The University Of North Carolina at Greensboro
Bryan School of Business and Economics
Department of Information Systems and Supply Chain Management

MBA 701-02: Quantitative Analysis for Decision Making (Fall 2021)
Location: Online
Time: Mondays 6:30 – 9:20 pm

Instructor: Onyi Nwafor, PhD
Office: Room 438 Bryan Building
Phone: (336) 256-8587
E-Mail: o_nwafor@uncg.edu
Office Hours: Virtual office hours by appointment

COURSE DESCRIPTION
The availability of large amounts of data to today’s business organizations and the opportunity it offers to make better decisions that can improve both financial and operational performance means that data analytics will continue to play an increasingly important role in today’s world. This course introduces students to a variety of quantitative methods and tools to analyze data from various business domains so as to make better fact-based decisions. Specific topics covered in the course include descriptive statistics and data visualization, hypothesis testing, confidence intervals, regression analysis, decision analysis, optimization modeling, and simulation modeling.

COURSE OBJECTIVES
The course goals are to: (i) Demonstrate the wide range of situations in which quantitative analysis improves decision making and creates competitive advantages; (ii) Develop students’ analytical thinking skills; (iii) Develop students’ mastery of analysis using spreadsheet models. Upon completing the course, students should be able to:

• Describe a set of data using histograms, scatter diagrams and summary statistics.
• Compute statistics from sample data to support confidence interval estimation, hypothesis testing and regression analysis.
• Infer the statistical precision of insights derived from confidence interval estimation, hypothesis testing and regression analysis.
• Construct effective models of decision-making situations using principles of professional spreadsheet design.
• Compute optimal solutions to decision making models for the management of a wide range of situations in which quantitative analysis improves decision making.
• Analyze spreadsheet simulation models and decisions with uncertain outcomes by using multiple criteria for optimality and risk.

PRE-REQUISITE COURSES AND REQUIREMENTS
• Excel 2016 Prep Course

COURSE TEXTBOOK AND OTHER MATERIALS
   • MindTap® is an online learning resource that includes e-text, videos of worked examples, flashcards and many other study resources.
MindTap® is required to complete graded problem sets and quiz assignments. Students may purchase access to MindTap® directly from Cengage, or a printed access card from the UNCG Bookstore.

- Cengage also offers various product options that include combinations of e-text, print, and digital platform. Students can learn more about these options by visiting: https://www.cengage.com/c/business-analytics-data-analysis-decision-making-7e-albright/9780357109953PF/

2. Laptop installed with MS Excel 2010 or later and the following add-ins: Solver, Analysis Toolpak, SolverTable, Palisade Decision Tools Suite (StatTools, @Risk, PrecisionTree, NeuralTools, TopRank, and Evolver). Please note that the examples provided in the text are based on Excel 2016.

- Some of the Excel features used in this course are not supported by Excel for Mac.

Mac users need to use a Windows emulation program (Bootcamp, Parallels, Vmware Fusion, etc.), along with Windows, to participate in the course!!

**COURSE STRUCTURE**

This course meets for one semester of instruction. This course will be taught 100% online and will combine standard e-learning with supplemental video conference sessions (see “Zoom” section below). This course uses a discussion-oriented inverted classroom model, wherein students are responsible for reviewing the course materials posted online BEFORE attempting follow-up quizzes or participating in the instructor-led web meetings. This approach allows time to address more challenging problems and in-depth discussions of the subject matter during the web meetings. Web meetings will involve discussions of assigned readings, guided computer exercises, group lab assignments, and case discussions. The lecture slides will be posted on Canvas.

**Canvas:**

This course will use UNCG Canvas as a course management tool to post important information. This information includes course syllabus, tests, grades, videos, reading articles, announcements, and other instructional materials. To access Canvas, visit: http://canvas.uncg.edu.

Students must have an active UNCG email account to access Canvas. Canvas works best using the Mozilla Firefox browser or Google Chrome. It is the student’s responsibility to check Canvas regularly for important announcements, such as class notes, emails, and grades among others.

**Discussion Forums**

I have created two discussion boards on Canvas:

- Ask your Instructor Discussion Board
- What’s Going on in Class Discussion Board

*Ask your Instructor Discussion Board*

Please use this discussion board to ask any general questions you may have about the class, so I can respond to them in public. Chances are that if you have a question, someone else has the same one!

*What’s Going on in Class Discussion Board*

The purpose of this discussion board is to facilitate collaboration among students enrolled in the class. Please use this discussion board to communicate with your classmates. I encourage everyone to subscribe to this discussion forum. That way, you can easily reach out to your classmates (or easily be reached by
other students). Please note that I do not participate in the “What’s Going on in Class?” discussion board. The best way to reach me is via the "Ask Your Instructor" discussion board.

Zoom
The course will rely on Zoom web sessions to present/ clarify course concepts and allow opportunity for discussion and dialogue between the Professor and students. Zoom sessions will hold from 6:30pm-9:20pm, every Monday. Students can access the weekly Zoom sessions via the link provided in Canvas. Every Zoom session is important. Students should endeavor to participate in all. The sessions will be recorded to allow access to students unable to participate in “live” sessions. Students can access the recordings via the link provided in Canvas. Please note that sometimes, the video recordings will not be available until the day following each session.

Laptop/Computer Policy
This is a computer intensive class. Please ensure you have a working computer/laptop with you during the web sessions!

Some of the advanced Excel functions are not supported by Excel for Mac. As such, only PC Windows-based computers, or Mac Computers with Excel running on a Windows emulation program are appropriate for this course.

Excel 2016 Prep Course
This course relies on Microsoft Excel and some of its powerful add-ins to implement the data analysis techniques that will be covered in class. It is important for students to note that although Microsoft Excel will be used extensively throughout the course, the course is not designed to teach students how to use Excel. Rather, the course focuses on how to address business problems using various quantitative methods. Excel only serves as a tool to implement these data analysis methods. As such, students are expected to have working knowledge of Microsoft Excel prior to the start of the class. The Excel 2016 Prep course provided through the MBA office will help students assess their level of Excel proficiency. Students must achieve a score of 80% on the assigned proficiency quizzes in order to earn course credit for the Excel 2016 Prep Course. Students may attempt the Excel 2016 Prep Quizzes as many times as needed before the due date posted on Canvas.

MindTap
Problem-Sets and Quizzes will be administered via MindTap, the online software accompanying the text. Students are therefore required to purchase access to MindTap. To access or register for MindTap, please see the link provided on Canvas. A video guide is also provided on Canvas.

Quizzes
There will be a quiz at the end of every module/topic area to test students’ understanding of the concepts discussed in class. The objective of the quizzes is to reinforce key concepts discussed in class. The quizzes will be short and relatively simple. All quizzes will be administered via MindTap. Unless otherwise stated, quizzes will be due at 11:59 p.m. on the Sunday following the quiz assignment. At the end of the semester, the lowest score will be dropped from students’ final grades.

Group-based Assignments
The course also includes group-based assignments. The assignments could take the form of problem sets and/or essay questions. The problem sets provide an opportunity to practice the quantitative methods covered in class, and typically include complex computation problems. The essay questions provide an opportunity to reflect on the managerial implications of the quantitative methods covered in class.
Students are required to form their own groups by the second class. Unless otherwise stated, all group-based assignments will be due at 11:59 p.m. on the Sunday following the problem set assignment.

Important:
Please note that the instructor does not grant extensions or provide opportunities for makeup quizzes/group-based assignments. Students will earn a score of zero for each assignment that they fail to submit by the due date. In the event that a technical problem prevents a student from submitting an assignment by the due date, the instructor may grant the student an opportunity to complete the assignment, strictly on the condition that the student provides evidence of the technical problem (e.g., a screenshot of the error message clearly showing the date and time the error occurred). It is the student’s responsibility to ensure that he/she captures evidence of the technical error (including date and time) at the time that it occurs. Students are therefore advised to ensure that they have a reliable computer and internet access ready before attempting each assignment.

Exams
This course includes one exam. The exam will be conducted virtually. The instructor will provide further details on the exams in course of the semester.

Case Study:
The course will include a case study assignment related to business decisions and quantitative modeling. Students will work in assigned teams to attempt the case. Each team will submit a two-page executive summary of its recommendations (in MS Word or PDF format), along with the Excel spreadsheet upon which the recommendations are based, and recorded video presentation of their research problem and findings. These items will be due on the dates posted on Canvas.

Grades
The point allocation and resulting letter grades for the course are detailed below:

<table>
<thead>
<tr>
<th>Assignment</th>
<th>Percentage of Overall Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quizzes</td>
<td>15% of the overall grade</td>
</tr>
<tr>
<td>Group-based Assignments</td>
<td>20% of the overall grade</td>
</tr>
<tr>
<td>Case Study Assignment</td>
<td>25% of the overall grade</td>
</tr>
<tr>
<td>Final Exam</td>
<td>25% of the overall grade</td>
</tr>
<tr>
<td>Excel 2016 Prep Course</td>
<td>10% of the overall grade</td>
</tr>
<tr>
<td>Participation and Professionalism</td>
<td>5% of the overall grade</td>
</tr>
<tr>
<td>Total</td>
<td>100%</td>
</tr>
</tbody>
</table>
The required performance for each letter grade is given below. Note, that final grades averages are not rounded off to the next higher integer. For example, a 92.99 is an A-, not an A.

<table>
<thead>
<tr>
<th>Grade</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>93-100 %</td>
</tr>
<tr>
<td>A-</td>
<td>90-92.99 %</td>
</tr>
<tr>
<td>B+</td>
<td>87-89.99 %</td>
</tr>
<tr>
<td>B</td>
<td>83-86.99 %</td>
</tr>
<tr>
<td>B-</td>
<td>80-82.99 %</td>
</tr>
<tr>
<td>C+</td>
<td>77-79.99 %</td>
</tr>
<tr>
<td>C</td>
<td>70-76.99 %</td>
</tr>
<tr>
<td>F</td>
<td>Below 70 %</td>
</tr>
</tbody>
</table>

GENERAL
Virtual Office Hours
The Professor’s virtual office hours are designed to assist students with understanding of the material. Students are STRONGLY encouraged to contact the Professor by posting a message on the “Ask Your Instructor” discussion forum at the first sign of any problem or lack of understanding. Do not wait until it is too late! The instructor will respond to all questions posted on this forum within 24 hours. To avoid repeat questions, students are encouraged to review the discussion thread before posting questions.

Attendance Policy
Students are strongly encouraged to attend every online session, especially given the quantitative and hands-on nature of the course.

Make-Up Exam Policy
Exams may not be missed for the convenience of the student. The exam dates are published in the course schedule and it is expected that students will schedule their other activities around these exam dates. If a major exam is to be missed due to an approved university absence, students must inform the Professor before the exam (if not possible, no later than 24 hours after the exam) and you must furnish the Professor with the original documentation (copies will not be accepted) why the absence should be excused. There will be no make-ups for missed exams without a university approved excuse.

If excuse is approved, students are allowed to take the exam on the date agreed by the Professor and the student. The make-up exam will cover the material of the missed exam and the new material that is covered prior to the make-up exam date. The format of the exam may be different from the exam given in class. An exam, whether regularly scheduled or make-up, that is missed without an approved excuse will be assigned a grade of ZERO.

UNCG Academic Integrity Policy.
By submitting an assignment, each student is acknowledging their understanding and commitment to the Academic Integrity Policy on all major work for the course. Refer to the following URL: https://osrr.uncg.edu/academic-integrity/

Accommodations/ADA Statement.
UNCG seeks to comply fully with the Americans with Disabilities Act (ADA). Students requesting accommodations based on a disability must connect with the Office of Accessibility Resources and Services (OARS) in 215 Elliott University Center, (336)334-5440, oars.uncg.edu.

*****HAVE A GREAT SEMESTER!…*****
UNCG STATEMENT ON COVID

As we return for Fall 2021, the campus community must recognize and address continuing concerns about physical and emotional safety, especially as we will have many more students, faculty, and staff on campus than in the last academic year. As such, all students, faculty, and staff are required to uphold UNCG’s culture of care by actively engaging in behaviors that limit the spread of COVID-19. Such actions include, but are not limited to, the following:

- Following face-covering guidelines
- Engaging in proper hand-washing hygiene when possible
- Self-monitoring for symptoms of COVID-19
- Staying home if you are ill
- Complying with directions from health care providers or public health officials to quarantine or isolate if ill or exposed to someone who is ill.

Instructors will have seating charts for their classes. These are important for facilitating contact tracing should there be a confirmed case of COVID-19. Students must sit in their assigned seats at every class meeting and must not move furniture. Students should not eat or drink during class time.

To make it easier for students to hear their instructor and/or read lips and if conditions permit, instructors who are fully vaccinated and who can maintain at least six feet of distance from students may remove their masks while actively teaching if they choose, but will wear a mask at all other times while in the classroom, including during the periods before and after class.

A limited number of disposable masks will be available in classrooms for students who have forgotten theirs. Face coverings will also be available for purchase in the UNCG Campus Bookstore. Students who do not follow masking requirements will be asked to put on a face covering or leave the classroom to retrieve one and only return when they follow the basic requirements to uphold standards of safety and care for the UNCG community. Once students have a face covering, they are permitted to re-enter a class already in progress. Repeated issues may result in conduct action. The course policies regarding attendance and academics remain in effect for partial or full absence from class due to lack of adherence with face covering and other requirements.

For instances where the Office of Accessibility Resources and Services (OARS) has granted accommodations regarding wearing face coverings, students should contact their instructors to develop appropriate alternatives to class participation and/or activities as needed. Instructors or the student may also contact OARS (336.334.5440) who, in consultation with Student Health Services, will review requests for accommodations.