

**UNIVERSITY OF WISCONSIN-MILWAUKEE
HELEN BADER SCHOOL OF SOCIAL WELFARE
DOCTORAL PROGRAM IN SOCIAL WORK**

Social Work 962: Applied Multiple Regression Analysis

**Instructor: Nicole Traxel
Office: Enderis 1179
Phone: 414-229-5176
Email: nmtraxel@uwm.edu
Office Hours: Monday 9am-11am**

Text: Pedhazur, E. J. (1997). *Multiple Regression in Behavioral Research*, Third Edition. New York: Harcourt.

Notes and other resources:

Copies of lecture notes will be available on D2L. These can be printed out prior to lecture to facilitate note taking. Homework assignments will also be available on D2L.

If at any time you feel that you would benefit from additional resources (other regression books, software manuals, etc) please contact me and I would be happy to assist you in finding resources that you will find beneficial.

Course Description: This one semester course will focus on regression techniques commonly used in social science research. These will include, but may not be limited to: simple and multiple ordinary least squares regression, binary, ordinal, and multinomial (polytomous) logistic and exact logistic regression. We will also briefly discuss extensions of these procedures to models involving more than a single dependent variable, e.g. path analysis. The course content will be presented in lecture format and through assigned readings. Weekly assignments will require analyses to be completed by hand and run in SAS and SPSS to ensure that students understand the proper implementation of the techniques in both software packages.

Course Objectives: On completion of this course, students will be able to:

1. Correctly apply regression-based techniques to analyze data under a variety of error models.
2. Apply and interpret the results of regression diagnostic procedures.
3. Interpret the meaning of coefficients from different coding schemes, properly interpret interaction effects, and address issues such as the scaling of predictors in logistic regression.
4. Understand the effects of measurement error, multicollinearity, suppressor variables, and misspecified models on parameter estimation and significance tests.
5. Interpret the output from SAS and SPSS regression procedures.
6. Understand extensions of the logistic regression model to address issues in behavioral research.

Course Policies

Campus policy information regarding participation by students with disabilities, accommodations for religious observances, academic conduct/misconduct, incomplete grading policies, complaint procedures, grade appeal procedures, sexual harassment and safety policies, final exam date requirements, and other standing policies/procedures is available online at:

<http://www.uwm.edu/Dept/SecU/SyllabusLinks.pdf>.

Academic Misconduct: Academic misconduct is an act in which a student seeks to claim credit for the work or efforts of another without authorization or citation, uses unauthorized materials or fabricated data in any academic exercise, forges or falsifies academic documents or records, intentionally impedes or damages the academic work of others, engages in conduct aimed at making false representation of a student's academic performance, or assists other students in any of these acts.

Prohibited conduct includes cheating on an examination; collaborating with others in work to be presented, contrary to the stated rules of the course; submitting a paper or assignment as one's own work when a part or all of the paper or assignment is the work of another; submitting a paper or assignment that contains ideas or research of others without appropriately identifying the sources of those ideas; stealing examinations or course materials; submitting, if contrary to the rules of the course, work previously presented in another course; tampering with the laboratory experiment or computer program of another student; knowingly and intentionally assisting another student in any of the above, including assistance in an arrangement whereby any work, classroom performance, examination or other activity is submitted or performed by a person other than the student under whose name the work is submitted or performed.

Students' work must be in their own words except where appropriately cited. Excerpts from other authors may be used judiciously, but direct quotes involving even a few words must include the source, date, and page number(s) and must be indented or enclosed in quotations. Failure to comply with these requirements constitutes plagiarism and is grounds for a failing grade.

Late Assignments and Make-Up Policy: Students are expected to turn in examinations and assignments on or before the due date. Late homework assignments and exams will be accepted with a 10% deduction for each day they are late. It is your responsibility to turn your exams and homework in on or before the due date, even if you are absent.

Attendance and Class Participation: Because the material will be covered at a rapid pace, attendance is mandatory for all lectures and labs unless prior arrangements have been made with the instructor. Students with unexcused absences will receive a one-third reduction in their final grade for each unexcused absence (e.g., a final grade of A will be reduced to an A- following one unexcused absence).

Participation by Students with Disabilities: If you need special accommodations in order to meet any of the requirements of this course, please contact me and the Student Accessibility Center as soon as possible to make the necessary arrangements.

Accommodation for Religious Observances: Students will be allowed to complete examinations or other requirements in advance of a religious observance.

Course Structure and Student Evaluation

Weekly Assignments: Homework problems designed to let students practice the concepts covered in class will be assigned each week and will be due at the beginning of class the week after they are assigned. The homework is intended to give you hands-on practice with the concepts we cover and to ensure that you are keeping up with the material. Each problem will be graded on a three-point scale to indicate the level of accuracy and understanding reflected in your answer:

Grade	Points	Interpretation
Good	3	Complete, clear, and correct.
Satisfactory	2	Some mistakes and/or misconceptions, somewhat unclear or incomplete
Unsatisfactory	1	Serious mistakes and/or misconceptions, very unclear or barely attempted
Not Done	0	Student did not even attempt a response

You need to make sure that you are clearly communicating your understanding in your answers. Homework grades and comments are designed to provide you with feedback on your level of understanding. Do not put off getting help if you don't know how to do a problem or do not understand the feedback you received! Homework assignments will be 25% of your final grade.

Exams: There will be one mid-term exam as well as a final exam. These will be take-home exams. Each exam will be worth 25% of your final grade.

Project: One project requiring application of concepts learned in the course to a data file selected by the student will be assigned. Further details will be provided in the weeks ahead. This project will be worth 25% of your final grade.

Determination of Student Grade

Homework assignment grades will be converted to percentages (for example, 3/3=100%, 2/3=66.6666%, etc) and averaged to create an average homework percentage which will be worth 25% of your grade. This will be averaged with the percentages from the exams and the project to get your final grade. Letter grades will be assigned based on your overall percentage by the percents listed below.

A	A-	B+	B	B-	C+	C	C-	D+	D	D-	F
90-100	85-89	80-84	75-79	70-74	67-69	63-66	60-62	57-59	53-56	50-52	below 50

Tentative Schedule

Date	Topic	Reading
Jan 28	Introduction, Review, Simple Regression, and Diagnostics	Chapters 1-4
Feb 4	Multiple Regression with Two Independent Variables	Chapter 5
Feb 11	Matrix Algebra & The Mathematical Basis of Regression	Appendix & Chapter 6
Feb 18	Statistical Control: Partial & Semipartial Correlations	Chapter 7
Feb 25	Prediction	Chapter 8
March 4	Partitioning Variance	Chapter 9
March 11	Analysis of Effects – Midterm Exam Handed Out	Chapter 10
March 18	NO CLASS: SPRING BREAK	
March 25	A Categorical Independent Variable: Dummy, Effect, and Orthogonal Coding – Midterm Exam Due	Chapter 11
April 1	Multiple Categorical Independent Variables and Factorial Designs	Chapter 12
April 8	Curvilinear Regression Analysis	Chapter 13
April 15	Continuous and Categorical Independent Variables IV's	Chapter 14
April 22	Continuous and Categorical Independent Variables – ANCOVA	Chapter 15
April 29	Categorical Dependent Variable: Logistic Regression	Chapter 17
May 6	Structural Equation Models with Observed Variables: Path Analysis – Project Due and Final Exam Handed Out	Chapter 18
May 13	Final Exam Due by 5pm	