

## Tamkang University Academic Year 109, 2nd Semester Course Syllabus

Course Title	HIGH DIMENSIONAL GRAPHICS	Instructor	KAO CHIUN HOW
Course Class	TLXDM1A MASTER'S PROGRAM IN BIG DATA ANALYTICS AND BUSINESS INTELLIGENCE, 1A	Details	<ul style="list-style-type: none"> <li>◆ General Course</li> <li>◆ Selective</li> <li>◆ One Semester</li> </ul>
Relevance to SDGs	SDG4 Quality education SDG8 Decent work and economic growth		
D e p a r t m e n t a l   A i m   o f   E d u c a t i o n			
I. Cultivate students with ability to conduct research on big data. II. Cultivate students with ability for computer programming on big data.			
Subject Departmental core competences			
A. Ability to conduct research of big data.(ratio:40.00) B. Big data analysis skills.(ratio:30.00) C. Ability to integrate interdisciplinary knowledge.(ratio:30.00)			
Subject Schoolwide essential virtues			
2. Information literacy. (ratio:60.00) 5. Independent thinking. (ratio:20.00) 8. A sense of aesthetic appreciation. (ratio:20.00)			
Course Introduction	The purpose of this course is to introduce the techniques of high-dimensional data visualization. Students taken this course can understand the dimensionality reduction techniques and visualizations, dimension free data visualizations, clustering methods, data pre-processing, related software and tools, etc. In addition, this course will also introduce web programming, provide web services through back-end program connection data(file/database), and use front-end programming language (such as D3.js) to visualize high-dimensional data.		

**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	Basic theories and concepts of high dimensional data visualization.	Cognitive
2	Can use front-end program to visualize high dimensional dataset.	Cognitive
3	Can use back-end program to connect front-end program and database.	Cognitive

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

No.	Core Competences	Essential Virtues	Teaching Methods	Assessment
1	ABC	258	Lecture	Study Assignments, Discussion(including classroom and online), Report(including oral and written)
2	ABC	258	Lecture	Study Assignments, Discussion(including classroom and online), Report(including oral and written)
3	AB	258	Lecture	Study Assignments, Discussion(including classroom and online), Report(including oral and written)

**Course Schedule**

Week	Date	Course Contents	Note
1	110/02/22 ~ 110/02/28	Introduction	
2	110/03/01 ~ 110/03/07	Java programming	
3	110/03/08 ~ 110/03/14	Java programming	
4	110/03/15 ~ 110/03/21	Database	
5	110/03/22 ~ 110/03/28	JDBC	

6	110/03/29 ~ 110/04/04	Back-end programming: Spring MVC	
7	110/04/05 ~ 110/04/11	Back-end programming: Spring MVC	
8	110/04/12 ~ 110/04/18	Back-end programming: Hibernate	
9	110/04/19 ~ 110/04/25	Back-end programming: Others	
10	110/04/26 ~ 110/05/02	Interim Report	
11	110/05/03 ~ 110/05/09	Front-end programming	
12	110/05/10 ~ 110/05/16	Front-end programming	
13	110/05/17 ~ 110/05/23	D3.js	
14	110/05/24 ~ 110/05/30	D3.js	
15	110/05/31 ~ 110/06/06	D3.js	
16	110/06/07 ~ 110/06/13	Dimensionality reduction	
17	110/06/14 ~ 110/06/20	Dimension free data visualizations	
18	110/06/21 ~ 110/06/27	Final Project Presentation	
Requirement			
Teaching Facility	(None)		
Textbooks and Teaching Materials			
References			
Number of Assignment(s)	(Filled in by assignment instructor only)		
Grading Policy	◆ Attendance : 10.0 %   ◆ Mark of Usual : 10.0 %   ◆ Midterm Exam : 30.0 % ◆ Final Exam : 50.0 % ◆ Other ( ) : %		
Note	This syllabus may be uploaded at the website of Course Syllabus Management System at <a href="http://info.ais.tku.edu.tw/csp">http://info.ais.tku.edu.tw/csp</a> or through the link of Course Syllabus Upload posted on the home page of TKU Office of Academic Affairs at <a href="http://www.acad.tku.edu.tw/CS/main.php">http://www.acad.tku.edu.tw/CS/main.php</a> . <b>※ Unauthorized photocopying is illegal. Using original textbooks is advised. It is a crime to improperly photocopy others' publications.</b>		