COUN 7373 (01) Statistical Methods for Counselor Education Research
Fall 2017
College of Education
Department of Counselor Education

Course Description:

This course is designed to teach students how to manage, analyze, and interpret univariate data related to counseling themes at the doctoral level. The course will emphasize univariate methods (*t*-tests, chi-square, correlation, ANOVA, simple linear regression) via lectures, exams, small and large group discussions, and computer work both in and out of class. Credit 3.

Instructor: Rebecca A. Robles-Piña
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Office hours: By appointment; call me or email to set up an appointment.

Day and time the class meets: Mondays, 5:30-8:50

Location of class: The Woodlands Center, Computer Room to be assigned.

IDEA Objectives: In this course, our focus will be on these major objectives (as assessed by the IDEA course evaluation system):

Essential:
- Learning to apply course material (to improve thinking, problem solving, and decisions).

Important:
- Gaining factual knowledge (terminology, classifications, methods, trends).

Textbooks:

Required

Robles-Piña, R. A. & Rosenblad, S. (2015). *A template approach: Simplifying statistics for research*. College Station, TX: Views Unlimited. Follow the directions below to purchase the textbook. $50.00. You may print the textbook or use it directly from the website.

Instructions:

- In Blackboard, go to "Purchase A Template Approach…" and follow the instructions.
- If you want a printed copy of the text, go to Blackboard and click on PDF version of A Template Approach: Simplifying Statistics for Research.

Pyrczak, F. (2017). *Making sense of statistics* (6th ed.). Florence, KY: Routledge Publishing. ISBN: 9781936523276 – pub: 2016-08-04. Telephone: 1-800-634-7064. orders@taylorandfrancis.com. $51.95.

SPSS (Statistical Package for Social Sciences)

You must have SPSS software loaded onto your laptop computer as this software will be used at every class meeting and you will also need it to complete major assignments. Purchase Standard GradPak version, version 22.0 or higher. Prices can vary depending on where you purchase. Information can be researched by going to www.spss.com. You may also look at Amazon.com. Make sure that you purchase the software for multivariate statistics as well as this will be used in COUN 7374, next semester.

Recommended

American Psychological Association. (2010). *Publication manual of the American Psychological Association* (6th. ed.). Washington, DC: Author. *You will use this text throughout the program.*

Cronk, B. C. (2012). *How to use SPSS: A step-by-step guide to analysis and interpretation* (7th ed.). Glendale, CA: Pyrczak Publishing. ISBN 1-884585-99-X. $49.95.

Field, A. (2009). *Discovering statistics using SPSS* (3rd ed.). Thousand Oaks, CA: SAGE Publications Ltd. ISBN – 978-1-84787-907-3.

Holcomb, Z. C. (2010). *Interpreting basic statistics* (6th ed.). Glendale, CA: Pyrczak Publishing. ISNB 1-884585-91-4. $49.95.

Course Format:

This course will be offered using face-to-face meetings and some online meetings.

Course Content:

This course will consist of lecture, group discussions, small discussion group activities, online discussion boards, demonstrations, oral tests, written tests, and case studies.

Course Requirements:

- Late assignment policy. Assignments are considered late if not turned within 24 hours of deadline. There is a one letter grade deduction for each day an assignment is not turned in. Late assignments will only be accepted up to 48 hours.
- Time requirement. 24 hours are provided as a time requirement.
- Professional Standards are requested at all times, no cell phone use; no use of computer during lectures or presentations that do not require computer use; when using computers during class for completion of assignments, no checking of e-mail and other personal items; do not carry on conversations while others are speaking; disagree in a respectful manner; participate in class discussions; and, have all materials necessary for class (software, textbooks, printed materials). Failure to comply with these will result in a letter grade reduction on the final grade. Please check the website below for university policy.
- Academic Dishonesty policy. Professor will periodically turn in your assignments to Turnitin.com to check for plagiarism. If plagiarism is found, these are grounds for dismissal from the course, program, and university. Please avoid these problems by paraphrasing all information and ideas that belong to others and then citing appropriately. Please see the website below for university policy.
- Students with Disabilities. Please check the website below for university policy.
- Student Absences on Religious Holy Days. Please check the website below for university policy.

University Policies

- SHSU Academic Policy Manual-Students
  - Procedures in Cases of Academic Dishonesty #810213
  - Students with Disabilities #811006
  - Student Absences on Religious Holy Days #861001
  - Academic Grievance Procedures for Students #900823
- SHSU Academic Policy Manual-Curriculum and Instruction
  - Use of Telephones and Text Messages in Academic Classrooms and Facilities #100728
  - Technology during instruction: INSTRUCTOR'S POLICY ON TECHNOLOGY USE DURING INSTRUCTION
  - Technology during exams: INSTRUCTOR'S POLICY ON TECHNOLOGY USE DURING EXAMS
  - Technology in emergencies: INSTRUCTOR'S POLICY ON TECHNOLOGY USE IN EMERGENCIES
- Visitors in the Classroom- Only registered students may attend class.

Exceptions can be made on a case-by-case basis by the professor. In all cases, visitors must not present a disruption to the class by their attendance.

Upon successful completion of this course, students will be able to:

- Use Statistical Package for Social Sciences (SPSS) to code data, enter data, define variables, run analyses, and interpret printouts.
- Calculate descriptive statistics (frequencies, percentages, measures of central tendency and measures of variability).
- Graph data using Bar Charts, Histograms, Pie Charts, and others.
- Write null hypothesis and alternative hypothesis, conduct hypothesis testing, and use research questions to test the hypotheses.
- Test assumptions to determine if parametric or non-parametric statistics should be used.
- Calculate and interpret correlations using Pearson Product Moment Correlation Coefficients.
- Calculate and interpret: (a) single-sample *t* test, (b) independent-samples *t* test, and (c) paired-samples *t* test.
- Calculate and interpret a one-way ANOVA.
- Calculate and interpret a Chi-Square.
- Read and evaluate research articles covering all statistical analyses calculated.
- Calculate and interpret effect sizes of practical significance and calculate and interpret confidence intervals.
- Conduct an "a priori" power analysis to determine sample size.
- Use a large dataset for analyzing data for a research topic.
- Conduct evaluation for a counseling program.
- Write a 15-20 page paper using APA 6th edition writing style.

2009 CACREP Standards for Doctoral Level Research Courses
The following standards will be met: (Our Counselor Education Program is accredited by the Counseling and Counselor Related Education Program [CACREP] standards. The doctoral standards highlighted in yellow are applicable to this course). http://www.cacrep.org/wp-content/uploads/2013/12/2009-Standards.pdf

II. Professional Identity and Foundations

II.B.4. Contribute to and promote scholarly counseling research.

II.C.5 Design, implementation, and analysis of quantitative and qualitative research.

II.C.6. Models and methods of assessment and use of data.

IV. Knowledge

IV.E.1. Understands univariate and multivariate research designs and data analysis methods.

IV.E.4. Knows models and methods of program evaluation.

IV.F.6. Design, implementation, and analysis of quantitative and qualitative research.

CALENDAR OF EVENTS

Due to pacing of course, activities are subject to change pending notification to students. Professionalism affects points earned.

Topic/Objective(s)	Activities/Assignments (including field-based activities)	Measurement (including performance-based)	Standards Alignment DDP – Diversity and Dispositions CF-Conceptual Framework Indicator CACREP
Week 1 Aug. 28 Understands univariate and multivariate research designs and data analysis methods.	• Introductions, syllabus, textbooks, and class expectations. • Introduce Framework (Concept Maps) in *A Template Approach…* • Introduce Templates in *A Template Approach*…. • Review Blackboard • Introduce SPSS Commands	• *A Template Approach*…. • *Making Sense of Statistics*…..	CACREP: IV.E.1.
	• Read pgs. 1-49, *Making Sense*….. • Read in *A Template Approach*…sections : 7.4-7.4.0.7 & 7.4.0.12 – 7.4.0.19; Data Analysis and Results.	• Calculate frequencies, frequency distribution table, percentages, mean and standard deviation. Use intelligence as variable in dataset (2.3). Calculate only first 5 cases by hand. (50 pts.) Due: Sept. 4 by 12:00 Midnight. Post to Assignments	

		Data Analysis # 1 in Blackboard.	
Week 2 Sept. 4 Labor Day No Face-to-face class; Blackboard. Understands univariate and multivariate research designs and data analysis methods.	• Begin *t*-tests. • Read *Making Sense*…pgs. 119-126. Answer questions at end of chapters. Be prepared to discuss on Sept. 12.	• Answer questions at end of chapter. Have ready to discuss on Sept. 11. (50 pts.)	CACREP: IV.E.1.
	• Read *A Template Approach*, sections; 7.4.1, 7.4.2, 7.4.3.	• Choose a variable of interest to you (i.e. intelligence, self-concept, depression). • Write a research question, null hypothesis, alternative hypothesis for each type of *t*-test (single-sample, paired samples, independent). (50 pts.) Be ready to discuss in class on Sept. 11.	
Week 3 Sept. 11 Design, implementation, and analysis of quantitative and qualitative research.	• Review *t*-tests. • Use SPSS to analyze *t*-tests. • Test assumptions. • Write research questions, null hypotheses, alternative hypotheses. • Normal Curve.	• Use templates and run *t*-test of independent means, paired samples, and single samples. Use the variables noted in *A Template Approac*h; 7.4.0.49. (100 pts.) Due: Sept.	CACREP: II.C.5

		18 at class time. Analyses are to be printed before class and material should be ready to interpret.	
Week 4 Sept. 18 Design, implementation, and analysis of quantitative and qualitative research.	• *t*-tests to be continued. • Articles to be interpreted. • Read Purposes for Research in *A Template Approach* – 4.0. • Analyses continued. • Assumption Testing. • Writing Results. • Shapes of Distribution. • Normal Curve.	• Complete *t*-test assignments. • After review of *t*-tests, post corrected versions within 24 hours.	CACREP: II.C.5.
	• Read APA Framework Paper in *A Template Approach*; 3.0. • Know parts of APA paper. • Develop your own template for your APA paper. • Large dataset • http://www.cdc.gov/healthyyouth/data/yrbs/data.htm	• Review database. Start thinking of a topic for research. • Decide on variables.	
Week 5 Sept. 25 Contribute to and promote scholarly counseling research.	• Introduce Chi-Square. • Read *Making Sense*…, pgs. 141-147. • Read *A Template Approach* – 7.4.6. • Analyze data in class.		CACREP: II.B.4
	• Conduct a Chi-square using templates – use variables in *A Template Approach* 7.4.0.49. • Research questions, hypotheses, assumptions, effect size, interpretations.	• Due: Oct. 2 by class time. Post to Blackboard Assignments. (50 pts.) • Post corrected versions to Blackboard within 24 hours.	

Week 6 Oct. 2 Contribute to and promote scholarly counseling research.	• Review Chi-Square. • Introduce ANOVA (research questions, hypotheses, SPSS commands, assumptions, analyses, interpretation, and written results). • Read *Making Sense*, pgs. 127-133. • Read and use template in *A Template Approach* – 7.4.4 • Analyze ANOVA using variables in 7.4.9.49.		CACREP: II.B.4
	• Analyze ANOVA using homework variables in *A Template Approach* - 7.4.9.49.	Due: Oct. 9 by class time. (50 pts.)	
Week 7 Oct. 9 Models and methods of assessment and use of data.	• Review ANOVA analysis. • Introduce Designs & Sampling. • Read in *Making Sense*, pgs. 89-100. Use questions for discussion. • Read in *A Template Approach*, 7.0.	• Study for Midterm Exam – ANOVA.	CACREP: II.C.6.
Week 8 Oct. 16 Models and methods of assessment and use of data.	• Introduce Correlations. • Read in *Making Sense*, page 57-80. • Read and use template in *A Template Approach*, 7.4.5 (research questions, hypotheses, assumptions, SPSS commands, analyses, written results). • Calculate Correlations using variables in 7.4.9.49.	• **Midterm Exam** on ANOVA (100 pts.) Rubrics and variables will be given to you. The test will be in class and due on that day.	CACREP: II.C.6.
	• Calculate Correlation using new variables in 7.4.9.49.	Due: Oct. 23 by class time. (50 pts.)	
Week 9 Oct. 23 Models and methods of assessment and use of data.	• Review Correlation. • Introduce Simple Linear Regression. • Read in *Making Sense*, pgs. 161-162. • Read and use template in *A Template Approach* - 7.4.6.		CACREP: II.C.6.

	• Calculate Simple Linear Regression (hypotheses, assumptions, SPSS commands, analyses, written results).		
	• Calculate Simple Linear Regression using variables in 7.4.9.49.	• Due: Oct.30 by class time. (50 pts.)	
Week 10 Oct. 30 Models and methods of assessment and use of data.	• Review Simple Linear Regression. • Use large datasets (Youth Risk Behavioral Survey) for statistical analyses. • Parts of APA Paper. • Conducting Literature Review.	• Identify variables, write research questions and hypotheses. Identify the scale of measurement for each variable. Due: Nov. 6 by class time. (50 pts.)	CACREP: II.C.6.
Week 11 Nov. 6 Knows models and methods of program evaluation.	• Using variables from YRBS, calculate an ANOVA and correlation.	• Calculations of ANOVA and correlations. Due: Nov. 13 by class time. Corrected versions are to be posted with 24 hours. (50 pts.)	CACREP: IV.E.4.
Week 12 Nov. 13 Knows models and methods of program evaluation.	• Review ANOVA and correlation analysis.		CACREP: IV.E.4.
	• Read Integrating Concepts in *A Template Approach* 9.0. • Discussion on parts of paper.		
	• Literature Review Chart due.	• Due: Nov. 20 by class time. (50 pts.)	
Week 13 Nov. 20 Thanksgiving No Class	• Work on datasets, paper, and conferences with professor about parts of the paper.		

Week 14 Nov. 27 Design, implementation, and analysis of quantitative and qualitative research.	• Work on datasets, paper, and conferences with professor about parts of the paper.	• 50 pts.	CACREP: IV.F.6.
Week 15 Dec. 4 Design, implementation, and analysis of quantitative and qualitative research.	• Final Oral Presentations. • Final Paper Due.	Final Paper Due. Oral Presentation (50 pts.) Written Paper (100 pts.) Use a large dataset for analyses of ANOVA. Rubrics will be provided.	CACREP: IV.F.6.

EVALUATION

Activity	Points
Calculate small dataset by hand.	50
Discussion on questions *Making Sense*…..	50
Discussion Questions on Readings. These will not be posted in Blackboard. It is expected that all worksheets and exercises will be finished before class time and be ready to discuss. Failure to do this will affect Professionalism Grad	
Research questions and hypotheses for *t*-tests	50
Calculate 3 different types of t-tests.	100
Calculate Chi-square.	50
ANOVA – Midterm test.	100
Calculate a Pearson Product Moment Correlation.	50
Calculate Simple Linear Regression.	50
Identify variables for analysis from large dataset to conduct a program evaluation for a counseling program.	50
Calculate ANOVA and correlations for variables from large dataset.	50
Literature Matrix.	50
Conference with Professor about Final Project. Have analyses conducted.	50
Final Research Oral Presentation (Rubrics will be provided).	50
Final Research Written Paper (Rubrics will be provided).	100
Professionalism (reduction of one letter grade on the final grade).	
Total	**850**

Evaluation: 850 pts.
850 - 765 = A
764 - 680 = B
679 - 595 = C
<594 = Fail

In addition to the CACREP Standards noted for the Counselor Education Program, there are standards that are met for the College of Education. The following information discusses those standards.

NCATE Accreditation

The National Council for Accreditation of Teacher Education (NCATE), the largest accreditation body in the United States, is officially recognized by the U.S. Department of Education and highly acclaimed as an accrediting body for institutions that prepare educators for professional roles in schools. NCATE's mission is to provide

accountability and improvement in educator preparation through a standards-based assessment. NCATE accreditation adds value to your education as a program of high quality in the educational community.
"NCATE standards are based on the belief that all children can and should learn, (NCATE, 2008)." The effectiveness of the College or Unit is measured based on the standards, which are institutional guidelines that ensure knowledge, skills, and professional dispositions educators need to facilitate P-12 learning.
The NCATE website is source for additional information accessed as follows:

http://www.ncate.org/documents/standards/NCATE%20Standards%202008.pdf
http://www.ncate.org/public/unitStandardsRubrics.asp?ch=4

Conceptual Framework Statement, Descriptors (5 indicators) and Logo:

The COE Conceptual Framework establishes the shared vision of the college in preparing educators to work with P-12 students through programs dedicated to collaboration in instruction, field experience, and research, the candidates in Sam Houston State University's Educator Preparation Programs acquire the knowledge, dispositions, and skills necessary to create a positive learning environment preparing educators to work with P-12 students. Employing a variety of technologies, candidates learn to plan, implement, assess, and modify instruction to meet the needs of diverse learners.
The Conceptual Framework (CF) incorporates five (5) indicators throughout the framework that serve to identify areas tied to course work where there is evidence of Conceptual Framework and goals assessment. The five indicators are:
Knowledge Base (CF1)
Technological Learning Environment (CF2)
Communication (CF3)
Assessment (CF4)
Effective Field Experience with Diverse Learners (CF5)
Web link on *Educator Preparation Services* site for ***Conceptual Framework***:
http://www.shsu.edu/~edu_edprep/

SHSU Dispositions and Diversity Proficiencies

1. Demonstrates an attitude of reflection and thoughtfulness about professional growth and instruction. (CF 1)
2. Demonstrates a commitment to using technology to create an authentic learning environment that promotes problem-solving and decision making for diverse learners. (CF 2)
3. Practices ethical behavior and intellectual honesty. (CF 3)
4. Demonstrates thoughtfulness in communication and an awareness and appreciation of varying voices. (CF 3)
5. Demonstrates knowledge of second language acquisition and a commitment to adapting instruction or programs to meet the needs of culturally and linguistically diverse learners. (CF 3; CF 5)

6. Demonstrates ability to be understanding, respectful and inclusive of diverse populations. (CF 3; CF 5)
7. Uses assessment as a tool to evaluate learning and improve instruction for all learners. (CF 4)
8. Demonstrates a commitment to literacy, inquiry, and reflection. (CF 1; CF 4)
9. Leads diverse learners to higher level thinking in cognitive, affective and/or psychomotor domains. (CF 5)
10. Demonstrates a commitment to adapting instruction or programs to meet the needs of diverse learners. (CF 5)

The Dispositions and Diversity Proficiencies (DDP) are administered and evaluated during the initial and advanced program in prescribed courses. (*Please provide additional information for the candidate if the DDP is administered during your course.)*

College of Education Information:
Please be advised that the College of Education conducts ongoing research regarding the effectiveness of the programs. You will receive one survey in the final semester prior to graduation regarding the operations of the unit during your time here. A second survey will occur within one year following graduation from or completion of a program, and will be sent to you and to your employer. This survey will focus on the preparation received at SHSU. Please remember that your response to these surveys is critical to SHSU program excellence.

STANDARDS

NCATE Unit Standards – Standards for the College of Education
http://www.ncate.org/documents/standards/NCATE%20Standards%202008.pdf
http://www.ncate.org/public/unitStandardsRubrics.asp?ch=4

State Standards:
http://www.sbec.state.tx.us/SBECOnline/standtest/edstancertfieldlevl.asp

Web address for ***specialty organization standards***:

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Web link on *Educator Preparation Services* site for ***Conceptual Framework***:
http://www.shsu.edu/~edu_edprep/