Students requiring accommodations as a result of S3 ΠC2atistics

Instructor: Dr. Tim Swartz

Prerequisite:

STAT 330 and STAT 350.

Textbook:

No textbook required.

References:

Bayes and Empirical Bayes Methdos for Data Analysis (Carlin &Louis)
Bayesian Data Analysis (Gelman, Carlin, Stern & Rubin)

Calendar Description:

The Bayesian approach to statistics is an alternative and increasingly popular way of quantifying uncertainty in the presence of data. This course considers comparative statistical inference, prior distributions, Bayesian computation, and applications.

Outline:

1. The basics:
    the Bayesian paradigm
    comparative statistical inference
2. Priors:
    conjugate priors
    prior elicitation
    reference priors
    improper priors
    discrete mass priors
3. Computations:
    quadrative
    importance sampling
    Markov chain Monte Carlo

4. Other topics:
    testing via Bayes factors
    interval and point estimation
    elementary decision theory
    hierarchical models
    Dirichlet process
5. Applications:

Grading Scheme:

Assignments – 20marks
Midterm 1 – 15marks
Midterm 2 – 15 marks
Final – 50marks

Students should be aware that they have certain rights to confidentiality concerning the return of course papers and the posting of marks. Please pay careful attention to the options discussed in class at the beginning of the semester. Students are