Tamkang University Academic Year 109, 1st Semester Course Syllabus

Course Title	APPLICATION OF BIG DATA ANALYTICS IN BUSINESS	Instructor	MENG-IA CHUNG
Course Class	TLQXM2A MASTER'S PROGRAM IN BUSINESS AND MANAGEMENT (ENGLISH-TAUGHT PROGRAM), 2A	Details	◆ General Course ◆ Selective ◆ One Semester

Departmental Aim of Education

Ⅰ. Develop a business and management perspective for students.

Ⅱ. Train the professionals in the integrated fields of business and management.

Ⅲ. Cultivate the talents with both theory and practices in business and management.

Subject Departmental core competences

A. Provide the basic knowledge of both theory and practices.(ratio:50.00)

D. Obtain the ability of analyzing industrial and business problems.(ratio:50.00)

Subject Schoolwide essential virtues

2. Information literacy. (ratio:50.00)

3. A vision for the future. (ratio:50.00)

Course Introduction	This course is an introduction to Big Data analytics. Calculus will be used, and students are expected to have taken probability and statistics courses. The course is divided into three parts. For classification, we will talk about Naïve Bayes, K-Nearest Neighbors and Decision Tree. For clustering, topics include K means, DBSCAN, hierarchical agglomerative clustering. For regression based algorithms, we will discuss lasso/ridge regression, logistic regression and support vector machines. All computing in class will be conducted in R. Python and SPSS will also be used in some occasions.

The correspondences between the course's instructional objectives and the cognitive, affective, and psychomotor objectives.

Differentiate the various objective methods among the cognitive, affective and psychomotor domains of the course's instructional objectives.

I. Cognitive : Emphasis upon the study of various kinds of knowledge in the cognition of the course's veracity, conception, procedures, outcomes, etc.

II.Affective : Emphasis upon the study of various kinds of knowledge in the course's appeal, morals, attitude, conviction, values, etc.

III.Psychomotor: Emphasis upon the study of the course's physical activity and technical manipulation.

No.	Teaching Objectives	objective methods
1	The goal of this course is to help students learn, understand, and practice different algorithms for big data analytics.	Cognitive

The correspondences of teaching objectives : core competences, essential virtues, teaching methods, and assessment

No.	Core Competences	Essential Virtues	Teaching Methods	Assessment
1	AD	23	Lecture, Discussion	Testing, Discussion(including classroom and online), Activity Participation

Course Schedule

Week	Date	Course Contents	Note
1	109/09/14 ~ 109/09/20	Introduction	
2	109/09/21 ~ 109/09/27	Classification I	
3	109/09/28 ~ 109/10/04	Classification II	
4	109/10/05 ~ 109/10/11	Classification III	
5	109/10/12 ~ 109/10/18	Classification IX	
6	109/10/19 ~ 109/10/25	Quiz I	
7	109/10/26 ~ 109/11/01	Clustering I	
8	109/11/02 ~ 109/11/08	Clustering II	
9	109/11/09 ~ 109/11/15	Clustering III	
10	109/11/16 ~ 109/11/22	Clustering IX	
11	109/11/23 ~ 109/11/29	Clustering X	

12	109/11/30 ~ 109/12/06	Quiz 2	
13	109/12/07 ~ 109/12/13	Regression based methods I	
14	109/12/14 ~ 109/12/20	Regression based methods II	
15	109/12/21 ~ 109/12/27	Regression based methods III	
16	109/12/28 ~ 110/01/03	Review	
17	110/01/04 ~ 110/01/10	Quiz 3	
18	110/01/11 ~ 110/01/17	Discussions	

Requirement	
Teaching Facility	(None)
Textbooks and Teaching Materials	Lecture notes
References	1. The Elements of Statistical Learning: Data Mining, Inference, and Prediction 2. Pattern Recognition and Machine Learning 3. Applied Predictive Modeling 4. An Introduction to Statistical Learning : with Applications in R
Number of Assignment(s)	(Filled in by assignment instructor only)
Grading Policy	◆ Attendance： 10.0 % ◆ Mark of Usual： % ◆ Midterm Exam： % ◆ Final Exam： % ◆ Other〈3 Quizzes〉：90.0 %
Note	This syllabus may be uploaded at the website of Course Syllabus Management System at http://info.ais.tku.edu.tw/csp or through the link of Course Syllabus Upload posted on the home page of TKU Office of Academic Affairs at http://www.acad.tku.edu.tw/CS/main.php . **※ Unauthorized photocopying is illegal. Using original textbooks is advised. It is a crime to improperly photocopy others' publications.**