Instructor: Jeff Fineberg  
Email: fineberg@buffalo.edu

Course Time: Monday and Wednesday 5:00pm-6:20pm  
Course Location: 110 Knox  
Office hours: 325B Jacobs on Monday 6:30pm-8:30pm or by appointment

Course URL: [http://ublearns.buffalo.edu](http://ublearns.buffalo.edu) (check for updates)

Course Description: This course is designed to provide an understanding of the various aspects of database technology, with significant emphasis on the database development process (analysis, design and implementation). The course also provides experience with various database platforms and programmatic methodologies, using SQL as a mechanism for accessing data. Data access will be explored with a variety of interfaces, including character-based command line utilities and graphical (GUI) utilities. Students will also gain experience with program and database integration using platforms such as PHP and Java, as well as the UNIX shell.

In addition to the core database technology aspects, more advanced areas are explored, including areas such as Data Warehousing, ETL, Data Integration and Ontology.

Goal of the course: The goal of this course is to improve database analysis, design and implementation skills to the degree that one can list these skills on their resume with confidence. Equally important is being able to investigate problems, research technologies and methodologies as they evolve. Examples of such competencies include (however are not limited to): Requirements Gathering, Data Modeling, SQL, Performance Tuning, awareness of Security issues, etc. We will examine many of the critical competencies necessary for Information System professionals.

Labs: consist of exercises for providing hands-on experience to aid in the understanding of theoretical aspects of the course. Although labs are not graded, it is important that students complete these in order to be adequately prepared for class discussion, tests, assignments, as well as the final project.

Assignments: designed for reinforcing the concepts from lectures and lab exercises, as well as textbook readings, research materials and any additional readings. Assignments consist of written work and the utilization of various software tools, as well as research and presentations of your findings. Refer to UB Learns based upon the attached schedule.

Exams: there will be a midterm and final exam. These will require a comprehensive knowledge and understanding of all material covered in class. The content of the exams are based upon the textbook, assignments, labs and class discussions as well as student presentations of their research. **Advanced arrangements must be made if an exam is to be missed (unless a documented emergency exists).**
Final Project: This will be a group project to gain practical experience in the application of theoretical concepts learned in the course, emphasizing teamwork, innovation, and cohesiveness of presentation. Each team member is expected to contribute equally to the team project. **Note that there will be peer reviews of all team member performance, therefore it is critical to work closely with and stay in contact with your team members.**


Link to the text resources: [http://www.pearsonhighered.com/hoffer/](http://www.pearsonhighered.com/hoffer/)
**Note: Chapters 12, 13 and 14 are online and downloadable from the above link.**

Readings: additional readings will be assigned to complement the material covered in the course.

Supplemental Resources and textbooks: The resources below contain detailed and comprehensive aspects of Oracle, including capabilities such as PL-SQL, functions, procedures, introductory and advanced query techniques, query tuning and security.

**Online reference: Oracle Database Documentation Library** – includes several free PDF manuals from Oracle, including an SQL Reference, Performance Tuning guides, error messages, etc.

Link to online resources: [http://www.oracle.com/pls/db112/homepage](http://www.oracle.com/pls/db112/homepage)

Note: also available as downloadable Kindle editions (*there are Windows clients to read these book formats*).

Link to online resources: [http://oraclesqlbyexample.com](http://oraclesqlbyexample.com)

**Software (including, but not limited to):** Oracle 11g, Oracle SQL Developer, SQL Plus (utilizing Unix), MySQL, HeidiSQL, LAMP Server architecture (utilizing Uniform Server or equivalent), Microsoft Office (Access / Excel primarily) and SQLite.

Class Discussion Web: For questions that would benefit the majority of the class, please use the UB Learns website [http://ublearns.buffalo.edu](http://ublearns.buffalo.edu)

Incompletes: under normal circumstances these are not given. Where appropriate, any special cases need to be approved and have supporting documentation.

Email communication via UB Learns: Periodically messages may be sent via email (or UB Learns) to everyone in class regarding assignments, etc. Also, please feel free to email me directly with any questions or suggestions at: fineberg@buffalo.edu. **Note: the email subject line **MUST** begin with MGS613 in order to help expedite a response to you.**

Class participation: It is expected that students will be prepared to discuss the assigned material for each class. The class participation portion of your grade is composed of class activity work, contribution to discussions in class, suggesting useful / interesting resources, etc.

Academic Integrity / Plagiarism: all students are expected to perform their own work. Any acts of plagiarism will be taken very seriously and will be dealt with in accordance of the University’s policy. Be sure to read thoroughly and understand the policy (CHAPTER VIII Disciplinary Procedures for Academic Infractions) in pages 62-72 of the handbook (refer to link below): [http://mgt.buffalo.edu/programs/new-york-mba/academics/handbooks/201314Handbook](http://mgt.buffalo.edu/programs/new-york-mba/academics/handbooks/201314Handbook)
Attendance and Punctuality

- Students are expected to attend all classes and to arrive on time, except when precluded by emergencies, religious holidays, or other extenuating circumstances. If such a situation should arise, please notify me in advance.
- Students are expected to arrive to all classes at the scheduled time and to stay until the end of each class.
- Grades of students who are consistently late or who miss five or more classes will be reduced by one letter grade for the course.
- Note that there will be material that you will be responsible for that is covered exclusively in class.

Disruptions and Class Decorum

- Observe common discussion protocols and best practices such as, no cross talks, only one person speaking at one time, and listening carefully what others are saying.
- Students disrupting the class or violating class decorum may be asked to leave the classroom.
- Repetitive disruptions and violations of class decorum may lead to disciplinary action as allowed by the university policies. Please refer to UB’s policy on acceptable classroom behavior for more details (http://www.student-affairs.buffalo.edu/judicial/classroom.shtml).

Assignment Guidelines

- You may discuss individual assignments with your team members and your other friends. However, you are expected to work alone and individually while actually preparing the deliverable you will submit for the assigned problem.
- Please use electronic submission in UBLearns to submit all your assignments. The file name should include student / team name along with the title of the assignment. If paper submission is required, this will be specified in the assignment.
- Please provide a cover page on all assignments that should include the student’s (or team’s) name, student identification number (for individual submissions), the title of the assignment, and the date of submission.

Submission of Assignments

- All assignments are due at the beginning of the class (5:00pm) on the due date indicated in the course schedule. Assignments received after the due date and time will be penalized at the rate of 20% per day.
- All assignments should be submitted via the UB Learns before the class, unless described otherwise on the assignment itself.
- E-mail submissions are accepted ONLY under special circumstances (such as issues with UBLearns access).
- If there are non-academic emergency reasons because of which you are not able to submit an assignment on time as per schedule, please let me know at the earliest possible opportunity, which may result in an extension without penalty on that particular assignment.

Students with Disabilities: The Office of Disability Services (ODS) coordinates needs for special accommodations for eligible students. Information on registering is available on the Student Affairs website. If you require special accommodations, please talk with me as soon as possible so we may work out a solution. I will be happy to aid in making accommodations necessary for you to succeed in the course.
Grading Policy

**Grade assessment:** Comprehension of the material will be assessed through homework assignments, tests and a final project utilizing the following:

<table>
<thead>
<tr>
<th>Component</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Midterm Exam</td>
<td>20%</td>
</tr>
<tr>
<td>Assignments (4 @ 6.25% each)</td>
<td>25%</td>
</tr>
<tr>
<td>Final Project</td>
<td>20%</td>
</tr>
<tr>
<td>Final Exam</td>
<td>25%</td>
</tr>
<tr>
<td>Class participation (contributing to discussions, participation, group work, etc.)</td>
<td>10%</td>
</tr>
</tbody>
</table>

**Final Grading Scale**

<table>
<thead>
<tr>
<th>Percentage Points</th>
<th>Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt;=92.5</td>
<td>A</td>
</tr>
<tr>
<td>&gt;=90 and &lt;92.5</td>
<td>A-</td>
</tr>
<tr>
<td>&gt;=87.5 and &lt;90</td>
<td>B+</td>
</tr>
<tr>
<td>&gt;=82.5 and &lt;87.5</td>
<td>B</td>
</tr>
<tr>
<td>&gt;=80 and &lt;82.5</td>
<td>B-</td>
</tr>
<tr>
<td>&gt;=77.5 and &lt;80</td>
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<tr>
<td>&gt;=60 and &lt;70</td>
<td>D</td>
</tr>
<tr>
<td>&lt;60</td>
<td>F</td>
</tr>
</tbody>
</table>
# MGS 613 Fall Schedule

*(Subject to some revision – refer to UB Learns for updates)*

**Note:** Bold items in schedule are of high importance

<table>
<thead>
<tr>
<th>Class Date</th>
<th>Topic(s) Discussed / Activities</th>
<th>Assignments / Reading for the week</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aug 26, 28</td>
<td>Syllabus, Course Overview and Survey. Introductory material</td>
<td>- Read Chapter 1 / *other as assigned</td>
</tr>
</tbody>
</table>
| Sep *2, *4   | Chapter 1 – The Database Environment and Development Process  
*Mon 9/2 – no class: Labor Day  
*Wed 9/4 – class ends 6pm Rosh Hashanah | - Read Chapter 2 / *other as assigned  
- Lab 1                                                                 |
| Sep 9, 11    | Chapter 2 – Modeling Data in the Organization  
CIT Academic Oracle Environment | - Read Chapter 6 / *other as assigned  
- **Assignment 1 – due 9/16**                                                                 |
| Sep 16, 18   | Chapter 6 – Introduction to SQL                                                                 | - Read Chapter 3 / *other as assigned  
- Lab 2                                                                 |
| Sep 23, 25   | Chapter 3 – The Enhanced ER Model                                                               | - Read Chapter 4 / *other as assigned                                                               |
| Sep 30, Oct 2| Chapter 4 – Logical Database Design and the Relational Model                                    | - Read Chapter 5 / *other as assigned  
- **Assignment 2 – due 10/7**                                                                 |
| Oct 7, 9     | Chapter 5 – Physical Database Design and Performance                                            | - Read Chapter 7 / *other as assigned  
- Lab 3                                                                 |
| Oct 14, 16   | Chapter 7 – Advanced SQL (joins, triggers, functions, procedures)                               | - Read Chapter 8 / *other as assigned  
- **Assignment 3 – due 10/21**                                                                 |
| Oct 21, 23   | Chapter 8 – Database Application Development                                                   | - Read Chapter 9 / *other as assigned  
- **Study for Test 2**                                                                                       |
| Oct 28, 30   | Midterm Exam – Monday Oct 28  
Lab 4 – explain plan for Assign #4                                                                | - **Assignment 4 – due 11/4**                                                                     |
| Nov 4, 6, **8| Final Project meetings  
Lab 5 (for use with the project)  
Final Project technical discussions  
**Nov 8 – last day to Drop with ‘R’ grade** | - Read Chapter 9 / *other as assigned  
- Final Project assigned – due Dec 2  
- Final Project Work  
- Lab 5                                                                 |
| Nov 11, 13   | Chapter 9 – Data Warehousing                                                                     | - Read Chapter 10 / *other as assigned  
- Final Project Work                                                                                           |
| Nov 18, 20   | Chapter 10 Data Quality and Integration  
Ontology, Semantic Web and Data Modeling                                                          | - Read Chapter 11/ *other as assigned  
- Final Project Work  
- Lab 6                                                                 |
| Nov 25, *27  | Chapter 11 - Data and Database Administration  
*Wednesday 11/27 – no class: fall recess                                                        | - Final Project Work                                                                                       |
| Dec 2, 4     | **Group Presentations**  
Review for Final                                                                                     | - Final Project Due  
- **Study for Final Exam**                                                                                     |
| **Dec 11**   | Final Exam – location Knox 110                                                                  |                                                                                                     |
| 7:15pm-10:15pm |                                                                                                 |                                                                                                     |

* Additional reading will be assigned throughout the semester.