

Tamkang University Academic Year 111, 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	<ul style="list-style-type: none"> ◆ 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:30.00) B. Enhance the practical training for the current trends.(ratio:20.00) C. Cultivate the ethics in business and management.(ratio:20.00) D. Obtain the ability of analyzing industrial and business problems.(ratio:30.00)			
Subject Schoolwide essential virtues			
1. A global perspective. (ratio:10.00) 2. Information literacy. (ratio:30.00) 3. A vision for the future. (ratio:20.00) 4. Moral integrity. (ratio:10.00) 5. Independent thinking. (ratio:10.00) 6. A cheerful attitude and healthy lifestyle. (ratio:5.00) 7. A spirit of teamwork and dedication. (ratio:10.00) 8. A sense of aesthetic appreciation. (ratio:5.00)			

Course Introduction	<p>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.</p>
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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
4	Learn to use R and SPSS to conduct different analyses	Cognitive
5	Learn to use R and SPSS to conduct different analyses	Cognitive
6	Learn to use R and SPSS to conduct different analyses	Cognitive
7	Learn to use R and SPSS to conduct different analyses	Cognitive
8	Learn to use R and SPSS to conduct different analyses	Cognitive

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

No.	Core Competences	Essential Virtues	Teaching Methods	Assessment
1	ABCD	12345678	Lecture	Testing, Study Assignments
2	ABCD	12345678	Lecture	Testing, Study Assignments

3	ABCD	12345678	Lecture	Testing, Study Assignments
4	ABCD	12345678	Lecture	Testing, Study Assignments
5	ABCD	12345678	Lecture	Testing, Study Assignments
6	ABCD	12345678	Lecture	Testing, Study Assignments
7	ABCD	12345678	Lecture	Testing, Study Assignments
8	ABCD	12345678	Lecture	Testing, Study Assignments

Course Schedule

Week	Date	Course Contents	Note
1	111/09/05 ~ 111/09/11	Introduction	
2	111/09/12 ~ 111/09/18	Probability and statistical inference for big data analysis	
3	111/09/19 ~ 111/09/25	Unsupervised learning I	
4	111/09/26 ~ 111/10/02	Unsupervised learning II	
5	111/10/03 ~ 111/10/09	Unsupervised learning III	
6	111/10/10 ~ 111/10/16	Unsupervised learning IV	
7	111/10/17 ~ 111/10/23	Unsupervised learning V	
8	111/10/24 ~ 111/10/30	Review 1	
9	111/10/31 ~ 111/11/06	Midterm	
10	111/11/07 ~ 111/11/13	Supervised learning I	
11	111/11/14 ~ 111/11/20	Supervised learning II	
12	111/11/21 ~ 111/11/27	Supervised learning III	
13	111/11/28 ~ 111/12/04	Supervised learning IV	
14	111/12/05 ~ 111/12/11	Supervised learning V	
15	111/12/12 ~ 111/12/18	Supervised learning VI	
16	111/12/19 ~ 111/12/25	Supervised learning VII	
17	111/12/26 ~ 112/01/01	Review 2	

18	112/01/02 ~ 112/01/08	Final Exam	
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		
Number of Assignment(s)	2 (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.		