SYLLABUS

PSYC 2354.403
Psychological Statistics
Monday, Tuesday, Wednesday, & Thursday 8:30 – 10:20 am. BEP bldg Room 213

Instructor: Christopher L. Thomas, Ph.D.
Office: BEP 243
Office Hours: Tuesday and Thursday 3:00 – 4:00 pm (& by appointment)
Email: cthomas@uttyler.edu (Best Way to contact me)
Phone: (903)-566-7171

Course Catalog Description
An introduction to descriptive and inferential statistical methods used in psychological research. Emphasis will be on hypothesis testing with t-tests, analysis of variance, correlation, and selected nonparametric techniques.

Student Learning Outcomes & Assessments
Upon successful completion of the course, the student will be able to …

1. Demonstrate an understanding of the differences between and uses of descriptive and inferential statistics. (BS/BA 6.0)

2. Demonstrate an understanding of the differences between parametric and nonparametric statistics. (BS/BA 6.0)
   a. Define and distinguish between a population and a sample.
   b. Define and distinguish between statistics and parameters.
   c. Classify data with respect to the four levels of measurement.

3. Compute statistical tests manually (with a calculator) and interpret and explain results. (BS/BA 6.0)
   a. Compute and explain measures of central tendency and find the mean, median and mode of a sample and a population
   b. Compute and explain variability: range, variance and standard deviation
   c. Calculate and interpret standard z scores and information gained through normal distribution tables.
   d. Calculate and interpret correlation coefficients using the Pearson and the Spearman.
   e. Explain regression and predict y-values using regression the equation.
   f. Calculate and interpret standard error of the estimate and proportion of variance accounted for.
   g. Discuss hypothesis testing and how to state the null and alternative hypotheses
   h. Interpret the level of significance of a hypothesis test (p-values)
   i. Identify type I and type II errors, and the probabilities associated with them.
   j. Discuss the power of an analysis and the factors that affect it.
   k. Perform one and two sampled t-tests, determine significance, and interpret the results.
   l. Explain an F-test, calculate and interpret a one-way ANOVA
   m. Calculate and interpret a two-way ANOVA
n. Calculate and interpret non-parametric tests such as the Mann-Whitney U, the Wilcoxon rank test, and Chi Squares.
o. Graph different types of data manually and describe the information contained in them.

4. Be able to identify the independent and dependent variables of experiments, determine the design and the correct statistical analyses with which to test appropriate hypotheses. (BS/BA 6.0)

Required Student Resources:

**Textbook:** Heiman (2013). Basic Statistics for the Behavioral Sciences (7th Ed.).


A student at UT-Tyler is not under any obligation to purchase a textbook from a university-affiliated bookstore. The same textbook may also be available from an independent retailer, including an online retailer.

Course Policies and Expectations:

**Attendance and Preparedness:** Attendance is mandatory. At the beginning of each class session, you will be asked to sign an attendance sheet. It is your responsibility to sign the attendance sheet for each class period. If you arrive late to class, do not forget to sign the attendance sheet before you leave class for the day or you will be counted as absent for that day. If you miss a class for an excused absence (e.g., doctor’s excuse, death in the family, religious observances, etc.), please inform me as soon as possible. Following an excused absence, you will be responsible for making all arrangements necessary to complete missed assignments. Further, you are expected to coordinate with classmates to collect any missed handouts, notes, and to be updated on all announcements. You are allowed one unexcused absence over the course of the semester; however, your attendance grade will be lowered by approximately .60 points per missed day starting with the 2nd missed session. Also, please bring the following items with you to every class period: pencils with erasers, paper and a calculator.

**Connectivity (Email and Canvas):** Throughout the semester, important course information will be sent via email and/or Canvas. All students are required to check their email messages and Canvas announcements regularly in order to keep up with this course. You are responsible for all information sent via email or posted on the Canvas page.

**Accuracy Checks:** During quizzes and exams that involve numerical calculations, I am willing to check the accuracy of your final numbers. If your answer is incorrect, but your work is neat and legible, I will attempt to find the point in your calculations where you “went wrong,” so that you can try again, time permitting. Please do not abuse this privilege, or rely too heavily on it. I work hard in giving you every chance to show me what you have learned, but you must work hard, as well, to learn.
**Student Assignments:**

**Readings:** One of the primary responsibilities you will face in this is to keep up with assigned readings. Failure to keep up with readings will negatively impact your understanding of course materials and may lead to poor performance on assignments, quizzes, exams, projects, and class activities.

**Quizzes:** For each topic, you will complete a brief quiz that will assess your understanding of key terms and concepts from the readings and lectures related to that topic. The quizzes are a factor in your factor grade but are also a continuous assessment tool that provides useful information about your understanding of course content. The dates of the quizzes are dependent on when we finish the material and when I feel like the class is ready to take a quiz, so it is important that you attend each class. Students should expect at least a quiz a week, over material covered since the previous quiz or exam. The lowest quiz grade will be dropped.

**Exams:** You will be asked to complete three exams during the semester. All exams will be distributed and completed during class time. I will allow you to re-take one exam if you would like to do so. Make-up exams will be taken during the final exam period on 7/7.

**Practice Work:** During class time we will usually have time to begin the practice problems for each chapter. Quiz content and format will be modeled on practice worksheets but may also include the application of related concepts covered on the powerpoint. As time permits, you should expect to complete substantial practice before leaving class. The practice time is for your benefit, so please take advantage of it.

<table>
<thead>
<tr>
<th>Grade Item</th>
<th>Total Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quizzes</td>
<td>10 points each X 8 quizzes = 80 total points</td>
</tr>
<tr>
<td>Tests</td>
<td>50 points each X 3 = 150 points</td>
</tr>
<tr>
<td>Attendance</td>
<td>20 Points</td>
</tr>
<tr>
<td>Course Total</td>
<td>Approximately 250 points</td>
</tr>
</tbody>
</table>

Please note: The number, content focus, and point value of all assessments and assignments is an approximation and may change.

**Letter Grades:** Letter grades will be assigned using the following guidelines:

- A: 90.00% of points or above
- B: 80.00% - 89.999% of points
- C: 70.00% - 79.999% of points
- D: 60.00% - 69.999% of points
- F: 59.999% of points or below
## Proposed Semester Schedule

<table>
<thead>
<tr>
<th>Date</th>
<th>Topic(s)</th>
<th>Required Reading(s)</th>
<th>Assignments</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Week 1</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Monday, July 8th</td>
<td>Course Overview &amp; Introduction to Psychological Statistics, Research Designs &amp; Variables</td>
<td>Chapters 1 &amp; 2</td>
<td></td>
</tr>
<tr>
<td>Tuesday, July 9th</td>
<td>Overview of Frequency Distributions</td>
<td>Chapter 3</td>
<td>Quiz #1 Due</td>
</tr>
<tr>
<td>Wednesday, July 10th</td>
<td>Central Tendency and Variability</td>
<td>Chapters 4 &amp; 5</td>
<td></td>
</tr>
<tr>
<td>Thursday, July 11th</td>
<td>The Normal Curve</td>
<td>Chapter 6</td>
<td></td>
</tr>
<tr>
<td><strong>Week 2</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Monday, July 15th</td>
<td>Finish Normal Curve and Test Review the Normal Curve The Normal Curve</td>
<td>Chapter 6</td>
<td></td>
</tr>
<tr>
<td>Tuesday, July 16th</td>
<td>EXAM #1 &amp; Begin Chapter 7</td>
<td></td>
<td>EXAM #1</td>
</tr>
<tr>
<td>Wednesday, July 17th</td>
<td>Correlation and Regression</td>
<td>Chapters 7 &amp; 8</td>
<td></td>
</tr>
<tr>
<td>Thursday, July 18th</td>
<td>Probability</td>
<td>Chapter 9</td>
<td></td>
</tr>
</tbody>
</table>
## Week 3

<table>
<thead>
<tr>
<th>Date</th>
<th>Topic</th>
<th>Chapter</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monday, July 22(^{nd})</td>
<td>Hypothesis Testing</td>
<td>Chapter 10</td>
</tr>
<tr>
<td>Tuesday, July 23(^{rd})</td>
<td>Z – Test &amp; One Sample T – Test</td>
<td>Chapter 11</td>
</tr>
<tr>
<td>Wednesday, July 24(^{th})</td>
<td>One Sample T Test Wrap Up &amp; Exam Review Exam #2</td>
<td></td>
</tr>
<tr>
<td>Thursday, July 25(^{th})</td>
<td>Exam #2</td>
<td>EXAM #2</td>
</tr>
</tbody>
</table>

## Week 4

<table>
<thead>
<tr>
<th>Date</th>
<th>Topic</th>
<th>Chapter</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monday, July 29(^{th})</td>
<td>2 – Sample T-Test</td>
<td>Chapter 12</td>
</tr>
<tr>
<td>Tuesday, July 30(^{th})</td>
<td>ANOVA</td>
<td>Chapter 13</td>
</tr>
<tr>
<td>Wednesday, July 31(^{st})</td>
<td>ANOVA</td>
<td>Chapter 13</td>
</tr>
<tr>
<td>Thursday, August 1(^{st})</td>
<td>2 – Way ANOVA</td>
<td>Chapter 14</td>
</tr>
<tr>
<td>Monday, August 5(^{\text{th}})</td>
<td>2 – Way ANOVA</td>
<td>Chapter 14</td>
</tr>
<tr>
<td>-------------------------------</td>
<td>----------------</td>
<td>------------</td>
</tr>
<tr>
<td>Tuesday, August 6(^{\text{th}})</td>
<td>Non – Parametric Statistics</td>
<td>Chapter 15</td>
</tr>
<tr>
<td>Wednesday, August 7(^{\text{th}})</td>
<td>Non – Parametric Statistics &amp; Exam #3 Review</td>
<td>Chapter 15</td>
</tr>
<tr>
<td>Thursday, August 8(^{\text{th}})</td>
<td>Exam #3</td>
<td>Exam #3</td>
</tr>
</tbody>
</table>

Note: All dates subject to change
University Policies:

Grade Replacement/Forgiveness
If you are repeating this course for a grade replacement, you must file an intent to receive grade forgiveness with the registrar by the 12th day of class. Failure to do so will result in both the original and repeated grade being used to calculate your overall grade point average. Undergraduates will receive grade forgiveness (grade replacement) for only three course repeats; graduates, for two course repeats during his/her career at UT Tyler.

Disability Statement
"If you have a disability, including a learning disability, for which you request disability support services/accommodation(s), please contact Ida MacDonald in the Disability Services office so that the appropriate arrangements may be made. In accordance with federal law, a student requesting disability services/accommodation(s) must provide appropriate documentation of his/her disability to the Disability Services counselor. In order to assure approved services the first week of class, diagnostic, prognostic, and prescriptive information should be received 30 days prior to the beginning of the semester services are requested. For more information, call or visit Disability Services located in the University Center, Room 3150. The telephone number is (903) 566-7079. Additional information may also be obtained at the following UT Tyler Web address: http://www.uttyler.edu/disabilityservices.

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.

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.

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 instructor has designated that the examination is not to be removed from the 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, homework solution or computer program;
• falsifying research data, laboratory reports, and/or other academic work;
• taking, keeping, misplacing, or damaging the property of U. T. 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.

Vision
The College of Education and Psychology is nationally recognized and respected for its academic programs and opportunities. It is a center of academic excellence, scholarly inquiry, and public service. The College prepares leaders to meet the critical challenges of the 21st Century through productive contributions to local and global communities and toward individual and cultural equity.

Mission
The mission of the College of Education and Psychology is to provide a positive environment that fosters the acquisition of knowledge and skills. The mission is individually and collectively realized through a community of scholars that contributes to knowledge through scholarly inquiry; organizes knowledge for application, understanding and communication; and provides leadership and service. We affirm and promote global perspectives that value individual and cultural diversity to enhance learning, service, and scholarship.
Psychology B.S./B.A. Program Mission Statement:

The mission of the undergraduate program in Psychology is to provide students with a demonstrable knowledge and understanding of the science of behavior and the mind, including content in Memory and Thinking; Sensory and Behavioral Neuroscience; Developmental Psychology; Clinical and Abnormal Psychology; Social Psychology; Psychological Measurement and Methodology. We seek to prepare students for either postgraduate education or a wide variety of employment settings and careers.

Psychology B.S./B.A. Program Learning Outcomes may be found at:

http://www.uttyler.edu/psychology/BSBAPsychPLO