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Course:      MATH 3P82 (Regression Analysis)
Instructor:  J. Vrbik
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Topics to be covered

Simple linear regression and correlation: Method of maximum likelihood, Least-squares estimation, Normal equations, Confidence intervals, Hypotheses testing, Model adequacy, Weighted regression, Coefficients of correlation and determination, Large sample theory.

Multiple linear regression: Multivariate Normal distribution, partial correlation coefficient, Regression coefficient estimation, Redundancy test, Stepwise regression.

Polynomial regression: Coefficient estimation, Optimal model.

Indicator variables and their use in regression analysis.

Nonlinear regression: Model building, Levenberg_Marquardt technique.

Robust regression: Laplace and Cauchy distribtutions.

Time series: Markov and Yule models.

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Marking Scheme: Assignments          - 30%
                Two Midterms         - 15% each
                Final Exam           - 40%
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