Tamkang University Academic Year 110, 1st Semester Course Syllabus

Course Title	APPLICATION OF BIG DATA ANALYTICS IN BUSINESS	Instructor	MENG-IA CHUNG
Course Class	TLGBM1A MASTER'S PROGRAM IN BUSINESS AND MANAGEMENT, DEPARTMENT OF MANAGEMENT SCIENCES (ENGLISH-TAUGHT PROGRAM), 1A	Details	◆ General Course ◆ Selective ◆ One Semester
Relevance to SDGs	SDG8 Decent work and economic growth SDG9 Industry, Innovation, and Infrastructure		

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 analysis. The course is roughly divided into three parts. First, we will learn (review) basic probability and statistical inference. Second, we will learn to use the general linear model to analyze data. We will then learn to apply some machine learning algorithms to data analysis. We will use R and SPSS software in the class.

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 statistical methods for big data analytics.	Cognitive
2	learn to apply statistical methods to big data analytics	Cognitive
3	learn to apply statistical methods to 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
2	AD	23	Lecture	Study Assignments
3	AD	23	Lecture	Study Assignments

Course Schedule

Week	Date	Course Contents	Note
1	110/09/22 ~ 110/09/28	Introduction	
2	110/09/29 ~ 110/10/05	Probability and statistical inference for big data analysis I	
3	110/10/06 ~ 110/10/12	Probability and statistical inference for big data analysis II	
4	110/10/13 ~ 110/10/19	Probability and statistical inference for big data analysis III	
5	110/10/20 ~ 110/10/26	Review 1	
6	110/10/27 ~ 110/11/02	General linear model I	
7	110/11/03 ~ 110/11/09	General linear model II	

8	110/11/10 ~ 110/11/16	General linear model III	
9	110/11/17 ~ 110/11/23	Midterm	
10	110/11/24 ~ 110/11/30	Unsupervised learning I	
11	110/12/01 ~ 110/12/07	Unsupervised learning II	
12	110/12/08 ~ 110/12/14	Unsupervised learning III	
13	110/12/15 ~ 110/12/21	Review 2	
14	110/12/22 ~ 110/12/28	Supervised learning I	
15	110/12/29 ~ 111/01/04	Supervised learning II	
16	111/01/05 ~ 111/01/11	Supervised learning III	
17	111/01/12 ~ 111/01/18	Final Exam	
18	111/01/19 ~ 111/01/25	tbd	

Requirement	
Teaching Facility	Computer
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： % ◆ Mark of Usual： % ◆ Midterm Exam： % ◆ Final Exam： % ◆ Other〈2 assignments〉：100.0 %
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.**