INTRODUCTION TO DATABASE AND SQL (FALL 2022)

Instructor	Brendan Shea, Ph.D.	Course number	COMP 1140
Contact Info	Brendan.Shea@rctc.edu 507-722-1146	Prerequisites	MATH 0099: Intermediate Algebra
Office	M2403Q	Class location	Online
Zoom Office Hours	**Thurs 2 to 4 (Zoom Class Meeting)** Fri 10 to 12 (Open)	Class time	Asynchronous. Optional Zoom Section: **Thursday 2 pm to 4 pm** at class Zoom link
Class Zoom Link	https://minnstate.zoom.us/j/99874991922 Passcode: 312566		

UPDATE (8/25): I have updated the course calendar to give you more time to work on problem set 1. See below. -- Brendan

Welcome to COMP 1140: Introduction to Database and SQL! I'm your instructor, Brendan Shea (I prefer "Brendan"; "Dr. Shea" or "Prof. Shea" work if you are feeling formal). If you have short questions not answered here, email is generally the best way to get ahold of me. For more detailed questions about the class, I'd encourage you to talk to me during office hours (either in person or over the phone) or to set up an appointment.

Course Description: This course introduces the major concepts of database design and implementation. Students will learn how to design, build and use databases utilizing a conventional DBMS system such as Microsoft SQL Server, MySQL, Oracle, and etc. Topics also include entering and retrieving information, SQL commands, query creation, analyze query results, and etc. Students will design their own databases and implement them on a conventional DBMS system. College level reading is required. (3 cr, 3 hours lecture per week)

COURSE CONTENT AND LEARNING OUTCOMES

Outline of Major Content Areas:

1. Database design and implementation
2. Information entering and retrieving
3. SQL commands
4. Queries
5. Analysis of query results

Learning Outcomes (General): The student will be able to:

1. Demonstrate an understanding of Database Management Systems (DBMS) and how they can be used in industry.
2. Design databases and implement them on a conventional DBMS system.
3. Enter and retrieve information from databases
4. Use SQL commands to create queries.
5. Analyze query results.

RCTC Core Outcomes. This course contributes to meeting the following RCTC Core Learning Outcome(s):

- **Critical Thinking.** Students will think systematically and explore information thoroughly before accepting or formulating a position or conclusion.

REQUIRED COURSE MATERIALS

- The only course material is **Cengage Unlimited.** This will give you access to ALL of Cengage's materials (including multiple books and SQL activities). In terms of course readings, the main textbook is:
  - Coronel, Carlos, and Steven Morris. *Database Systems: Design, Implementation, & Management. 13th edition*. Australia ; United States: Cengage Learning, 2018.
  - If you'd like a physical copy of this book, you can rent one (cheaply!) with your Cengage unlimited subscription. Older editions are also available online for fairly cheap, but the quizzes/activities will require the newest version.
  - The main reason for adopting Cengage Unlimited is that it will give you access to **MindTap,** which will provide a platform for various course activities (in particular, coding SQL).
- I will provide everything else (including extensive lecture notes) online.
- This course will require that you have reliable, regular internet access (to complete online quizzes, etc.).

GRADING AND COURSE POLICIES

Standard Grading Scale:: >=90.0 (A), 80.0-89.9 (B), 70.0 -79.9 (C), 60.0-69.9 (D), <60 (F).

Your final grade is a weighted average of the following:

- **Cengage/MindTap Homework (15% total).** Most weeks, there will be an assignment on MindTap/Cengage. Unless noted otherwise, these assignments will always be due SUNDAY night.
- **D2L Quizzes (15% total).** Most weeks will also have a D2L quiz covering either the textbook reading or my notes. These will also be due SUNDAY night. You'll have three chances to do the quiz, and only your best score will count.
- **Problem Sets (50% total).** Each problem set will consist of conceptual and/or coding problems. You are welcome to work on them with a partner if you would like (and I will provide time for you to do so during our live Zoom meetings). However, each person must hand in their OWN copy of the work. These will generally be due on MONDAY.
- **Final Project (20%).** The final project will allow you to practice what you have learned over the semester by designing and implementing a PostgreSQL database.
- **Extra Credit.** There may be occasional opportunities for extra credit, which I will let you know about. For reasons of fairness, I can't offer extra credit opportunities to individual students, so please don't ask.

You can find the policy on **Late Work** later in this document.

Plagiarism and Academic Integrity. Your work should be your own—please don't use your classmates, friends, parents, internet sites, etc., to help you write your papers or answer test questions. And when you use outside sources (such as for bits of computer code), be sure to give appropriate citation and acknowledgment for any words, ideas, code snippets, etc. If the preponderance of the evidence suggests cheating has occurred (that is, if the evidence suggests that this is *more likely than not)*, you will receive a failing grade on the assignment. A second violation will lead to a failing grade for the course. Please also see the RCTC statement on academic integrity later in the syllabus.

Attendance. Students in face-to-face classes are expected to attend class regularly, while online students are expected to participate in the class discussions and activities. If you miss more than two weeks consecutively, or 1/3 of the total class sessions, you may receive a failing grade of FW. This may endanger your ability to receive financial aid. With this in mind, you are responsible for withdrawing from the class if you decide not to continue. I am willing to make exceptions if circumstances require, but you must let me know about these promptly.

POLICY ON LATE WORK: PLEASE READ BEFORE EMAILING ME!

Please read the following *before* emailing me to request an extension on an assignment. Here are my policies for making up missed or late work:

- Both the MindTap homework and D2L Quizzes can be submitted up to one week late. There will be a 10% penalty applied to the MindTap homework score.
- You can submit the problem sets late for partial credit. Your grade will be capped at 90% if they are less than 72 hours late and at 80% if less than one week late.
- I will make exceptions to these policies if you can demonstrate a genuine need. Please come talk to me if anything comes up that is preventing you from succeeding in class.

ALL late work should be submitted to the D2L "Late Work" assignment folder. NO LATE WORK WILL BE ACCEPTED DURING THE LAST WEEK OF CLASS (again, absent exceptional circumstances).

EXPECTATION FOR "LIVE" ZOOM SESSIONS

For this class, you'll have the opportunity to attend class synchronously/ If you choose to attend these live sessions, my expectations are as follows:

1. Please make sure to attend from a quiet location and "mute" your mic if you aren't speaking.
2. Please come on time (the same as you would for a face-to-face class).
3. I prefer your cameras to be on, *especially* during small group work. I understand that there are times this won't work! However, when working with classmates, it does work better if people can see your face. (I also appreciate this as an instructor 😊).
4. You won't receive credit for the activity if you are "absent" during small group work (and don't interact with your peers).
5. You'll occasionally be asked to submit short, in-class coding, diagramming, or writing assignments. For this reason, you should be at a computer (as opposed to a phone or tablet) when attending class.

RCTC COMMON POLICIES

This course will be taught in accordance with the following policies, which apply to ALL RCTC courses. If you have any questions about these, please let me know!

Academic Integrity Statement. The primary academic mission of Rochester Community and Technical College (RCTC) is to provide quality learning opportunities for students. Acts of academic dishonesty undermine the educational process and the learning experience for the student and our college community. It is the responsibility of the student to complete their academic requirements with integrity and not engage in acts of cheating, plagiarism, or collusion. The College expects that students are submitting work and materials that reflects their individual learning and efforts within their course, program, and college academic requirements. It is expected that RCTC students will understand and adhere to the concept of academic integrity and to the standards of conduct outlined within this policy. Students who are found to have engaged in an act of academic dishonesty may face academic sanctions through the Academic Integrity Procedure and non-academic misconduct sanctions through the Code of Student Conduct.

Americans with Disabilities Act. Rochester Community and Technical College is committed to ensuring its programs, services and activities are accessible to individuals with disabilities, through its compliance with state and federal laws, and System Policy. Appropriate accommodations are provided to those qualified students with disabilities. If you believe you qualify for an academic accommodation, please contact the Director of Disability Support Services, Travis Kromminga at 507-280-2968 or through the Minnesota relay TTY 1-800-627-3529. The office can also be reached via email at travis.kromminga@rctc.edu.

Military Friendly Statement. Rochester Community and Technical College (RCTC) is a military friendly campus, pledging to do all we can to help military veterans transition into college to complete their educational goals. RCTC is proud to be a Beyond the Yellow Ribbon campus, serving and honoring our veterans, military service members and their families. Through the Veterans Resource Center, RCTC offers student veterans an on-campus point of contact with other veterans, and program information to assist them in making a successful transition into college. For assistance, students are encouraged to contact the Veterans Assistant Coordinator, Mark Larsen, at 507-779-9375 or email at mark.larsen@state.mn.us, or Othelmo da Silva, RCTC's VA certifying official at 507-285-7566 or email at VeteranServices@rctc.edu.

Title IX Statement. Sexual violence and other forms of sexual misconduct is prohibited at Minnesota State colleges and universities (Minnesota State). Any individual who has been, or is being, subjected to conduct prohibited by the Sexual Violence Policy is encouraged to report the incident. Individuals may choose to file a complaint anonymously using the online reporting tool https://www.rctc.edu/services/student-affairs/title-ix/). Individuals who choose to file anonymous reports are advised that it may be difficult for the college to follow up or take specific action, where information is limited. For additional information please see the RCTC Sexual Violence Policy, http://www.rctc.edu/policies/system/sexual-violence or contact Teresa Brown, Title IX Coordinator, at 507-285-7108 or email at TitleIX@rctc.edu.

GETTING IN TOUCH WITH ME (AND WHAT TO INCLUDE IN AN EMAIL)

The best way to get ahold of me is by email, which I will aim to respond to within ONE working day (for simple questions) or TWO working days (for more complex ones). I don't generally check email on the weekends or holidays. If you don't hear from me by then, please try emailing me again. In order to help me provide you with quick, effective feedback, here's a general template for what I expect in an email.

Dear Brendan (or Professor Shea):

My name is [full name], and I'm a student in [this section] of [this class]. I had a question regarding [identify quiz, textbook chapter, etc. Be specific, and include a copy of anything I might need to answer your question, including the full problem text, if applicable]. Here's everything I've tried so far to figure out the answer for myself [looked at the syllabus, notes, textbook, etc.], and here's my best guess as to the answer. Could you help me by doing the following? [Be specific in what you are asking me to do.] [Feel free to include anything else you'd like here. I'm always happy when students send along ideas/links/whatever vaguely relating to ethics and philosophy 😊*]/*

As I rule, I will not respond to requests that you be exempted from class policies without very good reason (e.g., for late-work extensions outside the conditions outlined above), or to emails that lack basic identifying information (your full name, class, etc.). For long or complex questions, I highly encourage you to schedule an appointment so that we can talk (either in person or by phone). Oh, and please don't call me Mr. Shea (That's my dad!).

RESOURCES FOR STUDENT SUCCESS

Some helpful resources at RCTC (all of which are included with your course tuition) include the following:

- **Student Support Services/TRIO (SS 159)** provides academic support for first-generation and low-income college students, as well as those with documented disabilities.
- **Drop-in Tutoring (AT 306)** is available free of charge to *all* RCTC students. Please take advantage of it!
- **Online Tutoring** is available at www.tutor.com, accessible via D2L (so, don't go directly to the website—instead, log on to the main RCTC D2L page, and look for the link). This online tutoring option also includes a form where you can submit a paper for review (there is something like a 12-hour turn around).

COURSE CALENDAR

Unless otherwise noted, the readings are from *Database Systems: Design, Implementation, & Management. 13th edition*. I will let you know ahead of time if there are any changes. Most of the readings can be found in your textbook; I will make the others available to you online. **QUIZZES** on each chapter will generally be due on the Friday of that week.

Week	Week Starting	Topics	Notes
1	8/21	Syllabus and "Learning How to Learn"	No Zoom meeting
2	8/28	Lecture 1: Intro to Database	First Zoom meeting
3	9/4	Lecture 2: Data Models	
4	9/11	Lecture 3: The Relational Model	
5	9/18	Problem Set 1 Work Week	PS1 due 9/26
6	9/25	Lecture 4: E-R Diagrams	
7	10/2	Lecture 5: Advanced Modeling	
8	10/9	Lecture 6: Deep Questions About Data	PS2 Due 10/17
9	10/16	Lecture 7: Basics of Python Notebooks	No Zoom meeting – Education MN conference,
10	10/23	Lecture 8: Data Frames and CSVs	
11	10/30	Lecture 9: Basic Queries in SQL	PS3 Due 11/7
12	11/6	Lecture 10: Intermediate Queries in SQL	

13	11/13	Lecture 11: SQL Data Definition Language	
14	11/20	Problem Set 4 Work Week	No Zoom meeting (Thanksgiving), PS4 Due 11/28
15	11/27	Lecture 12: Further Into SQL	
16	12/4	Final Project Work Week	
17	12/11	To be Announced	No Zoom Meeting, Final Project Due 12/12