

Course Info

Fall 2019 • CRN 11196 • Monday/Wednesday: 7:30-9:45pm
29 class sessions • [TTC Room 2340](#) (Inside Computer Lab)

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/KVCC Info

Office: 7338

Campus email: jburns@kvcc.edu – (best contact method)

Cell phone (will share if we find that necessary)

Campus phone: 269.488.4113

Voice mail: 269.488.4701 ...extension 6142

Office hours: M/W – 6:00-7:00ish on campus OR by appointment

KVCC Public Safety: 269.488.4575 --- located in room 5120 (TTC)

Class Policies

- Cheating/Plagiarism - *Student Handbook* ([KVCC PDF](#)) starting on Page 18
- Graded Items
 - Must be turned-in, as scheduled.
 - Prior arrangements may be made - at the discretion of the instructor.
- Hand-in items due as defined in schedule, or via class session discussion
 - Occasionally, due dates “may be” modified due to snow day or other closures; however, in general – we are an electronic society – therefore hand-in via web/email is most likely alternate procedure

College Notes

ADA/Special Needs: The Special Services Office is designed to meet the individual needs of students with physical, psychiatric, or learning disabilities. The College has a long history of service to students with disabilities and is committed to removing barriers to help students not only reach their potential, but become academically competitive within their programs. To initiate services or for more information, please contact the Special Services Office at: Voice: (269) 488-4397 - TTD: (269) 488-4358.

Student Support Services: Through Academic Counseling, Career Counseling, Credit for Prior Learning, Transfer Assistance, Student Activities, Special Services, Life Resources, and an Advocacy Program, the Student Success Center (SSC) is a resource center which brings together campus services to help students achieve their professional and personal academic goals. We provide one-on-one assistance to students which lend the personal touch they need to be successful and reach their objectives. For more information on how to obtain assistance from the SSC: <https://www.kvcc.edu/services/successcenter/>

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": <https://docs.microsoft.com/en-us/dotnet/standard/design-guidelines/naming-guidelines>
- Microsoft "Working with Base Types": <https://docs.microsoft.com/en-us/dotnet/standard/base-types/>
- 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](#)
- **Use the Index, Luke** [author's site](#), Amazon: [Author's books](#)

Class Schedule (subject to change)

September

Date	DOW	To Do	Details/Reference
4	W	Intros, Learning Community MS Access Overview Part I - DB Fundamentals	Chapter 1 Access Workbench #1
9	M	Keys, NULL's, Types, SQL Intro Practice	Chapter 2 Access Workbench #2
11	W	Practice	Quiz #0 (10 bonus points)
16	M	Brainstorm, Table Structure Practice	Access Workbench #3, Project #1 (10pts)
18	W	Practice	ECARS (5pm)
23	M	Practice	
25	W	Practice	Chapter 3, Quiz #1 (25pts)
30	M	VM/MS SQL via SSMS	

October

2	W	System Outage – class cancelled	
7	M	Practice	Project #2 (10pts)
9	W	Practice	
14	M	Part II - Database Design Modeling, E-R Diagram, Design	Chapter 4, 5 Access Workbench #4
16	W	Practice	Access Workbench #5
21	M	Part III – Database Management	Chapter 6, 7
23	W	Admin, Applications, Business	Project #3 (20pts), Access Workbench #6
28	M	Practice	Access Workbench #7
30	W	Building Applications	

November

Date	DOW	To Do	Details/Reference
4	M	Practice	Article Review Handout
6	W	Practice Programs	Project #4 (10pts)
11	M	Working with Schema	Quiz #2 (25pts)
13	W	Practice Programs	
18	M	Practice Programs	
20	W	Other SQL DB's & Tools Oracle	
25	M	Other SQL DB's & Tools Oracle	Access Workbench #8
27	W	Thanksgiving Break - college closes at 5pm (no class)	

December

2	M	Practice Programs	Project #5 handout
4	W	Final Project – Logging Database	
9	M	FP Work Session	
11	W	College Survey Final Project: completed	Project: #5: (50pts)
16	M	Final Exam	Comprehensive

Community Time

- College Computer club – meets in Forum on 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.