CIS 241 Database Design and SQL

Welcome

Welcome to Database Design and SQL.

Course Information

Prerequisite: Working knowledge of, and experience with, Microsoft Access as presented in CIS 147 are strongly recommended.
Credits: 5
Description: Introduction to database management systems. Focuses on database normalized table design, and SQL queries to support forms and reports.

Optional on-site instructional assistance (tutorials) will be available for this class at the Whidbey Island campus. This is not obligatory for either the student or the instructor. Students are encouraged to form online study groups that *may* be the basis for optional tutorials, dependent upon schedules, room availability and levels of participation. Either the instructor or a group of students (at least 3) may initiate a tutorial.

Instructor Information

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Materials

Text: Title: Database Design for Mere Mortals
               Author: Hernandez
               Publisher: Addison Wesley
               ISBN: 978-0321884497

Hardware: Flash (thumb) drive or comparable storage device (not zip disks)
Software: Microsoft Office (Version 2013 recommended but other versions will suffice)

Skagit Valley College provides licensing of Microsoft Office Software to all students. Information for this program is found at http://www.mysvc.skagit.edu/images/MySVC_Office_Guide.pdf. Realize that anytime you are installing or upgrading software, there is a chance that it may corrupt the current operating system, and may require the operating system and/or other programs to be reinstalled. This could result in a loss of data. ***Students must assume all responsibility for possible losses.*** Assistance in completion of labs on personal machines will be limited since the instructor will not have access.

Course Content

- Overview & brief history of database management systems
- Database design, feasibility study, user requirements, diagramming.
- Normal forms.
- Tables.
- Relationships.
- Queries both QBE and SQL
- Calculations and data manipulation using QBE and SQL.

Course Objectives

After completing this course, the successful student will be able to:
- Use critical thinking skills to identify the advantages of the database management approach.
- Identify the components of a DBMS.
- Identify the leading commercial databases.
- Identify the role of the feasibility study.
- Use critical thinking to identify user requirements for a diversity of applications.
- Use critical thinking to develop class diagrams for a diversity of applications.
- Use critical thinking to determine the effects of business rules.
- Perform normalization techniques alone or in a teamwork context.
- Create a well behaved set of normalized tables alone or in a teamwork context.
- Use critical thinking to create correct relationships between classes.
- Use critical thinking to create queries using QBE and SQL.
- Perform basic calculations and data manipulation with QBE and SQL.

General Education Outcomes

After completing this course, the successful student will be able to:
- Identify and express concepts, terms, and facts related to a specific discipline.
- Analyze issues and develop questions within a discipline.
- Identify, interpret, and evaluate pertinent data and previous experience to reach conclusions.
- Apply successful organizational strategies of planning, goal setting, prioritizing, resolving conflict, and managing time to specific goals and/or projects.
- Interpret information and reasoning expressed mathematically (for example in spreadsheets, diagrams, charts, formulas, etc.).
- Communicate mathematical information effectively.
- Demonstrate an understanding of fundamental scientific concepts.
- Use technology appropriate to the context and task to effectively retrieve and manage information, solve problems, and facilitate communication.

Communication: Email and Moodle

Because electronic mail and Moodle are vital tools of communication, students must form the habit of checking both frequently.

Email

As an SVC student, you have a college email account. **You must use this email address for all college business.**

Students can expect email responses from the instructor during regular weekday work hours (Monday to Friday, 9 am to 5 pm).

Given the increasing volume of email, the message deserves particular attention:

- make the subject line pertinent
- be clear and concise
- include original threads where pertinent
- attach a file when necessary

Pay attention to the content of the message:

> **poor content**:
>> "I read Chapter 2 of the text and am having trouble understanding it – can you help?"
>
> **good content**:
>> "On page 65, there is an example regarding … I do not understand, can you give me another?"

E-Communication Policy

Clear and effective written communication is crucial to the success of any enterprise; this is acutely so in a learning environment where there is increasing reliance on e-communication.

In addition to the rules of email etiquette to be found at: https://www.skagit.edu/academics/e-learning/netiquette/, all e-communication must be **professional** in **vocabulary** and **tone**. Skagit Valley College provides a workplace (which includes e-communication) free from discrimination and harassment of any form. Confirmed violations of this policy will lead to corrective discipline.

If an infraction occurs, the offender may receive a reminder of this policy or a copy of the communication may be forwarded to: ecomm-abuse@skagit.edu.

Best Practice

Form the habit of asking yourself:

1. Could my communication possibly be interpreted as insulting, disrespectful, sarcastic, discriminating, mocking or rude?
2. How would I feel if the communication were directed to me?

Moodle

Not all features of Moodle will be utilized in this class. Students should have a clear understanding of the pertinent sections and take full advantage of the many benefits.

The only mandatory forum is Introductions (in the Orientation Unit). Other forums are made available for **students to interact with one another**. This simulates an 'in place' work group experience. Just as in a work group, I will be happy to contribute but I will enter a forum **only** if I am specifically invited, via email, to do so. You will find forums for each unit. Students are responsible for downloading course documents and taking part in discussions with classmates.

Assignment Submission Policy

Unless otherwise directed, solutions to lab assignments will be submitted as attachments using college email.
Individual files making up an assignment are named according to the following convention:
Five parts:
1. 3 digit course number
2. 3 initials of student's name
3. 2 digit assignment number
4. a decimal
5. extension appropriate to the application

Example for assignment 2 in CIS101 submitted by John Anthony Doe using Microsoft Word:
> **101JAD02.DOCX**

Before submission, all files (even if there is just one) making up the assignment must be zipped into a file named according to the following convention:
Five parts:
1. 3 digit course number
2. 3 initials of student's name
3. 2 digit assignment number
4. a decimal
5. .zip extension

Example for assignment 3 in CIS101 submitted by John Anthony Doe:
> **101JAD03.zip**

Email protocol:
The subject line of the message:
Five parts:
1. 3 digit course number
2. 3 initials of student's name
3. 2 digit assignment number
4. space
5. Please Grade

Example of the email subject line for assignment 2 in CIS101 submitted by John Anthony Doe:
> **101JAD02 Please Grade**

Do not include messages in assignment submissions; send a separate email.
Points will be deducted if an assignment is submitted incorrectly.

Assignments

All assignment quizzes and/or tests where applicable are completed online through Moodle where a schedule of unit due dates is displayed. It is **strongly** recommended that you use a computer with a broadband internet connection rather than dial-up!
If you are a student with **documented** disabilities you must ensure that the instructor has been provided the appropriate documentation after which you may exceed the times allotted.
The instructions for all assignments are found in Moodle.
You may challenge any online test or quiz. Simply submit an email and include the quiz number, question number(s) and your reason for the challenge. At the end of the course, these will be considered on their merit for your final grade.
The last unit of the class must be completed by **11:45 pm on Wednesday of the last week of the quarter**.
Given the time restraints for submitting grades, **there are absolutely no exceptions**.

Class Overview – Print this page and review frequently.

The course is divided into sections within which you will find items in the form of assignments and assessments. Items will become available in sequence as they are completed according to the conditions that apply. The following is an overview of the class content:

Orientation Unit
1. Watch Moodle video.
2. Download and study the Syllabus.
3. Read the Honor Code.
4. Take the Syllabus Quiz.
5. Introduce yourself.

Unit 1
1. Read Chapters 1, 2, 3.
2. Take Quiz 1.
3. Read Chapters 4, 5.
4. Take Quiz 2.
5. Study Database Design Directives and Naming Conventions.
6. Work through and complete Tutorial A.
7. Complete Lab 1.
8. Take Lab Quiz 1.

Unit 2
1. Read Chapter 6.
2. Take Quiz 3.
3. Work through and complete Tutorial B.
4. Complete Lab 2.
5. Take Lab Quiz 2.

Unit 3
1. Read Chapter 7.
2. Take Quiz 4.
3. Read Chapters 8, 9.
4. Take Quiz 5.
5. Work through and complete Tutorial C.
6. Complete Lab 3.
7. Take Lab Quiz 3.

Unit 4
1. Read Chapters 10, 11.
2. Take Quiz 6.
3. Work through and complete Tutorial D.
4. Complete Lab 4.
5. Take Lab Quiz 4.

Unit 5
1. Read Chapters 12, 13, 14, 15.
2. Take Quiz 7.
3. Work through and complete Tutorial E.
4. Complete Lab 5.
5. Take Lab Quiz 5.

Unit 6
1. Work through and complete Tutorial F.
2. Complete Lab 6.
3. Take Lab Quiz 6.

Unit 7
1. Complete Final Exam Lab.
2. Take Final Exam Lab Quiz.

Evaluation

Your grade will be based on:
8 Quizzes for a total of 20 %
6 Tutorials for a total of 15 %
6 Lab Assignments for a total of 55 %
1 Final Exam for a total of 10 %
In Canvas you will download a grade tracking spreadsheet that will enable you to know your current grade at all times and enter hypothetical scores based on anticipated performance.

Grading Scale

90	-	100	=	A
80	-	89	=	B
70	-	79	=	C
60	-	69	=	D
0	-	59	=	F

Pass/Fail grading is not an option.

Class Components

The primary features of this class are:

Readings

As directed in each unit.

Quizzes

There are 8 quizzes including the syllabus quiz. **You have unlimited attempts for the syllabus quiz but you must score 100% before proceeding to the next task.**

All other quizzes have a fixed duration and may be taken **twice**.

Your **best score** will be recorded.

Quiz content is based on specific reading assignments.

After completion, you will only see your answers and your score.

If, after reviewing your reading, you need clarification please contact the Instructor referring to the Quiz and question number.

Tutorials

This class has 6 tutorials.

Your email submission will have the appropriate attached tutorial (zipped file(s)). e.g. The solution to Tutorial A will be named 241XXX_TutA.accdb - zipped into a file named 241XXX_TutA.zip.

The tutorials will serve as a preparation for the labs. Each tutorial **must** be successfully completed before moving forward to the respective lab.

If you do not complete the tutorial successfully, you will not complete the lab successfully. **Do not submit the tutorial until it is completely correct else you will receive a score of zero.** The grade book value for each tutorial is 10. **Your score will be either 10 or 0**.

Work through the tutorial creating/checking your solution as you go. Get assistance on tutorial topics you do not understand before attempting the lab.

Labs

Labs require lots of pondering and re-working so be sure to allow enough time.

Your email submission will have the appropriate attached zipped file (containing database(s)).

e.g. The solution(s) to Lab 01 will be named as indicated in the lab assignment and **zipped** into a file named 241XXX01.zip (where XXX are your initials).

Lab Quizzes

Lab quizzes are taken after you have submitted your zipped file for the respective lab. You may take each Lab Quiz **just once**. The number of questions for each lab quiz and the duration for each may vary. In each Lab Quiz you will answer questions pertaining to the respective lab. Unless you hear otherwise, your score for the lab quiz will be your score for the lab. **You must answer the lab quiz according to what your lab submission indicates. Failure to do so may result in a score of zero for the assignment. Therefore, have your lab solutions available before you begin.**

Final Exam

For the final exam you will be presented with a design problem, for which you must create a solution and then answer questions regarding your solution in the form of an online quiz.

Academic Conduct

Academic Honor Code

All students of Skagit Valley College are responsible for knowing and adhering to the Academic Honor Code of this institution found at http://www.mysvc.skagit.edu/honorcode. Violations of this code include: cheating, plagiarism, aid of academic dishonesty, fabrication, lying, bribery, and threatening behavior. All incidents of academic misconduct are reported to the student conduct officer. Students found to be in violation of the Academic Honor Code are subject to academic consequences up to and including failure of the course. Students may also be subject to college disciplinary sanctions up to and including expulsion from the College."

Code of Student Conduct
http://www.mysvc.skagit.edu/conduct

Student Complaint Policy
http://www.mysvc.skagit.edu/complaint

College Policy

The Board of Trustees of Skagit Valley College provides a workplace free from discrimination and harassment of any form. This applies to students and employees of the college anywhere on campus. Confirmed violations of this policy will lead to corrective discipline.