Course Description

As technology advances, modern organizations nowadays collect enormous amounts of data on about everything we do. Managing data on this scale and converting it into knowledge to facilitate decision making, presents exciting new challenges. Data and information are critical to the modern organization. Whether used in knowledge management, business intelligence, enterprise resource planning (ERP), product design, marketing, personalization and other aspects of managing customer relationships (CRM), the underlying principles of data management are the same. This course aims to provide a practical introduction to the fundamental principles of database management systems and database marketing. Beyond the fundamental principles, the focus of the course is on related business applications. The course is organized into two big blocks – database and database marketing. The goal for the database block is to transform daily business activities into a database system from which information can be extracted. To achieve this goal, students are asked to pick a problem, design and deploy a database solution using Microsoft Access. The goal for the database marketing block is to provide the students with a solid understanding of database marketing concepts, techniques and various database marketing applications via a combination of lectures and case studies.

Intended Audience and Prerequisites

The course is recommended for students who are interested in understanding the role of data management for making intelligent business decisions in data-rich organizations, who are eager to set up his/her own database system from scratch, who have been working with databases but don’t know how a database is designed, who are interested in
working in the fields of sales, marketing with rich customer transaction data, etc. No prior knowledge is required for taking this course. MGT/MGP 207 is not a prerequisite.

**Textbook:**

Modern Database Management, 8th edition  
Authors: Jeffrey A. Hoffer, Mary Prescott, Fred McFadden  
Publisher: Prentice Hall  
ISBN-10: 0132212110  

If you are price sensitive, you can get the 7th edition of this book. The materials we are going to use in class haven’t changed much.

Modern Database Management, 7th Edition  
Authors: Jeffrey A. Hoffer, Mary Prescott, Fred McFadden  
Publisher: Prentice Hall  

Extra materials not included in the textbook and HBS cases will be handed out during class or made available on the course Web site.

**Software:**

Microsoft Access (needed for term project). Students can use other database software as long as they can fulfill the class project requirements.

**Course Web site:**

http://faculty.gsm.ucdavis.edu/~yiyang/teaching/287win07/287win07.html

We will make extensive use of the Web site in this course. Important information for the class (e.g., announcements, lecture notes and other handouts) will appear on the Web site. You should make a habit of checking it regularly.

Note: This syllabus may change during the quarter. The course Web site will always have the most up-to-date syllabus.

**Office Hours:**

By appointment.
Grading: (Subject to change)

<table>
<thead>
<tr>
<th>Components</th>
<th>Grades</th>
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</thead>
<tbody>
<tr>
<td>Class Participation</td>
<td>10%</td>
</tr>
<tr>
<td>Homework</td>
<td>20%</td>
</tr>
<tr>
<td>Mid-Term</td>
<td>35%</td>
</tr>
<tr>
<td>Term Project</td>
<td>35%</td>
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</tbody>
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Term Project:

It 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 face at your work place. The project can be done individually or in groups of 2. See the detailed project description at the end of the syllabus.

Homework:

There are 4 homework assignments in total. You should work on them individually. Only homework 3 and 4 are collected. You’ll benefit a lot in your midterm by working on homework 1 and 2.

Midterm:

The midterm will be in-class and closed-book/notes. It will last 2 – 2 1/2 hours. One page cheat sheet (letter size, one side) is allowed for the midterm. A calculator is allowed by not required.

Policies:

I’ll try my best to create a healthy learning environment both in the classroom and after class. Non-class related activities are discouraged in class. Please try your best to be on time for the class. After a class, you are responsible for reviewing the materials covered and reading the related text before the next class.

Late Policy: For Term Project Phase 1 and 2, you’ll get 0 if late. For Phase 3 (final report) and Homework 3 & 4, you will have 25% discount if it’s late within 24 hours. You will get 0 if it’s late for more than 24 hours.

Attendance: Attendance is required for this course. Absence is only granted for cases in which you absolutely can’t make to class. Total number of absences can not exceed 2.
### Class Schedule (Davis & Sacramento): (Subject to change)

<table>
<thead>
<tr>
<th>Week</th>
<th>Topic</th>
<th>Reading</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 (Jan 8)</td>
<td>Introduction, Data Collection, Data Representation</td>
<td>No reading</td>
</tr>
<tr>
<td>2 (Jan 17)</td>
<td>Database Conceptual Design</td>
<td>Chapter 3 &amp; 4</td>
</tr>
<tr>
<td>3 (Jan 22)</td>
<td>Logical Design</td>
<td>Chapter 5</td>
</tr>
<tr>
<td>4 (Jan 29)</td>
<td>Query 1, SQL</td>
<td>Chapter 7&amp;8</td>
</tr>
<tr>
<td>5 (Feb 5)</td>
<td>Query 2, Access</td>
<td><a href="http://www.fgcu.edu/support/office2000/access/">http://www.fgcu.edu/support/office2000/access/</a></td>
</tr>
<tr>
<td>6 (Feb 12)</td>
<td>Midterm</td>
<td></td>
</tr>
<tr>
<td>7 (Feb 19)</td>
<td>Holiday break (optional guest speaker)</td>
<td></td>
</tr>
<tr>
<td>8 (Feb 26)</td>
<td>Database marketing 1</td>
<td>Handout</td>
</tr>
<tr>
<td>9 (Mar 5)</td>
<td>Database marketing 2</td>
<td>Handout</td>
</tr>
<tr>
<td>10 (Mar 12)</td>
<td>Database marketing 3 + term project presentations</td>
<td>Handout</td>
</tr>
</tbody>
</table>

### Class Schedule (San Ramon): (Subject to change)

<table>
<thead>
<tr>
<th>Week</th>
<th>Topic</th>
<th>Reading</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 (Jan 12)</td>
<td>Introduction, Data Collection, Data Representation</td>
<td>No reading</td>
</tr>
<tr>
<td>2 (Jan 13)</td>
<td>Database Conceptual Design</td>
<td>Chapter 3 &amp; 4</td>
</tr>
<tr>
<td>3 (Jan 26)</td>
<td>Logical Design</td>
<td>Chapter 5</td>
</tr>
<tr>
<td>4 (Jan 27)</td>
<td>Query 1, SQL</td>
<td>Chapter 7&amp;8</td>
</tr>
<tr>
<td>5 (Feb 9)</td>
<td>Query 2, Access</td>
<td><a href="http://www.fgcu.edu/support/office2000/access/">http://www.fgcu.edu/support/office2000/access/</a></td>
</tr>
<tr>
<td>6 (Feb 10)</td>
<td>Midterm</td>
<td></td>
</tr>
<tr>
<td>7 (Mar 9)</td>
<td>Database marketing 1</td>
<td>Handout</td>
</tr>
<tr>
<td>8 (Mar 10)</td>
<td>Database marketing 2</td>
<td>Handout</td>
</tr>
<tr>
<td>9 (Mar 17)</td>
<td>Database marketing 3 + term project presentations</td>
<td>Handout</td>
</tr>
<tr>
<td>10 (Mar 17)</td>
<td>guest speaker</td>
<td></td>
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</tbody>
</table>
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 face at your work place. In this project, you should identify an application in your workplace and develop a database system for it. If you are not able to find a proper application related to your work, you should come and talk to me before you choose anything else. The project can be done individually or in groups of 2.

The project has 3 phases.

**Phase 1**: Database design

1. Pick an application, describe the application.
2. Why a database is needed for this application? What are the benefits and drawbacks of having a database system?
3. Draw Entity-Relationship diagrams for the application. Indicate the assumptions and constraints of the ER diagram. Convert the ER diagram to relational tables. Normalize the tables, and discuss the possible problems of the design. If the tables you get after normalization are not the best tables you would like to have, explain and list the final tables you want to have for the database.

Note:
1. The application you pick has to have some complexity. You need to have at least 4 tables.
2. The ER diagram can be easily drawn in Microsoft PowerPoint or Word. Electronic version of the graph is preferred, but hand-drawn graphs are acceptable at this stage. You need to have electronic version of the graph in the final report.
3. Before you decide on the application, your group is encouraged to talk to me first.

**Phase 2**: Implementation in Microsoft Access.

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 Access.
3. Populate the tables.
4. Describe what queries you want to have. Write them in SQL first and then implement them in Access. Each group member needs to independently write at least 5 queries in SQL and also implement them in Access. In your report, next to the query, write down the last name of the person who wrote the query. For each person, the queries should not be repetitive and should have certain level of complexity.

The requirements of the queries:
• At least 2 must use more than one table
• Each query must have at least one constraint
• At least 1 query must have a group-by term
• At least 1 query must be sorted

5. Each member in the group should build one data input form and one report. Mark your name in the report.

Note: When you submit phase 2 report, please also include everything you have for phase 1 to make it complete. Each group should only submit one copy of their report.

**Phase 3:** Final report and presentation.

The final report should incorporate changes I suggested based on the first two phases (e.g. adding a certain query, correcting problems in the ER design, etc.). The final report should properly integrate all the pieces you’ve done.

In the report, you should clearly state the background of the application, the motivation for creating a database for the application. Indicate how a database addresses the problem. Provide scenarios about how the users would use the database.

When you submit the final report, please submit the Access file together with the Word file. You can email them if the size is under 1M, otherwise please zip the files and then email or give me a CD. You can also upload the files somewhere and ask me to download.

**GRADING**

The purpose of the class is to learn, not necessarily to know everything at the beginning. So, the final report will count 25% of the total grade, and the first two phases will each count 5% of the total grade.

All the members in the group should work on all parts of the project together. You should not split the project and work on separate things. If this behavior is discovered, penalty will be applied in the grading.