Catholic University of America, School of Library and Information Science

LSC 740  Database Management  
Fall 2008

Time/Location: Thursday 12:30-3:00 pm / room 302 Shahan Hall
“Make mistakes. Get messy. Take chances.” Miss Frizzle’s motto.

Instructor:

Joan Lussky, PhD  
Email: lussky@cua.edu  
Phone (office)  202/ 319-5855  
Phone (cell)  302/ 299-7007 

Office:  Marist Hall Room 243  
Office Hours: Thursday 10-11 PM  
and by appointment

Course Description:
This is an introduction to database management with special emphasis on the enduring concepts and practical techniques of database systems. We will focus on database design, data integrity, and data manipulation. General topics include: design techniques using the entity-relationship model, translating entity-relationship diagrams into relational schema, integrity constraints, Structured Query Language (SQL), and normalization techniques.

This course will provide the student with a:
- Solid understanding of the relational database model and query languages
- Mastery of design techniques using the entity-relationship model
- Ability to create useful retrieval queries as well as data entry/update forms and reports
- Current awareness of: client-server systems, database warehousing and data mining
- Practice developing a small database application using Oracle or Access software
- Sharpened agility at learning and adapting within a changing information environment

Prerequisites: LSC551 and LSC555.

Academic Honesty Policy:
In professional settings database administrators frequently consult and so you may consult with your fellow students on the weekly assignments. However, consulting does not mean that you hand in the same answers. In regard to the term project the work you hand in must be completely the result of your own effort.

**********  Plagiarism will not be tolerated.  **********
Please read, understand, and follow the “Academic Honest Policy” as written in the University’s Online Student Handbook at: [http://studentlife.cua.edu/studenthandbook.pdf](http://studentlife.cua.edu/studenthandbook.pdf) and on the website for the University’s Policies & Procedures at: [http://policies.cua.edu](http://policies.cua.edu). Catholic University of America’s definition of plagiarism includes: “intentionally or knowingly representing the words or ideas of another as one’s own in any academic exercise.” All those found in violation will be publicly flogged in the garden of Marist Hall and then turned over to the authorities.

It is expected that all students will adhere to accepted codes of ethical, personal, and civil conduct while in this class and conversing online, using e-mail, or engaging in any online chat sessions. Failure to meet these standards will have serious consequences: you will receive a zero on the project or exam in question, and will be reported to the Dean for possible further action such as an F for the course and a withdrawal from the program.

While in this class I encourage you to be civil with each other especially since it will be necessary at times to share a limited supply of resources. Also I encourage you to be flexible and keep a firm grasp on your sense of humor. Finally, if you catch me making a mistake, please correct me, but, do so gently.

**Course Materials:**

**Textbook:**

FYI: Those who want a more in-depth coverage of the topic might I suggest:

**Database Management Systems:**
- MS Access
  (a database management system in the Windows environment which provides for SQL design as well as graphical user interface design)

**Help with using MS Access**

- Florida Golf Coast University, Technology Skills Orientation

- by Richard Holowczak, CUNY, Zicklin School of Business – Baruch College
  [http://cisnet.baruch.cuny.edu/holowczak/classes/2200/access/accessall.html](http://cisnet.baruch.cuny.edu/holowczak/classes/2200/access/accessall.html)
• MySQL
(a database management system in a Linux environment which provides for SQL design)

Help with using MySQL
-- MySQL Documentation (a bit technical for the novice user):
http://dev.mysql.com/doc/refman/5.0/en/tutorial.html

-- Beginning MySQL Tutorial by W.J. Gilmore. (easily accessible instruction)
http://www.devshed.com/c/a/MySQL/Beginning-MySQL-Tutorial/

Grading:
Grades for this course will be based upon the following:

<table>
<thead>
<tr>
<th>Assignment</th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Homework Assignments (4 @ 50 points each)</td>
<td>20%</td>
</tr>
<tr>
<td>Term Project → written (350 points)</td>
<td>35%</td>
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<tr>
<td>Term Project → presentation (100 points)</td>
<td>10%</td>
</tr>
<tr>
<td>Participation (100 points) (in-class and within Blackboard discussions)</td>
<td>10%</td>
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<tr>
<td>Quizzes (2 @ 50 points each)</td>
<td>10%</td>
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<tr>
<td>Mini presentations (2 @ 25 points each)</td>
<td>5%</td>
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<tr>
<td>Final Exam (100 points)</td>
<td>10%</td>
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<tr>
<td>TOTAL (1000 points)</td>
<td>100%</td>
</tr>
</tbody>
</table>

NOTE: Late work will not be accepted with the exception of those cases noted below under “Participation & conduct”.

Course Outline - This calendar is subject to change depending on class needs.

<table>
<thead>
<tr>
<th>Week</th>
<th>Class Dates</th>
<th>Topic</th>
<th>Readings</th>
<th>Assignment Due</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Sept 4</td>
<td>Introduction &amp; Workings of the course</td>
<td>Introduction &amp; Chapters 1 Lecture notes</td>
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<tr>
<td>2</td>
<td>Sept 11</td>
<td>Relational Model Design Terminology</td>
<td>Chapters 2 &amp; 3 Lecture notes</td>
<td>Assignment #1</td>
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<tr>
<td>3</td>
<td>Sept 18</td>
<td>Conceptual Overview Fact Finding ER Model</td>
<td>Chapters 4 &amp; 5 Lecture notes</td>
<td>Project idea due</td>
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<tr>
<td>4</td>
<td>Sept 25</td>
<td>ER Model Quiz #1</td>
<td>Chapters 6 &amp; 7 Lecture notes</td>
<td>Assignment #2</td>
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<tr>
<td>5</td>
<td>Oct 2</td>
<td>Conversion to Relational Schema</td>
<td>Chapters 8 &amp; 9 Lecture notes</td>
<td></td>
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<tr>
<td>Week</td>
<td>Date</td>
<td>Topic</td>
<td>Readings</td>
<td>Assignments</td>
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<tr>
<td>6</td>
<td>Oct 9</td>
<td>ER Model Extensions Quiz #2</td>
<td>Lecture notes</td>
<td>Project proposal due</td>
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<tr>
<td>7</td>
<td>Oct 16</td>
<td>Introduction to Relational Algebra &amp; Relational Theory</td>
<td>Chapter 10 Lecture notes</td>
<td>Assignment #3</td>
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<tr>
<td>8</td>
<td>Oct 23</td>
<td>SQL Mid-term Exam</td>
<td>Lecture notes</td>
<td></td>
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<tr>
<td>9</td>
<td>Oct 30</td>
<td>Normalization</td>
<td>Chapter 13 Lecture notes</td>
<td>Assignment #4</td>
</tr>
<tr>
<td>10</td>
<td>Nov 6</td>
<td>Indexing &amp; Views Database System Life Cycle</td>
<td>Chapters 11 &amp; 12 Lecture notes</td>
<td>Project part due</td>
</tr>
<tr>
<td>11</td>
<td>Nov 13</td>
<td>Database Administration &amp; Security Text processing</td>
<td>Lecture notes</td>
<td></td>
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<tr>
<td>12</td>
<td>Nov 20</td>
<td>Data warehousing / data mining OLAP / Web-Database Integration</td>
<td>Lecture notes</td>
<td>Project part due</td>
</tr>
<tr>
<td>13</td>
<td>Nov 27</td>
<td>THANKSGIVING HOLIDAY No Class</td>
<td></td>
<td></td>
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<tr>
<td>14</td>
<td>Dec 4</td>
<td>Project Presentations &amp; Review</td>
<td></td>
<td>Final project due</td>
</tr>
<tr>
<td>15</td>
<td>Dec 11</td>
<td>Final Exam</td>
<td></td>
<td></td>
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</tbody>
</table>

**Course Policies and Procedures:**

**Formatting of your assignments.**
- For hard copy work securely fasten together any papers that are more than 1 page.
- Your name must appear on the first page of every document you hand in.
- Submitted work must have a professional appearance.

**Participation & Conduct:**

- *Attendance is mandatory.* Attendance is required, in keeping with university policy. Students may miss up to 3 classes without a penalty. Your participation grade will drop by 10 points for every absence after 3 missed classes.

- *Late work.* The instructor will not accept late work except by prior arrangement. If accepted, it will be graded at the end of the term.
• **Makeup work.** If a student has a legitimate reason, such as a family emergency, the instructor might allow a student to do makeup work. The amount and nature of the work is up to the instructor’s discretion. It will be graded at term’s end.

• **Arrive on time.** Chronic lateness will negatively affect class participation grade.

• **Behave respectfully.** Students are expected to behave respectfully while in class. Participation grades will reflect a student’s maturity level and professionalism.

• **Participate actively.** Participation is essential to being successful in learning and fostering learning in others. Participation should be supported by reading the material before class and making an effort to be thoughtful in your remarks.

• **No phone calls during class.** Turn off or silence cell phones and pagers. Students leaving the room for calls are not allowed to return to that class session.

• **No internet access during class.** Students are expected to engage in the classroom lecture, discussions and group work. Students reading email or searching the web during class will be asked to leave that class session.

• **No grade discussions in class.** Instructor will not discuss grades in class. First consider why the instructor deducted points. If you still disagree, explain your disagreement in an e-mail to the instructor.

**Disabilities:**

Students with documented disabilities, who need course accommodations, have emergency medical information or require special arrangements for building evacuation should contact the instructor within the first week of class. Verification of any special arrangements needs to be made through the Office of Disability Support Services. They are located in suite 207 in the Pryzybyla Center. Their email is: cua-disabilityservices@cua.edu. Their phone number is 202-319-5618 or 202-319-5211 and their web site is http://disabilityservices.cua.edu/.

Some of the on campus resources and phone numbers can be found at:
http://disabilitysupport.cua.edu/services/supportresources.cfm

A Guide for services and accommodations for students with disabilities can be found at:
http://counsel.cua.edu/ADA/publications/disbro/contents.cfm

Some basic guidelines and links to other information may be found at:
http://counsel.cua.edu/ADA/clicks/

**Syllabus changes:**

The instructor reserves the right to make changes to this syllabus if circumstances warrant such change. All changes will be provided to the students via Blackboard.
Additional resources related to database management:

General Reference

Database design

Journals
- ACM Transaction on Database Systems (TODS)
- ACM Transaction on Information Systems (TOIS)
- IEEE Transaction on Knowledge and Data Engineering (KDE)
- Data and Knowledge Engineering (DKE)
- Information Sciences
- Information Systems
- Computing Survey
- Communications of ACM
- IEEE Computer
- DATA BASE
- Journal of Database Management

Free Subscription of Magazines

<table>
<thead>
<tr>
<th>Title</th>
<th>URL</th>
<th>Free Subscription?</th>
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<tbody>
<tr>
<td>Intelligent Enterprise</td>
<td><a href="http://www.intelligententerprise.com">http://www.intelligententerprise.com</a></td>
<td>Yes</td>
</tr>
<tr>
<td>Application Development Trends</td>
<td><a href="http://www.adtmag.com">http://www.adtmag.com</a></td>
<td>Yes</td>
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<tr>
<td>Datamation</td>
<td><a href="http://www.datamation.com">http://www.datamation.com</a></td>
<td>Yes</td>
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<tr>
<td>DM Review</td>
<td><a href="http://dmreview.com">http://dmreview.com</a></td>
<td>Yes</td>
</tr>
<tr>
<td>IEEE Internet Computing</td>
<td><a href="http://computer.org/internet">http://computer.org/internet</a></td>
<td>No</td>
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<tr>
<td>InfoWorld</td>
<td><a href="http://www.infoworld.com">http://www.infoworld.com</a></td>
<td>Yes</td>
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<tr>
<td>Oracle Magazine</td>
<td><a href="http://www.oramag.com">http://www.oramag.com</a></td>
<td>Yes</td>
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<tr>
<td>Databased Web Advisor</td>
<td><a href="http://www.advisor.com">http://www.advisor.com</a></td>
<td>No</td>
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<tr>
<td>Information Week</td>
<td><a href="http://www.informationweek.com/magazine">http://www.informationweek.com/magazine</a></td>
<td>Yes</td>
</tr>
</tbody>
</table>

Database Biography (DBLP), ACM SIGMOD Anthology and Reviews
http://www.informatik.uni-trier.de/%7Eley/db/

ACM Digital Library
http://portal.acm.org/dl.cfm

Information Technology News Service
www.cs.wisc.edu/dbworld

Web SQL
http://www.cs.toronto.edu/~websql/
Data Warehousing Web sites:
http://www.datawarehousing.org/
http://www.datamirror.com
http://www.rkimball.com/

Data Mining
http://www.data-miners.com

Knowledge Management
http://www.knworld.com/