

CIS 250 – Database Theory and Design
Syllabus for FALL 2015
Edmonds Community College
Department of Computer Information Systems

Contents

THE INSTRUCTOR	1
THE COURSE	1
FACILITIES	8
ASSIGNMENTS AND EXAMS	9
GRADING	10
WITHDRAWALS	11
INCOMPLETES	11
STUDENT RIGHTS AND RESPONSIBILITIES.....	12
EDMONDS COMMUNITY COLLEGE	12

THE INSTRUCTOR

Richard Leickly:¹ MS, DFE, CDRE, CHFI, CIH, CEH, Security+, Network+

Contact information and office hours

The best way to contact Richard is through the **Canvas email system**, since your email will then be associated with the course. You can expect a response within 24 hours.

Phone Number: 425-640-1716 (voice mail only)

Office hours:

Room SNH 110: 1:30 pm – 2:50 pm Tues, Thurs

Room SNH 123: 10:30 am – 12:00 pm and 5:40 pm – 6:30 pm Sat (9/26/2011- 10/24/2015)

Additional weekday office hours will be added after 10/24/2015.

THE COURSE

Catalogue information

CIS 250 – Database Theory and Design

Fall 2015 #2120 – Section A - 5 Credits – Hybrid course

Prerequisites

CIS 116 or twenty credits towards an ATA degree or certificate, or equivalent experience

¹ My name is pronounced, likely, as in “more likely than not”.

Hybrid course

CIS 250 is a *hybrid* course. In order for you to complete the course successfully, **there will be activities and work assignments that you'll need to work on outside of the scheduled class time**. This means having a personal computer with the required software installed (see below); and it means that you will check the class website on Canvas daily. Additional information about taking a hybrid course (eLearning) is here:²

<http://www.edcc.edu/online/>

Canvas

Announcements, assessments, and related information, can be found on the Canvas website for the class. You will need Internet connectivity. A list of supported browsers can be found here:

<http://guides.instructure.com/m/4214/l/41056-which-browsers-does-canvas-support>

If you are new to Canvas, look here for the Canvas Guides: <http://guides.instructure.com>. If, after checking the available resources (described in this syllabus and on the Edmonds Community College website), you have any questions or concerns about this, talk to me.

Class location and time

All classes are in Snohomish Hall: SNH 110. Meeting times are 2:50 pm – 5:30 pm on Tuesdays and Thursdays

Course description and objectives

Data as an asset

You know what data is and you know that it is **valuable**. This means that organizations (like retail businesses, investment firms, banks, engineering, manufacturing, etc.) make money from the collection, creation, and use of data. These are **business assets**. Other organizations collect and create data to solve scientific problems. These activities increase our understanding of the world and result in new technologies. They improve our health and longevity. They help us to understand and protect ecosystems and their communities. These activities create data that are **intellectual, technical, or scientific assets**.

Data organization

Raw data is valuable. However, data that it is organized and stored in the right way (in other words, data that is structured) is much more valuable. Highly valuable databases are free of contradiction (i.e. the data is consistent). In such databases, the data is correct (i.e. the data has integrity), the data is accessible to applications that can use it, the data is available when needed (i.e. it is in a fault-tolerant system and has been backed up), and the data is protected from unauthorized access (i.e. it is secure).

What you will learn

You will learn about relational databases using professional databases and professional tools. When this course is over, you will know:

1. What a relational database is, what makes it unique, what its purpose is, and how it achieves that purpose
2. How to collect the information you that you will need to solve a client's data problem (i.e. you will research and analyze business requirements)
3. How to identify the requirements of the data (i.e. identify the relevant business rules)
4. How to design a correct relational database (i.e. logical data modeling)
5. How to create a correct relational database (i.e. create tables, columns, rows, keys, relationships)
6. How to keep the data consistent (i.e. free from contradiction) and avoid unnecessary redundancy
7. How to administer a database (i.e. where to store it, how to store it, how to back it up, how to restore it)
8. How to interact with the data in the database (i.e. using the SQL Server Management Studio graphical interface vs. using SQL scripts)

² N.B. The EdCC website has been redesigned. Some of these links may re-direct; some may be dead. You may need to search the site. There is a search box on the site. If it doesn't work, try a different browser (I found that Internet Explorer worked better than Chrome. However, this behavior may depend on your security and other add-ons.)

Course-level Learning Objectives³

1. Describe fundamental principles of database theory and design
2. Research and analyze business data requirements
3. Identify high-level business rules for data modeling
4. Document high-level business rules for data modeling
5. Create and refine conceptual and logical data models
6. Validate conceptual and logical data models
7. Select unique identifiers and normalize the data model
8. Understand the role of SQL in the business and database contexts
9. Recognize the basic components and issues of database applications

Program-level objectives

This course is part of a certificate or a degree, and assesses student achievement of these specific outcomes. Outcomes for Edmonds CC degrees and certificates can be found in the online college catalog at <http://catalog.edcc.edu> embedded within each degree or certificate. To find specific outcomes, click on the Degrees and Certificates link and select a program from the list.

Course materials

The tools described below will be on your class computer. We will install them together – as a group – during class. You will want to bring a **USB thumb drive**.

Required textbooks

- **Database Concepts, 6th Ed** (Kroenke and Auer), Prentice Hall, 2013, ISBN-10: 978-0-13-274292-4
- **Database Design for Mere Mortals, 3rd Ed** (Michael J. Hernandez), Addison-Wesley, 2013, ISBN 978-0-321-88449-7

Portable USB media

You will use a swappable hard drive (“swap drive”) during class. In the front of your PC, there is a slot for a removable hard drive. You will shut down your computer, replace that drive with a drive that has been assigned to you, and then restart your computer. It will boot to the Windows 7 installation on your swap drive. You can save your work there since no other class is supposed to use those drives. However, you should backup to your USB thumb drive any user files that you created or modified. Do this by the end of class. I will try to give you time at the end of class to save your work, detach your databases, and copy your files to your thumb drive.

Detaching a database for transport

A SQL database is stored as an MDF file. If you want to take a database home with you, then you’ll need to detach it from SQL Server before you copy it to your thumb drive. I will go over this in class. For this class, copying the log file (LDF) is optional (unless told otherwise).

Software tools

Relational Database:

SQL Server 2014 Developer Edition: This is a complete relational database server and it includes other useful services, such as Reporting Services and Integration Services. There are only a few differences between this edition and the enterprise editions. Only Developer edition will run on a client operating system (e.g. Windows 7) as well as on a server operating system. It is substantially less expensive. This edition is free from DreamSpark and is available to you as a student. Outside of DreamSpark, it costs about \$50, which means you can continue to use it for self-study after you graduate. Developer edition is not licensed for commercial use.

Database Tools:

³ From the EdCC Academic Catalog: <http://catalog.edcc.edu>

SQL Server Data Tools for Business Intelligence – Visual Studio 2013 version (SSDT-BI for VS 2013): This is installed *after* SQL Server 2014 has been installed. ***It is not downloaded from DreamSpark – it is obtained from a Microsoft website.*** This is free of charge. It provides a Visual Studio shell that you can use in conjunction with SQL Server – it is not the complete Visual Studio development environment. It is not clear what will happen if you install Visual Studio in addition to the tools. Your installation may default to using the full Visual Studio instead of just the shell that the tool provides. For consistency throughout the class, and to avoid unnecessary confusion, I would prefer that you just install the SSDT-BI software.

<https://www.microsoft.com/en-us/download/details.aspx?id=42313>

Modeling Tools:

Visio Professional 2013 (SP1): This is available free from DreamSpark.

Sample Databases:

Each sample database is a single file with an MDF extension. AdventureWorks2012 is the newest and most complex. Northwind and Pubs are a few years older and much less complex. These will be present on the computers in SNH 110 and you can copy them to your USB thumb drive in class. They can also be found on the Internet.

- **AdventureWorks2012** – A database for a bicycle business
- **Northwind** – A database for a food importation business
- **Pubs** – A database for a book publishing business

DreamSpark (VERY IMPORTANT)

You will need to email the CIS program manager, Carol Tompkins (carol.tompkins@edcc.edu), to obtain, activate, or to extend your DreamSpark account (which usually has a lifespan of one quarter). **This is required.** The deadline for submitting your "DreamSpark account setup request", so that it will be ready for the first week of fall quarter, is **3:30 pm, 9/24/2015.**

Class schedule

An updated class schedule (reading and assignments) will be posted to Canvas weekly.

Policy on changes

The instructor reserves the right to substitute and modify materials and to add or substitute labs as the class progresses.

Copyright

Materials will be posted to Canvas. **Written materials are protected by copyright law.** It is illegal to post them to the Internet, make copies beyond those needed for the personal use of an enrolled student, or to sell electronic or physical copies.

Required resources

You will need access to a computer in order to access Canvas for reading materials, assignments, and announcements. This can be done through your personal computer or through a computer on campus. You will also need a computer for assignments that require SQL Server or Visio, since these are not generally found on student-accessible computers outside of SNH 110.

Computer resources on campus

Computers are available in a wide variety of locations across campus. The campus also has a wireless network available for students. See www.edcc.edu/acs/facilities.html for a complete list of locations and resources, and for technical assistance.

Other resources

CIS Department Advising Day: 11/5/2015, Noon – 5:00 pm, CIS 123.

CIS Department LinkedIn Group: <https://www.linkedin.com/grp/home?gid=7001505>

Pearson-Vue testing Center: <http://infosec.edcc.edu/pearsonvuetestingcenter.html>

Academic calendar

- Sept 21: Fall quarter begins
- Sept 22: First day of CIS 250
- Sept 23: Last day for online registration
- Sept 25: Last day to drop for a 100% refund
- Oct 9: Non-instructional day (no classes, but college is open)
- **Nov 5: CIS ADVISING DAY – NO CLASS TODAY**
- Nov 10: Last day to withdraw
- Nov 11: Veterans day – College closed
- Nov 12: Registration for winter quarter begins
- Nov 25: Non-instructional day (no classes, but college is open)
- Nov 26-27: Thanksgiving Holiday – College closed and no Saturday classes
- Dec 3: Last day of CIS 250
- Dec 7 – 11: Final exam week (does not apply to CIS 250)
- Dec 11: Last day of fall quarter
- Dec 16: Grades are due
- Dec 18: Grades available to students online
- Dec 21- 25: College closed for winter holiday season

The full EdCC Academic calendar can be found here: <http://www.edcc.edu/calendar/academic.html>

Your expectations of me

I treat all my students as mature, responsible adults, capable of making intelligent choices and aware of the consequences of those choices. As such, I am willing to meet you halfway when you encounter difficulties and problems in the performance of assigned tasks. However, I will not make accommodations for inattentiveness or neglect. It's up to you to seek me out if you are having difficulties, and this should occur quickly. Waiting until the end of the semester, the day an assignment is due, or just before an exam is to be given to seek assistance is NOT considered *meeting me halfway*. I DO care about your success in my classes. I hope that you will show me that you do too.

As your Instructor, you can expect these things from me:

- Organized lectures covering material appropriate to the course that focus on the more difficult aspects of the topics presented
- Assignments designed to illustrate and reinforce concepts presented in the lecture or the reading materials
- Assignments covering the material presented that require mastery of the concepts taught and the ability to apply these concepts to solve problems relevant to the topic
- Availability via email, during office hours and at other mutually agreed meeting times, and other venues as indicated, to answer questions about and provide assistance with the material covered or assigned
- Fairness, consistency, and flexibility in grading
- Maintenance of minimum learning standards
- Respect and consideration

I will be available for you when you need me. If you are doing your part and are an active participant in the work, then you can expect me to do everything within reason to help you be successful. I like to have fun in class and make the learning experience enjoyable. However, you will find that my classes are well structured, and that there is always a reason for what we are doing.

My expectations of you

As my student, I can expect these things from you:

- Attendance and participation in class
- The dedication of sufficient amount of time to complete assignments by the specified date
- Seeking help when needed, well before assigned work is due or the exam is to be taken. A month or quarter's worth of content cannot be condensed into a single, *wait-till-the-last-minute* request for help
- Your consideration of others during the class period i.e. no audio distractions, such as cell phones, pagers, private conversations in class, etc.
- Constructive and honest feedback on course evaluations
- Acquisition of information on class activities and assignments when you are absent
- Monitoring of your EdCC email and the class web page (on Canvas) regularly and frequently
- Focusing on the mastery of the material presented instead of on the grade to be earned
- Acceptance of responsibility for learning
- Academic honesty in all course work

Staying informed

Information available via Canvas will be announced by EdCC email to the class distribution list. It is your responsibility to assure that you have a current and valid EdCC email address registered. Instructions for accessing Canvas may be located online at <http://www.edcc.edu/elearning/>. If you encounter difficulties, we recommend that you contact the EdCC staff responsible for administering Canvas and student accounts. See <http://www.edcc.edu/online/support/>.

Attendance

Missing class

Unless you have a chronic or prolonged problem that will interfere with your ability to attend class or to turn in your homework, there is no need to present doctor's excuses, explain your absence, etc. Most of us at some point have a circumstance or a priority that leads to a class absence. I do understand that emergencies arise and that people get sick.

If you miss a homework handout or lecture, regardless of the reason, you are responsible for obtaining the associated materials. You will need to talk to other students and obtain the lecture notes. **Do not ask the instructor to record the lecture for you or to operate a recording device.** We will be covering information in class that is not in your reading material, and you will be expected to know the information. This is your responsibility.

Missing class or labs is not an adequate excuse for turning in material late, requesting a make-up a quiz or exam, or getting private tutoring from the instructor.

Student commitment

As a *hybrid* course, you are expected to set aside time outside of the regular class time for additional study and for the completion of assignments.

Participation in class

It is to your advantage to be an active participant in the class. Your understanding will increase if you ask questions, share observations, and contribute relevant personal experiences. This is true for you as an individual, as a lab partner, and as member of a team. It will also help you transition to becoming an active, contributing member of our community of digital forensic examiners and data recovery professionals. This community can be your community, but it won't happen without the effort on your part. You are not entitled to sit at any particular seat in the class.

Teams

You may be required to work in a team on some projects. You need to be an active participant. This is your responsibility. If you miss a class, your teammate will need to join another team for that class. Would you like that to happen to you?

Working at home

Since this is hybrid class, there may be activities for your classes that you will be expected to complete at home. You will required the use of particular software applications. We will use these same tools in class and your instructor will show you how to use them. However, you'll need to practice.

Accommodations for students with disabilities

Services for Students with Disabilities, Montlake Terrace Hall 159. Phone: (425) 640-1320 or ssdmail@edcc.edu. Their website can be found here: <http://www.edcc.edu/ssd/>.

Student resources

Useful Student Resources	www.edcc.edu/students
Academic Calendar	www.edcc.edu/calendar/academic.html
Advising	www.edcc.edu/advising
Center for Student Engagement and Leadership	www.edcc.edu/csel
College Policies and Procedures	catalog.edcc.edu
Counseling and Resource Center	www.edcc.edu/counseling
Diversity Student Center	www.edcc.edu/dsc
eLearning Information	www.edcc.edu/elearning
Enrollment Services	www.edcc.edu/es
Library, including online resources	www.edcc.edu/library
Services for Students with Disabilities	www.edcc.edu/ssd
Student Printing Information	www.edcc.edu/acs/printing
Student Support Resources	www.edcc.edu/support
TRIO	www.edcc.edu/trio

Cell phone usage

"Thank you for sharing" does not apply to phone conversations. Talking on a cell phone or smart phone is not permitted during class time. If you need to keep these devices on, then use a silent setting. If you are waiting on an important call, take your call outside the class.

Creating distractions

Talking during lecture may be fun for you, but it can make it difficult for others around you to hear the lecture and to concentrate. Save your conversations for the next break. The goal is an informal, working environment, where everyone is comfortable and able to focus.

Tardiness

Being late is disruptive to the class. Some class activities are sequential; others are complex, and must be performed within a prescribed timeframe. Being late can disrupt the ability of you and your partner, your teammates, and your peers to complete assignments in a timely manner and you may miss information presented during lecture. If you arrive late, you are still welcome to enter and participate. If you have a situation that causes you to be consistently late, discuss this with me and with your lab partner.

Use of recording devices

If you are planning to use a sound recording device in class to record me or any other person, obtain approval first. You are not entitled to any particular seat because you have a recording device. **Video recording is not permitted at any time.**

College policy on academic integrity and student conduct

EdCC students shall demonstrate *Academic Integrity*. I am expected to report all violations of Academic Integrity to the College. Cheating and plagiarism are examples of such violations. The College's database of such incidents will be monitored by the Office of the Vice President for Student Services. Data will be maintained for three years. Evidence of repeat incidents will result in additional action by the Office of the Vice President for Student Services as governed by the Student Code of Conduct. In this class, cheating and plagiarism will result in a grade of zero for the assignment. A second incident in this class will result in a grade of zero for the assignment, and possibly expulsion from the class.

Cheating and plagiarism will not be tolerated. Examples include, but are not limited to the following:

- Assignments that are copied in whole or in part from another person
- Plagiarizing by copying material verbatim from other authors
- Using any written or electronic materials to assist you in taking the final exam or in the competency exam, unless otherwise authorized to do so
- Asking another student for answers
- Working on an assignment with another student and submitting the same work unless. (This should not be confused with an assignment that is designated as a team or group or collaborative assignment.)

The Academic Integrity Statement can be found here: <http://www.edcc.edu/syllabus/sample-statement.html>.

The Student Code of Conduct can be found here:
<http://catalog.edcc.edu/content.php?navoid=6568&catoid=23>

FACILITIES

Printer

When you boot from the swap drive, the printing is free and does not require your EdPass. You may find it useful to print documents that you need to consult during lab if you want to write notes on them or check off steps as you complete them.

ASSIGNMENTS AND EXAMS

Expectations

If you are unsure about what is expected of you, or if you have questions regarding an assignment, ask your instructor. He can be reached through Canvas. It is ultimately your responsibility to let your instructor know about any difficulties you are having and to do it as soon as possible. Waiting until the last minute to start working on your homework is not an excuse. Begin early and give yourself time to work through the material.

Do not ask your instructor to make exceptions. If you have a verifiable situation that is beyond your control such as a death in the family, the instructor will work with you. Situations of this nature will be handled on a case-by-case basis, with the final decision up to your instructor.

Assignments

Canvas-based quizzes

These will be posted to Canvas, with an announcement. There will be several assignments on Canvas to assess your understanding of database concepts. There are many new words with new meanings. You need to read and review regularly throughout the quarter. The Canvas-based quizzes will help to keep you from falling behind.

Modeling assignments

To learn how to design a database, you will be expected to create conceptual, logical, and physical models. You will work with a group with at least one other student. We will also work on these together as a class. However, you will need to spend some time outside of class working on it. This will be a gradual process. Our goal is to make models that are reasonable – not necessarily optimal. We will want to be able to justify (i.e. defend) our choices. We may not all agree, so we'll need to have a way to settle our disagreements.

Here is what I have in mind. One of our faculty members, Steve Hailey, will come to class. He has a problem that requires a database solution. We, as a class, will interview him, and then, over time, we will develop a series of models to solve his problem. The textbook by Hernandez (Mortals) will be our resource, and we will be following his methodology very closely.

Lowest assignment will be dropped

Your Canvas-based quiz with the lowest score will be dropped.

Missed or incomplete Canvas-based quizzes

A Canvas-based quiz that is not turned in will be given a grade of 64%. In other words, you will not be assigned 0%; you will be assigned 64%. Partially completed or otherwise low-scoring quizzes will not get a score of less than 64%.

Missed, incomplete, or poor modeling assignments

The lowest score possible is 64%. None of these will be dropped.

Extra credit

There may be extra credit activities. These are optional. Points are assigned at the instructor's discretion.

Final exam

As a hybrid class, the final exam, if we have one, must be on the last day of class.

Late assignments

Assignments not turned in by the deadline will be considered late. Points will be deducted in accordance with the policy found in *§Late Policy*.

Late policy

Five points will be deducted for each day an assignment is late, until 65% is reached. Final score will be 64%.

GRADING

Point distribution

The table below shows the weighting used to arrive at your final grade.

Category	Weight (%)
Canvas assignments (quizzes, exams)	50
Modeling Assignments	40
Attendance and Participation	10
Total	100

Total Canvas Percentage

Unless Canvas is configured otherwise, it assigns default weights to the various categories, and its calculation of overall (or total) percentage is based on those weights. These will not be the same weights chosen by the instructor, since individual assignments are not equally weighted. **Do not use the total Canvas percentage to assess your standing in the class unless otherwise informed by the instructor.**

Explanation of grading

Numeric and letter equivalents

Numeric Grade	Percentage	Letter Equivalent
4.0	95	A
3.9	94	A
3.8	93	A
3.7	92	A
3.6	91	A
3.5	90	A
3.4	89	B
3.3	88	B
3.2	87	B
3.1	86	B
3.0	85	B
2.9	84	B
2.8	83	B
2.7	82	B
2.6	81	B
2.5	80	B
2.4	79	C
2.3	78	C
2.2	77	C
2.1	76	C
2.0	75	C
1.9	74	C
1.8	73	C
1.7	72	C
1.6	71	C
1.5	70	C

1.4	69	D
1.3	68	D
1.2	67	D
1.1	66	D
1.0	65	D
0.0	< 65	F

About your grades

You are being graded on the quality of your work, not on your effort. A high level of effort does not guarantee a high score. However, you will want to give the class your best effort, since that is how you will learn the most. A consistent, high level of effort can be difficult to sustain. Minor mistakes, major blunders, distractions, omissions, and bad days happen to all of us. Episodic, minor mistakes can happen more often than you like. However, they are unlikely to have much effect since – by definition – they are small and uncommon. Lapses that are more significant may trouble you, and you may feel that your performance is not reflective of the best you can do. Don't let these occasional lapses in your effort weigh on your mind excessively. **Believe in yourself, and others will believe in you. You'll have many, many opportunities in your life to show the world the real you, and what you can do. In general, you will find that you will be judged by your successes - not by your mistakes.**

Your objective is to learn as much as you can. Grades are an imperfect mechanism for measuring how much you know. Making perfection your objective will cause you a lot of stress, and it is unnecessary for success. **Your objective should be to do excellent work – not perfect work.**

Grade Range	Interpretation
3.5 – 4.0	Excellent
3.0 – 3.4	Very Good
3.0 – 3.3	Good
2.0 – 2.9	Average
1.0 – 1.9	Below Average

WITHDRAWALS

Instructor-initiated withdrawal

A grade of V is given if an instructor initiates a class withdrawal before the end of the quarter, often in consultation with the student, but also if a student enrolls in a class, but misses the first class or two or more classes, or stops attending class. A faculty member is under no obligation to grant an instructor-initiated withdrawal. See <http://www.edcc.edu/es/register/drop-policy.html>

Student-initiated withdrawal

A hardship or medical withdrawal may be given if a student formally requests a withdrawal due to circumstances beyond your control. The grade given will be W. Check with *Enrollment Services* for details and eligibility: <http://www.edcc.edu/es/withdrawal.html>.

INCOMPLETES

A grade of I is given at the discretion of the instructor when the student has done satisfactory work, but could not, for some unavoidable reason, complete some part of the coursework. This grade will not be awarded if you decide not to come to class, are failing the class due to poor grades on assignments, or fail to withdraw from class by the deadline set by the college. (<http://catalog.edcc.edu/content.php?catoid=23&navoid=6809>)

STUDENT RIGHTS AND RESPONSIBILITIES

Look under *Student Rights, Freedoms, and Responsibilities* in the EdCC academic catalog:

<http://catalog.edcc.edu/content.php?catoid=23&navoid=6810>

This document includes Guidelines for Student Conduct and information on disciplinary procedures.

EDMONDS COMMUNITY COLLEGE

Emergency preparedness

This Triton Alert System will be used to send notifications regarding campus closures, emergencies, or evacuation orders in the event of an emergency or inclement weather. Edmonds CC students and employees are automatically enrolled to receive Triton Alerts through their college email addresses. Sign up to receive text and voice messages on your mobile or home phones and/or additional email notifications to personal email addresses. The sign-up page for the Triton Alert System information is here: <http://www.edcc.edu/alert/triton/>.

School closures

EdCC is not part of the Edmonds School District.

Inclement weather: <http://www.flashalert.net/>. If the College is closed due to inclement weather, than all college operations and offices are closed. No classes or activities are required to meet.

Emergency closure information:

- Website: Flash Alert: <http://www.schoolreport.org/>
- Phone: 425-640-1459

EdCC website for emergency communications: <http://www.edcc.edu/alert/>

Campus security

- EdCC web site for campus safety and security: <http://www.edcc.edu/alert/>
- 425-640-1501
- x1501 from a campus phone
- There are yellow emergency boxes on campus
- Email: Security24.7@edcc.edu
- EdCC Safety tips: <http://www.edcc.edu/safety/safety.html>
- Lynnwood Police Department: 911