a place of mind
THE UNIVERSITY OF BRITISH COLUMBIA

Department of Statistics
Website :
www.stat.ubc.ca

3182 Earth Sciences Bldg
2207 Main Mall
Vancouver, BC V6T 1Z4

Telephone: (604)822-0570
Facsimile: (604) 822-6960

STAT 406, Methods for Statistical Learning, 2018/19 Term 1
Instructor: Matías Salibián-Barrera

Time and Place: T/TR 8:00-9:30 AM, ESB 1012

Course description: Modern statistical learning methods, including: unsupervised learning methods, predictive models (linear and otherwise), variable selection methods, tree-based methods, neural networks, boosting, support vector machines, and robust estimators. Emphasis will be on applications and interpretation.

Prerequisites: One of STAT 306, CPSC 340.

Textbook/course materials: Although the course does not have a formal textbook, the following books will be useful references. They are available on-line from the university library.

> An Introduction to Statistical Learning, James, G., Witten, D., Hastie, T., and Tibshirani, R., 2013, Springer, New York.
>
> The Elements of Statistical Learning, Hastie, T., Tibshirani, R. and Friedman, J., 2009, 2nd edition, Springer, New York.
>
> Modern Applied Statistics with S, Venables, W.N. and Ripley, B.D., 2002, 4th edition, Springer, New York.

Topics: Supervised and unsupervised learning. Prediction models: parametric (linear, non-linear) and non-parametric models. Variable selection: step-wise methods, sequencing, shrinkage methods. Regression and classification trees. Boosting. Random Forests. Neural Networks. Support Vector Machines for regression and classification. Robust estimators.

Notes: Stat 406 was formerly Stat 447B. Students will NOT be given credit for both Stat 406 and 447B

Evaluation scheme: please refer to the slides of Lecture 1, available on-line at https://github.com/msalibian/STAT406/Lecture1