## Bayesian book chapter list

1. The purpose of the book, and how best to use it.

**Part I: Understanding the Bayesian formula**

1. The subjective and the seemingly objective: An introduction to classical and Bayesian statistics.
2. Choosing an appropriate model for the data: specifying a likelihood.
3. The prior: representing your pre-investigation knowledge of the phenomena in question.
4. The last part of the Bayesian formula: the denominator.

**Part II: A practical guide to doing (and understanding) analytical Bayesian analysis**

1. An introduction to well known (and frequently used) probability distributions.
2. Conjugate priors and their uses in Bayesian data analysis.
3. Expressing uncertainty on parameters.
4. Objective Bayesian data analysis.
5. How to forecast in Bayesian statistics

**Part III: A practical guide to doing (and understanding) real life Bayesian analysis**

1. Leaving conjugate priors behind: MCMC.
2. Computational Bayes introduction part 1: Grid approximations.
3. Computational Bayes introduction part 2: the Metropolis-Hastings algorithm.
4. Computational Bayes introduction part 3: the Gibbs sampler.
5. An introduction to BUGs.

**Part IV: Regression analysis and hierarchical models**

1. Hypothesis testing and evaluating model fit.
2. Hierarchical models.
3. Linear regression models.

**Part V: GLM, Bayesian Decision Theory, and New advances in simulation.**

1. Generalised linear models.
2. Bayesian decision theory.
3. Advanced simulation techniques for Bayesian theorists.