

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

Classroom:	City Center Building 801	Instructor:	Lina Zhou
Class Hours:	Tu 5:30PM – 8:15PM	Office:	Friday Building – 363C
Teaching Assistant	Sthanu Ramakrishnan	Email:	lzhou8@uncc.edu
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Office Hours:	Tu 12:45 pm – 1:45 pm & 4:30 pm – 5:30 pm (Center City), Th 10:30 - 11:30 am and by appointment		
Content Access:	Canvas (canvas.uncc.edu)		

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.

Course 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) appropriate for data analytics problems.

Prerequisites: MBAD 5121 or equivalent

Course Material

There is **no required textbook** for the class. The following are **recommended Texts:**

- *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

Lecture slides, handouts, assignments, and online resources will be posted and managed on Canvas.

A scientific calculator that can do exponential and log calculations.

Course Grading

Each student can earn a maximum of 100 points (100%) by completing the required tasks successfully. A letter grade will be awarded at the end of the semester as your final grade based on your total points.

Item	Percentage in Final Grade
Exams (2 @ 32%)	64%
Assignments (5 @ 6%)	30%
Class Participation	6%
Total	100%

Final letter grade will be calculated based on the following scale:

- A: 90 and above;
- B: 80-89;
- C: 70-79;
- D: 60-69;
- F: 59 and below.

The course grades are posted on Canvas 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. The quizzes, mid-term exams and final exam may contain material that is not in the slides or handouts but was covered in the class.

The instructor will keep all exams. However, exam reviews are available during office hours or by appointment for 7 days after exam grades are posted. All exam grades will be posted on Canvas. 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: 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**. If an exam is missed, a comprehensive exam covering all material for the course will be given during the final exam week. For students missing more than one exam, the comprehensive will count towards one exam only. There will be no makeup exam for a missed comprehensive exam. The format of make-up exams may differ from the format of the regularly scheduled exam.

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 at 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 a violation of the Academic Integrity Code 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. These academic misconduct will result in a grade of zero for the assignment at a minimum with a possibility for further disciplinary action.

Class Participation

Students are expected to attend every class and remain in class for the duration of the session. Failure to attend class or arriving late may impact your ability to achieve course objectives. Attendance will be taken at each class, and one unexcused absence is allowed each semester before your participation grade is impacted negatively, which will result in zero participation point. Therefore, you must inform me ahead of time of your expected absence, tardiness, or early departure.

An absence, excused or unexcused, does not relieve a student of any course requirement. Regular class attendance is a student's obligation, as is a responsibility for all the work of class meetings, including tests and written tasks. You are responsible for all lecture material regardless of whether you attend each class. Please note that office hours are not to be used as a substitute for class attendance. Failure to attend class will affect the class participation portion of your grade.

The default grade for class participation is a B. To achieve a better grade, a student must participate in class in a noteworthy way. Failure to contribute sufficiently to class will result in a grade lower than B. The class will be conducted in an atmosphere of mutual respect. You are encouraged to have active participation in class discussions. Each of us may have strongly differing opinions on the various topics of class discussions. The conflict of ideas is encouraged and welcome. The orderly questioning of the ideas of others, including the instructor, is similarly welcome. However, the instructor will exercise responsibility to manage the discussions so that ideas and argument can proceed in an orderly fashion. You should expect that if your conduct during class discussions seriously disrupts the atmosphere of mutual respect, you will not be permitted to participate further.

To get exposed the breadth of business intelligence and analytics and to promote knowledge sharing, each student will have a chance to give a short presentation (~5 minutes) on a selected article on business intelligence and analytics.

- The presentations will be scheduled throughout the semester by the instructor.
- The presentation will be based on your selected article from an academic or trade journal or a conference. The article should contain significant content.
- Your presentation is expected to cover *problem context*, *methods*, and *findings* of the selected article.
- You are encouraged to prepare a presentation file in support of your presentation. The presentation file should be submitted to Canvas by **5:00pm on the day of your scheduled presentation**.

Class Policies

Attendance and Participation Policy

Attendance and participation are required and tardiness or early departure is disruptive and is, of course, discouraged. 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. 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.

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. 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. 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 unless being used as a part of Poll Everywhere or at the instructor's discretion. Except in emergencies, those using such devices must leave the classroom for the remainder of the class period.

Calculators, computers, smart phones, or smart watches are prohibited during examinations and quizzes, unless specified. Electronic video and/or audio recording is not permitted during class unless the student obtains permission from the instructor. If permission is granted, any distribution of the recording is prohibited. Students with specific electronic recording accommodations authorized by the Office of

Disability Services do not require instructor permission; however, the instructor must be notified of any such accommodation prior to recording. Any distribution of such recordings is prohibited.

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.

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

University regulations will be strictly enforced in all cases of academic irregularities, cheating or plagiarism or any variations thereof. Students assume full responsibility for the content and integrity of the academic work they submit. The guiding principle of academic integrity shall be that a student's submitted work, examinations, reports, and projects must be his/her own work.

All UNCC students have the responsibility to be familiar with and to observe the requirements of The **UNCC Code of Student Academic Integrity** (see the Catalog and also <http://integrity.uncc.edu/>). This code forbids cheating, fabrication or falsification of information, multiple submission of academic work, plagiarism of written materials and software projects, abuse of academic materials (such as library books on reserve), and **complicity in academic dishonesty** (helping others to violate the code). Additional examples of violation of the Code include:

- Representing the work of others as your own.
- Using or obtaining unauthorized assistance in any academic work.
- Giving unauthorized assistance to other students.
- Modifying, without instructor approval, an examination, paper, record, or report for the purpose of obtaining additional credit.
- Misrepresenting the content of submitted work.

Students are expected to report cases of academic dishonesty they become aware of to the course instructor who is responsible for dealing with them.

Any further specific requirements or permission regarding academic integrity in this course will be stated by the instructor, and are also binding on the students in this course.

Students who violate the code can be punished to the extent of being permanently expelled from UNCC and having this fact recorded on their official transcripts. The normal penalty 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 "F."

Disability Accommodations

UNC Charlotte is committed to access to education. If you have a disability and need academic accommodations, please send me your accommodation letter as early as possible. You are encouraged to meet with me to discuss the accommodations outlined in your letter. For more information on accommodations, contact the Office of Disability Services at 704-687-0040 (Fretwell 230).

Diversity and Inclusion

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.

Religious Accommodation for Students Policy

The instructor will observe University Policy 409 (<https://legal.uncc.edu/policies/up-409>) on matters of religious accommodation. Please note that the procedure prescribed by this policy requires a notice to the instructor prior to the census date of the semester.

Course Changes Disclaimer

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.

Copyright Ownership in Course Materials

The lectures and course materials, including presentations, tests, exams, outlines, and similar materials, are protected by copyright. The instructor is the exclusive owner of copyright in those materials created by the instructor. You are encouraged to take notes and make copies of course materials for your own educational use. However, you may not, nor may you knowingly allow others to reproduce or distribute lecture notes and course materials publicly without express written consent of the instructor. This includes providing materials to commercial course material suppliers such as CourseHero and other similar services. Students who publicly distribute or display or help others publicly distribute or display copies or modified copies of an instructor's course materials may be in violation of University Policy 406, The Code of Student Responsibility. Similarly, you own copyright in your original papers and exam essays. If the instructor is interested in posting your answers or papers on the course web site, the instructor will obtain your written permission.

Tentative Class Schedule

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

Week	Date	Topics	Due Dates
Week 1	Aug 20	<ul style="list-style-type: none"> • Introduction • Business Intelligence and Analytics Overview 	
Week 2	Aug 27	<ul style="list-style-type: none"> • A Short Introduction to Analysis Tool R • Statistics Review 	
Week 3	Sep 3	<ul style="list-style-type: none"> • Regression 	
Week 4	Sep 10	<ul style="list-style-type: none"> • More on Regression 	
Week 5	Sep 17	<ul style="list-style-type: none"> • Data Warehousing 	Regression Assignment
Week 6	Sep 24	<ul style="list-style-type: none"> • Classification — Methods 	Data Warehousing Assignment
Week 7	Oct 1	<ul style="list-style-type: none"> • Classification — Model evaluation 	
Week 8	Oct 8	Fall Recess, no Class 😊	
Week 9	Oct 15	<ul style="list-style-type: none"> • ROC • Decision Trees 	
Week 10	Oct 22	Exam 1	
Week 11	Oct 29	<ul style="list-style-type: none"> • Decision Trees 	ROC Assignment
Week 12	Nov 5	<ul style="list-style-type: none"> • Clustering 	Decision Tree Assignment
Week 13	Nov 12	<ul style="list-style-type: none"> • Clustering • Association Rule Mining 	
Week 14	Nov 19	<ul style="list-style-type: none"> • Association Rule Mining 	Clustering Assignment
Week 15	Nov 26	<ul style="list-style-type: none"> • Neural Networks • Text Mining 	Association Rule Assignment
Week 16	Dec 3	Exam 2	
Week 17	Dec 10	Optional Comprehensive Exam (cumulative)	