

EAB 770: Applied Statistical Methods for Categorical Data

Fall 2025

Miguel Antonio D. Fudolig, Ph.D.

2025-08-25

Table of contents

Course Details	3
Instructor Information	3
Course Description	3
Course Prerequisites	3
Course Objectives and Expected Learning Outcomes	3
Course Materials	5
Textbook and Other References	5
Requirements	5
University Policies and Accreditation	6
University Policies	6
Additional Information	6
Grading Criteria	7
Requirements	7
Problem Sets	7
Final Project	7
Review Paper (Ph.D. level students only)	7
Grade Breakdown	8
Master's Level Students (MPH/MS)	8
Doctoral Level Students (Ph.D.)	8
Assignment of Grades	8
Tentative Schedule	9

Course Details

Instructor Information

Office Hours: M/W 1-3:30 PM
Office: [GTW 346](#)
Email: miguel.fudolig [at] unlv.edu

Class Hours: W 4-6:45 PM
Classroom: [CHB/CBC C 321](#)
Office Phone: 702-895-4413

Course Description

Focus on introducing methodology and statistical programming for categorical data analysis, including multi-way contingency tables, the logit model for binary responses, multi-category logit models for nominal and ordinal responses, and loglinear models. Sample SAS codes will be provided for each chapter.

Course Prerequisites

EAB 791 (Intermediate Biostatistics for Public Health Research) or consent of instructor.

Course Objectives and Expected Learning Outcomes

By the end of this course:

1. Select quantitative and qualitative data collection methods appropriate for a given public health context. (MPH 02)
2. Analyze quantitative and qualitative data using biostatistics, informatics, computer-based programming and software, as appropriate. (MPH 03)
3. Interpret results of data analysis for public health research, policy or practice. (MPH 04)
4. Apply appropriate statistical methods according to study design (PhD EAB 01)

5. Evaluate the strengths and limitations of statistical analyses (PhD EAB 02)

Course Materials

Textbook and Other References

- Maura E. Stokes, Charles S. Davis, Gary G. Koch (2012). Categorical Data Analysis Using SAS, Third Edition. SAS Institute.
 - **NOT REQUIRED**

Requirements

- Course notes are available on Canvas.
- Class activities and homework should be submitted through Canvas.
- We will mainly use SAS software in lectures and examples.
 - SAS can also be accessed through SAS OnDemand for Academics (<https://welcome.oda.sas.com/>). Installation instructions will be detailed on the first day of class.

University Policies and Accreditation

University Policies

Please refer to this link for university policies: <https://www.unlv.edu/policies/students>

Additional Information

Assignments completed for this course may be used as evidence of student learning in accreditation reports. Students who do not wish their work to be used for accreditation purposes must inform the course instructor in writing by the end of late registration. Your participation and cooperation are appreciated.

Grading Criteria

Requirements

Problem Sets

Problem sets are composed by the examples and extra practices in each handout. These are designed to reinforce the understanding in course materials learned during each lecture. They will emphasize conceptual understanding and practical application of the material that we discuss in class, especially in computer computations and programming. Reading assignments may be included in some problem sets. Each problem set should be submitted on Canvas on the specified due date.

Final Project

The objective of the take-home final project is assessing students' understanding of all contents of this course. Students are expected to formulate research questions related to their current research and find a data set that they could use to analyze using the techniques discussed in class. The expected output for the final project is a short report (max. 10 pages) that should include the following: the research question, research and statistical hypotheses, statistical tests used, results of the analysis, brief discussion, and conclusion.

Review Paper (Ph.D. level students only)

The PhD level students are expected to review a research article that uses methods discussed in class in analyzing categorical data. The critique paper (max. 5 pages) should include a summary of the article focusing on the statistical analyses performed in the paper and present a critical discussion about the implementation and interpretation of the results of the statistical analysis.

Grade Breakdown

Master's Level Students (MPH/MS)

Requirement	Percentage
Problem Sets	60%
Final Project	40%
Total	100%

Doctoral Level Students (Ph.D.)

Requirement	Percentage
Problem Sets	60%
Final Project	30%
Review Paper	10%
Total	100%

Assignment of Grades

Note

Grades are assigned according to the table below. Graduate students must obtain a letter grade of “B” or better in all courses.

Percentage Grade	Letter Grade
$94 \leq X \leq 100$	A
$90 \leq X < 94$	A-
$87 \leq X < 90$	B+
$80 \leq X < 87$	B
$75 \leq X < 80$	C
$70 \leq X < 75$	D
< 70	F

Tentative Schedule

Dr. Fudolig reserves the right to change the schedule and requirements for this course; appropriate notice of any changes will be made during scheduled classes.

Date	Day	Topic	Chapter
2025-08-27	Wednesday	Course Introduction	1
2025-09-03	Wednesday	2x2 table	2-3
2025-09-10	Wednesday	2x2 table	2-3
2025-09-17	Wednesday	sxr table	5-6
2025-09-24	Wednesday	sxr table	5-6
2025-10-01	Wednesday	Logistic Regression	8-10
2025-10-08	Wednesday	Logistic Regression	8-10
2025-10-15	Wednesday	Logistic Regression	8-10
2025-10-22	Wednesday	Poisson Regression	12
2025-10-29	Wednesday	Poisson Regression	12
2025-11-05	Wednesday	Categorized Time-to-Event Data	13
2025-11-12	Wednesday	Generalized Estimating Equations	15
2025-11-19	Wednesday	Generalized Estimating Equations	15
2025-11-26	Wednesday	Writing Break	No class
2025-12-03	Wednesday	Final Project consult	1-15
2025-12-10	Wednesday	Final Project Deadline	