General Information

1. Meetings
   Days: Tuesday & Thursday
   Time: 2:00 – 3:50 pm
   Place: TBD

2. Instructor
   Name: Conrad Shayo, Ph. D.
   Office: JB 443
   Office Hours: TR 4:00 – 5:00 p.m. or by appointment.
   Office Phone: 909-537-5798
   Office Fax: 909-537-7176
   E-Mail: cshayo@csusb.edu

3. Prerequisites: INFO 101 and INFO 101 Lab, or consent of instructor

4. Special Needs: "If you are in need of an accommodation for a disability in order to participate in this class, please let me know ASAP and also contact Services to Students with Disabilities at UH-183, (909)537-5238."

Course Description

This is an introductory database management course for undergraduate or graduate students in business or related disciplines. The course covers theories of data modeling, techniques for database analysis, design, development and implementation; Structured Query Language (SQL), and management of databases. Although all major database management systems, including hierarchical, network, relational and object-oriented will be covered; focus will be on relational database systems. Students will learn both the theory and practice of successful design, development and implementation of databases. Students are expected to have completed the two one hundred level classes: INFO 101: Introduction to Information Technology Concepts and the associated INFO 101 Tools Lab. Students with prior exposure to concepts of organizational foundations of information systems, and some programming experience will have an added advantage.

Reading Material

Required Readings


2). Assigned Class Projects, power point slides, and articles on database management and policies posted on Blackboard.

Software Used To Support Class

Microsoft® Windows 7, 8, 10, Word, PowerPoint, Microsoft Access, Microsoft Visio, ER-Assistant
Goals and Objectives

1. Goals
The goal of database management and policies is to introduce students to the theory, principles, and fundamentals of database analysis, design, development and implementation so that they can help organizations to do the right things better, to win. This course focuses on relational database management systems. The material goes beyond the material covered in INFO 101 and the INFO101 Lab.

2. Objectives
Database management systems play a critical role in organizational activities including products’ creation, operations, decision-making, and organizational learning. Understanding the theories and practices of successful database analysis, design, development and implementation is arguably the key to obtaining significant value from information system investments.

The specific learning objectives that the student will achieve from taking this course are to:

- Understand concepts of database analysis, design, development, implementation and management.
- Understand the process of selecting a database management system.
- Apply the Entity-Relationship modeling technique and database concepts of data-integrity, data dictionary, and normalization to design a database.
- Be able to implement a database using a popular DBMS.
- Perform intermediate database administration and management tasks including security, error recovery and concurrency control.
- Understand concepts of distributed databases, client/server systems, Web Access to databases, XML, data warehouses and data marts.

Outcomes

You will acquire the following skills in INFO 274

1. Ability to advise a company on evaluating and selecting a database management system.
2. How to analyze the data requirements of an organization.
3. How to design, develop and implement a database that meets the organizational requirements.
4. How to assure a reliable and secure database.
5. How to use the Structured Query Language to extract information from a database.
6. Ability to conceive and implement a database project in a team framework.
7. Ability to present/share with your classmates the progress of your database project.

2. AACSB Learning Goals Fulfilled by Course

1. Communication (Oral and Writing) skill: Each student can effectively present information orally [LG1a] and in writing. [LG1b].
2. Innovative problem solving using Information Technology skill: Each student can apply knowledge in new and unfamiliar circumstance and devise IT driven innovative solutions to cope with unforeseen events. [LG2].
3. Ethical reasoning in a National and Global Context skill: Each student can recognize and analyze ethical problems in national and global contexts, and choose and defend resolutions for practical business situations. [LG3].
4. Management knowledge and skill: Each student will obtain required general and specialized management knowledge and skills for the creation of value through integrated operations and distributions of goods, services, and information. [LG4].
The underlying theme for this course is that information systems professionals must understand that both technical and social factors are responsible for successful planning and implementation and managing information systems in organizations. Although these factors are sometimes be explored separately, they can never be disassociated. Therefore, we will continually see linkages between social and technical systems. The social factors are explored in terms of both people and the roles that they take in organizational settings. We provide a group assignment to highlight the importance of working as a team and being rewarded as a team in organizational settings. Technical factors are explored in terms of tasks and the technology used to carry out and support those tasks.

3. Outline.
The course outline below provides a tentative overview of the topics covered in the course.

<table>
<thead>
<tr>
<th>Meeting</th>
<th>Topics</th>
<th>Assignment Due</th>
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</thead>
<tbody>
<tr>
<td>Week 1</td>
<td>Syllabus &amp; Course Introduction</td>
<td>KA ch.1</td>
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<tr>
<td>Week 2</td>
<td>An Introduction to Database Management</td>
<td>KA ch 1 &amp; 2 WORKBENCH Chpt 1</td>
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<td>Week 2</td>
<td>The Relational Model</td>
<td>KA chs.2; WORKBENCH Chpt 2</td>
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<td>Week 3</td>
<td>Introduction to Structured Query Language</td>
<td>KA ch.3; WORKBENCH Chpt 3</td>
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<td>Creating SQL Views</td>
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<td>Week 4</td>
<td>Data Modeling and the Entity Relationship Model</td>
<td>KA ch.4; WORKBENCH Chpt 4</td>
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<td>In Progress Review (Group Project)</td>
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<td>Week 5</td>
<td>Midterm Review and Examination</td>
<td>Chapters 1-4</td>
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<td>Week 6</td>
<td>Transforming Data Models in Database Designs</td>
<td>KA ch.5; WORKBENCH Chpt 5</td>
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<td>Design and Normalization</td>
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<td>Week 7</td>
<td>Veterans Holiday</td>
<td>KA ch.5; Group Projects</td>
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<tr>
<td></td>
<td>Transforming Data Models in Database Designs</td>
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<td></td>
<td>Design and Normalization</td>
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<td>Week 8</td>
<td>Database Administration</td>
<td>KA ch.6; WORKBENCH Chpt 6</td>
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<td>In Progress Review Presentation</td>
<td>Group Projects</td>
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<td>Week 9</td>
<td>Database Processing Applications Using Microsoft Access</td>
<td>KA ch.7; WORKBENCH Chpt 7</td>
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<td>Week 10</td>
<td>Database Processing for Business Intelligent Systems Using MS Access</td>
<td>KA ch.8; WORKBENCH Chpt 8</td>
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<td>Group Project Presentations</td>
<td>Group Projects</td>
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<tr>
<td>Week 11</td>
<td>Final Examination—June 14th 2:00 pm– 3:50 pm</td>
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1. Class Sessions
The class sessions will be flipped. Students will read the book, watch online videos, and take a test. In class, students will be prepared to ask questions, seek clarification on difficult concepts, and complete in class assignments and reinforcing tests. Time will be given for students to work on their group project with instructor guidance and clarification as needed. Students are expected to spend two hours of outside preparation for each one hour of class. A detailed description of the course evaluation process is contained in the Grading Requirements section below.

2. Class Climate
2.1 Approach
The approach that I will use in this course takes the view that the instructor and students work in a collaborative effort that recognizes the uniqueness of each person. As such, we are all co-producers in learning. The underlying assumptions are that each individual is capable of changing his/her own behavior, and is responsible for what happens to him/her; and that one person can never assume responsibility for another person’s change. This means that each student must assume responsibility for learning and for the evaluation of that learning. No one can ever fire a single synapse in someone else’s brain.

Think of learning about database management and policies as you would of learning a sport. To learn to play basketball, you would first have to learn the fundamentals of basketball at the fundamental level and then practice those fundamentals during each practice session. The same is true of learning how to analyze, design, develop and implement a database in this class. Once you have learnt some of the fundamentals by pre-reading a chapter, watching online videos, and taking an initial evaluation test; you must then practice them. The class will become the main practicing laboratory. All students are expected to participate in each component of the course by completing the out-of-class assignments, attending classes, working on projects, and participating in classroom activities. The role of the instructor in this environment is to establish a database management and policies course framework, assemble a set of materials for exploration, and to create conditions suitable for discovery and learning through feedback, openness, trust, acceptance, confrontation, and self-reflection. Moreover, I seek feedback that will improve my effectiveness as an instructor.

2.2 Course Rules and Policies
a) Any written work MUST be TYPED and be correct for grammar, spelling, punctuation, and typing style. Your work will be graded for BOTH content and appearance.
b) Failure to submit written reports on due date is serious. Written database example analysis reports should be submitted on the due date AT THE BEGINNING OF THE CLASS PERIOD.
c) There is no opportunity for make-up work for written projects and/or presentations missed. No substitutions. A good grade for this course is achieved through CONSISTENT quality work.
d) The student is expected to come to class prepared. Failure to complete an assigned reading is serious and will impact your class participation points.
e) Only in extreme circumstances can the mid-term or final exam be made up. The student will be responsible for documenting those extreme circumstances.
f) Incomplete grades will only be considered for extenuating circumstances as provided by CSUSB policy.
g) Any academic dishonesty such as plagiarism, submitting previous work, etc., will result in a failing grade for the course.
# Grading

1. **General Class Participation** [pursuant to LG 1b, LG2, LG3, and LG4] (20%)
The class participation grade will reflect an evaluation of the quality and quantity of student contributions during the class sessions. Students are expected to have thoroughly read and studied all assigned reading prior to class. Class participation will include the use of clickers to evaluate out of class preparation. Students who miss a clicker session (for any reason including schedule conflicts, tardiness, unscheduled vacations, etc.) during the class in which it is given will not be able to make it up afterwards. The lowest of the clicker scores will be dropped for final grade calculation in order to provide students with some flexibility in case of any conflicts that might cause them to miss a clicker during the term (or if they just happen to have a bad day). If you have any questions about this policy, please let me know.

2. **Group Project** [pursuant to LG1, LG2, and LG4] (20%)
This group project will last the entire quarter (See Appendix A). The project is divided into several phases and each phase will be graded individually. Each project team consists of five members at most. It is each team's responsibility to coordinate and share the work equally. Each project team receives one grade and each team member receives a grade in proportion to the member's contribution to the team project. A Group Member Evaluation Form will be completed by each group member half-way and at the end of the class to indicate each member's contribution to the project. (See Appendix C). Therefore, it is critical for every member in a team to work together and give the best collective performance for the team. It is also important for each team to keep a working log of work done by each team member so that the percentage of the work done by each team member can be easily determined at the end of the quarter. The group will make effective use of e-mail correspondence and occasionally meet in class and outside class. Students will sign a Group Memorandum of Understanding (Appendix B).

3. **Individual Exercises** [pursuant to LG2 and GL4] (15%)
Each student will complete a number of assigned in-class exercises during the quarter. Fifty percent (50%) of the exercises are based on the Workbench assignments at the end of every chapter; the other 50% will be in class assignments. They are individual assignments in the areas of data modeling, database design, SQL, and database implementation. These exercises are assigned in class during the term.

4. **Examinations** [pursuant to LG2, LG3, and LG4] (45%)
This will be an individual assignment. Each student will participate in a mid-term and a final exam (Please see schedule). A missed exam cannot be rescheduled without prior approval. The examination will evaluate the student’s comprehension and retention of the topic areas and subject matter in database management and policies (including textbook, online videos, the project, assigned readings, assigned exercises and class discussions).

4. **Grade Weights**
Grade points will be assigned according to the weighting scheme shown below. Weighted grade points will be summed, and then the course grade will be assigned based on this value. The maximum grade you can earn for the requirements above will be an “A” given that you submit high quality assignments, do and effective group project and presentation, participate consistently in class discussion, and score highly in the mid-term and final examination. When evaluating your status in class, you should not count **on any curve** for improvement in your final course grade. Except for a recording error, you will have only (1) week past the date from which the graded exercises, exams, projects, or presentations are returned to the class to dispute any grade. After that time, no grade changes will be permitted. Your grades will be posted on Blackboard on a regular basis.

5. **Class Presentations and Procedures**
The group members are responsible for preparing the presentation slides and distributing them to students and the instructor before the class presentation. The group is also responsible for making sure that their database project can be demonstrated in class. The group members are responsible for leading the presentation session. Each member of the group has to fill out a short evaluation form at the end of each presentation. The evaluation will provide feedback on the
contribution of each member to the group assignments as well the effectiveness of the group as a whole. See Appendix C.

6. Grading Weights

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<tbody>
<tr>
<td>1.</td>
<td>Class Participation &amp; Clickers</td>
<td>20</td>
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<tr>
<td>2.</td>
<td>Individual Exercises 50% Workbench; 50% in class assignments</td>
<td>15</td>
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<tr>
<td>3.</td>
<td>Group Project and Presentation</td>
<td>20</td>
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<tr>
<td>4.</td>
<td>Mid-term Examination</td>
<td>20</td>
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<tr>
<td>5.</td>
<td>Final Examination</td>
<td>25</td>
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<td>6.</td>
<td>Total</td>
<td>100</td>
</tr>
</tbody>
</table>

A 94 – 100%  A- 90 – 93%
B+ 87 – 89%   B 83 – 86%   B- 80 – 82%
C+ 77 – 79%   C 73 – 76%   C- 70 – 72%
D+ 67 – 69%   D 63 – 66%   D- 60 – 62%   F- Below 60%
APPENDIX A: DETAILED GROUP PROJECT GUIDELINES

Purpose
The purpose of this assignment is to enable each student to use what they are learning in the course to conceive, analyze, design, develop and implement a database application that fulfills a practical business need. Each student group will select an industry they would like to do their project on. Students will conceive of, and establish a completely new business in a specific industry. The group will have to demonstrate to the class and instructor why this is indeed a completely new business. The student groups will be established by the instructor in the first week of class.

NOTE: You may implement your group database using any of the following architecture - stand alone, two-tier, i.e., client server application or three-tier, i.e., web application. Projects implemented with two-tier or three-tier architecture will receive extra bonus.

Requirements:
1. Description of the new business including: organizational structure, duties and responsibilities of 4 upper management officers, questions the managers must get answers to in order to discharge their duties and responsibilities, at least 3 major decisions made by each manager, and information required to make such decisions. Team members’ names. Due 04/12/2018 (10 points)

2. Database project name, brief description, and the practical problem the database is trying to solve (existing problem description and proposed data requirements), questions that the database will be able to answer for decision makers. Due 04/26/2018 (10 points)

3. In progress Reviews (IPR) will be conducted as follows:
   • Various user views and explaining their function (Due 05/10)
   • Database Design – E-R Diagram (should be normalized at least into 3NF) (Due 05/17)
   • Implementation (table, query, forms, reports and menu) using a DBMS (Due 05/23)
   • User Manual – detailing operation of the database

4. Final project is due 06/07/2018. The final project should include:
   • Problem description, data requirements (analysis), including questions the database will be able to answer
   • Various user views and explaining their function
   • Database Design – E-R Diagram (should be normalized at least into BCNF)
   • Implementation (table, query, forms, reports and menu) using a DBMS
   • User Manual – detailing operation of the database

4. On 03/07/2018, each group will be given 15 minutes to present a summary of their database project. This will be followed by 10 minutes of questions and answers. The database application will capture what the group agreed on.

Grading
The database application will be graded based on their thoroughness, robustness, and degree to which it meets the data requirements captures in the analysis and questions posed by the decision makers. The database application and presentation account for 20% of the class grade. Not every student will receive the group grade. Your grade will depend on your group’s evaluation of your contribution. Group evaluations will be conducted at the end of the presentation. See attached Group Evaluation Form—Appendix C.
APPENDIX B: CLASS GROUP MEMORANDUM OF UNDERSTANDING

As a Member of this Class Group, I agree to:

1. Come prepared and on time to all class and project group meetings.
2. Be a fully participating member of the project group, by doing my fair share and giving my best effort to the work assigned to the group.
3. Do everything within my power to be an asset to the group, including seeking assistance from the instructor and other students to ensure that my understanding of the course material is kept in pace with the group’s overall knowledge.
4. Treat all members of the project group with dignity and respect by listening to their ideas and abiding by the decisions of the group.
5. Resign from the group should it become evident that I am no longer living up to the conditions of this agreement.

The class group agrees to:

1. Work as a team with decisions and consensus.
2. Delegate specific assignments, when appropriate, to individual group members.
3. Not ask the same member to perform the same task on all group work (such as writing the case analysis) and to rotate the group’s leadership among group members.
4. Work out meetings in the same manner as a business meeting (i.e., with an agenda and clearly established goals.)
5. Work out meeting time and places (if necessary) that are convenient to the majority of the group members.
6. Be fair and honest with members of the class group and to give fair warning to any group member who does not meet the defined group expectations of each assignment.
7. Request the resignation of any group member or members not abiding by the conditions of the contract.

I agree to abide by the conditions of this contract and recognize that my participation in the class group is a component of my grade for the course.

Signatures:

________________________________________________________________________________________________________

________________________________________________________________________________________________________

________________________________________________________________________________________________________

________________________________________________________________________________________________________

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________________________________________________________________________________________________________
APPENDIX C: GROUP EVALUATION FORM

GROUP NAME: _______________________________________________

ASSIGNMENT: _______________________________________________

In completing this form, do not identify yourself in anyway. In the space below, list the names of each member of your project team, including you. Then use the following scale to rate how effectively each member of the group, including yourself, contributed to the group assignment. Using the following scale, circle the number between one and five beside each name.

<table>
<thead>
<tr>
<th>Name</th>
<th>Rating</th>
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<tbody>
<tr>
<td>____________________________</td>
<td>1 2 3 4 5</td>
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<td>____________________________</td>
<td>1 2 3 4 5</td>
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<td>1 2 3 4 5</td>
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Now, objectively evaluate the group’s performance on the following questions. Attempt this rating without regard to positive or negative feelings that you may have for individual members.

Using the following scale, circle one number as your response to each question:
1 – Not at all Effectively  2 – Not Very Effectively  3 – Somewhat Effectively  4 – Effectively  5 – Very Effectively

How Effectively did the Case Group:

<table>
<thead>
<tr>
<th>How Effectively did the Case Group:</th>
<th>Rating</th>
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<tbody>
<tr>
<td>1. Make individual contributions that helped the group accomplish its goals?</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>2. Maintain an atmosphere in which each member could contribute to the group?</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>3. Remain focused on important issues during the group discussions?</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>4. Search for alternative points of view or compromise within the group?</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>5. Deal with and resolve conflict within the group?</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>6. Contribute to the group’s written outcomes?</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>7. Contribute to the group’s oral presentation?</td>
<td>1 2 3 4 5</td>
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What changes would you like to see in your class group?

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