



**STATISTICS 350-3**  
**LINEAR MODELS IN APPLIED STATISTICS**

**Summer 2006**  
**DAY COURSE**

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*Students requiring accommodations as a result of disability, must contact the Centre for Students with Disabilities 604-291-3112 or csdo@sfu.ca*

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**Instructor:** [Dr. R. Altman](#) (SC K10551)

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**Prerequisites:**

STAT 285 and MATH 251.

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**Textbook:**

*Applied Linear Statistical Models (w/student CD)* (5th Edition) by Kuno5(els)10 1ps1n)BcchtsNchro) and application theory of hypothesis tests and confidence intervals.  
Introduction to weighted least squares and generalized linear models.

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2. Estimation methods: Least-squares, maximum likelihood. Algebraic and geometrical interpretations.
3. Properties of least-squares estimators: Mean, variance, and covariance of least-squares estimators. Expected value of residual sum of squares.
4. Diagnostic tools: Residual plots, multicollinearity, outliers, influential observations, goodness-of-fit tests.
5. Inference: Interpretation of the parameter estimates. Hypothesis tests, p-values, confidence intervals, prediction and intervals. Inferences for a