



MIS 0855 – Data Science (Section 006) – Fall 2017
M/W/F 9:00 – 9:50 AM, Alter Hall 232

Updated with a revised schedule on November 1

Instructor

- Dr. Min-Seok Pang (Ph.D., University of Michigan)
- Speakman Hall 201A, minspang@temple.edu
- Office Hours: Monday, Wednesday 10-11am, or by appointment
- Course Web Site: <http://community.mis.temple.edu/mis0855sec006fall17/> (Bookmark this site!)

Course Objective

We are all drowning in data, and so is your future employer. Data pours in from sources as diverse as social media, customer loyalty programs, weather stations, smartphones, and credit card purchases. How can you make sense of it all? Those that can turn raw data into insight will be tomorrow's decision-makers; those that can solve problems and communicate using data will be tomorrow's leaders. This course will teach you how to harness the power of data by mastering the ways it is stored, organized, and analyzed to enable better decisions. You will get hands-on experience by solving problems using a variety of powerful, computer-based data tools virtually every organization uses. You will also learn to make more impactful and persuasive presentations by learning the key principles of presenting data visually.

Course Learning Goals

- Describe how advances in technology enable the field of data science
- Locate sources of data relevant to their field of study
- Identify and correct problems with datasets to facilitate analysis
- Combine data sets from different sources
- Assess the quality of a data source
- Convey meaningful insights from a data analysis through visualizations
- Analyze a data set using pivot tables
- Identify when advanced analytics techniques are appropriate
- Predict events that will occur together using association mining

Textbook

There is no required textbook for this course. A series of reading assignments will be given throughout the semester.

Grading

Assignments #1 – #4	40% (10% each)
Assignment #5	15%
Exams #1, #2	20% (10% each)
Exam #3	15%
In-Class Exercises	10%

#	Assignment	Due (subject to change)
1	Create a Data Analysis Plan	Fri, Sep 15
2	Analyze a Dataset Using Tableau	Mon, Oct 2
3	Cleaning a Dataset	Mon, Oct 16
4	Analytics Challenge	Tue, Oct 31
5	Original Data Analysis (Term Project)	Plan – Mon, Nov 20 (optional) Final – Mon, Dec 11

Assignments

- Five assignments will be given throughout the semester.
- Late submission is allowed, but there will be 10% penalty per each 12 hours. For example, if an assignment is submitted 30 hours after the deadline and it is graded 80, a 30% penalty is imposed, and the assignment will get $80 \times (100-30)/100 = 56$.
- The instructor will not take any extraneous circumstance into consideration such as a PC malfunction or network outages.

Exams

- Tentatively scheduled on Sep 25, Nov 8, and Dec 4 (subject to change).
- The exams are closed-books-closed-notes with multiple-choice questions.
- Exam #2 is not cumulative. Exam #3 covers the whole course.
- A review session will be held before each exam.

In-Class Exercise (10%)

- There will be one in-class exercise (either group or individual) every day.
- All in-class exercises, be they group or individual, will be counted toward the final grade.
- Deliverables from in-class exercises will be graded by success or fail.
- Up to four missing in-class exercises will be excused.

Grade Scale

94% - 100%	A	70% - 72.99%	C-
90% - 93.99%	A-	67% - 69.99%	D+
87% - 89.99%	B+	63% - 66.99%	D
83% - 86.99%	B	60% - 62.99%	D-
80% - 82.99%	B-	< 60%	F
77% - 79.99%	C+		
73% - 76.99%	C		

Tableau Desktop

- We will use Tableau Desktop v10.3, which can be downloaded from <https://www.tableau.com/products/desktop/download>.
- Each student should obtain a free one-year license key at <https://www.tableau.com/academic/students> by Sep 10. Make sure to use a Temple email when requesting a free license key.

Course Policies

- A student can request a review of the grade within one class-period of the day the assignment/exam is graded. After that period, no grade will be revised.
- A student is required to keep all the graded material that is returned till after the semester is over and he or she has checked the final grade. If there is a discrepancy between the instructor's records and the student's scores for any of the graded material at any time, the instructor's records will be altered only if the student can produce the graded material that the instructor has returned to the student as evidence.
- Using laptops or tablets is allowed only for class-related activities such as reading online materials or for in-class labs. Using them for other non-class activities including Web surfing or checking emails is prohibited. Should the instructor find a student using a laptop for personal use, he or she will be asked to turn off the laptop. Students are required to close laptops while the instructor plays a video.
- Keep monitoring announcements on the class site (<http://community.mis.temple.edu/mis0855sec006fall17/>).
- Email: Use @temple.edu email account for all correspondents with the instructor. Email messages sent from a non-Temple account may not be responded.
- Inclement Weather: Generally, in case of inclement weather, a class will not be canceled as long as the University is open.
- Cell phones, PDAs, etc. should be turned off, muted, or turned to vibrate during class. Please do not send or receive texts, tweets, e-mail, etc. or other communications during class.
- Please arrive for class on time. Be advised that being late to class disturbs the peers' learning.

Course Schedule (tentative)

This schedule is tentative and subject to change. Keep monitoring announcements.

Day	Date	Topic
1	Aug-28 M	Introduction
2	Aug-30 W	Data and Science
3	Sep-01 F	Data, Information, Knowledge
	Sep-04 M	<i>No Class (Labor Day)</i>
4	Sep-06 W	Data and Metadata
5	Sep-08 F	Prep for Assignment #1 (Create a Data Analysis Plan)
6	Sep-11 M	Introduction to Tableau

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Day	Date	Topic
7	Sep-13 W	Introduction to Tableau
8	Sep-15 F	Introduction to Tableau
9	Sep-18 M	Prep for Assignment #2 (Analyze a Dataset Using Tableau)
10	Sep-20 W	In Data We (Mis)Trust
11	Sep-22 F	Exam #1 Review
12	Sep-25 M	Exam #1
13	Sep-27 W	Data Visualization
14	Sep-29 F	Data Distortion
15	Oct-02 M	Creating Interactive Dashboards
16	Oct-04 W	Integrating Data
17	Oct-06 F	Dirty Data
18	Oct-09 M	Data Cleansing
19	Oct-11 W	Prep for Assignment #3 (Cleaning a Dataset)
	Oct-13 F	<i>No Class (Instructor travels for a conference)</i>
20	Oct-16 M	Storytelling with Infographics
21	Oct-18 W	Key Performance Indicators
22	Oct-20 F	Visualizing Maps
23	Oct-23 M	Visualizing Maps
24	Oct-25 W	Prep for Assignment #4 (Temple Analytics Challenge)
25	Oct-27 F	Visualizing Statistics
26	Oct-30 M	Visualizing Statistics
27	Nov-01 W	Visualizing Network
28	Nov-03 F	Visualizing Network
29	Nov-06 M	Exam #2 Review
30	Nov-08 W	Exam #2
31	Nov-10 F	Predictive Analytics
32	Nov-13 M	Predictive Analytics
33	Nov-15 W	Prep for Assignment #5 (Original Data Analysis)
34	Nov-17 F	Twitter Sentiment Analysis
	Nov-20 M	<i>No Class (Thanksgiving Break)</i>
	Nov-22 W	<i>No Class (Thanksgiving Break)</i>
	Nov-24 F	<i>No Class (Thanksgiving Break)</i>
35	Nov-27 M	Data Science and Your Career
36	Nov-29 W	Data Science and Your Career
37	Dec-01 F	Exam #3 Review
38	Dec-04 M	Exam #3
39	Dec-06 W	Aggregating Data (by Guest Instructor Aaron Cheng)
	Dec-08 F	<i>No Class (Instructor travels for a conference)</i>
	Dec-11 M	<i>No Class (Instructor travels for a conference)</i>

Academic Integrity – ZERO TOLERANCE

Plagiarism and academic dishonesty can take many forms. The most obvious is copying from another student's materials, but the following are also forms of this:

- Copying materials directly from the Internet (or another source) without a proper citation crediting the author
- Turning in an assignment from a previous semester as if it were your own
- Having someone else complete your assignment and submitting it as if it were your own
- Signing someone else's name to an attendance sign-in sheet
- Use of assignments completed in one class as any part of a project assigned in another class
- Sharing/copying homework assignments.
- Use of unauthorized notes during an examination
- In cases of cheating, both parties will be held equally responsible, i.e. both the student who shares the work and the student who copies the work.

There will be zero tolerance for blatant plagiarism or any other type of academic dishonesty. In particular, plagiarizing someone's work (be it a classmate's or on the Internet) is strictly prohibited. Under this zero tolerance policy, in any occurrence of academic cheating, a formal complaint will immediately be filed with the University Discipline Committee (UDC). This incident will be listed on the student's permanent academic record. The instructor will not discuss the penalty for violating this policy and simply direct the student to this paragraph in the class syllabus.

As stated above, while collaboration with one or two classmates is allowed, all deliverables must be individual work. In other words, they must be created individually on a different machine. In case that submitted files are strongly suspected to be work of one single person, both the student who provides a file and the one who plagiarizes will be reported to the University, regardless of collaboration and disclosure of it, and the instructor will recommend the same sanction. Thus, it is strongly suggested not to share any file for submission with classmates.

Academic Honesty

Temple University believes strongly in academic honesty and integrity. Plagiarism and academic cheating are, therefore, prohibited. Essential to intellectual growth is the development of independent thought and a respect for the thoughts of others. The prohibition against plagiarism and cheating is intended to foster this independence and respect.

Plagiarism is the unacknowledged use of another person's labor, another person's ideas, another person's words, another person's assistance. Normally, all work done for courses -- papers, examinations, homework exercises, laboratory reports, oral presentations -- is expected to be the individual effort of the student presenting the work. Any assistance must be reported to the instructor. If the work has entailed consulting other resources -- journals, books, or other media -- these resources must be cited in a manner appropriate to the course. It is the instructor's responsibility to indicate the appropriate manner of citation. Everything used from other sources -- suggestions for organization of

ideas, ideas themselves, or actual language -- must be cited. Failure to cite borrowed material constitutes plagiarism. Undocumented use of materials from the World Wide Web is plagiarism.

Academic cheating is, generally, the thwarting or breaking of the general rules of academic work or the specific rules of the individual courses. It includes falsifying data; submitting, without the instructor's approval, work in one course which was done for another; helping others to plagiarize or cheat from one's own or another's work; or actually doing the work of another person.

The penalty for academic dishonesty can vary from receiving a reprimand and a failing grade for a particular assignment, to a failing grade in the course, to suspension or expulsion from the University. The penalty varies with the nature of the offense, the individual instructor, the department, and the school or college.

Students who believe that they have been unfairly accused may appeal through the School or College's academic grievance procedure. See Grievances under Student Rights in this section.

Source: Temple University Undergraduate Bulletin, 2006-2007. Available online at:
http://www.temple.edu/bulletin/Responsibilities_rights/responsibilities/responsibilities.shtm#honesty

Disability Statement

Any student who has need of accommodation based on the impact of a disability should contact the instructor privately to discuss the specific situation as soon as possible. Contact Temple University's Disability Resources and Services (DRS) office at (215)204-1280 at 100 Ritter Annex to coordinate accommodations for students with documented disabilities. Please contact the instructor and the DRS within the first week of class, at the beginning of the semester. DRS will establish a student's needs, and make necessary arrangements with faculty. If the student chooses not to contact DRS, he/she will be unable to receive accommodations retroactively, once exams are completed and/or course grades are submitted. Such decisions are made jointly between the DRS office and the instructor, at their discretion based on circumstances. Accommodation letters must be received by the instructor during the first two weeks of the semester.