

## Final report structure:

For examples of publications in the area of applied statistics, see Annals of Applied Statistics:

[http://www.imstat.org/aoas/next\\_issue.html](http://www.imstat.org/aoas/next_issue.html). Please use Arial (or similar) font. Text should be size 11

throughout. Margins should be 1 inch (or so). *You report cannot exceed 4000 words in the main text.* The Supplementary sections may be longer. *The report should be as concise as possible.*

You final report will have nine components, as follows:

- 1) **Abstract.** The abstract is an ~200-word description of your project that summarizes all elements of the project, including the research methods, results and analysis. No figures or tables. Clearly and concisely summarize the motivation for the study, your approach, and your major findings.
- 2) **Introduction.** The introduction should include a purpose statement, reasons behind pursuing the project, expectations and hypothesis statements, if applicable. Concise and clear language is necessary to set the tone of the report. It should include a literature review. The literature review is an analysis and explanation of other research and publications already completed for similar projects, or for projects that set the basis for your study. Comment on methods used in previous studies, and as needed contrast them to the methods you are using. This section generally includes no figures and is 1000 words or less, though in some cases more may be needed. In general, the Introduction should not be the longest section of the manuscript.
- 3) **Methods.** The methods section allows you to explain the nature of any experiments, results tracking, collection of raw data and any adjustments you were required to make throughout the development of the project. Include any resources, software or other materials used in your research. Any novel methods or analytical techniques should be clearly explained at a level suitable for your classmates. The goal of this section is to generate a description sufficiently thorough so that *your study could be replicated*. This section is usually between 250 and 1000 words.
- 4) **Supplementary Methods.** Please include all code used to conduct the analysis in your project as Supplementary Files. *Each Supplementary File should be referenced appropriately in the Methods section.* Using this section your study should be easy to reproduce for anyone who's had this class. All datasets used should be provided in well-organized tar.gz files.
- 5) **Results.** Report all facts, measurements, results and findings that occur from your research and experimentation. Small graphs and charts should be used in this section, however lengthy tables or figures should be saved for Supplementary Results. Only the most important figures and conclusions should be listed in Results. Usually around 6 display items (Figures + Tables) appear in the main text, with any other display items that also support your study and conclusions in the Supplement. *Avoid discussing results or providing commentary in the results section of your statistical report* – interpretation will appear in the Discussion section. No figure or chart should be larger than 1 full page. All text on figures or in figure legends should be size 9 or larger. This section should be around 1000 words, though sometimes more is needed.
- 6) **Supplementary Results.** All figures or tables too large for the main text. *This section is not required.* This section should not dramatically exceed the length of your main results.
- 7) **Discussion.** Use the discussion section to provide analysis, define results and indicate to the reader if your hypotheses matched your findings. Interpret what the findings mean in relationship to the field of science, subject researched or your particular industry. Indicate whether any additional research needs to be conducted in order to fully explore the project and answer questions posed by the hypotheses. In this section, you will provide all your interpretation of the results. This section is usually around 500 words.
- 8) **References Cited.** Any references cited should be listed in a reasonable format (e.g. MLA) and should be clearly cited in the text.
- 9) **Author Contributions.** Explain exactly what each co-author contributed to the final report. All contributions must be commensurate with a final project.

**Your final report will be graded as follows:**

- 1) Are the research questions clearly explained? Is it immediately obvious (from the abstract) what is being studied? **(10% credit)**
- 2) Are the methods well suited to the research questions tackled? **(10% credit)**
- 3) Is the literature review in the Introduction informative and organized? **(10% credit)**
- 4) Could the study be immediately replicated using the text from Methods and the code, data, and additional text from Supplementary Methods? **(20% credit)**
- 5) Are the Results clearly stated? Are the figures and tables illustrative of the main findings? IS there at least one spectacular figure? Do the figure legends make it clear what the figures are showing? **(20% credit)**
- 6) Are the Results + Supplementary Results (if needed) sufficient to fully understand the Discussion? Is the Discussion compelling? Does it point to new and interesting research that can be built on top of these findings? **(10% credit)**
- 7) Are the Results and their interpretation in Discussion correct (or at least useful)? **(10% credit)**
- 8) Is the report concise and no longer than it needs to be? **(10% credit)**