THE UNIVERSITY OF TEXAS
STEVE HICKS SCHOOL OF SOCIAL WORK

Course Number:	SW 388R	Instructor:	Jaime Fuentes-Balderrama, PhD
Unique Number:	61035	Email:	j.fuentes@austin.utexas.edu
Semester:	Spring 2022	Office:	3.212.CC
Meeting Time/Place:	Wednesdays 2:30pm – 5:30pm SSW 2.130	Office Hours:	Tuesdays and Thursdays, 1:00pm – 2:30pm In person or Zoom

Quantitative Data Analysis II

I. STANDARDIZED COURSE DESCRIPTION

This course is designed to build on the foundations of bivariate and multivariate quantitative analysis to further the analytical rigor, flexibility and interpretation of statistical analysis for social workers. The course curriculum is planned to provide students with statistical theory and practice, along with robust alternatives to some parametric and multivariate procedures. The primary focus of the course is to develop a working understanding of the mathematical principles with aims of making statistical results interpretable and meaningful in a dissertation, report or scientific paper. This course will provide students with the opportunity to learn and practice using classical analyses to answer real-world research questions they could encounter in a professional setting, as well as an extension to these analyses.

II. STANDARDIZED COURSE OBJECTIVES

By the end of this course, students will be able to:

1. Understand the fundamental concepts behind Null Hypothesis Significance Testing.

2. Choose between statistical analyses to answer research questions.

3. Prepare and perform bivariate and multivariate statistical analyses.

4. Interpret, write and present the main findings, implications and limitations of the analyses performed.

III. TEACHING METHODS

The course will use lectures, readings, classroom discussions and exercises, sample syntax files and homework assignments based on the topics reviewed each class. Students

are expected to follow in-class exercises, be actively involved and, if needed, seek help of the instructor during office hours. Students will be assigned weekly homework assignments along with pertinent datasets and instructions.

IV.   REQUIRED TEXT AND MATERIALS

Textbook:

Warner, R.M. (2013). *Applied statistics: from bivariate through multivariate techniques* (2nd ed.). Sage Publications, Inc.

Although encouraged, as it exemplifies quantitative data analysis using SPSS, this is not a mandatory textbook. Most bivariate and multivariate statistics textbooks for the social sciences will cover the topics in the course.

Software: SPSS, RStudio or JASP.

V.   COURSE REQUIREMENTS

Course requirements will consist of weekly homework assignments, a mid-term exam, a final exam and class participation. Requirements will be weighted as follows:

Requirement	Weight	Date
Homework	65%	Weekly
Mid-term exam	15%	March 8th
Final exam	15%	April 26th
Participation	5%	Weekly

Regular attendance is highly encouraged as an active involvement in class discussions about assigned readings will be considered towards final grades. Although all homeworks will be graded, the best ten out of 12 total weekly homeworks will be considered towards the final grade.

VI.   GRADES

94.0 and Above	A
90.0 to 93.999	A-
87.0 to 89.999	B+
84.0 to 86.999	B
80.0 to 83.999	B-
77.0 to 79.999	C+
74.0 to 76.999	C
70.0 to 73.999	C-

67.0 to 69.999	D+
64.0 to 66.999	D
60.0 to 63.999	D-
Below 60.0	F

VII. CLASS POLICIES

Most classes will begin with an overview of the homework that was handed in before the lecture. The next step will introduce students to the topic of the week which will be applied using an example which will be guided by the instructor and discussed by the class, then a second example will be presented and solved individually in the classroom. During the course, students will engage in hand calculations to derive point estimates, dispersion parameters, limits and differences.

A collaborative approach between students is encouraged, yet all homework assignments and exams are to be completed individually and submitted the night before the next lecture. Submissions received after 11:59 PM central the day before the lecture, will be considered late and will be evaluated using penalties of 5% for each day they are late.

If students cannot attend a lecture of find themselves in need of asking for deadline accommodations, they should contact the instructor at their earliest convenience. It would be the student's responsibility to catch up with class materials and homework.

Students are expected to inform the instructor if they intend to attend office hours in-person or if Zoom would be best. Final grades assigned in the course are not negotiable.

VIII. UNIVERSITY POLICIES

COVID-19 RELATED INFORMATION. The University's policies and practices related to the pandemic may be accessed at: https://protect.utexas.edu/

THE UNIVERSITY OF TEXAS HONOR CODE. The core values of The University of Texas at Austin are learning, discovery, freedom, leadership, individual opportunity, and responsibility. Each member of the university is expected to uphold these values through integrity, honesty, trust, fairness, and respect toward peers and community.

DISABILITY ACCOMODATION STATEMENT. If you are a student with a disability, or think you may have a disability, and need accommodations please contact Disability and Access (D&A). You may refer to D&A's website for contact and more information: http://diversity.utexas.edu/disability/ . If you are already registered with D&A, please deliver your Accommodation Letter to me as early as possible in the semester so we can discuss your approved accommodations and how they apply in my class.

PROFESSIONAL CONDUCT AND CIVILITY IN THE CLASSROOM. The professor expects students to act as professionals in class. This means students should

arrive on time for class, be prepared to participate in the class discussion, and show respect for one another's opinions. A course brings together a group of diverse individuals with various backgrounds. Students are influenced and shaped by such factors as race, ethnicity, gender, sex, physical abilities, religious and political beliefs, national origins, and sexual orientations, among others. We expect to learn from each other in an atmosphere of positive engagement and mutual respect. This atmosphere includes working intentionally to recognize and dismantle racism, sexism, heterosexism, and ableism in the classroom. Social Work also deals with complex and controversial issues. These issues may be challenging and uncomfortable, and it would be impossible to offer a substantive classroom experience that did not include potentially difficult conversations relating to challenging issues. In this environment, we will be exposed to diverse ideas and opinions, and sometimes we will not agree with the ideas expressed by others. Nevertheless, the professor requires that students engage one another with civility, respect, and professionalism.

UNANTICIPATED DISTRESS. Students may experience unexpected and/or distressing reactions to course readings, videos, conversations, and assignments. If so, students are encouraged to inform the professor. The professor can be responsive and supportive regarding students' participation in course assignments and activities, but students are responsible for communicating clearly what kind of support is desired. If counseling is needed, students may contact a service provider of their choosing, including the UT Counseling Center at 512-471-3515 or online at https://cmhc.utexas.edu/.

POLICY ON SOCIAL MEDIA AND PROFESSIONAL COMMUNICATION. Public social networks are not private. Even when open only to approved or invited members, users cannot be certain that privacy will exist among the general membership of sites. If social work students choose to participate in such forums, please assume that anything posted can be seen, read, and critiqued. What is said, posted, linked to, commented on, uploaded, subscribed to, etc., can be accessed and archived, posing potential harm to professional reputations and prospective careers.

Social work students who use social media (e.g. Facebook, Twitter, Instagram) and other forms of electronic communication (e.g. blogs) must be mindful of how their communication may be perceived by clients, colleagues, faculty, and others. Social work students are expected to make every effort to minimize material which could be considered inappropriate for a professional social worker in training. Because of this, social work students are advised to manage security settings at their most private levels and avoid posting information/photos or using any language that could jeopardize their professional image.

Students are asked to consider the amount of personal information posted on these sites and are obliged to block any client access to involvement in the students' social networks. Client material should not be referred to in any form of electronic media, including *any* information that might lead to the identification of a client or compromise client confidentiality in *any* way. Additionally, students must critically evaluate any material that is posted regarding community agencies and professional relationships, as

certain material could violate the standards set by the School of Social Work, the Texas Code of Conduct for Social Workers, and/or the NASW Code of Ethics.

Social work students should consider that they will be representing professional social work practice as well as The University of Texas at Austin School of Social Work program while in the classroom, the university community, and the broader area communities.

POLICY ON ACADEMIC INTEGRITY. Students who violate University rules on academic dishonesty are subject to disciplinary penalties, including the possibility of failure in the course and / or dismissal from the University. Since such dishonesty harms the individual, all students, and the integrity of the University, policies on academic dishonesty will be strictly enforced. For further information, please visit the Student Conduct and Academic Integrity website at: http://deanofstudents.utexas.edu/conduct.

USE OF COURSE MATERIALS. The materials used in this course, including, but not limited to exams, quizzes, and homework assignments, are copyright protected works. Any unauthorized duplication of the course materials is a violation of federal law and may result in disciplinary action being taken against the student. Additionally, the sharing of course materials without the specific, express approval of the professor may be a violation of the University's Student Honor Code and an act of academic dishonesty, which could result in further disciplinary action. This sharing includes, among other things, uploading class materials to websites for the purpose of distributing those materials to other current or future students.

CLASSROOM CONFIDENTIALITY. Information shared in class about agencies, clients, and personal matters is considered confidential per the NASW Code of Ethics on educational supervision and is protected by regulations of the Family Educational Rights and Privacy Act (FERPA) as well. As such, sharing this information with individuals outside of the educational context is not permitted. Violations of confidentiality could result in actions taken according to the policies and procedure for review of academic performance located in sections 3.0, 3.1, and 3.2 of the Standards for Social Work Education.

UNIVERSITY ELECTRONIC MAIL STUDENT NOTIFICATION. Electronic mail (email), like postal mail, is a mechanism for official University communication to students. The University will exercise the right to send email communications to all students, and the University will expect that email communications will be received and read in a timely manner.Students can find UT Austin's policies and instructions for updating their e-mail address at https://it.utexas.edu/policies/university-electronic-mail-student-notification-policy.

RELIGIOUS HOLY DAYS. A student who misses classes or other required activities, including examinations, for the observance of a religious holy day should inform the instructor as far in advance of the absence as possible so that arrangements can be made to complete an assignment within a reasonable period after the absence. A reasonable accommodation does not include substantial modification to academic standards, or adjustments of requirements essential to any program of instruction. Students and

instructors who have questions or concerns about academic accommodations for religious observance or religious beliefs may contact the Office for Inclusion and Equity. The University does not maintain a list of religious holy days.

TITLE IX REPORTING. In accordance with Title IX of the Education Amendments of 1972, the University of Texas at Austin is committed to maintaining a learning environment that is free from discriminatory conduct on the basis of sex https://titleix.utexas.edu/. Faculty, field instructors, staff, and/or teaching assistants in their supervisory roles are mandated reporters of incidents of sex discrimination, sexual harassment, sexual violence, stalking, dating violence, or any other forms of sexual misconduct. Students who report such incidents will be informed of University resources. Incidents will be reported to the University's Title IX Coordinator. Further information, including student resources related to Title IX, may also be found at https://titleix.utexas.edu/.

CAMPUS CARRY POLICY. The University's policy on campus carry may be found here: https://campuscarry.utexas.edu.

SAFETY. As part of professional social work education, students may have assignments that involve working in agency settings and/or the community. As such, these assignments may present some risks. Sound choices and caution may lower risks inherent to the profession. It is the student's responsibility to be aware of and adhere to policies and practices related to agency and/or community safety. Students should notify the professor regarding any safety concerns.

BEHAVIOR CONCERNS and COVID-19 ADVICE LINE (BCCAL). If students have concerns about their behavioral health, or if they are concerned about the behavioral health of someone else, students may use the Behavior Concerns and COVID-19 Advice Line to discuss by phone their concerns. This service is provided through a partnership between the Office of the Dean of Students, the Counseling and Mental Health Center (CMHC), the Employee Assistance Program (EAP), and The University of Texas Police Department (UTPD). Call 512-232-5050 or visit https://safety.utexas.edu/behavior-concerns-advice-line. The Behavior Concerns and COVID-19 Advice Line has been expanded to support The University of Texas at Austin community during the COVID-19 pandemic. By calling 512-232-5050 - Option 2 for COVID-19, students, faculty and staff can be assisted in English and Spanish with COVID-19 support.

EMERGENCY EVACUATION POLICY. Occupants of buildings on the UT Austin campus are required to evacuate and assemble outside when a fire alarm is activated or an announcement is made. Please be aware of the following policies regarding evacuation:
·   Familiarize yourself with all exit doors in the classroom and the building. Remember that the nearest exit door may not be the one you used when entering the building.
·   If you require assistance to evacuate, inform the professor in writing during the first week of class.
·   In the event of an evacuation, follow the professor's instructions.

· Do not re-enter a building unless you are given instructions by the Austin Fire Department, the UT Austin Police Department, or the Fire Prevention Services office.

IX. COURSE SCHEDULE

Date	Topic	Reading	Assignment Due	Homework
Jan 11	Normal distribution, central tendency, mean and variance, z test	*pp. 74 -105*	Evaluation diagnostic	Normal distribution, shape parameters, normality and assumptions
Jan 18	t distributions, t tests, ANOVAs, type I and type II errors	*pp. 239-272*	Normal distribution, shape parameters, normality and assumptions	Mean comparisons
Jan 25	Factorial ANOVA, MANOVA, ANCOVA, MANCOVA and effect sizes	*pp. 501- 533*	Mean comparisons	Extended mean comparisons
Feb 1	Covariance and correlation	*pp. 276 - 291*	Extended mean comparisons	Covariance and correlations
8-feb	Simple regression	*pp. 353 - 384*	Covariance and correlations	Regression
Feb 15	Multiple regression, partial and semipartial correlations, multicollinearity	*pp. 435 - 460*	Regression	Multiple regression
Feb 22	Mediation and moderation	*pp. 600 – 618, 642*	Multiple regression	Indirect and differential effects
Mar 1	Logistic regression	*pp. 964 - 991*	Indirect and differential effects	Chi squared and logistic
Mar 8	Midterm		Chi squared and logistic	
Mar 15	Spring break			
Mar 22	Exploratory Factor Analysis and basic psychometric properties	*pp. 799 - 829*		EFA and psychometrics
Mar 29	Confirmatory Factor Analysis and cross validation	*pp. 894 -911*	EFA and psychometrics	CFA
Apr 5	Path analysis and SEM	Ebook:	CFA	Path analysis
Apr 12	SEM	Norman G.R. & Streiner D.L. (2003) *PDQ Statistics*	Path analysis	SEM

		(3rd ed.). BC Decker, Inc. (pp. 156 – 176)		
Apr 19	Introduction to Bayesian estimation or introduction to Hierarchical Linear Modeling	pending	SEM	
Apr 26	Final exam			

X. BIBLIOGRAPHY

Byrne, B. M. (2010). *Structural equation modeling with AMOS: basic concepts, applications, and programming (multivariate applications series).* Taylor & Francis.

Hayes, A. F. (2017). *Introduction to mediation, moderation, and conditional process analysis: A regression-based approach.* Guilford publications.

Hayes, A. F. (2017). *Using SPSS: A little syntax guide.*

Norman G.R. & Streiner D.L. (2003) *PDQ Statistics* (3rd ed.). BC Decker, Inc.

Pituch, K. A., & Stevens, J. P. (2015). *Applied multivariate statistics for the social sciences: Analyses with SAS and IBM's SPSS.* Routledge.

Warner, R.M. (2013). *Applied statistics: from bivariate through multivariate techniques* (2nd ed.). Sage Publications, Inc.

Whittaker, T. A., & Schumacker, R. E. (2022). *A Beginner's Guide to Structural Equation Modeling.* Routledge.

Whittier, N., Wildhagen, T., & Gold, H. J. (2019). *Statistics for social understanding: With STATA and SPSS.* Rowman & Littlefield.

Yockey, R.D. (2018). *SPSS® Demystified: A simple guide and reference* (3rd ed.). Routledge.