HONG KONG BAPTIST UNIVERSITY
COURSE OUTLINE

1. ## COURSE TITLE

   Big Data Analytics

2. ## COURSE CODE

   COMP7930

3. ## NO. OF UNITS

   3 Units

4. ## OFFERING DEPARTMENT

   MSc in Information Technology Management

5. ## PREREQUISITES

   Basic knowledge in linear algebra, probability and statistics, and basic database concepts.

6. ## MEDIUM OF INSTRUCTION

   English

7. ## AIMS & OBJECTIVES

   To introduce the basic knowledge of big data analytics; to learn the techniques and tools for big data analytics; to conduct application case studies to show the usage of big data analytics.

8. ## COURSE CONTENT

   I. Background mathematics

   II. Overview of big data analytics

   III. Technologies and tools for big data analytics
      - Introduction to MapReduce/Hadoop
      - Data analytics using MapReduce/Hadoop
      - Data visualization techniques

   IV. Theory and methods for big data analytics
      - Selected machine learning and data mining methods for big data (such as

dimensionality reduction and locality sensitive hashing)
- Statistical analysis techniques (such as conjoint analysis and correlation analysis)
- Search strategies in AI

V. Big data analytics applications
- PageRank and spam analysis
- Social network analysis
- Recommendation systems

VI. Case studies: big data in banking
- Fraud analytics
- Customer segmentation

9. COURSE INTENDED LEARNING OUTCOMES (CILOs)

CILO	By the end of the course, students should be able to:
CILO 1	Identify and distinguish big data analytics applications
CILO 2	Describe big data analytics tools
CILO 3	Explain big data analytics techniques
CILO 4	Present cases involving big data analytics in solving practical problems
CILO 5	Conduct big data analytics using system tools
CILO 6	Suggest appropriate solutions to big data analytics problems

10. TEACHING & LEARNING ACTIVITIES (TLAs)

CILO alignment	Type of TLA
1-3	Students will learn the concepts and techniques via lectures, in-class discussions, quizzes, and assignments.
4-6	Students will learn the skills via guided laboratories and mini-projects.

11. ASSESSMENT METHODS (AMs)

Type of Assessment Methods	Weighting	CILOs to be addressed	Description of Assessment Tasks
Continuous assessment	40 %	1-6	Continuous assessments are designed to measure how well the students have learned the concepts and techniques in big data analytics as well as the skills for solving real-world big-data problems.
Examination	60 %	1-4, 6	Final examination questions are designed to see how far students have achieved their intended

			learning outcomes. Analysis based questions will be used to assess the understanding of big data analytics concepts and techniques. Problem solving questions will be used to assess the students' ability in tackling applications in big data analytics.

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