Course Info

Fall 2018 ● CRN 11196 ● Monday/Wednesday: 7:30-9:45pm
29 class sessions ● TTC Room 2340

Prerequisites: CIS150 required.

Course Description: In this course, students will learn how to design and create a database along with using SQL and Oracle to access and query data within a database along with writing programs that access and maintain databases. Included will also be an introduction of data structures, data dictionaries, data security, and database components. Discussions will include the current and future database environmental concerns.

Learning Objectives

- Understand DBMS designs, purposes, functions and terminology
- Be capable of relating an ERD (Entity Relationship Diagram) with a database
- Normalize a relational database up to 3NF (Normal form) with an appropriate data dictionary
- Develop a database and, using SQL, query and maintain the database
- Import data from an external data source such as CSV, spreadsheets, other databases
- Maintain, backup and report from a database
- Understand current database architectures, data warehousing techniques, security concerns and uses including e-commerce and DSS (Decision Support Systems)
- Identify security needs of databases, including when used over the internet

General Education Outcomes

- Effective written and oral communication
- Ability to think critically and to solve problems
- Information, numeric, and technology literacy
- A highly developed sense of ethics
- Strong personal management skills

Textbook: Database Concepts 8th Edition, by David M. Kroenke

Instructor Info

Office: 7338 (new Fall 2018)
Campus email: jburns@kvcc.edu – (best contact method)
Campus phone: 269.488.4113 (new Fall 2018)
Voice mail: 269.488.4701 ...extension 6142
Office hours: M/W – 5:30-6:00ish classroom (if available) OR by appointment

Class & College Policies

- Cheating/Plagiarism - *Student Handbook (KVCC PDF) Page 17, Section II & III*
- Final Exam, Final Project
  - Must be turned-in, as scheduled.
  - Prior arrangements may be made - at the discretion of the instructor.
- Want a grade for your work?
  - Turn it in on-time
  - If work "could be better" – I will offer you opportunity to make it better; however, this work must be completed promptly. I will only allow up to 1 week extra – from point of offer.
  - After that week – all late work will lose 10% of possible grade, for each week late.
  - Nothing allowed late – 3 weeks before final class
- Note: late means at the 'start of class' for noted time frame
  - If you expect to turn-in late work, I can define this down to the minute if necessary.

- If academic accommodations are necessary due to a disability or academic barrier, please contact the Office for Student Access (OSA). The OSA is located in room 2220 in the Learning Center on the Texas Township Campus. You can schedule an appointment by calling 269-488-4397.

Grading

Attendance	Is monitored for college, not graded	
Projects 1-5	100 pts.	Total for all 5
Quizzes	50 pts	Total for all
Article Review	50 pts	
Final Exam	100 pts	Comprehensive
Total Points	***300 points***	

	Grade	Points	%
Outstanding	4.0	270-300	90-100
Excellent	3.5	255-269	85-89
Good	3.0	240-254	80-84
	2.5	225-239	75-79
	2.0	210-224	70-74
	1.5	195-209	65-69
	1.0	180-194	60-64
	0.0	0-179	0-59

Definitions

4.0... = someone that understands a majority of the subject matter for the course and can apply that knowledge to create a variety of well-written programs. They understand where to go to find additional information and how to weave-in that new knowledge. To an employer, this student is a self-starter and requires little, to no handholding.

3.5... = better than a 3.0 and less than a 4.0

3.0... = someone that understands the subject matter at a level below the 4.0, can apply most of the knowledge to create programs similar to those used within the course, and knows where to find additional information, but struggles at how it fits into their current knowledge. To an employer, this student will require some handholding over the first few months to a year as the student gains additional experience.

2.5... = better than a 2.0 and less than 3.0

2.0... = someone who struggles with the subject matter, fails to apply this knowledge to new programs, yet can work through course example programs if given enough time. This student relies completely on the instructor and course book and has not learned how to use external knowledge sources, nor how to apply that knowledge. The student is one who has had outside influences affecting focus on coursework, procrastinated, or just did not try. To an employer, this student would not be valuable in the subject-matter arena.

0.0, 1.0, or 1.5 ... This student should repeat the course.
Note: If maintaining a higher GPA is important to you - and your ability to do well in the course has been compromised, I highly recommend that you withdraw from the course before the cut-off period. Take the course again, when you are able to focus.

Project Grading Rubric

Design, Brainstorming
- Participation
- Sketch
- Completeness
  - Close representation of final product
  - Visually describes database
  - Displays tables, columns, and relations
  - Describes expected data to be entered/displayed, data types

Tables
- Structure meets common industry guidelines illustrated in course
- Well-named
- Normalization to minimum of 3rd level (4th preferred)

Columns
- Well-named with proper data type
- Consistent
- Preferences
  - Not named after known keywords
  - Not use special characters (spaces)
  - If any of above, documentation should note why and how queries will be affected

Relationships
- Proper use of foreign keys
- Consistent
- Documents should define if: 1:1, 1:M, M:N

Common Queries
- Query creation for table CREATE (INSERT), READ (SELECT), UPDATE, DELETE
- Sample SELECTs

Common Indexes
- Definition of useful indexes
- Implementation of those indexes

External References

Database Guidelines (representation of "sides")
- SO: SQL Naming Guidelines: http://stackoverflow.com/questions/7662/database-table-and-column-naming-conventions
- Code Project: http://www.codeproject.com/Articles/22947/A-Naming-Scheme-for-Database-Tables-and-Fields
- Blog: http://blog.sqlauthority.com/2007/06/04/sql-server-database-coding-standards-and-guidelines-part-1/
- Any number of others – search term: *database naming guidelines*

Programming/Development Guidelines
- Microsoft "Naming Guidelines": http://msdn.microsoft.com/en-us/library/xzf533w0(v=VS.71).aspx
- Microsoft "Guidelines for Names": http://msdn.microsoft.com/en-us/library/ms229002.aspx
- Microsoft "Working with Base Types": http://msdn.microsoft.com/en-us/library/7wchwf6k(v=VS.71).aspx
- Microsoft Search (UX guidelines): https://social.msdn.microsoft.com/Search/en-US?query=windows%20ux%20guidelines&ac=5
- Pete Brown: http://10rem.net/articles/net-naming-conventions-and-programming-standards---best-practices
- StackOverflow: http://stackoverflow.com/questions/181597/what-are-the-naming-guidelines-for-asp-net-controls
- Joel Spolsky: http://www.joelonsoftware.com/articles/Wrong.html

See references folder (e.g. Course folder tree), for more

Highly Recommended

- **Code Complete** - author's site, Amazon: Author's books
- **Don't Make Me Think** - author's site, Amazon: Author's books

Class Schedule (subject to change)

September

Date	DOW	To Do	Details/Reference
5	W	Intros, Learning Community MS Access Overview Part I - DB Fundamentals	Chapter 1 Access Workbench #1
10	M	Keys, NULL's, Types, SQL Intro Practice	Chapter 2 Access Workbench #2
12	W	Practice	Access Workbench #3
17	M	~~Practice~~ [POWER OUTAGE]	~~Project #1 (10pts)~~
19	W	Practice	Project #1 (10pts)
24	M	Brainstorm, Table Structure Practice	
26	W	Practice	Chapter 3, Quiz #1 (25pts)

October

1	M	VM/MS SQL via SSMS	
3	W	Practice	Project #2 (10pts)
8	M	Part II - Database Design Modeling, E-R Diagram, Design	Chapter 4, 5 Access Workbench #4
10	W	Practice	Access Workbench #5
15	M	Practice	
17	W	Part III – Database Management	Chapter 6, 7
22	M	Admin, Applications, Business	Access Workbench #6
24	W	Practice	Access Workbench #7
29	M	Practice	Project #3 (20pts)
31	W	Building Applications Putting it all together…	

November

Date	DOW	To Do	Details/Reference
5	M	Practice	Article Review Handout
7	W	Practice Programs	Project #4 (10pts)
12	M	Working with Schema	Quiz #2 (25pts)
14	W	Practice Programs	
19	M	Practice Programs	
21	W	*Thanksgiving Break - college closes at 5pm (no class)*	
26	M	Other SQL DB's & Tools Oracle	Access Workbench #8
28	W	Practice Programs	

December

3	M	Practice Programs	
5	W	Final Project – TBD	
10	M	FP Work Session	
12	W	Final Project: completed	Project: #5: (50pts)
17	M	IDEA - College Survey Final Exam	Comprehensive

Community Time

- College Computer club (former AITP) – Friday evenings Fall & Winter
- Other conferences Michigan - Dev Days/Nights, SQL Saturdays

Ethics

Electronic Class Attendance Report (E-CARs) occurs the 3rd week of class. I report participation in class based on active attendance and real effort. Do not ask me to help you commit fraud.

Attendance

I monitor attendance for the college. I do not award points for your attendance. Enhancing your learning… that is the reason you should attend class.

Can you learn without attending class? Some students can; however, your lack of attendance places a high burden on you to learn on-your-own. I have found through personal experience and also proven by students that less learning takes place, when students do not attend class. The amount of knowledge transferred in-class through discussion, demonstrations, and over-the-shoulder guidance is significant.

I do not teach this class via email and the short videos (if available) are not a replacement for your attendance and participation.

Make the decision to attend and participate in class!

Grading Plan

My goal in this course is that you learn the material. I focus on Mastery Learning.

This means that for a majority of the course, your work on 4 graded requirements, Projects #1-4 (e.g. individual or group) is not complete until you have "mastered" that section of work. Mastery for that section of work is defined by the course objectives, programming rubric, or completed answers for the reviews. This may mean that you will need to take the time to "re-do" a project.

It doesn't make sense for you to continue to the next objective when you are struggling with a prior objective. However, the college semesters offer us a defined time period to complete the content; therefore, if you have not finished sections of work early in the semester, it does not make sense for you to take the final exam or complete the final project - without the knowledge to do so.

The Quizzes, the Final Exam, and Project #5 have a required completion date. This means you will have only one opportunity to complete these graded requirements.

Course Book

Required – 'nuff said!

Commitment to Learning Community

I enjoy learning. I enjoy the entire atmosphere of learning. The new knowledge, the interactions, and the shared ideas. My goal is to foster a learning community.

You can learn by reading a book and then trial-error your way to a solution. Over time you will likely "get it". However, you will find that when you participate in a learning community... the time to "get it", is significantly less.

A quality work environment is a learning community. Sharing amongst peers can help you reach goals, seek new ideas, or spur new learning & work opportunities.

Each student should seek out learning communities - one which each participant can and will interact with others in the community. It is these interactions and sharing of ideas which will enable the greatest amount of learning to occur.

Support

Many of us may not have learned... *how to learn*. Sometimes the course material really stumps us. What is a struggling student to do? The college offers many resources to help struggling students. Our goal is that you succeed. However, it really is up to the student to seek out assistance.

Be Realistic

1. The sooner the better - most learning is cumulative - you need to know first parts, to continue to later parts
2. Missing (or skipping) classes and then trying to catch up is very frustrating, as you realize how difficult it is to recover lost time

Instructor

Speak with your instructor. Really! I would be glad to help you find what it takes to turn the light bulb on as you learn the course material. If you're not "getting it" in class, then let's arrange a time outside of class, so we can figure it out.

Class Network

Network with your classmates. Successful students work together to learn. Work this network!

Student Success Center

A great place to become familiar with, before you need help. The place to go if you need extensive help. Arrange *one-on-one* tutoring, information about "how-to-study", reading assistance, etc.