

- Faculté des sciences
- www.unine.ch/sciences

Bayesian statistics 1 (3ST2018)

Filières concernées	Nombre d'heures	Validation	Crédits ECTS
Master en statistique	Cours: 2 ph	Voir ci-dessous	3

ph=période hebdomadaire, pg=période globale, j=jour, dj=demi-jour, h=heure, min=minute

Période d'enseignement:

- Semestre Printemps

Equipe enseignante

Dr. Clément Chevalier

Contenu

Basics of Bayes formula and motivation/comparison to frequentist approaches. Discrete priors. Continuous priors (conjugacy, Jeffrey's prior, improper priors). Computations with the posterior : Monte-Carlo integration and rejection sampling.

Forme de l'évaluation

A) First attempt

CA graded: written 2 hours exam during the last week of the lecture.

B) Second attempt (re-examination):

unless the professor and the student both agree on a different date, the reexamination will take place at the same time as the examination for the students of the following year.

The student will pass the 2 hour written examination under the same conditions as the ones which apply to the students of the following year.

This includes possible changes regarding the program of the lecture.

Documentation

C. Robert (2007). The bayesian choice: From Decision-Theoretic Foundations to Computational Implementation. Springer Texts in Statistics

A. Gelman, J. B. Carlin, H. S. Stern, D. B. Rubin (2003). Bayesian Data Analysis, second edition, CRC Press.

P Lee (2012) Bayesian Statistics: An Introduction. Fourth Edition

C. Robert, Casella, C. (2009). Introducing Monte Carlo Methods with R. Springer-Verlag, New York.

Pré-requis

- Strong background in probability
- Strong background in R programming
- Notions on maximum likelihood estimation

Forme de l'enseignement

- 3 ECTS credits
- First half of Spring Semester
- Compulsory course for the master in statistics
- Learning activities: 4 hours lectures/exercise series per week.