

City University of Hong Kong

Information on a Course
offered by Department of Information Systems
with effect from Semester A in 2008/2009

Part I

Course Title:	Database Management Systems
Course Code:	IS5413
Course Duration:	One Semester (13 weeks)
Credit Units:	Three
Level:	P5
Medium of Instruction:	English
Prerequisites:	Nil
Precursors:	Nil
Equivalent Courses:	Nil
Exclusive Courses:	Nil

Part II

1. Course Aims

This course aims to introduce the basic concepts of database systems. It covers database models and languages for the physical design and implementation, and design methods for the conceptual and logical design of database applications.

2. Course Intended Learning Outcomes (CILOs)

Upon successful completion of this course, students should be able to:

No.	CILOs	Weighting (if applicable)
1.	Explain the role of database users and features of database systems, and architecture of database systems.	25%
2.	Design a small database application using entity-relationship method and relational database design theory.	50%
3.	Implement the database application using relational database management system (DBMS), write SQL codes and define integrity constraints.	25%

3. Teaching and Learning Activities (TLAs)

(Indicative of likely activities and tasks designed to facilitate students' achievement of the CILOs. Final details will be provided to students in their first week of attendance in this course)

CILO No.	TLAs	Hours/week (if applicable)
CILO 1	Basic concepts of database systems Databases and database users, DBMS concepts and its architecture, record storage and file organisation, index structures for files.	
CILO 2	Database design Database modelling using entity-relationship (E-R) method, functional dependencies and normalisation for relational databases, relational database design methods and design process.	
CILO 3	Database models and languages The relational database model, SQL- a relational database language, and other database models.	

4. Assessment Tasks/Activities

(Indicative of likely activities and tasks designed to assess how well the students achieve the CILOs. Final details will be provided to students in their first week of attendance in this course)

CILO No.	Type of Assessment Tasks/Activities	Weighting (if applicable)	Remarks
CILO 1	Coursework: A group project, which includes a project report and presentation, will be allocated to let students apply the modelling concepts and database programming techniques learnt in class to solve practical problems.	30%	
CILO 2	Examination: A written examination (2 hours) is developed to assess student's competence level of the taught subjects.	70%, one 2-hour exam	

**** Students must pass both coursework and examination in order to obtain an overall pass in this course. ****

5. **Grading of Student Achievement:** Refer to Grading of Courses in the Academic Regulations for Taught Postgraduate Degrees.

Standard grading pattern (A+, A, A-... C-, D, Fail)

Part III

Keyword Syllabus

- Database environments including the basic concepts, definitions and database approaches. Architectures and components of database systems.
- Database development process and conceptual database design using Enhanced Entity-Relationship approach.
- The relational data model and its languages. Three-layer relational database architecture. Business benefits of the relational model.
- Logical database design concepts, theory and techniques. Normalisation of relations and business considerations in data normalization.
- Physical database design process and techniques. Designing physical records and de-normalization, file organizations, using and selecting indexes, performance improvements.
- Database Definitive and Data Manipulation Languages in relational database management systems (RDBMS). Techniques in writing SQL statements. Choice of RDBMS from user perspectives.
- Advanced topics on SQL, triggers, stored procedures, embedded SQL, dynamic SQL and XML.

Recommended Reading

Text(s)

Hoffer, J.A., Prescott, M.B. and Topi, H., Modern Database Management, 9th edition, Prentice Hall, 2009.

Elmasri, R. and Navathe, S.B., Fundamentals of Database Systems, The Benjamin/Cummings, Co. Inc., 2009.

Korth, H.F. and Silberschatz, A., Database System Concepts, McGraw-Hill, Inc. 2009.

Date, C.J., An Introduction to Database Systems, Addison Wesley, 2007.

P. Rob and Carols Coronel, Database Systems: Design, Implementation and Management, 7th edition, Course Technology, 2006.

Online Resources

Course reading materials will be augmented by articles from journals and by whitepapers and other materials available on-line.