POLİS AKADEMİSİ BAŞKANLIĞI ADLİ BİLİMLER ENSTİTÜSÜ	
Course Code	APİ-303
Name of the Course	General Linear Models
Required / Elective	Elective
AKTS	7,5
Semester	Spring
Programme	ADLİ PSİKOLOJİ

COURSE DESCRIPTION

This course introduces students to techniques of data analysis and statistical inference based on the general linear model. The bulk of the course is devoted to linear regression analysis of continuous outcomes. In addition, techniques for logistic regression (for dichotomous and categorical outcomes) are covered.

COURSE OBJECTIVES

By the end of the course the student should demonstrate the ability to:

- identify continuous and discrete (or categorical) variables as either dependent or independent, and choose appropriate statistical procedures for their analysis;
- describe relationships between predictor variables and a continuous outcome variable;
- calculate point estimates and confidence intervals and conduct hypothesis testing for regression slopes;
- delineate assumptions of linear statistical models and examine data to evaluate their conformity to those assumptions;
- formulate and interpret multiple regression models appropriate for various research problems and interpret computer output relevant to those models;
- recognize similarities and differences between regression and analysis-of-variance models;
- describe relationships between predictor variables and a dichotomous outcome variable via binary logistic regression;
- calculate and interpret regression parameters for binary logistic regression models;
- conduct analyses to diagnose problems with multicollinearity, influential points, etc., for binary logistic regression;
- write coherent summaries and interpretations of data analyzed by the above procedures.

EVALUATION

Midterm exam, final exam, assignments.

COURSE PLAN

WEEK 1	Syllabus & Intro
WEEK 2	Simple regression
WEEK 3	Simple regression
WEEK 4	Multiple regression
WEEK 5	Multiple regression
WEEK 6	Multiple regression

WEEK 7	Dummy, interaction, and relation to ANOVA
WEEK 8	Midterm Exam
WEEK 9	ANCOVA model
WEEK 10	ATI model, Nonlinear Regression
WEEK 11	Logistic Regression (Binary)
WEEK 12	Logistic Regression (Binary)
WEEK 13	Logistic Regression (Ordered categorical)
WEEK 14	Review for final

Suggested Bibliography for the Course:

Cohen, J., Cohen, P., West, S. & Aiken, L. S. (2010). *Applied Multiple Regression/Correlation Analysis for the Behavioral Sciences* (3rd ed).