COURSE INFORMATION

COURSE TITLE
CIS240: Database Design and Development

COURSE DESCRIPTION
Introduces the basic concepts of relational databases, data storage, and retrieval. Covers database design, data modeling, transaction processing, and introduces the Structured Query Language for databases.

CREDIT HOURS
3

SUGGESTED PREREQUISITE KNOWLEDGE
Students entering this class should be familiar with using a database such as Microsoft Access, creating and editing documents, and proficient in basic file management, including saving files in specific locations, opening files, downloading files, renaming files, and compressing files in the .zip format.

CCCOnline Course Policies

The CCCOnline Course Policies page contains information about the student's role in the classroom, grading policies, and rights and responsibilities.
COURSE MATERIALS

Your textbook is available online as an eText. You do not need to purchase any additional materials. For specific information on refund policies and the optional black and white textbook available for purchase please contact the CCCOnline bookstore.

MINIMUM COMPUTER REQUIREMENTS

To complete this course, you will need regular access to a computer from which you can get to the internet and use email. In order to ensure that your course functions properly, you must run the System Check. This is a CRITICAL STEP, and taking the time to do it now will eliminate a tremendous amount of frustration for you later. To run the System Check, click Tools in the course NavBar and then click System Check.

MAINT TEXT


DIGITAL MATERIALS ACCESS AND SETUP

This course uses Cengage which contains the eText in addition to interactive media content to help you remember what you learn.

- Visit the Cengage Course Start page for details on first access of the materials.

To make sure your computer is set up correctly to access the eText and other digital content, review the Cengage Technical Support page, also linked in the Technical Support Module.

LIBRARY ACCESS

You will need your student ID Number (Your S#) to login to the CCCOnline Library in order to gain access to some of the readings and videos in this course.
COURSE COMPETENCIES AND OUTCOMES

STUDENT COMPETENCIES

The competencies you will demonstrate in this course are as follows:

A. The student will gain a working knowledge of Relational Database Systems.
B. The student will be able to effectively apply design tools to the design of a relational database.
C. The student will be able to properly execute queries to retrieve information from a relational database.
D. The student will be able to place database tables in the first three normal forms.
E. The student will be able to implement concurrency control in a relational database.
F. The student will be able to create a backup plan for a relational database.

The module outcomes that will permit you to demonstrate course competencies are:

MODULE 1

Outcomes Competencies
1 Review basic database terminology A, C
2 Describe database management systems (DBMSs) A, B
3 Explain the advantages and disadvantages of database processing A
4 Describe the relational model associated with databases B, C
5 Review sample companies used throughout the text - BITS Corporation, Colonial Adventure Tours, and Sports Physical Therapy A
6 Explain and design Query-By-Example (QBE) C
7 Develop relational algebra statements A, B

MODULE 2

Outcomes Competencies
1 Describe Structured Query language basics (SQL) B
2 Design SQL statements to update database data B, C
3 Define, describe, and use database views A
4 Implement indexes to improve database performance B
5 Describe the security feature of a DBMS E
6 Discuss entity, referential, and legal-values integrity A, B, E
MODULE 3

Outcomes
1. Explain functional dependence and primary keys
2. Define first normal form, second normal form, and fourth normal form
3. Explain how normalization is used in the database design process
4. Describe the problems associated with tables (relations) that are not in first normal form, second normal form, or third normal form, along with the mechanism for converting to all three
5. Define user views and explain their function
6. Define Database Design Language (DBDL) and use it to document database designs
7. Design entity-relationship model for representing and designing databases
8. Implement top-down and bottom-up approaches to database design and examine the advantages and disadvantages of both methods
9. Design and implement a survey form to obtain information from users prior to beginning the database design process
10. Present a method for database design at the information level and view examples illustrating this method

Competencies
A, B, C, E, F

MODULE 4

Outcomes
1. Describe the functions, or services, provided by a DBMS
2. Describe how a DBMS handles updating and retrieving data
3. Define and describe data replication
4. Present the utility services provided by a DBMS
5. Examine the catalog feature of a DBMS
6. Illustrate the concurrent update problem and describe how a DBMS handles this problem
7. Explain the data recovery process in a database environment
8. Describe the security services provided by a DBMS
9. Examine the data integrity features provided by a DBMS
10. Explain the need for database administration
11. Explain the DBA’s responsibilities in formulating and enforcing database policies for access privileges, security, disaster planning, and archiving

Competencies
A, B, C, E, F

MODULE 5

Outcomes
1. Describe distributed database management systems (DDBMSs)
2. Explain client/server systems
3. Examine the ways databases are accessed on the Web
4. Describe data warehouses and XML
5. Describe data warehouses structure and access
6. Explore the general concepts of object-oriented DBMSs

Competencies
A, B, C, E, F

A, B, F

A, B

A, B, F

A, B, E

A, B, E, F
**Grading and Evaluation**

**Methods**

Evaluation includes a combination of discussion participation, assignments, and other evaluations. Rubrics are provided for assignments and discussions.

**Grading Policies**

Mark all module due dates on your calendar for this class. You may submit assignments AHEAD of schedule. Late assignments will not be accepted without prior approval, possibly including documentation.

**Summary of Grading:**

<table>
<thead>
<tr>
<th>Assignment</th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Discussions, D2L (11 @ 20 points each)</td>
<td>220</td>
</tr>
<tr>
<td>Review Questions, MindTap (9 @ 15 points each)</td>
<td>135</td>
</tr>
<tr>
<td>Assignments, MindTap (9 @ 20 points each)</td>
<td>180</td>
</tr>
<tr>
<td>Module Quizzes, D2L (5 @ 33 points each)</td>
<td>165</td>
</tr>
<tr>
<td>Projects, D2L (3 @ 100 points each)</td>
<td>300</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>1,000</strong></td>
</tr>
</tbody>
</table>

Grading Scale

A = 90 to 100%   B = 80 to 89%   C = 70 to 79%   D = 60 to 69%   F = 59% and below

**Discussions**

Discussions will require a minimum of three posts. The initial post will directly address the discussion topic. The initial post will require at least one resource in addition to the course textbook. All sources used must be properly cited using either MLA or APA formatting. See the CCCOnline Library for assistance with proper citation formatting.

The other two posts (more than two are encouraged) will be responses to classmate posts. The response posts do not have to have sources, although any sources used must be cited. Response posts that simply agree or disagree without elaboration will not be counted for points.

Initial posts are due by the Wednesday of each week. Follow-up posts must be submitted between Thursday at 12:01 a.m. and Sunday at 11:59 p.m. of each week. Initial posts submitted after the Wednesday due date will be assigned a grade of 0. Follow-up post attempts after Sunday at 11:59 p.m. will not be accepted. All times are Colorado time.
ASSIGNMENTS
Each module will have multiple assignments including review questions. The assignments must be completed by the deadlines posted in the course schedule. No late assignments will be accepted except under extreme circumstances and only with the consent of the Department Chair. Requests for assignment due date extensions that are received on the assignment due date are far less likely to be approved without additional documentation that the student could not have submitted the assignment earlier do to circumstances beyond his/her control.

Assignment grading will follow the appropriate grading rubric.

QUIZZES
There are five module quizzes in this course. Each quiz consists of multiple choice and True/False questions. Students will have one attempt to complete each of the module quizzes.

PROJECTS
There are three projects in this course. The first project is based on information you obtain from a company pertaining to their existing DBMS. The second project expands on the information you presented in the first project with new details you have learned during the course. The third project is a compilation of your first two projects and the course concepts. Each project is due by the dates posted in the course schedule.

EXTRA CREDIT
There is no extra credit available in this course.
COURSE SCHEDULE

The Schedule is subject to change as needed.

This page summarizes all of the graded assignments, discussions, quizzes, and reading assignments for the course. If you want, you can print it out and post it somewhere handy.

All assignments are described in detail on the Module Assignment pages. If you have questions check there and/or send me an e-mail.

This course is not self-paced and is not open-exit. All assignments, quizzes, discussions, etc., are to be completed by no later than 11:59 pm MST/MDT of the due date.

NOTE: Important CCCOnline semester dates (e.g., drop/withdraw/term end) appear on the CCCOnline calendar.

MODULE 1

Reading/Assignments/Exams Due Dates
Introduction Discussion and Pre-Quiz
Chapter 1 – Reading, Exploration, Discussion and Assignments
Chapter 2 – Reading, Exploration, Discussion and Assignments
Discussion 1 Initial Post
Discussion 1 All Replies
Discussion 2 Initial Post
Discussion 2 All Replies
Module Quiz

MODULE 2

Reading/Assignments/Exams Due Dates
Chapter 3 – Reading, Exploration, Discussion and Assignments
Chapter 4 – Reading, Exploration, Discussion and Assignments
Discussion 1 Initial Post
Discussion 1 All Replies
Discussion 2 Initial Post
Discussion 2 All Replies
Module Quiz

MODULE 3

Reading/Assignments/Exams Due Dates
Chapter 5 – Reading, Exploration and Discussions
Chapter 5 – Assignment
Chapter 6 – Reading, Exploration, and Discussions
Chapter 6 – Assignment
Discussion 1 Initial Post
Discussion 1 All Replies
Discussion 2 Initial Post
Discussion 2 All Replies
Module Quiz
**MODULE 4**

**Reading/Assignments/Exams**
- Chapter 7 – Reading, Exploration, Discussion and Assignments
- Chapter 8 – Reading, Exploration, Discussion and Assignments
- Discussion 1 Initial Post
- Discussion 1 All Replies
- Discussion 2 Initial Post
- Discussion 2 All Replies
- Module Quiz

**MODULE 5**

**Reading/Assignments/Exams**
- Chapter 9 – Reading, Exploration, Discussion and Assignments
- Final Exam
- Final Paper
- Discussion 1 Initial Post
- Discussion 1 All Replies
- Discussion 2 Initial Post
- Discussion 2 All Replies
- Module Quiz

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