



**Basic Info:**

- Tuesday, Thursday 11:00 am – 12:15 pm
- Barret Library 035

**Instructor:**

- Betsy Williams Sanders
  - Office: Olendorf 420
  - Office Phone: 901.843.3791
  - Email\*: [williamsb@rhodes.edu](mailto:williamsb@rhodes.edu)

\*To ensure a quick response, the subject line of your emails should read “cs465: [subject of question]”

**Office Hours:**

- TBA
- By appointment

**Book:**

- The course textbook is
  - *A First Course in Database systems*, by Jeff Ullman, and Jennifer Widom
- Supplemental material will be distributed in class

**Other Course Materials:**

- We will use Microsoft Access and Microsoft Visual Studio (C#)
- Phillip Greenspun, SQL for Web Nerds, <http://philip.greenspun.com/sql/>.
  - A great introduction to RDBMS systems from the perspective application developer.
- Some course material will be available in my public folder

**Prerequisites:**

- Students must have taken *COMP 241: Data Structures and Algorithms* or instructor consent.

**Course Description:**

This course introduces the underlying concepts behind data modeling and database systems using relational database management systems (RDBMS), the structured query language (SQL), and applications as examples.

**Course Objectives:**

You will learn:

- How to model your data using the entity-relationship model
- How to design a normalized schema in the relational data model
- How to implement your schema using SQL
- How to keep your data consistent and safe with your schema using the ACID properties that a modern RDBMS gives you
- How to query your data using SQL
- How to interface to a modern RDBMS from a modern programming language (C#).
- How such interfaces are used to create web applications
- How an RDBMS provides quick access to your data using indices, and how indices are implemented.
- How an RDBMS manages the storage hierarchy.

- How an RDBMS optimizes and execute your queries using the relational algebra, the theoretical underpinning of database systems.
- The history of database systems, including old ideas, like hierarchical databases, that are seeing a resurgence of interest today in the context of XML and LDAP.

#### Workload:

- It is important to stay current with the material. You should be prepared to devote regular weekly hours to this course. More specifically, you should devote at least 5-6 hours for each in class lecture.
- **Do not wait to the last minute to start your programming assignments. The programming assignments are designed to be challenging. I will give you plenty of time to complete the assignment and will expect you to use your time wisely.**
- You are encouraged to form study groups with colleagues from the class. The goal of these groups is to clarify and solidify your understanding of the concepts presented in class, and to provide for richer and more engaging learning experience. However, you are expected to turn in your own code/solution that represents the results of your own effort.

#### Programming Assignments:

- Each student is responsible for keeping a back-up copy on disk of all source code turned in for an assignment. Failure to do so could result in loss of credit for an assignment.
- Assignments should be dropped in my inbox on the day they are due, at the specified time. Projects that are not turned in at the exact due time are considered late.
- You will be given a pool of 4 late days. Meaning you can use a late day so that you may turn in a program a day late with no penalty.
- If you use a late day you must indicate this in the assignment when it is turned in. It is your responsibility to keep track of late days that you have used.
- When the late days have been used, LATE programs will be accepted, with a penalty of one letter grade per day. (If a genuine emergency situation arises, please see me and we will work something out.)
- You are allowed to use the course textbook and the course notes for these programs. You may also use the web to search how to do certain things in C#.
- Collaboration: You are expected to work individually on assigned programs. However, you are allowed encouraged to discuss high-level details of the programs. If group work is allowed, it will be mentioned explicitly in the assignment.
- Grades are assigned to programs as follows by this general guideline:
  - A (100 pts): Program is carefully designed, efficiently implemented, well documented, and produce clearly formatted, correct output.
  - A- (94 pts): This is an 'A' program with one or two of the minor (?) problems described for grade 'B'.
  - B (88 pts): A 'B' program typically could easily have been an 'A' program, but it may have minor/careless problems such as poor, inadequate, or incomplete documentation; several literal values where symbolic constants would have been appropriate; wrong file names (these will be specified per program assignment); sloppy source code format; minor efficiency problems; etc. (This is not an exhaustive list.) You would be wise to consider 'B' the default grade for a working program --- this might encourage you to review and polish your first working draft of an assignment to produce a more professional quality final version of your program.
  - C (75 pts): A 'C' program has more serious problems: incorrect output for important special cases (the "empty" case, the "maxed-out" case, etc.), failure to carefully follow design and implementation requirements spelled out in the assignment description, very poor or inefficient design or implementation, near complete absence of documentation, etc.
  - D: (60 pts): A 'D' program compiles, links, and runs, but it produces clearly incorrect output for typical cases. Or, it may deviate greatly from the design or implementation requirements stated in the assignment description.

- F (35 pts): Typically, an 'F' program produces no correct output, or it may not even compile. It may "look like a program" when printed as a hard copy, but there remains much work to be done for it to be a correct, working program.

**Homework Assignments:**

- You will be given a number of homework assignments throughout the semester.
- Homework assignments are due at the beginning of class. You may not use a programming late day for homework assignments. I WILL NOT ACCEPT LATE HOMEWORK ASSIGNMENTS. However, if an emergency arises, please let me know.
- If you decide to write (and not type) your solutions to your homework, your handwriting must be legible.
- YOU MAY NOT DISCUSS THE SOLUTIONS TO THE HOMEWORK ASSIGNMENTS WITH YOUR CLASSMATES. Working together is considered cheating and will be dealt with appropriately.
- You are only allowed to use your textbook and your notes to answer your homework assignments.

**Quizzes:**

- You will be given a number of quizzes throughout the semester to ensure that you are doing outside reading and keeping current with the material.
- These will be at the beginning of class and will last approximately 10 minutes (but may vary by test)
- I will not give makeup Quizzes except under EXTREME circumstances. If you know that you will be missing a class, make sure you notify me well before the class period.
- These quizzes will be closed notes.

**Exams:**

- There will be two midterms and one final exam:
  - **Midterm 1:** Thursday, February 18<sup>th</sup>, in class.
  - **Midterm 2:** Tuesday, April 13<sup>th</sup>, in class.
  - **Final Exam:** Saturday, May 8<sup>th</sup>, 8:30 am (**I will give an alternate time later in the semester**)
- Make-up exams will only be given in extreme circumstances.

**Grade Breakdown:**

- 30 % Programming Assignments
- 35 % Homework Assignments & Quizzes
- 20 % Midterms
- 15 % Final

**Grade Assignments:**

- Grading is based on the below scale:
  - **A : [93%, 100%]**
  - **A- : [90%, 93%]**
  - **B+ : [87%, 90%]**
  - **B : [83%, 87%]**
  - **B- : [80%, 83%]**
  - **C+ : [77%, 80%]**
  - **C : [73%, 77%]**
  - **C - : [70%, 73%]**
  - **D : [65%, 70%]**
  - **D- : [60%, 65%]**
  - **F : [ 0%, 60%]**
- For borderline cases, I may take into account participation, and/or attendance, and improvement during the semester.

**Attendance:**

- Attendance is expected for each class as material that is not covered in the book may appear in class. If your attendance deteriorates you will be referred to the dean and asked to drop the course. Attendance, participation, and apparent overall improvement trend may be considered in assigning a final grade.
- Attendance will be checked each class lecture period. . After 5 unexcused absences, each additional absence reduces the final grade for the course by one letter grade.

**Special Accommodation:**

- If you are in need of special accommodations, please register with the Office of Student Disability Services (<http://www.rhodes.edu/disability>) as soon as possible so that all necessary arrangements can be made.

**Scholastic Behavior**

- Plagiarism, cheating, and similar anti-intellectual behavior are serious violations of academic ethics and will be correspondingly penalized. If you are concerned about a possible violation of this kind, please talk with me. I understand the pressure that students may experience while at Rhodes, and I will try to help as best as I can.
- Unlike the homework, all major programs and tests must be the student's *own* work, unless otherwise instructed by your instructor. Copying all or part of a major program assignment, or downloading code from the Internet and submitting it as your own, or having someone else write code for your assignment, or having someone else debug your assignment, or *allowing* someone else to copy from you, or coding or debugging someone else's assignment --- these are all included in the definition of reportable Honor Code violations for this course. If you have any doubts about whether or not a program development practice on a major program assignment is acceptable, please clear it with the instructor before proceeding.
- When you come to class, you are expected to pay attention! Cell phones are prohibited. You should work through the class exercises and NOT surf the web, etc.

**Important Dates**

- Drop Add Ends: 1/20/2010
- Extended Drop Period ends: 2/3/2010
- Pass Fail Period Ends: 2/3/2010
- Withdrawal Period Ends: 3/26/2010

I reserve the right to alter this syllabus as necessary.