

PSYC 5340: Fall 2019
Advanced Statistics and Design
SYLLABUS

Office: BEP 252

Phone: 903-565-5753

Location: TBD

Office hours: Mondays 2-3, Wednesdays 10:30-12:30 Best way to contact: email (Canvas or regular)

Required Text: IBM SPSS for Psychologists (And everybody else), 6th Ed. By Brace, Kemp, & Snelgar (2016). ISBN-13: 9781138189522

Course Catalog Description: Includes aspects of complex experimental designs, statistical hypothesis testing, decision theory, multiple regression analysis, ANOVA, distribution-free techniques, and factor analysis.

Required Prerequisites: PSYC 2354 and PSYC 2331 (or equivalent undergraduate statistics and research methods courses at another institution) and consent of instructor.

Student Learning Outcomes: As a result of this course, successful students will be able to:

- Identify and articulate the theoretical underpinnings of inferential statistics and experimental design.
- Articulate basic principles of statistical analyses, including measures of central tendency, variability, sampling distributions and hypothesis testing.
- Accurately choose and conduct statistical data analyses, using SPSS statistical software, emphasizing the basic assumptions, appropriate uses, and the interpretation of each.
- Employ qualitative, quantitative, and single-case research methods.

Grading: Two exams will comprise 40% of the final grade. Homework assignment grades will comprise 40%. The data analysis project due at the end of the semester will be worth 20% of your grade (includes work on preliminary assignments and presentation). All assignments **MUST** be turned in on time to receive full credit, late assignments may receive partial credit (10% off for every day that it is late, no more than 2 days late).

The Midterm and Final exams will have two parts: a conceptual/short essay portion over conceptual material, and an applied section over the SPSS skills.

Make-up exams and assignments: To be eligible for a make-up exam or assignment that was missed due to an absence, you will have to bring in some kind of official documentation for that absence (doctor note, work note, etc). This same policy applies to late work.

Attendance policy: Attending class is critical to your success in this course. You are permitted 1 unexcused absence with no grade penalty. Any student with more than 1 unexcused absence will receive a 10% penalty on their final grade (i.e., your grade will be dropped one letter). Absences will be excused with official documentation (see above in make-up assignments).

Grading Scale: A=90% +, B=80%-89%, C=70%-79%, D= 60%-69%, F = less than 60%

Lectures. Lectures and powerpoints on the basic statistics content are available online to aid you in relearning this material. Each week of class will be structured as follows: we will start off by going over the answers from the previous week's homework assignment. We will then spend time in class learning about the statistical concepts to be addressed for the week in a brief lecture. Then, I will set up a demonstration that we will begin working on in SPSS together in class, and move on to working on the homework assignment for the week.

Homework assignments. Each student will be a member of a 1-3 person team throughout the semester, and will work with their team member to carry out assignments in which they apply what they have learned from the book, lectures and other resources. The course schedule and calendar will show dates on which projects are begun and when they are due. When projects are not completed during the class period, team members are responsible for interacting as necessary to complete the work by the due date. If a team member misses a class period during which a Homework assignment is carried out, each team member must turn in an individually completed assignment for that week

Data analysis project. In a group of your choosing, you will work to design and test a hypothesis using one of the provided real data sets posted on Canvas. The final product will consist of a detailed presentation of your results in class. See the detailed description posted on Canvas.

| Week | Dates | Topic and Readings | Assignments and Due Dates |
|------|-------------|--|---|
| 1 | Aug 26 | Introduction (Ch. 1), Data entry (Ch. 2) | |
| 2 | Sep 2 | NO CLASS (Labor Day) | |
| 3 | Sep 9 | -Exploring Data and Descriptive Statistics (Ch. 3), Data handling (Ch.4) -Research designs and hypotheses lecture | Due Monday: Entering data homework |
| 4 | Sep 16 | Tests of Difference: One and two-sample designs (Ch. 5) | Due Monday: Exploring data homework |
| 5 | Sep 23 | -Correlation (Ch. 6- Sections 1-5) | Due Monday: Tests of Difference Homework |
| 6 | Sep 30 | -One way ANOVA (Ch. 8 p. 187-198) | Due Monday: Correlation Homework |
| 7 | Oct 7 | Two way and mixed ANOVA (Ch. 8 p. 198-240) | Due Monday: One way ANOVA homework |
| 8 | Oct 14 | Exam 1 in class | |
| 9 | Oct 21 | Bivariate and Multiple Regression (Ch. 6, Sections 6-7; Ch. 9) | Due Monday: Data analysis plans for group project |
| 10 | Oct 28 | Multivariate analysis in ANOVA (Ch. 10) | Due Monday: Regression Homework |
| 11 | Nov 4 | Chi Square (CH. 7) and Logistic Regression (Ch. 11) | Due Monday: ANCOVA and MANOVA homework |
| 12 | Nov 11 | Graphs, Presentations, and Projects Workshop | Due Monday: Logistic Regression homework |
| 13 | Nov 18 | Factor Analysis (Ch. 12) | |
| 14 | Nov 25 | Thanksgiving Break: No Class | |
| 15 | Dec 2 | Data project presentations in Class | Due Monday: Factor Analysis Homework |
| | Finals Week | Exam 2 | Exact time and day TBA by university |

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 or call 903.565.5555.

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

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 Services. 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 Support Services office so that the appropriate arrangements may be made. In accordance with federal law, a student requesting disability support services/accommodation(s) must provide appropriate documentation of his/her disability to the Disability Support Services counselor. For more information, call or visit the Student Services Center located in the University Center, Room 282. The telephone number is 566-7079 (TDD 565-5579). 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 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.

Grade Grievances: Grade grievances can be filed only after final grades have been posted after the end of the semester, but must be made within 90 days of the semester end. To file a grade grievance, refer to the appropriate section of the UTT Catalog (p. 38).