

COUN 7374 (01) Multivariate Methods Counselor Education Research Online Fall 2017 College of Education Department of Instructional Systems Design and Technology

Course Description: COUN 7374 Statistical Methods for Counselor Education Research.

This course is designed to teach students how to manage, analyze, and interpret multivariate data related to technology at the doctoral level. The course will emphasize multivariate methods via lectures, exams, pop quizzes, small and large group discussions, and computer work both in and out of class. Credit 3. *Course COUN 7373 is a required course for Counselor Education and for doctoral students in the Department of Instructional Systems Design and Technology.*

Instructor:	Rebecca A. Robles-Piña
	TEC 338
	Department of Educational Leadership & Counseling
	P.O. Box 2119
	Huntsville, Texas 77341
	Phone – 979-213-0129 (cell)
	edu_rar@shsu.edu

Office hours: By appointment; call me or email to set up an appointment

Day and time the class meets: Mondays, 5:30-8:20

Location of class: The Woodlands Center, Computer Room

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:
- Learning to analyze and critically evaluate ideas, arguments, and points of view.

Textbooks:

Required

Mertler, C. A. & Vannatta, R. A. (2013). Advanced and multivariate statistical methods (5th ed.). Glendale, CA.: Pyrzcak Publishing.

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:

- 1. Go to https://sites.google.com/site/atemplateapproachforresearch/
 - 2. Click on "Buy Now" to purchase access
 - 3. Once payment is complete, you will be given instructions to access the full site.

• Those who want to copy it may convert it to a PDF and print. It is easier to use both website and print copy.

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 20.0 or higher. Prices can vary depending on where you purchase. Information can be researched by going to <u>www.spss.com</u>. You may also look at Amazon.com.

Recommended (The Field text is very useful for understanding theory).

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.

Pyrczak, F. (2010). *Making sense of statistics* (5th ed.). Los Angeles, CA: Pyrczak Publishing. ISBN 1-884585-88-4. \$42.50

Course Format:

- This course will be offered using online meetings.
- Assigned Readings will be noted and typically cover introduction of one or two statistical analyses (i.e. ANOVA, Multiple Regression)
- Datasets will be provided to practice the particular analysis using the step-by-step templates.
- New variables from the dataset will be assigned for your homework. You may consult with your colleagues about the analyses.
- Post homework to Assignments and feedback will be provided. You can correct the assignment and you have 24 hours in which to post the correct assignment for credit.
- Weekly Discussion Board assignments will be used to react to research articles and specific questions.
- A midterm test will be administered using a dataset and variables assigned by me. No collaboration with colleagues on this assignment.
- The final project will be to write a <u>15-20-page paper</u> using APA writing style. Each student will use a large dataset related to students' field of study while using multiple regression for the analysis. Sample papers and a rubric will be provided.
- The assumption is that all students will have completed the CITI Training. If you have not then please make sure you have received this training : <u>https://www.citiprogram.org/</u>
- IRB will not be required for the final project because we will be using archived data from databases available to the public and thus IRB exempt.
- I have developed the syllabus assuming that univariate statistics is still fresh on your mind and moving along with an analysis per week. However, if you feel that this is too fast-paced, let me know and I will make modifications. The goal is to learn how to use univariate and multivariate statistics for analyses.
- I teach COUN 7373 (Univariate Statistics) course on Mondays at The Woodlands Center from 5:30-8:20. Students enrolled in this course are welcome to come and sit in on the course in order to refresh your univariate statistics.
- There are resources listed at the bottom of the syllabus to assist you with research and writing. Please check these out.

Course Content:

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

COURSE REQUIREMENTS:

- <u>Late assignment policy</u>. 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. Assignments are not accepted after 48 hours.
- Attendance Requirement. The Counseling Faculty has established a policy for all Counseling courses. "(1) Students are permitted to miss one class (3 hours) with no penalty, but a call to the professor of the class is expected. (2) With a second absence, a drop of one letter grade will occur unless the student writes a letter to the Counseling Faculty explaining the extenuating circumstances for both absences. The Faculty will discuss the letter in a meeting and decide if the letter grade drop will occur or if the student is excused from that action. (3) A drop of a letter grade will occur for each subsequent absence."
- Professional standards are requested at all times. This means 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. Further, it is expected that students will be prepared for class discussions and pop quizzes. A letter grade reduction on the final grade will be applied for failure to behave in a professional manner.

ACADEMIC DISHONESTY:

All students are expected to engage in all academic pursuits in a manner that is above reproach. Students are expected to maintain honesty and integrity in the academic experiences both in and out of the classroom. Any student found guilty of dishonesty in any phase of academic work will be subject to disciplinary action. The University and its official representatives may initiate disciplinary proceedings against a student accused of any form of academic dishonesty including but not limited to, cheating on an examination or other academic work which is to be submitted, plagiarism, collusion and the abuse of resource materials. Plagiarism on an assignment will result in a zero with no opportunity to recover the points. For a complete listing of the university policy, see Office of Dean at http://www.shsu.edu/dept/dean-of-students/index.ht

STUDENT ABSENCES ON RELIGIOUS HOLY DAYS POLICY:

Section 51.911(b) of the Texas Education Code requires that an institution of higher education excuse a student from attending classes or other required activities, including examinations, for the observance of a religious holy day, including travel for that purpose. Section 51.911 (a) (2) defines a religious holy day as: "a holy day observed by a religion whose places of worship are exempt from property taxation under Section 11.20...." A student whose absence is excused under this subsection may not be penalized for that absence and shall be allowed to take an examination or complete an assignment from which the student is excused within a reasonable time after the absence.

University policy 861001 provides the procedures to be followed by the student and instructor. A student desiring to absent himself/herself from a scheduled class in order to observe (a) religious holy day(s) shall present to each instructor involved a written statement concerning the religious holy day(s). The instructor will complete a form notifying the student of a reasonable timeframe in which the missed assignments and/or examinations are to be completed. For a complete listing of the university policy, see: http://www.shsu.edu/~vaf_www/aps/documents/861001.pdf

STUDENTS WITH DISABILITIES POLICY:

It is the policy of Sam Houston State University that individuals otherwise qualified shall not be excluded, solely by reason of their disability, from participation in any academic program of the university. Further, they shall not be denied the benefits of these programs nor shall they be subjected to discrimination. Students with disabilities that might affect their academic performance should register with the Office of Services for Students with Disabilities located in the Lee Drain Annex (telephone 936-294-3512, TDD 936-294-3786, and e-mail disability@shsu.edu). They should then

make arrangements with their individual instructors so that appropriate strategies can be considered and helpful procedures can be developed to ensure that participation and achievement opportunities are not impaired.

SHSU adheres to all applicable federal, state, and local laws, regulations, and guidelines with respect to providing reasonable accommodations for students with disabilities. If you have a disability that may adversely affect your work in this class, then I encourage you to register with the SHSU Services for Students with Disabilities and to talk with me about how I can best help you. All disclosures of disabilities will be kept strictly confidential. NOTE: No accommodation can be made until you register with the Services for Students with Disabilities. For a complete listing of the university policy, see:

http://www.shsu.edu/dotAsset/7ff819c3-39f3-491d-b688-db5a330ced92.pdf

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

- Understand the holistic relationship between all statistical analyses.
- Write measurable research questions that can be answered with statistical analyses.
- Use ethical practices in conducting research (IRB training and approval as well as using instruments that are valid and reliable).
- Use SPSS as software for coding, analyzing, and interpreting statistical analyses.
- Calculate descriptive statistics (frequencies, percentages, mean, median, mode, range, standard deviation).
- Conduct an a priori power analysis.
- Review inferential statistical procedures learned in COUN 7373 Introductory Statistics (testing of assumptions, t-test of independent means, chi-square, paired-samples t-test, one-way ANOVA, correlations, simple linear regression) by calculating, interpreting, and writing the analyses.
- Calculate, interpret, and write the analyses for a two-way ANOVA.
- Calculate, interpret, and write the analyses for a one-way MANOVA.
- Calculate, interpret, and write the analyses for a factor analysis.
- Calculate, interpret, and write the analyses for multiple regression.
- Calculate, interpret, and write the analyses for logistic regression.
- Use a large dataset (i.e. Youth Risk Behavioral Survey) for multivariate analyses.
- Prepare a 15-20 research paper using multivariate regression or logistic regression and using APA 5th edition writing style.

The following calendar indicates dates, activities, and evaluation assignments. Please note that the syllabus is only a guide and can change due to pacing of materials. However, all students will be notified in advance of any changes to the syllabus. Please refer to the information on Blackboard as the most accurate and updated information.

Further, due to the fact that you had another professor for introductory statistics and I am not aware of how much of univariate statistics was retained, a few weeks will be dedicated to review of univariate statistics before moving on to multivariate statistics.

Note that pop quizzes will be administered any time to check for readiness of concepts. Low grades on pop quizzes should indicate that you need to seek help by meeting with me outside of class or consulting the list of resources found at the end of the syllabus.

CALENDAR FOR ASSIGNMENTS AND EVALUATIONS:

Week 1 August 23	 Introductions IRB Professor provides context for course. Textbooks and templates. Review Concept Map and How to use <i>A Template</i> <i>Approach: Simplifying</i> <i>Statistics for Research.</i> Read Sample Papers using Multiple Regression. Review Rubric for Final Paper. Read templates on <i>t</i>-tests (single samples, paired samples, independent samples). Use dataset from <i>A Template</i> <i>Approach</i> and conduct a t- test of independent means using new variables. 	 Homework: Using Discussion Board, post an introduction. Use the format provided by professor for Discussion Board. React to all your colleagues. Use Discussion Board to react to questions about the Multiple Regression sample paper. (25 pts.) Post analysis of t-test of independent means to Assignments. Due: August 30 by 11:59 PM (end of day). (50 pts.) You will be provided feedback to assignment. Use this to correct the assignment and post to Assignments. You have 24 hours from time of receiving feedback in which to post corrected version. Discussion Board. React to articles and questions. Due by Aug. 30 by 11:59 PM (end of day). (25 pts.)
Week 2 Aug. 30	 Read Chi-square in A Template Approach and conduct the chi-square analysis following the template. Read Correlation in A Template Approachand practice the analysis following the template. Use new variables to conduct correlation and chi-square analysis. Use Discussion Board to discuss articles. 	 Use new variables to conduct correlation and chi- square analysis. Turn in to Assignments. Due: Sept. 6 by 11:59 PM (end of day). (50 pts.) Wait for feedback. Turn in with corrections within 24 of receiving corrective feedback. Participate in Discussion Board to discuss articles and questions. Due: Sept. 6 by 11:59 PM (end of day). (25 pts.)

Week 3 Sept. 6	 Read ANOVA in A Template Approachand practice the analysis following the template. Use new variables to conduct ANOVA. Use Discussion Board to discuss articles. 	 Use new variables to conduct ANOVA. Turn in to Assignments. Due: Sept. 13 by 11:59 PM (end of day). (50 pts.) Wait for feedback. Turn in with corrections within 24 of receiving corrective feedback. Discussion Board. Due: Sept. 13 by 11:59 PM. (25 pts.)
Week 4 Sept. 13	 Read Simple Linear Regression in A Template Approachand practice the analysis following the template. Use new variables to conduct Simple Linear Regression. Use Discussion Board to discuss articles. 	 Turn in to Assignments. Due: Sept. 20. (50 pts.) Wait for feedback. Turn in with corrections within 24 of receiving corrective feedback. Discussion Board. Due: Sept. 20 by 11:59 PM. (25 pts.)
Week 5 Sept. 20	 Read Two Way ANOVA in Advanced and Multivariate Read Two Way ANOVA template. Follow template using those same variables to conduct analysis. Use Discussion Board to discuss articles. 	 Turn in Two-way ANOVA analysis. Due: Sept. 27 by 11:59 PM. (50 pts.) Post corrected version within 24 hours. Discussion Board. Due: Sept. 27 by 11:59 PM. (25 pts.)
Week 6 Sept. 27	 Read MANOVA in Advanced and Multivariate Read MANOVA template. Follow template using those same variables to conduct analysis. Use Discussion Board to discuss articles. 	 Turn in MANOVA analysis. Due: Oct. 4 by 11:59 PM. (50 pts.) Post corrected version within 24 hours. Discussion Board. Due: Oct. 4 by 11:59 PM. (25 pts.)

Week 7 Oct. 4	 Read Factor Analysis in Advanced and Multivariate Read Factor Analysis template. Follow template using the same variables to conduct analysis. Use Discussion Board to discuss articles. 	 Turn in Factor Analysis. Due: Oct. 11 by 11:59 PM. (50 pts.) Post corrected version within 24 hours. Discussion Board. Due: Oct. 11 by 11:59 PM. (25 pts.)
Week 8 Oct. 11	• Midterm	 Review of past analysis. (100 pts.) Due: Oct. 18 by 11:59 PM.
Week 9 Oct. 18	 Start to look for a dataset that you will use for your final project. Contact Tyler Manolovitz for help if needed. Identify (a) the database and (b) start to conduct some literature on your variables, and(c) identify your variables. You may work in dyads for your final project if you wish. 	 Identify (a) the database and (b) start to conduct some literature on your variables, and(c) identify your variables. Post to Assignments. Due Oct. 25 by 11:59. (50 pts.) Discussion Board. Due Oct. 25 by 11:59. (25 pts.)
Week 10 Oct. 25	 Read Multivariate Regression in Advanced and Multivariate Statistical Methods. Read template on Multivariate Regression. Discussion Board. 	 Follow the template and conduct a Multivariate Regression. Due Nov. 1 by 11:59 PM. (50 pts.) Post corrected version within 24 hours of receiving feedback. Discussion Board Due: Nov. 1 by 11:59 PM (25 pts.)
Week 11 Nov. 1	 Conference with professor about dataset to use, variables to use, research questions, literature review. 	 A calendar will be sent out for conference (75 pts.)
Week 12 Nov. 8	 Use Multiple Regression to analyze the variables of interest from your database. 	 Post to Assignments. Due by Nov. 15 at 11:59. (75 pts.)
Week 13 Nov. 15	Work on Final Research Project. Turn in 1 st draft.	• First draft due Nov. 22 at 11:59. (75 pts.) Feedback will be provided.
Week 14 Nov. 22	Work on Final Research Project.	 Work on Final Research Project.

Thanksgiving		
Week 15 Nov. 29	 Final Oral Presentation. Power Point with Voice Over is required. Final Research paper due. 	 Paper = 100 pts. Presentation = 50 pts.

Evaluation: Total points = 1150 A = 1150 - 1035 B = 1034 - 920 C = 919 - 805

CACREP Objectives: Our Doctoral Program in Counselor Education and Supervision is accredited by the Council for Accreditation of Counseling & Related Educational Programs (CACREP) and the following standards must be met; however only standard IV. E. 1 will be evaluated in this course at the Novice, Competent, and Proficient Levels.

The counselor, in the context of this training program, is a skilled professional who is able to apply:	Activities/Assignments (including field-based activities)	Measurement (including performance-based)	Standards Alignment CA-CACREP 2009 Standards
 Knowledge – Understands univariate and multivariate research designs and data analysis methods. 	 Use a large dataset (i.e. Youth Risk Behavioral Survey) for multivariate analyses. 	 Prepare a 15-20 research paper using multivariate regression or logistic regression using APA 5th edition writing style. 	IV.E. 1- Assessed at Novice, Competent, Proficient levels.
 Foundations – Contribute to and promote scholarly counseling research. 	 Use a large dataset (i.e. Youth Risk Behavioral Survey) for multivariate analyses. Prepare a 15-20 research paper using multivariate regression or logistic regression using APA 5th edition writing style. 	 Prepare a 15-20 research paper using multivariate regression or logistic regression using APA 5th edition writing style. 	II. B. 4
3. Knowledge – Design, implementation, and analysis of quantitative and qualitative research.	 Calculate, interpret, and write the analysis for correlation analysis. Calculate, interpret, and write the analysis for simple linear regression. Calculate, interpret, and write the analyses for a two-way ANOVA. Calculate, interpret, and write the analyses for a one-way MANOVA 	 Homework assignments, quizzes, and tests. 	II. C. 5

 Calculate, interpret, and write the analyses for a factor analysis. Calculate, interpret, and write the analyses for multiple regression. Calculate, interpret, and write the analyses for logistic regression. 	

CACREP Standards

http://www.cacrep.org/wp-content/uploads/2013/12/2009-Standards.pdf



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 <u>Conceptual Framework</u>: <u>http://www.shsu.edu/~edu_edprep/</u>

RESOURCES

Dear SHSU-TWC professor,

The Academic Success Center at The Woodlands Center (ASC@TWC) is looking forward to serving you and your students throughout the semester. The ASC@TWC staff consists of the Director and three Graduate Assistants; all of whom will assist students with individual and group: writing assignments, PPT presentations, and capstone projects. Also, we can assist masters and doctoral level students with revising and editing their theses and dissertations. We have two statistics tutors to help undergraduates students: one tutor for MATH/STAT 3379 and one tutor for BANA 3363. Our primary goal at the ASC@TWC is to help all SHSU students develop strategies for writing, reading, and statistics that will allow them the opportunity to become competent, confident learners who persist to graduation at all academic levels.

We welcome the opportunity to visit your classes for a short discussion to inform you of our services. Also, we can schedule classroom visits to discuss writing strategies, various writing format guidelines, and textbook reading strategies. We look for every advantage to help your students be more successful in their academic endeavors. One important way that you can help us help you and your students with writing assignments is to email us a copy of your writing assignments, including writing guidelines and specific due dates. This strategy will allow us be prepared to meet the needs of your students because we will be familiar with the parameters of the assignments, and we can schedule tutors to assist your students effectively and efficiently.

To schedule a classroom visit, please email us at <u>ASC_TWC@shsu.edu</u> or call at 936.202.5102. To email writing assignments, please use the previously mentioned email address.

The ASC@TWC is located in Room 101.

Spring 2017 hours of operation are:		
Monday-Thursday	10:00 am – 7:00 pm	
Friday	10:00 am - 3:00 pm	
Saturday	12:00 pm – 5:00 pm	

Please share the information with your students and invite them to use our services.

The ASC@TWC staff is looking forward to working with you and your students to support the positive, professional learning environment at The Woodlands Center.

Best regards, Wally Barnes & the ASC@TWC Staff

Wally Barnes, Ed.D. Director, Academic Success Center-The Woodlands Center Sam Houston State University Ph.: 936.202.5102 Email: wbb001@shsu.edu

I hope you enjoyed your holidays and are ready for another busy semester. For those who don't know me yet, my name is Tyler Manolovitz and I am the Research/Instruction Librarian at TWC. I have been a librarian at Newton Gresham Library since 2008, but have worked at TWC since its opening in 2012 in order to provide full-time library assistance to you and your students. Although we don't have a traditional library at TWC, we can provide you with virtually all of the library services you may need. A summary of those services are listed below, but please take special note of the first two items listed and let me know if there is any way I can assist you or your class.

- In-class library instruction I can provide in-class library instruction *personalized* for your class and assignments. These instruction sessions provide an excellent foundation for your students' research and can be as broad or as detailed as you wish. In my experience, students at every level of research experience benefit from these sessions. I do my best to be unobtrusive and fit into your schedule as seamlessly as possible. If interested, simply let me know.
- If you are not interested in an instruction session, please consider giving me literally one minute your class time near the beginning of the semester to introduce myself and let your students know the library services available to them. Despite the signage and my face being plastered throughout the building, many students at TWC remain unaware of these services. A brief introduction will do wonders.
- Embedded Librarianship Having an "embedded librarian" simply means that I would be included in your Blackboard class to provide resources, tutorials, and research support directly to your students within the course. This is a great way to get important information out to your students while providing them with a simple and direct method for requesting library assistance. Please contact me for additional information, or simply fill out this brief form: http://library.shsu.edu/services/faculty/embedrequest.html.
- **On-Site Course Reserves** if you have any books or other materials you would like to have available for your students, let me know and I can put them on reserve for your students to check out.
- **On-site delivery of library materials** for you, and most students, I can have library materials from the library sent directly to TWC for pickup.
- Hands-on research support for papers, speeches, projects, etc. This applies to your students and you!
- One-to-One Consultation this is a program specifically designed for thesis and dissertation students in which I provide one-on-one research support throughout the course of their project.

Above all else, my job is to be here to assist you and your students in any way I can, so please don't hesitate to stop by, call, or e-mail me with any questions or requests. I am located in the Information Resources Center (computer lab 315) Monday – Friday 10-7 and Fridays 8-5. I look forward to visiting with you and wish you all a successful semester!

Tyler Manolovitz Research/Instruction Librarian Information Resources Center Sam Houston State University The Woodlands Center (936)202-5047 tyler@shsu.edu