DSBA 6100-U01/U90 - Big Data Analytics for Competitive Advantage
(Cross listed as MBAD7090, ITCS 6100, HCIP 6103)
==Fall 2016 (Revised from previous semesters)[1]==

DSBA 6100-U01 class will meet 12.00noon-2.45pm in 504 Center City Building.
DSBA 6100-U90 class will meet 5.30pm-8.15pm in 606 Center City Building.

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Fall 2016 office hours: posted on Moodle class page

TA: Mr. Manohar Kilaru (mkilaru@uncc.edu)

Sessions on Text Analytics will be delivered by **Dr. Wlodek W Zadrozny**, Department of Computer Science, College of Computing and Informatics.

Course Description
This course provides an introduction to the use of big data analytics as a strategic resource in creating competitive advantage for businesses. A focus is placed on integrating the knowledge of analytics tools with an understanding of how companies could leverage data analytics to gain strategic advantage. An emphasis is placed on developing the ability to think critically about complex problems/questions in real world data science and business analytics (DSBA) challenges.

Course Objectives
1. Understand the role of big data analytics in organizational strategy and how organizations can leverage useful data/information to gain competitive advantage and acquire insights.
2. Gain an introductory knowledge of the data science and business analytics tools that are useful in extracting intelligence and value from data.
3. Apply big data analytics tools to analyze business opportunities and threats.
4. Using actual business cases/examples, develop data-driven strategies that enhance stakeholder relationships, open new market opportunities, and/or better position the organization for competitive advantage during industry transition.

This class is **not** about mastering Hadoop computer code or Python programming or deriving data mining formulas. As such, you will not be taught any programming or Hadoop coding in this class. Rather, the focus is on an awareness of the tools and techniques in big data analytics and how they can

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[1] This syllabus may be subject to minor changes during the semester after adequate advance notice to students.

be leveraged to address business opportunities and problems. This course also emphasizes the critical thinking and problem-solving to achieve competitive advantage with big data.

Instructional Method
This course will take a business case & problem-solving approach, complemented by lectures, seminar style discussions and outside speakers. Students will be introduced to several topics and tools through business cases and problems with emphasis on how to use them to generate firm value. Students should bring laptops with them to class for hands-on exercises.

Credit Hours
This is a 3 credit hour course. Thus, the course has been designed to require about 10 hours/week (about 3 hours outside of class for every 1 credit hour) between readings, quizzes, and exercise/project work. If a student has limited backgrounds in certain topical areas, they might need to spend additional time to keep up with other students in the course.

Reading Materials
Details of all reading materials for this class will be posted on Moodle.

  Required Readings: All students are required to purchase a course-packet consisting of 3 business cases. Please go to this link http://cb.hbsp.harvard.edu/cbmp/access/51627483 and follow the instructions to purchase the course pack. The cost for the course pack is $12.75 before tax. You may have to register at the above link in order to access the course pack. This is the only course materials purchase expected for this class.

  There is no required textbook that students must purchase for this class. The instructor may recommend some useful books that will enhance your understanding of the area of data science and business analytics. However, exams, homework, quizzes, and other class work will not be assigned from these recommended books, unless the instructor posts power points from these materials for class discussion and designates the power points as study materials.

  Supplemental Required Readings (NO PURCHASE REQUIRED): The required readings may also include topical articles and other materials, which are free resources, and will be posted or hyperlinked on the class Moodle page before the scheduled date of discussion of the material.

Grading

The final grade will be determined on the following weights[2]:

Homework Exercises and Cases	200 points (20%)
In-class Participation Activities, including quizzes and short assignments	100 points (10%)
Exams (2 x 250 points)	500 points (50%)
Group Project & Presentation, including mid-term deliverables	200 points (20%)

Final letter grades will be based on the following totals:

900 and above	A (Superior Performance)
800-899.99	B (Good Performance)
650-799.99	C (Average Performance)
Below 650	U (Unsatisfactory)

Group Project Overview (details will be explained in class)

Each group will be required to develop a big data strategy for a given well-known company. For each company, an initial problem-setting will be provided (examples include a company facing increased customer churn, a company falling behind in innovation, a company losing money on its operations, a health practice dealing with high patient dissatisfaction). The group will apply their learning and their own research to provide big-data driven solution for the assigned company. The solution should include describing the problem in competitive strategy terms (i.e., operational excellence, product leadership, market growth, etc.), articulating how big data and analytics can be used to address the core problem, describing the internal and external data needed and plans for obtaining the data, explaining the data analytics techniques most appropriate and presenting the findings and recommendations to senior management of the assigned company. Each group will be expected to submit a mid-term report and a final report. Each group will also be expected to make a mid-term and final presentation.

Attendance

Students are expected to attend all class meetings and to arrive before the class starts. Class topics are integrated, with each week building on prior weeks. Failure to attend or to arrive on time can adversely affect both individual performance, ability to contribute to the group project, and the earned letter grade. *If a student misses 3 weeks of class or more, they will automatically receive an unsatisfactory U grade in the course regardless of earned points to date on other activities*. If a student misses a class

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[2] Any changes to the grading components or weights will be at the discretion of the instructor and will be communicated to the students well in advance.

due to work or other reasons, it is their responsibility to get notes from peers; instructors do not hold extra repeat class sessions.

Quizzes & Participation

There will normally be short (up to 10 question) quizzes that occur at the beginning of class that ask questions about the assigned readings for that class period. If there are no readings or under other circumstances, there might be a short activity instead. Once grading has started or work has been collected, late arrivals cannot make them up. (If one arrives during a quiz, they can immediately start on it, but no time extension will be made). Quizzes are graded using the quiz rubric shared in class during the first grade.

Exercises and Cases

Cases and exercises help participants practice read/discussed topics. Some cases and exercises will involve the entire class discussing a situation while others will be team-based discussion/answers. The instructors may randomly assign the teams for the exercises and cases. Exercises and cases will always be posted and/or announced at least one week in advance of the due date.

Extra Credit Opportunities

Descriptions of extra credit opportunities, if any, will be posted to class page on Moodle. However, it is strongly encouraged that students do not rely on extra credit to improve their grades as we may end up with very few or no extra credit opportunities in the semester.

Civility

The University strives to create an inclusive academic climate in which the dignity of all individuals is respected and maintained. We celebrate diversity that is beneficial to both employers and society at large. Students are strongly encouraged to actively appropriately share their views in class discussions.

Academic Integrity/Honesty

Students have the responsibility to know and observe the requirements of The UNC Charlotte Code of Student Academic Integrity available online at http://legal.uncc.edu/policies/up-407. This code forbids cheating, fabrication or falsification of information, multiple submissions of academic work, plagiarism (which includes viewing others work without instructor permission), abuse of academic materials, and complicity in academic dishonesty. ***This forbidding includes sharing/copying work between individuals or teams without permission of instructors.*** Any special requirements or permission regarding academic integrity in this course will be stated by the instructor, and are binding on the students. Students who violate the code can be expelled from UNC Charlotte. The normal penalty for a first offense is zero credit on the work involving dishonesty and further substantial reduction of the course grade. In almost all cases the course grade is reduced to failing. Students are expected to report cases of academic dishonesty to the course instructor.

Inclement Weather

University Policy Statement #13 states the University is open unless the Chancellor announces that the University is closed. The inclement weather hotline number to call is 704-786-2877. *In the event of inclement weather, check your email the morning of class.* The instructors will use their best judgment

as to whether class should be held understanding that some of you commute from far away and the instructors will notify you by email if class is cancelled.

Other Information

χ Students are responsible for **all** announcements made in class and on the class online resources. Students should check the online class resources **throughout** the semester. The instructors will send occasional emails with important information to the class listing in the Banner system. It is the **students**' responsibility to make sure that their email addresses are accurate.

χ The instructors will discuss grades **only** in person (and not via telephone or e-mail) and only with the student (not with parents, spouses, etc). The instructors may not answer student e-mails other than related to scheduling appointments. Office hours for each week will be posted online each week.

χ The instructors may **modify the class schedule and syllabus** during the course of the semester depending upon the progress of the class.

χ By attending class beyond the first week, students agree to follow the framework and rules related to this course, which are described above.

Class Schedule & Changes

The tentative schedule for this class is given below. However, the instructor reserves the right to make any necessary changes to the course content, schedule, and policies as appropriate without adversely affecting the learning objectives. ==Please always refer to the latest class schedule and announcements posted on the Moodle class page==.

Date	Theme/Topic of Discussion (The reading materials for each week's class are posted on Moodle)
24-Aug	Class overview, Syllabus, Software Big Data, Analytics and Competitive Advantage
31-Aug	Big Data Sourcing and Management: The Acquisition, Collection, Storage and Analysis of Big Data
7-Sep	Big Data Wrangling/Munging: Cleaning, Transforming, and Classifying Big Data
14-Sep	Text Mining of Big Data Text Search and Classification **(Dr. Wlodek Zadrozny)**
21-Sep	Clustering, Bayes Theorem, & Naïve Bayes Classification of Text Sentiment Analysis **(Dr. Wlodek Zadrozny)**

Date	Theme/Topic of Discussion (The reading materials for each week's class are posted on Moodle)
28-Sep	Big Data Visualization and Exploratory Analysis
5-Oct	Business Narratives and Communicating Big Data Insights with Story-telling Big Data Statistical Considerations Frequentist vs Bayesian Approaches
12-Oct	**Exam 1**
19-Oct	Big Data Predictive Modeling: A Survey of Predictive Models to Discover Business Opportunities and Manage Threats
26-Oct	**Mid-term Project Presentations**
2-Nov	Big Data Predictive Modeling: A Survey of Predictive Models to Discover Business Opportunities and Manage Threats
9-Nov	Big Data Classification and Association Modeling
16-Nov	Firm Strategies for Competitive Advantage with Big Data – Analyzing the Business Case
23-Nov	Firm Strategies for Competitive Advantage with Big Data – Making the Business Case
30-Nov	Big Data Ethics and Privacy Issues Big Data Trends: Predicting Big Data's Future
7-Dec	**Final Project Presentations**
14-Dec	**Final Exam**

<u>Have a great semester at UNCC.</u>

The University of North Carolina Charlotte 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.