

22S:138, Bayesian Statistics  
Fall 2005  
Instructor: Cowles  
Information on Midterm 1

- Midterm 1 will be given Fri. 09/30 in class.
- It will cover the following topics:
  - Probability: addition rule, multiplication rule, conditional probability, independence, law of total probability
  - Probability: Bayes' theorem
  - Assessing a subjective probability
  - Priors
    - \* informative and noninformative
    - \* conjugate and nonconjugate
    - \* Jeffreys' priors
  - Likelihoods
  - Posterior distributions and inference using them
  - Posterior predictive distributions
  - Robustness
  - Bayesian inference for one-parameter models
    - \* binomial probability
    - \* Poisson rate parameter
    - \* normal mean (variance assumed known)
    - \* normal variance or precision (mean assumed known)
    - \* possibly others
  - use of R/Splus functions that have appeared in lab, lecture, or homework
- Questions will be mostly short answer, with a little calculation. Some will involve interpreting computer output that I will provide.
- You may bring one 8-1/2 x 11 sheet of paper with your own notes on it, a photocopy of the table of distributions from your textbook, and a calculator.