Statistical Methods 2: Assessment Plan

Personal portfolio (30%)

On Tuesday of Weeks 13-16, 19-20 and 22-24 an assignment will be given and its solutions should be submitted the same week, on Friday. These submissions will form the portfolio component of the final mark.

These assignments will be computer based and will be designed so that, by working on them, the students learn (i) how the methods covered in class can be applied in practice using R and (ii) to use these methods to solve practical problems.

The weekly computer lab sessions will be used to support the students with this work.

The criteria for this part of the assessment will include:

- clarity of the computer code,
- when an R function is used to implement a method covered in the lectures: clarity of the explanations regarding what this function computes and how it works,
- clarity and relevance of the statistical analysis conducted.

Assessed coursework (40%)

This part of the assessment has two components:

- Presentation (20%): On Friday of Week 18 the students will be asked to choose a reading related to the material taught during Weeks 13-16. The week after, on Friday, each student will give a 10-minute presentation.

  The slides will count for 70% of the mark, with the following main marking criteria:

  - Content of the slides (choice and quantity of the material discussed),
  - Clarity of the slides, correctness of the mathematics and suitability of the notation used,
  - Quality and relevance of the numerical experiments (if applicable).

  The presentation itself will count for 30% of the mark, with the following main marking criteria:

  - Choice and quantity of the material discussed during the presentation (compared to the material contained in your slides),
  - Pace and clarity of the presentation,
  - timing (i.e. finish on time or not).

- Homework (20%): On Friday of Week 20 a computer based homework will be given and its solutions should be submitted the week after, on Friday. The criteria for this part of the assessment are the same as for the portfolio submissions.

Group project (30%)

There will be a joint project for Statistical Computing 2 and Statistical Methods 2, where the computational aspects of the project will be assessed for the Statistical Computing 2 project mark and the methodological aspects will be assessed for the Statistical Methods 2 project mark. The deadline for submitting the group project is June 5th.

Each group, composed of 2 or 3 members, will use a provided data set to

- perform statistical modelling of the data, using computationally intensive statistical methods;
- use the computational skills covered in Statistical Computing 2 to build an efficient implementation (e.g. using C++ and parallelization);
- write a report which explains and justifies the methodology that has been used, as well as presents the outcome of the project.

The criteria for this part of the assessment will include:

- the relevance of the statistical approach used;
- the relevance of the algorithm(s) used to approximate all the relevant quantities;
- the clarity and efficiency of the code;
- the explanation of the results.

The students are strongly encouraged to create a well documented and tested R package containing the code for their project, and to provide access to it via GitHub. The results of their analysis and computations should be reproducible and the software requirements of the project code (e.g., C++ libraries) should be clearly stated.