Stat 705 Linear Models
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Office hours: Wed 11AM or by appointment.
jstauden at math.umass.edu
www.math.umass.edu/~jstauden/stat705.html (There's not much there yet!)

Textbook
Plane Answers to Complex Questions (any edition) (Ronald Christensen)
We will use the book a lot.

Grading
Problem Sets: More or less weekly (33%)
Midterm Exam: In class, Wed October 18th (33%)
Final Exam: Self-scheduled after December 11th, 3 hours (34%)

Prerequisities
You will need to be comfortable with applied linear algebra including:
>   matrix arithmetic and manipulation: addition, multiplication, inverse, transpose,
>   block matrix arithmetic
>   concepts: identity, rank, basis, column space, null space
We will also use ideas from probability and statistics including:
>   probability distributions, moments, independence, correlation, parametric models,
>   likelihood, confidence intervals / testing

Tentative Schedule / Class Outline

Part 1:
>   September 6 – September 25
>   Random Vectors, Multivariate normal distribution, Quadratic forms

Part 2:
>   September 27 – October 16
>   Least squares, Gauss-Markov theorem, and Projections (full rank models)

Part 3:
>   October 23 – November 17
>   Estimability, Testing (including non-full rank models)

Part 4:
>   November 23 – End of Semester
>   Multivariate analysis and related material