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 (Spring 2022)
Location: Online
Virtual Check-in: Fridays 7:00 – 8:30 pm

Instructor: Onyi Nwafor, PhD
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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% asynchronously online and will combine standard e-learning with supplemental video conference sessions (see “Virtual Check-in Session” 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 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 are designed to check-in on students’ understanding of the materials posted online and their progress with any assignments.

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.

Class Notes and Video Recordings
Because this class is a paced asynchronous online class, lecture videos and associated lecture notes will be released on the weeks that they are specified to be covered in the course schedule (please refer to the course schedule at the end of this document). Specifically, lecture videos and the associated lecture notes will be posted in Canvas by 10:00am on Mondays specified. To access the video recordings, please navigate to the “Panopto Video” app in Canvas. You can find the link to the “Panopto Video” among the menu navigation items on the left-hand side of Canvas. The associated lecture notes and assignments will be available in the relevant module in Canvas.

Virtual Check-in Sessions
The professor will host virtual check-in sessions from 7:00pm-8:30pm, every Friday as a forum to clarify concepts related to the materials posted online the previous Monday. These virtual check-in sessions will take the form of workshops/tutorials where the professor will discuss any questions that students may have about course concepts. Attendance to these check-in sessions is optional and video recordings of any sessions that hold will be available via the Panopto Video app.

Note that although the instructor has reserved time for the check-in sessions, there will be no video recordings on the weeks that no students show up for the sessions. Further, the actual duration of the sessions will vary depending on student turnout and extent of student engagement. Remember, it is each student’s responsibility to be familiar with materials posted online the Monday preceding the check-in session and to come prepared with specific questions for the instructor to discuss. Students can join the weekly check-in sessions via the Zoom link provided in Canvas. For instructions on how to join virtual check-in sessions via Zoom, please see the file “How to Join Zoom Sessions.pdf” posted under “Getting Ready for MBA701” module in Canvas.
**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.

**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.

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>Component</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>
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GENERAL

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.

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, https://oars.uncg.edu/

*****HAVE A GREAT SEMESTER!...*****
As we return for spring 2022, 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. These actions include, but are not limited to:

- Following face-covering guidelines
- Engaging in proper hand-washing hygiene
- Self-monitoring for symptoms of COVID-19
- Staying home when 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
- Completing a self-report when experiencing COVID-19 symptoms, testing positive for COVID-19, or being identified as a close contact of someone who has tested positive
- Staying informed about the University's policies and announcements via the COVID-19 website

Instructors will have seating charts for their (face-to-face) 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. Students may move their chairs in class to facilitate group work, as long as instructors keep seating chart records. Students should not eat or drink during class time.

A limited number of disposable masks will be available in classrooms for students who have forgotten theirs. Face coverings are also 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 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.