**Biostatistics 311 Spring 2023 Course Project Report Rubric**

Differences between Demonstrates Proficiency and Demonstrates Competency are **in bold and underlined**

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| --- | --- | --- | --- | --- |
| **Component** | **Subcomponent** | **Demonstrates Proficiency** | **Demonstrates Competency** | **Incomplete** |
| **Scientific Context** | Background and motivation | Describe scientific background and **describe motivation for your scientific question** | Describe scientific background | Missing or incomplete scientific background |
| Scientific Questions | Clearly state scientific questions | Clearly state scientific questions | Scientific question missing or unclear |
| Data Description | Describe how data were collected and any variables you use in your analysis | Describe how data were collected and any variables you use in your analysis | Incomplete or missing description of dataset and variables |
| Adjustment Variables | **Justify the choice of any adjustment variables in the scientific context** | Adjustment variables make sense in context, though justification not given or incomplete | Adjustment variables do not make sense in context |
| **Statistical analysis** | Statistical Questions | Statistical questions are clearly described and make sense given the scientific questions | Statistical questions are clearly described and make sense given the scientific questions | Statistical questions aren’t clearly described or don’t sense given the scientific questions |
| Methods Description | **All aspects of analysis**, including significance levels, are clearly described | Almost all aspects of analysis are clearly described, some minor details may be missing | Analysis not clearly described |
| R Code | **Code is correct (separate file)** | Code may have a couple of minor errors (in separate file) | There are major errors or many minor errors in your code |
| Appropriate | **All aspects of the statistical analysis make sense** given the scientific context, question, and data collection process | Statistical analysis generally makes sense, though minor details might not | Statistical analysis doesn’t make sense |
| **Results and Interpretation** | Descriptive Analyses | Includes a table of summary statistics which is clearly labelled and captioned **and with an interpretation in the main text** | Includes a table of summary statistics which is clearly labelled and captioned | Missing or incomplete summary statistic table |
| Inferential Analyses | Correctly interprets and reports (in context) the point estimates, confidence intervals, p-values, and conclusion corresponding to each scientific question | Correctly interprets and reports (in context) the point estimates, confidence intervals, p-values, and conclusion corresponding to each scientific question | Incorrectly interprets or does not report the point estimates, confidence intervals, p-values, and/or conclusion |
| **Assumptions and Discussion** | Assumptions | Consider whether **all assumptions** relevant to your analyses are met; support the discussion with clear, well-labelled graphs as needed | Consider whether at least one assumption relevant to your analyses is met | Assumptions not considered |
| Discussion | Includes a summary of results, a discussion of **all key limitations**, and **a discussion of the results in the broader scientific context** | Includes a summary of results and a discussion of some limitations | Doesn’t include a complete summary of results or doesn’t include any limitations |
| **Writing and Organization** | Writing | **generally grammatically correct (a few typos are understandable), always clear, engaging** | mostly grammatically correct and usually clear | many grammatical errors and/or is unclear |
| Organization | Organized into sections sensible for a research report | Organized into sections sensible for a research report | Not organized into sections or sections aren’t sensible |
| Title | informative, and doesn’t contain abbreviations | informative, and doesn’t contain abbreviations | not informative |
| Formatting | - No R code or raw output in main report  - Size 12 in a reasonable font  - 10 pages max including tables and figures with 1-inch margins and at least single-spacing | - No R code or raw output in main report  - Size 12 in a reasonable font  - 10 pages max including tables and figures with 1-inch margins and at least single-spacing | Formatting guidelines not followed |