

# Bayesian Statistics II – Year 2019

Prof. Argiento

- 1- Recap of the most common univariate models: Bernoulli beta model, Poisson gamma model, normal normal-inverse-gamma model.
- 2- Monte Carlo integration methods and its use in Bayesian Inference.
- 3- Non conjugate model example and justification.
- 4- Introduction to computational methods for non conjugate Bayesian models. An outline of the Markov chain Monte Carlo methods.
- 5- The Metropolis-Hastings and the Gibbs sampler algorithms.
- 6- The use of the OpenBUGS software to implement a Gibbs sampler in a Bayesian framework.
- 7- How to check the convergence of a Markov Chain Monte Carlo simulation algorithm.
- 8- Introduction to linear models (generalized linear models) in Bayesian setting: parameter estimation and variable selection via spike-and-slab priors.