**Welcome**

*Welcome to the advanced statistics course! We are your instructors, Danita Alfred and Zhaomin He, 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. I 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.
Instructor Contact Information

Instructor: Danita Alfred, PhD, RN
The University of Texas at Tyler
College of Nursing
3900 University Blvd. Tyler, TX 75799
Office Hours: online and by appointment
dalfred@uttyler.edu
Ph: 903/566-7019
Fax: 903/565-5533

Instructor: Zhaomin He, PhD candidate
The University of Texas at Tyler
College of Nursing
3900 University Blvd. Tyler, TX 75799
Office Hours: online and by appointment
Contact information: TBA
Course Title/Description

NURS 6322 Advanced Statistics

Course Description: Within this course, students will study multivariate techniques in health care research and apply aspects of complex research designs, including model testing, decision theory, and advanced statistical techniques. 3 credits

Prerequisites: Basic graduate level statistics. Permission of instructor.

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**
   h) Multiple Independent and Dependent Variables: **MANOVA & RM MANOVA**
3. Create tables to report findings.
4. Compare the utility of multivariate statistical methods in transcultural health research.
5. Interpret reported statistical findings.
<table>
<thead>
<tr>
<th>Week/Beginning Date</th>
<th>CONTENT</th>
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<tbody>
<tr>
<td><strong>Week 1</strong> January 15</td>
<td>Introduction to advanced statistics (to be completed by January 22)</td>
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<tr>
<td><strong>Week 2</strong> January 20</td>
<td>Module 1 Review and t-tests (assignments due January 29)</td>
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<td><strong>Week 3</strong> January 27</td>
<td>Module 2 ANOVA</td>
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<td><strong>Week 4</strong> February 3</td>
<td>Continue ANOVA (assignments due February 12)</td>
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<td><strong>Week 5</strong> February 10</td>
<td>Module 3 ANCOVA (assignments due February 19)</td>
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<tr>
<td><strong>Week 6</strong> February 17</td>
<td>Module 4 Factorial ANOVA (assignments due February 26)</td>
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<td><strong>Week 7</strong> February 24</td>
<td>Module 5 RM ANOVA</td>
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<tr>
<td><strong>Week 8</strong> March 3</td>
<td>Continue RM ANOVA (assignment due March 19)</td>
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<tr>
<td><strong>March 10-14</strong></td>
<td><strong>Spring Break</strong></td>
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<td><strong>Week 9</strong> March 17</td>
<td>Module 6 Correlation and Simple Regression (Assignments due March 26)</td>
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<td><strong>Week 10</strong> March 24</td>
<td>Module 7 Multiple Regression</td>
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<td><strong>Week 11</strong> March 31</td>
<td>Continue Multiple Regression (Assignments due April 9)</td>
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<td><strong>Week 12</strong> April 7</td>
<td>Module 8 Logistic Regression</td>
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<tr>
<td><strong>Week 13</strong> April 14</td>
<td>Continue Logistic Regression (Assignments due April 23)</td>
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<td><strong>Week 14</strong> April 21</td>
<td>Module 9 MANOVA</td>
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<tr>
<td><strong>Week 15</strong> April 28</td>
<td>Continue MANOVA (Assignments due May 7)</td>
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<tr>
<td><strong>Week 16</strong> May 5</td>
<td>Course Evaluations and Wrap-up</td>
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All assignments are due by 11:59 PM on the due date

**IMPORTANT DATES:**
Classes Begin – January 13, 2014
Spring Break – March 10 – 14, 2014
Last day to drop without penalty – March 26, 2014
End of Spring semester – May 9, 2014
Textbooks and References

REQUIRED TEXTS


Quantitative Research textbook for reference such as:


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

Additional References (optional)


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.

<table>
<thead>
<tr>
<th>Course Evaluation Methods</th>
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<tr>
<td>Quizzes (9 @ 5% each)</td>
<td>45%</td>
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<tr>
<td>Application assignments (5 @ 10% each)</td>
<td>50%</td>
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<tr>
<td>Course participation</td>
<td>5%</td>
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<td><strong>Total</strong></td>
<td><strong>100%</strong></td>
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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 us 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.

You will have access to one unit of material at a time. The unit material will remain up through the end of the course. You may look and study ahead within the units, or go back and review a past unit, at any time during the course. 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.

email dalfred@uttyler.edu
Questions or problems other than technical problems (see Technical Requirements in this Syllabus) may be submitted to the email address above.

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. Postings should occur several times during the week rather than several in one day. When individuals wait to post late in the week, the whole group suffers from the lack of full group interaction. Posting late also reduces the opportunity to get feedback.

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

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://www2.uttyler.edu/wellness/rightsresponsibilities.php

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.uttyler.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 that students need to be aware of. 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 Services**
In accordance with Section 504 of the Rehabilitation Act, Americans with Disabilities Act (ADA) and the ADA Amendments Act (ADAAA) the University offers accommodations to students with learning, physical and/or psychiatric disabilities. If you have a disability, including non-visible disabilities such as chronic diseases, learning disabilities, head injury, PTSD or ADHD, or you have a history of modifications or accommodations in a previous educational environment you are encouraged to contact the Student Accessibility and Resources office and schedule an interview with the Accessibility Case Manager/ADA Coordinator, Cynthia Lowery Staples. If you are unsure if the above criteria applies to you, but have questions or concerns please contact the SAR office. For more information or to set up an appointment please visit the SAR office located in the University Center, Room 3150 or call 903.566.7079. You may also send an email to cstaples@uttyler.edu

**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.

**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.
Technical Information

Technical Support
If you experience technical problems or have a technical question about this course, you can obtain assistance by emailing itsupport@patriots.uttyler.edu
When you email IT Support, be sure to include a complete description of your question or problem including:

- The title and number of the course
- The page in question
- If you get an error message, a description and message number
- What you were doing at the time you got the error message

You may also visit the Help Tab in Blackboard for helpful information.

Plug-ins and Helper Applications
UT Tyler online courses use Java, JavaScript, browser plug-ins, helper application and cookies. It is essential that you have these elements installed and enabled in your web browser for optimal viewing of the content and functions of your online course.

- Adobe Flash Player allows you to view content created with Flash such as interactive web applications and animations. http://get.adobe.com/flashplayer/
- RealPlayer allows you to view and listen to streaming video and audio. http://www.real.com/

Netiquette Guide
"Netiquette" is network etiquette, the do's and don'ts of online communication. Netiquette covers both common courtesy online and informal "rules of the road" of cyberspace. Review and familiarize yourself with the guidelines provided.

Getting Started
Please refer back to the information contained in this Syllabus anytime you have a question regarding the basic course information. You can access a printable version of this Syllabus by clicking a link below.

Please begin this course by completing the “The course introduction” and assignment. Once that is complete, click on Module 1 to begin the course material.

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