Course Description

Data is a key source of intelligence and competitive advantage for businesses. With the explosion of electronic data and the demand for better and faster decisions, the role of data driven intelligence is becoming central in organizations. Data mining is the process of converting “big data” into useful knowledge required to support decision-making. It automates the process of knowledge discovery, making us orders of magnitude more productive in our search for useful information than we would be otherwise. Virtually every business organization these days is in the process of exploring and implementing business intelligence solutions to core business problems. The course covers various techniques, applications and software used for data mining.

The course is recommended for students interested in understanding the techniques and applications of data mining and acquiring hands-on skills for making intelligent business decisions in data-rich organizations. No prior knowledge is required for taking this course. There are no prerequisites for this course.

Required Textbook:

Data Mining Techniques: For Marketing, Sales, and Customer Relationship Management, Third Edition

**Required Textpak:**

Cases included in the textpak

1. Business Intelligen Software at SYSCO
2. Foxwoods: Turning Data into Insights in the Hospitality Industry
3. Kyruus: Big Data's Search for the Killer App
4. ChoicePoint Inc. and the Personal Data Industry
5. Meteor Solutions: Measuring the Value of Social Media Marketing
6. Dr. Tim's Premium All Natural Pet Food: Growth Options and Web Analytics Insights

**Software:**

SAS (free, will let you know how to get SAS on the first day of class). No programming skill is needed.

**Office Hours:** Wednesday 9-11am in my office. Or schedule an appointment.

**Grading:**

<table>
<thead>
<tr>
<th>Components</th>
<th>Grades</th>
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<tbody>
<tr>
<td>Class Participation</td>
<td>15%</td>
</tr>
<tr>
<td>Homework &amp; Quiz</td>
<td>55%</td>
</tr>
<tr>
<td>Group Project</td>
<td>30%</td>
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</table>

**Participation:** Each session you can earn 0.5 point for presence, 1 for acceptable participation, 1.5 for stellar performance. Absence with proper notification received before class earns 0 point, and absence without notification earns -1.

**Groups:** I will assign groups based on your background.

**Case presentation:** There will be 6 in-class case presentations. Depending on the number of groups we have, each group will be assigned one or two cases to present, or two groups can split one case presentation. Depending on the performance of your presentation, you can get up to 2 bonus points.

**Homework:** There will be 8 homework assignments. Each could include case write-up, problem sets based on chapter reading or lectures, and SAS. There might be 0-2 surprise in-class quizzes. Because the solution to the homework will be discussed in class on the due date, late homework will not be accepted.

**SmartSite:** All materials I need to hand out to you will be distributed via SmartSite. All deliverables need to be submitted via SmartSite.

**Group Project:** There are two components for the group project. One is a SAS project for which you are given a data set to analyze. The other one is a company analysis, where you will select a company and do a study on any topic that is relevant to this class. If you have data on this company, you will earn up to 3 bonus points by doing a data analysis for the company.
Class Schedule: (Subject to change)

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<tr>
<th>No.</th>
<th>Davis</th>
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<th>Bay</th>
<th>Topic</th>
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<tbody>
<tr>
<td>1</td>
<td>April 3</td>
<td>April 3</td>
<td>April 6</td>
<td>Course Introduction</td>
</tr>
<tr>
<td>2</td>
<td>April 10</td>
<td>April 10</td>
<td>April 6</td>
<td>Modeling Data in Organizations, Building Business Intelligence using Queries, Data Warehouse, BI software SYSCO</td>
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<td>3</td>
<td>April 17</td>
<td>April 17</td>
<td>April 20</td>
<td>Market Basket Analysis &amp; Association Rules, Foxwoods Hospitality</td>
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<td>4</td>
<td>April 24</td>
<td>April 24</td>
<td>April 20</td>
<td>Market Segmentation &amp; Clustering, Boston Globe, Prepare data</td>
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<tr>
<td>5</td>
<td>May 1</td>
<td>May 1</td>
<td>May 4</td>
<td>Prediction &amp; Classification, Decision Tree, Kyruus Physician data</td>
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<td>6</td>
<td>May 8</td>
<td>May 8</td>
<td>May 4</td>
<td>Model evaluation, SAS, Project</td>
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<td>7</td>
<td>May 15</td>
<td>May 15</td>
<td>May 18</td>
<td>Personalization &amp; Nearest Neighbor, Data Privacy, Personal data, ChoicePoint</td>
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<td>8</td>
<td>May 22</td>
<td>May 22</td>
<td>May 18</td>
<td>Neural Networks, Social media marketing, Meteor</td>
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<tr>
<td>9</td>
<td>May 29</td>
<td>May 29</td>
<td>June 1</td>
<td>Web mining, Web analytics, Dr. Tim Pet Food</td>
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<td>10</td>
<td>June 5</td>
<td>June 5</td>
<td>June 1</td>
<td>Term project presentations</td>
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Reading List

Before Lecture 2
Case – Sysco

Before Lecture 3:
Case- Foxwoods; Chapter 15

Before Lecture 4:
Chapter 13

Before Lecture 5:
Case- Kyruus; Chapter 7

Before Lecture 6:
None

Before Lecture 7:
Case- ChoicePoint; Chapter 9

Before Lecture 8:
Case- Meteor; Chapter 8

Before Lecture 9:
Case- Pet food