BUSI 6280: Applications in Causal and Covariance Structure Modeling (Structural Equation Modeling)

Fall 2021
Mon 2:00 pm – 4:50 pm
Sage 356
G. Brint Ryan College of Business
University of North Texas

Instructor Contact Information
Instructor: Hoda Vaziri, PhD
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Email: hoda.vaziri@unt.edu (best way to reach me)
Phone: 940.565.3158
Office Hours: Mondays 1-2pm
Wednesday 12-1pm
or by appointment

**Be sure to include BUSI 6280 in the Subject Line when you email me**

Course Description
This course focuses on the application of SEM techniques to the analysis of behavioral data in business research. It will provide “hands-on” practice using Mplus to examine measurement and structural models containing directly observed and latent variables. The course also provides students with a solid working knowledge of how to conceptualize measurement and structural models, the Mplus syntax for estimating these models, and proper interpretation of the output. Specific topics include reviews of causality and path analysis, covariance algebra, creating path diagrams and structural equations, Mplus notation and syntax, considerations in model identification, estimation, evaluation and interpretation. Specific application areas include confirmatory factor analysis and its extensions, causal models with directly observed and latent variables, mediation and moderation, multigroup analysis, and measurement invariance, among others.

Prerequisites
BUSI 6450, BUSI 6220, and BUSI 6240 (May be taken concurrently). Students must have a thorough knowledge of multiple regression, factor analysis, ANOVA and ANCOVA. Students are also expected to have a solid grasp of the fundamentals of research design, including how to assess the internal and external validity of research designs, as well as how to assess the validity and reliability of multi-item behavioral measures. Students are expected to have a working knowledge of matrix algebra.

Required Textbook
Optional Textbook

   Online Access at [https://discover.library.unt.edu/catalog/b4234789](https://discover.library.unt.edu/catalog/b4234789)


   Online Access at [https://discover.library.unt.edu/catalog/b6223931](https://discover.library.unt.edu/catalog/b6223931)


   Online Access to 2nd edition at [https://discover.library.unt.edu/catalog/b2843675](https://discover.library.unt.edu/catalog/b2843675)

Other References

   Online Access at [https://discover.library.unt.edu/catalog/b5987097](https://discover.library.unt.edu/catalog/b5987097)


   Online Access at [https://discover.library.unt.edu/catalog/b4269135](https://discover.library.unt.edu/catalog/b4269135)


   Online Access at [https://discover.library.unt.edu/catalog/b5804447](https://discover.library.unt.edu/catalog/b5804447)

Other Useful Resources
   Mplus YouTube Channel: [https://www.youtube.com/c/MplusVideos/videos](https://www.youtube.com/c/MplusVideos/videos)
   Consortium for the Advancement of Research Methods and Analysis (CARMA): [https://carmattu.com/](https://carmattu.com/)
   UCLA Statistical Consulting: [https://stats.idre.ucla.edu/mplus/](https://stats.idre.ucla.edu/mplus/)

Software
In this class, I will be using Mplus for teaching and demonstration purposes, but you are free to use any one of the software packages available for your project, such as LISREL, AMOS, CALIS, and EQS. If you choose to purchase Mplus, you only need the Mplus base program ($195 for the student pricing with a signed license addendum form) for this class. However, if you are interested in categorical outcomes or multilevel analyses for future analyses, you may want to purchase the combination add-on version of the program ($350). However, Mplus will also allow you to pay the difference if you ever choose to upgrade to that version at a later time.
Finally, you should be aware that if you use any program other than Mplus, I will not be able to assist you with syntax errors. Thus, Mplus is by far the most important program to purchase for the class. However, I don’t want that to detract you from using other programs if costs forbid you because I also firmly believe that one of the best ways to learn SEM is to jump into it without any “lifesaving” mechanisms. In short, you’re smart and you’ll figure it out, and then you’ll be the expert.

Overview of Course Requirements

Readings
Each class, there are readings assigned which are either on Canvas or consist of pages from the Mplus user’s guide. You are required to read the assigned readings before the day they are assigned. Be prepared to summarize each article for the class or a couple of specific questions about the reading if you didn’t completely understand it. The class is very discussion-based. Thus, it’s important that you have a grasp of the readings before coming to class and make note of questions to ask me for clarification. For empirical articles, it is not important that you know (or read) the conceptual information in the article; just read for discussion of the method or statistical technique. Readings that are assigned as “foundation readings” are not discussed in the class, but you are expected to know the concepts (e.g., learned in previous classes). If you are not familiar with these readings, make sure to read them before the other readings. Readings that are assigned as “suggested readings” are solely to supplement your knowledge of the topic. I don’t expect you to read those articles for class. They are primarily suggested as a guide for future reference on the subject.

Exam
There is one examination (see schedule below) worth 40% of your final grade. The exam will primarily be of the essay variety, but could vary from this format. It will assess both conceptual understanding and application of SEM (e.g., interpreting Mplus results).

Homework
There are numerous homework assignments throughout the course accounting for 25% of your total grade. Homework will be assigned on Monday and due on Friday at 9am to give me time to review. Then, we’ll discuss them the following class on Monday. The intent is to get you to conduct the analyses yourselves and stimulate discussion about any problems. Homework will be graded on a scale of 1-10, depending on a) the level of effort put forth to conduct the analyses, b) the level of knowledge exhibited, and c) the correctness of the results. The former two components will be weighed more heavily than the latter. I openly encourage you to consult other students to help you writing syntax and for problems you incur with Mplus. I feel that is the best way for you to learn the program. However, each student’s results and interpretation of results should be their own work. Further, the excuse, “I couldn’t get Mplus to run my model” will not be acceptable and I encourage you to not wait until Thursday night to do your homework because you inevitably will run into programming problems due to human error.
Course Project
This is the remaining 35% of your course grade. Given the diversity of students taking this course, I am willing to negotiate project structure with each student individually. No matter the structure of the project the overarching objective must require applying SEM methods to a data set.

The project and accompanying paper report involves much more than simply doing a SEM analysis. The student’s report must begin with a short review and discussion of the theoretical rationale of the focal paper in the context of other work in the field. The report will examine the extent to which the use of SEM to test that theoretical model is either appropriate or inappropriate. Students will examine the properties and development of the measures used in the paper (Note: the majority of your measures should be multi-item scales), in light of standards and methods discussed in this course. Further, students will undertake the analyses by themselves. I expect the report to focus on the steps involved in the analyses and proper presentation of results as well as discussion of those results. If students have no access to data, UNT has a public database full of data (http://www.icpsr.umich.edu/icpsrweb/ICPSR/). I strongly encourage you to explore the public access data, as there are many interesting questions to be answered with public access data that can lead to a high quality publication.

You are required to submit a preliminary proposal for your project (due Oct 4 at 2:00pm – submit on Canvas). This will help me ensure that you are on the right track for your project and that it is appropriate for this class. 10% of your project grade is based on this proposal. Your proposal should include the following:

- Brief summary of your hypotheses and theory (Include a path diagram)
- Description of the dataset you will be using (e.g., did you collect it? Got it from faculty? Archival?); if you haven’t collected the data yet, indicate the plan/schedule for data collection and who you are working with.
- Details of the variables and the scales used to measure them included in the dataset.
- A summary of the analytic strategy you will use to test the hypotheses.
- A recent article published in a top-tier journal in your field (A* in ABDC list) that uses the same analytic strategy you are planning to use. This will provide an example of what you should include in the methods/results section of your paper. If you can find more articles, the better!

Attendance
Students are expected to attend class meetings regularly and to abide by the attendance policy established for the course. It is important that you communicate with the professor and the instructional team prior to being absent, so you, the professor, and the instructional team can discuss and mitigate the impact of the absence on your attainment of course learning goals. Please inform the professor and instructional team if you are unable to attend class meetings because you are ill, in mindfulness of the health and safety of everyone in our community.

If you are experiencing any symptoms of COVID-19 please seek medical attention from the Student Health and Wellness Center (940-565-2333 or askSHWC@unt.edu) or your health care provider PRIOR to coming to campus. UNT also requires you to contact the UNT COVID Team at COVID@unt.edu for guidance on actions to take due to symptoms, pending or positive test results, or potential exposure.
Face Coverings
UNT encourages everyone to wear a face covering when indoors, regardless of vaccination status, to protect yourself and others from COVID infection, as recommended by current CDC guidelines. Face covering guidelines could change based on community health conditions.

Class Recodings
Synchronous (live) sessions in this course will be recorded for students enrolled in this class section to refer to throughout the semester. Class recordings are the intellectual property of the instructor and are reserved for use only by students in this class and only for educational purposes. Students may not post or otherwise share the recordings outside the class, or outside the Canvas Learning Management System, in any form. Failing to follow this restriction is a violation of the UNT Code of Student Conduct and could lead to disciplinary action.

Class Materials for Remote Instruction
Remote instruction may be necessary if community health conditions change or you need to self-isolate or quarantine due to COVID-19. Students will need access to a webcam and microphone to participate in fully remote portions of the class. Information on how to be successful in a remote learning environment can be found at https://online.unt.edu/learn.

Technical Assistance
Part of working in the online environment involves dealing with the inconveniences and frustration that can arise when technology breaks down or does not perform as expected. Here at UNT we have a Student Help Desk that you can contact for help with Canvas or other technology issues.

UIT Help Desk: UIT Student Help Desk site (http://www.unt.edu/helpdesk/index.htm)
Email: helpdesk@unt.edu
Phone: 940-565-2324
In Person: Sage Hall, Room 130
Walk-In Availability: 8am-9pm
Telephone Availability:
  • Sunday: noon-midnight
  • Monday-Thursday: 8am-midnight
  • Friday: 8am-8pm
  • Saturday: 9am-5pm
Laptop Checkout: 8am-7pm

At times, access to the course may be down due to server problems. The UNT CLEAR office will make students aware of such “downtime” whether expected or unexpected. Please see the UNT ecampus main access page (ecampus.unt.edu) for announcements. For additional support, visit Canvas Technical Help (https://community.canvaslms.com/docs/DOC-10554-4212710328)
Course Evaluation
Student Perceptions of Teaching (SPOT) is the student evaluation system for UNT and allows students the ability to confidentially provide constructive feedback to their instructor and department to improve the quality of student experiences in the course. SPOT evaluations will become available on April 12. Please look for the email in your UNT email inbox.

UNT POLICIES

Academic Integrity Policy
Academic Integrity Standards and Consequences. According to UNT Policy 06.003, Student Academic Integrity, academic dishonesty occurs when students engage in behaviors including, but not limited to cheating, fabrication, facilitating academic dishonesty, forgery, plagiarism, and sabotage. A finding of academic dishonesty may result in a range of academic penalties or sanctions ranging from admonition to expulsion from the University.

ADA Policy
UNT makes reasonable academic accommodation for students with disabilities. Students seeking accommodation must first register with the Office of Disability Accommodation (ODA) to verify their eligibility. If a disability is verified, the ODA will provide a student with an accommodation letter to be delivered to faculty to begin a private discussion regarding one’s specific course needs. Students may request accommodations at any time, however, ODA notices of accommodation should be provided as early as possible in the semester to avoid any delay in implementation. Note that students must obtain a new letter of accommodation for every semester and must meet with each faculty member prior to implementation in each class. For additional information see the ODA website (https://disability.unt.edu/).

Prohibition of Discrimination, Harassment, and Retaliation (Policy 16.004)
The University of North Texas (UNT) prohibits discrimination and harassment because of race, color, national origin, religion, sex, sexual orientation, gender identity, gender expression, age, disability, genetic information, veteran status, or any other characteristic protected under applicable federal or state law in its application and admission processes; educational programs and activities; employment policies, procedures, and processes; and university facilities. The University takes active measures to prevent such conduct and investigates and takes remedial action when appropriate.

Emergency Notification & Procedures
UNT uses a system called Eagle Alert to quickly notify students with critical information in the event of an emergency (i.e., severe weather, campus closing, and health and public safety emergencies like chemical spills, fires, or violence). In the event of a university closure, please refer to Canvas for contingency plans for covering course materials.

Retention of Student Records
Student records pertaining to this course are maintained in a secure location by the instructor of record. All records such as exams, answer sheets (with keys), and written papers submitted during the duration of the course are kept for at least one calendar year after course completion. Course work completed via the Canvas online system, including grading information and comments, is also stored in a safe electronic environment for one year. Students have the right to view their individual record; however, information about student’s records will not be divulged to other individuals without proper written consent. Students are encouraged to review the Public Information Policy and the Family Educational Rights and Privacy Act (FERPA) laws and the University’s policy. See UNT Policy 10.10, Records Management and Retention for additional information.

**Acceptable Student Behavior**

Student behavior that interferes with an instructor’s ability to conduct a class or other students’ opportunity to learn is unacceptable and disruptive and will not be tolerated in any instructional forum at UNT. Students engaging in unacceptable behavior will be directed to leave the classroom and the instructor may refer the student to the Dean of Students to consider whether the student’s conduct violated the Code of Student Conduct. The University’s expectations for student conduct apply to all instructional forums, including University and electronic classroom, labs, discussion groups, field trips, etc. Visit UNT’s [Code of Student Conduct](https://deanofstudents.unt.edu/conduct) to learn more.

**Access to Information - Eagle Connect**

Students’ access point for business and academic services at UNT is located at: [my.unt.edu](https://my.unt.edu). All official communication from the University will be delivered to a student’s Eagle Connect account. For more information, please visit the website that explains Eagle Connect and how to forward e-mail [Eagle Connect](https://it.unt.edu/eagleconnect).

**Student Evaluation Administration Dates**

Student feedback is important and an essential part of participation in this course. The student evaluation of instruction is a requirement for all organized classes at UNT. The survey will be made available during weeks 13, 14 and 15 of the long semesters to provide students with an opportunity to evaluate how this course is taught. Students will receive an email from "UNT SPOT Course Evaluations via IASystem Notification" ([no-reply@iasystem.org](mailto:no-reply@iasystem.org)) with the survey link. Students should look for the email in their UNT email inbox. Simply click on the link and complete the survey. Once students complete the survey they will receive a confirmation email that the survey has been submitted. For additional information, please visit the [SPOT website](http://spot.unt.edu/) or email [spot@unt.edu](mailto:spot@unt.edu).

**Sexual Assault Prevention**

UNT is committed to providing a safe learning environment free of all forms of sexual misconduct, including sexual harassment, sexual assault, domestic violence, dating violence, and stalking. Federal laws (Title IX and the Violence Against Women Act) and UNT policies prohibit discrimination on the basis of sex, and therefore prohibit sexual misconduct. If you or someone you know is experiencing sexual harassment, relationship violence, stalking, and/or sexual assault, there are campus resources available to provide support and assistance. UNT’s Survivor Advocates can assist a student who has been
impacted by violence by filing protective orders, completing crime victim’s compensation applications, contacting professors for absences related to an assault, working with housing to facilitate a room change where appropriate, and connecting students to other resources available both on and off campus. The Survivor Advocates can be reached at SurvivorAdvocate@unt.edu or by calling the Dean of Students Office at 940-565-2648. Additionally, alleged sexual misconduct can be non-confidentially reported to the Title IX Coordinator at oeo@unt.edu or at (940) 565 2759.

Important Notice for F-1 Students taking Distance Education Courses

Federal Regulation
To read detailed Immigration and Customs Enforcement regulations for F-1 students taking online courses, please go to the Electronic Code of Federal Regulations website (http://www.ecfr.gov/). The specific portion concerning distance education courses is located at Title 8 CFR 214.2 Paragraph (f)(6)(i)(G). The paragraph reads:

(G) For F-1 students enrolled in classes for credit or classroom hours, no more than the equivalent of one class or three credits per session, term, semester, trimester, or quarter may be counted toward the full course of study requirement if the class is taken on-line or through distance education and does not require the student's physical attendance for classes, examination or other purposes integral to completion of the class. An on-line or distance education course is a course that is offered principally through the use of television, audio, or computer transmission including open broadcast, closed circuit, cable, microwave, or satellite, audio conferencing, or computer conferencing. If the F-1 student’s course of study is in a language study program, no on-line or distance education classes may be considered to count toward a student's full course of study requirement.

University of North Texas Compliance
To comply with immigration regulations, an F-1 visa holder within the United States may need to engage in an on-campus experiential component for this course. This component (which must be approved in advance by the instructor) can include activities such as taking an on-campus exam, participating in an on-campus lecture or lab activity, or other on-campus experience integral to the completion of this course.

If such an on-campus activity is required, it is the student’s responsibility to do the following:

(1) Submit a written request to the instructor for an on-campus experiential component within one week of the start of the course.
(2) Ensure that the activity on campus takes place and the instructor documents it in writing with a notice sent to the International Student and Scholar Services Office. ISSS has a form available that you may use for this purpose.

Because the decision may have serious immigration consequences, if an F-1 student is unsure about his or her need to participate in an on-campus experiential component for this course, s/he should contact
the UNT International Student and Scholar Services Office (telephone 940-565-2195 or email internationaladvising@unt.edu) to get clarification before the one-week deadline.

**Student Verification**
UNT takes measures to protect the integrity of educational credentials awarded to students enrolled in distance education courses by verifying student identity, protecting student privacy, and notifying students of any special meeting times/locations or additional charges associated with student identity verification in distance education courses.

See [UNT Policy 07-002 Student Identity Verification, Privacy, and Notification and Distance Education Courses](https://policy.unt.edu/policy/07-002).

**Use of Student Work**
A student owns the copyright for all work (e.g. software, photographs, reports, presentations, and email postings) he or she creates within a class and the University is not entitled to use any student work without the student’s permission unless all of the following criteria are met:

- The work is used only once.
- The work is not used in its entirety.
- Use of the work does not affect any potential profits from the work.
- The student is not identified.
- The work is identified as student work.

If the use of the work does not meet all of the above criteria, then the University office or department using the work must obtain the student’s written permission.

Download the UNT System Permission, Waiver and Release Form

**Transmission and Recording of Student Images in Electronically-Delivered Courses**

1. No permission is needed from a student for his or her image or voice to be transmitted live via videoconference or streaming media, but all students should be informed when courses are to be conducted using either method of delivery.

2. In the event an instructor records student presentations, he or she must obtain permission from the student using a signed release in order to use the recording for future classes in accordance with the Use of Student-Created Work guidelines above.

3. Instructors who video-record their class lectures with the intention of re-using some or all of recordings for future class offerings must notify students on the course syllabus if students' images may appear on video. Instructors are also advised to provide accommodation for students who do not wish to appear in class recordings.
Example: This course employs lecture capture technology to record class sessions. Students may occasionally appear on video. The lecture recordings will be available to you for study purposes and may also be reused in future course offerings.

No notification is needed if only audio and slide capture is used or if the video only records the instructor's image. However, the instructor is encouraged to let students know the recordings will be available to them for study purposes.

**ACADEMIC SUPPORT & STUDENT SERVICES**

**Student Support Services**

*Mental Health*
UNT provides mental health resources to students to help ensure there are numerous outlets to turn to that wholeheartedly care for and are there for students in need, regardless of the nature of an issue or its severity. Listed below are several resources on campus that can support your academic success and mental well-being:

- [Student Health and Wellness Center](https://studentaffairs.unt.edu/student-health-and-wellness-center)
- [Counseling and Testing Services](https://studentaffairs.unt.edu/counseling-and-testing-services)
- [UNT Care Team](https://studentaffairs.unt.edu/care)
- [UNT Psychiatric Services](https://studentaffairs.unt.edu/student-health-and-wellness-center/services/psychiatry)
- [Individual Counseling](https://studentaffairs.unt.edu/counseling-and-testing-services/services/individual-counseling)

**Chosen Names**
A chosen name is a name that a person goes by that may or may not match their legal name. If you have a chosen name that is different from your legal name and would like that to be used in class, please let the instructor know. Below is a list of resources for updating your chosen name at UNT.

- [UNT Records](https://studentaffairs.unt.edu/)
- [UNT ID Card](https://studentaffairs.unt.edu/)
- [UNT Email Address](https://studentaffairs.unt.edu/)
- [Legal Name](https://studentaffairs.unt.edu/)

*UNT euIDs cannot be changed at this time. The collaborating offices are working on a process to make this option accessible to UNT community members.*

**Pronouns**
Pronouns (she/her, they/them, he/him, etc.) are a public way for people to address you, much like your name, and can be shared with a name when making an introduction, both virtually and in-person. Just as we ask and don’t assume someone’s name, we should also ask and not assume someone’s pronouns.
You can add your pronouns to your Canvas account so that they follow your name when posting to discussion boards, submitting assignments, etc.

Below is a list of additional resources regarding pronouns and their usage:

- What are pronouns and why are they important?
- How do I use pronouns?
- How do I share my pronouns?
- How do I ask for another person’s pronouns?
- How do I correct myself or others when the wrong pronoun is used?

Additional Student Support Services

- Registrar [https://registrar.unt.edu/registration](https://registrar.unt.edu/registration)
- Financial Aid [https://financialaid.unt.edu/](https://financialaid.unt.edu/)
- Student Legal Services [https://studentaffairs.unt.edu/student-legal-services](https://studentaffairs.unt.edu/student-legal-services)
- Career Center [https://studentaffairs.unt.edu/career-center](https://studentaffairs.unt.edu/career-center)
- Multicultural Center [https://edo.unt.edu/multicultural-center](https://edo.unt.edu/multicultural-center)
- Counseling and Testing Services [https://studentaffairs.unt.edu/counseling-and-testing-services](https://studentaffairs.unt.edu/counseling-and-testing-services)
- Pride Alliance [https://edo.unt.edu/pridealliance](https://edo.unt.edu/pridealliance)
- UNT Food Pantry [https://deanofstudents.unt.edu/resources/food-pantry](https://deanofstudents.unt.edu/resources/food-pantry)

Academic Support Services

- Academic Resource Center [https://clear.unt.edu/canvas/student-resources](https://clear.unt.edu/canvas/student-resources)
- Academic Success Center [https://success.unt.edu/asc](https://success.unt.edu/asc)
- UNT Libraries [https://library.unt.edu/](https://library.unt.edu/)
- Writing Lab [http://writingcenter.unt.edu/](http://writingcenter.unt.edu/)
## Class Schedule

Note: This is a flexible course schedule. The instructor reserves the right to change this schedule.

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<thead>
<tr>
<th>Date</th>
<th>Topic and Assigned Readings/Homework</th>
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<tbody>
<tr>
<td>8/23</td>
<td>Class Overview</td>
</tr>
<tr>
<td></td>
<td>Topic 1: Introduction to SEM</td>
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<tr>
<td>8/30</td>
<td>Topic 1: Introduction to SEM (Continued)</td>
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<td>Readings:</td>
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<td>Foundation Readings:</td>
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<tr>
<td>9/6</td>
<td>Topic 2: Introduction to Matrix Algebra, SEM Matrices, and Mplus Software</td>
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<tr>
<td></td>
<td>Readings:</td>
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</table>
Chapter 17: Matrix Approach to Structural Equation Modeling (pp. 373-423). In Schumacker, R. E., & Lomax, R. G. (2010). *A beginner’s guide to structural equation modeling* (3rd Edition). [Even though this chapter details LISREL output, it’s important to understand the matrix notation. Really understanding the LISREL output is secondary.]


**Suggested Readings:**

**Syntax References: Uploaded on Canvas**
- Mplus Syntax Rules
- Summary of Mplus Language (Mplus User Guide)
- LISREL Syntax Guide

**Other Resources:**

[Data Preparation for LISREL]


*Homework 1 will be assigned and due Sept 10 at 9:00 am – Submit on Canvas*

9/13

**Topic 3: SEM Basics**

**Readings:**


**Suggested Readings:**


<table>
<thead>
<tr>
<th>9/20</th>
<th><strong>Topic 4: Model Fit &amp; Modification</strong></th>
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<tr>
<td><strong>Readings:</strong></td>
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<tr>
<td><strong>Suggested Readings:</strong></td>
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**Homework 2 will be assigned and due Sept 24 at 9:00 am – Submit on Canvas**

<table>
<thead>
<tr>
<th>9/27</th>
<th><strong>Topic 5: Measurement Models and Confirmatory Factor Analysis</strong></th>
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<tbody>
<tr>
<td>Date</td>
<td>Topic</td>
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</table>
| 10/4   | Topic 6: MTMM & Effects of Common Method Variance | *Project Proposal Due – Submit on Canvas*  
Readings:  
Suggested Readings:  
*Homework 4 will be assigned and due Oct 11 at 2:00 pm – Submit on Canvas/present in class* |
| 10/11  | Topic 6 Continued – Group presentations & Midterm Review | |

*Homework 3 will be assigned and due Oct 1 at 9:00 am – Submit on Canvas*
<table>
<thead>
<tr>
<th>Date</th>
<th>Topic</th>
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<tbody>
<tr>
<td>10/18</td>
<td><strong>MIDTERM EXAM (IN CLASS)</strong></td>
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</table>
| 10/25  | **Topic 7: Path Models & Latent Models with Structural and Measurement Components (Full Structural Models)**  
*Readings*:  
*Suggested Readings*:  
*Homework 5 will be assigned and due Oct 29 at 9:00 am – Submit on Canvas* |
| 11/1   | **Topic 8: Testing for Mediation**                                   |
|        | *Readings*:  
*Suggested Readings*:  
Foundation Readings:
Baron, R. M., & Kenny, D. A. (1986). The moderator–mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of personality and social psychology, 51*(6), 1173. [This is a classic but outdated approach to mediation – but you need to know the concepts]


Homework 6 will be assigned and due Nov 5 at 9:00 am – Submit on Canvas

11/8

Topic 9: Testing for Moderation, Moderated Mediation, Mediated Moderation, and Beyond

Readings:


Suggested Readings & Video:


CARMA Videos found at https://carma.azurewebsites.net/video and accessible by registering with your unt.edu email address.

- “Moderated Mediation” by Jose Cortina from Spring 2013.
- “Multilevel Mediation” by Zhen Zhang From Spring 2016

*Homework 7 will be assigned and due Nov 12 at 9:00 am – Submit on Canvas*

11/15 **Topic 10: Multisample Analyses, Tests of Mean Structures, & Measurement Invariance/Equivalence**

*Readings:*


*Suggested Readings:*


*Homework 8 will be assigned and due Nov 19 at 9:00 am – Submit on Canvas*


*Suggested Readings:*


11/29 No Class – Work on your project!

12/6 COURSE PROJECT DUE AT 2:00 pm – Submit on Canvas AND put a hard copy in my box