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358-01 Data Modeling and Management

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INFO 358: Data Modeling and Management

Instructor: Dr. (Ari) Thilini Ariyachandra

Phone: 513-745-3379 (Please leave vmail with call back number or email address if I do not answer)

E-mail: ariyachandrat@xu.edu (Please include "INFO 358" in the subject line) <- The BEST way to contact me.

Office Hours: 1pm to 2:30pm on Tuesday/Thursday and 10am to 1pm on Wednesday in Smith 206

Mission of the Williams College of Business

"We educate students of business, enabling them to improve organizations and society, consistent with the Jesuit tradition".

Course Description and Objectives

Databases are at the core of most information-based systems with which we interact in our daily lives and help keep track of myriad of details of every transaction that takes place in a business. Database management requires multiple perspectives: understanding an organization as a social system and understanding of database technology. Rapid growth in data continues to challenge this space evolving new business models and challenges for data administrators. The developments in big data and the internet of things are some of the new trends in data growth that are shaping existing frameworks for data management.

This course is designed for the undergraduate student *who has no prior experience* in database systems and it covers the fundamentals of database systems as well as emerging technologies that are likely to play a strategic role in business organizations. Some of you maybe more familiar or proficient with the fundamentals of relational database design. However, please note that the course will still cover all topics from the beginning. Topics include the role of data management systems, data modeling, design, implementation and analysis of relational

databases. These topics will be explored from the perspective of both a user and manager of database technologies.

Students will gain experience with data modeling and Structured Query Language (SQL). The course will cover basic data modeling and SQL concepts. The concepts learnt over the term will enable students to design, implement and analyze a prototype database using a relational database system. The goal is to experience the database development life cycle and explore issues relevant to managing corporate data resources. The course will also cover trends in managing organizational memory technologies such as business intelligence, big data and analytics.

Upon successfully completing INFO 358, you should be able to

1. Understand the organizational issues involved in data management;
2. Develop a valid data model for a business system of medium complexity;
3. Build and use a relational database;
4. Formulate a wide range of relational database queries;
5. Be familiar with the principles of managing organizational data;
6. Be familiar with the design principles and technology used to manage and exploit organizational intelligence;

In so doing, the course reinforces WCB Learning Goals and Objectives:

- Collect, evaluate and synthesize information to offer solutions and support decision making.
- Produce business reports demonstrating their ability to organize and communicate ideas clearly and professionally.
- Make effective presentations, accompanied by the appropriate technology, demonstrating their ability to organize and communicate ideas clearly and professionally, both individually and in teams.

These objectives are met through a combination of class lectures, readings, lab sessions, projects, and hands-on exercises.

Course Prerequisites & Required Skills

The prerequisite for this course is INFO 220. You MUST drop this course and take INFO 220 if you do not have this requirement. Also, I assume you are computer literate. This means you know computer history, computer technology, and some business applications.

I will NOT assume that you are familiar with any database management system. We will start at the very beginning and learn the use of a basic database management system package (i.e., Microsoft Access). This will help us focus on learning basic data management concepts using a basic database management package. We may explore other packages given the availability of other reliable database platforms.

Course resources

E-Text Book : (Available online via library)

1. Watson, Richard. Data Management: Databases and Organizations, Fifth Edition. Wiley, New York, 2006. (ISBN: 0-471-71536-0)

Teradata University Network:

The class may use resources on the Teradata University Network (TUN). Please register on TUN. Its URL is <http://www.teradatauniversitynetwork.com> (Links to an external site.)[Links to an external site.](#). The password to access materials is Analytics. (Please note that the password is not case sensitive).

Course Grading

Student performance will be evaluated on the following basis:

Database Team Project I	20%
Database Team Project II	20%
Assignments	10%
Participation	10%
Exams	<u>40%</u>
	100%

Database Team Projects:

- You will be assigned to a team for the duration of the semester to work on class activities and projects.
- Most of you will work effectively in teams, each contributing your best effort and proving to be a reliable, productive team member. However, because past experience has proven that team projects always raise the possibility that some team members may not carry their fair share of the load, a confidential peer evaluation will be conducted at the end of the term. This evaluation will impact your grade.

Assignments:

There may be individual and/or group assignments during the term.

Participation/Attendance:

Students are expected to attend all class sessions on time. Class attendance should be given priority over other activities. Late attendance will count as a partial absence. “A” students must attend all classes and actively provide thoughtful, relevant comments to class discussions and class exercises. Low attendance, less than 85 percent, will result in an automatic fail in the course. It is your responsibility to make up material if you were absent for a session. If absent, first check with your team mates in class for the missed days work/notes. If you have questions on work/notes, please contact the instructor.

Please note: using computers, mobile phones or laptops for personal use (e.g., email) will be grounds for reduction of your overall participation grade. The participation grade will be reduced by one percentage point for EACH INSTANCE of computer use for any activity outside of class work. Your participation grade will be available to you at the end of the semester. Please do not be surprised if you receive a zero for participation at the end of the course if you violate this policy.

Exams, Assignments and Team Project Deliverables:

There will be two exams during the course of the term. Deliverables of assignments/project milestones are due at the beginning of class on due dates; late deliverables will receive a 20% penalty for each day late. Your grade on the team projects will be based on the quality of the deliverables your team produces, the portion of the work you were responsible for and anonymous peer evaluations completed at the end of the term.

General Course Philosophies & Policies

Academic honesty:

Academic dishonesty, in any form, is a serious offense. The University Rules and other documented policies of the department, college, and university related academic integrity will be enforced. Any violation of these regulations, including acts of plagiarism or cheating, will be dealt with on an individual basis according to the severity of the misconduct.

Disability Services:

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 contacted Disability Services (located in the Learning Assistance Center) to arrange accommodations, I encourage you to do so by contacting Cassandra Jones, by phone at 513-745-3280, in person on the Fifth Floor of the Conaton Learning Commons, Room 514, or via e-mail at jonesc20@xavier.edu as soon as possible as accommodations are not retroactive."

Evaluation:

The final grade awarded will be based on the percentage of the total points awarded as follows:

Scale

A 94-100

A- 90-93

B+ 87-89

B 83-86 C 70-76

Below

B- 80-82 F

70

Grading:

Every effort will be made to return papers, exams, etc...within one week of submission.

Grade appeals:

If you have a concern about a grade that you receive in this class, you are invited to submit to me (in writing) an appeal within one week of receiving the grade in question. The appeal should outline your specific concerns with the grade and provide evidence supporting why the grade should be changed. I will then review your appeal and respond as quickly as possible. I reserve the right to re-grade the entire exam, assignment or project milestone in question.

Communication:

Email is the best way to communicate with me. I will answer emails within 24 hours of receipt. I expect the same courtesy from you. Email will be a very important mode of communication in this class. Also make sure to check canvas announcements on a regular basis for updates or additional course material.

Please note that I am available to answer questions/help one on one in addition to the specified office hours. Email me and we can setup a time to work on course content.

Teaching Style

The instructional style will primarily consist of lectures based on the e-text. If you are unsure about a topic PLEASE ASK QUESTIONS in class or via email/phone. If I receive no questions, I can only assume that everyone understands the material.