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

Bayesian statistics (3ST2015)

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. Pierre-Yves Deléamont
Institut de statistique
Av. de Bellevaux 51 , CH-2000 NEUCHATEL

Contenu

This course will, if time permits, cover the following topics:
- The Bayesian choice
- Foundations of Bayesian inference
- Single-parameter models
- Introduction to multi-parameter models
- Hierarchical models
- Introduction to Bayesian computation: rejection sampling, importance sampling, Metropolis-Hastings algorithm, Gibbs sampling

Forme de l'évaluation

CA graded: The final mark will be based on a 2-hour written exam which takes place during the last week of the lecture.

Retake attempt : must be registered at next session and coordinated with professor (not in Pidex).

Documentation

- Robert, C.P., The Bayesian Choice: from Decision-Theoretic Foundations to Computational Implementation (2nd edition). Springer, 2007.
- Gelman, A., Carlin, J., Stern, H., Dunson, D., Vehtari, A., and Rubin, D., Bayesian Data Analysis (3rd edition). Chapman and Hall, 2013.
- Albert, J., Bayesian Computation with R (2nd edition). Springer, 2009.
- Robert, C.P., and Casella, G., Introducing Monte Carlo Methods with R. Springer, 2010.

Pré-requis

Inferential statistics, Probability, R programming

Forme de l'enseignement

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