Directions: Submit a PDF of your report and a file containing your R code on Canvas by the due date and time.

A general outline for data analysis reports is

- Introduction

  This section should provide a brief introduction to the subject matter you are discussing and should present the scientific question of interest.

- Data

  The data section should provide relevant details about the data that you will be modeling. It should include information like the range of values for each variable including units, the relationship between the variables, the number of observations, etc. This section can provide tables or figures to help the reader understand the data.

- Methods

  The methods section should introduce the model that you are fitting to the data using statistical notation. The model discussion should include how the parameters in this model will be estimated and how this model will address the scientific question of interests. Notation, e.g. Y_i, X_i, etc, should be defined except for standard statistical notation, e.g. ind, $N(m, C)$, etc. If there is a doubt about the convention, then it is best to be explicit, e.g. specify if b in $Ga(a, b)$ is the rate or the scale. Since the methods in this project will likely depend on MCMC, you need to specify how convergence in the MCMC will be assessed.

- Results

  The results section should provide summaries of the results of applying methods from the Methods section on the data in the Data section. Before discussing the actual estimates of parameters, you should provide details of the MCMC, e.g. number of burn-in and inferential iterations, as well as an assessment of convergence. After summarizing convergence, summarize the posterior distribution of the model parameters. This is typically best done by plots of posterior distributions or, if there are too many parameters, plots of credible intervals. In addition, the answer to the scientific question should be presented.

- Discussion

  The discussion section provides an interpretation of the results from the results section. It also provides an opportunity to discuss any shortcomings in the model or the data.

See the rubric on the following page for further details.

Topic	Score	Comments
On-time	10	Submit PDF report to Canvas by the due date and time Submit R code to Canvas by due date and time
Length	10	Approximately 5 pages, single-spaced, min 12pt font for main text Put figures and tables later (do not count against the page limit)
Grammar	10	Are words misspelled? Are complete sentences used? Are thoughts broken up into paragraphs?
Design	10	Does the report follow a logical progression? e.g. Introduction, Data, Methods, Results, Discussion
Clarity	10	Can I understand the data and model? Can I understand your interpretation and conclusion? Did you specify the source for your data?
Figure(s)	10	Do the figures and captions contain all pertinent information? Do the figures capture the important point? Is all text in the figure readable, i.e. large enough font size?
Table(s)	10	Do the tables and captions contain all pertinent information? Do the tables capture the important point?
Math	10	If math is used, is all notation thoroughly described?
Accuracy	10	Was an appropriate analysis used? Are the results interpreted correctly? Was the correct scientific conclusion reached?
Bayesian	10	Was a fully Bayesian approach used? Were posterior probabilities, posterior distributions, or credible intervals interpreted?
Total	100	