

- Faculté des sciences
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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.
In case of failure at their first attempt, students will need to submit a new data analysis report following the lecturer's guidelines.

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