

Spring 2-1-2018

BMIS 465.01: Real-Time Data Analytics

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Recommended Citation

Tangedahl, Eric Lee, "BMIS 465.01: Real-Time Data Analytics" (2018). *Syllabi*. 7210.
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BMIS 465

Real-Time Data Analytics

Spring 2018

Course Information

Time: Th 2:00 – 4:50pm
Venue: Gallagher Business Building 205/206 (lab)

Professor Information

Professor: Eric Tangedahl
E-Mail: eric.tangedahl@mso.umt.edu
Phone: (406) 243-6620
Office: GBB370
Office Hours: Wednesday 2-4pm or by Appt.

School of Business Administration Mission Statement

The University of Montana's School of Business Administration is a collegial learning community dedicated to the teaching, exploration, and application of the knowledge and skills necessary to succeed in a competitive marketplace.

School of Business Administration Assessment and Assurance of Learning

As part of our assessment process and assurance-of-learning standards, the School of Business Administration (SoBA) has adopted five 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 technological skills.
- *Learning Goal 7* SoBA graduates will understand the global business environment in which they operate.

Course Learning Outcomes

- Students will be exposed to several different applications of real-time analytics not limited to but including Azure, AWS, Tweepy, and Infosphere Streams.
- Concepts in data analytics, Internet of Things IoT, Machine Learning, Parallel Computing and Cloud/Datacenter Infrastructure.
- Students will work with cloud and local server based infrastructure gaining a better understanding of how real-time analytics systems may be implemented.
- Fundamental knowledge of Infosphere Streams operators and functionality as well as statistical methods will be assessed using two mid-term exams.
- Final projects will bring the knowledge of real-time analytics, statistics and Infosphere streams, Python, Azure, AWS together to show how decisions can be made with the large datasets to derive relevant information and put that in the hands of managers. Projects will include a written paper along with an oral presentation.

Graduate Requirements

- See Graduate Project document

Prerequisites

BMIS 326 – Introduction to Data Analytics
BMIS 365 – Business Application Development or equivalent.
STAT 216 – Introduction to Statistics

Course Description

Real-Time Data Analytics looks at a portion of Big Data that deals with streaming data. Basic concepts of Big Data, statistics, streams programming, cloud computing and parallel computing will be introduced. In this course we will look at applications of streaming data as they relate to such topics as cyber security, finance, social media and others. You will be working with IBM Infosphere Streams to analyze data and understand the process of working with Big Data to obtain relevant informative information. This class is multi-disciplinary and designed to have skillsets from Management Information Systems, Computer Science and Math. The intention is to allow students to work with these disciplines to simulate the problem solving environment would see in the work place This class will look at exciting and complex problems that have only recently had solutions due to computing advances and data analytics techniques.

Required Materials

Class Materials

No textbook is required for this course. Lectures and lab exercise materials will be in the form of PDF on Moodle.

Moodle

The professor will make extensive use of the Moodle system, which can be located at <https://moodle.umt.edu/>. Course materials (announcements, course schedule, handouts, assignments, grades, etc.) will be posted on Moodle.

Computing Resources

Students must have access to the following computing resource:

- We will be in the GBB206 computer lab. The Linux image for this class is currently only available on your assigned hard drive for this class. Use class time wisely as this is your best opportunity to have access to this computer lab.

***Course Grading**

Student performance will be measured along three (3) distinct achievement criteria, broken down as follows:

<i>Criterion</i>	<i>Points</i>
2 Midterm Exams	200
Final Project	100
Homework and Tutorials	100
	<hr/> <hr/> 400

*Subject to change, current document will be posted on Moodle.

Class Attendance

Class attendance is extremely important to succeed in this course. With only one class per week, we have a total of only 15 classes for you to attend. Access to this specific lab image will be more difficult outside classroom hours. While attendance every class period is not mandatory, it will be critical to your success in working with a new technology and new programming language. If you are going to miss an exam you will need to notify me at least one week prior. If there is an assignment that week you have one week to make up in order to receive credit. If missing the exam was due to an emergency please provide documentation which verifies this emergency. (E.g. a doctor's note)

Seating

The computer you are sitting at the first day of class will be your location for the semester. Lecture will be held in GBB205 and Labs are in GBB206. Maintain a clean workspace as this is a shared lab.

Use of Personal Electronic Devices

The use of personal electronic devices such as cell phones, tablets (Kindles, iPads, etc.) and iPods is prohibited during class. **Turn off all personal electronic devices prior to entering the classroom.** Use of a personal electronic device during an exam or quiz will result in immediate removal from the course. Laptops can be used to follow along in class to view powerpoints, pdfs, etc.

Electronic Mail Policy

Faculty may only communicate with students regarding academic issues via official UM electronic mail (e-mail) accounts. Accordingly, students must correspond with their professors using authorized UM accounts (e.g., umontana.edu, umconnect.edu). E-mail received from non-UM accounts may be flagged as spam and deleted without further response. Due to security issues, *confidential information (including grades and course performance) will not be discussed via e-mail.*

The professor will try to be extraordinarily timely when responding to e-mail messages. If you send an e-mail during the week, you will almost always receive a response within one business day. However, your messages should be well written and grammatically correct. Furthermore, your messages should begin with a proper salutation and end with a thank you. Be sure to include your full name and section number when communicating with the professor via e-mail.

Written communication skills are extremely important to succeed in business. Therefore, students should be aware that the professors will reject e-mails that do not comply with the above specifications. In particular, the professors will not respond to your inquiry directly, but rather advise you to reformat and resubmit the correspondence. As a result, sending unacceptable e-mails will impair your ability to receive a timely response.

NetID Password

All students must change their NetID passwords at least every 365 days. Otherwise, passwords expire for security purposes. If your password expires, you will be unable to access the course materials posted on Moodle. Therefore, students are encouraged to change their passwords at the beginning of the semester to avoid any potential logon issues. Students can change their passwords online at <http://onestop.umt.edu>. To maximize security, students are encouraged to create complex passwords including a combination of alpha, numeric, and symbolic characters (minimum of six characters).

Students with Disabilities

Students with disabilities may request reasonable modifications by contacting the professor. The University of Montana assures equal access to instruction through collaboration between students with disabilities, instructors, and Disability Services for Students (DSS). “Reasonable” means the University permits no fundamental alterations of academic standards or retroactive modifications. For other options, please refer to <http://www.umt.edu/disability>.

University Student Conduct Code

The professor, school, and University rely upon and cherish a community of trust. The professors firmly endorse, uphold, and embrace the University’s Students Conduct Code. Even one misconduct infraction

can destroy an exemplary reputation that has taken years to build. Acting in a manner consistent with the University's policies will benefit every member of the community, not only while attending the University, but also in your future business endeavors.

All students must practice academic honesty. Academic misconduct is subject to an academic penalty by the professors and/or a disciplinary sanction by the University. All students need to be familiar with the Student Conduct Code. The Code is available for review online at <http://life.umt.edu/VPSA/name/StudentConductCode>.

Course Schedule

Due to the nature of this course the schedule will change often. Any updates to the schedule you see on Moodle.