IST459 - INTRODUCTION TO DATABASE MANAGEMENT SYSTEMS

1. COURSE DETAILS

COURSE (SECTION):	IST459 (M002)	TERM:	Spring 2010 (1102)
INSTRUCTOR:	Michael Fudge, Jr.	PHONE:	443-9686 (Office)
OFFICE:	Hinds 110B	EMAIL:	mafudge@syr.edu
OFFICE HOURS:	By Appointment	HOME PAGE:	http://blackboard.syr.edu
MEETING TIME:	Tu/Th 12:30pm-1:50pm	LOCATION:	Class: Hinds 111 / Lab: Hinds 013

COURSE DESCRIPTION:

This course examines data structures, file organizations, concepts and principles of database management systems (DBMS); as well as, data analysis, database design, data modeling, database management and database implementation. More specifically, introduces hierarchical, network and relational data models; entity-relationship modeling; the Structured Query Language (SQL); data normalization; and database design. Using Microsoft's SQL Server DBMSs as implementation vehicles, this course provides hands-on experience in database design and implementation through assignments, lab exercises and course projects. Advanced database concepts such as transaction management and concurrency control, distributed databases, multi-tier client/server architectures and Web-based database applications are also introduced.

COURSE OBJECTIVES:

Like any introduction class, we will be exploring a vast array of topics, rather than a detailed drill-down. It is the primary objective of this class to expose you to the varying ideas of databases and database design, with a major focus on the relational model and SQL (Structured Query Language). With that in mind, the outcomes of this course are to:

1. Describe fundamental data and database concepts
2. Compare and contrast the relational database model with other database models
3. Explain and use the database development lifecycle
4. Design databases using data modeling and data normalization techniques
5. Create databases using popular database management system products
6. Solve problems by constructing database queries using the Structured Query Language
7. Develop insights into future data management tool and technique trends
8. Recommend and justify strategies for managing data security, privacy, audit/control, fraud detection, backup and recovery
9. Critique the effectiveness of Database Management Systems in computer information systems

PREREQUISITE:

- IST352: Information Systems Analysis of Organizational Systems

TEXT:

- On-line class materials, posted to the learning management system (LMS).
- Databases Demystified: A Self-Teaching guide, Oppel.
  ISBN: 9780072253641
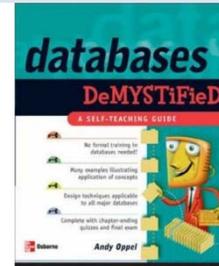
2. METHODS OF EVALUATION

This table outlines each method by which you will be evaluated in this class.

ASSESSMENT	QTY	NOTES	POINTS EACH	TOTAL POINTS
Study Guides (S01 – S13)	13	One for each topic in the course; due weekly;	10	130
Labs (L02– L12)	12	One for each topic beyond the first; due weekly;	10	120
Assignments (A01 due 3/4 , A02 due 4/29	2	Both assignments are required	100	200
Exams (E01 on 3/11 E02 on 5/6)	2	In-class lab exam	100	200
Participation (P)	1	See participation section below	1	50
			TOTAL	**700**

GRADE EXPECTATIONS:

Your grade in this class is based on the quality and accuracy of your submitted work. At any given point in time in this class, your grade can be calculated as the ratio of points you've earned to points issued, based on the following scale:

	GRADE	EXPECTATION OF THAT GRADE
A	A: [.93, 1.00] A-: [.90, .93)	Your work is outstanding and exceeds expectations.
B	B+: [.87, .90) B: [.83,.87) B-: [.80, .83)	Your work meets expectations; on par with the average student.
C	C+: [.77, .80) C: [.73,.77) C-: [.70, .73)	Your work is adequate but could be better.
F	D: [.60, .70) F: [0, .60)	Your work is inadequate and needs substantial improvement.

COROLLARY ON THE CALCULATION OF FINAL GRADES

- It is your responsibility to know your standing in the course at all times.
- Appeals for rounding grades will not be honored. When it comes to your final grade in the course, the grade you've earned is the grade you get: For example an 86.999999% is a B, not a B+.

STUDY GUIDES: (S01 – S13)

Study guides are graded self-study tools - worksheets consisting of short-answer, fill-in-the-blank, and essay questions based on the required readings and videos for the current week's topic. You should complete the study guide after you finish reading the required the contents of the topic, but before class lecture. Study guides are a triple-threat serving as (1) a measuring stick for your progress in the course, (2) a method to keep you on pace with the class material and (3) fodder for exams.

POLICIES REGARDING STUDY GUIDES:

- Work individually. Do not collaborate with others, or face a Zero grade or worse.
- You will have to complete the study guide by Tuesday's class.
- There are 13 study guides total, one for each topic in the course.

LABS: (L02 - L12)

The second half of most of our class topics will be in the lab – the place where you will learn to apply the concepts you've learned in class lecture. You will begin work on the labs during class time, but are responsible for completing the remainder of the labs, including the lab questions on your own time. A portion of each lab's deliverable will be handed in for a grade as part of the lab assessment. Instructions, including how and what should be turned in are included in our learning management system.

POLICIES REGARDING LABS:

- Work alone on your labs. Do not collaborate with others, or face a Zero grade or worse.
- Each lab has a series of questions in each of the lab sections. You should always complete the entire lab despite the fact that only a subset of the questions may be submitted for a grade.
- Generally labs are due by the next class. The specific lab due dates are indicated on the course calendar.
- There are 12 labs total starting with topic 2.

GRADING RUBRIC FOR LABS AND STUDY GUIDES

Any lab or study guide submission will receive one of three marks: full credit, half credit, or no credit. You receive half credit for completing the deliverable in full (answering all the questions), and another half credit answering a passing number of questions correctly. The intent is to reward you for completing all the work but also understand this is a learning process (hence the reason it is graded pass fail).

MARK	POINTS	CRITERIA
Full Credit	10	Deliverable was completed in full (all questions attempted) AND a passing mark
Half Credit	5	Deliverable was incomplete OR not a passing mark
No Credit	0	Deliverable was incomplete AND not a passing mark.

ASSIGNMENTS: (A01, A02)

Assignments are instruments which gauge your ability to apply the concepts we've learned throughout the course. They build upon the weekly topics and class labs, and it is near impossible to even attempt an assignment without a satisfactory comprehension of the course material. Assignments are quite demanding of your time, often requiring around 50 hours for the most competent of students to complete, mainly due to the research and additional practice that will be required.

Consult the course calendar for the specific due date of each assignment. The requirements for each assignment, including the deliverables, a grading form which clearly outlines the assignment's expectations and grading rubric with be posted in the LMS. You must hand in your assignment deliverables as per the instructions in our learning management system (LMS). It will not be accepted any other way. If time allows, you may begin your assignment in class once you have completed your lab work. Since the purpose of the class labs are to allow you to practice the skills you'll require for completing the assignments, you should complete your labs before attempting an assignment.

POLICIES REGARDING ASSIGNMENTS:

- You may work individually, or in up to teams of no more than 3 on your assignments.
- If working as a team, you must let me know who you worked with at the time you submit your assignment. Each team member must appear on all deliverables.
- All assignments must be handed in according to the instructions. Assignments not handed in properly will suffer a penalty.
- It is strongly advised that you start your assignments well in advance of the due dates, as they will require an extensive amount of time to complete.

EXAMS: (E01, E02)

There are two exams in the course, in which each student will have to demonstrate a minimum competency in the required learning objectives. The examination will be given using our LMS during class time, in the labs. There are no make-up exams, so please plan your schedule accordingly. The exam dates are posted on the course calendar.

POLICIES REGARDING EXAMS:

- Exams are given in the class lab on the dates provided. No make-ups will be given, so please plan accordingly.
- Work individually on exams. Cheating on exams will result in removal from the course at the very minimum.
- Exams are open book. You will be able to use any inanimate resources to help you complete the exams, including your notes, the course materials, the software in the lab, the web, etc. The only resources you may not use are other people - whether F2F, chat, phone, text, or instant messaging. No synchronous communication is permitted.
- You will have no more than the entire class period to complete the exam.

Participation: (P)

Your participation grade is based on your contributions to class discussion and lecture. Specifically, this means: being present in class, answering questions when called upon, paying attention in class, using technology for course related purposes, and contributing to class discussion. You will not receive participation credit on days you are not in attendance, regardless of reason since you're not eligible to contribute to the class. Also, you may not receive participation credit if you're found to not be participating - for example surfing the web when you should be doing your lab.

Policies regarding Participation

- You are expected to attend and participate in every class.
- Bring your SUID card to class as attendance will be taken on random days and you need to swipe your student ID to prove you were in attendance.
- At minimum, attendance is required for participation credit. If you are not present, than you are not eligible for participation credit on that date, regardless of the reason you are absent.
- Your participation grade is the ratio of days you received participation credit to the days were attendance was taken.
- I appreciate knowing when you will not attend class, but keep in mind there are no excused absences.
- Should you exhibit obstructive behavior in class, are found doing non-course related activities in class, show unwillingness to contribute to class discussion or inability to answer questions then, I reserve the right to deny you participation credit for that day.

3. Other Class Policies

Readings and Class Materials

It is expected you will come to class prepared. As part of being prepared, you should:

- Review the posted class materials
- Read all assigned readings
- Compose any questions you may have regarding the material prior to coming to class.

This will maximize your in-class experience by helping to facilitate discussion of that day's topic, as opposed to just committing you to "death by PowerPoint." Assigned readings will come from your text book as well as reference materials posted on our learning management system. Any assigned reading is fair game for questions on exams, assignments, homework, etc.

Deliverables (submission of work)

- All deliverables (exams, projects, labs, study guides, etc.) are due on the dates provided on the course calendar. These dates are firm.
- Any extensions to deliverables will be issued to all students and will be announced with enough lead time for the class participants to plan accordingly. I do not make exceptions for individual students it is not fair to the rest of the class.

- No late submissions are accepted unless explicitly posted. No exceptions.
- All work should be individual effort unless it is explicitly posted that you are eligible to work in a group.

GETTING HELP

- I'm here to help. My TA's are here to help. But we're not here to do your work for you. Be respectful of our time and come prepared to ask directed questions which have not been covered by the class materials already.
- My office hours are by appointment. Generally, I am available from 9am to 5pm M-F. This does not mean walk in whenever you want. Please respect my time by making a formal request for an appointment. If you come in but do not have an appointment, I will ask you to schedule an appointment.
- My teaching assistants will hold weekly office hours throughout the semester. These office hours will be posted. TA's are available to help you during office hours without an appointment.

4. UNIVERSITY AND SCHOOL POLICIES

ACADEMIC INTEGRITY

The academic community of Syracuse University and of the School of Information Studies requires the highest standards of professional ethics and personal integrity from all members of the community. Violations of these standards are violations of a mutual obligation characterized by trust, honesty, and personal honor. As a community, we commit ourselves to standards of academic conduct, impose sanctions against those who violate these standards, and keep appropriate records of violations. The academic integrity statement can be found at: http://supolicies.syr.edu/ethics/acad_integrity.htm

STUDENT WITH DISABILITIES

In compliance with section 504 of the Americans with Disabilities Act (ADA), Syracuse University is committed to ensure that "no otherwise qualified individual with a disability…shall, solely by reason of disability, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity…" If you feel that you are a student who may need academic accommodations due to a disability, you should immediately register with the Office of Disability Services (ODS) at 804 University Avenue, Room 308 3rd Floor, 315.443.4498 or 315.443.1371 (TTD only). ODS is the Syracuse University office that authorizes special accommodations for students with disabilities.

OWNERSHIP OF STUDENT WORK

In compliance with the Federal Family Educational Rights and Privacy Act, works in all media produced by students as part of their course participation at Syracuse University may be used for educational purposes, provided that the course syllabus makes clear that such use may occur. It is understood that registration for and continued enrollment in a course where such use of student works is announced constitutes permission by the student. After such a course has been completed, any further use of student works will meet one of the following conditions: (1) the work will be rendered anonymous through the removal of all personal identification of the work's creator/originator(s); or (2) the creator/originator(s)' written permission will be secured. As generally accepted practice, honors theses, graduate theses, graduate research projects, dissertations, or other exit projects

submitted in partial fulfillment of degree requirements are placed in the library, University Archives, or academic departments for public reference.

ATTENDANCE POLICY

Regular class attendance is obligatory. An instructor may recommend that a student be dropped from a course for poor achievement due to excessive absence. A student who is dropped after the deadline for dropping courses may be assigned a grade of F.

Students who have two unexcused absences during the first two class meetings of the semester may be dropped from the course at the discretion of the instructor. The instructor or the department offering the course will notify the Registrar of this action. However, students should not assume that they have been dropped from a class just because the first two classes were missed. It is ultimately the responsibility of the student to drop a course that they are not planning to attend by the deadline published in the College calendar. For more information about the Syracuse University Attendance Policy, please see the following web site:
http://www.syr.edu/policies/rules_regs.html

ADD/DROP PROCESS AND COURSE WITHDRAWAL POLICY

It is the responsibility of the students to be fully informed of the college catalog policies regarding course add, drop and withdrawal policies. For more information about the Syracuse University Add/drop Process and Course Withdrawal Policy, please see the following web site: http://sumweb.syr.edu/registrar/regintro.htm

COMPUTER LITERACY SKILLS POLICY

Graduate students are expected to meet the minimum and recommended information technology literacy skills required of students in all School of Information Studies master's programs.

Please refer to: http://ischool.syr.edu/prospective/graduate/literacyreq.asp for the "Computer Literacy Requirements" document.

ISCHOOL SERVER SPACE

These resources are required for you to complete your homework, labs and the Database Project, and no other resources but these should be used without permission from your instructor. In addition only work associated with this class should be stored on this server. Your instructor will supply you with the credentials required to access the server space. To learn how to access your server space once it is setup, please visit: http://iststudents.syr.edu

5. Course Calendar

The following course calendar lists all reading assignments, lecture topics, labs, and due dates for assignments and exams. All additional reading and class materials can be accessed from inside our course Wiki. You should plan on reading the materials associated with the learning unit prior to the date posted on the syllabus. All dates are firm, so please use this schedule to plan accordingly.

Week#	Date	Class Subject	Deliverables Due
1	1/19	Introduction to the course.	
	1/21	T01: The Database Environment	S01
2	1/26	T02: The Database Development Process & Relational Model	S02
	1/28	L02: Intro to a DBMS and the Relational Model	
3	2/2	T03: Introduction to Structured Query Language (SQL)	S03, L02
	2/4	L03: Introduction to SQL (DDL and DML)	
4	2/9	T04: The SQL SELECT statement Joins	S04, L03
	2/11	L04: The SQL SELECT statement joins more DML	
5	2/16	T05: Advanced SQL SELECT, aggregates, sub-selects, Views	S05, L04
	2/18	L05: SQL Programming	
6	2/23	T06: SQL Programming: Stored Procedures, Functions	S06, L05
	2/25	L06: SQL Programming: Stored Procedures, Functions	
7	3/2	T07: Data and Database Administration	S07, L06
	3/4	L07: Transaction Management, DBMS security	A01
8	3/9	Review for Exam 1	L07
	3/11	Exam 1 (E01) 12:30p-1:50p in Hinds 013	E01
9	3/16	*** No Classes - Spring Break ***	
	3/18	*** No Classes - Spring Break ***	
10	3/23	T08: Database Analysis – Data Modeling	S08, L07
	3/25	L08: Conceptual Modeling in Visio	
11	3/30	T09: Logical Database Design, Mapping complex data models	S09, L08
	4/1	L09: Mapping to	
12	4/6	T10: Logical Database Design – Normalization	S10, L09
	4/8	L10: Data Normalization	
13	4/13	T11: Data Modeling – Putting it all together	S11, L10
	4/15	L11: Data Modeling from start to finish	
14	4/20	T12: Physical Database Design, Performance, Data Migration	S12, L11
	4/22	L12: Data Migration	
15	4/27	T13: Client/Server, Distributed Databases and DDBMSs	S13, L12
	4/29	T13: Distributed Databases	A02
16	5/4	Review for Exam 2	L13
	5/6	Exam 2 (E02) 3pm-5pm in Hinds 013	E02