

# Syllabus for STAT 432: Introduction to Linear and Logistic Regression Spring 2022

**Instructor:** Eric Fox  
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Office: North Science 303A

## Lecture:

- Tuesday 2:45-4PM at North Science 336
- Thursday 2:45-4PM at South Science 204

**Office Hours (online):** Tu/Th 10AM-noon, or by appointment  
Zoom link: <https://csueb.zoom.us/j/502694714>

**Website:** Course materials will be posted on Blackboard.

**Textbook:** There is no required textbook. The following references are available for free on the internet:

James, G., Witten, D., Hastie, T., and Tibshirani, R. *An Introduction to Statistical Learning with Applications in R*. Second Edition, Springer, 2021.  
Free PDF version: <https://www.statlearning.com/>

Sanford Weisberg. *Applied Linear Regression*. Fourth Edition, John Wiley & Sons, 2014.  
Free electronic version: <http://library.csueastbay.edu/home>

Diez, D.M., Barr, C.D., and Cetinkaya-Rundel M. *OpenIntro: Statistics*. Fourth Edition, 2019. Free PDF version: <https://www.openintro.org/>

## Software:

R, can be downloaded here <https://www.r-project.org/>  
RStudio, can be downloaded here <https://www.rstudio.com/>  
RStudio Cloud, <https://rstudio.cloud/>

**Prerequisites:** STAT 330, or an introductory statistics course

## Course Topics:

- Exploratory data analysis (scatterplots, histograms, box plots)
- Simple linear regression model
- Multiple linear regression model, matrix notation
- Least squares estimation

- Inference for linear regression models
- Model diagnostics and transformations
- Polynomial regression
- Variable selection
- Logistic regression

**Grading:**

- 5% Attendance
- 20% Homework Assignments
- 75% Three Exams (25% each)

All exams will be open notes and you can use R for computations. Exams may have both in-class and take-home components.

**Attendance Policy:** Students are required to attend class on campus during the scheduled times and participate in class activities.

**Policy on Late Assignments:** Late homework will generally not be accepted. However, your lowest scoring homework assignment will be dropped. I may agree to extensions on due dates if you are experiencing an emergency or illness.

**Student Learning Outcomes:** Upon successful completion of this course, students will be able to:

- Apply statistical methodologies, including (a) simple and multiple linear regression, (b) model diagnostics and transformations, and (c) logistic regression.
- Derive and understand basic theory underlying these methodologies.
- Use R and RStudio to analyze data sets, estimate statistical models, and conduct model diagnostics.
- Communicate statistical concepts clearly and appropriately to others.

**Technology Requirements:** This course will use the web conferencing software Zoom for first two weeks of instruction and for office hours. To participate you will need a stable internet connection, and a laptop or desktop computer equipped with a webcam, microphone, and speakers. Please refer to the Zoom system requirements [here](#).

### **Zoom Etiquette:**

- Make sure that your audio is muted upon entry into the class.
- You may ask questions by using the chat function or by unmuting yourself. Please try to not disrupt the instructor or other students.
- Please turn on your video during breakout room sessions and office hours.

### **Important Dates:**

- First day of classes: Tuesday, January 18
- Drop deadline (no permission required): Monday, February 7
- Spring break: March 28–April 1
- Last day to withdraw from classes: Friday, April 15
- Last day of classes: Friday, May 6

**Common Syllabus Items:** Items such as policies on academic dishonesty, disability, and handling emergency situations can be found under “University Policies” on Blackboard.

### **A Note on Discrimination, Harassment, and Retaliation (DHR):**

California State University East Bay is committed to a community free from sexual assault and violence. Title IX and CSU policy prohibit discrimination, harassment and retaliation, including Sex Discrimination, Sexual Harassment or Sexual Violence. CSUEB encourages anyone experiencing such behavior to report their concerns immediately. CSUEB has both confidential and non-confidential resources and reporting options available to you.

**As a faculty member, I am required to report all incidents and thus cannot promise confidentiality.** I must provide our Title IX coordinator and or the DHR Administrator with relevant details such as the names of those involved in an incident. For confidential services, contact the **Confidential Advocate at 510-885-3700** or go to the Student Health and Counseling Center. For 24-hour crisis services call the Bay Area Women Against Rape (BAWAR) hotline at 510-845-7273. For more information about policies and resources or reporting options, please visit the following websites: <https://www.csueastbay.edu/diversity/title-ix/>