Course Outline

Single-parameter models

(1) Estimating a probability from binomial data (2.1)

(2) Posterior, data, and prior (2.2-2.3)

(3) Informative prior: conjugate prior and non-conjugate prior (2.4)

(4) Estimating normal mean with variance is known (2.5)

(5) Normal distribution with known mean and unknown variance, Poisson distribution, Exponential distribution (2.6)

(6) Example: cancer rate (2.7)

(7) Noninformative prior (2.8)

R Examples:

1. R code for binomial data and normal data
2. Chapter 2—3, “Bayesian Computation with R”

Homework:

1. Sec Exercise: 2.1 (5 pts), 2.5 (20 pts), and 2.20 (15 pts)
2. Programming: 2.11 (20 pts)

3. Reading Assignment: Chapter 2 of textbook, Chapter 2—3 of “Bayesian Computation with R”.