

Business Intelligence and
Analytics
Fall 2023

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Office Location: Friday 352C
Office Hours: Tuesday 12:00 pm – 1:00 pm and Thursday 12:00 pm – 1:00 pm
Office Hours Zoom link: <https://charlotte-edu.zoom.us/j/93972871460?pwd=c3NXTTk3bnJCRWZPOERuN3gxZHJPUT09>
Passcode: 6201

Teaching Assistant: Ravalika Reddy Aduri
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TA Office Hours: Monday 3:00 pm – 4:00 pm
Wednesday 12:00 pm – 1:00 pm
Friday 12:00 pm – 1:00 pm
TA Office Hours Zoom Link: <https://charlotte-edu.zoom.us/j/94054192397>

Course: MBAD 6201/ DSBA 6201
Website: canvas.uncc.edu
Class Hours: Monday 12:00 pm – 2:45 pm
Venue: CITY 901

Important Update for Fall 2023 semester

Our class will be a fully in-person class in Fall 2023. This means that there will be no remote participation option available for students for any reason. All students must follow the updates and instructions posted on <https://ninernationcares.charlotte.edu/>. For your own health and safety and that of your friends and families make sure to adhere to the health and safety guidelines posted on the above links. Please do not treat these guidelines lightly.

Course Materials

Handouts, Power-point Slides, and Assignment Help documents will be posted on Canvas

Course Objectives:

As we transition from an industrial to a knowledge economy, an organization's ability to create and successfully leverage data and knowledge assets will be an important competitive factor.

Data management includes an understanding of issues relating to modeling, using, securing, and sharing the organizational data resources. This course will focus specifically on the understanding of data warehousing, data mining (including rule-based systems, decision trees etc.) and other knowledge management concepts.

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. This course will cover in depth major aspects of Business Intelligence; statistical methods such as Regression, Logit, Clustering, Decision trees to analyze raw data and to gain key insights.

Knowledge management is an emerging discipline of how to effectively deploy technology, organizational practices, and processes to increase an organization's return on its knowledge capital.

This course will examine data and knowledge management from organizational, technological, and management perspectives.

Software: Apporto, Python, SAS 9.4, and SAS Enterprise Miner

Fall 2023 course schedule

Week	Date	Topic	Homework DUE	Mode of Instruction
Week 1	21-Aug	Introduction and course overview, Regression, Main Article: Big Data in Big Companies		In Class
	23-Aug		Main Article Summary Discussion	Assignment Due
Week 2	27-Aug		Introduction to SAS Bootcamp	Assignment Due
	28-Aug	Regression		In Class
	2-Sep		Regression Class Participation	Assignment Due
Week 3	3-Sep		Overview on Statistics SDS Bootcamp	Assignment Due
	4-Sep	Labor Day - No Class		
Week 4	11-Sep	Data Warehousing / Regression Assignment in Class	Regression Assignment	In Class Assignment Due
Week 5	18-Sep	Data Warehousing		In Class
	21-Sep		Data Warehousing Class Participation	Assignment Due
Week 6	24-Sep		Data Warehousing Assignment	Assignment Due
	25-Sep	Decision Table		In Class
	28-Sep		Decision Table Class Participation	Assignment Due
Week 7	1-Oct		Decision Table Assignment	Assignment Due
	2-Oct	ROC		In Class
	5-Oct		ROC Assignment	Assignment Due
Week 8	9-Oct	Exam I (Will include everything till ROC Curves)		In Class
Week 9	16-Oct	Decision Trees		In Class
	19-Oct		Decision Trees Class Participation	Assignment Due
Week 10	22-Oct		Decision Trees Assignment	Assignment Due
	23-Oct	Student Recess - No class		
Week 11	30-Oct	Logit		In Class
	2-Nov		Logit Class Participation	Assignment Due
Week 12	6-Nov	SAS Enterprise Miner Lab Class / Logit Assignment in Class	Logit Assignment	In Class Assignment Due
Week 13	13-Nov	Clustering		In Class
Week 14	20-Nov	Clustering/ Guest Speaker		In Class
	22-Nov		Clustering Class Participation	Assignment Due
Week 15	26-Nov		Clustering Assignment	Assignment Due
	27-Nov	Association Rule Mining		In Class
	30-Nov		Association Rule Mining Class Participation	Assignment Due
	2-Dec		Association Rule Mining Assignment	Assignment Due
Week 16	4-Dec	Exam II (Everything covered after Exam I)		In Class
Week 17	10-Dec		SAS Enterprise Miner Project Due	Assignment Due
	11-Dec	Optional Comprehensive Final (Entire course Material)		In Class

Bootcamp courses

There are two Bootcamp courses described below that you are required to complete for this course. Each is a Canvas course and you can register for the boot camps at <https://dsba.charlotte.edu/current-students/sds-bootcamp-courses>.

Registration Link -

https://docs.google.com/forms/d/e/1FAIpQLScD_6VZRcME_mHKKZDyaPZrYRR6NZCwZmODxHURE4HhVKzKQA/viewform

Statistics for Data Science Overview (30 points): You can complete each module in the course or pass the comprehensive assessment and get a completion certificate. Only then will you get credit for the 30 points in this class. The estimated time required for completion is 10 hours. It is recommended to complete these as soon as possible.

Introduction to SAS (20 points): You must complete Modules 1-4 to get credit for the 20 points in this class. The estimated time required for completion is 5 hours. It is recommended to complete these as soon as possible.

Which training course(s) are you registering? *

- Overview of Statistics for Data Science
- Introduction to Python For Data Science
- Introduction to R For Data Science
- Introduction to SAS

Credit Hours

This is a 3-credit hour course. Thus, the course has been designed to require on average about 10 hours/week (about 3 hours outside of class for every 1 credit hour) between readings, quizzes, and exercise/project work. Of course, the hours may be more or less than indicated above depending on the assignments, cases, exams, or project work due. If a student has limited background in certain topics, they might need to spend additional time to keep up with other students in the course.

Grading: We are planning to use Canvas to help with the course and grading

Exams	550
Assignments (Total 8 <i>excluding</i> SAS project)	300
SDS Bootcamp	50
SAS Predictive Modeling	40
SAS Association Rule Mining	10
Class Participation.	50
Total	1000

Grades will be posted on Canvas after each exam or assignment is graded. Access to your grades will be through Canvas.

Final grades will be based on the following scale: A >899, B-800-899, C-700-799, D-600-699, F <600. In addition, students are expected to receive an average of 65% in the three exams in order to receive a grade of C or better.

Exam Policy:

It should be noted that the course has 3 exams – 2 required exams (Exam 1 and Exam 2) and 1 optional exam (Comprehensive Final). Two exams with the highest scores will be considered towards the final grade. This implies that if the student chooses to take all 3 exams, the exam with the lowest score will not be considered for the final grade calculation.

During the exam session:

1. You need to put away all notes and cell phones prior to starting the exam.
2. You are only permitted to access the Exam questions on Canvas.
3. You are prohibited from:
 - Browsing any website other than Canvas
 - Open any files from your machine or from elsewhere.
 - Access to any help resource other than SAS Help via the SAS software portal.
4. At any point during the Exam the Professor or the TA may ask you to show all content being accessed on your machine. Don't be offended. This is necessary

ANY VIOLATION OF THE ABOVE RULES WILL CONSTITUTE A VIOLATION OF SCHOLASTIC HONESTY AND WILL RESULT IN YOUR RECEIVING A "U" IN THIS COURSE, A "U" IN ANY GRADUATE COURSE WILL RESULT IN YOUR REMOVAL FROM THE PROGRAM AS PER GRADUATE SCHOOL REQUIREMENTS.

Missed Exam Policy:

There are no accommodations for missed exams. However, if you have a medical emergency or are representing the university for any reason you will be allowed to take up a make-up exam if and only if proper documentation is provided. The final decision rests with the course instructor.

Assignments:

Problem Solving Assignments

These assignments will involve the use of concepts discussed and taught in class. **Assignments must be submitted through Canvas; submission of electronic copies by e-mail or disk is *not* acceptable. Your NAME and ID should appear on the top of each page that you submit.** All assignments should be completed on time and submitted on Canvas before the submission deadline as shown on Canvas.

Students violating these policies will be marked for disruptive behavior and may be asked to leave the class. Their grade will also be affected according to the rules of class participation points (pages 2 and 3 of this document).

Accommodation for Disabilities

In compliance with the Americans with Disabilities Act (ADA), all qualified students enrolled in this course are entitled to “reasonable accommodations.” Please notify the instructor during the first week of class of any accommodations needed for the course.

Academic integrity

As a program that helps to create business and government leaders, the College of Business has an obligation to ensure academic integrity is of the highest standards. Standards of academic integrity will be enforced in this course.

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 that of the student's 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). 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.

For this class, it is permissible to assist classmates in general discussions of computing techniques. General advice and interactions are encouraged. Each person, however, must develop his or her own solutions to the assigned homework and laboratory exercises. Students may not "work together" on graded 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. If you need help on an assignment, contact your instructor or the TA, not other classmates.

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." If you are unclear about whether a particular situation may constitute an honor code violation, you should meet with the instructor to discuss the situation.

If you do not have a copy of the code, you can obtain one from the Dean of Students Office.

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

Feel free to discuss the definition of cheating and/or plagiarism with me if you are unclear on these terms or have questions about the acceptability of a particular type of action.

Academic Integrity Policy: <https://legal.charlotte.edu/policies/up-407>

Academic Integrity Charge Form:

https://cm.maxient.com/reportingform.php?UNCCCharlotte&layout_id=2

Introduction to Canvas:

Canvas is a software tool for the use of instructors, teaching assistants (TA) and students. It is accessible from the Internet both on and off campus and has the following features:

- 1. Syllabus:** A current copy of the course syllabus.
- 2. Files:** Notes provided from the textbook vendor and the instructor.
- 3. Announcements:** Instructor/TA can communicate with students about course activities and post interesting course-related topics
- 4. Discussions:** Students can post any course-related queries here.
- 5. Grades:** You can access your grades here. If you have questions about your grades, communicate through Canvas mail with the instructor. Check the bulletin board to see if there is a message to the class about the posting of grades.
- 6. Assignments:** Assignments will be posted here and can be downloaded to your PC. Each assignment will have a deadline. This is the latest time the assignment can be submitted without penalty. You can upload your assignment file many times and submit it many times before the given deadline. After the deadline, your assignment will be frozen and you will not be able to change your assignment (if it is turned in before the deadline). If you submit your assignment after the deadline it will be considered late. Once your assignment is graded, comments on your assignment will appear along with your grade on Canvas

Title IX Reporting Expectations

UNC Charlotte is committed to providing an environment free of all forms of discrimination and sexual harassment, including sexual assault, domestic violence, dating violence, and stalking. If you (or someone you know) has experienced or experiences any of these incidents, know that you are not alone. UNC Charlotte has staff members trained to support you in navigating campus life, accessing health and counseling services, providing academic and housing accommodations, helping with civil protective orders, and more.

Please be aware that all UNC Charlotte employees, including faculty members, are expected to relay any information or reports of sexual misconduct they receive to the Title IX Coordinator. This means that if you tell me about a situation involving sexual harassment, sexual assault, dating violence, domestic violence, or stalking, I am expected to report the information to the Title IX Coordinator. Although I am expected to report the situation, you will still have options about how your case will be handled, including whether you wish to pursue a formal complaint. Our goal is to make sure you are aware of the range of options available to you and have access to the resources you need.

If you wish to speak to someone confidentially, you can contact the following on-campus resources, who are not required to report the incident to the Title IX Coordinator: (1) University Counseling Center (counselingcenter.uncc.edu, 7-0311); or (2) Student Health Center (studenthealth.uncc.edu, 7-7400).

Additional information about your options is also available at titleix.uncc.edu under the “Students” tab.

All students are required to abide by the UNC Charlotte Sexual Harassment Policy and the policy on Responsible Use of University Computing and Electronic Communication Resources. Sexual harassment, as defined in the UNC Charlotte Sexual Harassment Policy, is prohibited, even when carried out through computers or other electronic communications systems, including course-based chat rooms or message boards.

Absenteeism during Covid-19: Students are expected to attend every class and remain in class for the duration of the session when it is safe to do so in accordance with university guidance regarding COVID-19. An absence, excused or unexcused, does not relieve a student of any course requirement. For absences related to COVID-19, please adhere to the following:

- **Do not come to class if you are sick.** Please protect your health and the health of others by staying home. Contact your healthcare provider if you believe you are ill.
- **If you are sick:** If you test positive or are evaluated by a healthcare provider for symptoms of COVID-19, complete this form to alert the University. Representatives from Emergency Management and/or the Student Health Center will follow up with you as necessary, and your instructors will be notified.
- **If you have been exposed** to COVID-19 positive individuals and/or have been notified to self-quarantine due to exposure, complete this form to alert the University. Representatives from Emergency Management and/or the Student Health Center will follow up with you as necessary, and your instructors will be notified.

To return to class after being absent due to a COVID-19 diagnosis or due to a period of self-quarantine, students should submit an online request form to Student Assistance and Support Services (SASS). Supporting documentation can be attached directly to the request form and should be from a student's health care provider or the Student Health Center, clearly indicating the dates of absences and the date the student is able to return to class. Instructors will be notified of such absences.

If you are absent from class because of a COVID-19 diagnosis or quarantine, please notify your instructor immediately and seek instructions to help you continue to make progress in the course. The specific instructions for this situation will be provided on a case-by-case basis. The final decision for approval of all absences and missed work is determined by the instructor.

Student Support: The details of student support resources available are provided at the following links.

Academic support: <https://ninernationcares.uncc.edu/students/academic-support>.

Health support: <https://ninernationcares.uncc.edu/health-support-services>

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 the 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 the express written consent of the instructor. This includes providing materials to commercial course material suppliers such as Course Hero 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 the copyright in your original papers and exam essays. If the instructor is interested in posting your answers or papers on the course website, the instructor will obtain your written permission.

Other Information

- Students are responsible for **all** announcements made in class or announced via email. The instructors may send some information via Canvas announcements. It is the **students'** responsibility to keep up-to-date on the class-related information and to check their @uncc.edu email regularly.
- 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 are posted in the syllabus on page 1.
- The instructors may **modify the class schedule and syllabus** during the semester depending upon the progress of the class.

The University of North Carolina Charlotte and the Belk College of Business strive 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 statu