Probability Theory
Course formalities

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OVERVIEW TODAY

- ► Course outline
- ► Introduction, recap of some background
- ► What is probability?
- ► Functions of random variables
- ► Multivariate random variables

COURSE OUTLINE

- **6 Lectures**: theory interleaved with illustrative solved examples. (Krzysztof)

- **6 Seminars**: problem solving sessions + open discussions. (Sarah)

- **1 Recap session**: Recap of the course. (Sarah)

COURSE LITERATURE

- ► Gut, A. *An intermediate course in probability*. 2nd ed. Springer-Verlag, New York, 2009. ISBN 978-1-4419-0161-3
- ► Slides from last year
- ► Chapter 1: Multivariate random variables
- ► Chapter 2: Conditioning
- ► Chapter 3: Transforms
- ► Chapter 4: Order statistics
- ► Chapter 5: The multivariate normal distribution
- ► Chapter 6: Convergence

EXAMINATION

- The examination consists of a written exam with max score 20 points and grade limits:
  A: 19p, **B**: 17p, **C**: 14p, **D**: 12p, **E**: 10p.
- You are **allowed to bring** a pocket calculator to the exam, but no books or notes.
- The following will be **distributed with the exam**:
  - Table with common formulas and moment generating functions (available on the course homepage).
  - Table of integrals (available on the course homepage).
  - Table with distributions from Appendix B in the course book.
- Active participation in the seminars gives **2 bonus points** to the exam.

BONUS POINTS

- ▶ To earn the bonus points a student must be present and active in at least 5 of the 6 seminars, so maximally one seminar can be missed regardless of reasons.

- ▶ Active participation means that the student has made an attempt to solve every exercise indicated in the timetable before respective seminar and is able to present his/her solutions on the board during the seminar. Active participation also means that the student gives help and comments to the classmates' presented solutions.

- ▶ In the seminars, for each exercise a student will be selected, using Sarah's method, to present her/his solution.

- ▶ Exercises marked with * are a bit harder and it is ok if you are not able to solve these.

- ▶ Exercises marked with self-study relate directly to the lecture. Depending on Sarah's decision they might or might not be solved at the seminar sessions.

Course homepage (one of the alternatives)

- GitHub: STIMALiU/ProbTheoryCoure

XOR

- https://www.ida.liu.se/~732A63/ (select English)

XOR

- LISAM