SYLLABUS ComS 170 Data Analysis in Communication Research

Fall 2022 Dr. Fred Molitor
Tuesdays & Thursdays 7:30-8:45 <u>fred.molitor@csus.edu</u>
Office Hours: Tuesdays & Thursdays 11:00-Noon Office: MND 5038

Course Description: Introduction to the application of data analysis to the study of communication processes.

Course Objectives:

- Understand the assumptions, uses, advantages, and limitations of statistical analysis tests.
- Acquire the knowledge and skills necessary for conducting advanced statistical analyses and interpretation of statistical output.
- Continue to develop critical thinking skills.

Required Materials: A calculator. There is no required textbook for this class. All content necessary to do well on the homework assignments and exams will be presented in class lectures or posted on Canvas.

Course Requirements and Evaluations: There will be four examinations and eight homework assignments. Exams may be taken other than when scheduled only if we make prior arrangements or in cases of unforeseen emergencies. You must contact me by email <u>as soon as possible</u> (12 hours after the exam at the latest) if you miss an exam. Makeup exams will not be the same as the scheduled exams. <u>Homework assignments are due before 7:30 AM on the specified due dates</u>. Homework assignment can be submitted through Canvas or in class. For online submissions, Adobe PDF versions of your assignment must be uploaded onto Canvas and labeled with your last name, assignment number, and page numbers, if applicable (e.g., Molitor HW2 Page 2). Ideally you have access to a copier or printer that can be used to scan and PDF your homework assignments. Alternatively, but not ideal, you can use the Adobe Scan app on your phone. Late homework assignments or those sent as email attachments will not be accepted. The weight of each exam is 15% and all homework assignments are 40% toward your final grade. An ungraded but required Syllabus Assignment is due by 7:30 AM on September 06.

In cases when one homework is submitted by two (or more) students, both students will receive a "0" on the assignment and each student will be reported to the Office of Student Conduct. If you submit answers from an exam other than assigned to you, you will fail the class and be reported to the Office of Student Conduct.

Homework assignments, statistical tables, SPSS statistical output, tables from published studies, and required readings will be posted on Canvas. It is your responsibility to access these required documents. It is also your responsibility to read all announcements posted on Canvas. I strongly suggest that you modify your Notifications settings in Canvas to be sure that you receive timely emails and announcements.

I communicate with students using their @csus.edu email addresses. I only use Canvas for emails when I reply to student emails. You need to check your @csus.edu email on a regular basis. I also strongly suggest that you modify your Notifications settings in Canvas to be sure that you receive timely emails and announcements. The expectation in this class is that you participate in professional email communications. Emails sent using your personal email address (e.g., @gmail) do not represent professional email communications and I will not respond to emails from students using their personal email address. Professional email communications also include checking and responding to email messages in a timely manner, and acknowledging that you received a reply to a question that you asked.

Extra credit assignments are not offered in this class. Please don't ask.

Final grades will be based on A=94-100; A-=90-93; B+=87-89; B=84-86; B-=80-83; C+=77-79; C=74-76; C-=70-73; D=60-69; F=<60.

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Course Calendar:

| Aug. 30 Introduction to Course Review from 100C: Levels of Measurement & Measures of Central Tendency Sept. 01 Calculating Grand Mean & Percent and Percentage Point Change Sept. 06 Measures of Variability Syllabus Assignment Sept. 08 Confidence Interval for a Mean Homework #1 Sept. 13 Confidence Interval for a Proportion Sept. 15 Crosstabs and Chi Square Statistic Homework #2 Sept. 20 Crosstabs and Chi Square Statistic Sept. 22 Practice Exam 1 Homework #3 Sept. 27 Exam 1 Sept. 29 Hypothesis Testing Test of Difference Between Dependent Means Oct. 04 Test of Difference Between Independent Means Oct. 05 Test of Difference Between Independent Means Oct. 11 Mann-Whitney U Test Oct. 13 Mann-Whitney U Test Oct. 14 No Class Oct. 25 One-Way Analysis of Variance Test Oct. 27 Exam 2 Nov. 01 Linear Correlation Nov. 03 Linear Correlation Nov. 04 Spearman Rank Correlation Nov. 15 Criteria for Causality Partial Correlation Nov. 15 Criteria for Causality Partial Correlation Nov. 22 Exam 3 Nov. 24 No Class Nov. 29 Linear Regression Analysis Dec. 06 Logistic Regression Analysis Dec. 08 Logistic Regression Analysis Dec. 08 Logistic Regression Analysis | Date | Discussion/Event | Due |
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| Sept. 01 Calculating Grand Mean & Percent and Percentage Point Change Sept. 06 Measures of Variability Sept. 08 Confidence Interval for a Mean Sept. 13 Confidence Interval for a Proportion Sept. 15 Crosstabs and Chi Square Statistic Homework #1 Sept. 20 Crosstabs and Chi Square Statistic Sept. 20 Practice Exam 1 Homework #3 Sept. 27 Exam 1 Sept. 29 Hypothesis Testing Test of Difference Between Dependent Means Oct. 04 Test of Difference Between Independent Means Oct. 06 Test of Difference Between Independent Means Oct. 11 Mann-Whitney U Test One-Way Analysis of Variance Test Oct. 20 One-Way Analysis of Variance Test Oct. 27 Exam 2 Nov. 01 Linear Correlation Nov. 03 Linear Correlation Nov. 03 Spearman Rank Correlation Nov. 04 No Class Nov. 15 Criteria for Causality Partial Correlation Nov. 17 Partial Correlation Nov. 18 No Class Nov. 21 Linear Regression Analysis Dec. 06 Logistic Regression Analysis Dec. 08 Logistic Regression Analysis | Aug. 30 | Review from 100C: Levels of Measurement & Measures | |
| Sept. 08 Confidence Interval for a Mean Homework #1 Sept. 13 Confidence Interval for a Proportion Sept. 15 Crosstabs and Chi Square Statistic Homework #2 Sept. 20 Crosstabs and Chi Square Statistic Sept. 22 Practice Exam 1 Homework #3 Sept. 27 Exam 1 Sept. 29 Hypothesis Testing Test of Difference Between Dependent Means Oct. 04 Test of Difference Between Dependent Means Oct. 06 Test of Difference Between Independent Means Oct. 11 Mann-Whitney U Test Oct. 13 Mann-Whitney U Test One-Way Analysis of Variance Test Oct. 18 No Class Oct. 20 One-Way Analysis of Variance Test Oct. 27 Exam 2 Nov. 01 Linear Correlation Nov. 03 Linear Correlation Nov. 08 Spearman Rank Correlation Nov. 10 Spearman Rank Correlation Nov. 15 Criteria for Causality Partial Correlation Nov. 17 Partial Correlation Nov. 22 Exam 3 Nov. 24 No Class Nov. 29 Linear Regression Analysis Dec. 06 Logistic Regression Analysis Dec. 08 Logistic Regression Analysis Dec. 08 Logistic Regression Analysis | Sept. 01 | Calculating Grand Mean & Percent and Percentage Point | |
| Sept. 13 Confidence Interval for a Proportion Sept. 15 Crosstabs and Chi Square Statistic Homework #2 Sept. 20 Crosstabs and Chi Square Statistic Sept. 22 Practice Exam 1 Homework #3 Sept. 27 Exam 1 Sept. 29 Hypothesis Testing Test of Difference Between Dependent Means Oct. 04 Test of Difference Between Dependent Means Oct. 06 Test of Difference Between Independent Means Oct. 11 Mann-Whitney U Test Oct. 13 Mann-Whitney U Test Oct. 14 No Class Oct. 20 One-Way Analysis of Variance Test Oct. 20 One-Way Analysis of Variance Test Oct. 27 Exam 2 Nov. 01 Linear Correlation Nov. 03 Linear Correlation Nov. 08 Spearman Rank Correlation Nov. 15 Criteria for Causality Partial Correlation Nov. 17 Partial Correlation Nov. 20 Exam 3 Nov. 24 No Class Nov. 29 Linear Regression Analysis Dec. 06 Logistic Regression Analysis Dec. 08 Logistic Regression Analysis Dec. 08 Logistic Regression Analysis | Sept. 06 | Measures of Variability | Syllabus Assignment |
| Sept. 15 Crosstabs and Chi Square Statistic Homework #2 Sept. 20 Crosstabs and Chi Square Statistic Sept. 22 Practice Exam 1 Homework #3 Sept. 27 Exam 1 Sept. 29 Hypothesis Testing Test of Difference Between Dependent Means Oct. 04 Test of Difference Between Dependent Means Oct. 06 Test of Difference Between Independent Means Oct. 11 Mann-Whitney U Test Oct. 13 Mann-Whitney U Test One-Way Analysis of Variance Test Oct. 18 No Class Oct. 20 One-Way Analysis of Variance Test Oct. 27 Exam 2 Nov. 01 Linear Correlation Nov. 03 Linear Correlation Nov. 08 Spearman Rank Correlation Nov. 10 Spearman Rank Correlation Nov. 15 Criteria for Causality Partial Correlation Nov. 17 Partial Correlation Nov. 22 Exam 3 Nov. 24 No Class Nov. 29 Linear Regression Analysis Dec. 06 Logistic Regression Analysis Dec. 08 Logistic Regression Analysis Dec. 08 Logistic Regression Analysis | Sept. 08 | Confidence Interval for a Mean | Homework #1 |
| Sept. 20 Crosstabs and Chi Square Statistic Sept. 22 Practice Exam 1 Homework #3 Sept. 27 Exam 1 Sept. 29 Hypothesis Testing | Sept. 13 | Confidence Interval for a Proportion | |
| Sept. 22 Practice Exam 1 Homework #3 Sept. 27 Exam 1 Sept. 29 Hypothesis Testing | Sept. 15 | • | Homework #2 |
| Sept. 27 Exam 1 Sept. 29 Hypothesis Testing Test of Difference Between Dependent Means Oct. 04 Test of Difference Between Dependent Means Oct. 06 Test of Difference Between Independent Means Oct. 11 Mann-Whitney U Test Oct. 13 Mann-Whitney U Test Oct. 18 No Class Oct. 20 One-Way Analysis of Variance Test Oct. 25 One-Way Analysis of Variance Test Oct. 27 Exam 2 Nov. 01 Linear Correlation Nov. 03 Linear Correlation Nov. 08 Spearman Rank Correlation Nov. 10 Spearman Rank Correlation Nov. 15 Criteria for Causality Partial Correlation Nov. 17 Partial Correlation Nov. 24 No Class Nov. 29 Linear Regression Analysis Dec. 06 Logistic Regression Analysis Dec. 08 Logistic Regression Analysis Dec. 08 Logistic Regression Analysis | Sept. 20 | Crosstabs and Chi Square Statistic | |
| Sept. 29 Hypothesis Testing Test of Difference Between Dependent Means Oct. 04 Test of Difference Between Dependent Means Oct. 06 Test of Difference Between Independent Means Oct. 11 Mann-Whitney U Test Oct. 13 Mann-Whitney U Test One-Way Analysis of Variance Test Oct. 18 No Class Oct. 20 One-Way Analysis of Variance Test Oct. 25 One-Way Analysis of Variance Test Oct. 27 Exam 2 Nov. 01 Linear Correlation Nov. 03 Linear Correlation Nov. 08 Spearman Rank Correlation Nov. 10 Spearman Rank Correlation Nov. 15 Criteria for Causality Partial Correlation Nov. 22 Exam 3 Nov. 24 No Class Nov. 29 Linear Regression Analysis Dec. 06 Logistic Regression Analysis Dec. 08 Logistic Regression Analysis Dec. 08 Logistic Regression Analysis | Sept. 22 | Practice Exam 1 | Homework #3 |
| Test of Difference Between Dependent Means Oct. 04 Test of Difference Between Dependent Means Oct. 06 Test of Difference Between Independent Means Homework #4 Oct. 11 Mann-Whitney U Test Oct. 13 Mann-Whitney U Test Homework #5 One-Way Analysis of Variance Test Oct. 18 No Class Oct. 20 One-Way Analysis of Variance Test Homework #6 Oct. 25 One-Way Analysis of Variance Test Oct. 27 Exam 2 Nov. 01 Linear Correlation Nov. 03 Linear Correlation Nov. 08 Spearman Rank Correlation Nov. 10 Spearman Rank Correlation Nov. 15 Criteria for Causality Partial Correlation Nov. 17 Partial Correlation Nov. 22 Exam 3 Nov. 24 No Class Nov. 29 Linear Regression Analysis Dec. 06 Logistic Regression Analysis Dec. 08 Logistic Regression Analysis | Sept. 27 | Exam 1 | |
| Oct. 06 Test of Difference Between Independent Means Homework #4 Oct. 11 Mann-Whitney U Test Oct. 13 Mann-Whitney U Test Homework #5 One-Way Analysis of Variance Test Oct. 18 No Class Oct. 20 One-Way Analysis of Variance Test Homework #6 Oct. 25 One-Way Analysis of Variance Test Oct. 27 Exam 2 Nov. 01 Linear Correlation Nov. 03 Linear Correlation Nov. 08 Spearman Rank Correlation Nov. 10 Spearman Rank Correlation Nov. 15 Criteria for Causality Partial Correlation Nov. 17 Partial Correlation Nov. 22 Exam 3 Nov. 24 No Class Nov. 29 Linear Regression Analysis Dec. 06 Logistic Regression Analysis Dec. 08 Logistic Regression Analysis Dec. 08 Logistic Regression Analysis | Sept. 29 | 71 | |
| Oct. 11 Mann-Whitney U Test Oct. 13 Mann-Whitney U Test One-Way Analysis of Variance Test Oct. 18 No Class Oct. 20 One-Way Analysis of Variance Test Oct. 25 One-Way Analysis of Variance Test Oct. 27 Exam 2 Nov. 01 Linear Correlation Nov. 03 Linear Correlation Nov. 08 Spearman Rank Correlation Nov. 10 Spearman Rank Correlation Nov. 15 Criteria for Causality Partial Correlation Nov. 17 Partial Correlation Nov. 22 Exam 3 Nov. 24 No Class Nov. 29 Linear Regression Analysis Dec. 06 Logistic Regression Analysis Dec. 08 Logistic Regression Analysis | Oct. 04 | Test of Difference Between Dependent Means | |
| Oct. 13 Mann-Whitney U Test One-Way Analysis of Variance Test Oct. 18 No Class Oct. 20 One-Way Analysis of Variance Test Oct. 25 One-Way Analysis of Variance Test Oct. 27 Exam 2 Nov. 01 Linear Correlation Nov. 03 Linear Correlation Nov. 08 Spearman Rank Correlation Nov. 10 Spearman Rank Correlation Nov. 15 Criteria for Causality Partial Correlation Nov. 22 Exam 3 Nov. 24 No Class Nov. 29 Linear Regression Analysis Dec. 06 Logistic Regression Analysis Dec. 08 Logistic Regression Analysis Dec. 08 Logistic Regression Analysis | Oct. 06 | Test of Difference Between Independent Means | Homework #4 |
| One-Way Analysis of Variance Test Oct. 18 No Class Oct. 20 One-Way Analysis of Variance Test Homework #6 Oct. 25 One-Way Analysis of Variance Test Oct. 27 Exam 2 Nov. 01 Linear Correlation Nov. 03 Linear Correlation Nov. 08 Spearman Rank Correlation Nov. 10 Spearman Rank Correlation Nov. 15 Criteria for Causality Partial Correlation Nov. 17 Partial Correlation Nov. 22 Exam 3 Nov. 24 No Class Nov. 29 Linear Regression Analysis Dec. 01 Linear Regression Analysis Dec. 06 Logistic Regression Analysis Dec. 08 Logistic Regression Analysis | Oct. 11 | Mann-Whitney U Test | |
| Oct. 18 No Class Oct. 20 One-Way Analysis of Variance Test Homework #6 Oct. 25 One-Way Analysis of Variance Test Oct. 27 Exam 2 Nov. 01 Linear Correlation Nov. 03 Linear Correlation Nov. 08 Spearman Rank Correlation Nov. 10 Spearman Rank Correlation Nov. 15 Criteria for Causality Partial Correlation Nov. 17 Partial Correlation Nov. 22 Exam 3 Nov. 24 No Class Nov. 29 Linear Regression Analysis Dec. 01 Linear Regression Analysis Dec. 08 Logistic Regression Analysis Dec. 08 Logistic Regression Analysis | Oct. 13 | • | Homework #5 |
| Oct. 20 One-Way Analysis of Variance Test Oct. 25 One-Way Analysis of Variance Test Oct. 27 Exam 2 Nov. 01 Linear Correlation Nov. 03 Linear Correlation Nov. 08 Spearman Rank Correlation Nov. 10 Spearman Rank Correlation Nov. 15 Criteria for Causality Partial Correlation Nov. 17 Partial Correlation Nov. 22 Exam 3 Nov. 24 No Class Nov. 29 Linear Regression Analysis Dec. 06 Logistic Regression Analysis Dec. 08 Logistic Regression Analysis | Oct. 18 | | |
| Oct. 25 One-Way Analysis of Variance Test Oct. 27 Exam 2 Nov. 01 Linear Correlation Nov. 03 Linear Correlation Nov. 08 Spearman Rank Correlation Nov. 10 Spearman Rank Correlation Nov. 15 Criteria for Causality Partial Correlation Nov. 17 Partial Correlation Nov. 22 Exam 3 Nov. 24 No Class Nov. 29 Linear Regression Analysis Dec. 01 Linear Regression Analysis Dec. 08 Logistic Regression Analysis Dec. 08 Logistic Regression Analysis | | | Homework #6 |
| Oct. 27 | | | |
| Nov. 03Linear CorrelationHomework #7Nov. 08Spearman Rank CorrelationHomework #7Nov. 10Spearman Rank CorrelationNov. 15Criteria for Causality Partial CorrelationNov. 17Partial CorrelationHomework #8Nov. 22Exam 3Nov. 24No ClassNov. 29Linear Regression AnalysisDec. 01Linear Regression AnalysisDec. 06Logistic Regression AnalysisDec. 08Logistic Regression Analysis | Oct. 27 | · · · | |
| Nov. 08Spearman Rank CorrelationHomework #7Nov. 10Spearman Rank CorrelationNov. 15Criteria for Causality Partial CorrelationNov. 17Partial CorrelationHomework #8Nov. 22Exam 3Nov. 24No ClassNov. 29Linear Regression AnalysisDec. 01Linear Regression AnalysisDec. 06Logistic Regression AnalysisDec. 08Logistic Regression Analysis | Nov. 01 | Linear Correlation | |
| Nov. 10 Spearman Rank Correlation Nov. 15 Criteria for Causality Partial Correlation Nov. 17 Partial Correlation Homework #8 Nov. 22 Exam 3 Nov. 24 No Class Nov. 29 Linear Regression Analysis Dec. 01 Linear Regression Analysis Dec. 06 Logistic Regression Analysis Dec. 08 Logistic Regression Analysis | Nov. 03 | Linear Correlation | |
| Nov. 15 Criteria for Causality Partial Correlation Nov. 17 Partial Correlation Homework #8 Nov. 22 Exam 3 Nov. 24 No Class Nov. 29 Linear Regression Analysis Dec. 01 Linear Regression Analysis Dec. 06 Logistic Regression Analysis Dec. 08 Logistic Regression Analysis | Nov. 08 | Spearman Rank Correlation | Homework #7 |
| Partial Correlation Nov. 17 Partial Correlation Homework #8 Nov. 22 Exam 3 Nov. 24 No Class Nov. 29 Linear Regression Analysis Dec. 01 Linear Regression Analysis Dec. 06 Logistic Regression Analysis Dec. 08 Logistic Regression Analysis | Nov. 10 | Spearman Rank Correlation | |
| Nov. 17Partial CorrelationHomework #8Nov. 22Exam 3Nov. 24No ClassNov. 29Linear Regression AnalysisDec. 01Linear Regression AnalysisDec. 06Logistic Regression AnalysisDec. 08Logistic Regression Analysis | Nov. 15 | Criteria for Causality | |
| Nov. 22 Exam 3 Nov. 24 No Class Nov. 29 Linear Regression Analysis Dec. 01 Linear Regression Analysis Dec. 06 Logistic Regression Analysis Dec. 08 Logistic Regression Analysis | | Partial Correlation | |
| Nov. 24No ClassNov. 29Linear Regression AnalysisDec. 01Linear Regression AnalysisDec. 06Logistic Regression AnalysisDec. 08Logistic Regression Analysis | Nov. 17 | Partial Correlation | Homework #8 |
| Nov. 29 Linear Regression Analysis Dec. 01 Linear Regression Analysis Dec. 06 Logistic Regression Analysis Dec. 08 Logistic Regression Analysis | Nov. 22 | Exam 3 | |
| Dec. 01 Linear Regression Analysis Dec. 06 Logistic Regression Analysis Dec. 08 Logistic Regression Analysis | Nov. 24 | No Class | |
| Dec. 06 Logistic Regression Analysis Dec. 08 Logistic Regression Analysis | Nov. 29 | Linear Regression Analysis | |
| Dec. 08 Logistic Regression Analysis | Dec. 01 | Linear Regression Analysis | |
| | Dec. 06 | Logistic Regression Analysis | |
| | Dec. 08 | Logistic Regression Analysis | |
| TBD Final Exam | TBD | Final Exam | |

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General Information and Grading the Required Homework Assignments

Homework assignments are designed to prepare you for the exams. Grading is generally not based on the number of correct answers, but on effort. Your work must appear on lined paper, not on Microsoft Excel spreadsheets or in the columns or back of the document with the homework problems.

Points will be assigned to homework assignments according to the following criteria:

- Work shown, legible, and most or all answers correct = 100 points
- Work shown, legible, and ≤ 50% of answers incorrect = 75 points
- Sloppy presentation of work or illegible work due to scanning or picture taking regardless of correct answers = 0 points
- Submitting your homework as a non-PDF document = 0 points
- Work shown on printout with homework problems = 0 points
- No work shown = 0 points
- Partially completed homework = 0 points
- Late homework = 0 points
- No homework = 0 points
- Homework submitted as an email attachment = 0 points

Again, your work toward solving the problems must be completed on lined paper. Write your name and homework assignment number on the top of the first page. Clearly number each problem and circle your answers.

Graded homework assignments submitted through Canvas will not indicate which answers are incorrect Graded homework assignments will not include the correct answers; your graded homework assignments should be compared with the answer keys that will be posted on Canvas to see which answers you provided were incorrect. It is advisable that you make the effort to redo those problems to prepare you for the forthcoming exams.

General Information on Exams

Each exam is worth 100 percentage points regardless of the sum of the points for any exam.