MBAD6201-U90/DSBA 6201 – U90
Business Intelligence and Analytics
Spring 2019

INSTRUCTOR: Dr. Sungjune Park
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OFFICE HOURS: Tue 12:00 pm – 1:00 pm & 3:45 pm – 4:15 pm (Center City),
                      Thu 4:30 pm – 5:30 pm & 8:15 pm – 8:45 pm (Center City),
                        and by appointment
CLASS HOURS: Thu 5:30 pm - 8:15pm, Center City Building 601

COURSE DESCRIPTION

An overview of the business approach to identifying, modeling, retrieving, sharing, and evaluating an enterprise's data and knowledge assets. Focuses on the understanding of data and knowledge management, data warehousing, data mining (including rule-based systems, decision trees, neural networks, etc.), and other business intelligence concepts. Covers the organizational, technological and management perspectives.

Prerequisites: MBAD 5121 or equivalent.

LEARNING OBJECTIVES

Business intelligence (BI) is a broad category of applications and technologies for gathering, storing, analyzing, and providing access to data to help enterprise users make better business decisions. BI applications include the activities of decision support systems, query and reporting, online analytical processing (OLAP), statistical analysis, forecasting, and data mining. The learning objectives of the course are thus:

1. To understand the role of business intelligence and analytics in today's competitive and turbulent business environment.
2. To be familiar with the terminology of the field, basic principles, and concepts of business intelligence and analytics.
3. To learn how to use and apply key methods for analytics (e.g., regression, decision trees, clustering, and association rule).
4. To use a range of tools (e.g., R, SAS Enterprise Guide/Enterprise Miner, IBM SPSS Modeler) appropriate for data analytics problems.

COURSE MATERIALS

- Handouts, slides, assignments, and online resources will be posted on Canvas.

- Textbook: There are <u>no required textbooks</u> as students will be provided with enough materials for each topic on Canvas. But, recommended texts are as follows:
  - *An Introduction to Statistical Learning: with Applications in R* by James, Witten, Hastie, and Tibshirani, ISBN-13: 978-1461471370
  - *Data Science for Business: What you need to know about data mining and data-analytic thinking* by Provost and Fawcett, ISBN-13: 978-1449361327
  - *Data mining: concepts and techniques* by Jiawei Han, Micheline Kamber, and Jian Pei. Elsevier, 2011, ISBN-13: 978-0123814791
- A scientific calculator that can do exponential and log calculations.

GRADING

Component	Points
Exams (2)	60
Assignments (5)	35
Class Participation/Attendance	5
Total	**100**

Final grades will be based on the following scale.
A: 90 and above, B: 80-89.9, C: 70-79.9, U: 69.9 and below.

EXAMS

An opportunity to take an early or make-up exam is given to a student only if he/she provides legitimate and documented reasons. Permission must be obtained from the professor before the scheduled exam time. The format of make-up exams may differ from the format of the regularly scheduled exam.

Exams are **closed** book and notes when they are administered in class. The instructor will keep all exams. However, exam reviews are available during office hours or by appointment for 10 days after exam grades are posted. All exam grades will be posted on Canvas.

ASSIGNMENTS

Assignments will be posted at the end of the class at least a week before they are due. Solutions must be provided via Canvas only. Detailed information on assignments' tasks and expected work will be given with each assignment. Assignments are due on the given day with the start of class (5:30 pm) unless stated otherwise. In the case of a late submission on the same day, 20% of the points earned from the submission will be deducted. After the due date, the late homework may be accepted, but with a 50% penalty. Once the grade is posted or a week has passed after due date, whichever comes first, you will receive a 0 for the late assignment.

Each student must develop his or her own solutions to the assigned homework. Students may not "work together" on homework assignments. Such collaboration constitutes cheating unless it is a group assignment. A student may not use or copy (by any means) another's work (or portions of it) and represent it as his/her own.

ATTENDANCE POLICY

Students are expected to attend all classes. Attendance will be taken at each class, and unexcused absences will result in zero participation point. Therefore, you must inform me ahead of time of your expected absence, tardiness, or early departure. Tardiness or early departure is highly disruptive and is strongly discouraged in my class.

ELECTRONIC DEVICES IN CLASS

Students are permitted to use computers or tablets during class for **note-taking and other class-related work only**, but this should be done without distracting other students and without distracting you from the topic of discussion. Those using computers during class for work not related to that class must leave the classroom for the remainder of the class period.

The use of cell phones, smart phones, or other mobile communication devices is disruptive and is therefore prohibited during class. Cellular phones MUST BE TURNED OFF/SILENCED DURING CLASS. Students are strongly discouraged from checking their instant messaging, emails, or other communication technologies during class time. Calculators and computers are prohibited during examinations and quizzes unless specifically allowed by the instructor.

Students violating the electronic devices policies will be marked for disruptive behavior and may be asked to leave the class. Their grade will also be affected accordingly.

CLASS CONDUCT

Disruptive behavior in class distracts from the ability of others to profit from their in-class experience. Such disruptive behavior includes arriving late, leaving early, cell-phone interruptions, checking e-mail, surfing the net during the class, spending class time working on assignments for other classes, side conversations between two or more students during lecture, unnecessary comments that add no value to class, and any activities that negatively impact the ability of other students to learn and/or listen in class. Such behavior will be considered rude and inappropriate and will not be tolerated.

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."

GRADE APPEALS

If you believe that the grade you received on an assignment, exam or other graded course component was in error or unfair, you can appeal to the professor in writing within 10 calendar days of the receipt of your grade. 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.

INCOMPLETE GRADE POLICY

The incomplete 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 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 cases, the student's work to date should be passing, and the student should provide proper written proof (e.g., a doctor's note), in order to get an 'I' grade.

DISABILITY ACCOMMODATIONS

UNC Charlotte is committed to access to education. If you have a disability and need academic accommodations, please provide a letter of accommodation from Disability Services early in the semester. For more information on accommodations, contact the Office of Disability Services at 704-687-0040 or visit their office in Fretwell 230.

COURSE SCHEDULE

The Instructor reserves the right to change the course contents and schedule. The up-to-date course schedule is available on **Canvas**. Important announcements, specific policies regarding exams, etc. are also available on Canvas. It is the student's responsibility to be aware of any changes in the course schedule, course contents, and course policies by visiting Canvas regularly.

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.

Tentative schedule

Date	Topic	Due Dates
Jan 10	Introduction Business Intelligence and Analytics Overview Analytics tools (R and SAS)	
17	A short introduction of R Statistics Review	
24	Regression	
31	More on Regression	
Feb 7	Data Warehousing	**Regression Assignment**
14	Classification - Logistic Regression, Naive Bayesian, kNN, LDA, ...	**Data Warehouse Assignment**
21	Classification - Model Evaluation	
28	**Exam 1**	
Mar 7	Spring Recess – No class	
14	ROC / Decision Trees	
21	Decision Trees	**ROC Assignment**
28	Clustering	**Decision Tree Assignment**
Apr 4	Clustering / Association Rule Mining	
11	Association Rule Mining	**Clustering Assignment**
18	Neural Networks / Text Mining	**Association Rule Assignment**
Apr 25	**Exam 2**	
May 9	**Comprehensive Final Exam (optional)**	

AMAZON WORKSPACES

This course utilizes **Amazon Workspaces**. This application will allow you to access a VIRTUAL desktop in the Cloud anywhere, anytime; there's no need to use the campus computer labs! This VIRTUAL desktop has all of the software that you need for this course.

There are a few things you need to do prior to class starting.

Here's what you need to know and do:
- When you actually use Amazon Workspaces will depend on your professor and the curriculum.
- You will need to bring a personal device with you to class. We recommend at least an 11" screen and a keyboard; most mobile devices are too small to be used effectively. The operating system doesn't matter but you will need to have access to a browser: Internet Explorer, Firefox, Chrome or Safari.
- You need to install the Workspaces Client (before your first class; use this registration code: **SLiad+AGMR58** - this should take less than 5 minutes.
  - Windows and macOS
  - Android Tablets, Chromebooks, iPads
- Get connected to eduroam prior to your first class. If you have problems, contact the IT Service Desk, 704-687-5500.
- You should store your files to your Google Drive account.

PLEASE NOTE: You can use this workspace all semester but it will **expire May 17**. Any data stored on the virtual desktop must be moved prior to that date.

See these FAQs for more details. If you have any questions or problems, please contact the IT Service Desk at 704-687-5500 or drop by the Walk-Up Service Desk in Atkins Library, room 140C (on the main floor).