Canisius College  
Richard J. Wehle School of Business  
Marketing & Information Systems Department  
Fall 2019  
Course: ISB 340, Data Management

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Email: garrity@canisius.edu  
Phone: 716-888-2267  
Fax: 716-888-2525  

**Required Texts:**  
(Note: there is a newer version of this book, but this version is fine).  

**Office Hours:** 4:00-5:00 pm Monday & Wednesday & by appointment. Please call 716-888-2267 or email, Garrity@canisius.edu  

**Note:** Use of Desire2Learn and email is mandatory. Students must check frequently.

**Course Objectives and Outcomes:** This course introduces Data Management and Database Management Systems (DBMS). Important fundamental concepts in the design and management of large databases are presented. The student is given hands-on experience with a commercial microcomputer DBMS (MS Access), as well as practical experience in data analytics using Microsoft Power Pivot technology. Emphasis is on fundamental concepts, tools and methodologies involved in the design, implementation, and management of databases. Outcomes: Students will have gained skills in DBMS processing, learned new problem-solving techniques and logic, and will have acquired skills in logical database design, SQL, data analytics with Power Pivot and information processing with DBMS. Certain advanced concepts and technologies will be covered, including client-server databases, big data and data mining, data analytics, and access to databases over the Internet.

**Specific Course Objectives:** Student interaction and involvement in labs and in class course work is aimed at improving students’ analytical skills, reflective thinking (especially as it relates to design projects), oral communication skills (especially as students are required to work in groups or pairs to solve design problems in class and to formulate logical queries), written communication skills (as it relates to required, individual projects), and of course all of the course work helps to develop and improve students’ information literacy skills.

**Learning Goals:** We are committed to developing professionals who have depth of expertise in business functions combined with breadth of leadership and professional
skills for success in today’s dynamic business environment. Students graduating from the Wehle School of Business will:

- Understand ethical behavior and sustainability concepts
- Make well-informed business decisions by demonstrating the ability to solve business problems through quantitative and qualitative reasoning
- Understand how functional areas of business impact business strategy
- Be career-ready professionals who are prepared to lead

The learning goals for all students graduating from the Wehle School of Business:
https://www.canisius.edu/academics/our-schools/richard-j-wehle-school-business/about-wehle-school/program-learning-goals

**AIS majors:**

Goal 1: Graduates will be able to evaluate an organization’s system development process, the conceptual design of organizational systems and determine methods to provide information for business decision-making.

*Objectives: Students will be able to:*

B Apply principles of database design and effectively create database schemas based on conceptual business models.

C Apply concepts for effectively retrieving information from relational databases.

**Note to students with disabilities:**

"If you have any condition, such as a physical or mental disability, which will make it difficult for you to carry out the work as I have outlined it or which will require extra time on examinations, please notify me in the first two weeks of the course so that we may make appropriate arrangements. Thank you." Accessibility Support (716-888-2170), which is located in the Griff Center for Academic Engagement (OM 013), is responsible for arranging appropriate academic accommodations for students with documented disabilities. If anyone in this course falls into this category, please contact Accessibility Support so that an appropriate course of action may be determined. For additional information, see https://www.canisius.edu/student-experience/student-support-services/griff-center/accessibility-support

**Need help?** The GRIFF Center for Academic Engagement provides comprehensive programs, tutoring services, and resources to support student academic and career success. If you would like to learn more about academic support, please stop in Old Main 013 or call 716-888-2170. **Withdrawal**: Please check with Griff Center. Visit the GRIFF Center webpage at: http://www.canisius.edu/griff-center/

**Lectures and Group Discussion:**

Monday and Wednesday (lab day to be determined).

**Academic Integrity:** Students are expected to know and understand college policies with regard to the Academic Integrity Code (https://www.canisius.edu/academics/academic-affairs/academic-integrity-canisius). Violations of academic integrity will be prosecuted fully. Please note that you are responsible for reporting any instances where other students have violated these policies. Failure to do so will result in penalties as well. If you have any questions about this policy, please see the instructor.
No cell phone use and no texting is allowed in class.

Attendance Policy: Students are expected to attend all classes. Reductions in final grade will occur for numerous absences. If a student misses more than 2 classes a point reduction from the final average will be deducted for each absence. Example, a student misses 3 classes and his or her final grade is reduced by 3 points.

Grading and Learning Strategies:

<table>
<thead>
<tr>
<th>Project 1</th>
<th>Project 2</th>
<th>Project 3</th>
<th>Project 4</th>
<th>Project 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>SQL 1</td>
<td>Design 1</td>
<td>SQL-2</td>
<td>Design 2, Analytics</td>
<td>Data Analytics 1, Power Pivot</td>
</tr>
</tbody>
</table>

- Projects¹ (5 @ 5% each) (Hands-on, learning & problem solving) 25%
- 2 Exams (@ 15% each) (Individual hands-on, design skills, assessment) 30%
- Final Exam: (Individual hands-on, design skills, assessment) 40%
- Instructor Evaluation (Labs – team learning, participation, attendance) 5%
- Note: This course is 3 credits and required for AIS majors. 100%

A or A- 90% and above  
B or +/- 80% and above  
C or +/- 70% and above  
D 60% and above  
F less than 60%

Tentative Course Outline

<table>
<thead>
<tr>
<th>Week of:</th>
<th>Topic</th>
<th>Readings &amp; Work</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. 8/26</td>
<td>The Relational Model, Creating DBs &amp; tables, queries, DB intro, data integrity</td>
<td>Chapt. 1, 2, MS Access intro</td>
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<tr>
<td></td>
<td>What is/are data? What is a DB? Creating tables, DB fundamentals</td>
<td>types of DBs, Chapt. 1, 2</td>
</tr>
</tbody>
</table>

¹ Generally, late assignments are reduced 10% if received after they are due in class and by 20% after 1 day, but before the next penalty. Assignments are reduced by 50% at 1 week (e.g. due 9/11 turned in on 9/18) or if graded projects are returned to the class, whichever comes first.
<table>
<thead>
<tr>
<th>Week of:</th>
<th>Topic</th>
<th>Readings &amp; Work</th>
</tr>
</thead>
<tbody>
<tr>
<td>2. 9/4</td>
<td><strong>No Classes 9/2</strong>, Creating DBs &amp; tables, queries, simple reports, <em>Intro E-R diagrams</em></td>
<td>Chapt. 3 SQL, 4 ER</td>
</tr>
<tr>
<td>3. 9/9</td>
<td>Data Integrity, Queries, Simple Reports, SQL <em>Amazon ER</em></td>
<td>Chapt. 1, 2, 3, 4, Multi-table queries, <em>SQL lab-1</em></td>
</tr>
<tr>
<td>4. 9/16</td>
<td>Database Design, <em>Amazon design, ER reports</em></td>
<td><em>adv. Queries, QBE, Chapt. 2, 4</em></td>
</tr>
<tr>
<td>5. 9/23</td>
<td>DB, <em>SQL (2) part 1</em>, Database Design, <em>E-R part 2, &amp; design</em></td>
<td>Chapt. 5, 3, Multi-table, <em>Project 1 due, SQL</em></td>
</tr>
<tr>
<td>6. 9/30</td>
<td>Data Modeling, <em>SQL (2), part 2, CCR design</em></td>
<td>Chapt. 5, 2, 3, <em>Project 2 due, design 1, ER</em></td>
</tr>
<tr>
<td>7. 10/7</td>
<td>Data Modeling, Converting to Relational tables, SQL (2),</td>
<td>Chapt. 5, <em>lab Convert</em></td>
</tr>
<tr>
<td>8. 10/16</td>
<td><em>SQL</em>, Data Modeling, Normalization, <strong>No classes Monday, 10/14, Fall Holiday</strong></td>
<td>Chapt. 5, 4, 2, 3 <em>Project 3, SQL 2</em></td>
</tr>
<tr>
<td>9. 10/21</td>
<td><em>anomalies lab</em>, Data Modeling, <em>SQL (2), Exam 1</em></td>
<td>Chapt. 5, 2, 3, 4, G1</td>
</tr>
<tr>
<td>10. 10/28</td>
<td><em>Data analytics</em>, Normalization, SQL</td>
<td>Chapt. 3, 4, 5, 2, G1, <em>data analytics intro., Data analytics chap.s (TBA)</em></td>
</tr>
<tr>
<td>11. 11/4</td>
<td>SQL, <em>Data analytics</em>, Multi-User DBs, Normalization</td>
<td>DA Ch. , G2, <em>Project 4 due, design 2</em></td>
</tr>
<tr>
<td>12. 11/11</td>
<td><em>Data analytics</em>, SQL, <strong>Exam 2</strong></td>
<td>Chapt. 6, 7, 8, <em>Business Intelligence, 8</em></td>
</tr>
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<td>13. 11/18</td>
<td><em>Data analytics</em></td>
<td>Chapt. 8, AJ, AK,</td>
</tr>
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</table>
See Final Exam Schedule, Dec. 9-13

Notes: Chapter readings are from the Kroenke Database Concepts textbook, unless prefixed with a ‘G.’ In other words, G1 refers to my first handout on SQL. Policies:

Attendance: Students are expected to attend all classes. Reductions in final grade will occur for numerous absences. Conduct: Students are expected to conduct themselves in an ethical manner in this course. Withdrawal: Students may withdraw from the course prior to ... Please see the College Catalog for details. Having trouble?: Please contact me, using contact information at the top of the syllabus or please stop in OM 013, or call 716-888-2170. Visit the GRIFF Center webpage at:

http://www.canisius.edu/griff-center/

Students must follow the Canisius policy on Academic Integrity:
http://www.canisius.edu/academics/integrity/ Academic Integrity Code.

Chapter | Topics
---|---
1 | Getting Started (Introduction)
2 | The Relational Model
3 | Structured Query Language (SQL)
4 | Data Modeling and the ER Model
5 | Database Design (Transforming data model to designs
6 | Database Administration
7 | Database Processing Applications
8 | Big Data, Data Warehouses and BI
Appendix | L, PHP, J, BI, K Big Data

SQL lab-1 – QBE and SQL Intro.
SQL (2) – Learning SQL by Example.
SuperCharge Excel (Data Analytics content) by Allington, Matt: (TBA) To be announced.
Important content is scattered throughout this excellent book.