MGT 691: Research Methods II: Data Analysis

Days: Mondays  
Time: 10:00am to 1:00pm  
Location: Bidgood 147

Instructor: Justin A. DeSimone  
Office: Hewson 3001  
Email: jadesimone@cba.ua.edu  
Office Hours: Tuesday from 1:00pm to 2:00pm or (preferably) by appointment

Textbooks: There is no *required* textbook for this course. However, since most of the advanced analyses will be conducted using MPlus, there are two strongly recommended texts. Additionally, there will be reading assignments each week:


2. Geiser, C. (2013). Data analysis with Mplus. New York: Guilford Press. [This book is better than the software user’s guide, particularly if you are used to SPSS. It is currently available for $49.00 (new) on Amazon.com]

Grading Components:
- **Tests: 30%**
  - Test #1: 15%
  - Test #2: 15%
- **Weekly Assignments: 30%**
- **Projects: 30%**
  - Analysis: 10%
  - Paper: 10%
  - Presentation: 10%
- **Attendance/Participation: 10%**

<table>
<thead>
<tr>
<th>Grade Assignments</th>
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<tbody>
<tr>
<td>A</td>
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<td>B</td>
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<table>
<thead>
<tr>
<th>Important Dates</th>
<th>Test/Assignment Dates</th>
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<tbody>
<tr>
<td>August 22</td>
<td>First day of class</td>
</tr>
<tr>
<td>September 5</td>
<td>Labor Day</td>
</tr>
<tr>
<td>November 28</td>
<td>Last day of class</td>
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<tr>
<td>October 10</td>
<td>First Exam</td>
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<tr>
<td>November 28</td>
<td>Papers/Projects Due</td>
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<tr>
<td>December 5</td>
<td>Second Exam</td>
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Policies

Attendance/Participation: I never anticipate attendance problems with graduate students. All students are required to complete the assigned readings prior to class, attend all classes, and actively participate in class discussions. Extenuating circumstances will be considered on a case-by-case basis and only when notice of the absence is provided prior to the missed class. Missing an assignment, exam, or presentation is inexcusable and will result in a grade of zero.

Communication: I will communicate primarily in class or via email.

Classroom Procedures: I always attempt to begin class on time. Please do your best to arrive on time, but if you must arrive late, make sure you do not disturb the punctual students when you enter.

During lectures, you may use laptops or phones as you see fit. All I ask is that you refrain from disturbing other students.

Exams: Exams will be administered via in person or take-home format. Missing an exam, regardless of excuse, will result in a grade of zero. Exam questions are moderate to high in difficulty. Each exam will cover the assigned readings as well as some conceptual and computation content. Exams are intended to assess whether you understand the literature, concepts, and techniques well enough to perform research using advanced methodology and statistical techniques.

Assignments: Most weeks will involve a topic with an accompanying assignment. These will typically involve analyzing data and interpreting results. A few weeks will have topics where an analysis would be impractical (e.g., qualitative), but may have more assigned readings and discussion. One week (data quality) will involve a large-scale assignment. Late assignments will not be accepted.

Project: The project will involve collecting data, analyzing data, writing a miniature paper (partial Introduction, full Method, full Results, and partial Discussion sections), and presenting the results in class. Students should discuss project ideas with the instructor early in the semester.

Cheating: DO NOT CHEAT. Cheating on assignments or tests is unfair to other students (and yourself). This course has a ZERO-TOLERANCE policy regarding academic dishonesty. The UA Academic Misconduct Disciplinary Policy can be found at https://provost.ua.edu/academic-misconduct/. Any student suspected of cheating on an exam or assignment will be subject to any or all consequences outlined in the Code. For students caught cheating, consequences may range from obtaining a grade of zero on the exam (including the final) to expulsion or legal action (see https://www.ajc.com/news/local/former-tech-student-pleads-guilty-changing-grades/md9XbwHennmq23kbZwuDEL/).
Disability Accommodations: Accommodations for students with disabilities will be provided in accordance with UA policy. The University of Alabama Office of Disability Services website is located at http://ods.ua.edu/.

Severe Weather Protocol: Severe weather guidelines can be found at https://ready.ua.edu/severe-weather-guidelines/.

UAct: The University of Alabama is committed to an ethical, inclusive community defined by respect and civility. The UAct website (www.ua.edu/uact) provides extensive information on how to report or obtain assistance with a variety of issues, including issues related to dating violence, domestic violence, stalking, sexual assault, sexual violence or other Title IX violations, illegal discrimination, harassment, child abuse or neglect, hazing, threat assessment, retaliation, and ethical violations or fraud.

Statement on COVID-19

All University faculty, staff, and students are expected to maintain a commitment to the health and safety of our campus community. Due to the current COVID-19 pandemic, specific health and safety standards are in place to minimize exposure and community spread on campus. In the interest of your health and safety and that of all UA students, faculty and staff, the University reserves the right to change the mode of instruction or schedule of instruction at any time, based upon prevailing public health and other guidance. While the method of delivery may change, educational instruction and opportunities will continue. As such, the University will not provide a refund of tuition, in whole or in-part, based on any such changes. Detailed information on changes in format or schedule can be found at studentaccounts.ua.edu and financialaid.ua.edu.

UA students, faculty and staff are required to comply with UA System Comprehensive Health and Safety Task Force guidance regarding social distancing, face coverings and other measures.

Getting vaccinated is the best way to Protect Our Herd. COVID-19 vaccines are being administered by the University Medical Center, the Student Health Center and various businesses and healthcare providers. Students who report proof of their vaccination status will receive Bama Cash as a thank you gift for doing their part.

Prerequisites: MGT 690 (Research Methods I: Research Design), MKT 674 (Measurement and Structural Equation Modeling)
Course Description: A course that provides an overview of theory, research, and techniques associated with the investigation of specific research problems in organizational scholarship.

This course covers some of the more common advanced statistical techniques available to researchers in the organizational sciences. There is a focus on both the determination of appropriate techniques for specific research questions and application of the techniques using statistical software.

Objectives:

- To introduce students to topics in advanced research design and analysis
- To allow students the opportunity to practice advanced techniques using statistical software packages
- To teach students the appropriate use of advanced statistical techniques for addressing research questions

Student Learning Goals:

By the end of this course, students should be able to:

- Recognize the correct use and reporting of various research methods and statistical techniques in journal articles
- Employ the appropriate statistical technique to address various research questions in the organizational sciences
- Use multiple data management and statistical software packages to record, clean, manipulate, and analyze data
- Correctly and appropriately analyze data, interpret results, and communicate these actions effectively in writing and presentations

Subject to Change: The assigned readings and order of topics is subject to change. Course policies are not expected to change. Students will be given advance notice of any changes to the syllabus, schedule, assignments, or assigned readings.
# Course Schedule

<table>
<thead>
<tr>
<th>Week</th>
<th>Events and Topics</th>
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<tbody>
<tr>
<td>August 22</td>
<td>Introduction and review of ANOVA and regression</td>
</tr>
<tr>
<td>August 29</td>
<td>Dummy/Effects/Contrast coding, PCA/EFA, SEM/CFA, Measurement invariance, Relative importance, Epistemology, Qualitative</td>
</tr>
<tr>
<td>September 5</td>
<td>Labor Day (no class)</td>
</tr>
<tr>
<td>September 12</td>
<td>Psychometrics: CTT, Reliability types, Omega, Alternatives for temporal consistency, Test development, Measurement</td>
</tr>
<tr>
<td>September 19</td>
<td>Psychometrics: Generalizability theory, IRT</td>
</tr>
<tr>
<td>September 26</td>
<td>Data quality, Screening, Response rates, CMV</td>
</tr>
<tr>
<td>October 3</td>
<td>MA: Fixed-effect models, Random effects models, Heterogeneity and moderation, Publication bias, Confidence/Credibility/Prediction intervals, MASEM</td>
</tr>
<tr>
<td>October 10</td>
<td>Midterm</td>
</tr>
<tr>
<td>October 17</td>
<td>HLM: ICCs, $r_{wg}$, Homogeneity of regression</td>
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<tr>
<td>October 24</td>
<td>HLM: OWA, RCR, IAO, SAO</td>
</tr>
<tr>
<td>October 31</td>
<td>Time: Paired-sample t-test, Repeated measures ANOVA, Autoregression</td>
</tr>
<tr>
<td>November 7</td>
<td>Time: Latent change models, Latent growth models</td>
</tr>
<tr>
<td>November 14</td>
<td>Miscellaneous: Polynomial regression, RSA, Logistic regression, Survival analysis</td>
</tr>
<tr>
<td>November 28</td>
<td>Projects and presentations due</td>
</tr>
<tr>
<td>December 5</td>
<td>Exam 2 due</td>
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Reading Assignments

August 22, 2022

Topics: Introduction and review of ANOVA and regression

August 29, 2022

Topics: Dummy/Effects/Contrast coding, PCA/EFA, SEM/CFA, Measurement invariance, Relative importance, Epistemology, Qualitative

Required (Quantitative):


[This topic is also covered in Geiser Chapter 3]

Required (Qualitative):


**Reporting Examples:**


**Bonus Readings (Quantitative):**


Entire issue of Organizational Research Methods, April 2008, volume 11 number 2.

**Bonus Readings (Qualitative):**

The rest of the 2008 special issue in ORM (Volume 11, Number 3).


**September 5, 2021:** Labor Day
No readings (though I strongly suggest using this time to read ahead)

September 12, 2022

Topics: Psychometrics: CTT, Reliability types, Omega, Alternatives for temporal consistency, Test development, Measurement

Required:


Bonus Readings:


September 19, 2022

Topics: Psychometrics: Generalizability theory, IRT

Required:


**Reporting Examples:**


**Bonus Reading:**


**September 26, 2022**

Topics: Data quality, Screening, Response rates, CMV
Required:


Reporting Examples:


Bonus Readings:


October 3, 2022

Topics: MA: Fixed-effect models, Random effects models, Heterogeneity and moderation, Publication bias, Confidence/Credibility/Prediction intervals, MASEM

**Required:**


DeSimone, J. A., Köhler, T., & Schoen, J. L. (2020). If it were only that easy: The use of meta-analytic research by organizational scholars. *Organizational Research Methods, 22*, 867-891. [Emphasis on the “Findings and Discussion section along with the first online supplement]


**Bonus Readings:**


The entire special issue of the *Journal of Special Education* (volume 18, number 1).

The entire special issue of the *Journal of Clinical Epidemiology* (volume 48, number 1).

October 10, 2022: Midterm

October 17, 2022

Topics: HLM: ICCs, $r_w$, Homogeneity of regression, Context effects, WABA and variance decomposition

Required:


[This topic is also covered in Geiser Chapter 5]

**Reporting Examples:**


**Bonus Readings:**


LeBreton, J. M., James, L. R., & Lindell, M. K. (2005). Recent issues regarding $r_{WG}$, $r^{*}_{WG}$, $r_{WG(j)}$, and $r^{*}_{WG(j)}$. *Organizational Research Methods, 8*, 128-138.


**October 24, 2022**

Topics: HLM: OWA, RCR, IAO, SAO
Required:


[This topic is also covered in Geiser Chapter 5]

Reporting Examples:


Bonus Readings:


See Appendix A for a list of additional HLM references by topic.

October 31, 2022

Topics: Time: Paired-sample t-test, Repeated measures ANOVA, Autoregression

Readings combined with November 18. Please also review your course notes regarding t-tests, ANOVA, and regression.

November 7, 2022

Topics: Time: Latent change models, Latent growth models

Required:


Geiser Chapter 4

Reporting Examples:


Bonus Readings:

Chan, D. (1998). The conceptualization and analysis of change over time: An integrative approach incorporating longitudinal means and covariance structures analysis (LMACS) and multiple indicator latent growth modeling (MLGM). Organizational Research Methods, 1, 421-483.


November 14, 2022

Topics: Miscellaneous: Polynomial regression, RSA, Logistic regression, Survival analysis

Required:


Reporting Examples:

November 28, 2022

Papers and Presentations Due
Acknowledgement of Syllabus

I have received a copy of the syllabus for MGT 691-001 for the Fall semester of the 2022 academic school year. I understand and agree to the policies stated on the syllabus.

________________________________________
Printed Name

________________________________________  _____________________________
Signature                  Date

What do you hope to learn in this class?
Appendix A: HLM References by Topic

If You Only Read One


Books


Aggregation


Centering


Dyads


Ecological Fallacy


Other Stuff (Longitudinal, Mediation, Moderation, Three-level Models, Etc.)


