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

Generalized linear model (3ST2008)

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:

I. Basic theory of generalized linear models
- Introductory examples
- Definition and fundamental concepts
- Maximum likelihood estimation
- Confidence intervals, tests, goodness of fit

II. Applications to various data types
- Binomial data
- Polytomous data
- Count data
- Positive continuous data

III. Extensions of the basic generalized linear model
- Generalized estimating equations and generalized linear mixed models
- Generalized additive models

Forme de l'évaluation

CA graded: The final mark will be based on a data analysis report. Students retaking this course will be evaluated under the same conditions as the ones which apply to the students of the current year. This includes possible changes in the course contents.

Documentation

- McCullagh, P., and Nelder, J.A., Generalized Linear Models (2nd edition). Chapman and Hall, 1989.
- Dobson, A.J., and Barnett, A.G., An Introduction to Generalized Linear Models (4th edition). Chapman and Hall, 2018.
- Faraway, J.J., Extending the Linear Model with R: Generalized Linear, Mixed Effects and Nonparametric Regression Models (2nd edition). Chapman and Hall, 2016.

Pré-requis

Linear regression models, Inferential statistics and knowledge of R.

Forme de l'enseignement

- 3 ECTS credits
- Compulsory course for master in statistics
- Spring semester