Course Description

This course employs sports analytics to examine human behavior and to test social science theories. Sports analytics is a fast-growing field. It uses data and statistical methods to measure performance in competitive sports. Today, every major professional sports team has an analytics department. The approach’s popularity has generated a wealth of data that can be used to shed light on social science questions in interesting ways. We will focus on topics such as violent behavior, discrimination, cultural/ethnic diversity, corruption and cognitive biases using examples from baseball, basketball, figure skating, football, hokey, soccer and sumo wrestling.

Format

The class will meet three times per week for the duration of the quarter. The topics presented in class are paired with the required readings listed below. The classes will review the concepts discussed in these readings, but should be taken neither as a duplication nor as a substitute for them. In other words, you should not assume that because you came to class, you can skip the readings, and/or that because you made the readings you may not attend the lectures.

Assignments

Each week students are expected to read the materials. Students are expected to take a midterm exam, and final exam. The midterm exam is worth 35% of the final grade, and the final exam accounts for 50% of the final grade. Discussion and general class participation accounts for the remaining 15%. Extensions, incompleteds, etc. will be given in accordance with UCSD policy. Except under very pressing circumstances, they will be discouraged.
Course Policies

Academic Integrity. Students in this course are expected to comply with UCSD’s Policy on Integrity of Scholarship. In particular, plagiarism is considered a dishonest practice and a serious academic offense. Hence, there will be a zero tolerance policy with respect to these practices: any student violating the obligation of academic integrity during the term will automatically fail the class. Copies of the current version of the UCSD Policy on Integrity of Scholarship, also commonly referred to as the Academic Dishonesty Policy, may be found on the Academic Senate webpage: http://www-senate.ucsd.edu/AcademicIntegrity/AcademicIntegrity.htm

Disabilities. If you have a disability that requires special testing accommodations or other classroom modifications, you need to notify both me and the Office for Students with Disabilities (OSD). You may be asked to provide documentation of your disability to determine the appropriateness of accommodations. To notify the OSD, call (858) 534-4382 to schedule an appointment.

Required Book


Course Outline and Readings

Week 1 (January 4-8) - Introduction

- Introduction
- Observational Studies (FPP, ch. 2)

Week 2 (January 11-15) - Descriptive Statistics I

- The Histogram (FPP, ch. 3)
- Average and Standard Deviation (FPP, ch. 4)
- Normal Approximation (FPP, ch. 5)
Week 3 (January 20-22) - Descriptive Statistics II

- Measurement Error (FPP, ch. 6)
- Graphical Representations (FPP, ch. 7)

Week 4 (January 25-29) - Correlation & Regression

- Correlation I (FPP, ch. 8)
- Correlation II (FPP, ch. 9)
- Regression (FPP, ch. 10)

Week 5 (February 1-5) - Review & Midterm

- Regression Line (FPP, Ch. 12)
- Review Session
- **February 5: Midterm Exam.**

Week 6 (February 8-12) - Discrimination


Week 7 (February 17-19) - Diversity

Week 8 (February 22-26): Violent Behavior and Crime


Week 9 (February 29-March 4): Corruption and Bias


Week 10 (March 7-11): Sports and Political Outcomes


Final Exam: Friday March 18 - 8:00AM - 10:59AM