Pre-class lectures will be uploaded in e-class. You must take it before the Zoom class. - For project plan presentation, talk about the open competition problem.
13	Il-Youp Kwak	[DL] (pre) Chapter 13 Loading and Preprocessing Data with TensorFlow (after) Team project discussion, coding practice		Pre-class lectures will be uploaded in e-class. You must take it before the Zoom class.
14	Il-Youp Kwak	[DL] (mid) Deep learning for vision (after) Team project discussion		Pre-class lectures will be uploaded in e-class. You must take it before the Zoom class.
15	Il-Youp Kwak	[DL] Deep learning for text (after) Team project discussion		Pre-class lectures will be uploaded in e-class. You must take it before the Zoom class.
16	Il-Youp Kwak	[DL] (after) Team project presentation	final report final ppt, personal report.	Each team have 15 min for the presentation

[6]	**(Guide to Learning)**

If you are not familiar with python, I highly recommend study basics by yourself using online book (https://wikidocs.net/book/1) chapter 2~4.

- Missing more than six classes may result in an F grade.
- Davinci Learning will be applied on seven weeks as described in Weekly Schedules.
- On Davinci learning weeks, pre-class clips will be provided as e-class, and it is mandatory to study pre-class clips before the class.

(Previous Exam Samples)
<   >(<Download Additional Sample>)
.
71   6   47

.

(In pursuant to the Article 71 "Discipline" of the Chung-Ang University Regulations, and Article 47 "Punishment for Cheating during Examination" under Chapter 6 of the Academic Affairs Management Rules, any student caught engaging in academic misconduct during an exam will be subject to disciplinary action.)

.   .   ,
1.   :   ,   ,   ,   ,
2.   :   ,   ,
3.   /   :   ,   ,
4.   ,
                : 02-820-6577~9(   ), 031-670-4816(   )
                                            (cauable)

In this class, students with disabilities are eligible for reasonable accommodations depending on the type and severity of disability. If you wish to receive accommodations listed below, please contact the Support Center for Students with Disabilities.
1. Visual Impairment: Braille, large print, electronic class materials, volunteer note-taker, adjustments in assessment practices, etc.
2. Hearing Impairment: Volunteer note-taker, stenographer, adjustments in assessment practices, etc.
3. Physical Disabilities/Brain Lesions: Classrooms with wheelchair access, volunteer note-taker, adjustments in assessment practices, etc.
4. Accommodations for students with other psychiatric disabilities or health impairments can be arranged through the Support Center for Students with Disabilities after consultation.
   Inquiry: 02-820-6577~9 (Seoul Campus), 031-670-4816 (Anseong Campus)
 - KakaoTalk Plus Friend ID: @cauable

1.   :   ,   ,   ,   ,
2.   :   ,   ,
3.   /   :   ,   ,
4.   ,