Boston University
College of Arts and Sciences
Computer Science Department

CAS CS 460/660: Introduction to Database Systems

Spring 2012

Instructor: Prof. George Kollios, *gkollios@cs.bu.edu*, phone 617-353-8928.
Office Hours: Mon 4:00 pm-5:30 pm and Tue 11:00 pm-12:30 pm in MCS 283, or by appointment (the best way to reach me is via email.)

Teaching Fellow: TBD.

CS460 Course Description: Introduction to database management systems. Examines entity-relationship and relational data models; commercial relational query languages: SQL, relational algebra, and relational calculus; file organization, indexing and hashing, query optimization, transaction processing, concurrency control and recovery, integrity, and security. If time permits, we will discuss some advanced topics and new trends in data management including data warehousing and data management on large clusters.

CS660 Course Description: Graduate-level introduction to database systems and implementation. Students attend the CS460 lectures and are expected to complete additional work on assignments and exams.Furthermore, students in CS660 will attend and participate in database seminars and will have to do a semester long project.

Prerequisites: CAS CS 112. Working knowledge of C++ or Java programming and data structures. CS 350 is recommended.

Class Home Page: `http://www.cs.bu.edu/fac/gkollios/db12/`
All class assignments, schedules, and lecture notes can be found on this page.

Time and Place: Mon and Wed 2:30pm - 4:00pm in MCS B25.

Required Textbook: Raghu Ramakrishnan and Johannes Gehrke, "Database Management Systems", McGraw-Hill, Third Edition. 2002. ISBN: 0-07-246563-8.

Grading Policy: The course grade will break down as follows.

	CS460	CS660
Written Assignments	20%	15%
Programming Assignments	30%	20%
Midterm	20%	15%
Final Exam	30%	30%
Project and Participation	0%	20%

Important Dates: Midterm Exam: Mon 03/05/12 (tentative) (in class), Final Exam: TBA.

Collaboration/Academic Honesty: All course participants must adhere to the College of Arts and Sciences Academic Conduct Code. All instances of academic **dishonesty** will be reported to the academic conduct committee. Printed copies of the code are available from CAS room 105.

Late Policy – Make up exams: Late assignments will not ordinarily be accepted. If, for some compelling reason, you cannot hand in an assignment on time, please contact me as far in advance as possible. If a written assignment is due at the beginning of a class, you should hand it in at the *beginning* of the class. Late programming projects will be levied a late penalty of 10% per day for up to three (3) days. After three days, no credit will be given. No make-up exams (except under extremely unusual circumstances).

Tentative Course Schedule

Week#	Topics	Readings
1	Introduction	Chapter 1
2	ER-Model; Relational Model	Chapters 2, 3
3	Relational Algebra Relational Calculus	Chapter 4
4	SQL	Chapter 5
5	Integrity and Security	Chapter 5
6	DB Design	Chapter 19
7	Normalization and Transactions	Chapters 19, 16
8	**Midterm Exam**	
9	Storage and Files	Chapter 9
10	Indexing and Hashing	Chapters 10, 11
11	Advanced Indexing	Chapter 28
12	Query Processing and Optimization	Chapters 12, 13
13	Query Optimization and Transactions	Chapters 14, 15, 16
14	Concurrency Control and Recovery	Chapters 17, 18
15	Advanced Topics	Chapters 22, 27