

STATISTICS 330-3

LINEAR MODELS IN APPLIED STATISTICS I

Spring 2002
DAY COURSE

Instructor: MADJID AMIR

Prerequisites:

MATH 232 and STAT 270 (MATH 272). Students with credit for MATH 372 may not take STAT 330 for further credit.

Textbook:

Probability and Statistics for Engineering and the Sciences (5th ed), by J. Devore, published by Duxbury.

Course Description:

Standard statistical inference procedures for analysing experimental and survey results.
Statistical model building. Foundations of experimental design.

Outline:

1. Review of One-Sample and Two-Sample Problems.
2. One-Way Analysis of Variance: Comparison of several treatment means. Model and distribution assumptions. The F-test. Multiple comparisons.
3. Elementary Design of Experiments: Randomized blocks and two-way factorial designs.
4. Hypothesis tests: Type I and II errors, level, power, sample size calculations.
5. Likelihood Methods: Maximum likelihood es