



**MIS 0855 – Data Science (Section 002) – Spring 2015**  
**M/W/F 9:00 – 9:50 AM, Alter Hall 603**

*Official as of Jan. 9th, 2015*

**Instructor**

- Dr. Min-Seok Pang (Ph.D., University of Michigan)
- Speakman Hall 201E, [minspang@temple.edu](mailto:minspang@temple.edu)
- Office Hours: Monday and Wednesday 11:00 – 12:30, or by appointment
- Course Web Site: <http://community.mis.temple.edu/mis0855002spring2015/> (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 data sets 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
- Determine meaning in textual data using text mining
- 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	30%
Exams	45%
In-Class Exercise	10%
Participation	10%
Attendance	5%

#### Assignments (30%)

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

#### Exams (45%)

- There will be three exams in this course, each of which counts for 15% of the grade.
- All three exams are closed-books-closed-notes and not cumulative.
- Exams consists of multiple-choices and short-answer questions.
- Tentative exam schedules are available below.

#### In-Class Exercise (10%)

- All in-class exercises, be they group or individual, will be counted toward the grade.
- Deliverables from in-class exercises will be graded by success or fail.

#### Participation (10%)

- Students are expected to actively participate in class discussions, activities, and debates.
- In-class and online participation will be graded equally. Details on online participation are below.
- (Self-Reporting Participation Grading) After each class, please submit a note with a name, TUID, and remarks.
- Both frequency and quality are considered in participation grading.

#### Attendance (5%)

- A student is allowed to miss up to four sessions.
- Do not forget sign in on an attendance sheet every day. Forging a signature will be reported to the University as an academic cheating.
- Leaving the classroom before a class finishes without the instructor's prior consent will void the attendance.

### Grade Scale

90% - 100%	A or A-
80% - 89%	B+, B, or B-
70% - 79%	C+ or C
below 70%	C- or lower

### Online Class Participation at MIS Community Site

- This course uses MIS Community Site (<http://community.mis.temple.edu/mis0855002spring2015/>) as an online class participation forum, which will be a good venue for those who miss a chance to participate in-class or feel hesitant to speak up during class.
- A student can post his/her own opinions and thoughts on class topics and discussions.
- A student can also post a brief (up to 150 words) of a recent news article related to class topics. A news brief that is not related to class topics will not be counted as participation. (A student may consult the instructor for this.)
- The instructor will weigh online participation as much as in-class participation.
- Online participation closes on Thursday, April 30<sup>th</sup> at 11:59pm.

### 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 textbooks or 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/mis0855002spring2015/>).
- Email: Use [@temple.edu](mailto:@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 do not bring and eat foods.
- Please arrive for class on time. Be advised that being late to class disturbs the peers' learning.
- Participation: In order to speak, please raise a hand and wait for the instructor's cue.

**Course Schedule (tentative)**

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

Day	Date		Topic
1	Jan-12	M	Introduction
2	Jan-14	W	Data, Information, Knowledge
3	Jan-16	F	Data and Science
	Jan-19	M	<i>No class (MLK Day)</i>
4	Jan-21	W	Data and Metadata
5	Jan-23	F	Identifying Sources of Data
6	Jan-26	M	Identifying Data Sources
7	Jan-28	W	In Data We (Mis)Trust
8	Jan-30	F	Prep for Assignment #1 (Creating a Data Analysis Plan, due by Feb 6)
9	Feb-02	M	Introduction to Tableau Public
10	Feb-04	W	Introduction to Tableau Public
11	Feb-06	F	Communicating Data
12	Feb-09	M	Storytelling with Infographics
13	Feb-11	W	Prep for Exam #1
14	Feb-13	F	Exam #1
15	Feb-16	M	Prep for Assignment #2 (Analyze a Data Set Using Tableau, due by Feb 23)
16	Feb-18	W	Dirty Data
17	Feb-20	F	Data Cleansing
18	Feb-23	M	Key Performance Indicators
19	Feb-25	W	Key Performance Indicators
20	Feb-27	F	Prep for Assignment #3 (Cleaning a Data Set, due by Mar 11)
	Mar-02	M	<i>No class (Spring Break)</i>
	Mar-04	W	<i>No class (Spring Break)</i>
	Mar-06	F	<i>No class (Spring Break)</i>
21	Mar-09	M	Integrating Data
22	Mar-11	W	Creating Interactive Dashboards
	Mar-13	F	<i>No class (Instructor travels for conference)</i>
	Mar-16	M	<i>No class (Instructor travels for conference)</i>
23	Mar-18	W	Creating Interactive Dashboards
24	Mar-20	F	Prep for Exam #2
25	Mar-23	M	Exam #2
26	Mar-25	W	Aggregating Data
27	Mar-27	F	Aggregating Data
28	Mar-30	M	Designing Data
29	Apr-01	W	Designing Data
30	Apr-03	F	Beyond Numbers
31	Apr-06	M	Beyond Numbers
32	Apr-08	W	Predictive Analytics
33	Apr-10	F	Predictive Analytics
34	Apr-13	M	Data Science and Your Career
35	Apr-15	W	Prep for Exam #3
36	Apr-17	F	Exam #3

Day	Date		Topic
37	Apr-20	M	Prep for Assignment #4 (due by May 1)
38	Apr-22	W	<i>To be announced</i>
39	Apr-24	F	<i>To be announced</i>
40	Apr-27	M	<i>To be announced</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. SafeAssign on Blackboard will detect suspicious plagiarizing. 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](http://www.temple.edu/bulletin/Responsibilities_rights/responsibilities/responsibilities.shtm#honesty)