HONG KONG BAPTIST UNIVERSITY
COURSE OUTLINE

1. <u>COURSE TITLE</u>

Principles and Practices of Data Analytics

2. <u>COURSE CODE</u>

COMP7990

3. <u>NO. OF UNITS</u>

3 Units

4. <u>OFFERING DEPARTMENT</u>

MSc in Information Technology Management

5. <u>PREREQUISITES</u>

Nil

6. <u>MEDIUM OF INSTRUCTION</u>

English

7. <u>AIMS & OBJECTIVES</u>

This course introduces principal concepts of data management and analysis. It covers various topics including database management, data analytics, data mining, data visualization, and data privacy. It is expected that students can grasp practical skills about how to collect, store, analyze, and visualize data.

8. <u>COURSE CONTENT</u>

I. Data management
  - Database system concepts
  - Relational data model
  - Queries and updates in SQL

II. Data analytics
  - Background mathematics
  - Statistical analysis techniques (such as conjoint analysis, correlation analysis, linear regression, logistic regression)
  - Tools for data analytics

III. Data mining
   - Data preparation for knowledge discovery
   - Data mining algorithms (such as classification and clustering)

IV. Data visualization
   - Concepts of data visualization
   - Charts, maps and infographics

V. Data security and privacy
   - Concepts of data security and privacy
   - Privacy protection principles

9. COURSE INTENDED LEARNING OUTCOMES (CILOs)

CILO	By the end of the course, students should be able to:
CILO 1	Describe fundamentals of database management
CILO 2	Explain concepts of data analysis techniques and data mining algorithms
CILO 3	Describe and explain concepts of data visualization
CILO 4	Describe concepts and legal foundations of data security and privacy
CILO 5	Formulate SQL queries on the database
CILO 6	Conduct statistical analysis and design visualization to present analysis results

10. TEACHING & LEARNING ACTIVITIES (TLAs)

CILO alignment	Type of TLA
1-4	Students will learn the fundamentals of data management, analysis, and visualization concepts via lectures and tutorials.
5-6	Students will gain practical experiences via laboratory sessions and assignments.

11. ASSESSMENT METHODS (AMs)

Type of Assessment Methods	Weighting	CILOs to be addressed	Description of Assessment Tasks
Continuous Assessment	40 %	1-6	Continuous assignments are designed to measure how well students have learnt the fundamentals of data management, analysis, and visualization techniques. Assignments and lab exercises are designed to evaluate students' knowledge and skills. Quizzes are used to

			determine to what extent the students have achieved the expected learning outcome.
Examination	60 %	1-4	Final examination questions are designed to identify how far students have achieved intended learning outcomes. Questions will primarily assess students' knowledge in managing, analyzing and visualizing data.

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