



STA 4504/5503

Spring 2021

Categorical Data Analysis

**Instructor:** Joseph Antonelli

E-mail: [jantonelli@ufl.edu](mailto:jantonelli@ufl.edu)

Office hours: Time TBD. Location via Zoom for students in either the online or in-person sections.

**Teaching Assistant:** Zikun Qin

E-mail: [qinzikun@ufl.edu](mailto:qinzikun@ufl.edu)

Office hours: Time TBD. Location via Zoom for students in either the online or in-person sections.

**Course Website:** [e-Learning](#)

**Course lectures:** Attendance for lectures is strongly recommended and they will be given Tuesdays from 11:45am to 12:35pm and Thursdays from 11:45am to 1:40pm. For those taking the class in-person, this will take place in AND 0134, while the online students will attend via Zoom. We will likely be recording the lectures and posting them to the course website, but this is our first semester working with HyFlex teaching, so please attend the live session at least until that is figured out properly.

**Course Notes/Material:** Notes for the week will be posted at the beginning of each week on the course website. These should contain nearly all of the material that we cover in class, however, I will present some additional material in the lectures that is not posted on the course website.

**Software:** We will be using the R software language throughout. R is free and should be easy to download on your personal computer. I also highly recommend running R through RStudio, though it is not a requirement. If you have any problems downloading R or RStudio, feel free to talk to myself or the TA. If you do not have access to a computer, please reach out to me via email.

**Required Text:** An Introduction to Categorical Data Analysis, 3rd Edition

**Author:** A. Agresti

**ISBN-13:** 9781119405269

**Course Description:** This course will cover a wide range of analysis techniques used when dealing with categorical data. Course content includes description and inference for binomial and multinomial observations using proportions and odds ratios; multiway contingency tables; generalized linear models for discrete data; logistic regression for binary responses; multi-

category logit models for nominal and ordinal responses; inference for matched pairs and correlated clustered data; loglinear models.

## Homework

There will be a homework assignment roughly every two weeks and it will be due via Canvas submission at the end of that week.

## Exams

You will have two take-home exams. One that is assigned roughly halfway through the semester, while the other will be a final exam at the end of the course.

## Grade Distribution

Homework	30%
Midterm	35%
Project	35%

**Letter Grade Assignment:** Grades will be assigned as follows: 90-100, A; 87-89.9, A-; 84-86.9, B+; 80-83.9, B; 77- 79.9, B-; 74-76.9, C+; 70-73.9, C; 67-69.9, C-; 64-66.9, D+; 60-63.9, D; 55-59.9, D-; 0- 55, F

The numeric scores will be rounded to the nearest tenth.

**Make up Policy:** Requirements for class attendance and make-up exams, assignments, and other work in this course as well as policies regarding absences, religious holidays, illness and student athletes are consistent with [UF Attendance Policies](https://catalog.ufl.edu/UGRD/academic-regulations/attendance-policies/) (<https://catalog.ufl.edu/UGRD/academic-regulations/attendance-policies/>)

## Dropping and Withdraw

For late course drops and course withdrawals please visit <https://catalog.ufl.edu/UGRD/academic-regulations/dropping-courses-withdrawals/>

## Incomplete

An incomplete grade may be assigned at the discretion of the instructor as an interim grade for a course in which the student has completed a major portion of the course with a passing grade, been unable to complete course requirements before the end of the term because of extenuating circumstances, and obtained agreement from the instructor and arranged for resolution of the incomplete grade in the next term. Instructors are not required to assign incomplete grades. For complete details please visit [CLAS incomplete grade policies and forms](https://www.advising.ufl.edu/academicinfo/clas-policiesprocedures/incomplete-grades/). (<https://www.advising.ufl.edu/academicinfo/clas-policiesprocedures/incomplete-grades/>)

## Accommodating Students with Disabilities

Students requesting accommodation for disabilities must first register with the Dean of Students Office. The Dean of Students will provide documentation to the students who must

then provide this documentation to the instructor when requesting information. You must submit this documentation prior to submitting any assignments for which you are requesting accommodation.

**Academic Misconduct:** Students are held accountable to the [UF Honor Code](#).

(<https://sccr.dso.ufl.edu/process/student-conduct-code/>)

**Evaluations:** Students are expected to provide feedback on the quality of instruction in this course by completing online evaluations at <https://evaluations.ufl.edu>. Evaluations are typically open during the last two or three weeks of the semester, but students will be given specific times when they are open. Summary results of these assessments are available to students at

<https://evaluations.ufl.edu/results/>.

**Additional resources:** Any additional resources including academic support or information technology can be found at <https://www.ufl.edu/about/offices-services/>

**Privacy statement regarding online lectures:** 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 verbally 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.

### Tentative course outline:

Chapter	Content	Textbook
1	Introduction	1.1-1.4.2
2	Contingency tables	2.1-2.4,2.7
3	Generalized linear models	3.1-3.5
4	Logistic regression	4.1-4.6
5	Building and applying logistic regression	5.1-5.3
6	Multicategory logit models	6.1-6.2
8	Models for matched pairs	8.1,8.5
9	Correlated and clustered responses	9.1,9.2
10	Random effects and generalized linear mixed models	10.1,10.2
7	Loglinear models for contingency tables (if time permits)	7.1-7.4