



Spring 2020

## **NURS 6324.060, 061**

### **Multivariate Statistics**

#### **Faculty**

Janet Gehring, PhD, CRNP-P

BRB 2015

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Office Hours: online by appointment via written request.

Dr. Gehring has blocked Mondays 1 pm to 3 pm every week for scheduling appointments too.

*\*preferred method of contact - email*

#### **Course Description**

Students will study multivariate statistical techniques in health care research and apply aspects of complex research designs, including multivariate model testing, decision theory, and advanced statistical techniques. This is a three-credit course and requires the prerequisites of NURS6320 Data Management and NURS 6322 Advanced Statistic or equivalent courses with instructor permission.

#### **Course Learning Objectives**

##### **Prerequisites**

Full acceptance in to the doctoral program or permission of the instructor(s) is the only prerequisite for this course.

##### **Instructional Goals and Objectives**

After you complete this course, you should demonstrate knowledge and/or skills in the following statistical techniques including:

## Student Learning Outcomes

1. Regression analyses including (besides multiple regression) logistic regression and path analysis.
2. The multivariate general linear model (MANOVA) and discriminant analysis.
3. The latent variable techniques including exploratory factor analysis (EFA), principal component analyses (PCA) and an introduction to the confirmatory factor analysis (CFA).
4. A conceptual understanding of more sophisticated techniques of the structural equation modeling (SEM)
5. Testing assumptions of the multivariate statistical tests.
6. Using statistical software, e.g., SPSS and G\*Power.
7. Reporting and interpreting statistical results and findings.
8. Working with secondary data from national health research studies.

Assessment Methods will include use of quizzes, assignments and discussion board responses.

## Grading Policy and Criteria

Specific guidelines and grading criteria for all assignments are in the Modules. Final grades for the course will be determined based upon the following point assignments:

- A - 90-100
- B - 80-89
- C - 70-79
- D - 60-69
- F - Below 60

Grades will not be rounded when calculating the average (79.5 is not rounded to 80 and 89.5 is not rounded to 90). Students are expected to achieve an average of 80% (B) to successfully complete the course. Late policy: *Permission for late assignments must be obtained prior to due dates. If no permission is granted, late submissions will incur a 5 point per day deduction. Extenuating circumstance may apply.* Weekly written work will be graded along with student's edited copy from student writing partner. Grading criteria are found in the Modules and Assignments file.

<b>Criteria for Evaluation:</b>	<b>Percentage of Grade:</b>
Quizzes	20
Assignments	60
Discussions	15
Course Participation	5
<b>Total</b>	<b>100%</b>

Graded items: Refer to Canvas for more detailed information on descriptions, templates, and grading rubrics for specific assessed items.

In brief:

- Quizzes may be taken twice (at least once within the timeframe) but must be completed by the due date on the calendar and the two scores are averaged.
- Assignments are due per the course calendar. No extension is given without prior faculty approval. There is a 5 points/day penalty for late assignments (on a 100-point scale).

## Important Course Dates:

Note: The complete course schedule is available in the Course Canvas site.

Census Date: **Monday, 27 January 2020**

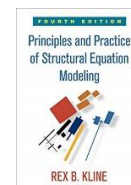
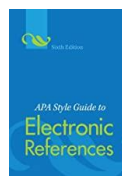
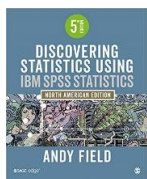
Last Date to Withdraw: **Monday, 20 March 2020**

<https://www.uttyler.edu/registrar/registration/withdrawals.php>

## Workload, Attendance and Make-up Policy

Attendance / participation is expected. Make-up for exams, quizzes, assignments, and required face to face time is at the discretion of the instructor. You should expect to spend as much time on an online course as you do in a face-to-face course. Besides lecture/demo videos and/or live Zoom meetings, a typical week's workload for this course includes (1) assigned readings, (2) quiz or (3) assignments/discussions. As a rough guide, you should plan to spend six to ten hours per week on this course. The actual amount of time will vary from individual to individual. The same bi-weekly schedule is adopted in this course with one week focusing on reading the content for the conceptual understanding and the other on applying the knowledge by working on the hands-on tasks. You will have access to all the course materials. The modules will remain up through the end of the course for you to work on your own pace.

## Required Textbooks/Materials



The first two textbooks were purchased for prior courses and will continue to be employed for the advanced multivariate statistics course.

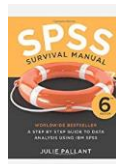
Field, A. (2017). *Discovering statistics using IBM SPSS: North American edition*, 5th edition. Thousand Oaks, CA: Sage. Publications.

American Psychological Association (APA). Publication manual of the American Psychological Association, 6th edition. Washington D.C. ISBN-10:1-4338-0561-8(softcover).

### **NEW! Textbook**

Kline, R. B. (2016) *Principles and Practice of Structural Equation Modeling*, 4<sup>th</sup> edition. New York: Guilford Press ISBN-10: 146252334X

## Recommended Textbooks



Glaser, A. N. (2014) *High-Yield Biostatistics, Epidemiology, & Public Health*. 4<sup>th</sup> edition. Philadelphia, PA; Lippincott Williams and Wilkins ISBN-10: 1451130171

Pallant, J. (2016) *SPSS Survival Manual*, 6<sup>th</sup> edition. New York: McGraw Hill Education

## Materials

Software: IBM SPSS Statistic Standard Grad Pack 25 (6 and 12 month licenses are available)

<http://www.onthehub.com/spss>

External Websites: a document of external website references is provided within the Canvas course.

The Doctoral Program's Research Methods Resources Lab also provides helpful information regarding statistical methodology.

## Reading Assignments

- Assigned readings in doctoral education are the beginning, not the endpoint. These readings will point you in the direction of continued reading and statistical methods. Each participant is responsible for completing the reading assignments in a timely manner.
- Discussion and written assignments are made with the assumption that required reading assignments are completed prior to completion of discussion and written assignments.

## Written Assignments

- Refer to the course calendar for course readings and assignments
- All written assignments are to be completed in Microsoft Word and submitted by the published due date and time.
- Deadlines are listed in the **Course Calendar**.
- Late Assignments are **not accepted** in this course.
- An extension for assignments/quizzes maybe granted during the semester based on extenuating circumstances and must be requested prior to the due date. An assignment extension is usually only granted once due.
- Please note that all written assignments must be submitted by 11:59 pm (U.S. Central Time) on the due date.
- All assignments should be submitted through the link in the **current Canvas module**.
- Plagiarism is a serious academic offense. Please avoid the consequences of academic dishonesty by citing all sources within your Assignments and appropriately employing Turn it in.

## **Email**

- The best way to communicate with me is via the CANVAS email or my UT Tyler email (jgehring@uttyler.edu).
- Please post your course questions within the General Course Discussion Questions via Canvas because more often than not your peers may have similar questions. NOTE: Responding to student emails will be managed within 48 hours. Of note: I do not monitor email in the late evening or overnight.

## **Class Policies or Expectations:**

Faculty have the authority to change the instructional plan based on student need or unforeseen circumstances. It is the student's responsibility to frequently check Canvas and UT Tyler email for notifications.

## **Discussion Board**

The Discussions feature is an online discussion forum in which students and faculty can communicate asynchronously (anytime) via message postings. We will also have an ongoing Course Questions Discussion forum. This forum is a place where general **course related** questions should be posted. The instructor will monitor this forum several times a week and respond appropriately to your questions. Chances are other students need the same information and this forum allows for open sharing of communication. When you click the Discussions tab on the left side of your course page, a listing of general subject categories will appear in a table format. The instructor has control of what general subject categories are available for discussion in the course. Click on the category of interest and click Reply. Students may introduce and name threads under the general subject or may reply to the threads of other students. That is why it is called "Discussion." Students can respond to threads in the course discussion. To respond to a thread:

- In the Discussions area, you will see a list of forums
- Click on a forum link to open it and view the contents within
- Open a message
- Click Reply to respond to the message
- Click Post Reply

Your response will now appear in the table, along with your name as author and date/time of posting. Check the Discussions section often. Since the discussion is asynchronous, other responses will be submitted after your post. Be sure to check the Discussions each time you log into the course to view any added material and respond to your colleagues' comments. As noted above, we will have a "Course Questions" thread open all the time where we will answer any questions or respond to any deep thoughts you may have.

## **Participation Expectations and Discussion Assignments**

A Rubric for how postings will be graded is provided in the next section of this Syllabus.

- Each participant is responsible for participating in the asynchronous discussions of each assigned module. This participation will include posting answers to questions posed by the instructor and replying to other participants' postings.

- Discussion postings should be made in a timely manner. Deadlines are listed in the Course Schedule. Please note that all discussion postings must be completed by midnight Central Standard Time on the due date.
- Participants should plan on entering the Discussion area several times a week in order to read and comment on others postings. Posting answers to the questions posed in the Discussion area should be done in advance of the deadline in order to allow other participants to have the opportunity to comment.
- Quality of answers is as important as quantity. A participant's comments should add to the discussion. Comments should be supported as required with references cited appropriately. The instructors and/or participants may use synchronous chats as the need arises.

Note: When posting to the discussion area, please type in your comments directly into the Discussion Board. Do not type your comments into a document and then attach it to the discussion-this method is difficult for some students to access. You may type your comments into a Word document, then copy and paste it into the Discussion Board.

### Discussion Board Postings - Expectations

The purpose of the discussion board in an online doctoral program is to take the place of the class interchange that would occur in a face-to-face class. It is your opportunity to demonstrate your mastery of the assigned readings and your ability to supplement those readings with expanded exposure to related (and sometimes contrary) information that you will seek in your self-directed quest to understand and be informed. To that end, we will expect you to share ideas you have gained from the literature, noting the source when appropriate and interpreting into your own words. We will also expect that you will use a more complex thought process to dissect and analyze what you read in the literature and in the discussion thoughts of your fellow students as you offer your own insights. We do not care if you use big words or a lot of words (remember, the world values parsimony), but we are eager to read your thoughtful insights into the questions and statements, your analysis of the words and ideas, and your recommendations for future pathways for nursing and healthcare. The following information will give you some guidelines and allow you to see thinking process we will use to assign a grade to the discussion board exercises.

Criteria	<79	80-89	90-100
Format and logical progression of posting.	Spelling and grammar errors detract from the substance of the posting; random thoughts with no sense of a plan to reach a logical conclusion. No clear main idea or direction for flow of information	Midpoint	Form is superior; obvious attention to proofreading and grammar. Main idea is stated early and clearly; argument or ideas are built using a logical progression of thoughts which are stated clearly and succinctly.
Depth and relevance of post to the topic at hand.	Posting shows superficial thinking based on personal experiences or opinions only, there is little consideration of contributions to the topic in the literature or from colleagues. Literature support is not relevant to the topic or major literature contributions are missing. Post strays from topic with much irrelevant information and does not address the intent of the assignment. No references cited.	Midpoint	Posting clearly shows evidence of critical thinking and analysis to a substantial depth expected of a doctoral student. Ideas offered are relevant to the topic and show the ability to extrapolate complex ideas from various sources into a coherent argument or statement(s). Two or more relevant references cited; cited references are appropriate and indicative of the best knowledge on the topic.

Contribution to the learning community	Posting is largely aimed at self-expression without consideration of the reader. There is no room for dialogue or disagreement and no acknowledgment of the potential contributions of others. The posting is a rehash of old ideas without consideration of how these can advise the future. No evidence is found of making the material consumable or reader-friendly.	Midpoint	Posting shows an astute awareness of the needs of the learning community with an interest in their growth and knowledge acquisition; attempts to move colleagues into meaningful dialogue and presents creative approaches that area open to discussion. Post contributes to the progression of nursing as a scholarly community but is presented in a clear, enlightening, and engaging way.
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## School of Nursing Policies and Additional Information

[https://www.uttyler.edu/nursing/college/documents/son\\_student\\_guide.pdf](https://www.uttyler.edu/nursing/college/documents/son_student_guide.pdf)

## University Policies and Additional Information (updated 1/2018)

The following course policies may be found at the website listed below: absence for religious observance, absence for university-supported trips, services to students with disabilities, grade replacement, state-mandated course drop policy, and Social Security and privacy.

<http://www.uttyler.edu/academicaffairs/files/syllabuspolicy.pdf>

## UT Tyler Honor Code

Every member of the UT Tyler community joins together to embrace: Honor and integrity that will not allow me to lie, cheat, or steal, nor to accept the actions of those who do.

## Students Rights and Responsibilities

To know and understand the policies that affect your rights and responsibilities as a student at UT Tyler, please follow this link: <http://www.uttyler.edu/wellness/rightsresponsibilities.php>

## Campus Carry

We respect the right and privacy of students 21 and over who are duly licensed to carry concealed weapons in this class. License holders are expected to behave responsibly and keep a handgun secure and concealed. More information is available at <http://www.uttyler.edu/about/campus-carry/index.php>

## UT Tyler a Tobacco-Free University

All forms of tobacco will not be permitted on the UT Tyler main campus, branch campuses, and any property owned by UT Tyler. This applies to all members of the University community, including students, faculty, staff, University affiliates, contractors, and visitors.

Forms of tobacco not permitted include cigarettes, cigars, pipes, water pipes (hookah), bidis, kreteks, electronic cigarettes, smokeless tobacco, snuff, chewing tobacco, and all other tobacco products.

There are several cessation programs available to students looking to quit smoking, including counseling, quitlines, and group support. For more information on cessation programs please visit [www.utt Tyler.edu/tobacco-free](http://www.utt Tyler.edu/tobacco-free).

## **Grade Replacement/Forgiveness and Census Date Policies**

Students repeating a course for grade forgiveness (grade replacement) must file a Grade Replacement Contract with the Enrollment Services Center (ADM 230) on or before the Census Date of the semester in which the course will be repeated. Grade Replacement Contracts are available in the Enrollment Services Center or at <http://www.utt Tyler.edu/registrar>. Each semester's Census Date can be found on the Contract itself, on the Academic Calendar, or in the information pamphlets published each semester by the Office of the Registrar.

Failure to file a Grade Replacement Contract will result in both the original and repeated grade being used to calculate your overall grade point average. Undergraduates are eligible to exercise grade replacement for only three course repeats during their career at UT Tyler; graduates are eligible for two grade replacements. Full policy details are printed on each Grade Replacement Contract.

The Census Date is the deadline for many forms and enrollment actions of which students need to be aware. These include:

- Submitting Grade Replacement Contracts, Transient Forms, requests to withhold directory information, approvals for taking courses as Audit, Pass/Fail or Credit/No Credit.
- Receiving 100% refunds for partial withdrawals. (There is no refund for these after the Census Date).
- Schedule adjustments (section changes, adding a new class, dropping without a "W" grade)
- Being reinstated or re-enrolled in classes after being dropped for non-payment.
- Completing the process for tuition exemptions or waivers through Financial Aid.

## **State-Mandated Course Drop Policy**

Texas law prohibits a student who began college for the first time in Fall 2007 or thereafter from dropping more than six courses during their entire undergraduate career. This includes courses dropped at another 2-year or 4-year Texas public college or university. For purposes of this rule, a dropped course is any course that is dropped after the census date (See Academic Calendar for the specific date).

Exceptions to the 6-drop rule may be found in the catalog. Petitions for exemptions must be submitted to the Enrollment Services Center and must be accompanied by documentation of the extenuating circumstance. Please contact the Enrollment Services Center if you have any questions.

## **Disability/Accessibility Services**

In accordance with Section 504 of the Rehabilitation Act, Americans with Disabilities Act (ADA) and the ADA Amendments Act (ADAAA) the University of Tyler at Texas offers accommodations to students with learning, physical and/or psychological disabilities. If you have a disability, including non-visible a diagnosis such as a learning disorder, chronic illness, TBI, PTSD, ADHD, or you have a history of modifications or accommodations in a previous educational environment, you are encouraged to visit <https://hood.accessiblelearning.com/UTTyler> and fill out the New Student application. The **Student**



**Accessibility and Resources** (SAR) office will contact you when your application has been submitted and an appointment with Cynthia Lowery, Assistant Director Student Services/ADA Coordinator. For more information, including filling out an application for services, please visit the SAR webpage at <http://www.uttyler.edu/disabilityservices>, the SAR office located in the University Center, # 3150 or call 903.566.7079.

### **Student Absence due to Religious Observance**

Students who anticipate being absent from class due to a religious observance are requested to inform the instructor of such absences by the second class meeting of the semester.

### **Student Absence for University-Sponsored Events and Activities**

If you intend to be absent for a university-sponsored event or activity, you (or the event sponsor) must notify the instructor at least two weeks prior to the date of the planned absence. At that time the instructor will set a date and time when make-up assignments will be completed.

### **Social Security and FERPA Statement**

It is the policy of The University of Texas at Tyler to protect the confidential nature of social security numbers. The University has changed its computer programming so that all students have an identification number. The electronic transmission of grades (e.g., via e-mail) risks violation of the Family Educational Rights and Privacy Act; grades will not be transmitted electronically.

### **Emergency Exits and Evacuation**

Everyone is required to exit the building when a fire alarm goes off. Follow your instructor's directions regarding the appropriate exit. If you require assistance during an evacuation, inform your instructor in the first week of class. Do not re-enter the building unless given permission by University Police, Fire department, or Fire Prevention Services.

### **Student Standards of Academic Conduct**

Disciplinary proceedings may be initiated against any student who engages in scholastic dishonesty, including, but not limited to, cheating, plagiarism, collusion, the submission for credit of any work or materials that are attributable in whole or in part to another person, taking an examination for another person, any act designed to give unfair advantage to a student or the attempt to commit such acts.

- i. "Cheating" includes, but is not limited to:
  - copying from another student's test paper;
  - using, during a test, materials not authorized by the person giving the test;
  - failure to comply with instructions given by the person administering the test;
  - possession during a test of materials which are not authorized by the person giving the test, such as class notes or specifically designed "crib notes". The presence of textbooks constitutes a violation if they have been specifically prohibited by the person administering the test;

- using, buying, stealing, transporting, or soliciting in whole or part the contents of an unadministered test, test key, homework solution, or computer program;
  - collaborating with or seeking aid from another student during a test or other assignment without authority;
  - discussing the contents of an examination with another student who will take the examination;
  - divulging the contents of an examination, for the purpose of preserving questions for use by another, when the instructors has designated that the examination is not to be removed from the examination room or not to be returned or to be kept by the student;
  - substituting for another person, or permitting another person to substitute for oneself to take a course, a test, or any course-related assignment;
  - paying or offering money or other valuable thing to, or coercing another person to obtain an unadministered test, test key, homework solution, or computer program or information about an unadministered test, test key, home solution or computer program;
  - falsifying research data, laboratory reports, and/or other academic work offered for credit;
  - taking, keeping, misplacing, or damaging the property of The University of Texas at Tyler, or of another, if the student knows or reasonably should know that an unfair academic advantage would be gained by such conduct; and
  - misrepresenting facts, including providing false grades or resumes, for the purpose of obtaining an academic or financial benefit or injuring another student academically or financially
- ii. "Plagiarism" includes, but is not limited to, the appropriation, buying, receiving as a gift, or obtaining by any means another's work and the submission of it as one's own academic work offered for credit.
- iii. "Collusion" includes, but is not limited to, the unauthorized collaboration with another person in preparing academic assignments offered for credit or collaboration with another person to commit a violation of any section of the rules on scholastic dishonesty.
- iv. All written work that is submitted will be subject to review by plagiarism software.

### UT Tyler Resources for Students

- [UT Tyler Writing Center](#) (903.565.5995), [writingcenter@uttyler.edu](mailto:writingcenter@uttyler.edu)
- [UT Tyler Tutoring Center](#) (903.565.5964), [tutoring@uttyler.edu](mailto:tutoring@uttyler.edu)
- [The Mathematics Learning Center](#), RBN 4021, this is the open access computer lab for math students, with tutors on duty to assist students who are enrolled in early-career courses.
- [UT Tyler Counseling Center](#) (903.566.7254)
- [UT Tyler Muntz Library](#) (903 566-7343), Library Liaison for Nursing, Suzanne Abbey (903.566.7165) email: [sabbey@uttyler.edu](mailto:sabbey@uttyler.edu)