STATS 225
BAYESIAN STATISTICS
University of California, Irvine
Winter 2018

SYLLABUS

Instructor	Time and Days
Michele Guindani Associate Professor Department of Statistics Email: michele.guindani@uci.edu Website: http://www.micheleguindani.info Phone: (949) 824-5968 Office Hours: W 1pm-2:30pm @ Bren Hall 2241	Lecture: TuTh 2:00- 3:20p DBH 1423 Discussion: F 9:00- 9:50 DBH 1423

COURSE WEBSITE: http://www.micheleguindani.info/teaching/stats225

CANVAS WEB SPACE: https://canvas.eee.uci.edu/courses/7637

COURSE DESCRIPTION:
The course will discuss the foundations of the Bayesian approach to statisticla inference.
Topics include a probabilistic foundation of the prior-to-posterior update via the Bayes theorem, and a discussion of posterior consistency, prior elicitation, Bayesian point-estimation, testing and credible regions, Markov Chain Monte Carlo calculation, Model choice, hierarchical and empirical Bayes estimation.

OBJECTIVES:
Learn foundation of Bayesian analysis, including how to conduct posterior and predictive inference; posterior consistency of Bayesian estimates; foundations of Bayesian estimation and testing; Bayesian calculation; hierarchical models.

REQUIREMENTS:
Prerequisite: STATS 205 and STATS 230.

TEXTBOOK:
Instructor Notes

Robert C.P. (2007) ***The Bayesian Choice: From Decision-Theoretic Foundations to Computational Implementation*****,** Springer

Ghosh J.K., Delampady M., Tapas, S. (2006) **An Introduction to Bayesian Analysis: Theory and Methods**, Springer

Hoff P.D. (2009) ***A First Course in Bayesian Statistical Methods****, Springer

GRADING POLICY:
For graduate students:
Homework (35%)
In class Midterm Exam (30%)
Take Home/Project Final (35%)

HOMEWORK POLICY:

- Homework can be completed in (fixed) groups of 2–3 students each. Everyone in
- the group will get the same score.
- Homework is due by 5pm on the due date.
- Homeworks need to be submitted in the EEE Dropbox on the CANVAS website, preferably as a PDF format or Rmd (R markdown) file.
  The timestamp recorded by the system for the upload of the file on the EEE Dropbox or the reception of the email will validate the submission of the homework at the required time.

ACADEMIC DISHONESTY POLICY
Students are responsible for adhering to the UCI Academic Honesty standards. Students are encouraged to talk to each other, the teaching assistants or the instructor about any homework assignment. However, this assistance is limited to the general and broad conceptual discussion of the problem. Any work turned in must be the original and independent work of each student.
Academic honesty is a requirement for passing this class. Any student who compromises the academic integrity of this course is subject to a failing grade. The work you submit must be your own. Academic dishonesty includes, but is not limited to copying answers from another student, allowing another student to copy your answers, communicating exam answers to other students during an exam, attempting to use notes or other aids during an exam, or tampering with an exam after it has been corrected and then returning it for more credit. If you do so, you will be in violation of the UCI Policies on Academic Honesty <see https://aisc.uci.edu/>. **It is your responsibility to read and understand these policies. Note that any instance of academic dishonesty will be reported to the Academic Integrity Administrative Office for disciplinary action and is cause for a failing grade in the course.**