2017

INFO 689-01 Data Visualization

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INFO 689-01
Data Visualization
XAVIER UNIVERSITY
WILLIAMS COLLEGE OF BUSINESS
Fall, 2017
689-01 (CRN 94683), 6:00-8:30PM, Mondays, Smith Hall – Room G30

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TEXT
The following books are required for our course, specifically for the Leadership & Comms (Storytelling) module:
You are required to review and participate in online modules through the Qlik Continuous Classroom https://qcc.qlik.com

CLASS COMMUNICATION
We use the announcements function in Canvas for most communications in this class. Please make sure that you are checking Canvas regularly. All PowerPoints will be posted on Canvas. Please be sure to bring the correct chapter PowerPoints to class according to the syllabus.

OFFICE HOURS
5:00-6:00pm on Mondays

COURSE OBJECTIVES
1. Identify how data visualization has evolved into the business discovery tool of today.
2. Apply psychology to design principles used in data visualization.
3. Recognize data transformation requirements for use in data visualizations.
4. Evaluate visualizations to answer business questions.
5. Use advanced measurements and visualizations to make data discoveries.

STUDENT LEARNING OBJECTIVES
1. Become proficient with a global leader in data visualization applications
2. Have a better understanding of core leadership and communication principles as presented through a variety of writings and videos.
3. Understand how core leadership and communication principles can be utilized to enhance client communication and consulting opportunities.
4. Understand and implement strategies to analyze “big data” and avoid analysis paralysis, while still telling compelling and actionable stories.
5. Get “real-life” experience with Storytelling and Client Consulting via the final project.

QLIK ACADEMIC LICENSE
In partnership with QlikTech International AB, you will be provided a license for your personal and academic use for 1 full year.

IGNATIAN EDUCATION PRINCIPLES
Characteristics of the Ignatian\(^1\) vision are:
- “See life and the whole universe as a gift calling forth wonder and gratefulness.”
- “Gives ample scope imagination and emotion as well as intellect.”
- “Seeks to find the Divine in all things --- in all peoples and cultures, in all areas of study and learning, in every human response…”
- “Cultivates critical awareness of personal and social evil, but points to God’s love as more powerful than any evil.”

LEARNING GOALS – WILLIAMS COLLEGE OF BUSINESS: MBA and MSCA PROGRAMS

Strategic Thinking and Leadership
Learning Goal: WCB MBA/MSCAs will be able to position organizations in chosen market areas, compete successfully, and satisfy stakeholders with the objective of achieving superior organizational performance.

Corresponding Objectives:
(1) MBA/MSCA students will demonstrate the appropriate knowledge of accounting, finance, management, marketing, and strategic integration.
(2) MBA/MSCA students will demonstrate the ability to articulate a vision and set and prioritize strategic objectives.
(3) MBA/MSCA students will formulate business strategies utilizing their understanding of the key functional areas of business.
(4) MBA/MSCA students will practice and assess their capacity to influence others, collaborate, and encourage cooperation toward organization goals.

Global Perspective and Cultural Diversity
Learning Goal: WCB MBA/MSCAs will be able to work across cultural boundaries, whether these are geographical or societal, in that they possess a recognition and appreciation of the global environment of business and an understanding and appreciation of diversity.

Corresponding Objectives:
(1) MBA/MSCA students will evaluate and integrate economic, political, technological, environmental and societal issues into their decision making and show competencies required to compete in the global environment in their analyses.
(2) MBA/MSCA students will incorporate the concepts of global diversity and inclusiveness in their analyses and decision making.

\(^1\) Taken from “Do You Speak Ignatian,” by George Traub, S.J., Ph.D., Xavier University
**Ethics and Social Responsibility**
Learning Goal: WCB MBA/MSCAs are able to foster an ethical climate in their roles and responsibilities in business and society.

**Corresponding Objective:**
MBA/MSCA students will recognize ethical issues and demonstrate the skills necessary to analyze information and make informed, ethical decisions in complex, conflicting or ambiguous environments or situations.

**Critical Thinking**
Learning Goal: WCB MBA/MSCAs are able to clarify problems, generate and evaluate alternatives using appropriate analytical and quantitative techniques, and draw conclusions.

**Corresponding Objective:**
MBA/MSCA students will evaluate organizations and recommend optimal strategies and actions demonstrating their ability to understand context, frame problems and use appropriate analytical and quantitative techniques.

**Effective Written and Oral Communication**
Learning Goal: WCB MBA/MSCAs are proficient in written and oral communication.

**Corresponding Objectives:**
1. MBA/MSCA students will demonstrate their ability to clearly summarize issues and support decisions in writing.
2. MBA/MSCA students deliver professional presentations accompanied by the appropriate technology.
3. MBA/MSCA students demonstrate effective interpersonal communications skills in a team setting.

**GRADING CRITERIA**

<table>
<thead>
<tr>
<th>Item</th>
<th>Percent</th>
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<tbody>
<tr>
<td>Quiz 1</td>
<td>15%</td>
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<tr>
<td>Quiz 2</td>
<td>15%</td>
</tr>
<tr>
<td>Class Participation</td>
<td>10%</td>
</tr>
<tr>
<td>Midterm Exam</td>
<td>25%</td>
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<tr>
<td>Final Exam/Group Project Deliverable</td>
<td>35%</td>
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</tbody>
</table>
Please be aware that your Final Grade in Canvas should be interpreted as directional. Grades are manually calculated through the weights listed above as outlined in the Grading Criteria. Canvas is imprecise in the Final Score calculation and also doesn’t incorporate Peer Feedback and other metrics.

Exams
Information from your text, the lectures, and the dialogue with your peers is considered valuable and worth testing. You will be well-prepared for Exams if you actively participate in class.

GRADE LEVELS
Final grades will be calculated as follows:

<table>
<thead>
<tr>
<th>Grade</th>
<th>Range</th>
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<tbody>
<tr>
<td>A</td>
<td>93 – 100.0%</td>
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<tr>
<td>A-</td>
<td>90 – 92.9%</td>
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<tr>
<td>B+</td>
<td>87 – 89.9%</td>
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<tr>
<td>B</td>
<td>83 – 86.9%</td>
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<tr>
<td>B-</td>
<td>80 – 82.9%</td>
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<tr>
<td>C+</td>
<td>78 – 79.9%</td>
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<tr>
<td>C</td>
<td>75 – 77.9%</td>
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<td>F</td>
<td>Below 75%</td>
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We reserve the right to calibrate grading based on observed demonstrated effort including attendance. Also a 360 peer review will be provided by your project teammates and will influence your final class grade. Please do NOT ask us to “round up” for your grades as the grading bands are generous. For example, an 89.89 is a B+. Help us to protect the integrity of our grading guidelines and the value and reputation of your Xavier University education and your own personal brand as a Graduate. Grading is at the SOLE discretion of the Instructors.

ASSIGNMENTS
You are Graduate Students. We expect the work you submit to be your best effort and demonstrate critical thinking, analysis, and solid conclusions. Your work must be uploaded into Canvas by the due date prior to the start of class and is timestamped by the system.

SUPPORTING ACADEMIC AND OVERALL HONESTY
The work you do is assumed to be your own. Please review the university guidelines regarding academic honesty. Note that Turnitin may be used to aid in the protection of your work and others and to provide you with feedback when you’re over-referencing materials.

ATTENDANCE POLICY/INCORPORATING THE “REAL WORLD”
Career obligations may require “missing a class”. If you miss a class, you will miss a lot. You are permitted to miss up to 3 classes for the Fall Semester, 20% of your classes, without impact on your final grade. However at minimum your grade will be reduced to the next available level on the 4th absence (i.e., A -> B+, B -> B-, etc.). Further absences will result in additional reduction in grade. Note that your Professor, after careful consideration, may recommend you withdraw from our course based on your absences and other factors.
EXAM MAKEUP POLICY
“Due Dates” established for deliverables and Exams/Quizzes are hard dates, drop-dead dates, or whatever terminology your organization uses to indicate that there is “no leeway” in the due date.

GROUP FINAL PROJECT
A group project will be assigned leveraging the applications of data visualization, coupled with the storytelling learning’s and principles.

This is a key part of your final grade for the course. 360°/Peer feedback is collected and reviewed via SurveyMonkey, Qualtrics, or other measurement to provide some thoughts on the project as well as to recognize outstanding and subpar performers. Your team needs you and your final score may be adjusted by +/- 5 points depending on peer feedback.

DISABILITY SERVICES
Qualified students with disabilities who will require disability accommodations in this class are encouraged to make their requests to me by sharing their Accommodation Letters with me at the beginning of the semester either during office hours or by appointment. 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.

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.
### SCHEDULE OF EVENTS for INFO 689-01, Fall Semester, 2017

<table>
<thead>
<tr>
<th>Date</th>
<th>Topic, Chapter, Assignment</th>
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<tbody>
<tr>
<td>Aug 21</td>
<td>Introduction to Data Visualization</td>
</tr>
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<td>Aug 28</td>
<td>Dimensions, Measures, Aggregation and Visual Encoding</td>
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<tr>
<td>Sept 4</td>
<td>Labor Day Holiday – All University Offices are Closed</td>
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<td>Sept 11</td>
<td>Psychology of Design</td>
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<td>Sept 18</td>
<td>Quiz #1, Advanced Visualizations and New Trends</td>
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<td>Sept 25</td>
<td>Data Analysis, Data Management and Data Warehousing</td>
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<td>Oct 2</td>
<td>Data Sources and ETL</td>
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<td>Oct 9</td>
<td>Midterm Exam</td>
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<td>Analytics and Social Media (Twitter, Facebook, LinkedIn)</td>
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<td>Oct 16</td>
<td>Cloud and Data Analytics (AWS and Azure)</td>
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<td>Oct 23</td>
<td>GIS and Spatial Analytics (ESRI and GeoAnalytics)</td>
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<td>Oct 30</td>
<td>Applied Business Analytics</td>
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<td>Nov 6</td>
<td>Leadership &amp; Comms</td>
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<td>Nov 13</td>
<td>Client Leadership &amp; Consulting</td>
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<tr>
<td>Nov 20</td>
<td>Storytelling and Client Consulting Part 1</td>
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<tr>
<td>Nov 27</td>
<td>Quiz #2, Storytelling and Client Consulting Part 2</td>
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<tr>
<td>Dec 4</td>
<td>Consulting and Action</td>
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<tr>
<td>Dec 11</td>
<td>Final Exam – Group Presentations</td>
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