

**Department of Mathematics and Computer Science
Adelphi University
Fall 2013**

0145-443-001 Database Management Systems

Dr. R. M. Siegfried
214 Post Hall
(516)877-4482
siegfrie@adelphi.edu

Office Hours MWF 9:00-9:50AM & 12:00-12:50PM (ET)

Course Description and Purpose Learn the structure of the relational database model. Understand the process of normalization in database design, and the use of relational algebra and calculus in query design. Become proficient in at least two database languages, including SQL.

Gen Ed Learning Goals Formal Sciences

Course Learning Goals Identifying all elements of a database management system and describe their functions.
Given an overall specification of the data requirements, students should be able to design database schema, including normalized tables, attributes and constraints.
Using SQL or a comparable query language to define, populate and modify tables, query the database, modify the schema and generate reports.

Prerequisite CSC 172

Text Database Systems: A Practical Approach to Design, Implementation and Management, 5th ed., by Thomas Connolly and Carolyn Begg, Addison-Wesley, 2010.

Topics: An Overview of Databases and Transactions
A Case Study of Databases
The Relational Model
Conceptual Modeling
Data Definition Languages and SQL
Relational Algebra and SQL
Database Design and Normalization
Triggers and Active Databases
Physical Data Organization and Indexing
Query Processing
Transaction Processing
Design Coding and Testing

Assignments

The assignments this semester will require students to use Microsoft Access and MySQL Server to design, populate, query, manipulate and update databases running on PCs (and possibly Panther, the University's multi-user Linux system. This will require access to Microsoft Access (available on computers in the Department's computer lab and the Information Commons in Swirbul Library) and may require access to the University's Linux system, Panther, using PuTTY or a comparable ssh-compatible terminal emulator. This may require students to purchase and install Access on their personal computers or to install such a secure terminal emulator on their personal computers if they wish to complete assignments off campus.

While there will be opportunities to use class time for assigned work, this will be mainly limited to debugging and other assistance that students require in class. One should expect to spend 4-6 hours outside class working on programming assignments for this class.

Grading

Each programming assignment will be graded with a base grade of 90%, with points added to reflected areas in which the assignment exceeded specified requirements and/or points deducted to show areas where the assignment is deficient.

Late penalties may be assessed of 2 points per class after the due date.

The final average will be weighted (based on the following ratio:

Programming Assignments	20%
Midterm Exam	40%
Final Exam	40%

The final average will translate to a letter grade according to the following table:

Final Average	Course Grade
A	90 – 100
A-	87.5 – 89.9
B+	83.3 – 87.4
B	80.0 – 83.2
B-	77.5 – 79.9
C+	73.3 – 77.4
C	70.0 – 73.2
C-	67.5 – 69.9

D+	63.3 – 67.4
D	60.0 – 63.2
F	0.0 – 59.9

Attendance

The following is the Adelphi University General Attendance Policy:

Only students who are registered for courses, and whose name appears on the Official Class Roster may attend courses at the University. Adelphi students make a commitment to be active participants in their educational program; class attendance is an integral part of this commitment. Attendance requirements for each course will be announced by the faculty member at the beginning of each term. Students are expected to be present promptly at the beginning of each class period, unless prevented by illness or by other compelling cause. In the event of such absence, students may request that faculty members be notified by the Office of Academic Services and Retention. Students are responsible for completing course work missed through absences. Students should wait a reasonable length of time for an instructor in the event that the instructor is delayed.

Additionally, you are also responsible for whatever work is covered in class whether or not you are there. Absence from the final exam will be excused only for a good and well-documented reason. The decision to allow a make-up exam will be made in accordance with the policies of Adelphi University.

NB:

If the University is closed for more than two days due to an emergency, go the home page for this course site each day for instructions and assignments. Student instructions materials can be found at <http://home.adelphi.edu/~siegfried/cs443>

Tentative Schedule (Subject to Change)

Date	Topic	Assignment due
August 28	Overview of Databases and Transactions	
September 4	Overview of Databases and Transactions	
September 9	Case Study of Database	Assn 1 – Creating a database using MS Access
September 11	Case Study of Database	
September 16	Relational Model	Assn 2 – Querying a

		database
September 18	Relational Model	
September 23	Conceptual Modeling	Assn 3 – Maintaining a database
September 25	Conceptual Modeling	
September 30	Data Definition Languages and SQL	Assn 4 – Basic Modeling
October 2	Data Definition Languages and SQL	
October 7	Relational Algebra and SQL	Assn 5 - Defining a Schema
October 9	Relational Algebra and SQL	
October 14	Review for Midterm	Assn 6 – Using Relational Algebra and MySQL
October 16	Midterm Exam	
October 21	Database Design and Normalization	
October 23	Database Design and Normalization	Assn 7 – Designing and Normalizing a Database
October 28	Triggers and Active Databases	
October 30	Triggers and Active Databases	
November 4	Physical Data Organization and Indexing	Assn 8 – Using Triggers in a Databases
November 6	Physical Data Organization and Indexing	
November 11	Query Processing	
November 13	Query Processing	
November 18	Transaction Processing	Assn 9 – Writing queries
November 20	Transaction Processing	
November 25	Design Coding and Testing	Assn 10 – Writing code for transactions
December 2	Design Coding and Testing	
December 4	Review	
December 9	Review	

Students With Disabilities

If you have a disability that may impact your ability to carry out assigned course work, and are not enrolled in the Learning Disabilities Program, it is important that you contact the staff in the Disability Support Services Office (DSS), University Center, Room 310, (516) 877-3145. DSS@adelphi.edu. DSS will review your concerns and determine, with you, appropriate and necessary accommodations. All information and documentation of disability is confidential.

Honor Code

Students enrolled in this course are expected to abide by the Adelphi University Honor Code. The purpose of the Honor Code is to protect the academic integrity of the University by encouraging consistent ethical

behavior in assigned coursework by students. Following is excerpted from the Student Honor Code:

The code of academic honesty prohibits behavior, which can broadly be described as lying, cheating, or stealing. Violations of the code of academic honesty will include, but are not limited to, the following:

1. Fabricating data or citations
2. Collaborating in areas prohibited by the professor
3. Unauthorized multiple submission of work
4. Sabotage of others' work, including library vandalism or manipulation
5. Plagiarism: presenting any work as one's own that is not one's own
6. The creation of unfair advantage
7. The facilitation of dishonesty
8. Tampering with or falsifying records
9. Cheating on examinations through the use of written materials or giving or receiving help in any form during the exam, including talking, signals, electronic devices, etc.

**Student Course
Evaluations**

During the last two weeks of the class, you will receive notification, via mail and eCampus, that the course evaluation is available for your input electronically. Availability will end at the start of the final examination period. Your feedback is valuable and I encourage you to respond. Please be assured that your responses are anonymous and the results will not be available to the instructor until after the end of the semester and therefore after course grades have been submitted.

Tear off this and return with information required below:

STUDENT ACKNOWLEDGEMENT:

I HAVE RECEIVED AND READ THE SYLLABUS FOR
[INSERT COURSE NUMBER AND SECTION].

SIGNED: _____

PRINT NAME:

DATE: _____

Warning – This page must be signed and returned to the instructor to receive a complete grade in this course.