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INFO 689-01 Data Visualization

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INFO 689: Data Visualization

Instructor: Dr. (Ari) Thilini Ariyachandra

Phone: 513-745-3379 (Please leave vmail with callback number or email address if you cannot get through)

E-mail: ariyachandrat@xu.edu (Please include “INFO 689” in the subject line) <- The BEST way to contact me.

Office Hours: 11:30am to 1pm on Tuesday/Thursday and 8:30am to 11:30am on Wednesday

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

We live in a data-rich world in which seemingly simple visualizations represent complex realities. Data has the potential to inform decision-making and influence public or corporate policy, and when visualized with appropriate context, data has the power to be an impetus for change in the world. In this hands-on introduction to data visualization, key design principles and techniques for interactively visualizing data will be introduced. The major goals of this course are to understand how visual representations can help in the analysis and understanding of complex data, how to design effective visualizations, how to create interactive dashboards & visualizations and how to storyboard and effectively communicate using visualization.

By the end of the semester, students will be able to use visualization to discover insights in data. Students will be able to choose appropriate visualizations to perform exploratory analysis and investigate data, and create explanatory visualizations to communicate findings. To do this, students will leverage knowledge of a collection of different visualization techniques along with understanding of how to appropriately apply them and optimize their appearance for clarity and integrity.

Student Learning Objectives

1. Gain an understanding of the principles of descriptive and exploratory data visualization.
2. Utilize visual tools to clean, parse and manipulate data to explore and help solve business problems.
3. Create effective data visualizations from base data sets
4. Compose data stories for effective corporate communication of analytical insights.

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.

Course Prerequisites & Required Skills

There are no formal prerequisites for this course. However, I assume you are computer literate. This means you know computer history, computer technology, and some business applications.

Course resources

Books :

1. Title Jumpstart Tableau: A Step-By-Step Guide to Better Data Visualization (E-book)
Author Arshad Khan
Publisher Apress, 2016
ISBN 1484219341, 9781484219348
2. Title The Visual Display of Quantitative Data (Supplementary NOT required)
Author Edward Tufte
Publisher Graphics Pr; 2nd edition 2001
ISBN 0961392142, 978-0961392147

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>. 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:

Class Participation & Discussion Board	10
Team Project I	15
Team Project II	30
Individual Assignments	20
Exams	25
	100

Team Projects:

- Each team must have **2** members.
- 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 will be individual lab assignments and/or individual summaries as well as a group assignment during the term.

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 20% penalty for each day late. Your grade on the database team projects will be based on the quality of the deliverables your team produces.

Participation/Discussions:

Students are expected to attend all in 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 80 percent, will result in a letter grade drop. 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. Discussions online should be meaningful. More weight will be given to the quality of the posts and to the extent to which you draw upon the concepts and theory of data visualization.

Please note (in class sessions): 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/smartphone 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.

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.

Special needs:

If you have any special needs related to your ability to perform in this course that may influence your performance in this course you should inform the instructor to arrange reasonable provisions to ensure an equitable opportunity to meet all the requirements of this course.

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	C+	77-79
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 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 as we meet once a week. 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 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.