

STAT 306 Finding Relationships in Data January-April 2018

Lecture Times: Tuesday, Thursday 9:30am-11:00am, ESB 1012
Instructor: Harlan Campbell (harlan.campbell@stat.ubc.ca)
Office hours: ESB 3167, Thursdays at 11:00am
3 credits

Lab times:

L2A - Tuesday, 12pm-1pm, ESB 1042 ,
L2B - Tuesday, 4pm-5pm, ESB 1046
L2C - Friday, 9am-10am, ESB 1046
L2D - Friday, 3pm-4pm, ESB 1046

Website: <https://harlanhappydog.github.io/STAT306/>

Prerequisite: One of MATH 152, MATH 221, MATH 223 and one of STAT 200, STAT 241, STAT 251, BIOL 300 and one of MATH 302, STAT 302.

Calendar description: Modeling a response (output) variable as a function of several explanatory (input) variables: multiple regression for a continuous response, logistic regression for a binary response, and log-linear models for count data. Finding low-dimensional structure: principal components analysis. Cluster analysis.

Text: We will be using custom course notes by Prof. Harry Joe, available at the UBC bookstore. Main statistical software in lectures and labs in R.

This course emphasizes (i) applications of statistical methods such as multiple regression, binary regression, principal component analysis; (ii) the use of statistical software to do the computations; and (iii) interpretation of statistical analysis and output of statistical software. There is some linear algebra (with matrix representations) to show how multiple regression is computed in software, and there is some probability (mainly expected values, variances and covariances for linear combinations) to show how standard errors are determined for parameter estimates and predictions.

Homework: There will be seven regular homework assignments through WebWork. Each homework assignment is worth 3% of your final grade.

Exams: There will be one midterm exam and a final exam. If the midterm exam is missed, its weight is transferred to the final exam. The midterm date is March 1.

Course Evaluation: Your grade will be calculated according to the following weighting scheme: Labs 9%, Homeworks 21%, Midterm 30%, Final 40%.