



**MBAD/DSBA 6122: Decision Modeling and Analysis
Summer Second Half Term 2024**

Online
Mondays and Wednesdays 5:30PM-9:15PM
July 1st to Aug. 7th 2024

Instructor: Dr. Xiuli He, Belk College of Business & School of Data Science

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Dr. He's Office Hours: **Tuesdays 1:30pm-3:30pm** or by appointment

TA: Mr. Vishaal Sai Devisetty (email: vdeviset@charlotte.edu, Tues. and Th. 12:00pm-1:00pm)

Lecture Zoom Link:

<https://charlotte-edu.zoom.us/j/99767944253?pwd=i7K2yIuzhwoXdUwsHwR0w3zrgUAKxj.1>

Meeting ID: 997 6794 4253

Passcode: 7012024

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>

IT support: <https://help.uncc.edu/>

Laptop requirement: All upper-level (including graduate level) business students are required to have their own personal laptop computer. The policy and the minimum system requirements are found at the link <https://belkcollege.uncc.edu/laptop-policy>. Students in the DSBA program are required to follow the laptop policy [here](#).

COURSE DESCRIPTION

This course is designed to provide students, primarily in the fields of business and economics, with a sound conceptual understanding of the role management science plays in the decision making process. This is an important course in developing decision models and their applications to management problems. The emphasis is on models that are widely used in all industries and

functional areas, including operations, supply chain management, finance, accounting, and marketing.

Specific topics covered in this course include fundamental techniques such as linear, integer, goal and multi objective programming, queuing theory and applications, decision support via Monte Carlo simulation, decision making under uncertainty and risk, decision trees, and multi-criteria decision making.

In this course, students learn to *model* the business problems, *analyze and solve* the models, and then *interpret* the solutions obtained to *make recommendations* to managers. The emphasis will be on both formulating an appropriate model for a given business problem and developing an Excel based solution approach by utilizing built-in and add-in software tools like Analytic Solver Platform and Data Analysis.

Prerequisites: MBAD 5141 or equivalent. A keen interest in problem solving (logic, math, and statistics) and a desire to practice higher level analytics and applied information technology skills.

Catalog Description: An analytical approach to the management process. Generalized models for decision making with major emphasis on application of the scientific method to management problems.

LEARNING OBJECTIVES

Upon completion of the course the students should be able to

- Demonstrate proficiency in using advanced Excel, including the build-in Solver
- Formulate and solve optimization problems arising in operations and supply chain management contexts.
- Interpret and assess the results produced by the optimization models and Excel solver
- Run sensitivity and what-if analysis, understand their implications and make recommendations
- Apply the modeling approach to various business applications to make sound managerial decisions based on data

COURSE MATERIALS

Textbook:

- *Spreadsheet Modeling and Decision Analysis: A Practical Introduction to Business Analytics*, 9th edition, by Cliff T. Ragsdale, Cengage Learning, 2021. ISBN: 978-0-357-13209-8. (8th Ed. will also work).
- CENGAGE UNLIMITED eTEXTBOOKS (\$69.99/semester) gives students access to unlimited number of eBooks. <https://www.cengage.com/unlimited/>

Course Website: <http://canvas.uncc.edu>

- **Use of Canvas:** Canvas will be the website for course information and primary communication channel for this class. You may access UNCC Canvas from My UNC

Charlotte (<https://my.uncc.edu/>) or direct type **canvas.uncc.edu/**. It's each student's responsibility to check Canvas regularly and report anything that does not match your own record (e.g., missing or wrong grade) within **SEVEN** calendar days since the date the information was posted.

- **Grades:** Grades on exams and assignments will be posted on Canvas. Please check that the grade posted matches the grade on your paper copy and notify the instructor as soon as possible in case of a discrepancy.

Withdrawal from Class:

The administration of this institution has set deadlines for withdrawal of any college-level courses. These dates and times are published in that semester's course catalog. Administration procedures must be followed. It is the student's responsibility to handle withdrawal requirements from any class. In other words, I cannot drop or withdraw any student. You must do the proper paperwork to ensure that you will not receive a final grade of "U" in a course if you choose not to attend the class once you are enrolled.

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. As per [university policy](#), incomplete grades will be granted when a student who is otherwise passing has not, due to circumstances beyond his/her control, completed all the work in the course. The missing work must be completed and the final grade reported within one calendar year from the date on which the "I" grade was recorded. The instructor assigning the "I" grade may specify a shorter time than one year for completion of the work and the assignment of a final grade. If the "I" is not removed during the specified time, a grade of "F", "U", or "N", as appropriate is automatically assigned. Time extensions for the completion of an "I" beyond one year cannot be approved except by special request to the Graduate School under extraordinary circumstances. The grade of "I" cannot be removed by enrolling again in the same course, and students should not re-enroll in a course in which they have been assigned the grade of "I".

COURSE ASSESSMENT

The course grades will be based on two exams, class participation and a final group project with a total of 240 points.

Assignments	Format	Points
Midterm Exam	Individual	100 points
Final Exam	Individual	100 points
Participation	Individual	10 points
Group Case Report	Group	30 points
Total		240 points

Exams

The two exams, **Midterm Exam (July 17th)**, **Final Exam 2 (August 7th)** are **NOT cumulative**. **There will be no makeup exams**. Conflicts for the exams must be resolved before the exam dates. You should contact me at least **one** weeks prior to the exam date. Last minute requests will not be accepted. **The only reasons for not being able to sit for an examination in its announced time should be part of University policy, or a documented medical excuse.** Missing an exam without prior approval and/or providing supporting documentation within the following timeframe will lead to a grade of zero for that exam. In the event that the excuse is **approved before the exam date** (in rare case and requires supporting documentation), the student will be given a make-up exam. A student who misses an exam without prior approval, possibly due to unexpected situation on the exam day, should contact the instructor within 12 hours of the exam start date/time and provide appropriate supporting documentation to be eligible for a makeup exam. It is the student's responsibility to be aware of and follow the make-up exam policies and no special accommodations will be made for any exceptions. No makeup exam will be given after the last day of class.

"Re-grade" Requests

Any request to re-grade any component of your submissions (assignment or exam or project) has to be made within **seven (7) days** after the grade has been posted on the Canvas. Given the speed with which the course progresses, any request beyond this deadline cannot be considered. The only exception to this rule is a documented emergency. Write a brief note explaining why you think there is an error in grading. Attach a copy of the graded assignment. The instructor reserves the right to re-grade the entire contents of any submitted assignment. Your grade may go up or down.

Class attendance and participation

Each student is expected to attend every class. Participation grades will be based on the quality and impact of your class participation. Voluntary class participation will consist of voluntary contributions and occasional cold calls, usually to answer questions.

To evaluate your contribution to the class discussions, the following **criteria** are to be applied:

- Is the comment accurate, reflecting case facts?
- Does the comment add to our understanding of the problem situation?
- Is the comment timely and linked to the comments of others?
- Does the comment move the discussion along by giving a new perspective?
- Does the comment reflect a concern for maintaining a constructive and comfortable classroom atmosphere?
- Is the comment clear and concise?

As with any medical absence, it is a student's responsibility to contact you if they are unable to attend class because they are ill. I may ask for a standard absence verification from the student for extended absences. They should work through [Student Assistance and Support Services](#).

DISABILITY POLICY

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.

DIVERSITY POLICY

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 status.

ACADEMIC INTEGRITY

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.

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 (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.

Accommodations for Religious Observances

UNC Charlotte provides reasonable accommodations, including a minimum of two excused absences each academic year, for religious observances required by a student’s religious practice

or belief. Please refer to <https://legal.uncc.edu/policies/up-409> for details on requesting such accommodations.

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 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 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.

Important dates:

- Midterm Exam will be released 8:00am July 16th and due 5:00pm July 21st.
- Final exam will be released 8:00am August 6th and due 5:00pm August 8th. (No late submission will be accepted).

TENTATIVE COURSE SCHEDULE

Date	Topics	Chapter
7/1	Syllabus & Introduction to Modeling	Ch1-2
7/3	Modeling and Solving LP Problems in a Spreadsheet	Ch3
7/8	Sensitivity Analysis	Ch4
7/10	Network Modeling	Ch5
	Group Formation by 10:00pm July 10th	
7/15	Network Modeling and Midterm review	Ch5
7/17	Midterm Exam	Ch2, Ch3, Ch4, Ch5
7/22	Integer Linear Programming	Ch6
7/24	Goal Programming and Multiple Objective Optimization	Ch7
7/29	No Class Meeting- Work on group project	Case7.1 Removing Snow in Montreal (9 th ed)
7/31	Time Series Forecasting (Guest Speaker TBA)	Ch11
8/4	Group Case Report due 11:59pm	
8/5	Nonlinear Programming and Final exam review	Ch8

8/7	Final Exam (Non-cumulative) Time: 5:00pm-7:30pm	Ch6, Ch7, Ch8, Ch11
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Note: These descriptions and timelines are subject to change at the discretion of the instructor. Notice of such changes will be by announcement in class or by changes to this syllabus posted on Canvas.

- Check the updated final exam schedule for Summer 2024:

<https://ninercentral.charlotte.edu/wp-content/uploads/sites/803/2024/03/Summer-2024-FE-Table.pdf>

GROUP CASE REPORT GUIDELINES

Please use the link above to form a group by **10:00 pm July 10th**. The group may contain three to five members (No more than five members, PLEASE). The group will work on Case7.1 Removing Snow in Montreal (p. 359, 9th ed) to answer the six questions.

Group formation link:

https://docs.google.com/document/d/1G78h-NT7urbgH_XEnN_OHbRC31kElO6fGsE2BeirQZE/edit

Note: Please use your UNCC email account to have the access to the link above.

It is your responsibility to form your group. If you cannot make the first two classes, please let me know in advance so that I may be able to assign you to a group. Not having a group is NOT a reason for late submission of a group case report.