COURSE DETAIL

LINEAR STATISTICAL ANALYSIS
Country Hong Kong
Host Institution University of Hong Kong
Program(s) University of Hong Kong
UCEAP Course Level Upper Division
UCEAP Subject Area(s) Statistics
UCEAP Course Number 123
UCEAP Course Suffix
UCEAP Official Title LINEAR STATISTICAL ANALYSIS
UCEAP Transcript Title LINEAR STAT ANALYS
UCEAP Quarter Units 5.00
UCEAP Semester Units 3.30

Course Description

The analysis of variability is mainly concerned with locating the sources of the variability. Many statistical techniques investigate these sources through the use of linear models. This course presents the theory and practice of these models. Topics include: simple linear regression: least squares method, analysis of variance, coefficient of determination, hypothesis tests and confidence intervals for regression parameters, prediction; multiple linear regression: least squares method, analysis of variance, coefficient of determination, reduced versus full models, hypothesis tests and confidence intervals for regression parameters, prediction, polynomial regression; one-way classification models: one-way ANOVA, analysis of treatment effects, contrasts; two-way classification models: interactions, two-way ANOVA for balanced data structures, analysis of treatment effects, contrasts, randomized complete block design; universal approach to linear modeling: dummy variables, multiple linear regression representation of one-way and two-way (unbalanced) models, ANCOVA models, concomitant variables; regression diagnostics: leverage, residual plot, normal probability plot, outlier, studentized residual, influential observation, Cook's distance, multicollinearity, model transformation.

Language(s) of Instruction
English

Host Institution Course Number
STAT3600

Host Institution Course Title
LINEAR STATISTICAL ANALYSIS

Host Institution Campus

Host Institution Faculty

Host Institution Degree

Host Institution Department

Statistics & Actuarial Science

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