



**MBAD/DSBA 6122-U90: Decision Modeling and Analysis
Fall 2025**

The Dubois Center (Uptown) Room 805
Mondays 5:30-8:15PM

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

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Dr. He's Office Hours on **Zoom**

Time: Thursdays. **1:30pm-3:00pm** or by appointment

JOIN ZOOM MEETING:

[HTTPS://CHARLOTTE-](https://charlotte-edu.zoom.us/j/94054948921?pwd=YFAZXOPiFEKB0KwKNWCSAdILAYVDt8.1)

[EDU.ZOOM.US/J/94054948921?PWD=YFAZXOPiFEKB0KwKNWCSAdILAYVDt8.1](https://charlotte-edu.zoom.us/j/94054948921?pwd=YFAZXOPiFEKB0KwKNWCSAdILAYVDt8.1)

MEETING ID: 940 5494 8921

PASSCODE: 811025

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://oneit.charlotte.edu/niner-ready-laptop-faqs/>.

Note: Belk College of Business students are **required to use a Windows operating system**.

MacOS is not compatible with all required business applications. *Chromebooks, iPads, other tablets, and mobile devices DO NOT meet the laptop requirement.* Students in the DSBA program are required to follow the laptop policy [here](#).

Hardware and Software note:

- An Excel add-in--Analytic Solver Platform for Education (ASPE) is required for this class. Students are required to purchase a 140-day (1 year) license copy of ASPE from Frontline systems for \$25 (\$62.5). Please follow the installation instructions in **Analytic_Solver_Student_Installation_Guide-2021.pdf** posted on Canvas.
- You can install a desktop version of ASPE which requires Windows OS and Excel 365/2016/2013/2010. If you have a Mac and want to install the desktop version, then you need a dual-boot or virtual machine setup (such as VirtualBox or Parallels or VMWare Fusion) on your Mac. You may find out how to create a Windows Virtual Machine on MacOS [here](#).
 - **If you use new MacBook Air or MacBook Pro models with the M1 chip instead of an intel processor, then the VM setup on the above link will not work for your computer. You will need to use <http://apporto.uncc.edu>.**
- You can also use the cloud-based version of ASPE which does not require download or setup program and can be used in Windows, Mac, or Excel Online. However, an Office 365 Subscription is required.
- Students with active NinerNET credentials are eligible for the Microsoft Office 365 program. You may find more information on how to access Microsoft Office 365 [here](#).
- Once you purchase the ASPE license, you will be able to use both the desktop and cloud- based versions.

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, nonlinear programming, and forecasting. 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.

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:

Students are expected to complete all courses for which they are registered at the close of the add/drop period. If you are concerned about your ability to succeed in this course, it is important to make an appointment to speak with me as soon as possible. The University policy on withdrawal allows students only a limited number of opportunities available to withdraw from courses. It is important for you to understand the financial and academic consequences that may result from [course withdrawal](#).

See: provost.charlotte.edu/policies-procedures/academic-policies-and-procedures/withdrawal-and-cancellation-enrollment-policy

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 calendaryear 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 group projects, class participation, and two exams with a total of 250 points.

Assignments	Format	Points
Midterm Exam	Individual	100 points
Final Exam	Individual	100 points
Participation	Individual	10 points
Case reports	Group	40 points
Total		250 points

Exams

The two exams, **Midterm Exam** and **Final Exam** 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 Behavior Policy and Participation

Class Behavior Policy: Disruptive behavior distracts from the ability of others to profit from their in-class experience. Such behavior includes but is not limited to arriving late, leaving early, having side conversations, making unnecessary comments that add no value to the class, surfing the net, 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.

Use of Computers: Students are permitted to use computers during class for note-taking and other class-related work only. Those using computers during class for work not related to that class must leave the classroom for the remainder of the class period.

Class Absence(s): The instructor has the authority to excuse a student's class absence(s) and to grant a student an academic accommodation (turn in a late assignment, provide extra time on an assignment, reschedule an exam, etc.). However, under Academic Affairs [Policy on Course Attendance and Participation](#), University-sanctioned events or activities are considered excused absences. A University-sanctioned event or activity is one in which a student formally represents the University to external constituencies in athletic or academic activities. This policy does not supersede individual program attendance and/or participation requirements that are aligned with accreditation or licensure. For more information and student responsibilities to account for such an absence, see provost.charlotte.edu/policies-procedures/academic-policies-and-procedures/course-attendance-and-participation.

Students are encouraged to work directly with their instructors regarding class absences for medical appointments, military/court orders, and/or personal and family emergencies, such as a death in the immediate family, where a student is able to provide an instructor with appropriate supporting documentation of the absence. The final decision for approval of absences and missed work or make-up work is determined by the instructor.

If a religious accommodation is needed, students are expected to communicate directly with their faculty regarding the related need. The request should be made in writing and should state (i) the specific accommodation being requested, (ii) the religious practice or belief the student holds, (iii) how the requested accommodation enables the student to participate in their religious practice or belief, and (iv) the date(s) and/or frequency of the requested accommodation. The request should be submitted as far in advance as possible. The length of time between when the request is submitted and the date of the requested accommodation may affect the reasonableness of the requested accommodation. The instructor and the student will then discuss what a reasonable accommodation should be in the given case and then document this agreed-upon accommodation. [University Policy 409](#) provides more details about this procedure. The [Office of Civil Rights and Title IX](#) is available as a resource if students or faculty have questions about the process.

The [Office of Student Assistance and Support Services \(SASS\)](#) can provide notification to faculty of emergency situations, when a student is unable to do so and when the office has been made aware of such emergencies. In such situations, the SASS office may also be able to assist with verification of such emergencies, once a student is able to return to classes. The SASS office does not provide verification of absences for car trouble, weather issues, personal activities, work, weddings, vacations, or University-sponsored events. Absences related to such activities should be discussed directly with the faculty member.

Should a student need assistance from the SASS office in verifying an emergency situation, they can submit an [online request form](http://sass.charlotte.edu/services/absence-verification) (sass.charlotte.edu/services/absence-verification) and attach supporting documentation. Please note that students are not required to go through the SASS office at any time

regarding absence verification, and the SASS office does not have the authority to excuse absences, allow for make-up work, or provide other academic accommodations.

In cases of absence due to pregnancy or parenting (pregnancy, childbirth, false pregnancy, termination of pregnancy, or recovery from any of these conditions), students should contact the [Office of Civil Rights and Title IX](#) to obtain absence verification by completing the [online form](#) at <http://bit.ly/332eaGd>.

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.

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](#).

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 and on the [Student Accountability & Conflict Resolution website](#). The Code is available from the Dean of Students Office or online at legal.charlotte.edu/policies/up-407. Additional resources are available on the [Student Accountability & Conflict Resolution website](#).

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.

Generative AI Permitted in this Course Only as Designated, with Attribution

In this course, students are permitted to use generative AI tools such as ChatGPT ***only for specific assignments, and only as designated by the instructor.*** To maintain academic integrity, students must disclose any AI-generated material they use and properly attribute it, including in-text citations, quotations, and references (see, for example, <https://apastyle.apa.org/blog/how-to-cite-chatgpt>). Be aware that students are responsible for any errors or information that is misrepresented or inaccurate (i.e. hallucinations) that generative AI tools produce when submitting work that includes AI-generated material. In addition, use of a generative AI tool that is not specifically authorized by the instructor may constitute a violation of the [Code of Student Academic Integrity](#).

Students should also include the following statement in their assignments to indicate use of a generative AI tool: “The author(s) acknowledges the use of [generative AI tool Name] in the preparation or completion of this assignment. The [generative AI tool Name] was used in the following way(s) in this assignment: [e.g., brainstorming, grammatical correction, citation, which portion of the assignment].”

Important Note on Data Protection and Privacy: When using generative AI tools, it is important to be aware that the data you supply might be used for training AI models or other purposes. Consequently, there is no guarantee that the information you provide will remain confidential. You should exercise caution and avoid sharing any sensitive or private information when using these tools. Examples of such information include personally identifiable information, protected health information, financial data, intellectual property, original research, and any other data that might otherwise be legally protected.

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.

Important dates:

- Sept. 8th, Group formation due at 11:59pm
- Sept. 29th, Case3.1 report due at 11:59pm
- Oct. 6th, Midterm exam in-class part; take-home exam released
- Oct. 13th, Midterm exam take-home part due 5:00pm
- Nov. 24th, Case 7.1 report due at 11:59pm
- Dec. 1st, final exam take-home part released
- Dec. 8th, Final exam take-home part due at 5:00pm
- Dec. 8th, 5:00pm-7:30pm, Final exam in-class part.

TENTATIVE COURSE SCHEDULE

Date	Topics	Chapter	Due
8/18	Syllabus & Introduction to Modeling	Ch1-Ch2	
8/25	Modeling and Solving LP Problems in a Spreadsheet	Ch3	
9/1	Labor Day- No Class		
9/8	Modeling and Solving LP Problems in a Spreadsheet	Ch3	Group formation by 11:59pm
9/15	Sensitivity Analysis	Ch4	
9/22	Network Modeling	Ch5	
9/29	Network Modeling and Midterm Exam Review	Ch5	Case3.1 Report due 11:59pm
10/6	Midterm Exam-In class part	Chapters 2-5	
10/13	Integer Linear Programming	Ch6	Midterm take-home part due at 5:00pm
10/20	Integer Linear Programming	Ch6	
10/27	Goal Programming and Multiple Objective Optimization	Ch7	
11/3	Goal Programming and Multiple Objective Optimization	Ch7	
11/10	Data Mining	Ch10	
11/17	Time Series Forecasting	Ch11	
11/24	Time Series Forecasting	Ch11	Case 7.1 report due at 11:59pm
12/1	Take-home part of final exam		
12/8	Final Exam in class part (non-cumulative)	5:00PM-7:30PM Chapters 6-7, 10-11	

Note:

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- 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.
 - UNCC Fall 2025 final exam schedule:
https://drive.google.com/file/d/1wAAbyK7jPkSqG2clq_X04E_nNh8tUfO0/view

GROUP CASE REPORT GUIDELINES

The group will complete two case reports, Case 3.1 and Case 7.1, with 20 points each case. Please provide your answers to each question. Submit a word file and an excel file. I will grade the reports based on the correctness of your solutions and your efforts. For Case 7.1 part f), please provide your suggestions and justify them.

Group formation link:

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

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

Copyright Ownership in Course Materials

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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.

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.