COLLEGE/SCHOOL/SECTION: ARSSB/DIBTS

Course: Add: X Delete: Delivery: MIS3360
(check all that apply) Change: Number Title SCH Description Prerequisite

Response Required: New course will be part of major X minor as a required or elective course

Response Required: New course will introduce, reinforce, or apply concepts

Response Required: Grade Type Normal (A-F) CR/NC P/F

Shortened Course Format: Equivalent Student Learning Outcomes verified: 

If new, provide Course Prefix, Number, Title, Measurable Student Learning Outcomes, SCH Value, Description, prerequisite, and lecture/lab hours if applicable. If in current online catalog, provide change and attach text with changes in red and provide a brief justification.

Program: Delete: Add: Change: Attach new/changed Program of Study description and 4-year plan. If in current online catalog, provide change and attach text with changes in red.


Minor: Add: Delete: Change: Attach new/changed minor. If in current online catalog, provide change and attach text with changes in red.

College Introductory Pages: Add information: Change information: Attach new/changed information. If in current online catalog, provide change and attach text with changes in red.

Other: Add information: Change information: Attach new/changed information. If in current online catalog, provide change and attach text with changes in red.

Approvals:  

Chair Department Curriculum Committee  

Chair Department  

Chair College Curriculum Committee  

Dean  

Provost  

2014
Course: MIS 3360-161, Business Data Visualization
Instructor: Milton Mayfield, Professor of Management
Office Hours: PH 313 D
956-326-2534
Monday: 3:00-6:00 pm
Wednesday: 3:00-6:00 pm
Friday: 3:00-6:00 pm
and by appointment
E-mail: mmayfield@tamiu.edu
Required Text:
Thinking with Data: How to Turn Information into Insights, 2014
Max Shon
O'Reilly Media

R Graphics Cookbook, 2013
Winston Chang
O'Reilly Media

Recommended:
Edward R. Tufte
Graphics Press

Envisioning Information, 1990
Edward R. Tufte
Graphics Press

Visual Explanations: Images and Quantities, Evidence and Narrative, 1997
Edward R. Tufte
Graphics Press

Prerequisite: DS 2310 or permission of the instructor

Course Description: Three semester hours
This course provides an overview of data visualization and analysis methods relevant to current business decision making. The class will help students to develop skills through all phases of the analysis and visualization process: determining analysis purpose; retrieving relevant data; analyzing the data; presenting the data in a method that enhances understanding. Use of modern visualization and analysis programs will be emphasized throughout the course.

Course Goals: By the end of the semester, successful participants will be able to:
1. Competently evaluate data analysis goals for making organizational improvement.
2. Implement an analysis of relevant data sources for their use in answering organizational improvement questions.
3. Create a data synthesis using quantitative and qualitative methods.
4. Complete an application of analysis results using visual presentation methods.

Learning Objectives:

<table>
<thead>
<tr>
<th>Goal</th>
<th>Objective</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Evaluate analysis goals</td>
<td>Students will be able to recommend data analysis goals that are appropriate for improving</td>
</tr>
</tbody>
</table>
2. Analyze data sources

3. Synthesis of data using analytic methods

4. Application of data summary results using visual presentation methods

organizational outcomes.

Students will be able to compare and select different data sources for implementing a data analysis and visualization project.

Students will be able to design and produce a data analysis to answer relevant organizational questions.

Students will be able to prepare a visual presentation of data analysis results that is appropriate for analytical and persuasive purposes.

Grading Policy
Grades will be determined with the following weights:

Course Tests 50%
In-class Assignments 10%
Data Understanding Assignments 20%
Final Project 20%

90-100% A
80-90% B
70-80% C
60-70% D
below 60 not passing

100%

Attendance Policy: Students are expected to attend and be prepared for all classes.

Other course policies:
Students are expected to:

1. Obtain the assigned course texts by the end of the semester's first week.
2. Complete all assigned readings by the posted date.
3. Bring the course text and all other necessary materials to class.
4. Use the Angel system for e-mail correspondences.
5. Ask questions.
6. Help your classmates when asked.
7. Ask for help when you want to know more.
8. Find one thing that interests you each class.

Classroom Behavior
The A.R. Sanchez, Jr. School of Business encourages classroom discussion and academic debate as an essential intellectual activity. It is essential that students learn to express and defend their beliefs, but it is also essential that they learn to listen and respond respectfully to others whose beliefs they may not share. ARSSB will always tolerate diverse, unorthodox, and unpopular points of view, but it will not tolerate condescending or insulting remarks. When students verbally abuse or ridicule and intimidate others whose views they do not agree with, they subvert the free exchange of ideas that should characterize a university classroom. If their actions are deemed by the professor to be disruptive, they will be subject to appropriate disciplinary action, which may include being involuntarily withdrawn from the class.

Copyright Restrictions
The Copyright Act of 1976 grants to copyright owners the exclusive right to reproduce their works and distribute copies of their work. Works that receive copyright protection include published works such as a textbook. Copying a textbook without permission from the owner of the copyright may constitute copyright infringement. Civil and criminal penalties may be assessed for copyright infringement. Civil penalties include damages up to $100,000; criminal penalties include a fine up to $250,000 and imprisonment.

Copyright laws do not allow students and professors to make photocopies of copyrighted materials, but
you may copy a limited portion of a work, such an article from a journal or a chapter from a book for your own personal academic use or, in the case of a professor, for personal, limited classroom use. In general, the extent of your copying should not suggest that the purpose or the effect of your copying is to avoid paying for the materials. And, of course, you may not sell these copies for a profit. Thus, students who copy textbooks to avoid buying them or professors who provide photocopies of textbooks to enable students to save money are violating the law.

Plagiarism and Cheating
Plagiarism is the presentation of someone else's work as one's own. Recently, the Internet has complicated the picture. Getting something from the Internet and presenting it as one's own is still plagiarism. Copying another student's paper or a portion of the paper - is usually called "copying". Neither plagiarism nor copying will be tolerated. Should a faculty member discover that a student has committed plagiarism, the students will receive a grade of 'F' in that course and the matter may, if necessary, be referred to the TAMU Honor Council for possible disciplinary action.

Students with Disabilities
Texas A&M International University seeks to provide reasonable accommodations for all qualified persons with disabilities. This University will adhere to all applicable federal, state, and local laws, regulations and guidelines with respect to providing reasonable accommodations as required to afford equal education opportunity. It is the student's responsibility to register with the Disabilities Services Coordinator located in the Student Counseling Center and to contact the faculty member in a timely fashion to arrange for suitable accommodations.

Safety and Security- You are the Difference
Your safety and security are of prime concern here at Texas A&M International University, and the University police department work hard to ensure the campus is a safe place to live, learn, work and play. TAMU is not, however, exempt from crime. To be safe and secure, you must take common sense precautions. Be alert and aware of those around you; look out for the safety of others. Do not leave valuables unattended; do not attempt to touch or interfere with our wildlife.

Student Responsibility For Dropping a Course
It is the responsibility of the STUDENT to drop the course before the drop date. Faculty are not responsible for dropping students who suspend class attendance.

Final Examination
The University requires that all final examinations be comprehensive and given on the day specified.

THE INSTRUCTOR RESERVES THE RIGHT TO MAKE CHANGES TO THIS SYLLABUS AS NEEDED AND WITH NOTIFICATION TO STUDENTS
<table>
<thead>
<tr>
<th>Date</th>
<th>Day</th>
<th>Class Topic/Reading Assignment</th>
<th>Assignments</th>
<th>Learning Objective(s) Addressed</th>
</tr>
</thead>
<tbody>
<tr>
<td>September 1</td>
<td>Monday</td>
<td>Introduction</td>
<td>Understanding data visualization and analysis</td>
<td>1, 2, 3, &amp; 4</td>
</tr>
<tr>
<td>September 8</td>
<td>Monday</td>
<td>Analysis of data issues and organizational problems</td>
<td><em>Thinking</em>: Chapter 1</td>
<td>1</td>
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<td><em>DAU</em></td>
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<tr>
<td>September 15</td>
<td>Monday</td>
<td>Selecting goals for organizational improvements</td>
<td><em>Thinking</em>: Chapter 2</td>
<td>1</td>
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<td></td>
<td><em>DAU</em></td>
<td></td>
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<tr>
<td>September 22</td>
<td>Monday</td>
<td>Obtaining useful data</td>
<td><em>Thinking</em>: Chapter 2</td>
<td>1, &amp; 2</td>
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<td></td>
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<td><em>R Graphics</em>: Chapter 15</td>
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<td><em>DAU</em></td>
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<tr>
<td>September 29</td>
<td>Monday</td>
<td>Preliminary data analysis for selection (including descriptive statistics methods)</td>
<td><em>R Graphics</em>: Chapters 1 and 2</td>
<td>1, &amp; 2</td>
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<td><em>DAU</em></td>
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<tr>
<td>October 6</td>
<td>Monday</td>
<td>Test 1</td>
<td>Test 1</td>
<td></td>
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<tr>
<td>October 13</td>
<td>Fall Break</td>
<td>No Class, Fall Break</td>
<td>NA</td>
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<tr>
<td>October 20</td>
<td>Monday</td>
<td>Analysis of static data and data classification</td>
<td><em>R Graphics</em>: Chapters 3, 5, &amp; 6</td>
<td>1, 2, &amp; 3</td>
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<td><em>DAU</em></td>
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<tr>
<td>October 27</td>
<td>Monday</td>
<td>Analysis of trend data</td>
<td><em>R Graphics</em>: Chapters 4, &amp; 5</td>
<td>1, 2, &amp; 3</td>
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<td><em>DAU</em></td>
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<tr>
<td>November 3</td>
<td>Monday</td>
<td>Visual presentation of static data and categorizing data</td>
<td><em>R Graphics</em>: Chapters 7, 8, 9, &amp; 10</td>
<td>1, 2, 3, &amp; 4</td>
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<td><em>DAU</em></td>
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<tr>
<td>November 10</td>
<td>Monday</td>
<td>Visual presentation of trend data</td>
<td><em>R Graphics</em>: Chapters 11, 12, 13, &amp; 14</td>
<td>1, 2, 3, &amp; 4</td>
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<td><em>DAU</em></td>
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<tr>
<td>November 17</td>
<td>Monday</td>
<td>Elements of persuasive data presentation</td>
<td><em>Thinking</em>: Chapters 3, 4, 5, &amp; 6</td>
<td>1, 2, 3, &amp; 4</td>
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<td><em>DAU</em></td>
<td></td>
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<tr>
<td>November 24</td>
<td>Monday</td>
<td>Test 2</td>
<td>Test 2</td>
<td>1, 2, 3, &amp; 4</td>
</tr>
</tbody>
</table>

1 Reading assignment titles taken from Robbins' and Hunsaker's *Training in Interpersonal Skills*.
2 Assignments should be completed before the class meeting on that date. Remember to *always* bring your texts to class for in-class assignments.
3 *Thinking with Data: How to Turn Information into Insights*
4 Data Understanding Assignment
5 *R Graphics Cookbook*
<table>
<thead>
<tr>
<th>Date</th>
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<th>Assignments²</th>
<th>Learning Objective(s) Addressed</th>
</tr>
</thead>
<tbody>
<tr>
<td>December 1</td>
<td>Monday</td>
<td>Final Project Presentations and Paper Due</td>
<td>Paper due Final Project Presentations</td>
<td>1, 2, 3, &amp; 4</td>
</tr>
<tr>
<td>December 8</td>
<td>Monday, 8:00 pm</td>
<td>Final Exam</td>
<td>Final Exam</td>
<td>1, 2, 3, &amp; 4</td>
</tr>
</tbody>
</table>

JUSTIFICATION:

Modernization of the existing BBA in MIS Program to include a Data Analytics component, whereby students will learn various state-of-the-art techniques to compile and analyze data from various organizations and from the cloud. The goal of these analyses will be a better understanding of issues that can be used to improve the quality of goods and services in organizations, and the productivity with which those goods and services are generated and delivered to customers.