

# Statistics 481: Bayesian Statistics

**Fall 2020**

**Prof. Suess, Department of Statistics and Biostatistics, CSU East Bay**

**Lecture:**

- Section 1: MW 6:30 to 7:45, Zoom

**Instructor:** Prof. Eric A. Suess

**Office:** NSc 319 **Phone:** 510-885-3879 **e-mail:** eric.suess@csueastbay.edu

**Office Hours:** MW 2 to 3pm, or by appointment

**Class Website:** <http://cox.csueastbay.edu/~esuess/stat481/>

**Required Texts:**

- John Kruschke, Doing Bayesian Data Analysis: A Tutorial with R, JAGS, and Stan 2nd Edition, Academic Press 2014.

**Reference Texts:**

- Allen B. Downey, Think Bayes, O'Reilly 2013.

**Material To Be Covered:** In this course we will be learning about applying Bayesian data analysis. We will be discussing the application Bayes' Rule. Posterior distributions will be determined from priors distributions and likelihood functions. MCMC methods will be used to fit models in R.

**Homework:** A list will also be on the website. Homework will be assigned weekly. Homework will be "due" on Mondays, which means you should complete the homework and come to class prepared to ask questions. Homework will be collected through Blackboard and needs to be submitted by Friday of the week the homework is due.

**Quizzes and Exams:** Two short quiz, one midterm will be given and the final. You are expected to bring a calculator with you to all exams and your Student I.D. for identification.

**Grading:**

- Homework 15%
- Quizzes 5%
- Midterm 25%
- Project 30%
- Final 25%

**Policy on Make-up Exams:** You are expected to take the quizzes and exams at the scheduled times. In case of genuine emergency, illness or hardship, for which you can present written documentation I may agree to arrange for a make-up exam. Make-up exams must always be arranged BEFORE the regular exam is given and always take place AFTER the regular exam. Quizzes may not be made up!

## **Statistics 481 SLOs**

### **Student Learning Outcomes (SLO's):**

Students graduating with an B.S. in Statistics from Cal State East Bay will be able to:

1. Apply basic computational skill in descriptive statistics and graphical displays; hypothesis testing and confidence intervals; modeling and error analysis.
2. Communicate to others results involving descriptive statistics and graphical displays; hypothesis testing and confidence intervals; modeling and error analysis.
3. Analyze data using appropriate statistical computer software and to interpret the results covering descriptive statistics and graphical displays; hypothesis testing and confidence intervals; modeling and error analysis.