Guidelines for
oral presentations & exercise reports

TMA4300: Computer Intensive Statistical Methods
(Spring 2016)

Andrea Riebler

If you have questions, . . .

. . . do not hesitate to ask!

Xin is the main contact person regarding exercises.

1. You get help in the assigned exercise classes. Either Xin and/or me will be present to answer your specific questions.

2. You can discuss with others. Also questions and discussions after/during the oral presentations are encouraged.

3. You can send an email to Xin (xin.luo@math.ntnu.no)

General points

- The exercises have to be done using the statistical package R.

- Comment your code (ideally in English). There should be almost as many comments as code.

- Use reasonable variable names.

- Do operations on vectors instead of using for-loops. For example

  ```
  x = log(runif(n))
  ```

  runs much faster than

  ```
  u = runif(n)
  for (i in 1:length(u))
      x[i]=log(u[i])
  ```

- Check your code!!! Does it run? Is it correct?

Do computations on log-scale

- Probability calculations often involve taking the ratio of very big numbers to produce a moderate-sized number. Calculating this may cause overflows.

- Take the logarithm of the expression you want to evaluate and then exponentiate the result.

- Example:

$$\frac{200!}{190! \cdot 10!} = \exp(\log(200!) - \log(190!) - \log(10!))$$

In R:

```
> lfactorial(200)
[1] 863.232
> log(factorial(200))
[1] Inf
```

Oral presentation

- Each presentation should be about 7 minutes.
- Give a rough overview of the solution (not all details are needed)
- Emphasize tricky points and show how you handled them.
- Use a presentation ($\leq$ 5 slides) to show figures and results.
- Practice and time your presentation.
- There should be some discussion/interaction between the presenting group and the audience. **This is the chance to discuss your solution!**

Using computer slides

- Do not make the slide too full (≤ 7 lines of text).

- Take care of the font size (not too small).

- Colours and text in figures must be visible!
  (Do not use yellow, or too tiny axis labels, ...)

Exercise report

- Submit one report per group and write your student numbers on the report.

- Computations, code, figures and interpretations/descriptions should be in ONE (preferably a pdf) document!

- Please be careful that the file size does not get too big, for example by avoiding high resolution figures.

- If you are familiar wit LaTeX you might want to use:
  - Sweave (`http://leisch.userweb.mwn.de/Sweave/`)
  - Knitr (`http://yihui.name/knitr/`)

  but this is not obligatory.

Evaluation criteria

All handed-in exercises must be found acceptable to be admitted to the exam. That means there must be a resonable attempt to solve all exercises (If you have problems ask!!!) Each of the exercises counts 10% of the final mark. Thus, in total the exercises account for 30% of the final mark.