



#5226 – ITM692 Special Topics in Information Technology

Part II: Database Design and Analysis | Fall 2011

Instructor: Sanjay Goel, Asst. Instructor: Damira Pon

This is an introductory course in database modeling, design, and implementation of business applications as well as data mining. It teaches the basic principles of relational database theory and use of query languages. The class emphasizes on the fundamentals of database design. The students learn to write queries in SQL and design a database using Microsoft Access. It is expected that students have already learned to use Access through a self-study module in the ITM 601 class. The class is very fast-paced and students are expected to complete their assignments each week in order to stay with the class. The class assumes students will learn the basic interface for Microsoft Access on their own using the MYITLab that accompanies the reference book.

LOCATION:

Business Administration 233 / 222 (lab)

CONTACT:

goel@albany.edu | (518) 442-4925 | BA310b
(518) 442-3143 | SS 259D

OFFICE HOURS:

TH 4:10 – 5:30pm & by appt.

REFERENCE BOOKS:

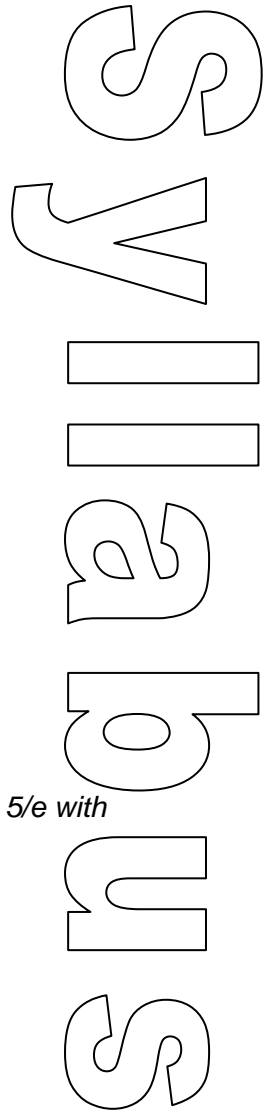
David M. Kroenke and David Auer, *Database Concepts 5/e with MYITLab*, ISBN: 0132182920 / 9781256070504

WEBSITES:

<http://www.albany.edu/~goel/classes/fall2011/itm692>
<https://blackboard.albany.edu>

COURSE DATES & TIMES

October 13, 20 & 27, November 3, 10, 17 & 24 and December 1, TH 1:15 – 4:05pm





COURSE SCHEDULE

Date	Lessons
10/13	Lesson 1: Introduction to Databases / Relational Database Design <ul style="list-style-type: none"> - Syllabus - Fundamentals of Databases - Relational Database Concepts (Entities, Attributes, Relations, & Keys) - Refer to Kroenke Ch. 1, Ch. 2 (pg. 52 – 61), Ch. 4
10/20	Lesson 2: E-R Diagrams <ul style="list-style-type: none"> - Entity-Relationship (E-R) Diagram Construction - Translation of Problems to E-R Diagrams - E-R Diagram Exercises - Refer to Kroenke Ch. 4
10/27	Lesson 3: Database Normalization <ul style="list-style-type: none"> - E-R Diagrams, cont'd. - Normalization (1NF, 2NF, 3NF, Boyce-Codd, etc.) - Normalization Exercises - Refer to Kroenke Ch. 2
11/3	Lesson 4: SQL: Data Definition Language (DDL) <ul style="list-style-type: none"> - Basic SQL Format - DDL for Creating Tables, Setting Relationships, and Population of Data - DDL Exercises - Refer to Kroenke Ch. 3 (pg. 101 – 117)
11/10	Lesson 5: SQL: Data Manipulation Language (DML) <ul style="list-style-type: none"> - DML for Retrieval of Data, i.e., SELECT, ORDER BY, GROUP BY, joins, conditions, etc. - Refer to Kroenke Ch. 3 (pg. 118 – end)
11/17	Lesson 6: SQL: Advanced Queries <ul style="list-style-type: none"> - Advanced SQL queries, i.e., nesting, UNION, INTERSECT, etc.
11/24	Thanksgiving Break
12/1	Lesson 7: Exam

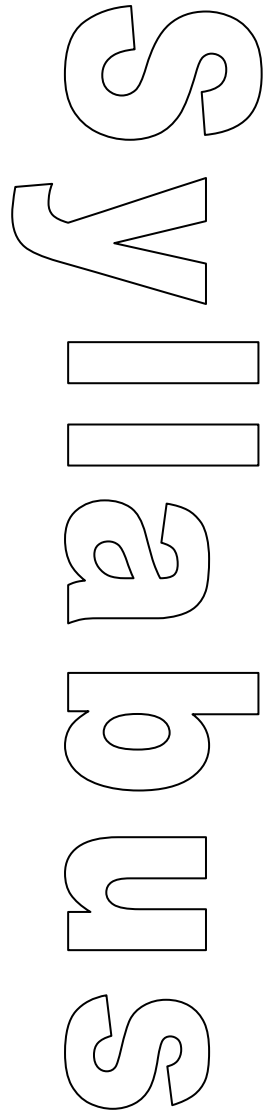
This schedule is subject to change and students are expected to be aware of any modifications to including, but not limited to: due dates, readings, exam dates, and project guidelines, either announced in-class and through email.

LEARNING OBJECTIVES

Overarching Goal: Students will be able to efficiently manage and logically reason using large data sets

Sub-Objectives: At the end of this course, students will be able to:

1. Design and create entity relationship (E-R) diagrams
2. Perform database normalization
3. Write queries to create and access database information using data definition language (DDL) and data manipulation language (DML)
4. Perform functions using Microsoft Access/Reference databases for the class





ACADEMIC INTEGRITY & HONESTY Students MUST comply with all University standards of academic integrity. As stated on the undergraduate and graduate bulletin, **"Claims of ignorance, of unintentional error, or of academic or personal pressures are not sufficient reasons for violations of academic integrity."** Non-compliance with academic integrity standards, will result in the student being reported to the Office of Graduate Admissions or the Dean of Undergraduate Studies Office (whichever applies) AND receive a lowering of a paper or project grade of at least one full grade, receive a failing grade for a project containing plagiarized material or examination in which cheating occurred, receive a lowering of course grade by one full grade or more, a failing grade for the course, or any combination of these depending on the infraction. Violations include: Giving or receiving unauthorized help on an examination; Collaborating on projects, papers, or other academic exercises which is regarded as inappropriate by the instructor(s), submitting substantial portions of the same work for credit more than once, without the prior explicit consent of the instructor(s) to whom the material is being submitted; misrepresenting material or fabricating information in an academic exercise or assignment; Destroying, damaging, or stealing of another's work or working materials; and presenting as one's own work, the work of another person (e.g., words, ideas, information, code, data, evidence, organizing principles, or presentation style of someone else). This includes paraphrasing or summarizing without acknowledgment, submission of another student's work as one's own, purchase of prepared research, papers, or assignments, and the unacknowledged use of research sources gathered by someone else. Failure to indicate accurately the extent and precise nature of one's reliance on other sources is also a form of plagiarism. The student is responsible for understanding the legitimate use of sources, the appropriate ways of acknowledging academic, scholarly, or creative indebtedness, and the consequences for violating University regulations. **If you have questions about academic integrity - ASK!**

GRADING AND ASSESSMENT We try to grade assignments fairly and return them within a reasonable time period with relevant comments and to be available to discuss questions. Students are expected to set up an appointment to meet with the grader within a week of receiving a grade. Please let us know if there is a mistake in calculation – mistakes happen!

Late assignments, projects, or papers will receive 15% off per day late from the final possible grade for the exercise unless there is a verifiable legitimate excuse, e.g. death in the family, medical emergency, etc. Teams of greater than two on assignments, unless otherwise specified, will lose points.

Students should contact the Disabled Student Services Center and the relevant professor at least a week before each exam/quiz if requiring additional assistance. Missing any assessment without a verifiable legitimate excuse will result in a grade of zero. Exams/quizzes are expected to be closed-book unless otherwise specified and all personal electronic devices (laptops, cell phones, PDA's, etc.) should be stowed.\

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GRADING RUBRIC

Type	Percent	Description
Assignments	30%	Can be in-class or take-home and designated as individual or teams of NO MORE THAN TWO (2). Provided in-class or through website / Blackboard. Can include laboratory exercises, cases, and projects such as performing a risk analysis or writing a security policy. Projects should be done in groups of four (4). A different project is offered every year and may incorporate several elements from the following: creating an entity-relationship diagram, normalization, formulation of relevant queries in MS Access, analysis of the data using the data mining techniques learned, and the creation of a written project report. The project guidelines will be provided in the second class and groups will be formed. For more details and guidelines, please see the Projects/Papers section of the course site.
Project	30%	Short essay-based exam which can include short answer, multiple-choice, true-false, and matching questions covering the second part of the course. This can include E-R Diagram, normalization and rationalizations, creation of a data definition table, development of SQL queries based on a needs-based sentence of DML, DDL, and advanced SQL queries.
Exam	40%	

The instructor is expected to get approval of the entire class prior to making any changes regarding the grading rubric.

“GREAT” EXPECTATIONS

- Students can expect the instructor to be open to questions and concerns, but remain impartial and fair to all students.
- Students are expected to respectfully participate in class and communicate with the instructor if there is confusion or lack of understanding of the material. In turn, the instructor will attempt to clarify any material either in-class or outside of class.
- Students are expected to use electronic devices during non-exam periods to enhance their learning and study experience, i.e. taking/reviewing notes, looking up related topics to aid discussion, and/or annotating slides (if any). It is asked that you refrain from personal use of electronic devices during class time unless it is an emergency.
- If the instructor is unable to attend class or office hours due to a personal emergency, students can expect for alternate arrangements to be made or to be informed in as a timely a manner as possible via email/phone.
- Students are expected to provide reliable contact information and inform the instructor of any updates.
- Students are expected to contact the instructor via email, phone, or in person for reliable response. Blackboard will NOT be considered a reliable communication method.
- Students are expected to complete all assignments and readings as well as attend office hours as necessary. It is important for students to inform the instructor if all available office hours interfere with other classes during the first week of class.

