

Meeting Days: Tuesday, Thursday

Meeting Time: S1: 8:00-9:15, S2: 9:30-10:45, S3: 11:00-12:15, S4: 12:30-1:45, S5: 2:00-3:15

Classroom: McColl 3000

Instructor: Manoj Chari (Section 1)

Office: McColl 4530 Phone: 919.962.3565

Email: Manoj_Chari@kenan-flagler.unc.edu (preferred contact)

Office Hours: Mon: 3.30 PM – 5.00 PM, Wed: 2.00 -3.30 PM or by appointment, McColl 4530.

Instructor: Wendell Gilland (Sections 2, 3)

Office: McColl 4207 Phone: 919.260.3716

Email: wendell_gilland@unc.edu (preferred contact)

Office Hours: M 1:00PM-2:00PM, W 3:30PM-5:00PM, or by appointment, McColl 4711

Instructor: Sajad Modaresi (Sections 4, 5)

Office: McColl 4714 Phone: 919.962.3127

Email: Sajad_Modaresi@kenan-flagler.unc.edu (preferred contact)

Office Hours (Virtual): Mon. 1:00PM-2:00PM, Wed. 3:30PM-5:00PM, or by appointment

Teaching Mode: The expectation is that students will attend all class sessions in-person. We know, however, that there may be some instances when students are unable to attend class in-person, and a recording will be available for those situations. Students should always let their professor know in advance if they will be unable to attend class on a given day.

This document reflects our best idea at this time of how the semester will move forward, but specific details of the course may change. The course website on Canvas should be viewed as the living syllabus, and this is where adjustments to the plan for the semester will be announced and updated.

Course Objectives: Many challenges that companies and individuals face today are too complex to rely just on intuition to resolve. The goals of this course are to:

- 1) Demonstrate the wide range of situations in which quantitative analysis improves decision making and creates competitive advantages.
- 2) Develop students' analytical thinking skills.
- 3) Develop mastery of quantitative analysis using Microsoft Excel, and communication of results.

Course Structure: This course teaches analytical decision making in business applications in four parts. Parts I and II are covered in the first half of the semester. Parts III and IV are covered in the second half.

Part I: Drawing Conclusions from Data

Part II: Using Data to Identify Drivers of Business Outcomes

Part III: Predictive Analytics

Part IV: Decision Making under Constraints

Course Style: The students will learn each topic in three steps: i) lectures in which the topic and its applications are introduced; ii) lab sessions in which students get hands-on exercise; and iii) homework problem sets that reinforce and evaluate the learning.

Required Resources:

1. *BUSI 410 Course Pack (CHARI, GILLAND and MODARESI)*. Available later this semester at store.unc.edu.
2. *(Optional) Business Statistics for Competitive Advantage with Excel 2016*, by Cynthia Fraser. Digitally available for free to all UNC students at <http://search.lib.unc.edu/search?R=UNCb8915229>.
3. Laptop installed with *Office 365* or *Microsoft Excel 2016*.

We anticipate the cost for the Course Pack to be approximately \$20.00. We do not want these costs to be a stressor for you or to interfere with your learning. If this is a financial burden for you, please apply to the [Melwani Belonging Fund](#)

Course Website: <https://kenan-flagler.instructure.com/> (Canvas). You will receive announcements, download materials, and submit assignments via Canvas.

Bring to Class: Bring the Course Pack for case discussions marked with CP in the Course Outline below. Bring your laptop to every lab session. Laptops are also strongly recommended in lectures.

Participation: You are expected to come to class having thoroughly prepared the assigned readings and cases, and ready to actively participate in discussions. The pre-class preparation requirements are listed in the Course Outline below. Participation is very important for you and the entire class because:

- A discussion about a business problem is most fruitful when multiple perspectives are present.
- Articulating your thoughts out loud demands that you be clear and precise. This promotes deep thinking and maximizes your learning efficiency.
- Thinking on your feet and effectively communicating your thoughts are vital business skills. Classroom participation offers an excellent opportunity for you to practice such skills.

According to the Community Standards, if you are sick and/or symptomatic/isolating/quarantining, you must not attend the class in person and instead view the Panopto class recordings. You will not be penalized for missing class due to adherence to the Community Standards. The same rule applies to the instructors, so we may move a class session or two to Zoom if we can't come to campus.

Electronics Policy: Non-class use of laptops, phones and tablets is strictly prohibited. Examples include Facebook, Twitter, MLB/NCAA score updates, games, web browsing, emailing and messaging. This is for your own good, but more importantly, because your screen activities are very distracting for those beside and behind you. If you absolutely need to write emails, send messages or post social network updates during class time, please step out of the classroom to do so.

AI Usage Policy: The use of generative AI tools are not permitted in this class for any work that is graded (e.g., lab practice, homework, group project, exams); therefore, any use of AI tools for graded work in this class may be considered a violation of the University's Academic Honesty policy and Student Conduct Code, since the work is not your own. We permit you to use AI tools to enhance your knowledge and understanding of the general concepts covered in this course.

Other Classroom Policies: To help us get to know you, please sit in the same general area of the classroom and display your name card each class session.

Grading: Most BSBA core courses, including BUSI 410, use curved grading. Your letter grade will be given based on the rank of your average score in the class. The average score is calculated as a weighted average of the following items:

Lab Practice Assignments and Class Participation	10%
Homework Assignments	20%
Group Project	10%
Midterm Exam (10/3, Thursday, 7:00-10:00 PM)	30%
Final Exam (12/10, Tuesday, 4:00-7:00 PM)	30%

Lab Practice Assignments: There will be nine Lab Practice Assignments. They are simple, well-instructed exercises designed to acquaint you with the Excel functions needed in Lab Sessions. There is a Lab Practice Assignment due on Canvas prior to the start of each Lab Session. You should submit the documents as required in the assignments, using the “File Upload” method on Canvas. Lab Practice Assignments are individual assignments. They are graded for completion not for correctness.

Homework Assignments:

- There will be a total of four Homework Assignments.
- You may submit Homework Assignments individually, or in groups up to three students. Groups can be different for each Homework Assignment.
- You may not seek/receive help from individuals outside your group.
- Homework Assignments are due on Canvas prior to the start of the class sessions on their due dates. You should submit a single Word or PDF document, containing only the required parts, using the “File Upload” method on Canvas. “Comments” will not be considered when grading.
- If you work in a group, only one member needs to make the submission on Canvas. Please be sure to list all group members’ names in the submitted file itself.
- A grader will grade your submissions and post grades on Canvas, typically within one week. If you want to appeal a grade, contact me, not the grader.

Late Submission Penalty: If you miss the submission deadline for either a Lab Practice or Homework Assignment, you can still make late submissions on Canvas. Late submissions are accepted until midnight on the due date, at a 20-point penalty. All later submissions are not credited. Please note that if you make changes and re-submit your assignment, the submission time will be updated. Your latest submission time will be used to determine the late penalty.

Group Project: You need to form groups of five students within your section for the group case project. The project will offer you an opportunity to work on a real-life business case. The final deliverables are detailed in the group project assignment. You will be graded not only on the technical accuracy of your analysis, but also on its creativity and presentation. Members in each group will also submit their anonymous self- and peer-evaluations of the group members’ contributions, which may affect grades. Details will be announced later.

Midterm and Final Exams:

- Midterm and final exams are open note, open book, open laptop, but no communication of any kind is allowed, either verbal, written, electronic, or internet. You might only be allowed to use the internet to access the course website. Cell phones must be turned off and stowed away.
- If you have a conflict for the midterm or the final exam, you must notify the instructor at least one week before the exam, with documented proof. For legitimate conflicts, a late make-up exam will be scheduled. There will not be early make-up exams. Absence from an exam without prior notification is excused only in cases of emergency.
- Both exams will be taken in-person, but may be administered through Canvas. You will therefore want to make sure you have power for your computer.
- All requests for re-grades must be submitted within one week of the time you receive your graded exam back. All requests for re-grades must be submitted in writing. Your written grade appeal must show that you understand the answer given in the answer key, and then explain how *either*:
 - Your answer is a restatement of the answer given in the answer key, or
 - Your answer is a legitimate alternative answer to the problem.

Overall Grading Policy: Only numerical scores will be recorded from the midterm and the final exam, the homework assignments, and the group project. These numerical scores will then be weighted by the appropriate weights to obtain an overall score for each student. Your final grade in the course will be based on (a) your overall score, (b) the overall scores of your fellow students, and (c) the instructors considered judgment.

Pass/Fail Policy

You have the option to pass/fail one major or minor course (with grade of C or better) and have that course count towards your major or minor. The deadlines for this semester are:

Aug 30 for MOD 1

Oct 11 for Semester

Oct 25 for MOD 2.

If you would like to read more about this policy, please read the pass/fail policy on the Registrar's website. Note that Honors courses cannot be pass/failed

Attendance Policy

You are expected to attend each class. I expect to be notified by email if you are going to be absent or will miss a significant portion of any one class.

Attendance for this course will be captured via UNC Check-In App. For more information about it and to download the app to your phone, please visit:

<https://edtech.unc.edu/service/unc-check-in/>

As stated in the University's [Class Attendance Policy](#), no right or privilege exists that permits a student to be absent from any class meetings, except for these University Approved Absences:

1. Authorized University activities
2. Disability/religious observance/pregnancy, as required by law and approved by [Accessibility Resources and Service](#) and/or the [Equal Opportunity and Compliance Office](#) (EOC)
3. Significant health condition and/or personal/family emergency as approved by the [Office of the Dean of Students](#), [Gender Violence Service Coordinators](#), and/or the [Equal Opportunity and Compliance Office](#) (EOC).

Honor Code

All students are expected to follow the guidelines of the UNC honor code. In particular, students are expected to refrain from “lying, cheating, or stealing” in the academic context. If you are unsure about which actions violate that honor code, please consult the [Student Conduct](#) website. Integrity is one of UNC Kenan-Flagler Business School’s core values. According to our statement of core values “we hold ourselves to the highest ethical standards.” Violations of the honor code are totally inconsistent with this core value and are **simply unacceptable in any form**.

In this class, an honor code violation would occur if you gave or received help on the individual exams (midterm and final), or gave or received help outside of your homework group on the homework assignments. An honor code violation would also occur if any assignment contained plagiarism. According to the university honor code, plagiarism is defined as “the intentional representation of another person’s words, thoughts, or ideas as one’s own.” Finally, for the group projects “unauthorized collaboration” is defined as getting help from someone outside your group (be sure to note any exceptions) or use in any way of a project from previous years that is closely related to your project.

It shall be the responsibility of every student at the University of North Carolina at Chapel Hill to obey and support the enforcement of the Honor Code. The Honor Code prohibits plagiarism, falsification or misrepresentation of an academic assignment, unauthorized collaboration on academic work, and cheating on examinations or other academic assignments. If you have questions about your responsibilities under the Honor Code, please consult the document Instrument of Student Judicial Governance. If you have any questions about whether a proposed action is permitted in this class, you should ask the instructor.

Academic Dishonesty

It shall be the responsibility of every student enrolled at the University of North Carolina to support the principles of academic integrity and to refrain from all forms of academic dishonesty including, but not limited to, the following:

1. Unauthorized assistance or unauthorized collaboration in connection with academic work, whether or not for a grade.
2. Cheating on examinations or other academic assignments, whether graded or otherwise, including but not limited to the following:
 - a. Using unauthorized materials and methods (notes, books, electronic information, telephonic or other forms of electronic communication, or other sources or methods);
 - b. Sharing or accessing documents or any other resources on Chegg, Course Hero, or any other website that facilitates the unauthorized sharing of class material.
 - c. Violating or subverting requirements governing administration of examinations or other electronic assignments;
 - d. Compromising the security of examinations or academic assignments;
 - e. Representing another’s work as one’s own; or
 - f. Engaging in other actions that compromise the integrity of the grading process.

UBP Wellness coaching Services

In the UBP, Wellness Coaches work with students to co-create action-oriented goals based on the habits they'd like to change, and provide accountability and support as students work towards these goals. Wellness Coaching typically lasts for between 3 to 6 sessions and is a free service for all UBP students. Coaching may also be used as a bridge to additional services if it seems students could benefit from resources and support outside the scope of a brief, goal-oriented space. Sign-up for UBP Wellness Coaching to learn more about your wellbeing or other mental health resources on campus! You can also email wellness@kenan-flagler.unc.edu to get started. To explore additional wellness resources or a calendar of wellness events, check out the UBP SharePoint: <https://kenanflaglerunc.sharepoint.com/sites/ubp/SitePages/Student-Wellness.aspx>

Counseling and Psychological Services

UNC-Chapel Hill is strongly committed to addressing the mental health needs of a diverse student body. The Heels Care Network website is a place to access the many mental health resources at Carolina. CAPS is the primary mental health provider for students, offering timely access to consultation and connection to clinically appropriate services. Go to their website <https://caps.unc.edu/> or visit their facilities on the third floor of the Campus Health building for an initial evaluation to learn more. Students can also call CAPS 24/7 at 919-966-3658 for immediate assistance.

Title IX

Any student who is impacted by discrimination, harassment, interpersonal (relationship) violence, sexual violence, sexual exploitation, or stalking is encouraged to seek resources on campus or in the community. Reports can be made online to the EOC at <https://eoc.unc.edu/report-an-incident/>. Please contact the University's Title IX Coordinator (Elizabeth Hall, interim – titleixcoordinator@unc.edu), Report and Response Coordinators in the Equal Opportunity and Compliance Office (reportandresponse@unc.edu), Counseling and Psychological Services (confidential), or the Gender Violence Services Coordinators (gvsc@unc.edu; confidential) to discuss your specific needs. Additional resources are available at safe.unc.edu.

Accessibility Resources and Services

The University of North Carolina at Chapel Hill facilitates the implementation of reasonable accommodations, including resources and services, for students with disabilities, chronic medical conditions, a temporary disability or pregnancy complications resulting in barriers to fully accessing University courses, programs and activities.

Accommodations are determined through the Office of Accessibility Resources and Service (ARS) for individuals with documented qualifying disabilities in accordance with applicable state and federal laws. See the ARS Website for contact information: <https://ars.unc.edu> or email ars@unc.edu.

Course Outline: The following pages give an outline of the entire course. The readings and assignments for each lecture are listed. I will attempt to stick to this schedule as much as possible, though I reserve the right to modify the contents of the lectures depending on the evolution of the course. Sufficient notice will be given for any changes.

Course Outline

(CP refers to the Course Pack, and T refers to the Textbook.)

1 Date: August 20 Lecture

Subjects: Introduction, Course Logistics, Examples of Business Analytics

Part I: Drawing Conclusions from Data

2 Date: August 22 Lecture

Subjects: From Data to Decision Making
Describing Data

Read: Optional: Chapters 1, 2 (T)

3 Date: August 27 LAB Session 1

Subject: Describing Data using Excel

Due: Lab Practice 1

4 Date: August 29 Lecture

Subjects: Hypothesis Tests

Read: Optional: Chapter 3 (T)

September 3 No Class – Well-being Day

5 Date: September 5 Lecture

Subjects: Confidence Intervals

Read: Optional: Chapter 3 (T)

6 Date: September 10 LAB Session 2

Subject: Statistical Inference using Excel

Due: Lab Practice 2

Part II: Using Data to Identify Drivers of Business Outcomes

7 Date: September 12 Lecture

Subject: Quantifying the Influence of Performance Drivers & Forecasting: Regression

Read: Optional: Chapter 5 (T)

8 Date: September 17 Lecture

Subject: Building Multiple Regression Models

Read: Optional: Chapter 10 (T)

Due: Homework 1

9 Date: September 19 LAB Session 3

Subject: Linear Regression using Excel

Due: Lab Practice 3

10 Date: September 24 Lecture

Subject: Using Indicator and Interaction Variables

Read: Optional: Chapter 11 (T)

11 Date: September 26 LAB Session 4

Subject: Incorporating Indicator Variables using Excel

Due: Lab Practice 4

12 Date: October 1 Review

Subject: Midterm Review

Read: All materials covered in Parts I & II

Due: Homework 2

October 3 MIDTERM EXAM 7-10 PM, Rooms TBD (Note: Replaces Normal Class)

Part III: Predictive Analytics

13 Date: October 8 Lecture
Subject: Introduction to JMP Pro
Read: **Store 24 (A): Managing Employee Retention (CP)**

14 Date: October 10 Lecture
Subject: Classification Modeling and Logistic Regression

15 Date: October 15 Lecture
Subject: Classification Trees

October 17 No Class – Fall Break

16 Date: October 22 LAB Session 5
Subject: Conducting Classification Modeling (in JMP Pro)
Due: Lab Practice 5

17 Date: October 24 Lecture
Subject: Model Validation and Prediction Accuracy
Due: Project Proposal (10:00 PM)

18 Date: October 29 LAB Session 6
Subject: Model Validation
Due: Lab Practice 6

19 Date: October 31 Lecture
Subject: Neural Networks and AI

Part IV: Decision Making under Constraints

20 Date: November 5 Lecture

Subject: Linear Programming

Read: Note on Linear Programming, pp. 1-6 (CP)
Using Excel to Solve a Linear Programming Problem (CP)

21 Date: November 7 Lecture

Subject: Sensitivity Analysis

Read: Note on Linear Programming, pp. 7-12 (CP), except
"Shadow Prices and Resource Pricing"

Due: Homework 3

22 Date: November 12 LAB Session 7

Subject: Decision Making under Constraints using Excel

Due: Lab Practice 7

23 Date: November 14 Lecture

Subjects: Production and Inventory Management
Revenue Management
Design of Transportation Networks
Retail Price Optimization

Prepare case: Retailer: A Retail Pricing Simulation Exercise (CP)

24 Date: November 19 LAB Session 8

Subject: Excel Solver Output and Sensitivity Analysis

Due: Lab Practice 8

Due: November 20, 10:00 PM Executive summary memo and presentation slides

25 Date: November 21 Final Project Presentations

26 Date: November 26 Final Project Presentations

November 28 No Class – Thanksgiving

27 Date: December 3 Lecture

Subject: Final Review, Course Evaluation

Read: All materials covered in Parts III and IV

Due: **Homework #4, Peer-review scores**

December 10 FINAL EXAM 4:00-7:00 PM, Rooms TBD