BMIS 326.01: Introduction to Data Analytics

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BMIS 326  
Introduction to Data Analytics  
Spring 2016

Instructor Information
Professor: Dr. Jason Triche  
E-mail: jason.triche@business.umt.edu (best way to reach me)  
Office Phone: 243-6272  
Office: GBB 314  
Office Hours: T, Th 2:00 – 4:00 pm or by appointment

Course Information
Meeting Place: GBB 213  
Meeting Time: 12:40 – 2:00 T, Th

This course is a 3-credit hour, full-semester offering covering introduction topics in data analytics. This course introduces the terminology and application of big data and data analytics. Students will complete cases in a variety of disciplines as they become acquainted with some of the software, tools, and techniques of data analytics. There is no textbook for the class. I will use current and relevant content from highly regarded publications and textbooks in the field. I will post all content on Moodle.

Prereq: STAT 216

Grading Evaluation

<table>
<thead>
<tr>
<th>Criterion</th>
<th>Weight</th>
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<tbody>
<tr>
<td>Exam 1</td>
<td>25%</td>
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<tr>
<td>Exam 2</td>
<td>25%</td>
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<tr>
<td>Homework</td>
<td>20%</td>
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<tr>
<td>Project</td>
<td>25%</td>
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<tr>
<td>Class Participation</td>
<td>5%</td>
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</tbody>
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Letter grades will be based on the following scale:

A  93% and above  
A-  90% to 92%  
B+  87% to 89%  
B   83% to 86%  
B-  80% to 82%  
C+  77% to 79%  
C   73% to 76%  
C-  70% to 72%  
D+  67% to 69%  
D   63% to 66%  
D-  60% to 62%  
F   Below 60%
Expected Learning Objectives and Assessment
Students will:

- Understand the terminology used in the Big Data field of study.
- Explore the applications of Big Data in a variety of disciplines.
- Use, at an introductory level, data analytics tools.
- Explain the story told by the output of the data analyses.
- Discuss the issues of privacy and ethics raised by the use of Big Data tools.

Assignments

Homework
Homework will be assigned throughout the semester. Some homework will be individual and some homework can be completed in groups. I will specify individual or possible group on each assignment. If done in groups, make sure everyone in the group understands each question and/or task. This will help tremendously on exams. All homework is due as specified in Moodle. No late assignments will be accepted and they will be assigned a score of zero (0).

Python Code Academy
Some homework assignments will include Python Code Academy. Each student should register for a free account at Code Academy and select the Python course. https://www.codecademy.com/learn/python

Exams
The exams will be a combination of multiple choice, short answer, and essay questions covering the content discussed in class, homework, readings from Moodle, and in-class exercises.

Project
There will be a project assigned which will utilize the material and technologies covered in class. The project will be completed in cross-disciplinary teams assigned by the instructor.

Policies

Academic Honesty
All students must practice academic honesty. Academic misconduct is subject to an academic penalty by the course instructor and/or a disciplinary sanction by the University. The University of Montana Student Conduct Code specifies definitions and adjudication processes for academic misconduct and states, “Students at the University of Montana are expected to practice academic honesty at all times.” (Section V.A., available at http://www.umt.edu/vpsa/policies/student_conduct.php). All students need to be familiar with the Student Conduct Code. It is the student’s responsibility to be familiar the Student Conduct Code. SoBA Professional Conduct. (link: http://www.business.umt.edu/Soba/SoBAEthics/CodeofProfessionalConduct.aspx)

Makeup Exams
Makeup Exams must be approved prior to missing the exam. No makeup exams will be allowed if the absence is not pre-approved.
Disability Services for Students
The University of Montana assures equal access to instruction through collaboration between students with disabilities, instructors, and Disability Services for Students. If you think you may have a disability adversely affecting your academic performance, and you have not already registered with Disability Services, please contact Disability Services in Lommason Center 154 or 406.243.2243. I will work with you and Disability Services to provide an appropriate modification.

Mission Statements and Assurance of Learning
The University of Montana’s School of Business Administration enhances lives and benefits society by providing a world-class business education in a supportive, collegial environment.

We accomplish this mission by acting on our shared core values of creating significant experiences, building relationships, teaching and researching relevant topics, behaving ethically, and inspiring individuals to thrive.

As part of our assessment process and assurance-of-learning standards, the School of Business Administration has adopted the following learning goals for our undergraduate students:

Learning Goal 1: SoBA graduates will possess fundamental business knowledge.
Learning Goal 2: SoBA graduates will be able to integrate business knowledge.
Learning Goal 3: SoBA graduates will be effective communicators.
Learning Goal 4: SoBA graduates will possess problem solving skills.
Learning Goal 5: SoBA graduates will have an ethical awareness.
Learning Goal 6: SoBA graduates will be proficient users of technology.
Learning Goal 7: SoBA graduates will understand the global business environment in which they operate.
Schedule

Jan 26  Read Syllabus, Readings on Moodle, Sign up for Amazon Web Services, Class will not meet in person
Jan 28  Introduction to Big Data, Data Analytics, and Business Intelligence
Feb 2   Exploring Data – Descriptive Statistics
Feb 4   Exploring Data – Dealing with Missing and Incorrect Data and Outliers
Feb 9   Relational Databases
Feb 11  Database - SQL
Feb 16  Database - SQL
Feb 18  NoSQL Databases
Feb 23  NoSQL Databases
Feb 25  **Exam 1**
Mar 1   Introduction to R
Mar 3   R – Imputing missing values, merging datasets
Mar 8   Classification Trees
Mar 10  Multiple Regression
Mar 15  Multiple Regression
Mar 17  Cluster Analysis
Mar 22  Association Analysis
Mar 24  Text Analysis
Mar 29  Text Analysis
Mar 31  **Exam 2**
Apr 5   Spring Break
Apr 7   Spring Break
Apr 12  Data Visualization
Apr 14  Data Visualization
Apr 19  Combining Exploring, Analyzing, Visualizing
Apr 21  Work on Projects
Apr 26  Work on Projects
Apr 28  Project Presentations
May 3   Project Presentations
May 5   Project Presentations

I will announce all changes to the schedule in class and on Moodle.