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INFO 680-01 Introduction to Data Mining for Managers

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INTRODUCTION TO DATA MINING FOR MANAGERS
INFO 680/MKTG 680
Spring 2017

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Textbooks: Fundamentals of Predictive Analytics with JMP (ISBN: 978-1-61290-425-2)
Authors: Ron Klimberg and B.D. McCullough

Practical Data Analysis with JMP (ISBN: 978-1-61290-823-6)
Author: Robert Carver

Course Description:
This introductory course will familiarize students with popular data mining methods for extracting knowledge from data. Principles of data mining will be presented and discussed, but students will also acquire hands-on experience using state-of-the-art software to develop data mining solutions to real-world business problems. The course will be delivered from both a technological view and a marketing/management view. Topics and related methods discussed in the class include: data mining processes and knowledge discovery, database support to data mining, associations, classifications and prediction, clustering, recommendation systems and developing issues in data mining.

Course Objectives:
In the last decade we have seen an explosion in the quantity of data available to businesses. Transactional data from point-of-sale scanners are now routinely available; data from direct marketing is growing exponentially; and e-commerce and web-browsing data is everywhere. Obviously, there is going to be a strong interest in extracting value or knowledge from this data. My vision of this course is to present and discuss data mining technologies and their application to data sets in an effort to support tactical and strategic business decisions. However, the over-riding focus will be learning when and how to use the technologies.

- Recognize popular data mining techniques and apply them
- Utilize a state-of-the-art commercial data mining package
- Apply popular data mining techniques to solve real-world problems

WCB Learning Goals and Objectives:
This course reinforces the following MBA program learning goals:

- Strategic Thinking and Leadership
  - Ability to demonstrate the appropriate knowledge of data mining in strategic thinking
- Ethics and Social Responsibility
  - Ability to foster an ethical climate in their roles and responsibilities in business and society
- Critical Thinking
  - Ability to clarify problems, generate and evaluate alternatives using appropriate analytical and quantitative techniques, and draw conclusions

Grade Components:

1) Homework	30%
2) Project	15%
3) Exam 1	25%
4) Exam 2	25%
5) Final Exam	5%

Exams:
There will be two exams covering material from the textbook, readings, assignments, and JMP usage. The final exam will be done in class during finals week.

Project:
There will be a course project that utilizes JMP and Excel. Details will be provided in-class.

Homework:
There will be homework assignments throughout the course covering data mining applications in JMP and Excel.

In-class work:
We will be performing a number of in-class assignments (to be applied outside of class) using JMP therefore it is important that you **attend class regularly**.

Class readings:
Published articles will be presented for reading, review, and in-class discussion. These articles will cover current trends and practices in "real-world" data mining.

Grade Distribution:

93-100	A	77-79.9	C+
90-92.9	A-	73-76.9	C
87-89.9	B+	70-72.9	C-
83-86.9	B	60-69.9	D
80-82.9	B-	Below 60	F

Course Policies:

1. I will take attendance at every class period. This is simply for my information and will only come into play if attendance is poor. In this class, if you miss, it will be extremely hard for you to catch-up because of the "learning-by-doing" emphasis.
2. Assignments are to be submitted on the due date. Late assignments will not be accepted unless prior arrangements have been made with the instructor. A score of 0 will be recorded for any assignment received beyond the due date.

Academic Honesty:
"All work submitted for academic evaluation must be the student's own. Certainly, the activities of other scholars will influence all students. However, the direct and unattributed use of another's efforts is prohibited as is the use of any work untruthfully submitted as one's own." The penalty for violation of this policy will be a zero for that assignment if it is a first offense. Subsequent violation will result in an ***F for the course***.

Tentative Schedule

Date:	Topic	Textbook
1/12	Course Introduction Introduction to JMP	Klimberg: Chapters 1 & 11 Carver: Chapters, 1, 3, & 5
1/19	Statistics Review	Klimberg: Chapter 2 Carver: Chapter 9
1/26	Finish Statistics Review Introduction to Multivariate Data	Klimberg: Chapter 3 Carver: Chapter 18
2/2	Cluster Analysis	Klimberg: Chapter 7
2/9	Regression	Klimberg: Chapter 4 Carver: Chapters 14 & 15
2/16	Regression	
2/23	Extensions/Transformations on Regression	
3/2	**EXAM #1**	**Cluster Analysis and Regression**
3/9	**SPRING BREAK - NO CLASS**	
3/16	ANOVA, Transformations	
3/23	Logistic Regression	Klimberg: Chapter 5
3/30	Decision Trees	Klimberg: Chapter 8
4/6	Neural Networks	Klimberg: Chapter 9
4/13	**Exam #2**	**Logistic Regression, Decision Trees, Neural Networks**
4/20	Model Comparison & Assessment	Klimberg: Chapter 10
4/27	Group Project Presentations	
5/4	**Final Exam**	