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

Statistical learning (3ST2020)

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 is meant as an overview of commonly used methods in statistical learning. If time permits, the following topics will be covered:
- Fundamental ideas of statistical learning theory
- Basic linear regression
- Basic classification
- Resampling techniques
- Basis expansions
- Regularization
- Model selection
- Tree-based methods
- Support vector machines
- Basics of neural networks

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 exam session and coordinated with professor (not in Pidex).

Documentation

- James, G., Witten, D., Hastie, T., and Tibshirani, R., An Introduction to Statistical Learning: with Applications in R. Springer, 2013.
- Friedman, J., Hastie, T., and Tibshirani, R., The Elements of Statistical Learning: Data Mining, Inference and Prediction (2nd edition). Springer, 2009.
- Bishop, C.M., Pattern Recognition and Machine Learning. Springer, 2006.
- Goodfellow, I., Bengio, Y., and Courville, A., Deep Learning. MIT Press, 2016.

Forme de l'enseignement

- 3 ECTS credits
- Spring Semester
- Elective course for master in statistics (choose 18/24 ECTS)