MBAD 6211
Advanced Business Analytics
UNC Charlotte
Spring 2014

Instructor: Dr. Kexin Zhao
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Email: kzhao2@uncc.edu
Class Hours: Monday 5:30-8:15pm

Classroom: Center City 801
Office Hours: Tuesday 1:30-3:00 in my office, right before class in Center City, or by appointment
Website: Moodle 2

Course Description
This course is designed to help students apply business analytics techniques to explore and analyze big data, so they can find subtle and non-trivial relationships that are understandable, useful, and executable to business owners. Valuable insights gained via fact-based decision making can be exploited by managers in various functional areas to achieve competitive advantages. Specific topics covered in this course include: predictive modeling such as regression and decision trees; segmentation; forecasting; and text mining. A case approach will be used and SAS is the main analytical tool.

Learning Objectives
This course aims at business managers, information professionals, data analysts, as well as general audience who are interested in applying data analytics techniques to discover non-trivial relationships and to summarize data in novel ways that are understandable, useful, and executable to business owners.

This course will examine principles, ideas, and data analytics tools underlying the current practice of data mining. Specifically, students will understand basics of predictive modeling, segmentation, forecasting, and text mining. By understanding business analytics at the practical and non-highly-mathematical level, students will be able to translate information into decisions and convert information about past performance into reliable forecasts.

This course will develop understanding of practical applicability of analytics methods in a variety of business scenarios. This course will not just describe/explain the end results, but also discuss the process of formulating/refining business objectives, data selection, data preparation, model selection and evaluation that lead to the results. The students will learn how to formulate analytic tasks in support of business objectives, how to define successful projects, and how to evaluate utility of existing and potential applications of discussed technologies in practice.
This course will take a case approach, complemented by lectures, seminar style discussion, outside speakers, and lab work. This course will use statistical software SAS for hands-on experimentation with various analytics techniques.

**Course Materials**
Handouts, power-point slides, assignments, and additional helpful resources will be posted on Moodle. You can print the posted material and bring them to class. Please note that I will not provide printed copies of the posted materials in the class.


Students can also practice via SAS on-demand

**Grading**

<table>
<thead>
<tr>
<th>Component</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>Two exams (2 @ 25%)</td>
<td>50%</td>
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<tr>
<td>Group consulting project</td>
<td>25%</td>
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<tr>
<td>Assignments (4 @ 5%)</td>
<td>20%</td>
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<tr>
<td>Class participation</td>
<td>5%</td>
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<tr>
<td><strong>Total</strong></td>
<td>100%</td>
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Final letter grade will be calculated based on the following scale:

A: 90 and above; B: 80-89.9; C: 70-79.9; D: 60-69.9; E: 59.9 and below.

The course grades are posted on Moodle for informational purposes only. The official overall grade is computed and kept in the instructor’s grade book.

**Exams**
Exams are closed book and notes when they are administered in class. Questions on the exams will be taken from the assigned readings of texts, class lectures, and assignments.

If the answer to an exam question is disputed, the student should submit a written appeal, citing the source to the instructor. The instructor will take these appeals into account during grading.

Exams are a form of intellectual property belonging to those who create them. Consequently, exams must remain in my possession or under my control at all times. This means that exams may not be taken out of the room or copied. Students are encouraged to review their exams during office hours or by appointment. However, failure to return an exam after taking or reviewing it or removing an exam from my presence at any time or copying an exam will be
considered theft of intellectual property. Such action will result in an exam grade of zero and may warrant further disciplinary action.

**Missed exams**
In the event that the excuse is approved before the exam date (a rare case and requires documentation), the student will be given a make-up exam.

**Assignments**
Students need to complete four individual assignments during the course of the semester. These assignments will be submitted on Moodle before 5:00pm on the due date. Assignments submitted after the due date will be considered late. A penalty of 20% of the assignment value per day (including weekends) is assessed on late assignments beginning on the due date.

You must complete each assignment on your own. Any sharing between students will be considered a violation of the Academic Integrity Code and will result at a minimum in a grade of zero for the assignment with a possibility for further disciplinary action.

All changes in assignments or schedules will be posted on Moodle. It is your responsibility to keep up with the changes that are posted on Moodle.

**Group Consulting Project**
Students will form a group of 3 or 4 members to complete a consulting project. Detailed project background and data will be made available to students. Students also have opportunities to meet our project sponsors during the semesters for a project kickoff meeting and final project presentation.

If a group member does not contribute, the rest of the members may, after a consensus agreement, ask him/her to leave the group and notify the instructor. The maximum project grade for students not belonging to a group will be a B. If necessary, peer reviews will be factored into the grade.

**Class Policies**

**Attendance and Participation Policy**
Attendance and participation are required and will account for 5% of the final grade. Attendance may be taken at any point during the class (beginning, middle, end) and may even be checked multiple times. Tardiness or early departure is disruptive and is, of course, discouraged and will be reflected in the attendance grade as absences.

Students will be held responsible for any material covered, announcements made, assignments passed out, and any other type of work that they may miss during any absence from class.

**Class Behavior Policy**
Inappropriate behavior distracts from the ability of others to profit from their in-class experience. Such behavior includes arriving late, leaving early, talking, surfing the net, and so on.

Rude and inappropriate behavior will not be tolerated. Since it is my responsibility to provide an environment that is conducive to learning for everyone in the class, I will deduct points from the grade of any student who chooses to repeatedly distract others. In particularly egregious cases, I will have the student permanently removed from the class.

Under no circumstances will students be permitted to spend their lab time working on assignments for other classes, checking e-mail, surfing the Web, or printing out homework. Attempts to engage in such behavior will be reflected in lower grades and may lead to removal from the course.

Electronic Devices in Class
Use of cellular phones, pagers, music players, radios, and similar devices are prohibited in the classroom and laboratory facilities. Cellular phones MUST BE TURNED OFF DURING CLASS, except in cases of medical emergencies. Pagers must be set to vibrate, rather than beep. Calculators and computers are prohibited during examinations and quizzes, unless specified. Laptop-size computers may be used in lecture for the purpose of taking notes. Use of instant messaging, email or other communication technologies during class time is prohibited. Use of computing devices for purposes other than those required for the purposes of the class topic are prohibited. This includes use of laptops, lab computers, phones or other devices for Internet browsing, game playing, reading news, texting, chatting, IM and other activities not required for the class.

Grade Appeals Policy
If you believe that the grade you received on an assignment or an exam was in error or unfair, you can appeal to the professor in writing within 7 calendar days after the grades are posted. The appeal should clearly state the reasons why you believe the grade to be unfair or the nature of the error. Overdue appeals will not be considered.

Academic Integrity
THE UNC CHARLOTTE CODE OF STUDENT ACADEMIC INTEGRITY governs the responsibility of students to maintain integrity in academic work, defines violations of the standards, describes procedures for handling alleged violations of the standards, and lists the applicable penalties. The following is a list of prohibited conduct in that Code as violating these standards: A) Cheating; B) Fabrication and Falsification; C) Multiple Submission; D) Plagiarism; E) Abuse of Academic Materials; and F) Complicity in Academic Dishonesty. For more detail and clarification on these items and on academic integrity, students are strongly advised to read the current “UNCC undergraduate and graduate catalog.”

Disability Accommodations
If you have a disability that qualifies you for academic accommodations, please provide a letter of accommodation from the Office of Disability Services in the beginning of the
semester. For more information regarding accommodations, please contact the Office of Disability Services at 704-687-4355 or stop by their office in 230 Fretwell.

**Diversity**
The Belk College of Business strives to create an inclusive academic climate in which the dignity of all individuals is respected and maintained. Therefore, we celebrate diversity that includes, but is not limited to ability/disability, age, culture, ethnicity, gender, language, race, religion, sexual orientation, and socio-economic status.

**Incomplete Grade Policy**
Receiving a grade of incomplete (“I”) is not based solely on a student’s failure to complete work or as a means of raising his/her grade by doing additional work after the grade report time. An incomplete grade can be given only when a student has a serious medical problem or other extenuating circumstance that legitimately prevents completion of required work by the due date. In any case, for a student to receive an 'I' grade, the student's work to date should be passing, he/she must have completed a significant portion of the course, and the student must provide proper written proof (e.g., a doctor's note) of the extenuating circumstances.

**Course Changes Policy**
The instructor reserves the right to make any necessary changes to the course content, schedule, and policies. Changes will be announced in class and will also be posted online.
## Tentative Class Schedule

*** This tentative schedule is subject to change ***

<table>
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<tr>
<th>Week</th>
<th>Date</th>
<th>Topics</th>
<th>Due Dates</th>
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| Week 2 | Jan 13 | • Course Introduction  
• Overview of Business Analytics                                       |                    |
| Week 3 | Jan 20 | MLK Day, no class. 😊                                                  |                    |
| Week 4 | Jan 27 | • Manage Data with SAS Enterprise Guide: Advanced Tasks and Querying  | Group formation due |
|        |        | • Initial Project Kickoff Meeting                                      |                    |
|        |        | • Get Started with SAS Enterprise Miner: Rapid Predictive Modeler      |                    |
| Week 5 | Feb 3  | • Guest Speaker: Dr. Anu Brookins, Vice President of Customer Relationship Management, Belk
• Predictive Modeling: Decision Trees                           | Assignment 1 Due   |
| Week 6 | Feb 10 | • Predictive Modeling: Regression                                      |                    |
| Week 7 | Feb 17 | • Segmentation                                                         | Assignment 2 Due   |
| Week 8 | Feb 24 | • Assignment                                                           |                    |
| Week 9 | Mar 3  | Spring recess, no class. 😊                                            |                    |
| Week 10| Mar 10 | • Midterm                                                             |                    |
|        |        | • Group Project Status Update                                         |                    |
| Week 11| Mar 17 | • Forecasting                                                          |                    |
| Week 12| Mar 24 | • Guest Speaker: Dr. Doug Hague, Board Member of Analytics & Big Data Society of Charlotte
• Forecasting                                                      | Assignment 3 Due   |
| Week 13| Mar 31 | • Forecasting                                                          |                    |
| Week 14| Apr 7  | • Guest Speaker: Jim Zhang, Executive Vice President of Analytics, Fuzzy Logix
• Forecasting                                                      |                    |
| Week 15| Apr 14 | • Text Mining                                                          |                    |
| Week 16| Apr 21 | • Text Mining                                                          | Assignment 4 Due   |
| Week 17| Apr 28 | Final Exam                                                             |                    |
| Week 18| May 5  | Group Project Presentation                                             |                    |