PSYC 5317.001 Univariate Statistics, Fall 2023
Wednesdays 4:00-6:30 PM McKibben 127

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Office Hours: Monday/Wednesday 9:00-9:55
Tuesday/Thursday 12:00-2:00


Course description: This course covers statistical methods and research designs that are applicable to psychological research. Students are exposed to experimental designs. Particular attention is given to the analysis of variance (ANOVA) and related techniques. Along with hand calculations, computer-based data analyses will also be performed with “SPSS,” the Statistical Package for the Social Sciences.

<table>
<thead>
<tr>
<th>Program Learning Outcomes (PLO)</th>
<th>Proficiency Level</th>
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<tbody>
<tr>
<td>The student will demonstrate statistical skills.</td>
<td>Mastery</td>
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<tr>
<td>The student will demonstrate effective and professional writing skills.</td>
<td>Advanced</td>
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<tr>
<td>The student will demonstrate research design skills.</td>
<td>Advanced</td>
</tr>
<tr>
<td>The student will respect and use critical and creative thinking, skeptical inquiry, and when possible, the scientific approach to solve problems related to behavior and mental processes.</td>
<td>Advanced</td>
</tr>
<tr>
<td>The student will demonstrate a solid general psychology knowledge base.</td>
<td>Basic</td>
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<tr>
<td>The student will demonstrate and understanding of the ethics of the psychology profession.</td>
<td>Intermediate</td>
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Student Learning Outcomes

A learner will be able to describe the principles and practices of good experimental design and analysis.

A learner will be able to identify basic designs

A learner will be able to identify the appropriate statistical analysis given the experimental design.

A learner will be able to conduct overall and specific analyses of experimental data.

A learner will be able to articulate the differences and similarities between various univariate and multivariate ANOVA techniques.

A learner will demonstrate an understanding of the General Linear Model.
Course requirements:

**Exams (420 points):** There will be three exams at 140 points each. We will take exams in person, making an arrangement for social distancing that is safe. The exam dates will not change. If you miss an exam, which is strongly discouraged, I must have documentation justifying the absence. I must be fair to all students. The way to do that is to offer tests at the same time for everyone so that everyone takes tests with the same preparation and under the same conditions.

**In-class assignments (60 points):** There will be 12 in-class assignments at 5 points each, one per class. In-class assignments will include by-hand problem solving to establish skills with central tendency, variability, table-making and inference tests using $t$, $F$, $r$, etc. These are breezy and often involve getting the entire complement of points.

**Problems and writing assignments to be done independently as homework (120 points):**

- **By-hand text problem solving, most often at home between classes (12 assignments; 72 points of the 120 points):** Where it clarifies the process, we will solve some problems by hand to illustrate processes with respect to both descriptive and inferential statistics. This work is a mirror of what SPSS does “behind the scenes,” but offers us a chance to “view the engine” and examine the process. *I have loaded “quizzes” in Brightspace/D2L in which you will render your answers. This keeps us from undue paper handling.*

- **Written assignments (three [3] assignments; 48 points of the 120 points):** For three long-term assignments, I will provide you with a research article. One describes research fraud that was discerned by a savvy consumer of psychological statistics, Simonsohn. The other describes Jacob Cohen’s (no relation to Barry) meticulously researched misgivings on null hypothesis significance. Cohen’s paper is seminal. The third involves the 2021-2023 crisis at Harvard relating to alleged misbehavior by Harvard Business School professor Francesca Gino, still at an apex as of August 30, 2023. Each of these articles involves a level of knowledge of statistics that we will obtain well within this semester. You will write a brief paper describing the findings of the author and other questions. It is to be typewritten, but is intended to be quite manageable. I’ll have more elaborate instructions on Brightspace/D2L by August 30, 2023, our first meeting.
Grading:

<table>
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<tr>
<th>Component</th>
<th>Points</th>
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<tbody>
<tr>
<td>Exams</td>
<td>420</td>
</tr>
<tr>
<td>In-class assignments</td>
<td>60</td>
</tr>
<tr>
<td>Independent/homework assignments</td>
<td>120</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>600</strong></td>
</tr>
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</table>

Class attendance policy: We have 14 class meetings before the final that include August 30, 2023. I will observe attendance and will log points during each of the 12 in-class assignments that fall during class periods in which we do not have a test. Each class will contain critical material that will appear on tests as well as in-class assignments that cannot be redone. I will also assign homework. I pledge to make class as rewarding as possible. I hope all students will attend all 14 classes.

Missed work policy: You must take exams and complete assignments at scheduled times unless the miss can be justified with documentation. Stephen F. Austin State University’s “excused absences policy” is below.

*I acknowledge Stephen F. Austin State University’s “excused absences policy” as it appears below. However, I strongly, strongly discourage missing class and assignments, particularly missing tests. I must be fair to students taking tests as scheduled.*

Excused-absences policy:  
(http://www.sfasu.edu/policies/class_attndance_excused_abs.asp) Students may be excused from attendance for reasons such as health, family emergencies, or student participation in approved university-sponsored events. Students are responsible for notifying instructors in advance for excused absences when possible.

Students are responsible for providing satisfactory documentation in a timely manner to the instructor for each absence. Whether absences are excused or unexcused, a student is responsible to course assignments. Students with excused absences may be permitted to make up work for a maximum of three weeks of absences during a semester, depending on the nature of the missed work. Make up work must be completed as soon as possible after returning from an absence in accordance with the course syllabus.

In the case of absences caused by participation in university sponsored events, announcement via mySFA will constitute official notification. Faculty members sponsoring activities that require students to be absent from other classes must submit to the provost an explanation of the
absence, including the date, time, and alphabetical listing of all attending students. If approved by the provost, this information will be posted by mySFA.

The academic-dishonesty policies have been lengthened and more deeply codified since Stephen F. Austin State University joined the University of Texas system. I happen to applaud the new way. That is attached and posted to our Brightspace/D2L shell.

Withheld-semester-grades policy (A-54): At the discretion of the instructor of record and with the approval of the academic chair/director, a grade of WH will be assigned only if the student cannot complete the course work because of unavoidable circumstances. Students must complete the work within one calendar year from the end of the semester in which they receive a WH, or the grade automatically becomes an F. If students register for the same course in future semesters, the WH will automatically become an F and will be counted as a repeated course for the purpose of computing the grade point average.

Students with disabilities: To obtain disability related accommodations, alternate formats and/or auxiliary aids, students with disabilities must contact the Office of Disability Services (ODS), Human Services Building, and Room 325, 468-3004 / 468-1004 (TDD) as early as possible in the semester. Once verified, ODS will notify the course instructor and outline the accommodation and/or auxiliary aids to be provided. Failure to request services in a timely manner may delay your accommodations. For additional information, go to http://www.sfasu.edu/disabilityservices/.

Credit-hour justification: “Univariate Statistics” (3 credits) is designed to cover statistical methods and research designs that are applicable to psychological research, including experimental designs, analysis of variance, and related techniques. Along with hand calculations, computer-based data analyses also will be performed. The course typically meets 150 minutes once a week for 15 weeks, and also meets for a 2-hour final examination period. Students typically have significant weekly reading assignments, writing assignments, are expected to take regular tests, and a final examination. These activities average at a minimum 6 hours of work each week to prepare outside of classroom hours.

Course schedule: On Brightspace/D2L is a course schedule that I created in Excel. Because it is so exact, and our progress may vary from what I anticipate, that schedule may change. I vow to make class as predictable as possible and I will be explicit about our progress and scheduling changes as each class progresses.

While some dates may vary, the test dates will not vary.