

FES 202 Software Tools in Quantitative Social Science Research

Term:	Spring 2022
Time:	Tuesdays & Thursdays 10:00 – 11:20 am
Location:	PFSC 215
Credits:	3
Prerequisites:	ST 201 or equivalent
Instructor:	Dr. Xiangyou (Sharon) Shen (<i>She, Her, Hers</i>), Email: sharon.shen@oregonstate.edu
Office Hours:	Thursdays 4:00 – 5:00 pm, other times by appointment Online via Zoom at https://oregonstate.zoom.us/j/93369891187 (use “waiting room” function password: Sharon)

Course Description

FES 202 is an introductory course designed to help students develop and apply skills to analyze, interpret, and present quantitative social science data. The course emphasizes the use of readily-available software, primarily Excel and secondarily R. Coverage includes descriptive statistics, hypothesis tests, t-test, ANOVA, chi-square test, correlation analysis, and multiple linear regression. The course will also provide students with the opportunity to structure and conduct the above analyses with their own datasets.

Students are expected to have a foundation of statistical analysis from ST 201 or other sources.

Learning Outcomes

After completing this course, students will be able to:

- Prepare and set up data for analysis in Excel and R
- Choose appropriate statistical techniques for addressing select social science research questions, such as those related to psychology, health, nature-based recreation, and human dimensions of natural resources
- Conduct appropriate data analyses in R and Excel; these include descriptive analysis (frequency, central tendency, dispersion), chi-square test, t-test, analysis of variance, correlation, and regression analysis.
- Interpret the results of their analyses
- Communicate results of analysis in written and oral form

Course Website

Canvas (oregonstate.instructure.com) will host the lecture materials, assignments, and readings, and will be used for electronic submission of assignments.

Readings

There is no required textbook or readings for this course. Please carefully review the lecture slides and any supplemental materials in preparation for any assignment. Students are encouraged to access **optional resources**, as needed, including:

- FES 202 course guide. Created by Kreg Lindberg with updates from Xiangyou Shen
This course guide is used in FES 202-Bend Section, which covers similar content as the Corvallis section. The Corvallis class will incorporate additional resources and use different datasets in class exercises and assignments. You can refer to this course guide for topics introduced in this class.
- FES 202 Cheat Sheet, created by Xiangyou Shen
This one-page sheet summarizes the statistical analyses techniques introduced in this class, including Excel steps and R codes. This sheet provides a handy reference when working on assignments.

- Salkind, N. (2017). Statistics for people who think they hate statistics, using Microsoft Excel 2016, 4th edition. Thousand Oaks: Sage. (OSU library Reserve [link](#))
This book is on reserve in the library. It provides guidance on using Excel for data analysis and can serve as a refresher or a guide to new statistical techniques.
- Other useful online resources on data analysis in R include [YaRrr! The Pirate's Guide to R](#) and [Quick-R](#).

Lastly, many questions related to data analysis in Excel or R can be answered via web searches and/or the help functions within the software package.

Hardware and Software

The course will be taught using the PC version of Microsoft Excel 2016 with the Analysis ToolPak add-in. Students are welcome to use alternate hardware or software (e.g., a Mac with Excel or a PC with Google Sheets) but are responsible for ensuring their hardware and software have the ability to perform the relevant analyses. Analysis in R will be taught using R Studio. Both software packages are available for free download. Instruction on how to acquire R and R Studio will be provided in class.

Laptops are available for loan from the OSU library (<https://library.oregonstate.edu/laptops>). If you use a loan laptop, be sure to log out after each session (and do not save any personal information on the laptop).

Course Requirements

- Attendance:** Participation in class is essential and expected. There are no required readings in this class. All learning content will be delivered through lectures, and there will be in-class exercises following each lecture to allow you practice what is just learned.
- Weekly Individual Assignments:** For most weeks, there will be a short assignment that helps you master course content and gain hands-on experience by running specific statistical tests using made-up or real-life data. There are 7 assignments and we will drop the one for which you get the lowest grade.

Due date: deadline information is provided on Canvas. Typically, each weekly assignment will be made available after Thursday's class, and due by the end of the following Tuesday.

Submission: For each assignment, with the exception of quizzes delivered on Canvas, submit your weekly assignment in a MS Word file via Canvas (include your last name and the name of the assignment, e.g., "Shen_Assgn3.docx"). For each assignment, only turn in:

- If using Excel: **screenshot(s) of results**; if a chart is required, copy and paste the chart to Word (in Excel: highlight the chart, press Ctrl+A, press Ctl+C, then go to Word, press Ctrl+V). Note if you use Google software, do **not** submit a link to the Google files. Instead, download the Doc as a Word file and the Sheet as an Excel file, then submit.
- If using R: **screenshot(s)** of R script (commands) and results from the Console window.

Tips: Use the [Snipping Tool](#) to capture screenshots, OR use Alt + PrtScn to print the active window, and the cropping functionality in Word to trim image so it includes only required content.

- Small Group Final Project:** You will complete the project in a group of two to four student, and use an existing dataset provided by the instructor or data obtained from other sources (including your own dataset) approved by the instructor to conduct and interpret statistical analysis using Excel and R. The final project consists of two parts: a written report and an oral presentation. You will also have the option to turn in a working draft for extra credits. Key dates are listed below. Detailed instructions will be introduced in class and provided in the "Project Report Guide" file on Canvas.

<i>Task</i>	<i>Due Date (PST)</i>	<i>Note</i>
Introducing Assignment	In class, Tuesday, April 12	Read instructions before class, bring questions
Draft 1 due	11:59 pm, Sunday, May 15	Submit on CANVAS (5 bonus points)
Final draft due	11:59 pm, Sunday, May 29	Revise, complete, & submit on CANVAS (60 pts)
Oral Presentation	In class, T/Th, May 31/June 2	Every student presents (20 pts)

Students within a group will receive the same grade on all tasks except the presentation. Occasionally, a student drops the course unexpectedly. To avoid a situation in which you are left to complete the project on your own, it is **strongly recommended** that you form a group of three or four students (rather than two).

Study Group: You are encouraged to form a study group with your classmate(s) throughout the term. You can discuss ideas about each weekly assignment and the final project with me and your fellow students (e.g., during lab sessions or group study time outside of class meetings), however **written answers for individual assignments that are almost identical are not allowed.**

Extra Credit Activities

- a) **Submitting a working draft of final project.** You can earn 5 bonus points by submitting a working draft of your group final project by Sunday, May 15, 11:59pm, PST. Your draft should contain at least the first two main components of your final project, including the sample description and test of group difference.
- b) **Presenting at [Celebrating Undergraduate Excellence \(CUE\) showcase](#).** You can earn up to 5% (10 pts) extra credit by presenting your final project or part of it at CUE showcase on May 19, 2022. Participation requires significant commitment and on a timeline that is shorter than for the class project. If you plan to participate, inform the instructor early on and be sure to follow the process outlined on the event website, including registering to present by April 15, and submitting a poster by April 29, and attending the CUE presentation event on May 19. More information is provided on Canvas.

Additional extra-credit activities, if available, will be announced during the term.

Late Policy

Late submissions for written assignment will be accepted within three days of the due date. An automatic 0.5% per day deduction will apply. If you anticipate a problem meeting the deadline due to extenuating circumstances, please contact the instructor ASAP before the due date.

Grading

Requirement	Points	% of Grade
Weekly Assignment (top 6 of 7 @ 20 pts each)	120	60%
Final Project		
Written Report	60	30%
Oral Presentation	20	10%
Total	200	100%

Your course letter grade will be based on the following percentages. Check with your advisor regarding the minimum letter grade needed for the course to count toward your major.

Point percentage range (%)	Letter	Point percentage range (%)	Letter
92 and higher	A	72 to 75	C
89 to 91	A-	69 to 71	C-
86 to 88	B+	66 to 68	D+
82 to 85	B	62 to 65	D
79 to 81	B-	60 to 61	D-
76 to 78	C+	59.99 and lower	F

Course Schedule

The course schedule serves as a guideline for weekly progression. It is subject to change during the term.

Week	Date	Day	Topic	Actions/Assignment*
1	Mar 29	T	Course overview	Read Syllabus
	Mar 31	Th	Excel work environment and functions	Play with Excel, a lot!
2	Apr 5	T	R work environment and commands	Assignment 1
	Apr 7	Th	Level of measurement/ Introducing Final Project	Discuss with instructor if using own/outside data for final project
3	Apr 12	T	Frequency & Graphs in Excel & R	
	Apr 14	Th	Central tendency & dispersion in Excel	If presenting @ CUE, register (deadline 4/15) & Inform Instructor
4	Apr 19	T	Central tendency & dispersion in R	Assignment 2
	Apr 21	Th	T-test and ANOVA in Excel	
5	Apr 26	T	T-test and ANOVA in R	Assignment 3
	Apr 28	Th	Pivot tables, crosstabs, Chi-square in Excel	If presenting @ CUE, submit to CUE (Deadline 4/29)
6	May 3	T	Chi-square in R	Assignment 4
	May 5	Th	Correlation in Excel	
7	May 10	T	Correlation in R	Assignment 5
	May 12	Th	Regression in Excel	
8	May 17	T	Regression in R / Project work session	Assignment 6 , Final project Draft 1 due 5/15
	May 19	Th	No-class! Celebrating Undergraduate Excellence Showcase	Present at or attend CUE (5/19)
9	May 24	T	Intro to Qualtrics	Assignment 7
	May 26	Th	Extra topics of interest / Project work session	
10	May 31	T	Final project presentations	Final Project Written Report (due 5/29)
	Jun 2	Th	Final project presentations	
Jun 6 - 10		Finals week, no final exam!		

* Required assignments/actions are indicated by bold text

Communication

Through class emails, class meetings, and Canvas announcements, I will maintain ongoing communication with you. If you have specific questions, email or office hours will be the best way to reach me (see page 1 for email address and zoom link). Email will be checked daily on weekdays. I will do my best to respond to questions within 24 hours or, if sent on the weekend, the following Monday. Office hours will be held on Zoom (see page 1). If you need to schedule a time to chat outside these days / times, please email me directly.

Academic Calendar

All students are subject to the registration and refund deadlines as stated in the Academic Calendar: <https://registrar.oregonstate.edu/osu-academic-calendar>

Quarantine, Isolation, or Missed Class Time

This class is scheduled to be offered face-to-face on campus. OSU has vaccination and mask mandates in place and we meet in a space that follows the best practice guidelines of the CDC and the state of Oregon. There may be unexpected changes. If health and safety concerns prevent us from meeting in person, synchronous zoom meetings, with notifications in advance, will be held to optimize your interactions with the instructor, guest speakers, classmates, and course materials.

If you experience symptoms of COVID-19 please consult OSU Quarantine and Isolation guidelines to determine your next steps. If you are unable to attend a class session please contact the instructor about arrangement to help you catch up with missed lectures (if applicable).

If you are ill (or caring for someone who is), I am here to support your success during these challenging times. Please reach out to me or the TAs directly via email or Canvas message if you are concerned about your ability to engage in course activities while you are ill. You need not disclose private medical information or provide documentation of your illness.

If you need help coping, please reach out to us or Counseling and Psychological Services (<https://counseling.oregonstate.edu>, 541-737-2131) and connect with your classmates via Canvas.

The Office of the Dean of Students (<https://studentlife.oregonstate.edu/student-info>) can also assist if you are navigating a range of extenuating life circumstances including, but not limited to, prolonged illness, hospitalization, or financial concerns. They can be reached via Zoom chat or audio Monday through Friday from 9 a.m. to 5 p.m. at beav.es/4qQ or by email at support.odos@oregonstate.edu.

Classroom Behavior

COVID-19: During this public health emergency we all have a shared responsibility to each other to take steps to reduce spread and transmission of COVID-19. This includes getting fully vaccinated as soon as you are eligible, following all OSU and public health authority guidance and regulations, including maintaining physical distancing at all times, wearing face coverings in shared spaces, and staying home if you are sick or have been in close contact with a known or suspected COVID-19 case. If you need to stay home due to illness or potential exposure, please contact your instructor who will work with you to facilitate your continued engagement with the course material and make up assignments with no penalty for lateness. For the updates from OSU on COVID-19 safety and mitigation measures, visit: <https://covid.oregonstate.edu/>

Policy Violations: Each member of the OSU community is responsible for holding themselves accountable to OSU policies and standards. Faculty are responsible for classroom management and may refer students to the Office of Student Conduct and Community Standards for further discipline if warranted.

Student Wellbeing and Academic Support: <https://experience.oregonstate.edu/resources>

Students with Disabilities

Accommodations for students with disabilities are determined and approved by Disability Access Services (DAS). If you, as a student, believe you are eligible for accommodations, but have not obtained approval please contact DAS immediately at 541-737-4098 or at <http://ds.oregonstate.edu>. DAS notifies students and faculty members of approved academic accommodations and coordinates implementation of those accommodations. While not required, students and faculty members are encouraged to discuss details of the implementation of individual accommodations.

Inclusivity Statement

OSU and the College of Forestry strive to create an affirming climate for all students, including underrepresented and marginalized individuals and groups. Diversity encompasses differences in age, color, ethnicity, national origin, gender, physical or mental ability, religion, socioeconomic background, veteran status, sexual orientation, and marginalized groups. We believe diversity is the synergy, connection, acceptance, and mutual learning fostered by the interaction of different human characteristics.

Student Bill of Rights

OSU has twelve established student rights. They include due process in all university disciplinary processes, an equal opportunity to learn, and grading in accordance with the course syllabus: <https://asosu.oregonstate.edu/advocacy/rights>

Religious Holidays

OSU strives to respect all religious practices. If you have religious holidays that are in conflict with any of the requirements of this class, please see me immediately so that we can make alternative arrangements.

Reach Out for Success

Students encounter setbacks from time to time. If you encounter difficulties and need assistance, it is important to reach out. Consider discussing the situation with an instructor or academic advisor. Learn about resources that assist with wellness and academic success at <https://counseling.oregonstate.edu/reach-out-success>. If you are in immediate crisis, please contact the Crisis Text Line by texting OREGON to 741-741 or call the National Suicide Prevention Lifeline at 1-800-273-TALK (8255).

Reporting

Please be aware that I need to report incidents you disclose to me inside or outside the classroom that involve gender or sex-based harassment, violence, or discrimination (including your name) to the Office of Equal Opportunity and Access (EOA). For more information on how EOA responds to reports, please visit their website at <https://eo.oregonstate.edu>. However, if you wish to make a confidential disclosure and receive information on resources and services, please contact the Survivor Advocacy and Resource Center (SARC) by telephone (541-737-2030), by e-mail (survivoradvocacy@oregonstate.edu), or visit them in the Plageman Building. EOA and SARC can assist with academic accommodations.

Student Learning Experience Survey

During Fall, Winter, and Spring term the online Student Learning Experience surveys open to students the Wednesday of week 9 and close the Sunday before Finals Week. Students will receive notification, instructions, and the link through their ONID email. They may also log into the survey via MyOregonState or directly at <https://beav.es/Student-Learning-Survey>. Survey results are extremely important and are used to help improve courses and the learning experience of future students. Responses are anonymous (unless a student chooses to “sign” their comments, agreeing to relinquish anonymity of written comments) and are not available to instructors until after grades have been posted. The results of scaled questions and signed comments go to both the instructor and their unit head/supervisor. Anonymous (unsigned) comments go to the instructor only.

Student Conduct Expectations

Student conduct is governed by the university’s policies, as explained in the Code of Student Conduct at <https://beav.es/codeofconduct>. Students are expected to conduct themselves in the course (e.g., in Zoom breakout rooms, email postings) in compliance with the university's regulations regarding civility. Students are not allowed to post inappropriate material, spam the class, use offensive language, or engage in online flaming.

To facilitate quality discussion and a positive, safe, and friendly learning environment, it is important that all of us communicate respectfully to each other. Disagreeing and sharing critical remarks is welcomed, but personal attacks and otherwise disrespectful behavior will not be tolerated. An essential part of good communication and respecting others is being a good listener and helping others learn and articulate their thoughts.

Integrity is a character-driven commitment to honesty, doing what is right, and guiding others to do what is right. OSU students and faculty have a responsibility to act with integrity in all of our educational work, and that integrity enables this community of learners to interact in the spirit of trust, honesty, and fairness.

The OSU Code of Student Conduct prohibits Academic Misconduct and defines it as “Any action that misrepresents a student or group’s work, knowledge, or achievement, provides a potential or actual inequitable advantage, or compromises the integrity of the educational process.” To support understanding of what can be included in this definition, this Code further classifies and describes examples of Academic Misconduct. Prohibited behaviors include, but are not limited to doing or attempting the following actions:

Cheating: Unauthorized assistance, or access to or use of unauthorized materials, information, tools, or study aids. Examples include, but are not limited to, unauthorized collaboration or copying on a test or assignment, using prohibited materials and texts, unapproved use of cell phones, internet, or other electronic devices, etc.

Plagiarism: Representing the words or ideas of another person or presenting someone else's words, data, expressed ideas, or artistry as one's own. Examples include, but are not limited to, presenting someone else's opinions and theories as one's own, using another person's work or words (including unpublished material) without appropriate source documentation or citation, working jointly on a project and then submitting it as one's own, etc.

Falsification: Fabrication or invention of any information. Examples include, but are not limited to, falsifying research, inventing or falsely altering data, citing fictitious references, falsely recording or reporting attendance, hours, or engagement in activities such as internships, externships, field experiences, clinical activities, etc.

Assisting: Any action that helps another engage in misconduct. Examples include, but are not limited to, providing materials or assistance without approval, altering someone's work, grades or academic records, taking a test or doing an assignment for someone else, compelling acquisition, selling, bribing, paying or accepting payment for academic work or assistance that contributes to academic misconduct, etc.

Tampering: Interfering with an instructor’s evaluation of work by altering materials or documents, tampering with evaluation tools, or other means of interfering.

Multiple submissions of work: Using or submitting work completed for another or previous class or requirement, without appropriate disclosure, citation, and instructor approval.

Unauthorized recording and use: Recording or dissemination of instructional content without the express permission of the instructor(s), or an approved accommodation coordinated via Disability Access Services.

You must write in your own words. Cutting and pasting blocks of text from sources is plagiarism. You may quote from source material, but the quote must be brief (i.e., less than a couple of sentences), enclosed within quotation marks (“...”), and cited in the text and reference section in APA format (see below). Ask in advance if you are uncertain regarding the appropriate use of material from other sources.

It is important that you understand what student actions are defined as Academic Misconduct at OSU.

The OSU Libraries offer a tutorial on misconduct

(<https://guides.library.oregonstate.edu/c.php?g=286121&p=3896378>), and you can also refer to the OSU Code of Student Conduct (website is listed above) and the Office of Student Conduct and Community Standard’s website (<https://studentlife.oregonstate.edu/studentconduct/student-info>) for more information.

More importantly, if you are unsure if something will violate the academic integrity policy, ask your professors, TAs, academic advisors, or academic integrity officers.

If you are found responsible for Academic Misconduct, it may result in an “F” grade for the assignment and / or the course. In addition, the College Hearing Officer (or other hearing body) may make a determination of additional sanctions that are appropriate to the violation and the surrounding context. College Hearing Officers are authorized to assign Academic Sanctions as described in the Code of Student Conduct.