MATH 539 - Statistical Consulting

Spring 2024

California State University, Fullerton
Department of Mathematics

Class Information

Time: Monday and Wednesday 5:30 PM - 8:15 PM
Location: MH 480
Class Zoom Link: https://fullerton.zoom.us/j/86004819877

Instructor Information and Office Hours

- Dr. Sam Behseta (sbehseta@fullerton.edu)
  - Office Hours: Monday and Wednesday 4:00 - 5:00 PM
  - Office Hour Link: https://fullerton.zoom.us/j/86004819877
- Dr. Jessica Jaynes (jjaynes@fullerton.edu)
  - Office Hours: Monday and Wednesday 4:00 PM - 5:00 PM
  - Office Hour Link: https://fullerton.zoom.us/j/86004819877

Course Description

Provides a hands-on experience in statistical consulting with real-world data. Students will be exposed to various statistical consultants throughout Southern California as well as theory in statistical consulting.

Course Objectives

The goal of this course is to introduce graduate students to a professional statistical consulting environment. Students will apply the skills they have learned throughout the M.S. program during a semester of consulting with local industries. Students will work in groups on a statistical consulting project and be partnered with local companies to provide hands-on learning opportunities to prepare them for the workforce. All projects are supervised by the instructors of the course. Benefits to local companies include a recruitment of talented and motivated students, student teams offering a fresh perspective on challenges or new projects, access to faculty leaders and research, and playing a role in helping the mentor the next generation of talent.
Prerequisite: Prerequisites: Math 533, Math 534, Math 536, Math 538 with a grade of C or better or consent of the instructor.

Student Learning Outcomes

Upon completion of Math 539 students should be able to understand and know how to handle various statistical consulting matters, including data ethic, communication with clients, formulation of statistical problems, recommendations of design protocols, selection of appropriate statistical methods, data analysis and interpretations of results including writing proper reports.

Course Website: Canvas

Canvas will be used to post course information, including course updates, announcements, assignments, references, exams, final project information, grades, etc. Please make sure you check the email associated with your Canvas account, as emails with important announcements will be sent via Canvas. You will be expected to check your email daily for the duration of this course.

Required Technology

- A computer equipped with a webcam and a microphone.
- Cable or DSL access to the Internet.
- A scanner will be required to scan handwritten material. All scanned material should be in pdf format. Pictures from a camera are absolutely NOT acceptable.
- Zoom is the software that we use for our online course delivery. You can download the software from http://www.fullerton.edu/zoom/.

Class Sessions

Each class meeting will consist of a variety of components. Examples include lectures on statistical consulting topics and case studies, extensive class discussions on course reading assignments, guest speaker presentations, group presentations, zoom breakout room sessions, and various others.

Participation

This course will be streamed live online via Zoom. Attendance is required and will be graded via unannounced activities. Participation will be expected in both the main classroom as well as group breakout sessions. Moreover, all students are expected to actively participate in class discussions and activities.

Assignments

This course will be comprised of various assignment types to facilitate statistical consulting methods, including reading and writing assignments, weekly progress reports, weekly presentations, and problem solving. If an assignment is not a group assignment, then students are expected to turn in their own individual assignment and show their own understanding of the material.

Exams

There will be three exams in this course related to students statistical consulting projects. These exams will be focused on the following themes:

- Exam 1: Science and context
- Exam 2: Data wrangling and visualization
- Exam 3: Analysis and modeling

Final Projects

The final project will be worked on throughout the entire semester. The final project will be graded based on three components: the write up, the presentation for CSUF, and the client presentation based on client feedback.

Tentative Course Outline

- **Weeks 1-4**
  - Science and context
  - Exam 1 Presentation and Reports Due
- **Weeks 5-8**
  - Data wrangling and visualization
  - Exam 2 Presentation and Reports Due
- **Weeks 9-12**
  - Data wrangling and visualization
  - Exam 3 Presentation and Reports Due
- **Week 13-16**
  - Interpretation and communication
  - Final Presentation and Reports Due

Make-up policy

Groups are responsible for meeting the deadlines of the clients. Make-up items will only be given in extreme instances and with advance permission of the instructor. This course will operate under a zero tolerance policy. Sharing material or not following directions given will be subject to the University's academic integrity policy.

Grade Distribution

Participation and Contribution to Class Activities	15%
Assignments and Exams	45%
Final Project	40%

Letter Grade Distribution

≥ 93	A	73 - 76	C
90 - 92	A-	70 - 72	C
87 - 89	B+	67 - 69	D+
83 - 86	B	63.00 - 66	D
80 - 82	B-	60.00 - 62	D-
77 - 79	C+	≤ 59	F

University Policies

1. **Students with Special Needs:** If you have a disability or special need for which you are or may be requesting an accommodation, please inform me and contact Disability Support Services, located in University Hall 101, as early as possible. For more information, Disability Support Services can be reached by calling (657) 278-3112 or visit their website at www.fullerton.edu/DSS. Of course, confidentiality will be protected.

2. **Academic Integrity:** Students are expected to maintain a high standard of academic integrity. Policies on academic integrity will be strictly enforced. Familiarize yourself with the academic dishonesty policy, which can be found in the current student handbook or on the web at http://hhd.fullerton.edu/MSW/documents/StudentHandbook.pdf. According to the Policy on Online Instruction (UPS 411.104), students enrolled in online courses are subject to the same university policies and procedures applicable to students attending courses on campus. Academic standards regarding cheating, plagiarism, and appropriate online behavior ("Netiquette") shall be according to the UPS 300.021 Academic Dishonesty found at http://www.fullerton.edu/senate/documents/PDF/300/UPS300-021.pdf.

3. **Emergency Procedure Notice to Students:** The safety of all students attending California State University Fullerton is of paramount importance. During an emergency it is necessary for students to have a basic understanding of their personal responsibilities and the University's emergency response procedures.

Disclaimer:
Please note that this syllabus may be subject to change. Any changes will be announced in class.