

Syllabus

STA 4505 and STA 5503, Spring 2022

Categorical Data Analysis

Department of Statistics, University of Florida

Course information.

Lectures. Monday, Wednesday, and Friday from 3:00 PM - 3:50 PM in LEI 0207

<i>Instructor.</i>	Aaron J. Molstad	<i>Teaching assistant.</i>	Ziqian Yang
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<i>office hours.</i>	TBA	<i>office hours.</i>	TBA

Course objective. STA 4505 and STA 5503 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; and log-linear models.

Course topics. Major topics include contingency tables, generalized linear models, logistic regression, multinomial logistic regression, models for matched pairs, correlated/clustered responses, generalized linear mixed models, and log-linear models for contingency tables. Another major focus of the course will be implementing the aforementioned models and methods in R. A list of topics can be found here: ajmolstad.github.io/S22_STA4504.

Course webpage. Course materials (e.g., homework assignments and due dates) will be posted to ajmolstad.github.io/S22_STA4504. A link to this page will be available on the course eLearning site, where students' grades will be posted. Please check this site regularly for updates and announcements. Course documents and important information – including homework exercises, homework solutions, sample exams, and special announcements – will be posted here.

Office hours. Both the instructor's and teaching assistant's office hours will at a time and location to be announced during the first week of class.

Textbook. *An Introduction to Categorical Data Analysis (3rd ed)*, by Alan Agresti. ISBN-13: 978-1119405269.

- Note that exams will be based on material presented in lectures, which will approximately cover Chapters 1-10 of the textbook. The textbook is required: it will be a

very helpful resource for the suggested readings and many homework exercises will be from the textbook.

- For secondary readings and references, the textbook *Extending the Linear Model with R (2nd ed)* by Julian J. J. Faraway (ISBN-13: 978-1439887332) is recommended (but not required).

Assessment. Course grades will be based on nine homework assignments and two take-home examinations. Of the nine homework assignments, the average of the highest eight assignments will account for 40% of the course grade (5% each). Of the two exams, your higher exam score will count for 32.5% of course grade; the lower exam score will count for 27.5%.

Homework assignments will be submitted and graded electronically through the course eLearning site. Homework will be due before the start of lecture on days that they are due. **Because you are allowed to drop one homework score, late homework will not be accepted.**

- *Tentative exam due dates.*
 1. Friday, February 25th
 2. Monday, April 25th
- *Tentative homework due dates (approximate lectures covered).*
 1. Friday, January 21st (Lectures 2 - 5)
 2. Friday, January 28rd (Lectures 6 - 8)
 3. Friday, February 4th (Lectures 9 - 11)
 4. Friday, February 18th (Lectures 12 - 18)
 5. Friday, March 18th (Lectures 19 - 21)
 6. Friday, March 25th (Lectures 22 - 24)
 7. Friday, April 1st (Lectures 25 - 28)
 8. Friday, April 8th (Lectures 28 - 31)
 9. Monday, April 18th (Lectures 31 -)

Grading scales. Letter grades will be assigned based on the following cutoffs:

Grade	Percentile
A	100% - 93%
A-	93% - 90%
B+	90% - 87%
B	87% - 83%
B-	83% - 80%
⋮	⋮
D-	63% - 60%
F	60% -

The instructor may adjust cutoffs downward (i.e., lower the percentile needed to achieve a certain letter grade) when assigning final course grades.

Working with classmates: While students are encouraged to work through homework exercises with one another, it is required that students write up their solutions independently. A failure to do so would constitute a violation of the student honor code and will be treated as such: see <https://sccr.dso.ufl.edu/policies/student-honor-code-student-conduct-code/>. No collaboration on any kind is allowed on examinations, with no exception.

Student honor code: Materials which may be referenced during exams will be explicitly mentioned before the exam and on the cover of the exam sheet. See the homework section for expectations about homework assignments. Please refer to the UF student honor code (linked above) for more.

Missed exam. Missed exams will receive a grade of zero, except in the cases of emergency. If an exam will be missed for a non-emergency reason, the student must notify the instructor *at least two weeks prior* to the exam date and provide proper documentation. Refer to <https://catalog.ufl.edu/UGRD/academic-regulations/attendance-policies/> for specifics on course attendance policy and missed exam policy.

Incomplete policy. The grade of "Incomplete" can be assigned at the discretion of the instructor when, due to extraordinary circumstances, e.g., hospitalization, a student is prevented from completing the work of the course on time. In particular, an "Incomplete" will be given if the student presents evidence from a certified professional that the student is unable to complete the course. In addition, the student must have a passing grade at the time of the incomplete request in order to receive the "Incomplete". An "Incomplete" requires a written agreement between instructor and student found here <https://clas.ufl.edu/files/2019/02/CLASIncompleteGradeContract.pdf>.

Students with Disabilities. Students with disabilities requesting accommodations should first register with the Disability Resource Center (352-392-8565, www.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.

Online course evaluation process. Students are expected to provide professional and respectful feedback on the quality of instruction in this course by completing course evaluations online via GatorEvals. Guidance on how to give feedback in a professional and respectful manner is available at <https://gatorevals.aa.ufl.edu/students/>. Students will be notified when the evaluation period opens, and can complete evaluations through the email they receive from GatorEvals, in their Canvas course menu under GatorEvals, or via <https://ufl.bluera.com/ufl/>. Summaries of course evaluation results are available

to students at <https://gatorevals.aa.ufl.edu/public-results/>.

Academic dishonesty. UF students are bound by The Honor Pledge which states, “We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honor and integrity by abiding by the Honor Code. On all work submitted for credit by students at the University of Florida, the following pledge is either required or implied: “On my honor, I have neither given nor received unauthorized aid in doing this assignment.” The Conduct Code specifies a number of behaviors that are in violation of this code and the possible sanctions. The Conduct Code can be found here: <https://sccr.dso.ufl.edu/process/student-conduct-code/>. If you have any questions or concerns, please consult with the instructor or TAs in this class.

Virtual class consent. 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.

In class recording. Students are allowed to record video or audio of class lectures. However, the purposes for which these recordings may be used are strictly controlled. The only allowable purposes are (1) for personal educational use, (2) in connection with a complaint to the university, or (3) as evidence in, or in preparation for, a criminal or civil proceeding. All other purposes are prohibited. Specifically, students may not publish recorded lectures without the written consent of the instructor.

A “class lecture” is an educational presentation intended to inform or teach enrolled students about a particular subject, including any instructor-led discussions that form part of the presentation, and delivered by any instructor hired or appointed by the University, or by a guest instructor, as part of a University of Florida course. A class lecture does not include lab sessions, student presentations, clinical presentations such as patient history, academic exercises involving solely student participation, assessments (quizzes, tests, exams), field trips, private conversations between students in the class or between a student and the faculty or lecturer during a class session.

Publication without permission of the instructor is prohibited. To “publish” means to share, transmit, circulate, distribute, or provide access to a recording, regardless of format or medium, to another person (or persons), including but not limited to another student within the same class section. Additionally, a recording, or transcript of a recording, is considered published if it is posted on or uploaded to, in whole or in part, any media platform,

including but not limited to social media, book, magazine, newspaper, leaflet, or third party note/tutoring services. A student who publishes a recording without written consent may be subject to a civil cause of action instituted by a person injured by the publication and/or discipline under UF Regulation 4.040 Student.

Health and wellness resources.

- U Matter, We Care: If you or someone you know is in distress, please contact umat-ter@ufl.edu, 352-392-1575, or visit U Matter, We Care website to refer or report a concern and a team member will reach out to the student in distress.
- Counseling and Wellness Center: Visit the Counseling and Wellness Center website or call 352-392-1575 for information on crisis services as well as non-crisis services.
- Student Health Care Center: Call 352-392-1161 for 24/7 information to help you find the care you need, or visit the Student Health Care Center website.
- University Police Department: Visit UF Police Department website or call 352-392-1111 (or 9-1-1 for emergencies).
- UF Health Shands Emergency Room / Trauma Center: For immediate medical care call 352-733-0111 or go to the emergency room at 1515 SW Archer Road, Gainesville, FL 32608; Visit the UF Health Emergency Room and Trauma Center website.

Academic resources.

- E-learning technical support: Contact the UF Computing Help Desk at 352-392-4357 or via e-mail at helpdesk@ufl.edu.
- Career Connections Center: Reitz Union Suite 1300, 352-392-1601. Career assistance and counseling services.
- Library Support: Various ways to receive assistance with respect to using the libraries or finding resources.
- Teaching Center: Broward Hall, 352-392-2010 or to make an appointment 352- 392-6420. General study skills and tutoring.
- Writing Studio: 2215 Turlington Hall, 352-846-1138. Help brainstorming, formatting, and writing papers.
- Student Complaints On-Campus: Visit the Student Honor Code and Student Conduct Code webpage for more information.
- On-Line Students Complaints: View the Distance Learning Student Complaint Process.