MBAD 6211-U90/DSBA 6211-U90
Advanced Business Analytics
Fall 2024

INSTRUCTOR: Dr. Sungjune Park
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OFFICE HOURS: Tue 4:30 pm – 5:30 pm (Center City – in person),
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LOCATION: The Dubois Center (Uptown) 506

COURSE DESCRIPTION

This course is designed to help students apply business analytics techniques to explore and analyze various types of data. The goal is to help students find subtle and non-trivial relationships that are understandable, useful, and executable to business owners. Managers in various functional areas can exploit valuable insights gained via fact-based decision-making to achieve competitive advantages. Specific topics covered in this course include *predictive modeling, text mining, forecasting, survival analyses, and experimentation*. This course uses a case approach and Python is the main programming language.

LEARNING OBJECTIVES

This course is designed for business managers, information professionals, data analysts, and the general audience interested in applying data analytics techniques. It aims to explore non-trivial relationships, summarizing data in novel, practical, and executable ways that benefit business owners.

At the end of the semester, students should

- Understand the principles, ideas, and data analytics tools underlying the current practice of data mining.
- Understand the basics of predictive modeling, experimentation, survival analyses, text mining, and forecasting.
- Understand the practical applicability of analytics methods in various business scenarios.

- Learn how to formulate analytic tasks in support of business objectives, how to define successful projects, and how to evaluate the utility of existing and potential applications of discussed technologies in practice.

This course will take a case approach, complemented by lectures, seminar-style discussion, and lab work. This course will use Python for hands-on labs with various analytics techniques.

COURSE MATERIALS

- Handouts, power-point slides, assignments, and additional helpful resources will be posted on Canvas.
- Software: Python/Google Colaboratory

GRADING

Component	**Points**
Two Exams (2)	50
Assignments (4)	20
Python Bootcamp	3
Group Project	25
Class Participation	2
Total	**100**

Final letter grade will be calculated based on the following scale:
A: 90 and above, B: 80-89.9, C: 70-79.9, U: 69.9 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, with questions sourced from assigned readings, class lectures, and assignments. 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.

Should a student dispute an answer to an exam question, they are encouraged to submit a written appeal, citing their source, to the instructor. These appeals will be considered in the grading process.

Exams are intellectual property and should be treated as such. They remain the possession of the course instructor at all times and cannot be reproduced or distributed

in any way. While students are encouraged to review their exams during virtual office hours or by appointment, any failure to respect the stipulated conditions, including unauthorized distribution or reproduction of the exam, will be considered as a breach of intellectual property. Such actions will result in an exam grade of zero and may lead to further disciplinary measures.

ASSIGNMENTS

Assignments will be posted a minimum of one week before their due date, with solutions to be submitted exclusively via Canvas. Each assignment will include detailed information on the tasks involved and the expected deliverables.

Unless otherwise specified, assignments are due at the beginning of the class on the stipulated due date (5:30 pm). Any submissions made on the due date, but after the start of class, will incur a 20% deduction from the total points earned. Assignments submitted after the due date may still be accepted but with a 50% penalty. If an assignment is not turned in before its grade is posted or a week after the due date, whichever comes first, it will be scored as zero.

Each student must independently develop their solutions to the assigned homework. While exchanging ideas is encouraged, collaboration on homework assignments, unless explicitly defined as a group task, is considered cheating. Students are prohibited from using or copying someone else's work (or portions of it) and presenting it as their own.

DataCamp

For class preparation, you are required to complete the SDS Python Bootcamp, a custom track available on DataCamp (https://www.datacamp.com/). The School of Data Science (SDS) offers this bootcamp specifically to support students with weak foundational skills in programming. If you do not have full access to DataCamp yet, please visit https://dsba.charlotte.edu/current-students/sds-bootcamp-courses/ and request access with your @charlotte.edu email account.

If you already have a DataCamp account (e.g., with your @uncc.edu or personal email account) and wish to merge your data with the new account, follow the instructions here (How do I enroll my existing DataCamp account into my organization's group?)

ATTENDANCE AND 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 which could affect your course grade. 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. Any unexcused absence or excessive tardiness may result in a loss of participation points.

This course uses Canvas and other online learning supporting systems, which provides the instructor with analytics and data on student engagement with the Canvas page, including page views, participation, submissions, timeliness, etc. I will be monitoring student activities on Canvas to ensure successful engagement and participation in the course. If I notice that a student's activities on Canvas indicate issues with pedagogically appropriate engagement, I may reach out to the student to discuss improving course engagement and participation.

CLASS CONDUCT

I will take very seriously any distraction caused by violating the above policies. Any member of the class should feel free to let me know if any behavior of fellow student(s) is distracting her/his learning experience. Such complaints will be treated as confidential but will help me to take appropriate action to provide a positive learning environment in the class.

Since it is my responsibility to provide an environment that is conducive to learning for everyone in the class, **I will deduct all participation points from the grade of any student who chooses to repeatedly distract others or create other disruptions. In particularly egregious cases, I will have the student permanently removed from the class and deduct up to a maximum of 15% of the final grade. To attend or not to attend is your decision to make, but once you decide to attend my class, you should refrain from any disruptive behavior during the class.**

ACADEMIC INTEGRITY

All students are required to read and abide by the Code of Student Academic Integrity. Violations of the Code of Student Academic Integrity, including plagiarism, will result in disciplinary action as provided in the Code. Definitions and examples of plagiarism are set forth in the Code. The Code is available from the Dean of Students Office or online at https://legal.charlotte.edu/policies/up-407.

Ownership of Course Materials

The lectures and course materials provided by the instructor including presentations, tests, quizzes, exams, videos, outlines, and similar materials are protected by copyright. The instructor is the exclusive owner of copyright in those materials instructor creates. You are encouraged to take notes and make copies of course materials for your own educational use. However, you may not, nor you may knowingly allow others to reproduce or distribute course materials publicly without instructor's express written consent. This includes providing materials to commercial course material suppliers such as **CourseHero**, **Chegg**, etc. and other similar services. Students who publicly distribute or display or help others publicly distribute or display copies or modified copies of the instructor's materials may be in violation of University Policy - 406, the Code of Student Responsibility.

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. Students in this course seeking accommodations to disabilities must first consult with the Office of Disability Services and follow the instructions of that office for obtaining accommodations. Contact the Office of Disability Services at 704-687-0040 or visit their office in Fretwell 230.

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 or not 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 (caps.charlotte.edu, 7-0311); or (2) Student Health Center (studenthealth.charlotte.edu, 7-7400). Additional information about your options is also available at civilrights.charlotte.edu under the “Students” tab.

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
Aug 20	Introduction Overview of Business Analytics Brief Software Recap	
27	Predictive Modeling	**Group formation**
Sep 3	Predictive Modeling	**Project topic, Python Bootcamp**
10	Predictive Modeling	
17	Dimension Reduction / Advanced Predictive Modeling	**Assignment 1**
24	Advanced Predictive Modeling	
Oct 1	Text Mining	**Assignment 2**
8	**Midterm Exam**	
15	Fall Recess – No class	
22	Text Mining	
29	Text Mining	
Nov 5	Forecasting	**Assignment 3**
12	Forecasting	
19	Survival Analysis	
26	Survival Analysis / Review	**Assignment 4**
Dec 3	**Final Exam**	
Dec 10	**Group Project Presentations, 5-7:30pm**	