



SYLLABUS

Technology Fundamentals for Business Analytics

MGMT6963

3 Credits

Fall/2015 Monday 6:00 – 8:50

Room Location: Pittsburgh Building 4114

Websites: <https://jkuruzovich.github.io/tech-fundamentals-analytics/>
& Blackboard

Prerequisites or Other Requirements: None.

INSTRUCTOR

Instructor Name: Jason Kuruzovich

Tel. No.: 518-698-9910

Office Hours: Thursday 10:00 AM-12:00 PM

Office Location: Pitt. 4th Floor (Sev. Center)

Email Address: kuruzj@rpi.edu

COURSE DESCRIPTION:

The widespread proliferation of IT-influenced economic activity leaves behind a rich trail of micro-level data, enabling organizations to use analytics and experimentation in both strategy and operations. This course provides a hands-on introduction to the concepts, methods and processes of business analytics. We will learn how to obtain data and draw business inferences from data by asking the right questions and using the appropriate tools.

COURSE GOALS/OBJECTIVES

The goal of this course will be to provide the technical foundation to enable students to become data scientists.

STUDENT LEARNING OUTCOMES

Through this course you are expected to:

- (1) Demonstrate an understanding of analytics based problem solving and analytics thinking.
- (2) Be able to extract, match, transform, and clean data from a variety of sources.
- (3) Conduct structured statistical analyses to answer business related questions.

COURSE REFERENCE MATERIALS

There is no text book but students may find that the following freely available texts are useful:

R for Data Science by Garrett Grolemund & Hadley Wickham
(<http://r4ds.had.co.nz>)

Think Python 2e by Allen B. Downey
(<http://greenteapress.com/wp/think-python-2e/>)

COURSE ASSESSMENT MEASURES

Class Participation and In-Class Assignments

Participation in class is absolutely necessary. I expect this to be a hands on class where you will be actively working on problems, demonstrating solutions, and helping your colleagues. This may also include in-class assignments designed to push absorption of the material.

Assignments (Weekly)

You will have assignments associated with many classes. Be sure to check the course website and submit assignments via the LMS> Preparing the case questions in advance is expected to help you participate and contribute to class discussion. Assignments up to 24 hours late will have their grade reduced by 25%; assignments up to one week late will have their grade reduced by 50%. After one week, late assignments will receive no credit. Please turn in your assignment early if there is any uncertainty about your ability to turn it in on time.

Kaggle/Organizational Assignment

There will be an individual data assignment to be completed as part of the class. The overall goal is to undergo all stages of the data understanding, data munging, modelling, and further development of understanding.

For complete details, see the course web page.

Tutorial Creation

There are so many different things to learn related to data science. For this assignment you are required to select some interesting component that can be presented clearly to the class in 5 minutes and using 1 Jupyter Notebook.

For complete details, see the course web page.

GRADING CRITERIA

All grading is out of 100%. Grade breakdown and feedback will be given through the course learning management system.

Component	Weight
Participation and Homework Assignments and Quizzes	20%
Kaggle/Organizational Assignment (Due 14 th Class)	30%
Tutorial	10%
Midterm (7 th Class)	20%
Final Exam	20%

ATTENDANCE POLICY

A maximum of 2 unexcused absences are allowed. After that 10% of the overall participation grade will be removed for each missed class.

Labs are designed to be worked on during class time in a collaborative environment in which you each help one another. We have very different levels of technical expertise in the class, and it is important to work together on the labs to help one another in a classroom environment. While you may be able to complete the work at home by yourself, in doing so you will be robbing your classmates of your expertise. I will consider helping behaviours during the class as part of the participation component of the class.

Therefore, the imperative clearly stated: each participant attends class fully prepared, willing and able to offer constructive criticism, provide goal-oriented analytic and synthetic insights, and encourage investigative dialectic. You earn your grade on participation through consistent, daily contribution. Merely "COMING TO CLASS" is not sufficient, but is necessary.

Simply put: Do not miss class hours or group meetings! Understandably, there are circumstances (e.g., job interviews, family matters, extracurricular activity, etc.) that may cause you to miss class;

nevertheless, excessive absences will reduce your class participation grade. Notify the instructor and group IN ADVANCE of any planned absences (especially students who participate in extracurricular activities as representatives of RPI.)

OTHER COURSE POLICIES

After the add deadline, assignments up to 24 hours late will have their grade reduced by 25%; assignments up to one week late will have their grade reduced by 50%. After one week, late assignments will receive no credit. Please turn in your assignment early if there is any uncertainty about your ability to turn it in on time.

ACADEMIC INTEGRITY

Student-teacher relationships are built on trust. For example, students must trust that teachers have made appropriate decisions about the structure and content of the courses they teach, and teachers must trust that the assignments that students turn in are their own. Acts that violate this trust undermine the educational process. The Rensselaer Handbook of Student Rights and Responsibilities and the Graduate Student Supplement (For Graduate courses) define various forms of Academic Dishonesty and you should make yourself familiar with these. In this class, all assignments that are turned in for a grade must represent the student's own work. In cases where help was received, or teamwork was allowed, a notation on the assignment should indicate your collaboration. Submission of any assignment that is in violation of this policy will result in a ***grade of zero will be given on the first assignment where a violation is detected, and the infraction will be reported to the Associate Dean for Academic Affairs. If there is a subsequent infraction the student will receive a grade of F for the course.***

If you have any question concerning this policy before submitting an assignment, please ask for clarification.

COURSE CALENDAR

	Date	Topic	Overview
1	29-Aug	Introduction to Analytics	Click Here
	5-Sep	Labor Day	
2	12-Sep	Intro to Python	Click Here
3	19-Sep	Intro to Python (continued)	Click Here
4	26-Sep	Intro to R	Click Here
5	3-Oct	Intro to R (continued)	Click Here
	10-Oct	Columbus Day - No Class	
6	11-Oct	Intro to Visualization	Click Here
7	17-Oct	Data Munging	Click Here
8	24-Oct	Midterm	Click Here
9	31-Oct	Introduction to Modeling I	Click Here
10	7-Nov	Introduction to Modeling II	Click Here
11	14-Nov	Text Mining and Unstructured Data	Click Here
12	21-Nov	Image Processing	Click Here
13	28-Nov	Introduction to Big Data with Spark	Click Here
14	5-Dec	Presentations	