# Data Analysis Exam – Fall 2022

Perform a data analysis using any methods that you think are appropriate for these data. You may not need to include all variables in your analysis, but your primary goal should be to explain patterns in and associations with **COVID19 counts**. There are a variety of approaches that may be appropriate, and you are free to use more than one single method. Your submission should be a well-organized written report in which you specify what meaningful questions can be addressed from the data, discuss why you need data manipulation, explain why the methods you use are appropriate, and interpret the results of your analyses in the context of the application with appropriate descriptions of uncertainty. Your goal should be to use your broad knowledge of applied statistical methods to glean as much knowledge as you can from these data. In the report, you also need to address potential limitations of your analyses. Analyses that are statistically sound but provide only a superficial investigation of the data will not be sufficient for a passing grade.

# Organization of Report

Submissions are limited to 7 single-spaced pages including all tables and figures, but excluding signature page, references, and appendices. Use 1 inch margins on paper size of 8.5 inches by 11 inches and a font size of 11 or 12 pts. All pages should be numbered. Submission should include the following clearly labeled sections.

1. Signature page: Fill out and *separately* submit a signed cover page according to the included instructions.
2. Title: Please provide a meaningful title for your report.
3. Executive Summary (like an abstract): One paragraph that describes the problem, how it was addressed, results, and conclusions.
4. Introduction: What is/are the question(s)? What are the hypotheses? What type of statistical analyses is used and why is it appropriate?
5. Exploratory Data Analysis: Describe the data in tables and graphs.
6. Statistical Analyses: These should be described to someone who is a quantitatively savvy scientist, not to your statistics professor. You need to justify the approach used and justify final models using the data.
   1. Put computer outputs in an appendix
   2. State hypothesis/hypotheses
   3. Describe why the particular method was used
   4. Provide test statistic and p-value (or confidence interval). Draw and interpret statistical inference.
   5. Interpret results in plain language.
7. Conclusions: Summarize results; Discuss limitations of the study; Discuss future studies.
8. References: Cite relevant resources and include a bibliography.
9. Appendix: Include annotated computer codes. Someone else should be able to run your codes to get to the results you presented in the paper. Important results should be included in the paper, not in the appendix.

**Fall 2022**

**Statistics Data Analysis Report REPORT COVER PAGE**

**PLEASE READ BEFORE SUBMITTING YOUR REPORT.**

DO NOT include your name or redID on ANY page of your report. Please name your report with your assigned code. For example, if your assigned code is 050, please name your report as DAE050

Number every page of your report, i.e., Page 1 of 10, page 2 of 10, etc.

Reports will NOT be graded without your signature on a separate page. Unsigned reports will be disqualified. Reports will be disqualified if the completed signature page is not submitted with the report. Reports MUST be emailed to Emily Olmsted <[erolmsted@sdsu.edu](mailto:erolmsted@sdsu.edu)> by the deadline. No other form of submission will be accepted. Written report is due no later than **Tuesday, August 23, at 11:00am.** Exams may be submitted any day before the deadline, but not after the

deadline. Plan ahead to submit your report by the deadline.

COMPLETE EACH LINE BELOW BEFORE YOU SUBMIT YOUR REPORT. You need to turn in

the following filled page as a separate attachment when you email your report to Emily Olmsted.

**STATISTICS MASTERS COMPREHENSIVE EXAM DATA ANALYSIS REPORT**

**Fall 2022**

I declare, under the penalty of perjury, that this report and data analysis was completed by me, with no additional advice or help from any other person.

**EXAM CODE# DAE-003 DATE: August 22, 2022**

**PRINT LAST NAME, first name ZEITOUNIAN, Razmig**

**RedID# 827180335**

**SIGNATURE: Razmig Zeitounian**