HONG KONG BAPTIST UNIVERSITY
COURSE OUTLINE

1. COURSE TITLE

Data Mining & Knowledge Discovery

2. COURSE CODE

COMP7650

3. NO. OF UNITS

3 Units

4. OFFERING DEPARTMENT

MSc in Information Technology Management

5. PREREQUISITES

Basic Knowledge in Database Concepts, Probability and Statistics.

6. MEDIUM OF INSTRUCTION

English

7. AIMS & OBJECTIVES

To introduce the fundamental issues of knowledge discovery and data mining; To learn the latest techniques of data mining; To conduct application case studies to show the usage of data mining for knowledge discovery.

8. COURSE CONTENT

I. Overview of Knowledge Discovery and Data Mining

II. Foundations of Knowledge Discovery
A. The process of knowledge discovery
B. Graphical models for discovering knowledge
C. Different perspectives on knowledge discovery
- A database perspective
- A pattern recognition perspective
- A statistical learning perspective

III. Data Mining Techniques

A. Classification
B. Clustering
C. Association Rule Mining
D. Decision Tree
E. Outlier Detection
F. Other related techniques

IV. Case Studies of Data Mining in Social Network Analysis

V. Case Studies of Data Mining in Other Areas

9. COURSE INTENDED LEARNING OUTCOMES (CILOs)

CILO	By the end of the course, students should be able to:
CILO 1	Identify and distinguish data mining applications from other IT applications
CILO 2	Describe data mining algorithms
CILO 3	Describe applicability of data mining applications
CILO 4	Suggest appropriate solutions to data mining problems
CILO 5	Analyze data mining algorithms and techniques
CILO 6	Build up team spirit in solving challenging data mining problems

10. TEACHING & LEARNING ACTIVITIES (TLAs)

CILO alignment	Type of TLA
1-3	Student will learn the concepts from lecture
4-5	Student will achieve the outcomes via assignment
4-5	Student will achieve the outcomes via guided laboratory
4-6	Student will achieve the outcomes via group project

11. ASSESSMENT METHODS (AMs)

Type of Assessment Methods	Weighting	CILOs to be addressed	Description of Assessment Tasks
Continuous Assessment	40 %	4-6	Assignments and Labs will be used to consolidate their knowledge and develop their skills in data mining. Group project will further strengthen their understanding and problem solving skills.
Examination	60 %	1-5	Final Examination questions are designed to evaluate how far students have achieved their intended learning outcomes. Analysis based

			questions will be used to assess the understanding of data mining problems. Problem solving questions will be used to assess the students' ability in tackling applications in data mining.

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