

UNIVERSITY OF NORTH CAROLINA AT GREENSBORO
Bryan School of Business and Economics
Department of Management

BUS 750: Doctoral Research Methods IV (Regression Models)

Fall 2021
Online Delivery

Synchronous Sessions from 2000 to 2130 (Eastern Time) on
Aug 18; Sep 1, 15, 29; Oct 13, 27; Nov 10

INSTRUCTOR INFORMATION

Name: Arran Caza
Office Location: Bryan Building (room 362)
Phone: Dept. of Management 336-334-5691
Email: ajcaza@uncg.edu
Office Hours: see below

OFFICE HOURS

I will have Zoom office hours from 2000 to 2130 (Eastern Time) on Wednesdays and Thursdays in the weeks in which we do not have synchronous meetings (i.e., think in terms of “class week” or “office hours” week). Note that these times will be shared between two classes (BUS720 and BUS750). I am leaving them shared to maximize my availability, and thus your convenience. My plan is to have these be open, first-come first-served chat sessions. Giving answers to the whole group helps to counter both pluralistic ignorance and imposter syndrome. It will also create a potential opportunity for the two cohorts to interact. Plus, switching back and forth from OT to regression may allow for some serendipitous inspiration. However, if you want to talk with me privately, we can go into a breakout room to do so. If you cannot attend these sessions, send me an email and we will find an alternate time to meet. [The Zoom link for office hours is available in Canvas.](#)

COMMUNICATION

Email is typically the best way to reach me. It is also the way I will most frequently communicate with you. I usually check my email one each business day (Monday through Friday). You should typically receive a response from me within two business days. When emailing me, please use your UNCG email address. Also please remember that I teach multiple classes each semester, sometimes involving dozens of students. It is helpful if you can provide some context in your email; this is especially true if it is in early in the semester or you are emailing me for the first time.

CATALOG COURSE DESCRIPTION

Techniques of estimating multivariate relationships. Discusses multiple regression and problems associated with single equation modeling, moderation and mediation analysis, structural equation modeling, and hierarchical linear modeling.

COURSE DESCRIPTION

This course assumes you are already familiar with the content of BUS701 (Doctoral Research Methods I: Quantitative Research Methods), including reliability, validity, common method variance, exploratory factor analysis, and research design. We will build on and extend that previous quantitative training. You will be introduced to the more complex models mentioned in the catalog description above. Please note that each of

these topics can be -- and frequently is -- the basis of a semester long course by itself. As a result, we will not be able to address all the details. Our focus will be on giving you a firm conceptual understanding of the foundations of each topic, so that you can learn more about these topics on your own.

PREREQUISITES / COREQUISITES

None

INTENDED AUDIENCE

This is a doctoral level course, intended for PhD students in Management.

TEACHING METHODS

The course will be delivered in asynchronous format. The work in this course involves watching lecture videos, doing readings, and completing assignments. However, there will be biweekly synchronous sessions on the dates listed. These sessions will consist primarily of discussions in which I respond to your questions and concerns. If you are familiar with the phrase "flipped classroom," that's the model being used here. Synchronous attendance is optional -- sessions will be recorded and available on Canvas -- but all students are strongly encouraged to attend so that they can ask questions and help to focus the discussion on areas of greatest value to them.

STUDENT LEARNING OUTCOMES (SLOs)

Upon successful completion of this course, students will be able to

1. Demonstrate the ability to solve problems using regression models and multivariate techniques.
2. Demonstrate knowledge of the use of regression models in empirical research in organizations.
3. Apply the statistical knowledge to analyze individual, firm and country-level data using statistical software.
4. Evaluate the regression models and multivariate techniques used in empirical research in business and management.

ASSIGNMENTS FOR ACHIEVING LEARNING OUTCOMES

There will be a total of seven (7) deliverables, each of which supports all four of the course SLOs. Separate documents, available on Canvas, will provide detailed instructions.

Assignments: There will six (6) homework assignments, one for each unit in the course. Each assignment will have two parts -- conducting and interpreting analysis; and progressing your final paper. The assignments are due on or before Sep 5, Sep 19, Oct 3, Oct 17, Oct 31, and Nov 14.

Final paper: The final paper is due on or before Dec 5. It's a complete paper, not a proposal. You're going to need data, analysis, and results.

ASSIGNMENT SUBMISSION AND FORMAT

Details are given on Canvas.

FINAL EXAMINATION

There will not be a final exam.

EVALUATION AND GRADING

Each of the six problem sets will determine 10% of your final grade (total 60%). The final paper will determine 40% of your final grade. Numerical scores will be converted to letter grades as indicated below.

Letter Grade	% points accumulated
A	94 – 100
A-	90 - 93.99
B+	86 - 89.99
B	82 - 85.99
B-	78 - 81.99
C	70 - 77.99
F	<70

POLICY ON LATE WORK & EXTRA CREDIT

Late submissions will not be accepted. Extra credit will not be available.

ACADEMIC INTEGRITY POLICY

Each student is required to sign the Academic Integrity Policy on all major work submitted for the course. Refer to the following URL: [Academic Integrity](#).

ACCOMMODATIONS

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

LEARNING ENVIRONMENT

I want to create a productive and inclusive learning environment of mutual respect. If you experience or witness any instances of inappropriate behavior you can contact me directly and seek out the following resources:

- UNCG Counseling Center (non-reporting agency/confidential) 336.334.5874
- Murphie Chappell, Title IX Coordinator (reporting agent) 336.256.0362 or mechappe@uncg.edu
- University Police (reporting agent) 336.334.4444

For more information on UNCG's policies regarding harassment, visit [UNCG Sexual Harassment Policy](#)

Likewise, if you are personally dealing with challenges or concerns that are barriers to your success, Student Health Services and The Counseling Center can help. You can learn about the free, confidential mental health services available on campus by calling 336-334-5874, visiting the website at [Student Health Services](#), or visiting the Anna M. Gove Student Health Center at 107 Gray Drive.

ATTENDANCE POLICY

The course is delivered in online, asynchronous format. Attending synchronous sessions is optional.

TECHNICAL SUPPORT

Students with technical issues with the course and email should contact 6-TECH for support either by email or phone or chat ([6TECH Help](#)). Please also let me know about the issue and if there will be any delays in resolving it.

REQUIRED TEXTS/READINGS/REFERENCES

Required readings will consist of the two textbooks below and assigned articles. The specific readings for each unit are given in a document on Canvas (see "BUS750-ReadingList.pdf").

Textbooks (please get both)

Using Multivariate Statistics

By: Barbara G. Tabachnick; Linda S. Fidell
Publisher: Pearson
Print ISBN: 9780134790541
eText ISBN: 9780134792910
Edition: 7th
Copyright year: 2019

An R Companion to Applied Regression

By: John Fox; Sanford Weisberg
Publisher: SAGE Publications, Inc
Print ISBN: 9781544336473
eText ISBN: 9781544336466
Edition: 3rd
Copyright year: 2019

Assigned articles that are available from the library will not be provided on Canvas. You should seek them out yourself, for three reasons: (a) accessing the articles directly will allow you to get them in the format that best suits your learning needs (e.g., EPUB vs PDF, screen reader enabled, etc.); (b) getting them yourself will allow you to integrate the articles into your reference manager of choice; and (c) when you get the articles, you will incidentally be exposed to other articles on related topics, any of which may provide a lead that advances your personal research.

The course will be conducted using R, which is a software platform for many kinds of analysis and graphical presentation. R is freely available for all types of computers (<https://www.r-project.org/>). Many users find that the R environment is less than ideal to interact with in terms of simplicity and aesthetics. Therefore, they often choose to use another program as an interface between themselves and R (in technical terms, this is an IDE -- integrated development environment). In this course, I will use the RStudio IDE (<https://rstudio.com/>), because it is open source, cross-platform, and freely available. You are free to interact with R in any way you prefer.

Strictly speaking, you are not required to use R in your assignments. If you prefer to use another software application you may (e.g., SAS, Stata), however there are four things to keep in mind if you choose to not use R: (1) you need to be sure that your chosen software can perform all of the required analyses (e.g., SPSS cannot do structural equation modeling); (2) it is your responsibility to make your output and reports comparable to those produced by R (e.g., I'm not very familiar with SAS, so you'd need to make sure I can understand what you produce); (3) I am unlikely to be able to help you with the technical details of conducting analysis in any software other than R; and (4) I am going to use R, so all examples will be in R.

TOPIC OUTLINE & CALENDAR

It is my intention to follow the calendar as outlined below. However, if the need arises, we may have to adjust it. In all such cases, I will notify all students about the changes.

On or before . . .	Arran will . . .	You will . . .
Wed Aug 4	<ul style="list-style-type: none"> • Open Canvas site • Post syllabus • Post Assignment 0 	
Tue Aug 17		<ul style="list-style-type: none"> • Review the syllabus • Do readings • Complete Assignment 0
Wed Aug 18	Attend synchronous Zoom session Topic: Introduction & review	
Mon Aug 23		<ul style="list-style-type: none"> • Do readings
Tue Aug 24	<ul style="list-style-type: none"> • Post lecture video • Post code video • Post Assignment 1 	<ul style="list-style-type: none"> • Watch videos • Work on Assignment 1
Wed Sep 1	Attend synchronous Zoom session Topic: Assignment 1 – Review of simple models	
Sun Sep 5		<ul style="list-style-type: none"> • Submit Assignment 1
Mon Sep 6		<ul style="list-style-type: none"> • Do readings
Tue Sep 7	<ul style="list-style-type: none"> • Post lecture video • Post code video • Post Assignment 2 	<ul style="list-style-type: none"> • Complete readings • Work on Assignment 2
Wed Sep 15	Attend synchronous Zoom session Topic: Assignment 2 – Multiple regression	
Sun Sep 19		<ul style="list-style-type: none"> • Submit Assignment 2
Mon Sep 20		<ul style="list-style-type: none"> • Do readings
Tue Sep 21	<ul style="list-style-type: none"> • Post lecture video • Post code video • Post Assignment 3 	<ul style="list-style-type: none"> • Complete readings • Work on Assignment 3
Wed Sep 29	Attend synchronous Zoom session Topic: Assignment 3 – Extensions of regression	
Sun Oct 3		<ul style="list-style-type: none"> • Submit Assignment 3
Mon Oct 4		<ul style="list-style-type: none"> • Do readings
Tue Oct 5	<ul style="list-style-type: none"> • Post lecture video • Post code video • Post Assignment 4 	<ul style="list-style-type: none"> • Complete readings • Work on Assignment 4
Wed Oct 13	Attend synchronous Zoom session Topic: Assignment 4 – Moderation & mediation	
Sun Oct 17		<ul style="list-style-type: none"> • Submit Assignment 4
Mon Oct 18		<ul style="list-style-type: none"> • Do readings
Tue Oct 19	<ul style="list-style-type: none"> • Post lecture video • Post code video 	<ul style="list-style-type: none"> • Complete readings • Work on Assignment 5

On or before . . .	Arran will . . .	You will . . .
	<ul style="list-style-type: none"> • Post Assignment 5 	
Wed Oct 27	Attend synchronous Zoom session Topic: Assignment 5 – Multilevel models	
Sun Oct 31		<ul style="list-style-type: none"> • Submit Assignment 5
Mon Nov 1		<ul style="list-style-type: none"> • Do readings
Tue Nov 2	<ul style="list-style-type: none"> • Post lecture video • Post code video • Post Assignment 6 	<ul style="list-style-type: none"> • Complete readings • Work on Assignment 6
Wed Nov 10	Attend synchronous Zoom session Topic: Assignment 6 – Structural equation models	
Sun Nov 14		<ul style="list-style-type: none"> • Submit Assignment 6
Mon Nov 15		<ul style="list-style-type: none"> • Do readings
Tue Nov 16	<ul style="list-style-type: none"> • Post lecture video 	
Sun Dec 5		<ul style="list-style-type: none"> • Submit final paper