

(see Course Descriptions under the year applicable: <http://www.ucalgary.ca/pubs/calendar/>)

<u>Topics</u>	<i>Syllabus</i>	<u>Number of hours</u>
R basics, exploring and transforming data, numerical summaries and graphical displays, examining relationships between two variables		4
Simple linear regression, method of least squares, model assumptions, parameter estimation, statistical inferences, goodness of fit, prediction and weighted least squares		5
Factor coding, simple linear regression involving factorial variable, ANOVA		3
Vector and matrix algebra, matrix operations, least squares using matrices		3
Multiple linear regression and model fitting using R, parameter estimation and hypothesis testing about regression coefficients, model selection, bootstrapping regression models		6
Regression diagnostics, model assessment, outliers, influential points and collinearity, non-normality, non-constant variance, non-linearity		6
Polynomial regression, variable transformation and non-linear regression		4
Variable selection in high-dimensional data, application using R		3
Introduction of other regression models such as generalized linear models, time series models and survival models		2
TOTAL HOURS		36

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