School of Management
University at Buffalo The State University of New York

Course	**MGS 404 – Database Management Systems**
Instructor	Srikanth Parameswaran
Term	Fall 2016 August 29 –December 14
Meetings	Mo We 5pm - 6:20pm – Nsc 220

Instructor's Contact Information

Office Location	303 Alfiero Center
Email Address	sparames@buffalo.edu
Office Hours	We 2:30 -3:30pm or by appointment

General Course Information

Course Description Introduces the technologies used to develop and implement database systems. The course begins by introducing the relational model and the structure query language (SQL), and also examines post-relational models as found in object-oriented and semantic databases. Uses data modeling concepts and principles of good database design to illustrate the construction of integrated databases. Requires students to complete a project that incorporates good database design concepts.

Required Texts & Materials Modern Database Management
ISBN (13): 9780133544619
12th EDITION - 2015
Jeffrey A. Hoffer, Ramesh Venkataraman, Heikki Topi

Required Software MySQL and MySQLWorkbench (Both are open source and free. In class demonstrations will be performed to help students install these two database management systems)

Lecture Notes PowerPoint slides will be available online through course Ublearns. http://ublearns.buffalo.edu.

Student Learning Outcomes

By the end of the course, you should be able to…	Method of assessment
Understanding of the database development process including analysis, design, implementation and testing	Exams 1 and 2, assignments and group project
Develop data models using ER diagramming technique and tools such as MySQLWorkbench	Exam 1 and 2, assignments and group project
Understand and perform database normalization	Exam 2, assignments and group project
Write simple and complex SQL queries to define and manipulate data from database tables using tools such as MySQL	Exams 1 and 2, assignments and group project
Obtain an overview of advanced topics in databases such as big data and analytics, data warehousing, data quality, and database administration.	Assignments

Grading criteria

Exams 2 x 15% = 30%

Homework 10 x 3% = 30%

Group Project 30%

Participation and attendance 10%

Grading scale

92% or more …….A
90% or more …….A-
88% or more …….B+
82% or more …….B
80% or more …….B-
78% or more ….,….C+
72% or more …….C
68% or more ……..C-
60% or more ……D
less than 60% …… F

Exams

There will be two exams. One will be a mid term exam roughly half way through the semester. You will be tested on the portions covered till then. The next exam will be a final exam. This exam will be cumulative i.e. the exam will test you on all portions covered in this course. The final exam schedule is available in your HUB Student Center (via MyUB). Exams are closed book. Students are allowed to bring a two-sided A4 sheet (but no solutions from the exercises).

Homework

There will be 10 homework assignments. These will be assignments in MySQL and \or database analysis, modeling and design

Group Project

Each project team will consist of 4 to 5 team members. Each team will pick a specific database project to be implemented in a fictitious (or not) company. Go ahead – be creative with the name and the product that this company sells or the service that it provides! For the database project, do the following:

- Create a database project proposal. In the proposal, you will clarify the characteristics of the organizational problem you are trying to address; list information sources needed and list tasks that you must do to finish the project.
- In your final project report, you will define the problem and talk about the effect of this problem on the organization. This activity will help you summarize your database management system and how it helps address the organizational problem you previously identified. More details will be provided about the exact deliverables later on in the semester.
- For the last days of classes, prepare a 10 minute presentation about your team project.

Hands-on SQL

In the class, I will demonstrate SQL and data modeling through MySQL and MySQLWorkbench. You are expected to follow along as I demonstrate. In some classes, I will ask you to send me the screenshots of the in-class demonstrations. This submission should be made before the class ends. You will not be graded on these submissions. These submissions will count towards class participation.

Guest Lectures

There will be two guest lectures in this semester. These guests have extensive industry experience in database management systems. They will discuss topics such as: database management systems as a career, job prospects, big data, and future trends in DBMS.

Course Outline

1. **Database Concepts**
   - ***a.*** Database Environment
   - ***b.*** Data Models
   - ***c.*** Database Development Process

2. **Database Analysis**
   - ***a.*** Entity Relationship (E-R) Modeling
   - ***b.*** Enhanced E-R Model

3. **Database Design**
   - ***a.*** Relational Data Model
   - ***b.*** Normalization

4. **Database Implementation**

a. Introduction to SQL - Structured Query Language
b. Advanced SQL
c. Database Application Development

5. **Advanced Database Topics**
   a. Data Quality
   b. Data Warehousing
   c. Big Data and Analytics
   d. Database Administration

Course Policies

Exams **There will be NO make-up exams**

Extra Credit No extra credit work be assigned

Late Work Will not be accepted – No exceptions

Class Attendance Students are expected to be present for the entire duration of each class. Tardiness to or absenting oneself during class will result in a deduction from the attendance and participation portion of the final grade. Students will be responsible for material covered in class that is not available in the text or elsewhere.

Technology Requirements All students are expected to have access to a personal computer or use the SoM computer lab.

Classroom Citizenship **No social networking during class time.**

Please turn off your cell phones or put them on silent and be courteous to me and your fellow students in your use of other electronic devices.

Student Conduct and Discipline Academic Dishonesty is ***not*** tolerated. Anyone found cheating will not only receive a grade of "F" for the course, but will also be subject to any and all disciplinary action allowed by the University and/or the School of Management. Academic Dishonesty includes (but is not limited to): submitting someone else's work as your own including and especially: copying someone else's answers on homework or during a test, ALLOWING someone to copy your work, talking to another student during a test, removing a test from a classroom without permission. THIS IS NOT INTENDED TO BE AN EXHAUSTIVE LIST. RATHER IT IS PROVIDED TO GIVE YOU AN IDEA OF BEHAVIOR CONSIDERED TO BE INTOLERABLE. THERE IS A LINE BETWEEN "WORKING TOGETHER" AND SUBMITTING THE SAME WORK FOR TWO PEOPLE. If someone "steals" your work, you (and the thief) will be held liable. Under NO circumstances should you "share" a file with another individual. BOTH parties will be held responsible if/when the same file arrives twice. I suggest you NOT work with anyone else/another group to avoid any semblance of impropriety. Should you wish to read more on Academic Integrity, the following paragraph is indicative of material that can be found in the Undergraduate Handbook:
http://mgt.buffalo.edu/programs/undergrad/handbooks/handbook

Academic Integrity The faculty expects from its students a high level of responsibility and academic honesty. Because the value of an academic degree depends upon the absolute integrity of the work done by the student for that degree, it is imperative that a student demonstrate a high standard of individual honor in his or her scholastic work. Any student who commits an act of scholastic dishonesty is subject to discipline. Scholastic dishonesty includes but is not limited to cheating, plagiarism, collusion, and the submission for credit of any work or materials that are attributable in whole or in part to another person, taking an examination for another person, any act designed to give unfair advantage to a student or the attempt to

commit such acts.

Copyright Notice The copyright law of the United States (Title 17, United States Code) governs the making of photocopies or other reproductions of copyrighted materials, including music and software. Copying, displaying, reproducing, or distributing copyrighted works may infringe the copyright owner's rights and such infringement is subject to appropriate disciplinary action as well as criminal penalties provided by federal law. Usage of such material is only appropriate when that usage constitutes "fair use" under the Copyright Act.

Email Use It is strongly recommended you use your UB e-mail account. Additionally, it is advised that you copy yourself in e-mail correspondences to the instructor. Your copy of the e-mail you sent is often the only proof anyone has an item was submitted on time.

Incomplete Grade According to University Regulations incompletes may be given only if the student is passing at the time the incomplete is assigned. The student would be allowed to complete the remaining work in the next 12 months. Incomplete grades do NOT allow you to go back and submit work you have skipped or to do work over. They are assigned when circumstances preclude you from finishing the semester. That is, finishing the work that is due in the future. As a general rule: I should have no reason to deny an incomplete; as long as you are not failing the course at the time you request the incomplete. However, if you have finished the course (taken the final) an incomplete CANNOT be given. ***A grade of Incomplete is NOT to be a conversion of the course to an Independent Study course. Students finishing Incompletes must take tests, etc. on schedule with students in the semester they are completing the course.***

Disability Services Students registered with the Office of Disability Services are **required** to forward the corresponding paperwork to the instructor. Failure to do so will jeopardize your ability to take tests in their Office. You need to bring the instructor copy to lectures or the instructor's office. Alternately, the ODS staff can send a copy to the instructor, if you feel there is no need to speak to the instructor directly.

Course **MGS 404 – Database Management Systems – Fall 2016**
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Week	Dates	Topic	Remarks
1	Aug 29-31	Class introduction & Chapter 1	
2	Sep 5 - 7	Chapter 1	Sep 5th no class labor day
3	Sep 12-14	SQL Lesson 1	
4	Sep 19-21	Chapter 2	Assignment 1 due
5	Sep 26-28	Chapter 2 & SQL Lesson 2	Assignment 2 due
6	Oct 3-5	SQL Lesson 2	Assignment 3 due
7	Oct 10 -12	Chapter 3	Assignment 4 due
8	Oct 17-19	Chapter 3 & SQL Lesson 3	Assignment 5 due
9	Oct 24-26	Review Session for exam & Midterm Exam I	Oct 26th – Mid Term
10	Oct 31 – Nov 2	SQL Lesson 3	Assignment 6 due
11	Nov 7 – Nov 9	Chapter 4	Assignment 7 due
12	Nov 14 - 16	Chapter 4 & SQL Lesson 4	Assignment 8 due
13	Nov 21 - 23	Chapter 5	Nov 23rd no class – Thanksgiving
14	Nov 28 -30	Chapter 5 & SQL Lesson 5	Assignment 9 due
15	Dec 5 -7	Project Presentations	Assignment 10 due
16	Exam Week	Final Exam	Project Report Due