



## Standard Course Outline

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### I. General Information

- ♦ Course number: IS 380
- ♦ Title: Database Management
- ♦ Units: 3
- ♦ Prerequisites: IS 300
- ♦ Course Coordinator: Sophie Lee
- ♦ SCO Prepared by: Sophie Lee
- ♦ Date prepared/revised: October 5, 2012

### II. Catalog Description

Introduction to database requirements, analysis and specification. SQL query formulation. Database implementation using relational database management system software, such as Oracle. Design of computerized business forms and reports.

Letter grade only (A-F).

### III. Curriculum Justification(s)

Database management is one of the foundations in Information Systems education. Database is not only a central repository of business data, such data are used to generate strategic information needed by the organization. Business data are massive and complex in nature. The processing, storage, retrieval, manipulation and management of large amount of business data is an essential part of every information system. This course is the first database course in IS curriculum. Many advanced courses references database understanding, so it is important that the instructor provides enough depth into this course. Major concepts include data integrity, conceptual modeling of data, and structured query language (SQL). In terms of SQL, instructors should cover data definition language, data manipulation language, transaction control concept, join, grouping, and subqueries. Introductory database administration concepts are also introduced.

### IV. CBA Undergraduate Program Learning Goals:

This course meets the following CBA undergraduate learning goals:

#### **Learning Goal #5 – Business Functions**

Students will have advanced understanding of business functions in Information Systems, and how an database systems works in the entire organization

#### **Learning Goal #6 – Quantitative and Technical Skills**

Students will have enhanced knowledge in quantitative and technical skills in database management systems.



## V. Course Objectives, Measurable Student Learning Outcomes, Evaluation Instruments, and Instructional Strategies for Skill Development

Upon completion, students will be able to

1. identify data anomalies and integrity
2. understand conceptually manipulate data with relational algebra
3. understand normal forms and normalization
4. demonstrate competency in basic structured query language (SQL) commands
6. demonstrate competency in advanced SQL such as grouping and subquery
7. understand introductory database administration concepts

## VI. Outline of Subject Matter

- Topic 1. Introduction to relational data models
- Topic 2. Relational algebra
- Topic 3. Structure query language – data definition language
- Topic 4. Structure query language – data management language
- Topic 5. Structure query language – query
- Topic 6. Join
- Topic 7. Data integrity commands
- Topic 8. Normalization
- Topic 9. Entity relationship diagram
- Topic 9. Grouping data: group by and having
- Topic 10. Subquery
- Topic 11. Database administration

## VII. Methods of Instruction

This course should be taught by lectures and heavily hands-on programming. Instructors should build a solid conceptual foundation on relational database, data integrity, and normalization. Equal emphasize is then used on building a solid technical ability to program and develop using Structure Query Language. **Advanced topics such as complex join, grouping data, and subquery must be covered.** Instructors should provide students plenty of exercises to practice their conceptual and programming skills. An individual-based, hands-on project using Oracle or any other leading commercial database is strongly recommended.

## VIII. Extent and Nature of Technology Use

Instructors must assign homework, exercises, and projects that involves hands-on exercises of a database system.

## IX. Textbooks

The following is a short list of textbooks that are most likely to be used for this course. Instructors may assign one or more of these and/or include other relevant texts/readings. Instructors may be asked to justify the use of old textbooks, if updated texts are available.

1. Rob, Peter, and Carlos Coronel, Database Systems: Design, Implementation, and Management, Seventh Edition, Boyd and Fraser publishing. ISBN: 1418835935.
2. Koch, George, and Kevin Loney, ORACLE 10g: The Complete Reference, 2004, by McGraw-Hill. ISBN: 0072253517.

## X. Instructional Policies Requirements

### A. Assessment Criteria

#### Homework

Students will complete individual homework profiling their competence in various subject matters.

#### Quizzes and Exams

Students will complete quizzes (optional), mid-term exam (required; at least one), and final exam (required).

#### Projects

Instructors must assign comprehensive course project that requires problem solving and use of a leading commercial database management system.

Suggested workload and grading:

Homework	70 pt (7 homeworks @10pt each)
Quiz	50 pts
Mid-Term	100 pt
Final	100 pt
Project	130 pts (2 deliverables at 15pts each; final project 100 pts)
TOTAL	550 pt

### B. Required Statement

In compliance with university policy: Final grades will be based on at least three, and preferably four or more, demonstrations of competence. In no case will the grade on any class tests count for more than one-third of the course grade.

### C. Attendance, Withdrawal, Late Assignments



Students are expected to attend courses and turn in assignments on time. Specific attendance and late assignment policies are up to each individual instructor's discretion. The withdrawal policy is the same as that of the university.

*D. Disabilities*

Students with disabilities are responsible for notifying their instructor as early as possible of their needs for an accommodation of a verified disability. A student with a disability is urged to consult with Disabled Student Services as soon as possible in order to identify possible accommodations to enhance academic success.