CRJ 504 Applies Statistics -- Fall 2018

Instructor

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Office Hours: By appointment

Class Location and Time

Location: Husted Hall 013
Time: Mondays 5:45pm to 8:35
Website: crj504.bryer.org

Course Description

Introduction to statistical techniques appropriate for use in the criminal justice field. Descriptive statistics; scales of measurement; measure of central tendency, variability, and association. Introduction to statistical inference including sampling distributions and tests of significance.

Course Learning Outcomes

By then end of the course, students should be able to:

- Understand the foundations of probability theory and perform basic probability calculations.
- Model situations involving uncertainty using appropriate probability distributions and conditional techniques.
- Explore and summarize data using descriptive statistics.
- Test hypotheses using classical and modern computational techniques.
- Perform and interpret regression models.

Course Textbook

Required

Diez, D.M., Barr, C.D., & Çetinkaya-Rundel, M. (2015). OpenIntro Statistics (3rd Ed).

> This is an open source textbook and can be downloaded in PDF format here, from the OpenIntro website, or a printed copy can be ordered from Amazon.

Recommended

Wickham, H., & Grolemund, G. (2016) *R for Data Science*. O'Reilly.

> Most of this books is available freely online at r4ds.had.co.nz/ but can be purchased from Amazon.

Other Documents

- Probability Tables
- Inference Guide
- RStudio Cheat Sheets
- Probability Cheat Sheet

Grading

- Homework: 32%
- Labs: 20%
- Data Project: 30%
- Final exam: 18%

Data Project

The purpose of the data project is for you to conduct a reproducible analysis with a data set of your choosing. There are two components to the project, the proposal, which will be graded on a pass/fail basis, and the final report/presentation. The outline for each of these are provided in the templates on the course website. Suggestions for possible data sources are also provided on the course website, however you are free to use any freely available dataset.

Course Schedule

Tentative, subject to change

Date	Chapter	Topic	Homework[1]
Aug-27		**NO CLASS**	
Sep-3		**NO CLASS: Labor Day**	
Sept-10		**NO CLASS: Rosh Hashanah**	
Sept-17	1	Introduction to Statistics	
Sept-24	1	Introduction to Data	1.8, 1.10, 1.28, 1.36, 1.48, 1.50, 1.56, 1.70
Oct-1	2	Probability	2.6, 2.8, 2.20, 2.30, 2.38, 2.44
Oct-8	3	Distributions	3.2, 3.4, 3.18, 3.22, 3.38, 3.42
Oct-15	4	Foundations for Inference	4.4, 4.14, 4.24, 4.26, 4.34, 4.40, 4.48
Oct-22	5	Inference for Numerical Data	5.6, 5.14, 5.20, 5.32, 5.48
Oct-29	6	Inference for Categorical Data	6.6, 6.12, 6.20, 6.28, 6.44, 6.48
Nov-5	7	Linear Regression	
Nov-12	7	Linear Regression	7.24, 7.26, 7.30, 7.40
Nov-19	8	Multiple Regression	
Nov-26	8	Logistic Regression	8.2, 8.4, 8.8, 8.16, 8.18
Dec-3		TBD	
Dec-10		Final Exam	

[1] Homework is due the following week.

Additional course policies

This course will be conducted in accordance with all policies described in the Graduate Bulletin: http://www.albany.edu/graduatebulletin/admission*graduate*requirements.htm. Consistent with this policy, excusal from an exam will only be permitted in cases of documented family, health, or work emergency. Any such compelling reason must be communicated to me as soon as you become aware of it, or as soon as you reasonably can thereafter.

II anticipate that you are all well aware of issues pertaining to academic integrity, but you may also refer to the Graduate Bulletin for additional information with this regard.

Academic integrity

Academic dishonesty, such as cheating, plagiarism, or falsification, will not be tolerated in any form. Violations will be reported to the University Judicial System. Violations will also result in a failing grade on the exam or assignment.

Please familiarize yourself with the Academic Regulations for undergraduate students (http://www.albany.edu/undergraduate_bulletin/regulations.html) and the standards of academic integrity (http://library.albany.edu/infolit/integrity).

Students with disabilities

Reasonable accommodations will be provided for students with documented physical, sensory, systemic, medical, cognitive, learning and mental health (psychiatric) disabilities. If you believe you have a disability requiring accommodation in this class, please notify the Disability Resource Center (518- 442-5490; drc@albany.edu). Upon verification and after the registration process is complete, the DRC will provide you with a letter that informs the course instructor that you are a student with a disability registered with the DRC and list the recommended reasonable accommodations.

Emergency preparedness

In the event of an emergency that leads to university closure, we will use an alternative method to disseminate course materials. I will communicate class-specific information via email. You are responsible for checking your email regularly for updates. In the event of a declared emergency, students should refer to the UAlbany website (www.albamy.edu/emergency) and the UAlbany emergency information line at (518) 442-7669.