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

Bayesian statistics (3ST2015)

Filières concernées	Nombre d'heures	Validation	Crédits ECTS
Master en statistique	**Cours: 4 ph**	**controle continu: 1**	6

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

Période d'enseignement:

- Semestre Printemps

Equipe enseignante:

Dr. Jean-Marc Freyermuth (bureau B213, bâtiment Emile Argand)
Institut de statistique
Av. de Bellevaux 51 , CH-2000 NEUCHATEL
Office phone :+41 32 718 28 24 - email : jean-marc.freyermuth@unine.ch

Objectifs:

By the end of the lecture, the student will be familiar with the principles and the basic techniques in Bayesian statistics

Contenu:

- bayesian models for some classical data generating processes: Bernoulli, binomial, multinomial, gamma, gaussian linear regression
- bayesian decision theory
- tests and confidence regions
- point estimation
- choice of prior distributions
- bayesian calculations
- introduction to bayesian nonparametrics

Forme de l'évaluation:

A) First attempt
CA graded: written 3 hours exam during the last week of the semester.

B) Second attempt

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 3 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:

inferential statistics, probability, R programming

Forme de l'enseignement:

6 ECTS credits
Elective course for master in statistics
Spring semester
Course + practical exercises

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

Bayesian statistics (3ST2015)