Teaching elements

- ★ Digital lecture: A number of videos each week.
    - self study, must be done before the Monday lecture!
- ★ Physical lecture: Mondays 12.15-14.00.
    - larger examples related to theory in digital lecture
- ★ Interactive exercise session: Thursdays 14.15-16.00.
    - smaller examples/problems
    - you try first, afterwards lecturer discuss on blackboard
    - you need to be up to date with lectures

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* ★ Three projects.
    * – all obligatory, should be handed in, returned with comments
    * – last project is given a letter grade, counts 30% on course grade

Plan of the course

- ⋆ Week 1: Introduction: What is lifetime analysis?
    - – new ways to describe a lifetime distribution
- ⋆ Week 2-3: Martingales, i.e. probability theory
- ⋆ Week 4: Project 1
- ⋆ Week 5-7: (Non-parametric) inference
- ⋆ Week 8: Project 2
- ⋆ Week 9-11: (Semi-parametric) inference for regression models
- ⋆ Week 12: Parametric models and inference
- ⋆ Week 13: Project 3
- ⋆ Week 14: Frailty (hierarchical) models and inference

Home page

- ⋆ Home page: `https://wiki.math.ntnu.no/tma4275/2024v/start`

- ⋆ Curriculum, two books, one with theory, one with R

- ⋆ Detailed lecture and exercise plan:
  `https://wiki.math.ntnu.no/tma4275/2024v/plan`

- ⋆ Videos and related problems (many with solutions):
  `https://tma4275.math.ntnu.no`

    - – organised in topics and subtopics
    - – videos available both from topic pages and subtopic pages
    - – problems only available from subtopic pages
    - – use the solutions wisely! The solutions include also R code

- ⋆ Digital forum: `https://mattelab2024v.math.ntnu.no/c/`
  `tma4275-levetidsanalyse/6`

Projects

Parts of the projects are to be done using R. An introduction to R can be found in the course web page (see Statistical software). The project report should consist of one (and only one) pdf-file. The project report should include derivation of formulas that you are developing and/or using in your implementations. The project report should also include the R code you have used to solve the project and the plots you have generated. Associated to the various plots there should be captions explaining the contents of the plots, and in addition all the plots should be explained and discussed in the main text of the report.

The project report should be formulated as a scientific report. In particular, it should be possible to understand what you have done without reading the questions in the problem text. Moreover, the text in the project report should consist of full sentences and proper punctuation should by used throughout, also in the equations! All results you present should also be discussed, what can you (and the world) learn from your results? The project text should be written so that it is easy to follow by your fellow students in TMA4275 Lifetime analysis.

The two first projects can be done alone or in groups of two or three persons. The last project should be done alone.

This first week

- ⋆ First digital lecture this week! Must be studied before Tuesday!
- ⋆ First physical lecture tomorrow, Tuesday, morning.
- ⋆ First interactive exercise session on the coming Tuesday.

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- ⋆ Questions/comments?