Major report

This assessment is designed to give students the opportunity to work in an interdisciplinary team setting to solve a discipline specific problem based on real data. NUTM3004 students will gain experience in formulation of research questions based on lectures in the first part of the course and all students will be able to discover the solutions through analytical tools and real data.

STAT students will need to work with NUTM students to construct a research question based on the Australian Heath Survey data. STAT students will need to reformulate the research question into a statistics problem, analyse the data, and communicate the results to the NUTM students.

Through this process it is expected that STAT students will help to produce figures and tables for the NUTM multimedia assessment. In return NUTM students are expected to help STAT students interpret their results from a nutritionist’s perspective (which should contribute to the STAT report).

Files associated with the major assignment can be found in the “Resources” section on Canvas for the STAT3014 course.

* Groups have been allocated in the file:

Combined.xlsx

* The data description can be found in the file:

Aus\_Health\_Survey.pptx

* The data itself is located in the file:

nutmstatData2018.csv

* The data codebook is located in the file:

nutmstatDataItems2018\_new.xlsx

* Examples of journal articles conducting a an analysis on similar data can be found in the files:

Alzheimers\_and\_Dementia\_2017\_Amadieu.pdf

ANZ\_Journal\_of\_Public\_Health\_2017\_Engelen.pdf

AmJClinNutr\_2017\_Brand\_Miller.pdf

* Peer-to-peer assessment survey:

Student Team Assessment.docx

Major report – Suggested structure

Reports are to be no longer than 15 pages in length (excluding references).

* Executive summary (1 page max).
  + Short description of the problem(s).
  + What are the main findings?
  + Key figure if appropriate.
  + Are their shortcomings to the analysis?
  + What is the clinical relevance?
* The problem:
  + Longer description of the scientific problem(s).
  + Translation of the scientific problem into a statistical problem.
* Relevant (to answering the question) data summaries. Data transformations. (Only if necessary).
* Analysis:
  + What tools are used and why.
  + What are the results?
  + Use figures to illustrate the results.
  + Interpret the results (to a statistician).
  + Interpret the results (to a non-statistician).

On the presentation of the report.

* If grammar is not your strong suit then use small sentences. Copy sentences from other sources (not each other's assignments) and modify them to suit the context.
* All figures and tables should be captioned. Label the axes and headings for all figures. Use legends if applicable.
* Only show figures that you think are necessary (less is more). Do not show any R code in the report. Marks will be deducted for irrelevant figures.
* du knot gamatical ur speling errurs hav. It makes bosses (but not-so-much Lecturers) angry. Marks will be deducted for excessive grammatical and spelling errors.

Marking rubric for STAT3014 Major Report

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Criteria** | **Fail** | **Pass** | **Credit** | **Distinction** | **High Distinction** |
| **Translate the scientific question into a statistical formulation**  **(Question)** | Wrong | Slight misunderstanding of the biological question. | Simplistic, or formulated to a limited capacity | Appropriate formulation. | 1) Innovative formulation.  2) Shows good understanding of the biology. |
| **Analysis** | Incorrect analysis | Direct application of techniques | No real justification | Accurate and appropriate | 1) Robust analysis (cross-validated, outliers handled).  2) Accurate,  3) Appropriate,  4) Assumptions checked. |
| **Presentation** | Figures do not match analysis. Errors in the Figures. Figures do not match data. | Not informative figures | 1) Informative figures.  2) Axis labels, headings, and legend. | 1) Informative figures.  2) Axis labels, headings, and legend.  3) Visually pleasing. | 1) Informative figures.  2) Axis labels, headings, and legend.  3) Visually pleasing.  4) Innovative visualization. |
| **Reproducibility** | Code does not match figures/analysis. | Too many customized elements for lecturer to easily modify the code to get it to run. | Readable, but not fully reproducible. | Reproducible with minimal changes. | 1) Fully reproducible.  2) Stable code.  3) Runs first time without editing.  4) Self-contained. |

Multimedia communication

This assessment is to be completed in team work as part of your research project. It is worth 5% of your final mark in STAT3x14, and each student in the team will receive the same mark.

Clearly and memorably communicating science to the public and to decision makers (government, industry, reviewers of publications or grants, journalists, consumers) is extremely important for scienti]sts to maintain research productivity and to make a difference. Many scientists struggle to explain how their research translates to the real world, reducing the impact any research findings might have on public health. As a team, you will design a communication to convey the main results of your research project to a lay audience.

|  |  |
| --- | --- |
| *Length*: | Less than 500 words of text OR less than 3min of video/audio |
| *File type*: | pdf, video, audio, html |
| *File name:* | Group#\_multimedia |
| *Due date*: | 11:59pm Friday 26th October, Week 12 |

Create any type of multimedia communication to a non-scientist audience, based on your groups main research findings.This is a free format assignment e.g., pamphlet, slides, poster, wiki page, newspaper article, blog, video or audio are permitted. All figures and tables should be captioned. Label the axes and headings for all figures. Use legends if applicable.

**Oral presentation**

This assessment is to be completed in team work as part of your research project. It is worth 15% of your final mark in STAT3x14, and each student in the team will an individual mark. You will be assessed on your presentation skills, measured by criteria covering slides, flow of information, engagement with the audience and clarity of message.

|  |  |
| --- | --- |
| Length: | three minutes presentation + two minutes question time |
| File type: | powerpoint, RMarkdown, keynote etc |
| File name: | Group#\_oral |
| Due date: | **5:00pm Tuesday 30th October**, Week 13 |

The oral presentations are scheduled for week 13, Wednesday October 31st or Thursday 1st November from 1-3pm.

### **Suggested format**

You may choose to use Rmarkdown / powerpoint / keynote or any other style of presentation. Each team member must be part of the presentation (whether speaking, dancing, singing or operating the slides).

There is no predefined presentation format, however you are expected to cover most components of a research paper. In other words, it should consist of: Aim, Background, Methods and materials, Results, and Conclusion

## Reflection

You are required to submit a word document or similar providing information on your team work and reflections as detailed below. This is worth 5% of your final mark in STAT3x14 and each team member will receive an individual mark. On submission of the information below, you agree that your reflections are a genuine and independent account. You have tried to be as objective as possible. You have stood back and tried your best to view the experience objectively.

|  |  |
| --- | --- |
| Length: | Approx. 500 words |
| File type: | pdf, word doc |
| File name: | SID\_reflection |
| Due date: | 11:59pm Friday 9th November |

### **Format of reflection**

Team Name:

Your name /Student Number:

Other Group Members: [Name/Student Number, etc]

* 1. Meetings you attended: dates/time attended + location  [e.g. Meeting 1- ‘Getting started’ Fisher Library, 25/09/17, 2-4pm; Meeting 2 – ‘Moving forward’ online via Collaborations, Canvas, 4/10/17, 9-11am]
* 2. List and outline the tasks you completed
* 3. Individual reflection  on

1. What did you learn from being part of a group?  [Your reflections should include commentary on yours and the group’s teamwork skills, organisational and time management skills and collaborative skills]
2. What did you learn from completing the task?  [Your reflections should include commentary on yours and the group’s investigative and thinking skills]

Peer to peer assessment of individual contribution to team work

You must complete a separate survey for each team member including yourself. On the survey of yourself provide only your student number. Then complete a separate survey for each of the other STAT3x14 team members. On each of the surveys of other team members include your student number as well as the student number of the team member you are surveying.

1. Fill out separate surveys (Student Team Assessment.docx) for each team member [including yourself] using only student numbers;
2. Combine your completed survey sheets for each team member, including yourself, into one document for submission.

On submission of the surveys, you declare the ratings are a genuine and independent account. You have tried to be as objective as possible. You have stood back and tried your best to view the experience objectively.

## Team meeting minutes

Each team must organise at least and preferably no more than 3 meetings in total for:

1. getting organised;
2. moving forward; and,
3. finalising work

Create a team collaborative document for recording meeting minutes and provide the information below:

### **1. List the team name and group members’ names and student numbers**

### **2. Meeting one**

Getting Organised

Date: …………………Time………………..Location.................................................

Attendance/Apologies: Who is present? Has anyone given apologies?

Agenda: Discussing what is required; identifying who will do what before the next meeting; sharing tasks equally; developing a timeline; identifying when to meet. Provide below a summary of the minutes of the meeting under the following headings

1. Decisions made: [list what needs to be done and provide a timeline]
2. Tasks allocation: [list student name and task allocation]
3. Subsequent meeting times: [list where and when]

* MEETING TWO Moving Forward
* MEETING THREE Finalising Work

### **3. Subsequent meetings**

Provide a separate summary of the minutes of each subsequent meeting. Your summary must include the following headings:

1. Title of the meeting
2. Decisions made
3. Tasks completed since the last meeting
4. Who completed the tasks
5. Where to from here

For example:

Meeting two:

Title  [e.g. Moving Forward]

[date, time, place]

[attendees/apologies]

Decisions made?

Tasks completed since the last meeting?

Who completed each task?

Where to from here?

Based partially on Bird (2009, p.3) and University of Sydney (2009, p.6)