Stat 7430 (Spring 2020): Generalized Linear Models

Lecturer

Peter F. Craigmile, Ph.D.
pfc@stat.osu.edu
Office hours in 427 Cockins Hall: Mon 3-4pm, Thu 1.30-2.30pm, or by appointment.

Grader

Hengrui Luo
luo.619@osu.edu

Lectures

Tues and Thu, 9.35-10.55pm in Cockins Hall (CH) 228
Holidays: Martin Luther King, Jr. Day is January 20; Spring break is March 9–13.
Please download notes from the class website on Carmen
Lectures may not be recorded.

Class Attendance Policy

You are expected to attend all lectures.

Course Description

Stat 7430 introduces the statistical theory and methods to extend regression and analysis of variance to non-normal data. By the end of the course students should be able to use fixed effect generalized linear models to model data. In particular there will be a focus on model identification, building, diagnostics, and inference. This course covers extensions to longitudinal models.

Prequisites: Stat 6910, 6950 (Applied Statistics I and II) giving exposure to analysis of variance and experimental design, as well as regression modeling – Stat 7410 (Theory of Linear Models) provides the theory for these models. Stat 6801–6802 (Statistical Theory I and II), introducing distribution theory and methods for statistical estimation and testing.

Textbook

P. McCullagh and J.A. Nelder (1999), Generalized linear models, second edition, Chapman and Hall/CRC Press, London; New York. (This is a reprint of the 1989 Chapman and Hall book).
I will highlight other useful references as the course progresses.

Computing

This class requires you to use the statistical software packages R and RStudio.
More details will be given in class and on the class web site.

Evaluation

Homework	Midterm	Project
30%	30%	40%

Grades will be recorded on Carmen

Homework will be due at the **beginning** of class on the day it is due. **No** late homework will be accepted. You are encouraged to work together on the homework, but **do not** copy any part of a homework. 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.

The **midterm** will be held in class on Thu 27 Feb. All exams are closed book/closed notes. There will be **no make-up** exams. A basic calculator is allowed – tablets, laptops, cellphones, and other communication devices are not. You will be permitted to bring along one standard sized sheet of written notes to the midterm exam. **There will be no make-up exams.**

Project: You will will be reponsible for producing a presentation and a 10-15 page report on a topic in generalized linear models. The presentation will be given towards the end of the semester. The report will be due by noon on Thu 23 April (exam week). Further details, including a list of possible topics, will be given as the semester progresses.

Academic misconduct

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. Instructors shall 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://studentaffairs.osu.edu/csc/).

Disability Statement

Students with disabilities that have been certified by the Office for Disability Services will be appropriately accommodated, and should inform the instructor as soon as possible of their needs. The Office for Disability Services is located in 150 Pomerene Hall, 1760 Neil Avenue; telephone 292-3307, TDD 292-0901; http://www.ods.osu.edu/.

Disclaimer

This syllabus should be taken as a fairly reliable guide for the course content. However, you cannot claim any rights from it and in particular I reserve the right to change due dates or the methods of assessment. Official announcements will ALWAYS be those made in class.