

NURS 6322: Advanced Statistics Syllabus

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Welcome

Welcome to the advanced statistics course! We have the great honor of being your instructor, and we actually like statistics, use them regularly, and enjoy helping others learn and use them.

*An essential goal of this course is to approach data analysis from the perspective of understanding statistics and their relationship to research rather than focus on mathematics or memorizing formulas. So the underlying theory of statistics will be presented and content will be related to research to facilitate learning. Since individuals learn in different ways, varied activities will be provided to foster learning. **Repetition** is often key to understanding statistics, so take the time to read, re-read, do assignments, redo them as needed after feedback, and reinforce your learning rather than quickly going through material. You stand to experience the greatest benefit if you regularly read, review, and apply the material. We urge you to invest considerable time and energy in statistics so you end the course with a strong skill set. It is important to develop strong skills, as you will be applying them in subsequent coursework. If you are an auditory learner, you may find it helpful to read aloud, record and listen. Several students with similar learning styles may also find it helpful to share recordings or other strategies.*

The goal is always to facilitate your learning. If you have math anxiety, please know that you are not alone and this course is designed to reinforce concepts with enough practice to facilitate your successful achievement of the course objectives. Thus, repetition will be part of the plan so you master basic concepts.

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Course Title/Description

NURS 6322 Advanced Statistics - Multivariate techniques in health care research are studied. Aspects of complex research designs, including model testing, decision theory, and advanced statistical techniques are applied. Prerequisite: NURS 6320.

Course Goals/Objectives

By the end of the course, each student will be able to:

1. Identify and test assumptions for statistical tests.
2. Select, conduct and report appropriate statistics to test hypotheses with
 - a) One independent variable and three or more levels (aka groups): **ONE-WAY ANOVA, KRUSKAL-WALLIS ANOVA**
 - b) One independent variable and three or more levels with confounding variable (aka covariate): **ANCOVA**
 - c) One group measured repeatedly with and without covariate: **REPEATED MEASURES ANOVA & ANCOVA, FRIEDMAN ANOVA**
 - d) Two or more independent variables with 2 or more groups with and without covariate: **TWO-WAY ANOVA, TWO-WAY ANCOVA aka FACTORIAL ANOVA**
 - e) Two or more independent variables with 1 group measured repeatedly with and without covariate: **TWO-WAY REPEATED MEASURES ANOVA & ANCOVA**
 - f) Two or more independent variables and mixed methods with and without covariate: **MIXED DESIGN ANOVA**
 - g) One or more independent variables and the prediction of one or more dependent variables: **REGRESSION, MULTIPLE REGRESSION, and Logistic Regression**
3. Create tables to report findings.
4. Compare the utility of multivariate statistical methods in transcultural health research.
5. Interpret reported statistical findings.

Textbooks and References

REQUIRED TEXTS

Field, A. (2013) *Discovering Statistics Using SPSS*, 4th edition. Thousand Oaks, CA: Sage. Publications. Paperback ISBN: 978-1-4462-4918-5.

Cronk, B. (2013). *How to Use SPSS: A Step-by-Step Guide to Analysis and Interpretation*. 8th ed. **(highly recommended but not required)**

Quantitative Research textbook for reference such as:

Portney, L.G., & Watkins, M.P. (2009). *Foundations of clinical research: Applications to practice*, 3rd edition. ISBN 0-13-17460-9. Upper Saddle River, NJ: Pearson Education, Inc.

Polit, D. F. & Beck, C. T. (2012). *Nursing research: Generating and Assessing Evidence for Nursing Practice*. (9th ed.). ISBN 978-0-7817-9468-8. Philadelphia: J. B. Lippincott.

REQUIRED SOFTWARE

The most recent version of SPSS: Statistics package for the social sciences.

Additional References (optional)

Pett, M.A. (1997). *Nonparametric Statistics for Healthcare Research: Statistics for Small Samples and Unusual Distributions*. Sage: Thousand Oaks, CA.

Polit, D.F. & Lake, E. (2009) *Statistics and Data Analysis for Nursing*, 2nd Ed. Prentice Hall.

Mertler, C. A. & Vanatta, R. A. (2013). *Advanced and Multivariate Statistical Methods*. (5th ed.) Glendale, CA: Pyczak Publishing. ISBN: 978-1936523-09-2

You may purchase your textbook from any source you wish or you can purchase it through the [UT Tyler Bookstore](#).

Grading Information

Final grades for the course will be determined based upon the following point assignments:

A – 89.5 -100

B – 79.5 – 89

C – 69.5 - 79

D – 59.5 - 69

F - Below 59.5

Students are expected to achieve an average of 80% (B) to successfully complete the course.

<i>Course Evaluation Methods</i>	
Quizzes (7 @ 5% each)	35%
Application assignments (6 @ 10% each)	60%
Course participation	5%
Total	100%

Testing/Assignments/Projects Turn-In Process

Testing will occur online within the Blackboard environment.

All assignments and projects will be submitted through the assignments link. Use the following process to prepare and submit assignments:

- Prepare your assignment using Microsoft Word. Name your assignment with the following convention: last name, first initial, assignment title (ex. LastF_Assignmenttitle)
Click on "View/Complete Assignment" in the overview area or project area
- Number 1-shows the assignment instructions
- Number 2-add your comments and attach your completed assignment
- Number 3-when all attached files (your completed assignment files) are uploaded, click submit

When assignments are received, we will open them in Microsoft Word for grading. This will enable me to make comments, ask questions, etc. We will then return your assignment through the Student Gradebook area. We will make an announcement when papers are returned to remind you to check the Student Gradebook. To see comments about your assignment, click on your grade.

If you need more instructions on how to submit files through the assignment link, please read the Blackboard Student Manual located in the Tools area.

Completion Time - Expectations

You should expect to spend as much time on an online course as you do in a face-to-face course. 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. This estimate includes the time you spend in reading, discussions, and assignments.

The material for most modules is posted at the beginning of the semester. If something is new or in revision, there will be a note regarding the date it will be available to you. The unit material will remain up through the end of the course. You may look and study ahead; however, faculty will focus stay focused on the current unit. All assignments have set due dates. Due dates are as of 11:59 PM Central Standard Time on that date

Email and Course Discussions

Email

To communicate by email within the course with other participants or all participants, click the Communications link on the left. Click Send E-mail to send a message. You are able to send messages to All Users or Select Users in the course, including the instructor. If you need more instructions on how to send email messages with Blackboard please read the student manual located in the Resources area of the course.

Course Discussions

Blackboard takes the place of in class discussions so please plan on spending several hours reading and posting in order to have a high quality experience. Posting responses to colleagues on BB is an opportunity to give your peers input. Asking questions and posing a different viewpoint yields higher quality learning experiences than simply giving kudos. Your instructor will generally delay feedback to give the group members a chance to post. When the instructor posts too quickly, others sometimes become reticent to post. An important behavior in graduate education is questioning. Never hesitate to share different viewpoints and disagree with all colleagues including your instructors.

Please post DIRECTLY onto the blackboard posting site rather than add attachments unless instructed otherwise because it speeds the experience of reading and posting by your classmates. Please do not copy and paste SPSS output which is often voluminous. When questions arise about output, simply save and send output to your instructor.

The Discussions feature in Blackboard is an online discussion forum in which students and faculty can communicate asynchronously (at differing times) via message postings.

When you click the Communications link on the left, then the Discussion Board area, a listing of general subject categories will appear in a table format. Each general subject category is represented by a file folder icon.

All threads (topics) pertinent to a general subject category will appear as links under that subject category folder. The instructor has control of what general subject categories are available for discussion in the course. 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." At the instructor's discretion, students may or may not have the option of starting a new thread under the general subject categories and may or may not be able to edit their comments after they have

been posted. If there are restrictions on your access, you will know in advance what these restrictions are and why they are in place.

Students can and will usually be expected to respond to threads in the course discussion. To respond to a thread:

- In the Discussion Board 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

Your response will now appear in the table, along with your name as author and date/time of posting. Icons will appear to the right that allows either a response or perhaps editing and deletion options. If the edit icon or the trash can (delete icon) doesn't appear, the student doesn't have editing or deletion privileges.

Check the Discussions section often. Since the discussion is asynchronous, other responses will be submitted after your post. Be sure to check the Discussions section each time you log into the course to view any added material and respond to your colleagues' comments. Blackboard will show you the number of unread messages for each topic and highlight them until read.

Roles and Responsibilities

Students will complete assignments as described in each module. A typical week will include: readings, a PowerPoint presentation or video, and practice data assignments. The discussion board will be available each week for questions, discussion and/or clarifications. Faculty will monitor the discussion but will not interfere with student discussion unless necessary for clarification. Assignments have specific due dates as indicated on the course schedule. Students will have specified time periods to complete each unit and the associated assignments.

University Policies and Technical Support

Updated information related to including but not limited to the following is available at the [Student Resource for Blended and Online Courses](#):

- Students Rights and Responsibilities
- Grade Replacement/Forgiveness and Census Date Policies
- State-Mandated Course Drop Policy
- Disability Services
- Student Absence due to Religious Observance
- Student Absence for University-Sponsored Events and Activities
- Social Security and FERPA Statement
- Emergency Exits and Evacuation
- Technical Support.
- Plug-ins and Helper Applications
- Netiquette

Course Evaluation

UT Tyler will ask you to complete a voluntary evaluation to help them make improvements and adjustments in their overall online learning forums. Also, an end of semester evaluation specifically for this course will be made available for you to complete in the last week of instruction. Your comments and recommendations will be considered seriously as the course is updated. Your input throughout the semester contributes to our commitment to improve continually the quality and relevance of this course.

Getting Started

Please refer back to the information contained in this Syllabus anytime you have a question regarding the basic course information. Please begin this course by clicking on the Getting Started Tab on the Blackboard course menu.

Note: The content of this syllabus is subject to change at the discretion of the faculty leaders according to current learning needs.