

287 Business Database and Database Marketing Winter 2017

University of California, Davis
Graduate School of Management

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Davis/Sacramento: Wednesday 6:30-9:30pm, 1302 Gallagher Hall (1/11, 1/18, 1/25, 2/1, 2/8, 2/15, 2/22, 3/1, 3/8, 3/15)

Course Description

This course aims to provide a practical introduction to the fundamental principles of database management systems and database marketing. After taking this course, students will be able to transform daily business activities into a database system from which information can be extracted, write SQL queries to extract information from the database, and understand concepts of database marketing. Students will design and deploy a database solution using Microsoft SQL Server Express. Marketing databases will be available to students to learn how to use database marketing principles to design queries to answer marketing questions. Students will also learn how to connect databases to data visualization tool Tableau and visualize database query results within Tableau.

Intended Audience and Prerequisites

The course is designed mainly for students who have no or very limited database background and are eager to learn how to set up his/her own database from scratch, write SQL queries, and work with marketing databases for database marketing. Students with extensive database background who are interested in this course should talk to me first before enrolling in this course. No prerequisite is required for taking this course.

Software:

We will use the Microsoft SQL Server (the free Express edition) to build our databases and execute SQL queries. We will also use Tableau for visualizing the results of the database queries. No programming skill is needed. You must have access to a laptop with Windows OS, which you should bring to every class.

Textbook (Optional):

Modern Database Management, 12th edition
Authors: Jeffrey A. Hoffer, Ramesh V., Heikki Topi
Publisher: Prentice Hall
ISBN-10: 0133544613
ISBN-13: 978-0133544619

I do not teach according to the textbook, but you can choose to have a copy as a reference. If you are price sensitive, you can choose not to buy it or you can get the much cheaper 10th or 11th edition of this book, which is quite similar to the 12th edition.

10th edition: ISBN-13: 978-0136088394

11th edition: ISBN-13: 978-0132662253

Grading:

Components	Grades
Class Participation	8%
7 Homework Assignments	65%
Term Project (Phase 1: 6%; Phase 2: 10%, Final report: 6%; Presentation: 5%)	27%

Class Participation: Class participation is evaluated by in-class exercises to see how well you have paid attention in class. There is one multiple-choice exercise in each class (except the first and last class). If your answer is correct, you earn 1 point, if not correct, you earn 0.5, and you earn 0 if you are absent. You can't make up for a missing class.

Homework Assignments: You should be expecting weekly homework assignments. Because the solution to the homework will be posted on Canvas on the due date, late homework will not be accepted.

Canvas: All materials I need to hand out to you will be distributed via Canvas. All deliverables need to be submitted via Canvas.

Groups: I will assign groups based on your background. I will try my best to honor your preference for group members if there is any. A group will work together on the term project, and some questions in the homework assignments.

Class Schedule:

Date	Topic
1 (Jan 11)	Introduction
2 (Jan 18)	Database Conceptual Design
3 (Jan 25)	Database Logical Design
4 (Feb 1)	SQL Basics
5 (Feb 8)	SQL – Time, Location, Enterprise database
6 (Feb 15)	Database marketing 2 – RFM Segmentation
7 (Feb 22)	Database marketing 3 – Building Customer Signatures

8 (Mar 1)	Data Warehouse & Data Visualization
9 (Mar 8)	Big data
10 (Mar 15)	Term project presentation

Term Project

The term project is intended to provide you with valuable *hands on* experience in designing and implementing a *real world* database system application, and as such, you are encouraged to develop such a system to address managerial issues you could face at a work place. In this project, you should identify an application and develop a database system for it. If you are not able to find a proper application, you should come and talk to me before you choose anything else. You should have real data to populate your database. If you can't find a proper real data set which can be mapped into at least 5 tables in the database, you can design and implement a conceptual database, and then generate data for the tables, and then use a simpler real data set (which may not correspond to more than one table) to write queries to get the insights from the data.

The project has 3 phases.

Phase 1: Database design

- 1, Pick an application, describe the application.
- 2, Draw an Entity-Relationship diagram for the application. Indicate the assumptions and constraints of the ER diagram. Convert the ER diagram to relational tables. Discuss the possible problems of the design.
- 3, Submit your phase 1 report.

Note:

- 1, The application you pick has to have some complexity. You need to have at least 5 tables.
- 2, The ER diagram can be easily drawn in Microsoft PowerPoint or Word. Electronic version of the graph is required.

Phase 2: Implementation in Microsoft SQL Server.

- 1, Properly refine your phase 1 according to my suggestions. You are allowed to make other changes to phase 1 if desirable.
- 2, Implement the tables in Microsoft SQL Server.
- 3, Populate the tables. If you have real data for the 5+ tables in your database, that'll great. If not, generate data for the tables.
- 4, Implement five queries in Microsoft SQL Server. You will be graded based on the complexity of the queries, and the insights you can obtain from the queries.

5, If your queries are not based on real data, please also find a simpler real data set to convert to a database, and write 3 queries based on this real data, then discuss the insights behind the queries and results.

5, Submit your phase 2 report.

Note: When you submit the phase 2 report, please also include your updated phase 1 to make it complete.

Phase 3: Final report and class presentation.

The final report should incorporate changes I suggested on your phase 2 report. The final report should properly integrate all the pieces you have done. In the report as well as the class presentation, you should describe the business problem you are addressing, the challenges you encountered, the design, the insights behind the queries, and the potential uses of the database.