Bayesian methods
Lab notes

Lab 2
An introduction to BUGS and Bayesian updating, inference and prediction
in 2 standard data models: Normal and Poisson

Two educational BUGS examples for one-dimensional parameter models

Example 1
The univariate Normal model with unknown mean $\mu$ but known variance $\sigma^2$
Reference Congdon’s book: pag. 17, Example 2.1 Systolic Blood Pressure
Language BUGS Program 2.1 Systolic Blood Pressure
Subject Which is the mean blood pressure in the particular diagnostic group of the survey? and its likely level in a typical new patient in the same group? Has the particular diagnostic group blood pressure mean above or below the typical blood pressure of all adult males (= 125)?

Example 2
The Poisson model for event counts
Reference Congdon’s book: pag. 36, Example 2.15 Area mortality comparisons
Language BUGS Program 2.15 Trent Leukaemia Mortality
Subject In 1989, was the male myeloid leukaemia mortality in Derby similar to that in the remainder of the Trent region of England (of which Derby is part)?

The text of the examples (from Congdon’s book) and the related bugs programs (which can be downloaded at http://www.mrc-bsu.cam.ac.uk/bugs/weblinks/weblinkresource.shtml) are written down in norm1.b and pois.b (at the course web page).