STA 6126: Statistical Methods in Social Research I

Sec. 2058   **Fall 2020**

Instructor: Bikram Karmakar (`bkarmakar@ufl.edu`)

Class Hours: Monday, Wednesday, Friday — Period 3 (9:35 AM – 10:25 AM)

Location: <u>All</u> activities will be online or virtual. Details will be emailed to you and/or announced on the course webpage.

Course Website: Canvas page. Please check regularly.

Instructor's Office: 226 Griffin-Floyd Hall. (Phone. 352-273-2994)

Office Hours (via Zoom): Wednesdays 2:00–3:00pm, or by appointment via email.

Teaching Assistant: Tingting Wang (`wangt1@ufl.edu`)

        Office Hours (via Zoom): TBD.

Course Description

The goal of this course is to enable the students to develop a firm understanding of the fundamental ideas behind statistical reasoning and experimental design, and to learn some of the basic techniques of data analysis. Topics include descriptive statistics, probability basics, the sampling distribution of the mean (Central Limit Theorem), point estimation, confidence intervals, hypothesis testing, and linear regression. Students will be introduced to the R programming language, at the "exposure level" (for the most part, you will not create your own code, but rather run code that is given to you; you will understand what the code is doing; and you will be able to interpret the output).

We will be focusing on the practical use of statistics in social sciences. Towards this goal, some statistical methodologies most relevant to today's social science research will be discussed.

Grading

The final grade will be based on the following components:

Exam 1:	Tentative date: Oct 19, 2020 (Monday). During the class period.	25%
Exam 2:	Tentative Date: Dec 2, 2020 (Wednesday) During the class period	25%
Quizzes:	3 short in class quizzes. The lowest of the 3 will be dropped. Dates will be announced at least one week before.	15%
Project:	One group project. Grading based on presentation and report.	30%
Participation:	Engagement in class discussion.	5%

All exams will be held during the class period. They will be open note exams. Exams are not going to be cumulative. The project will be semester long. You, along with your group, are expected to make steady progress throughout the semester. There will be one final report and a final presentation to the class. Further details on the project will be given in class.

There will be frequent practice problem sets. You are encouraged to work on them. Solutions to the practice problems will be posted on canvas.

Review classes and additional office hours will be organized before the exams.

A final grade of 93–100 will guarantee an A, 90–92 at least an A-, 87–89 at least a B+, 83–86 at least a B, 80–82 at least a B-, etc. (the actual cutoffs for the grades are likely to be lower than these numbers.)

Textbooks and Materials

Introduction to the Practice of Statistics, by David S. Moore, George P. McCabe, and Bruce Craig, 9th edition, W.H. Freeman, 2017.

Note: You are not required to buy the book. Lecture notes and materials that will be provided will be comprehensive. Also, getting the 8th edition is perfectly fine, and is cheaper.

Note: Since we aim to discuss some relevant statistical tools in recent social sciences research, there will be material covered in lectures which is not found anywhere at all in the textbook. Lecture notes are your best resource in this regard. Lectures will be recorded, and the recordings will be shared. Lecture notes will be regularly posted on the canvas page.

Reference books

Alan Agresti, *Statistical Methods for the Social Sciences* (5th Edition) Pearson.

Practical Regression and Anova using R, Julian J. Faraway. 2002. Available from `https://cran.r-project.org/doc/contrib/Faraway-PRA.pdf`.

Statistical Software

We will use the free statistical computing language `R`. You should download it from `https://www.r-project.org` and install it before Friday September 4. You may wish to also download Rstudio from `https:// www.rstudio.com` (go to `https://www.rstudio.com/products/rstudio/download` to get the free Open Source License).

Course Policies

Recorded Materials: Our class sessions may be audio visually recorded for students in the class to refer back and for enrolled students who are unable to attend live. Students who participate with their camera engaged or utilize a profile image are agreeing to have their video or image recorded. If you are unwilling to consent to have your profile or video image recorded, be sure to keep your camera off and do not use a profile image. Likewise, students who un-mute during class and participate orally are agreeing to have their voices recorded. If you are not willing to consent to have your voice recorded during class, you will need to keep your mute button activated and communicate exclusively using the "chat" feature, which allows students to type questions and comments live. The chat will not be recorded or shared. As in all courses, unauthorized recording and unauthorized sharing of recorded materials is prohibited.

Accessibility: Students with disabilities requesting accommodations should first register with the Disability Resource Center (352-392-8565, `dso.ufl.edu/drc`) by providing appropriate documentation. Once registered, students will receive an accommodation letter which must be presented

to the instructor when requesting accommodation. Students with disabilities should follow this procedure as early as possible in the semester.

Attendance: Requirements for class attendance and make-up exams, assignments, and other work in this course are consistent with university policies that can be found at: `catalog.ufl.edu/UGRD/academic-regulations/attendance-policies/`.

Course Evaluation: Students are expected to provide professional and respectful feedback on the quality of instruction in this course by completing course evaluations online via GatorEvals. Relevant links: `gatorevals.aa.ufl.edu/students/`; `ufl.bluera.com/ufl/`; `gatorevals.aa.ufl.edu/public-results/`.