CPSC340A
Database Systems
Syllabus

Instructor: Dr. Durell Bouchard
Office Hours: MWF: 2:30-3:30, TTH: 3:00-4:00, also by appointment or open door
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Course Objectives

This course provides an introduction to database systems. Topics include the architecture of a database system, the query language SQL, database design, data mining, and issues data concurrency, security and integrity in the context of multi-user database systems. Students will put the knowledge and skills gained to use by designing a database and creating a graphical application that uses the database.

Intended Learning Outcomes: At the end of the course the successful student will be able to

1. design a relational databases for a given data set.
2. use the Structured Query Language (SQL) to create relational databases.
3. formulate queries to extract appropriate data from a given relational database.

Course Content

Prerequisites: CPSC170

Text: *SQL Queries for Mere Mortals: A Hands-On Guide to Data Manipulation in SQL: Third Edition*, by John Viescas and Michael J. Hernandez, Addison-Wesley, 2014.

Assignments: In addition to regular reading and in-class activities, there will be programming and design assignments. These assignments are designed to give the student the opportunity to put into practice the programming and design skills they have learned.

Projects: In addition to the smaller assignments there will be a larger projects. These projects are designed to give students the opportunity to put into practice designing a database and integrating it into a graphical program.

Exam: One midterm exam will be given on Thursday, March 1st.

Co-curricular: The Department of Mathematics, Computer Science, and Physics is offering a series of lectures designed to engage the campus community in discussions of ongoing research, novel applications, and other issues that face these disciplines. You are invited to attend all of the events but participating in at least three is mandatory. Within one week of attending an event you must submit a one page, single-spaced, paper (to Inquire) reflecting on the discussion. If you do not turn the paper in within the one week time frame you may not count that event as one you attended.

Grading: Course grades are assigned based on the following weights and scale:

Grade Weights:	projects.....60%	midterm exam...20%
	assignments...17%	co-curricular.....3%

Grade Scale:	93-100	A	83-86	B	73-76	C	63-66	D
	90-92	A-	80-82	B-	70-72	C-	60-62	D-
	87-89	B+	77-79	C+	67-69	D+	below 60	F

Course Policies

Attendance Policy: Class attendance is vital to your success in this course; material covered during missed sessions is the responsibility of the student. Conversations held in class illuminate the published class materials and are subject to evaluation on subsequent tests and quizzes. Moreover, quizzes and in-class assignments are not available for make-up.

Late Assignment Policy: Unless otherwise specified, assignments are to be turned in before the start of class on the due date. If you anticipate being unable to meet a deadline, talk to me at least 24 hours before the deadline. In extenuating circumstances we may be able to make special arrangements. Please note that this must be discussed – just sending an email does not automatically grant you extra time. Unexcused late work will receive no credit. Electronic "glitches" do not waive your responsibility to submit your work in a timely manner.

Make-up Policy: Everyone is expected to take quizzes and exams at the scheduled times. Make-ups will be given only for legitimate, documented absences that the instructor has been notified of ahead of time. Make-up tests, if given, may be oral. There will be no make-up

quizzes.

Academic Integrity: It is accepted that you have read and understood the standards for academic integrity at Roanoke College. All tests and exams are to be the work of the individual student. You are encouraged to get help from the instructor if you need help with any aspect of the course including programs and assignments. Student assistants, tutors, and classmates may help you understand course concepts but may not show you how to do any particular aspect of an assignment. Students may discuss lab work and help each other out but in all cases the work you turn in must be your own. Copying someone else's work or turning in someone else's work is NEVER allowed. Using someone else's work or ideas as your own is plagiarism and an academic integrity offense. Examples of academic integrity violations include copying a program or part of a program (even one line) from someone else, writing code for someone else, telling someone else how to solve a problem or having someone tell you how to solve a problem. Discussion among students about programming projects should be limited to general concepts, not specific aspects of how to complete the work.

Accessible Education Services: Accessible Education Services (AES) is located in the Goode-Pasfield Center for Learning and Teaching in Fintel Library. AES provides reasonable accommodations to students with documented disabilities. To register for services, students must self-identify to AES, complete the registration process, and provide current documentation of a disability along with recommendations from the qualified specialist. Please contact Dr. Sue Brown, Director of Academic Services and Acting Coordinator of Accessible Education Services, at 540-375-2247 or by e-mail at sbrown@roanoke.edu to schedule an appointment. If you have registered with AES in the past and would like to receive academic accommodations for this semester, please contact Dr. Brown at your earliest convenience to schedule an appointment.

Course Schedule

This course expects you to spend at least 12 hours of work each week inside and outside of class.

Date	Topic
Jan 16 - Feb 22	SQL Databases
Feb 27 - Mar 1	Database Design
Mar 13 - Apr 12	NoSQL Databases

Date	Topic
Apr 17 - Apr 19	Data Mining