SURV798Z: BAYESIAN METHODS

FALL, 2015

Meeting Time:
We will meet in 1208 Lefrak Hall every Tuesday 1:00-3:30 PM

First class: Tuesday, September 8, 2015
Last class: Tuesday, December 8, 2015

If you are unable to come to the classroom, you can attend the class live remotely using a software called BlueJeans and the following website:

https://bluejeans.com/899920512

You will be provided with a meeting ID and passcode on the first day of the class. You will also find additional instructions on the use of BlueJeans in the class website.

Instructors:
Dr. Partha Lahiri, Joint Program in Survey Methodology (JPSM), University of Maryland, College Park; Phone: 301-314-5903; FAX 301-314-7912; Email: plahiri@umd.edu

Dr. Daniel Bonnery, Joint Program in Survey Methodology (JPSM), University of Maryland, College Park; FAX 301-314-7912; Email: daniel.bonnery@gmail.com

Office hours:
Tuesday, 3:30-4:30PM or by appointment (please send me an email to make an appointment)

Prerequisites:
The course is designed for both Master’s and PhD students in survey methodology, statistics, biostatistics and related areas. A prerequisite for this course is a mathematical statistics course at the Master’s level (e.g., UMD STAT/SURV 420 or equivalent.) If you are unsure about your qualifications for the course, please contact us.

Webpage for the course:
Course materials will be posted on the following JPSM Moodle website:

http://jpsmonline.umd.edu

It is the student’s responsibility to check the website for additional readings, homework, and other important information. We will mainly follow class lecture notes to be posted on the JPSM Moodle website on a regular basis.

Lectures
Video recording of the lectures can be accessed using the following link:

http://www.jpsmclasses.umd.edu/Mediasite/Catalog/catalogs/default
Text Book:

Other readings/websites will be provided as needed.

Additional Reference:

Course Outline:
The purpose of the course is to provide a blend of theory, methods, and applications. The course will begin with a review of relevant concepts of classical statistical inference, which is needed to compare different paradigms. Following this, elements of the Bayesian inference and decision theory will be introduced in order to emphasize the advantages and challenges of the Bayesian methods. The course will cover a wide range of topics in Bayesian analysis, including Bayesian computations and high-dimensional problems. The course emphasizes data analysis via modern computer methods and R freeware packages that will be introduced and used throughout the course.

Grading:
Your final course grade will be based upon homework assignments (50%), one midterm (20%), and a final exam (30%). The homework problems will include theoretical and applied questions, mostly from the text. Assignments will be given out as appropriate throughout the semester, and will generally be due one week after they are assigned. The midterm will be in-class (open-book). For data analysis, your write-up must be a careful report of your models, methods, interpretations, and conclusions -- as if you were making a final report to a supervisor who has statistical training, but doesn't want to get bogged down in the details. Include only the relevant parts of your computer output in your report, labeling all plots, variables, and so forth.