

**THE UNIVERSITY OF TEXAS AT AUSTIN  
STEVE HICKS SCHOOL OF SOCIAL WORK**

<b>Course Number:</b>	SW 388	<b>Instructor:</b>	Yessenia Castro, PhD (Dr. Castro)
<b>Unique Number:</b>	61335	<b>Email:</b>	ycastro@austin.utexas.edu
<b>Semester:</b>	Spring 2021	<b>Office:</b>	SSW 3.130E
<b>Meeting Time/Place:</b>	Wednesdays	<b>Office Phone:</b>	512-232-0778
	2:30pm – 5:30pm via Zoom	<b>Office Hours:</b>	By appointment via Zoom

**QUANTITATIVE DATA ANALYSIS II**

**I. STANDARDIZED COURSE DESCRIPTION**

This course is designed to build upon the concepts and procedures introduced in Quantitative Data Analysis I, and enable students to do a more thorough job of data analysis by introducing multivariate statistical procedures into their repertoire of statistical techniques. It provides students with extended practice in the conceptual and mathematical bases of linear and logistic regression models, as well as extended practice in data preparation and organization. It also introduces students to advanced regression-based data analytic techniques, including moderation and mediation. The primary focus is on using the SPSS statistical package for estimating multivariate statistical models, and on the interpretation and write up of statistical analysis for research papers.

**II. STANDARDIZED COURSE OBJECTIVES**

By the end of this course, student should be able to:

1. Understand the conceptual and mathematical basis of statistical control and regression models.
2. Understand and be able to explain and apply the concept of statistical inference.
3. Conduct a variety of statistical analyses, including testing of statistical assumptions, linear and logistic regression, mediation, and moderation.
4. Design a data analytic strategy that answers a research question (including data preparation and organization), requirements of the statistic, and limitations to the interpretation.
5. Interpret and present (written and orally) the results of statistical analyses.

**III. TEACHING METHODS**

A variety of methods will be used to achieve course objectives in order be inclusive of diverse learning styles. These include readings, lectures, student-led group discussion, computer demonstrations, group and individual exercises, homework, lab work, and analytic assignments. Students are expected to ask questions, share experiences, and actively participate in class discussions.

Most weeks, students will be assigned readings and be provided with datasets and other materials as needed in order to complete data analytic exercises in class each week. All materials will be organized by week in the Modules tab in the course's Canvas website. Students are expected to have completed assigned readings *before the class day for which they are assigned*. Lab exercises are expected to be started and completed in class. Some exception may be made to complete lab assignments prior to the next class day.

## IV. REQUIRED TEXTS AND MATERIALS

### \*Required Texts

1. Darlington, R. B. & Hayes, A. F. (2017). *Regression Analysis and Linear Models: Concepts, Applications, and Implementation*. New York; The Guilford Press.
  - i. E-version available through UT Libraries: <https://ebookcentral-proquest-com.ezproxy.lib.utexas.edu:2444/lib/utxa/reader.action?docID=4652287>
2. Hayes, A. F. (2017). *Using SPSS: A little syntax guide*.
  - i. Available on at: <http://afh Hayes.com/using-spss-a-little-syntax-guide.html>
  - ii. Available on the Canvas course website.
3. *IBM SPSS Command Syntax Reference*
  - i. Available in the SPSS software program.
    - a. Open SPSS
    - b. Click "Help"
    - c. Click "Command Syntax Reference"
  - ii. Available at the IBM SPSS Documentation website:  
[https://www.ibm.com/support/knowledgecenter/SSLVMB\\_26.0.0/statistics\\_kc\\_ddita/spss/product\\_landing.html](https://www.ibm.com/support/knowledgecenter/SSLVMB_26.0.0/statistics_kc_ddita/spss/product_landing.html)
    - a. Click "Table of Contents"
    - b. Click "Command Syntax Reference"

\*Additional required readings will be made available on Canvas.

### Required Materials and Software

1. Computer with reliable audio and video capabilities
2. Reliable internet connection
3. Basic Calculator (such as the one available on most smartphones)
4. Reliable supply of note paper, pencils and erasers
5. Adobe Reader
6. Microsoft Excel

7. Microsoft Word
8. IBM SPSS Version 25 or higher
9. UT Austin Zoom account:  
<https://wikis.utexas.edu/display/LAITS/Install+and+Configure+Zoom>

## V. COURSE REQUIREMENTS

Most days class will consist of two segments: 1) a student-led group discussion, and; 2) a practical lab section. Students will earn 3 points each week provided all attendance and participation criteria are fulfilled at each class. **Attendance and Participation points are awarded on an all-or-nothing basis.** Attendance policies can be found in Section VII. Participation is evaluated based on the extent to which the student makes one or more meaningful contributions in during the class period.

### Student-led Group Discussion

Each module will begin with a student-led discussion of the module topic. The student-led group discussion has two goals. The first goal is to review the module's readings and get any outstanding questions or points of clarification answered by fellow classmates and the instructor. The second goal is to decide, as a class, what are the key conceptual, theoretical, or practical "take home points" from the module's readings. To this end, the following discussion prompts are offered. Students are encouraged to consider any other/additional exercises, strategies, or discussion points in pursuit of the above-stated goals as they see fit.

- a. Articulate the "big picture"/ overall module topic.
- b. Review (e.g., define, explain) individual concepts, terms, etc., as they come up in discussion, *in their own words*. This helps check one's own understanding.
- c. Ask clarifying questions and make any "stuck points" known. This helps everyone learn and can lead to new insights.
- d. Consider the connections of concepts from the current module with concepts from previous modules.
- e. Think critically about the practical utility concepts, however abstract they may seem.
- f. Think critically about any ethical questions or considerations that may arise for a particular concept.
- g. Offer any important implications for the interpretation data, any applied examples, or other points that demonstrate problem-solving/critical thinking.

**All students are expected to meaningfully contribute to every discussion.** In this course, a *meaningful contribution* is defined as a substantive commentary that helps move the group discussion forward beyond a basic simple review of concepts (as with points d through g above), or helping another student gain a clear understanding of a concept or otherwise get past a stuck point.

### Data Analysis Lab

Within each module, a significant amount of class time will be devoted to instruction on data analyses. Students will be provided with the necessary materials to complete lab assignments via Canvas, and should download those materials prior to logging into class.

Unless explicitly instructed otherwise, students are expected to consult each other, as well as the instructor, when engaging in any lab exercise. The instructor encourages students to complete lab exercises as a group in order to benefit from diverse understandings of the material. At the same time, it is important that each student complete lab exercises at their individual pace to ensure they have an adequate familiarity and understanding of the process.

Given the inevitable need to provide improvised data analytic instruction “on the fly,” students should be prepared to show their work to the instructor (and by extension, to the class) using the “share screen” function of Zoom at any point during the lab. **Completed lab exercises should be uploaded to Canvas by 11:59 pm on the day of class in which the lab exercises are assigned unless explicitly stated otherwise by the instructor.**

## Written Reports

Two times throughout the semester, students will turn in a *manuscript-quality* draft of a Methods and a Results section, based on analyses conducted with a dataset provided by the instructor. Students will receive specific instructions for each write-up approximately four weeks before it is due. The purpose of these assignments is for students have a prepared, written opportunity to demonstrate their understanding of the concepts covered in the course, as well as to provide students with opportunities for practice with scientific writing and ethical reporting of data analytic results. Written reports should be uploaded to Canvas by 11:59 pm on their noted due dates.

## VI. GRADES

Grades for the course will be based on participation in 15 classes (3 points each; 30 points total), completion of up to 12 lab assignments (5-10 points each, 60 points total), and 2 Written Reports (30 points each; 60 points total). Thus, students’ grades will be based on the percentage of points earned out of 150. The grading scale for this course is as follows:

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

### Assignment Submission

All assignments should be submitted through their designated link on the “Assignments” tab on the Canvas course website. Only assignments submitted via Canvas will be accepted.

***Assignments submitted to Dr. Castro via email without her explicit prior permission will not be accepted.*** Please plan accordingly.

### Late Assignments

No late assignments will be accepted except in the circumstance of a ***documented, unforeseen emergency that has occurred on the day the assignment due and has caused the student to miss the assignment deadline.*** In this case, the student should be prepared to approach Dr. Castro with official documentation of the unforeseen emergency. If a student is aware of any other situation that will cause them to be unable to turn in an assignment before its deadline, they should plan to submit it early and notify Dr. Castro of their intent to do so.

***Participation points cannot be made up under any circumstances.***

### Attendance

Class will start promptly at 2:30 pm. Students are expected to attend class and log in to Zoom on time. Student arrivals after 2:40 pm will be considered late. It is the student’s responsibility to ensure that they are at a location with a reliable internet connection on the day of class. Students are expected to be prepared for each class (i.e., completed the week’s readings, have information to contribute to the review/discussion and questions to ask the class, and downloaded the necessary materials for the day’s class from Canvas).

If a student cannot attend a class, they should notify Dr. Castro ahead of time. Students should notify Dr. Castro as soon as possible after a *documented, unforeseen emergency* that has caused them to miss class with no prior notice. If a student has a documented, unforeseen emergency that affects their attendance in this course, they should be prepared to approach Dr. Castro about it with official documentation of the unforeseen emergency. In the case of an absence due to a documented and unforeseen emergency, Dr. Castro will assist the student in getting caught up with the missed class.

### Electronic Devices in the Classroom

The use of other electronic devices during class is prohibited. *Students misusing laptops or smartphones, or using other electronic devices during class will be dismissed from class and this dismissal will constitute an unexcused absence.* Students must turn mobile phones to silent and disable notifications when they log into class (*Phones must be completely silent.* Placing phones on vibrate is not acceptable).

### Use of the Canvas Web Site

Web-based, password-protected class sites using Canvas software are available for all accredited courses taught at The University of Texas. Syllabi, handouts, assignments and other resources are types of information that may be available within these sites. Site activities could include exchanging email, engaging in class discussions and chats, and exchanging files. In addition, class e-mail rosters will be a component of the sites. Students who do not want their names included in these electronic class rosters must restrict their directory information in the Office of the Registrar, Main Building, Room 1. For information on restricting directory information see: <http://www.utexas.edu/student/registrar/catalogs/gi00-01/app/appc09.html>.

This class will utilize Canvas for organization and distribution of all course materials and recording of student grades. The link to the course's virtual classroom will only be posted on Canvas.

Canvas will also be used by Dr. Castro to communicate with students via email. Students should make a concerted effort to check their email at least once per day for any announcements from Dr. Castro regarding this course. The primary mode of communication for this course will be email via the Canvas course website. Note below (in University Policies) that email is an official form of communication for The University of Texas at Austin and students are strongly encouraged to check their email daily.

## **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.

**DOCUMENTED DISABILITY STATEMENT.** Any student who requires special accommodations must obtain a letter that documents the disability from the Services for Students with Disabilities area of the Division of Diversity and Community Engagement (471- 6259 voice or 471-4641 TTY for users who are deaf or hard of hearing). A student should present the letter to the professor at the beginning of the semester so that needed accommodations can be discussed and followed. The student should remind the professor of any testing accommodations no later than five business days before an exam. For more information, visit: <http://diversity.utexas.edu/disability/>.

**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 SCHOLASTIC DISHONESTY.** Students who violate University rules on scholastic 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 scholastic dishonesty will be strictly enforced. For further information, the student may refer to the Web Site of the Student Judicial Services, Office of the Dean of Students: <https://deanofstudents.utexas.edu/conduct/academicintegrity.php>.

**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.

**USE OF E-MAIL FOR OFFICIAL CORRESPONDENCE TO STUDENTS.** Email is recognized as an official mode of university correspondence; therefore, students are responsible for reading their email for university and course-related information and announcements. Students are responsible for keeping the university informed about a change of e-mail address. Students should check their e-mail regularly and frequently—daily, but at minimum twice a week—to stay current with university-related communications, some of which may be time-sensitive. 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 HOLIDAYS.** By UT Austin policy, students must notify the professor of a pending absence at least fourteen days prior to the date of observance of a religious holy day. If the student must miss a class, examination, work assignment, or project in order to observe a religious holy day, the professor will give the student an opportunity to complete the missed work within a reasonable time after the absence.

**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 concealed firearms may be found here: <https://campuscarry.utexas.edu>. You also may find this information by accessing the Quick Links menu on the School’s website.

**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 ADVICE LINE (BCAL).** 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 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>.

**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

The course is divided into nine topic modules that will be covered over the course of the 15-week semester. Modules have been historically covered in 1 or 2 days (depending on the topic) on average, but the calendar is designed to allow for flexibility in the length of time spent on up to 3 topics as deemed necessary by the class and/or instructor. Historically, this has *always* been deemed necessary to some extent. Should extra time on listed topics not be necessary, additional topics can be covered (e.g., statistical mediation).

Module	Topic	Readings
1	Introduction to SPSS with Syntax Basic data organization and exploration	Hayes (2017)

		Kent State University, SPSS Tutorial, Section 1: <a href="https://libguides.library.kent.edu/SPSS/home">https://libguides.library.kent.edu/SPSS/home</a>
2	Measures of Central Tendency, Dispersion, and Distribution	Dashpande et al., (2016) Kim (2013) Lamb (2008)  Kent State University SPSS Tutorials, Sections 2 and 3: <a href="https://libguides.library.kent.edu/SPSS/home">https://libguides.library.kent.edu/SPSS/home</a>
3	Covariance and Correlation	Aggarwal & Ranganathan (2016)
4	Principles of regression analysis	<u>Complete in the following order:</u> 1) Brennan (2002) Understanding Algebra. Chapter 4: Graphing and Straight Lines. <a href="http://www.jamesbrennan.org/algebra/index.html">http://www.jamesbrennan.org/algebra/index.html</a> 2) Linear Equation Worksheets 3) Gogtay, Deshpande, & Thatte (2017)
5	Simple (aka: Univariate, Univariable) Linear Regression	Darlington & Hayes, Ch 1 and 2
6	Null Hypothesis Significance Testing and Statistical Inference	Hayat (2010) Gelman and Loken (2014) Darlington & Hayes, Ch 4
7	Multiple (aka: Multivariate, Multivariable) Linear Regression	Darlington & Hayes, Ch 3 Darlington & Hayes, Ch 5, Sec 5.1; Ch 9 Darlington & Hayes, Ch 16
8	Logistic Regression	<u>Complete in this order</u> 1) Dr. Castro's slides on measures of relative probability. 2) Probability, odds, odds ratio worksheets 3) Peng, Lee, & Ingersoll (2002) 4) Darlington and Hayes, Ch18
9	Statistical Moderation Analysis	Darlington & Hayes, Ch 13 and 14

## Important Dates

January 20, 2021: First Day of Class  
March 17, 2021: Spring Break, No Class  
March 24, 2021: Written Report 1 Due  
April 28, 2021: Written Report 2 Due  
May 5, 2021: Last Day of Class

## X. BIBLIOGRAPHY

### Publications

1. Aggarwal, R., & Ranganathan, P. (2016). Common pitfalls in statistical analysis: The use of correlation techniques. *Perspectives in Clinical Research*, 7(4), 187–190.
2. American Psychological Association (2009). *Publication Manual of the American Psychological Association, 6th edition*. Washington, DC; American Psychological Association.
3. Biau, D. J., Jolles, B. M., & Porcher, R. (2010). P value and the theory of hypothesis testing: an explanation for new researchers. *Clinical Orthopaedics and Related Research*, 468(3), 885-892.
4. Cohen, J. (1994). The earth is round ( $p < .05$ ). *American Psychologist*, 49, 997-1003.
5. Cortina, J. M., & Dunlap, W. P. (1997). On the logic and purpose of significance testing. *Psychological Methods*, 2(2), 161-172.
6. Darlington, R. B. & Hayes, A. F. (2017). *Regression Analysis and Linear Models: Concepts, Applications, and Implementation*. New York; The Guilford Press.
7. Deshpande, S., Gogtay, N. J., & Thatte, U. M. (2016). Measures of central tendency and dispersion. *Journal of the Association of Physicians of India*, 64, 64-66.
8. Gelman, A., & Loken, E. (2014). The statistical crisis in science, *American Scientist*, 102. Available at <http://www.americanscientist.org/issues/feature/2014/6/the-statistical-crisis-in-science>.
9. Gogtay, N. J., Deshpande, S. P., & Thatte, U. M. (2017). Principles of regression analysis. *Journal of the Association of Physicians of India*, 65, 48-52.
10. Gogtay, N. J., & Thatte, U. M. (2017). Principles of correlation analysis. *Journal of the Association of Physicians of India*, 65, 78-81.
11. Hayat, M. J. (2010). Understanding statistical significance. *Nursing Research*, 59, 219-223.
12. Hayes, A. F. (2017). *Using SPSS: A little syntax guide*. Available at: <http://afhayes.com/using-spss-a-little-syntax-guide.html>
13. Hayes, A. F., & Montoya, A. K. (2017). A tutorial on testing, visualizing, and probing an interaction involving a multicategorical variable in linear regression analysis. *Communication Methods and Measures*, 11(1), 1-30.
14. Hosmer Jr, D. W., Lemeshow, S., & Sturdivant, R. X. (2013). *Applied Logistic Regression* 3rd Edition. John Wiley & Sons.
15. Kim, H. Y. (2013). Statistical notes for clinical researchers: assessing normal distribution (2) using skewness and kurtosis. *Restorative Dentistry & Endodontics*, 38(1), 52-54.

16. Lamb, C. R. (2008). Statistical briefing: the normal distribution. *Veterinary Radiology & Ultrasound*, 49(5), 492-493.
17. MacKinnon, D. P., Krull, J. L., & Lockwood, C. M. (2000). Equivalence of the mediation, confounding and suppression effect. *Prevention Science*, 1(4), 173-181.
18. Peng, Lee, & Ingersoll (2002). An Introduction to Logistic Regression Analysis and Reporting. *The Journal of Educational Research*, 96(1), 1-13.
19. Vardeman, S. B., & Max D Morris, M. D. (2003) Statistics and Ethics, *The American Statistician*, 57(1), 21-26.
20. Wasserstein, R. L. (2016) The ASA Statement on p-Values. *The American Statistician*, 70(2) 131-133.

### **Instructional Websites**

1. UT Austin SDS software tutorials: <https://stat.utexas.edu/training/software-tutorials>
2. UCLA Institute for Digital Research and Education Website: <http://www.ats.ucla.edu/stat/>
3. Kent State University, SPSS Tutorial: <https://libguides.library.kent.edu/SPSS/home>

### **Youtube Channels**

1. Research by Design (SPSS tutorials)
2. Quantitative Specialists (SPSS tutorials)
3. Brandon Foltz (statistics tutorials)
4. James Gaskin (statistics tutorials in SPSS and Mplus)

### **Consulting**

1. UT Austin SDS statistical consulting: <https://stat.utexas.edu/consulting/free-consulting>