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INFO 674  
Xavier University:  
Summer 2018

Scheduled Meeting Time  
Wednesdays 5:30-9:15pm 6/20 – 8/29 (No class 7/4)

Instructor: Todd A. Ruthemeyer  
Email: ruthemeyert1@xavier.edu  
Phone: 513/327-8633

Office Hours: West Chester: After class.  Virtual: By appointment.

Text:  
Practical SQL: A Beginner’s Guide to Storytelling with Data by Anthony DeBarros  

Data Management: Databases and Organizations (5e or 6e) by Richard Watson  
(ISBN: 978-1943153039 or 978-0471715368 and Kindle ASIN: B00E8HS8N2)  
Access to the 5th edition is available via Xavier’s electronic resources with the link below:  
http://proquest.safaribooksonline.com.nocdbproxy.xavier.edu/9780471715368

Williams College of Business Mission: “We educate students of business, enabling them to improve  
organizations and society, consistent with the Jesuit tradition.”

My Vision: The word “database” is a ubiquitous term used to explain everything from the simplest Excel  
spreadsheet sorting your movie collection to the most complicated data storage technologies used by  
companies like Facebook, Google and Amazon. We interact with databases every day to keep track of a  
myriad of details—both in business and our personal lives. However, the average person has no  
understanding or grasp of how much data exists, how their lives are affected by it, and how it can be used to  
help generate an understanding of their systems and their world. They are either boring systems not worth  
thinking about, or nefarious bottlenecks, or most damaging: things to be feared. It is my hope that by the end  
of this course you will know enough to ask the right questions, and to understand what is possible, feasible,  
and beyond the scope of your own data.

Course Description: This class answers the questions of what a database really is and how do they  
supplement business functions. We explore the rapid growth in data collection, storage and analytics as well  
as learning how to design, query and interact with relational database systems.  
This course is designed for a graduate student in business who has no prior experience with database  
systems. It covers the fundamentals of database design, structured query language, security, analytics  
and how databases play a strategic role in organizations. These topics are explored from the perspective  
of both a data user and a data manager, however the course is NOT intended to train database  
administrators. Rather, this class is taught with the goal of teaching business analysts how to interact  
with and manage databases and understand the environments in which they function.

Course Materials: In addition to the text, you are responsible for materials posted on Canvas  
(http://canvas.xavier.edu).  Homework assignments, supplemental reading, and other information will be  
posted regularly. Students in need can make use of the Virtual Lab for completing assignments, projects  
and exams. (http://www.xavier.edu/ts/students/Virtual-Desktop.cfm)

Grades: Your final grade will consist of two exams (50%), a final project (30%) and regular homework and  
cases (20%). Possible grades are A (95-100), A- (90-94.9), B+ (85-89.9), B(80-84.9), B- (75-79.9), C+ (70-  
74.9), C (65-69.9), F (Below 65). You must earn at least a “C” on each of the exams and the project to pass  
the class; the instructor will provide anyone receiving a failing grade an opportunity to demonstrate the  
required competency, replace the failing grade with a 65%, and thus pass the class. No other extra credit is  
available.
**Due Dates:** Due dates and test dates are firm. Students are expected to contact the instructor prior to an expected absence to make arrangements. Late assignments will receive no credit.

**Academic Honesty:** Do your own work. Review Xavier’s Academic Honesty policy for more information.

**Xavier University Policies:** Xavier University policies regarding privacy rights, incomplete work and attendance, and academic honesty will be strictly enforced. Please see the current University catalog for more on these policies.

**Disability Accommodations:** It is my goal that this class be an accessible and welcoming experience for all students. If you are a student with a disability who may have trouble participating or effectively demonstrating learning in this course, contact me to arrange an appointment to share your Accommodation Letters from Disability Services and to discuss your needs. Disability related information is confidential.

If you have not previously contacted Disability Services, I encourage you to do so by phone at 513-745-3280, in person on the Fifth Floor of the Conaton Learning Commons, Room 514, or via e-mail to Cassandra Jones at jonesc20@xavier.edu, to coordinate reasonable accommodations as soon as possible as accommodations are not retroactive.

### TENTATIVE Course Calendar

<table>
<thead>
<tr>
<th>Date</th>
<th>Topics</th>
<th>Assignments Due</th>
</tr>
</thead>
<tbody>
<tr>
<td>20-Jun-18</td>
<td>Introduction, Syllabus Review, Setting up your Amazon Web Services environment, Introduction to Data; How to create your first database.</td>
<td>Sign Up for AWS educate account</td>
</tr>
<tr>
<td>27-Jun-18</td>
<td>Introduction to thinking with databases. Creating Tables, Data Types</td>
<td>Read Ch 18, 1 &amp; 2 of Practical SQL and Read Ch7 of Database Management, HW 1</td>
</tr>
<tr>
<td>4-Jul-18</td>
<td><strong>Holiday: NO CLASS</strong></td>
<td></td>
</tr>
<tr>
<td>11-Jul-18</td>
<td>Math and Stats in SQL, Table Relations</td>
<td>Read Ch 3 &amp; 4 of Practical SQL, HW 2</td>
</tr>
<tr>
<td>18-Jul-18</td>
<td>Exam 1 Review, Table Design, Aggregation and summarizing</td>
<td>Read Ch 5 &amp; 6 of Practical SQL, HW 3, Project Proposals</td>
</tr>
<tr>
<td>25-Jul-18</td>
<td>Inspecting and Updating data, Stats Functions (And when not to use them)</td>
<td>Read Ch 7 &amp; 8 of Practical SQL, HW 4 Exam 1</td>
</tr>
<tr>
<td>1-Aug-18</td>
<td>Time, Advanced queries</td>
<td>Read Ch 9 &amp; 10 of Practical SQL, HW 5, Project checkpoint</td>
</tr>
<tr>
<td>8-Aug-18</td>
<td>Mining text and Infrastructure</td>
<td>Read Ch 11 &amp; 12 of Practical SQL, HW 6, Data Diagram</td>
</tr>
<tr>
<td>15-Aug-18</td>
<td>Maintaining your Database</td>
<td>Read Ch 13 &amp; 15 of Practical SQL, HW 7, Data Loaded/cleaned</td>
</tr>
<tr>
<td>22-Aug-18</td>
<td>Exam 2 Review</td>
<td>Read Ch 17 of Practical SQL, HW 8</td>
</tr>
</tbody>
</table>

**Homework / Cases:** Homework and solutions to be completed for student learning are provided for each learning objective. Students are encouraged to assist one another in the completion of homework and cases provided each student submits his or her original work for credit. All Homework / Cases are graded on a “reasonable attempt” basis; full credit is given if a student submits a “reasonable attempt” (in the sole estimation of the instructor) before the due date and resubmits based on feedback received in class, from the instructor, or from other students (on peer reviewed assignments). Assignments received late will receive credit only at the discretion of the instructor. Failure to resubmit after receiving feedback will result in your assignment being graded as submitted.
Exams: All examinations are to be completed outside of class. Class notes, SQL help files and the textbook are appropriate resources to use while completing the exams. Assistance from any third party, except for the instructor, is prohibited. Exams are to be completed outside of class and will be due at 11:59 pm eastern time of the date noted in the assignment.

Project: See the project addendum in the Final Project document.

Learning Objectives: Students completing this course will be able to:

- Understand the organizational benefits and issues related to data management
- Develop a valid data model for a business system of medium complexity
- Build and use a relational database
- Deploy, query and manage an RDBMS in a cloud environment
- Formulate a wide range of relational database queries using structured query language (SQL)
- Be familiar with the principles of managing organizational data
- Be familiar with the security and ethical issues surrounding the management of data

WCB Learning Goals and Objectives: This course reinforces the following WCB program learning goals:

*Strategic Thinking and Leadership*
- Ability to demonstrate the appropriate knowledge of database management in strategic thinking

*Ethics and Social Responsibility*
- Ability to foster an ethical climate in their roles and responsibilities in business and society

*Critical Thinking*
- Ability to clarify problems, generate and evaluate alternatives using appropriate data management techniques and draw conclusions

*Effective Written and Oral Communication*
- Ability to communicate complex subjects and solutions in accessible ways to others