



## Fall 2016 Syllabus

### MIS 6324: Business Intelligence Software and Techniques

**Instructor:** Dr. Radha Mookerjee, (SOM 3.209, 972-883-2415)

**Class hours:** 1:00 to 3:45 pm, Mondays

**Office Hours:** 3:00 pm to 5:00 pm on Tuesdays

**Email:** via eLearning only

**TA office hours:** TBA

#### Optional Books:

- 1) Data Mining for Business Intelligence: Concepts, techniques, and applications in Microsoft Office Excel with XLMiner, 2e, by Galit Shmueli, Nitin Patel and Peter Bruce. Wiley, ISBN-10: 0470526823, ISBN-13: 978-0470526828. **(available as an eBook from the UTD library)**
- 2) Data Mining Techniques: For Marketing, Sales, and Customer Relationship Management, 3e, by Gordon Linoff and Michael Berry. Wiley, ISBN-10: 0470650931, ISBN-13: 978-0470650936 **(available as an eBook from the UTD library)**
- 3) Getting Started with Business Analytics: Insightful Decision-Making, by David Roi Hardoon and Galit Shmueli. CRC Press, ISBN-10: 1439896534, ISBN-13: 978-1439896532
- 4) Applied Analytics Using SAS Enterprise Miner (Course Notes), by Peter Christie, Jim George, Jeff Thompson and Chip Wells. SAS e-book. **To be distributed in eLearning.**

#### Additional Reading:

Lecture notes and additional learning material will be posted in eLearning as the semester proceeds.

#### Required Software:

SAS 9.4 (Refer to the instructions in the Preliminary Information folder on eLearning)

#### Laptop Computer:

This course is heavily hands-on with many in-class exercises. Students should purchase and install SAS on their laptops promptly after first class, and to bring laptops to each class thereafter (except for exam days).

#### Course Description:

Large amounts of data are being generated daily. For instance, according to The Radacati Group, 205 billion emails were sent each day in 2015. These large volumes of data could reveal potentially useful

information about the target of interest, such as customers and products. The primary objective of this course is to introduce you to various techniques available to extract this information (business intelligence) and apply it to bring value to the organization. At the end of the semester, you will not only appreciate the substantial opportunities that exist in the BI realm, but also learn techniques that will allow you to exploit these opportunities. The course will cover general concepts in the BI field, along with popular BI techniques including association rules, clustering and classification. The focus will be on how the techniques are to be used, and the details of the methodologies will be covered only to the extent necessary to understand when and how each technique can be used. Students will also gain experience with some leading BI software over the course of the semester.

**Prerequisite:**

There are no pre-requisites for this class. Some knowledge of basic statistics and probability will be helpful.

**Student Learning Objectives / Outcomes:**

1. To learn business analytics concepts, methods and techniques.
2. To have working knowledge on using business analytics tools to solve data-driven business problems.

**Groups:**

This class involves several group assignments and one group project. Groups should comprise 4-5 students, and should be formed ASAP. Once formed, altering the groups will not be possible except in very special circumstances.

**Group Project:**

See a separate handout on the first day of class about your group project.

**Course Evaluation:**

1. *Group Assignments:* 20%
2. *Test 1 (30%):* Test on Oct 10<sup>th</sup> 2016
3. *Test 2 (35%):* Test on Nov 14<sup>th</sup> 2016
4. Group Project (15%)

**Notes:**

1. You must submit original, independent intellectual work for all academic exercises. **Students in this course suspected of academic dishonesty are subject to disciplinary proceedings, and if found responsible, the following minimum sanctions will be applied:**
  1. **Tests - F for the course**
  2. **Homework - Zero for the Assignment**
  3. **Project - Zero for the Project**

2. Make up exams: will be allowed ONLY with the prior permission of the instructor.
3. Exams are closed book, closed notes.
4. You are responsible for any announcements made in class or through eLearning, including changes to the schedule. You are also responsible for material distributed in class or through eLearning (so check eLearning regularly).
5. All assignments and project reports must be submitted through eLearning. Alternative submission methods, e.g., by paper, by e-mail or on disk/USB drive, is not acceptable. Late submissions will not be accepted.

**Grading Information**

**Approximate Grading Scale**

Scaled Score	Letter Equivalent
94 - 100	A
86 - 93	A-
81 - 85	B+
76 - 80	B
71 - 75	B-
66 - 70	C+
60 - 65	C
Less than 60	F

**Grading Policy:** Grades will be based on student performance relative to other students who have completed this course in the past as well as the students who are currently taking the course. Adherence to instructions will be considered an important part of the grade.

**Tentative Class Schedule:**

<b>Week</b>	<b>Day (s)</b>	<b>Topic</b>	<b>Assignment</b>
1	08/22/2016	Course Introduction	Form groups, get SAS
2	08/29/2016	Data Pre-processing and Principal Component Analysis	
3	09/05/2016	<b>No Class</b>	
4	09/12/2016	Association Rules	
5	09/19/2016	Association Rules; Introduction to SAS Enterprise Miner	
	09/25/2016	<b>Homework One Due</b>	
6	09/26/2016	Clustering	
	10/02/2016	<b>Project Proposal due</b> <b>Homework Two Due</b>	
7	10/03/2016	Hierarchical Clustering; Clustering in Enterprise Miner	
	10/09/2016	<b>Homework Three Due</b>	
8	10/10/2016	<b>Test 1</b>	
9	10/17/2016	Classification I: Fundamentals and Decision Trees	
	10/23/2016	<b>Project progress report due</b>	
10	10/24/2016	Classification II: Logistic Regression	
11	10/31/2016	Classification Using Enterprise Miner	
	11/06/2016	<b>Homework Four Due</b>	
12	11/07/2016	Evaluating Classifiers; Recommendation Systems and Collaborative Filtering	
13	11/14/2016	<b>Test 2</b>	
14	11/21/2016	<b>Thanksgiving Holiday: No Class</b>	
	11/27/2016	<b>Project final report due</b>	
15	11/28/2016	Project Presentations	
	12/04/2016	<b>Project Presentations due</b>	
16	12/05/2016	Project Presentations	

### **Class Attendance**

No points are awarded for attendance. However, students are expected to attend all classes and to read the assigned material. It is also the students' responsibility to keep abreast of any announcements made in class. I will post information about significant changes, if any, to the syllabus. **This is only to be used as a supplement, and not as a substitute, to announcements made in class.** I will monitor attendance in class and will provide no additional help to students who regularly skip lectures. Students are expected to come to class on time and stay for the entire class duration. Please do not distract me or the other students by walking in and out of class while the lecture is going on.

### **Comet Creed**

*This creed was voted on by the UT Dallas student body in 2014. It is a standard that Comets choose to live by and encourage others to do the same:*

**"As a Comet, I pledge honesty, integrity, and service in all that I do."**

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### **UT Dallas Syllabus Policies and Procedures**

The information contained in the following link constitutes the University's policies and procedures segment of the course syllabus.

Please go to <http://go.utdallas.edu/syllabus-policies> for these policies.

***The descriptions and timelines contained in this syllabus are subject to change at the discretion of the Professor.***