

## Tamkang University Academic Year 108, 1st Semester Course Syllabus

Course Title	DATA MINING	Instructor	CHUN-HAO CHEN
Course Class	TEIBM1A MASTER'S PROGRAM, DEPARTMENT OF COMPUTER SCIENCE AND INFORMATION ENGINEERING (ENGLISH- TAUGHT PROGRAM), 1A	Details	<ul style="list-style-type: none"> <li>◆ General Course</li> <li>◆ Selective</li> <li>◆ One Semester</li> </ul>
Departmental Aim of Education			
I. Cultivate the ability to conduct independent research and problem solving. II. Strengthen creativity and research capacity. III. Build profound professional knowledge in computer science and information engineering. IV. Engage in self-directed lifelong learning.			
Subject Departmental core competences			
D. Research & development (R&D) ability in information engineering.(ratio:100.00)			
Subject Schoolwide essential virtues			
2. Information literacy. (ratio:100.00)			
Course Introduction	This course will introduce related techniques and applications of data mining, and the goal is to provide various approaches for students to solve different data analysis tasks. The contexts include association rule, clustering, classification, genetic algorithms and introducing to their applications. Finally, how to implement related techniques by Python are stated to enhance students' developing experiences.		

**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	Evolutionary Computation Techniques	Cognitive
2	Data Mining Techniques	Cognitive
3	Paper Study	Cognitive
4	The Future of Data Mining	Cognitive

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

No.	Core Competences	Essential Virtues	Teaching Methods	Assessment
1	D	2	Lecture, Discussion	Discussion(including classroom and online), Report(including oral and written)
2	D	2	Lecture, Discussion	Discussion(including classroom and online), Report(including oral and written)
3	D	2	Lecture, Discussion	Discussion(including classroom and online), Report(including oral and written)
4	D	2	Lecture, Experience	Discussion(including classroom and online)

**Course Schedule**

Week	Date	Course Contents	Note
1	108/09/09 ~ 108/09/15	Data Mining Overview	
2	108/09/16 ~ 108/09/22	Data Mining - Binary Association Rule Mining Techniques	
3	108/09/23 ~ 108/09/29	Data Mining - Fuzzy Association Rule Mining Techniques	
4	108/09/30 ~ 108/10/06	Data Mining - Hard Clustering	

5	108/10/07 ~ 108/10/13	Data Mining - Soft Clustering	
6	108/10/14 ~ 108/10/20	Data Mining - Regression Models	
7	108/10/21 ~ 108/10/27	Data Mining - Introduction of Classification	
8	108/10/28 ~ 108/11/03	Data Mining - Other Classification Models (SVM, ANN, etc.)	
9	108/11/04 ~ 108/11/10	Data Mining - Genetic Algorithms	
10	108/11/11 ~ 108/11/17	Midterm Examination	
11	108/11/18 ~ 108/11/24	Data Mining - Multi-Objective Genetic Algorithms	
12	108/11/25 ~ 108/12/01	Association Rule - Case study and implementation using Python	
13	108/12/02 ~ 108/12/08	Clustering - Case study and implementation using Python	
14	108/12/09 ~ 108/12/15	Classification - Case study and implementation using Python	
15	108/12/16 ~ 108/12/22	Paper Presentation	
16	108/12/23 ~ 108/12/29	Paper Presentation (Cont.)	
17	108/12/30 ~ 109/01/05	Paper Presentation (Cont.)	
18	109/01/06 ~ 109/01/12	Future of Data Mining	
Requirement			
Teaching Facility	Computer, Projector		
Textbooks and Teaching Materials	Data Mining: Concepts and Techniques, Third Edition (The Morgan Kaufmann Series in Data Management Systems)		
References			
Number of Assignment(s)	2 (Filled in by assignment instructor only)		
Grading Policy	◆ Attendance : 20.0 %   ◆ Mark of Usual : 20.0 %   ◆ Midterm Exam : % ◆ Final Exam : % ◆ Other (Paper Study & HW) : 60.0 %		

Note	<p>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> .</p> <p>※ <b>Unauthorized photocopying is illegal. Using original textbooks is advised. It is a crime to improperly photocopy others' publications.</b></p>
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