

Generalized Linear Models

STAT 7430

Instructor

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Office hours

Usually Mondays 4:00-5:00pm, or by appointment.
(Check Carmen for changes or cancellations.)

Lectures

Tues and Thurs 9:35-10:55am, 42 Hagerty Hall

Website

carmen.osu.edu

Aims

This course introduces the statistical theory and methods to extend regression to non-normal data. This course covers the construction and estimation of parameters in generalized linear models, including specific treatment of nominal and ordinal logistic regression, log linear models, Poisson regression, gamma regression, models for dependent data, and other topics as time permits.

Prerequisites

Stat 6910, 6950, 7410, and 6801-2, or permission of the instructor. Students should be particularly familiar with maximum likelihood estimation and linear models.

Required Text

McCullagh, PM and JA Nelder. *Generalized Linear Models*, 2nd edition. Chapman & Hall, 1989.

Additional Resources will be listed on the course website

Computing

This course will be taught in the R computing language. If you are not already familiar with R programming, there are a plethora of online tutorials available.

Requirements

Students are responsible for all material covered in class, in assigned readings, and on homework assignments. Attendance at all classes is strongly recommended.

Evaluation

Homework (approximately 10) 10%

Midterm Exam 1 25%

Midterm Exam 2 25%

Final Exam 40%

Homework: Homework assignments are intended to help you check your understanding and encourage you to think more deeply about course topics. Tentative homework due dates and times will be posted on Carmen, but these may be extended at the instructor's discretion. No late homework will be accepted. Please contact the instructor if you have an emergency or other situation that may prevent you from turning in your assignment on time. You are encouraged to work together on the homework, but do not copy any part of a homework from another student or other source. Each student must produce his/her own homework to be handed in. Feel free to ask me for help after you have made an attempt of the questions. Not all questions on all homework assignments will be graded. Possible solutions to all the problems will be available on Carmen after the due date, and students should check their own answers against these. All homework assignments are given equal weight.

Exams: Exams are closed book/closed notes. Calculators are allowed – communication devices (including cell phones) are not. You may bring a single 8.5"x11" page of notes (double sided) to the midterm exams. You may bring two 8.5"x11" pages of notes (double sided) to the final exam. Statistical tables will be provided on exams as needed. Tentative dates for the exams are noted on Carmen.

Tentative Schedule

A tentative schedule of topics and reading assignments will be maintained on Carmen. I encourage you to check this schedule often to keep current with the reading assignments.

Academic misconduct

Cheating, plagiarism and other forms of academic dishonesty will not be tolerated. Any violation will be prosecuted to the fullest extent. Particular considerations for work in this course are noted below.

Exams. You must complete the midterm and final exams yourself, without any external help or communication.

Written homework assignments. Your written assignments should be your own original work. You should formally cite the ideas and words of your research sources, including direct quotes from the textbook. You are encouraged to ask a trusted person to proofread your assignments before you turn them in--but no one else should revise or rewrite your work.

Collaboration and informal peer-review. The course includes many opportunities for informal collaboration with your classmates. Study groups and peer-review are encouraged, but you should only turn in work that is yours. If you're unsure about a particular situation, please just ask Dr. Kaizar ahead of the due date.

Ohio State's academic integrity policy

Cheating, plagiarism and other forms of academic dishonesty will not be tolerated. It is the responsibility of the Committee on Academic Misconduct to investigate or establish procedures for the investigation of all reported cases of student academic misconduct. The term “academic misconduct” includes all forms of student academic misconduct wherever committed; illustrated by, but not limited to, cases of plagiarism and dishonest practices in connection with examinations. The instructor will report all instances of alleged academic misconduct to the committee (Faculty Rule 3335-5-487). For additional information, see the Code of Student Conduct: <http://studentlife.osu.edu/csc/>.

Disclaimer

This syllabus should be taken as a fairly reliable guide for the course content. However, I reserve the right to change due dates or methods of assessment. Official announcements will be those made in class or on the course website.

Special accommodations

Students with disabilities (including mental health, chronic or temporary medical conditions) that have been certified by the Office of Student Life Disability Services will be appropriately accommodated and should inform the instructor as soon as possible of their needs. The Office of Student Life Disability Services is located in 098 Baker Hall, 113 W. 12th Avenue; telephone 614- 292-3307, slds@osu.edu; slds.osu.edu.