Instructor: Luis E. Aguerrevere  
Office: HSTC 302  
Office Phone: 1238  
Other Contact Information:  
Course Time & Location: 5/17/2021  
Office Hours: TBA  
Credits: 3  
Email: aguerrevle@sfasu.edu

Prerequisites:

I. Course Description: (brief paragraph)

This is an independent study course that will review the application of descriptive and inferential statistical techniques in processing behavioral data. Includes normative techniques, parametric and nonparametric applications.

Course Justification: Students have significant weekly reading assignments, complete weekly quizzes. These activities average at a minimum 6 hours of work each week to prepare outside of classroom hours.

Course Delivery Modality: Face to Face

The James I. Perkins College of Education is committed to proactively recruiting and retaining a diverse faculty, staff, and student population. Through open dialogue, mutual respect, and shared responsibility, faculty, staff, and students will demonstrate an understanding and sensitivity to ethnicity, race, gender, exceptionalities, culture, language/dialect, age, social class, family structure, sexual orientation, religion, and spiritual values in order to enhance the quality of life in a diverse, global community.

Prerequisites: Admission to graduate school

I. Course Description: (brief paragraph)

Independent Study of the multivariate statistical methods in conjunction with artificial neural network applications for the behavioral sciences. Topics include matrix algebra, multivariate analysis of variance, multiple and logistic regression, ANOVAS, MANOVAS, principal components and factor analysis. Applications and exercises employing SPSS GradPack multivariate software provide the background for learning operations critical to fluency in the application of multivariate analysis and procedures.

II. Intended Learning Outcomes/Goals/Objectives (Program/Student Learning Outcomes):  
The complete listing of the standards associated with the PLOs, SLOs, assignments, and assessments are located on the PCOE website.

This course reflects the following core values of the College of Education:

• Academic excellence through critical, reflective, and creative thinking
• Life-long learning
• Collaboration and shared decision-making
• Openness to new ideas, to culturally diverse people, and to innovation and change
• Integrity, responsibility, diligence, and ethical behavior
• Service that enriches the community
The mission of the College of Education is to prepare competent, successful, caring, and enthusiastic professionals dedicated to responsible service, leadership, and continued professional and intellectual development.

The goals of this course are closely aligned to those of the College of Education (COE), which is to prepare competent, successful, caring and enthusiastic professionals dedicated to responsible service, leadership, and continued professional and intellectual development. As a preliminary step in this process the knowledge obtained in this course will enable candidates to develop the requisite knowledge, skills, and dispositions necessary for admission into the COE Teacher Certification Program.

This course also supports the mission of the Human Services Department. The mission of the College of Education is to prepare competent, successful, caring and enthusiastic professionals dedicated to responsible service, leadership, and continued professional and intellectual development.

**NASP Domains addressed by this course:**

Domain 1: Data-Based Decision Making and Accountability - School psychologists have knowledge of varied models and methods of assessment and data collection for identifying strengths and needs, developing effective services and programs, and measuring progress and outcomes.

Domain 9: Research and Program Evaluation - School psychologists have knowledge of research design, statistics, measurement, varied data collection and analysis techniques, and program evaluation sufficient for understanding research and interpreting data in applied settings.

**Program Learning Outcomes:**

**PLO 1. Practical Knowledge**
- Candidates demonstrate a clear and precise understanding that school psychologists must be able to use assessment strategies to gather information and define current problem areas. Response addresses the need for assessing strengths and needs for individuals, groups, and systems.

**PLO 2. Research and Program Evaluation**
- Practical Knowledge, Content Knowledge and Application of Principles and Procedures
- Answer demonstrates a clear understanding of issues regarding the evaluation of research, translating research into practice, and understanding research design and statistics in sufficient depth to plan and conduct investigations and program evaluations for improvement of services.

**PLO 5 Information Technology**
- Candidates have a clear understanding and enthusiasm for being familiar with and being able to evaluate the appropriateness of various technologies that impact the practice of their profession.

**Student Learning Outcomes:**

- A learner will demonstrate the ability to use statistics to describe data including frequency distributions, percentiles and histograms/polylgons.
- A learner will demonstrate the ability to identify and calculate several measures of central tendency and variability
- A learner will demonstrate the ability to use the hypothesis testing process
- A learner will demonstrate an understanding of probability
- A learner will demonstrate the ability to compute measures of correlation and test for statistical significance
- A learner will demonstrate the ability to compute statistics testing statistical
significance of differences in means (i.e., t and Z)
• A learner will demonstrate the ability to compute statistics testing statistical
  significance of differences in variances (i.e., $F_{\text{max}}$, F, and t)
• A learner will demonstrate an understanding of single factor (between and within-subjects)
  ANOVA and Factorial ANOVA (between subjects)
• A learner will demonstrate facility with statistical calculators and software

III. Course Assignments, Activities, Instructional Strategies, use of Technology:

There will be no exams in this class, rather there will be assigned weekly and monthly projects. These
projects will include, as much as possible, genuine data sets. Your tasks will involve analyzing the data
using a multivariate technique, printing and annotating the output from SPSS, and writing up a brief results
section using APA style. Other tasks will involve offering brief answers to conceptual questions, minor hand
computations (e.g., with matrix algebra), and analysis of small, contrived data sets.

IV. Evaluation and Assessments (Grading):

1. Study (40%). Students will be writing a report and presenting a study using either data already
   collected or simulated data (created by the instructor) to answer questions related to a student’s
   topic of interest. Students will be writing and extended abstract following the below guidelines.
   Students will also present their finding in a poster session.
2. Homework (60%): Every week, students will have to complete the tasks at the end of each chapter.

The following rubric will be used for all projects and in-class activities.

<table>
<thead>
<tr>
<th>Rubric for Statistics Projects</th>
<th>Points Possible</th>
<th>Points Earned</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introduction/Title:</td>
<td>30</td>
<td></td>
</tr>
<tr>
<td>Title is clear and in the form of a question</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>Introduction clearly describes the question that is being investigated</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>Introduction clearly states the hypotheses for the question of interest</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>Graphs and Summary Statistics:</td>
<td>40</td>
<td></td>
</tr>
<tr>
<td>Appropriate graphs are used (help answer the overall question of interest)</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>Graphs are accurate and neat</td>
<td>10</td>
<td></td>
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<tr>
<td>Appropriate summary statistics are calculated (help answer the overall question of interest)</td>
<td>10</td>
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<tr>
<td>Summary statistics are calculated correctly (SPSS output is included)</td>
<td>10</td>
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<tr>
<td>Discussion and Conclusions:</td>
<td>30</td>
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<tr>
<td>Conclusion clearly and correctly addresses the question of interest</td>
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<td></td>
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<tr>
<td>Conclusion is supported by the appropriate inferential procedure</td>
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<td></td>
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<tr>
<td>Appropriate generalizations are made with supporting evidence</td>
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Study Specifics:

Brief Paper ~3000 words follow the following format:

Revised April 28, 2021
a. Introduction. must be a discussion of the scientific evidence that led you to your study. Here, you will discuss 6 articles that are relevant (similar to your study). At least half of your articles should be published within the last 5 years.
b. To effectively use the content of the 6 journal articles to support your ideas, be sure to clearly describe 1) the topic of the research being reported, 2) the research method used (and how these methods may have affected the results), 3) the researcher’s conclusions, and 4) questions raised by the research.
c. In the last paragraph of the research section of your paper, summarize the research findings and briefly state how the research relates to the topic of your paper. In this same paragraph, you should clearly and concisely describe the various SPECIFIC hypotheses on which you are basing your paper.
d. Methods. Here you will present your proposed participants, materials and design.
e. Results: Here you will present your experimental design, including the statistics you will be using and a non-statistic results. If you have not collected data, you will be provided with simulated data.
f. Discussion: You will need to explain how your results change the existing literature. Also, state in what ways you can make your study improve.
g. References. All the books and journals used for your paper should be listed alphabetically in a bibliography at the end. You should follow the style manual of the American Psychological Association (APA) - sixth edition.

<table>
<thead>
<tr>
<th>GRADES</th>
</tr>
</thead>
<tbody>
<tr>
<td>A = 90–100 %</td>
</tr>
<tr>
<td>B = 80–89.9%</td>
</tr>
<tr>
<td>C = 70–79.9%</td>
</tr>
<tr>
<td>D = 60–69.9%</td>
</tr>
<tr>
<td>F &lt; 60 %</td>
</tr>
</tbody>
</table>

V. Tentative Course Outline/Calendar:

| TENTATIVE COURSE SCHEDULE AND OTHER IMPORTANT DATES |
|---------|----------------------|------------------|
| Day     | Topic                | Homework Problems |
| Week 1  | Course Introduction/Syllabus  | Exercises Chapters  |
|         | Review, basic Concepts  | 1,2,3             |
| Week 2  | Central tendency, Spread, Z-Scores and Probability | Exercises Chapters |
|         |                      | 4,5,6             |
PCOE Syllabus Template Check-Off List

<table>
<thead>
<tr>
<th>Week</th>
<th>Topic</th>
<th>Exercises Chapters</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>Introduction to Hypothesis Testing, Introduction to T-Test,</td>
<td>7,8,</td>
</tr>
<tr>
<td>4</td>
<td>Independent Samples and Repeated Measures</td>
<td>9,10</td>
</tr>
<tr>
<td>5</td>
<td>Analysis of Variance and Correlations</td>
<td>11,12</td>
</tr>
<tr>
<td>6</td>
<td>Chi Square</td>
<td>Exercises Chapter 14</td>
</tr>
</tbody>
</table>

Study Due June 25th at NOON

VI. Readings (Required and recommended—including texts, websites, articles, etc.):


This book was created as part of the University of Missouri’s Affordable and Open Access Educational Resources Initiative (https://www.umsystem.edu/ums/aa/oer). The contents of this work have been adapted from the following Open Access Resources: Online Statistics Education: A Multimedia Course of Study (http://onlinestatbook.com/). Project Leader: David M. Lane, Rice University

VII. Course Evaluations:

Near the conclusion of each semester, students in the Perkins College of Education electronically evaluate courses taken within the PCOE. Evaluation data is used for a variety of important purposes including:
1. Course and program improvement, planning, and accreditation;
2. Instruction evaluation purposes; and
3. Making decisions on faculty tenure, promotion, pay, and retention.

As you evaluate this course, please be thoughtful, thorough, and accurate in completing the evaluation. Please know that the PCOE faculty is committed to excellence in teaching and continued improvement. Therefore, your response is critical!

In the Perkins College of Education, the course evaluation process has been simplified and is completed electronically through MySFA. Although the instructor will be able to view the names of students who complete the survey, all ratings and comments are confidential and anonymous, and will not be available to the instructor until after final grades are posted.

VIII. Student Ethics and Other Policy Information: Found at http://www.sfasu.edu/policies/

Class Attendance and Excused Absence: Policy 6.7
Regular, punctual attendance, documented participation, and, if indicated in the syllabus, submission of completed assignments are expected at all classes, laboratories, and other activities for which the student is registered. Based on university policy, failure of students to adhere to these requirements shall influence the course grade, financial assistance, and/or enrollment status. The instructor shall maintain an accurate record of each student's attendance and participation as well as note this information in required reports (including the first 12 day attendance report) and in determining final grades. Students may be excused from attendance for reasons such as health, family emergencies, or student participation in approved university-sponsored events. However,

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students are responsible for notifying their instructors in advance, when possible, for excusable absences. Whether absences are excused or unexcused, a student is still responsible for all course content and assignments. Students with accepted excuses may be permitted to make up work for up to three weeks of absences during a semester or one week of a summer term, depending on the nature of the missed work. Make-up work must be completed as soon as possible after returning from an absence.

**Academic Accommodation for Students with Disabilities: Policy 6.1 and 6.6**
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, 936-468-3004 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/](http://www.sfasu.edu/disabilityservices/)

**Student Academic Dishonesty: Policy 4.1**
Abiding by university policy on academic integrity is a responsibility of all university faculty and students. Faculty members must promote the components of academic integrity in their instruction, and course syllabi are required to provide information about penalties for cheating and plagiarism, as well as the appeal process.

**Definition of Academic Dishonesty**
Academic dishonesty includes both cheating and plagiarism. Cheating includes, but is not limited to:
- using or attempting to use unauthorized materials on any class assignment or exam;
- falsifying or inventing of any information, including citations, on an assignment;
- helping or attempting to help another in an act of cheating or plagiarism.

Plagiarism is presenting the words or ideas of another person as if they were one’s own. Examples of plagiarism include, but are not limited to:
- submitting an assignment as one’s own work when it is at least partly the work of another person;
- submitting a work that has been purchased or otherwise obtained from the Internet or another source;
- incorporating the words or ideas of an author into one’s paper or presentation without giving the author credit.

**Penalties for Academic Dishonesty**
Penalties may include, but are not limited to, reprimand, no credit for the assignment or exam, re-submission of the work, make-up exam, failure of the course, or expulsion from the university.

**Student Appeals**
A student who wishes to appeal decisions related to academic dishonesty should follow procedures outlined in Academic Appeals by Students (6.3).

**Withheld Grades: Policy 5.5**
At the discretion of the instructor of record and with the approval of the academic unit head, 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 by the deadline set by the instructor of record, not to exceed one calendar year from the end of the semester in which they receive a WH, or the grade automatically becomes an F, except as allowed through policy [i.e., Military Service Activation (6.14)]. 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.

If a student has been found guilty of academic dishonesty, a grade of “WP” or “WH” may be changed to “WF” at the discretion of the faculty member. In the case of a grade change to “WF”, the course will not count towards the six course drop limit since the student is incurring an academic penalty.

**Student Code of Conduct: Policy 10.4**

Disruptive Behavior--Interference or disruption of students, faculty, administration, staff, the educational mission, or routine operations of the university is prohibited. Such activity includes, but is not limited to, behavior in a classroom or instructional program that interferes with the instructor or presenter’s ability to conduct the class or program, or the ability of others to profit from the class or program. To remain in the vicinity of activity that is disrupting normal university functions when requested to leave by a university official is prohibited. The instructor shall have full discretion over what behavior is appropriate/inappropriate in the classroom. Students who do not attend class regularly or who perform poorly on class projects/exams may be referred to the Early Alert Program at SFA.

Masks (cloth face coverings) must be worn over the nose and mouth at all times in this class and appropriate physical distancing must be observed. Students not wearing a mask and/or not observing appropriate physical distancing will be asked to leave the class. All incidents of not wearing a mask and/or not observing appropriate physical distancing will be reported to the Office of Student Rights and Responsibilities. Students who are reported for multiple infractions of not wearing a mask and/or not observing appropriate physical distancing may be subject to disciplinary actions.


SFASU values students’ mental health and the role it plays in academic and overall student success. SFA provides a variety of resources to support students mental health and wellness. Many of these resources are free, and all of them are confidential.

**On-campus Resources:**
SFASU Counseling Services
www.sfasu.edu/counselingservices
3rd Floor Rusk Building
936-468-2401

SFASU Human Services Counseling Clinic
www.sfasu.edu/humanservices/139.asp
Human Services Room 202
936-468-1041

**Crisis Resources:**
Burke 24-hour crisis line 1(800) 392-8343
Suicide Prevention Lifeline 1(800) 273-TALK (8255)
Crisis Text Line: Text HELLO to 741-741
Additional Information Specific to Educator Preparation (only add if educator preparation):

**Code of Ethics for the Texas Educator:**

The Texas educator shall comply with standard practices and ethical conduct toward students, professional colleagues, school officials, parents, and members of the community and shall safeguard academic freedom. The Texas educator, in maintaining the dignity of the profession, shall respect and obey the law, demonstrate personal integrity, and exemplify honesty and good moral character. The Texas educator, in exemplifying ethical relations with colleagues, shall extend just and equitable treatment to all members of the profession. The Texas educator, in accepting a position of public trust, shall measure success by the progress of each student toward realization of his or her potential as an effective citizen. The Texas educator, in fulfilling responsibilities in the community, shall cooperate with parents and others to improve the public schools of the community. This chapter shall apply to educators and candidates for certification.


**To complete Certification/Licensing Requirements in Texas related to public education and other professional settings, you will be required to:**

1. Candidates must undergo a criminal history background check prior to clinical teaching and prior to employment as an educator. The public school campuses are responsible for completing the criminal background check. A person who is enrolled or planning to enroll in a State Board for Educator Certification-approved educator preparation program or planning to take a certification examination may request a preliminary criminal history evaluation letter regarding the person’s potential ineligibility for certification due to a conviction or deferred adjudication for a felony or misdemeanor offense.

A Preliminary Criminal History Evaluation is a non-mandatory, non-binding evaluation of an individual’s self-reported criminal history. In addition, the agency obtains your name-based Texas criminal history information. The service is provided to the requestor for a non-refundable fee. The requestor will receive an evaluation letter by email from agency staff advising of potential ineligibility for educator certification. You are eligible to request a Preliminary Criminal History Evaluation if:

- You enrolled or planning to enroll in an educator preparation program or
- You are planning to take a certification exam for initial educator certification, and
- You have reason to believe that you may be ineligible for educator certification due to a conviction or deferred adjudication for a felony or misdemeanor offense.

You are not eligible for a preliminary evaluation of your criminal history if you do not have a conviction or deferred adjudication for a felony or misdemeanor offense.

In addition, you must complete the fingerprinting process when you apply for certification. Participation in the evaluation does not preclude you from submitting to a national criminal history review at the time you apply for your educator certification. Your criminal history will be reviewed and you may be subject to an investigation based on that criminal history, including any information you failed to submit for evaluation. Additional information can be found at [https://tea.texas.gov/Texas_Educators/Investigations/Preliminary_Criminal_History_Evaluation-FAQs/](https://tea.texas.gov/Texas_Educators/Investigations/Preliminary_Criminal_History_Evaluation-FAQs/).
2. Provide one of the following primary ID documents: passport, driver’s license, state or providence ID cards, a national ID card, or military ID card to take the TExES exams (additional information available at http://www.tx.nesinc.com/PageView.aspx?f=GEN_Tests.html. YOU must provide legal documentation to be allowed to take these mandated examinations that are related to certification/licensing requirements in Texas. If you do not have legal documentation, you may want to reconsider your major while at SFASU.

3. Successfully complete state mandated a fingerprint background check. If you have a history of criminal activity, you may want to reconsider your major while at SFASU.

   For further information, contact the Office of Assessment and Accountability at 936-468-1282 or edprep@sfasu.edu.

IX. Other Relevant Course Information: